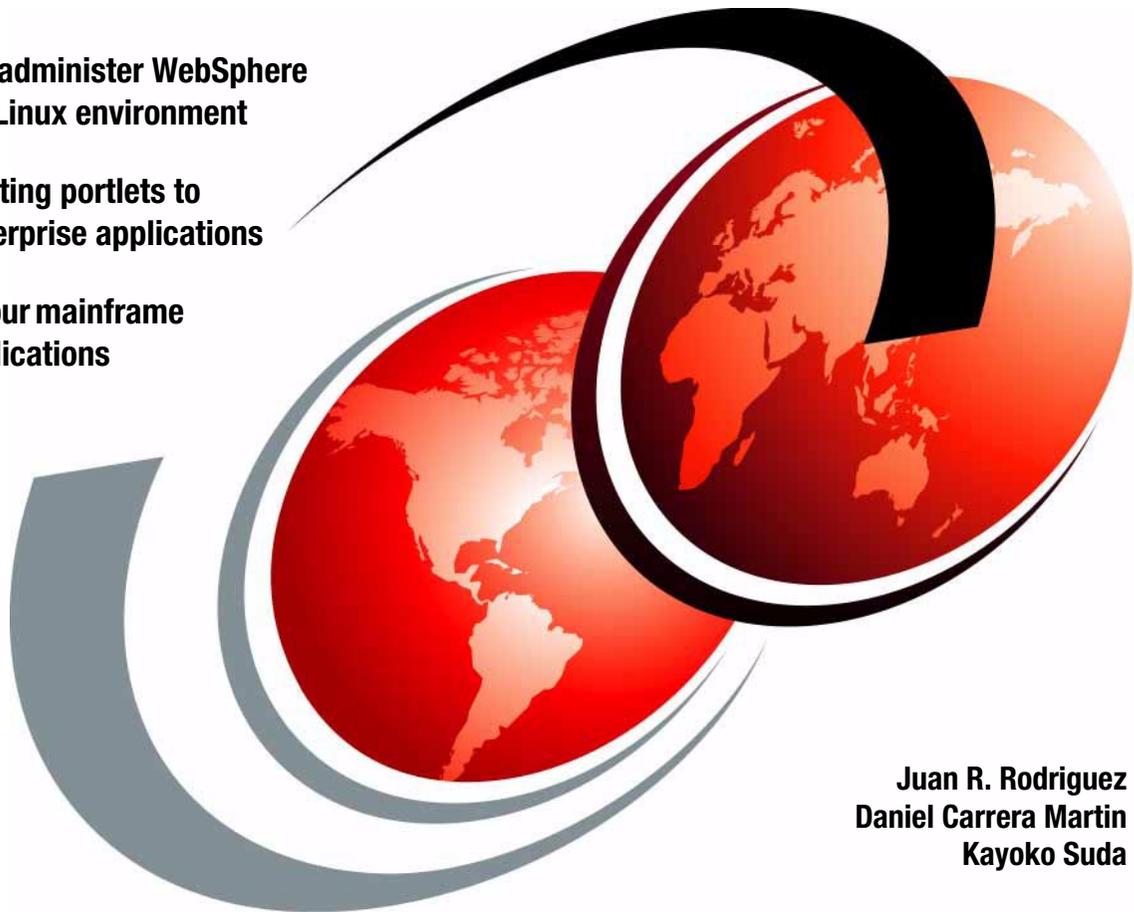


# IBM WebSphere Portal V4.1.2 in a Linux Environment

Install and administer WebSphere  
Portal in a Linux environment

Import existing portlets to  
access enterprise applications

Portalize your mainframe  
legacy applications



Juan R. Rodriguez  
Daniel Carrera Martin  
Kayoko Suda





International Technical Support Organization

**IBM WebSphere Portal V4.1.2 in a Linux  
Environment**

September 2002

**Note:** Before using this information and the product it supports, read the information in “Notices” on page v.

**First Edition (September 2002)**

This edition applies to Version 4, Release 1, Modification 2 of IBM WebSphere Portal Enable and Extend offerings for Linux operating systems.

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# Preface

This Redpaper will help you plan, install and administer the IBM WebSphere Portal Version 4.1.2 Enable offering product in a Red Hat Linux environment so that existing enterprise applications can be accessed from portlets using the IBM WebSphere Portal product.

In this Redpaper, you will also find step-by-step examples showing ways to rapidly import and use existing portlets to access your enterprise applications, such as Domino, Lotus Notes, iNotes, Sametime, IBM WebSphere Host On-Demand, IBM WebSphere Host Publisher and LDAP Directory Services data in an IBM WebSphere Portal environment. You will find numerous scenarios describing recommended ways to integrate your enterprise applications using the portlet support and generic portlets provided by this product release and other sources.

A basic knowledge of Red Hat Linux, LDAP Directory Services, WebSphere Portal, portlets, Java technologies such as servlets, JavaBeans, and JavaServer Pages (JSPs), as well as HTML and XML markup languages and the terminology used in Web publishing, is assumed.

## The team that wrote this Redpaper

This Redpaper was produced by a team of specialists from around the world working at the International Technical Support Organization, Raleigh Center.

**Juan R. Rodriguez** is a Consulting IT professional at the IBM ITSO Center, Raleigh. He received his M.S. degree in Computer Science from Iowa State University. He writes extensively and teaches IBM classes worldwide on such topics as networking, Web technologies, and information security. Before joining the IBM ITSO, he worked at the IBM laboratory in the Research Triangle Park (North Carolina, USA) as a designer and developer of networking products.



**Daniel Carrera Martin** is an IT specialist in IBM Spain. He has four years of experience developing e-Commerce sites with IBM Global Services and two years at the IBM Software Group in pre-sales for e-Commerce and Portal software. He holds a degree in Computer Science.



**Kayoko Suda** is an IT specialist at the System and Web Solution Center Technical Support in IBM Japan. She has one and half years of experience at the IBM Software Group working in Technical Sales Support for Pervasive Computing and Portal software.



Thanks to the following people for their contributions to this project:

William H. Tworek  
IBM International Technical Support Organization, New York, USA

Gabriel Cohen, Manjula Seelan, Belinda Z Yu  
IBM Research Triangle Park, North Carolina, USA

Enrique Cortes Pecina, Jenaro Gallego Gomez, Julio Sanchez Cubas  
IBM Spain

Gabriel Sallah  
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# Overview

IBM WebSphere Portal provides a single point of access to applications, application content, processes, and people in your network. In order to provide this unified access, WebSphere Portal implements rich and valuable functions.

This chapter presents an overview of the IBM WebSphere Portal Enable offering product and briefly introduces the architecture and wide variety of functionalities of the WebSphere Portal components.

In this chapter, the following topics are described:

- ▶ Introduction
- ▶ WebSphere Portal offerings and components
- ▶ Architecture

## 1.1 Introduction

IBM WebSphere Portal allows you to establish customized portals for your employees, Business Partners, and customers. As illustrated in Figure 1-1, the framework architecture implemented in this product provides a unified access point to internal and external Web applications as well as portal access to other legacy applications. In this way, users sign on to the portal and receive personalized Web pages.



Figure 1-1 Horizontal and vertical portals

The personalized single point of access to all necessary resources reduces information overload, accelerates productivity, and increases Web site usage. In addition, portals do much more; for example they provide additional valuable functions such as security, search, collaboration and workflow.

A portal delivers integrated content and applications, plus a unified, collaborative workplace. Indeed, portals are the next-generation desktop, delivering e-business applications over the Web to all kinds of client devices.

IBM WebSphere Portal Version 4.1 has been designed in response to the following set of fundamental business objectives:

1. A single point of access to all resources associated with the portal domain.
2. Personalized interaction with the portal services.
3. Federated access to hundreds of data types and repositories, aggregated and categorized.
4. Collaboration technologies that bring people together.
5. Integration with applications and workflow system.

IBM as well as some industry analysts have coalesced around the concept of horizontal and vertical portals. Horizontal portals are the primary infrastructure upon which a portal is built. Vertical portals are built upon the horizontal layer and represent a specific portal instance, usually defined by a major topic or domain.

As illustrated in Figure 1-2 on page 4, the horizontal portal infrastructure consists of several modular subsystems including:

- ▶ Presentation layer - a Web user interface plus pervasive device support
- ▶ Personalization - the ability to serve dynamic response to the user based on personal profiles
- ▶ Collaboration - tools that allow e-mail, team rooms, shared places, etc. to be exchanged
- ▶ Portlets - a framework for easily attaching software modules (portlets) and services
- ▶ Applications and workflow - integration of legacy and new applications
- ▶ Search and navigation - categorizing repositories of content and searching them for relevant information
- ▶ Publish and subscribe - the ability to author new content and publish it to subscribers
- ▶ Administration and security - basic Web site services such as page designers, performance monitors, cluster services, and metadata management
- ▶ Integration - metadata sharing, XML, connectors, standards, EAI

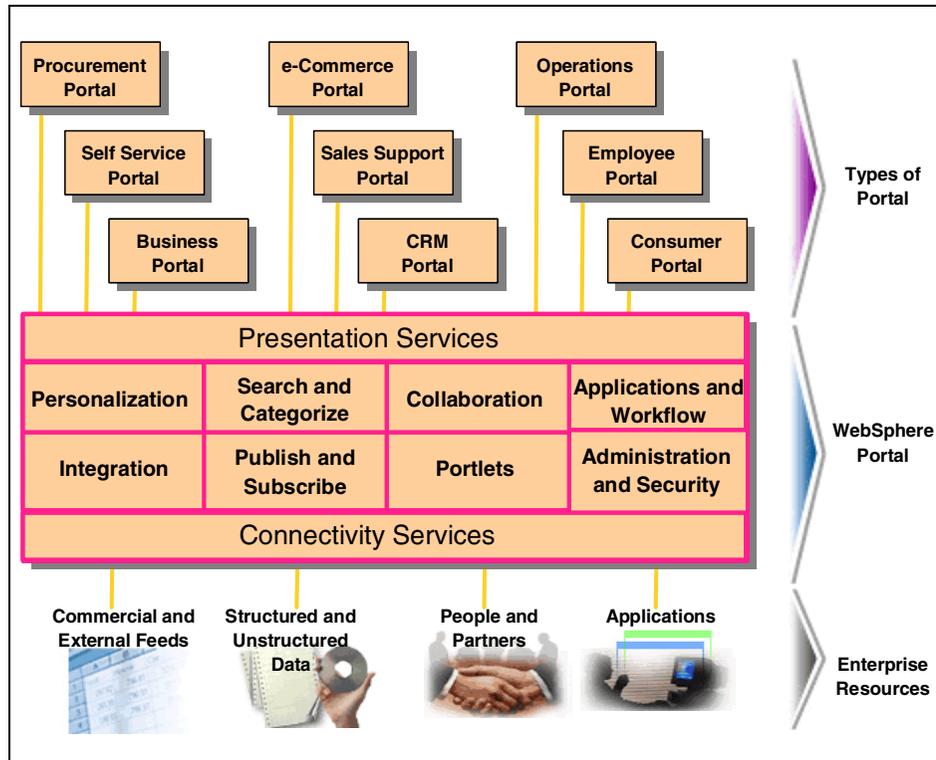


Figure 1-2 WebSphere Portal architecture

**Note:** WebSphere Portal provides an extensible framework for interacting with enterprise applications, content, people, and processes. Self-service features allow end users to personalize and organize their own view of the portal, to manage their own profiles, and to publish and share documents with their colleagues.

WebSphere Portal provides additional services such as single sign-on, security, Web content publishing, search and, personalization, collaboration services, enterprise application integration, support for mobile devices, and site analysis.

## 1.2 WebSphere Portal components

IBM WebSphere Portal provides three offerings, each designed to provide the infrastructure you need to build and deploy highly scalable portals. All three offerings share a common framework (the portal server) plus additional products

and services. The portal server provides common services such as application connectivity, integration, administration, and presentation that are required across portal environment.

### **1.2.1 WebSphere Portal Enable**

The IBM WebSphere Portal Enable offering lets you quickly build highly scalable portals that simplify and speed your access to personalized information and applications. Portal Enable provides common services including:

- ▶ Connectivity and integration to allow access to enterprise data, external unsifted or even your trading partners' applications
- ▶ Presentation and administration to enable computing desktop customization to match your own work patterns and needs, while providing:

#### **WebSphere Portal**

WebSphere Portal provides personalization, user management, security, and other services for constructing the portal site.

#### **WebSphere Personalization**

The WebSphere Personalization offering provides personalization technologies for targeting Web content to meet user needs and preferences:

- ▶ Rules-based personalization, where the business manager defines a set of business rules that determine which Web content is displayed for a particular user.
- ▶ Recommendations, using advanced statistical models and other matching techniques to extract trends from the behavior of Web site visitors. This approach adapts to changing trends in visitor interests without creating new business rules.
- ▶ Campaign management, for e-mail and Web-based promotions, such as enrollment offers or product introductions.

#### **Web Content Publisher**

Provides a browser-based interface that enables nontechnical users to create, contribute and manage content on portals and Web sites in a simple and controlled manner. Features such as template management, workflow management, versioning and access control allow you to publish content quickly and efficiently providing end users access to the most up-to-date information when they need it.

## **WebSphere Studio Application Developer**

These are professional developer tools for creating, testing, debugging, and deploying portlets, servlets, and other assets related to portals and Web applications.

### **1.2.2 WebSphere Portal Extend**

The Portal Extend offering includes all products in the Enable offering and adds collaborative components and Web analysis coupled with additional tools to access, organize, and share information. Features include:

- ▶ Parallel, distributed, heterogeneous searching capability
- ▶ Individual and shared team workspaces with built-in collaborative capabilities
- ▶ Collaboration software components
- ▶ Web site analyses

#### **Lotus Collaboration Components**

Lotus Collaborative Components are building blocks (APIs and JSP tag libraries) for integrating the functionality of Lotus Domino, Lotus Sametime, Lotus QuickPlace, and Lotus Discovery Server into the portal. Developers can leverage the features of Lotus Domino, Lotus QuickPlace, Lotus Sametime, and Lotus Discovery Server, by using these components to add user interface extensions to their portlets and portal pages.

#### **Lotus Collaborative portlets**

Provides portal community services and portlets that help teams share portal pages, applications, documents, messaging, and other collaboration tools.

#### **IBM Lotus Extended Search**

This offering provides parallel, distributed, heterogeneous searching capabilities. It allows you to search Lotus Notes databases, legacy data stores, Web search sites, Microsoft Index Server, Site Server and Exchange 2000, as well as multiple Lotus Notes domains.

#### **IBM Tivoli Web Site Analyzer**

This offering analyzes Web content integrity and site performance, provides usage statistics, and analyzes portal server logs. Reports from Site Analyzer reveal information that can be used to improve the portal for a better user experience.

#### **Lotus Discovery Server Integration**

In addition, another concept that is key to WebSphere Portal Extend offering is the Lotus Discovery Server integration. When using Lotus Discovery Server with

WebSphere Portal Extend or WebSphere Portal Experience, certain features are automatically enabled inside the portal. Examples of integration include additional menu options that appear when you click on a user name in a portlet, allowing you to perform actions such as searching for all documents by the user selected, or launching a profile of the user that is maintained and stored with the Discovery Server.

### 1.2.3 WebSphere Portal Experience

The Portal Experience offering includes all products in the Extend offering and adds additional tools and functionality including advanced collaboration, content management and security policy management, creating the most comprehensive portal offering in the market. Features include:

- ▶ Advanced collaboration features for e-meetings, application sharing, and whiteboarding (whiteboards are used in teleconferencing applications) enable effective online collaboration as well as the ability to take team rooms offline.
- ▶ Data storage for a broad spectrum of digital information including Facsimiles, images, PC files, XML, and multimedia.
- ▶ Content infrastructure for applications including call center, high-volume claims processing, and accounts payable.
- ▶ Folder management and document workflow.
- ▶ Sample Java applications as well as advanced application development tools.
- ▶ Security policy management tools for e-business and distributed applications.

#### **IBM Content Manager**

This offering provides data store capabilities for a broad spectrum of digital business information, for example scanned images, facsimiles, PC files, XML files, and rich multimedia and Web content. Content Manager also provides folder management and document workflow. It provides the content infrastructure for applications from call centers, high-volume claims processing, and accounts payable, to e-commerce catalogues and e-learning.

#### **IBM Tivoli Access Manager**

Access Manager provides security policy management tools for e-business and distributed applications. It is a policy-based access control solution for e-business and enterprise applications.

## 1.3 WebSphere Portal infrastructure

IBM WebSphere Portal provides a framework that breaks the different portal components into portlets to accommodate the aggregation and display of diverse content. Each portlet is responsible for accessing content from its source (for example, a Web site, database, or e-mail server) and transforming the content so that it can be rendered to the client.

From a user's perspective, a portlet is a small window in the portal that provides a specific service or information. From an application development perspective, portlets are pluggable modules that are designed to run inside a portlet container of a portal server.

The portlet container provides a runtime environment in which portlets are installed and used. Portlets rely on the portal infrastructure to access user profile information, participate in window and action events, communicate with other portlets, access remote content, look up credentials, and store persistent data. The Portlet API provides standard interfaces for these functions. The portlet container is not a stand-alone container like the servlet container. Instead, it is implemented as a thin layer on top of the servlet container and reuses the functionality provided by the servlet container.

For more information about Portlet API, refer to the *Portlet Development Guide* at:  
<ftp://ftp.software.ibm.com/software/webserver/portal/V41PortletDevelopmentGuide.pdf>

### 1.3.1 WebSphere Portal runtime process flow

After installation, the portal developer develops and deploys the portal to users. The developer alters the layout and appearance of the default portal page by selecting a *theme and skins* that WebSphere Portal provides, or by creating a page layout that matches a corporate standard. A portlet programmer writes and registers additional portlets by using the portlet API.

After the portal recognizes user data, a user can log on to the portal. If a user attempts a logon, the incoming request passes through an authentication layer that provides controlled access to the portal. If the logon is authenticated, a single sign-on component stores user information for later use by other programs that require authentication, and user information is placed in a data store, such as an LDAP directory or a relational database. Based on the user information, the portal framework retrieves the portal page layout and customization data from storage. WebSphere Portal processes the layout by generating markup for the portal page and rendering the portlets that are accessible to the user.

Figure 1-3 illustrates the runtime process flow in WebSphere Portal.

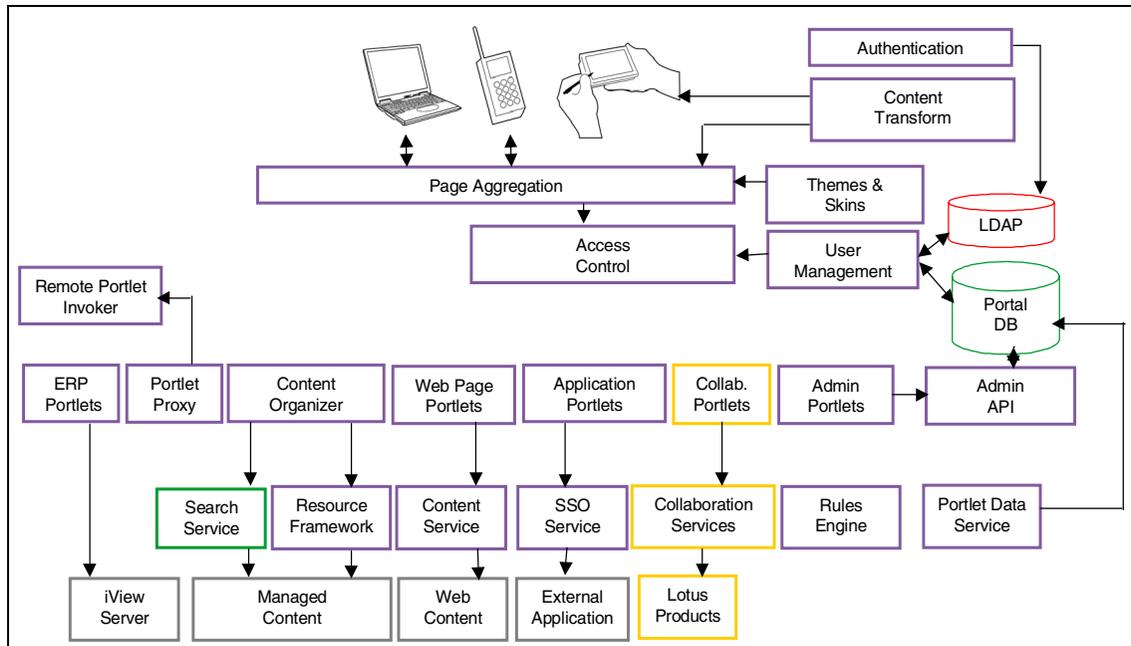


Figure 1-3 WebSphere Portal runtime process flow





# Installation

This chapter provides guidelines and recommendations for installing WebSphere Portal software components in a Linux environment using Setup Manager, the software installer provided with WebSphere Portal and supported by IBM.

In this chapter, a sample WebSphere Portal installation in a two-tier runtime environment is included, since this is the recommended scenario for a production server.

The chapter is organized in the following sections:

- ▶ WebSphere Portal V 4.1 Enable offering installation overview
- ▶ Test environment
- ▶ Component prerequisites
- ▶ Installation

**Note:** The install procedures described in this chapter are for WebSphere Portal Enable offering only. There exist different install procedures for extend and experience offerings. In addition, there are many different install considerations for extend to properly tie into its collaborative functionality.

## 2.1 WebSphere Portal installation overview

This section presents a step-by-step description of the WebSphere Portal installation process. WebSphere Portal provides multiple software components that you can install, and each component has various requirements and prerequisites. You are required to use the Setup Manager to install these components. Before you install a WebSphere Portal software component, you should also read the information provided in the planning section of the WebSphere Portal V4.1 InfoCenter. The InfoCenter contains enhanced installation information related to planning, requirements, and security information.

In addition, the release notes document contains information related to workarounds for known defects and supplemental information on topics that might also be covered in the WebSphere Portal InfoCenter.

You can access the release notes at the following URL:

<http://www.ibm.com/software/info1/websphere/solutions/offerings/portallibrary.jsp>

WebSphere Portal contains a number of components, such as Lotus QuickPlace, Lotus Sametime, IBM Content Manager, Tivoli Access Manager, and so on. However, as a starting point in an initial sample scenario, the basic components such as IBM WebSphere Portal, IBM WebSphere Personalization, IBM WebSphere Application Server, DB2 Universal Database, and IBM SecureWay Directory in a Red Hat Linux environment are installed.

**Note:** Before you begin the WebSphere Portal installation, it is important to gather enough information about the specific components you want to install. To help you collect this information into a single document, you may want to use the planning worksheet lists provided in the planning section of the WebSphere Portal InfoCenter. Fill out the table entries with appropriate values for your configuration and keep the worksheet for future reference.

**Tip:** Before you attempt to install WebSphere Portal, you should be very clear on which version of the product you pretend to install. For example, if you install WebSphere Portal Enable offering and build some portlet capabilities, and then at a later date you want to get WebSphere Portal Extend offering capabilities, there is currently no way to upgrade from Enable offering to Extend offering. In this case, you will need to uninstall and re-install, going through some work to export and import your portal and portlets settings.

## 2.2 Sample environment

In this section a sample environment is presented. Figure 2-1 illustrates the WebSphere Portal components that will be installed for this sample scenario. For example, Setup Manager will be used to install the LDAP Server and WebSphere Portal in a two-tier runtime environment.

In this scenario the WebSphere Portal is installed on machine A, and the LDAP Server is installed on a separate system, machine B. Desktop browsers are connected to the WebSphere Portal machine as client devices.

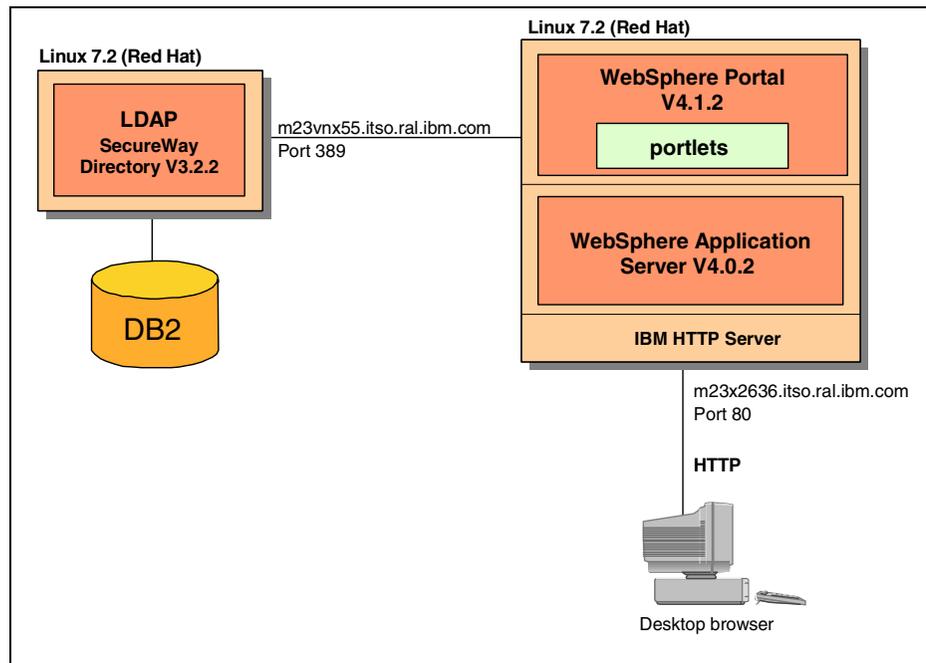


Figure 2-1 WebSphere Portal sample scenario

### Software used in this sample scenario

The following software will be installed:

- ▶ Red Hat Linux V7.2.2
- ▶ Windows 2000 Server + Service Pack 2
- ▶ IBM HTTP Server V1.3.19.1
- ▶ IBM DB2 Universal Database V7.2 + Fix Pack 5
- ▶ IBM WebSphere Application Server V4.0.1
- ▶ IBM WebSphere Portal Extend V4.1.2
- ▶ IBM SecureWay Directory V3.2.2

- ▶ Microsoft Internet Explorer V5.5 + Service Pack 1
- ▶ Netscape Communicator V4.78

### **Hardware used in this sample scenario**

The following hardware is used:

- ▶ WebSphere Portal
  - IBM Netfinity 5100
    - 1 GHZ Pentium III CPU
    - 4 GB RAM
    - 18 GB hard disk
    - 1 Ethernet (built-in)
- ▶ LDAP server
  - IBM xSeries Server 230
    - 1 GHZ Pentium III CPU
    - 1 GB RAM
    - 18 GB hard disk
    - 1 Ethernet (built-in)
- ▶ Desktop browser
  - IBM PC 300PL
    - 733 GHZ
    - 512 MB RAM
    - 20 GB DASD
    - 1 IBM Etherjet 100/10

## **2.3 Prerequisites**

This section provides detailed prerequisite information for WebSphere Portal and general requirements for additional software components included within WebSphere Portal.

Table 2-1 on page 15 describes the minimum requirements that must exist on the portal machine prior to installing WebSphere Portal in a Linux environment.

Table 2-1 Installation prerequisites

Requirement	Comments
Platforms	<p>Red Hat Linux 7.2</p> <p>The following packages are required before you install WebSphere Portal:</p> <ul style="list-style-type: none"> <li>▶ ncurses4-5.0-4.i386.rpm</li> <li>▶ pdksh-5.2.14.13.i386.rpm</li> </ul>
IBM WebSphere Application Server Advanced Edition 4.0 + Fix Pack 2 including the required e-fixes	<p>The following e-fixes are required before you can install WebSphere Portal. If you install WebSphere Application Server with Setup Manager, all of the following e-fixes are installed:</p> <ul style="list-style-type: none"> <li>▶ PQ55941, PQ56615, PQ57814, PQ58289, PQ58678, PQ58795, PQ59932, PQ60787</li> </ul> <p>The e-fix PQ60461 is required, but it must be installed manually. You can download this e-fix from the WebSphere Application Server Support Web site.</p> <p>For Japanese environments, manually install the e-fix PQ57024: WebSphere 4.0.2, AdminConsole displays incorrectly in Japanese. You can download this e-fix from the WebSphere Application Server Support Web site.</p>
IBM HTTP Server 1.3.19.1 is recommended.	The e-fix PQ54931 is recommended, but it must be installed manually. See IBM HTTP Server tips for more information in WebSphere Portal InfoCenter.

**Important:** When installing Red Hat Linux V7.2 operating system, the following two packages may not be installed by default:

- ▶ ncurses4-5.0-4 (Linux CD 2)
- ▶ pdksh-5.2.14-13 (download from Web site)

Both of these packages are required to complete WebSphere Portal installation.

The following steps can be executed to verify that a package has been installed in your system:

1. Verify whether a package is installed in your system:

```
# rpm --verify ncurses4-5.0-4
# rpm --verify pdksh-5.2.14-13
```

If no output is generated, the package is already installed. Otherwise, the RPM (Red Hat Package Manager) will return an error similar to the following statements:

```
package ncurses4-5.0-4 is not installed
package pdksh-5.2.14-13 is not installed
```

2. If a required package is not installed, then you must install it before you start the WebSphere Portal installation. For example, if you have the original Red Hat CD, follow the next step (if not, refer to the next pdksh installation and follow the way you will install from the Web site):

- a. Insert the Linux Red Hat V7.2 second CD into the CD-ROM drive (the ncurses4 package is located in this CD).
- b. If the CD does not automatically mount, you will need to mount it by issuing the following command as root:

```
# mount /mnt/cdrom
```

- c. If you are running X Windows with either KDE or Gnome desktop, these tools can automatically mount the CD-ROM device for you.
- d. Once you have the RPM file, use the following command to install or upgrade the packages:

```
# rpm -vih /mnt/cdrom/RedHat/RPMS/ncurses4-5.0-4.i386.rpm
```

3. Install pdksh5.2.14-13 package from the Web site:

- a. Go to <http://rpmfind.net/>
- b. Enter kdsh into the search box and click **Search** and download the RPM package.
- c. Once you have saved the file somewhere on your system, use the following command to install or upgrade the packages:

```
# rpm -vih <path_to_file>/pdksh5.2.14.13.i386.rpm
```

### 2.3.1 Uninstall Linux LDAP package

If you are going to use IBM SecureWay Directory for your LDAP Directory Services, you must remove any non-IBM versions of LDAP that might have been installed previously. If you try to install the IBM SecureWay Directory over an existing non-IBM version of LDAP, such as OpenLDAP, the SecureWay Directory will not install correctly.

For example, to determine if you have a previously installed version of LDAP, issue the following command:

```
rpm -qa |grep -i ldap
```

This command finds any installed applications containing the name ldap. This method works only if you have a version of LDAP that has the string ldap in its application names.

In addition, the following three packages are installed by default and have to be removed using KDE Package Manager tool:

- ▶ openldap\_client
- ▶ nss\_ldap
- ▶ openldap

You can also use the following command to remove packages:

```
# rpm -e <package_name>
# rpm -e --nodeps <package_name>
```

## 2.3.2 Memory requirements

To install WebSphere Portal, it is recommended that your system has a minimum of 1024 MB.

## 2.3.3 Disk space

The disk space mentioned in 2.3.3, “Disk space” on page 17 is adequate in most cases if you plan to use Setup Manager to install WebSphere Portal, Personalization, WebSphere Application Server, IBM HTTP Server, and the IBM Java Runtime Environment (JRE).

However, if for any reason you need to change the file system size, the Linux’s ext2 file system (which is used by default) does not allow you to change it. Therefore, you should carefully plan in advance for the size of your file system in order to avoid related problems. The following disk space is required for each directory:

- ▶ /: 1.5 GB or more (root directory)
- ▶ /usr: 2 GB or more (usr directory)
- ▶ /home: 500 MB or more (home directory)

**Note:** The current Linux ext2 file system does not provide the capability to change the file system size once it has been created. However, there exist third-party tools, such as PowerQuest Partition Magic, that can be used to change and resize your file system.

For further information, refer to the Redpaper *WebSphere Application Server V4 for Linux Implementation and Deployment Guide*, REDP0405.

## 2.3.4 Network configuration

It is required that machines be properly attached to the network in a network domain and with domain names resolved by using a DNS. The machines must use fixed IP addresses and you should not use DHCP to obtain IP addresses.

## 2.3.5 WebSphere Portal CD-ROM contents

IBM WebSphere Portal V4.1.2 is available in a set of CD-ROMs. There are a number of CDs contained in WebSphere Portal, since each component has an additional set of equivalent CDs for its release fixes, platforms, and languages. In this section, for your information only one name is mentioned for each component. The following components are included in the Enable offering:

1. IBM JRE Version JDK V1.3.0 (Service13a), WebSphere Portal Setup Manager, and IBM HTTP Server Version 1.3.19.1
2. DB2 Universal Database Version 7.2
3. WebSphere Application Server Version 4.0.2
4. WebSphere Personalization Version 4.0 and LikeMinds Recommendation Engine Version 4.0
5. IBM SecureWay Directory Version 3.2.2
6. IBM WebSphere Studio Application Developer for Windows Version 4.0.3
7. IBM WebSphere Portal Version 4.1, WebSphere Transcoding Publisher V4.1 and License Use Management
8. Domino Application Server V5.0.8
9. WebSphere Content Publisher Version 4.0 and Lotus WorkFlow Version 3.0a

In addition, the following components are included in the Extend offering:

1. WebSphere Site Analyzer Version V4.1
2. Lotus QuickPlace Release V2.0.8
3. Lotus Sametime V2.5 and Fix Pack 1
4. Lotus Domino Extended Search Release 3.7 and Lotus Collaborative Services Release V4.1

In addition, the following components are included in the Experience offering:

1. Tivoli Access Manager Version V3.9
2. IBM Content Manager Version V7.1
3. IBM Enterprise Information Portal (EIP) Client Kit for Content Manager Version V7.1.2

## 4. DB2 RunTime Clients Version 7.2

**Note:** For a basic installation in a Linux environment, you will need CD1, CD2-3, CD2-13, CD3-2, CD4, CD5, and CD7.

## 2.4 A sample two-tier installation

As shown in Figure 2-1 on page 13, LDAP Server and WebSphere Portal will be installed in a two-tier runtime environment. In this scenario the WebSphere Portal is installed on machine A, and the LDAP Server is installed on a separate system, machine B. When you install the separate system, you must install LDAP Server before you start the WebSphere Portal installation.

### 2.4.1 Installing the LDAP Server

In this section we describe the recommended steps to install your LDAP Server.

#### ***Step1: Starting the WebSphere Portal installation***

In this step you invoke the installation shell script. The tasks performed by the script include the verification process to make sure the installation runs with user “root” and with the correct JDK and JRE level.

**Note:** You need to be sure you issue these commands from the root directory. Use the `cd` command to get to the root directory. For example, if the command window is in the `/mnt/cdrom` directory, you will not be able to unmount the CD.

As a sample procedure, use the following command sequence to confirm and start the WebSphere Portal installation program:

```
# cd
# mount /mnt/cdrom
# pwd
/
# ./mnt/cdrom/install.sh
```

This will result in the following output:

```
Collecting installation files...
Didn't find java of proper version; will install one
Installing java
Preparing... ##### [100%]
1:IBMJava2-SDK ##### [100%]
```

```
# WebSphere Portal Server 4.1 Setup Manager starting
.....
Copyright (C) IBM 2001-2002
Unpacking JAR File .....
```

### **Step 2: JDK**

The WebSphere Portal installation process installs and configures the JDK and JRE.

### **Step 3: Welcome window**

The welcome window is displayed, as shown in Figure 2-2.

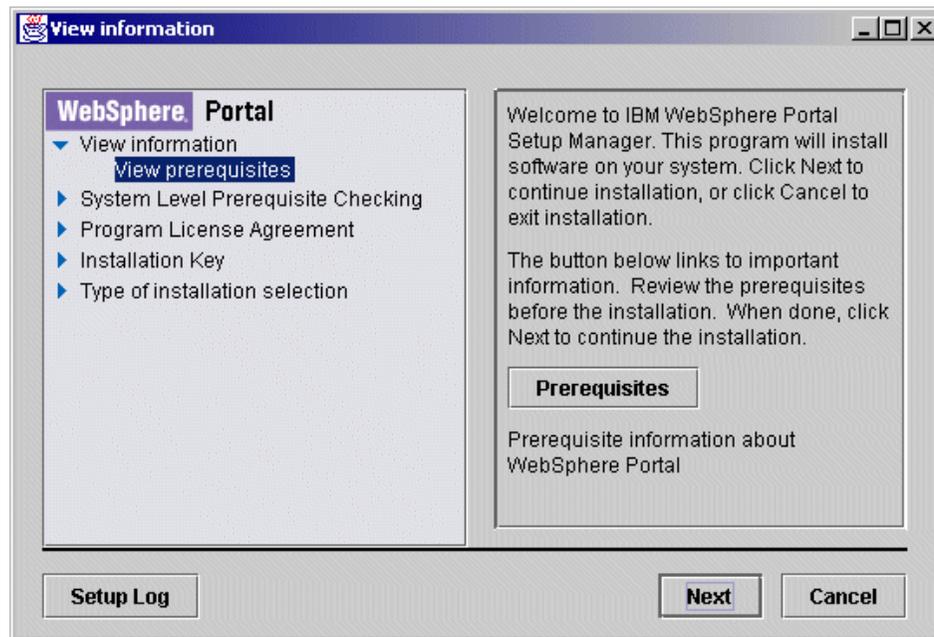


Figure 2-2 WebSphere Portal installation program welcome window

### **Step 4: License agreement**

If required, the license agreement window is displayed.

### **Step 5: License key**

Enter your license key number into the box.

### Step 6: Selection of installation type

WebSphere Portal includes three different types of installation procedures as follows:

- ▶ Quick install: The Quick installation uses configuration information stored in a response file to automatically install the WebSphere Portal components. The response file, wprecord.script, is on CD 1. You must modify the response file and store it on your system before you install WebSphere Portal.
- ▶ Standard install: The Standard installation uses configuration information stored in a response file to automatically install the WebSphere Portal components. The response file is generated during the installation process and provides the needed information so you don't need to enter information during the actual installation.
- ▶ Advanced install: The Advanced installation lets you select the components you want to install. Selected components can be installed on different systems. If you want to add some components after initial install, this selection will be chosen.

**Note:** Standard install is recommended for most installations, as shown in Figure 2-3.

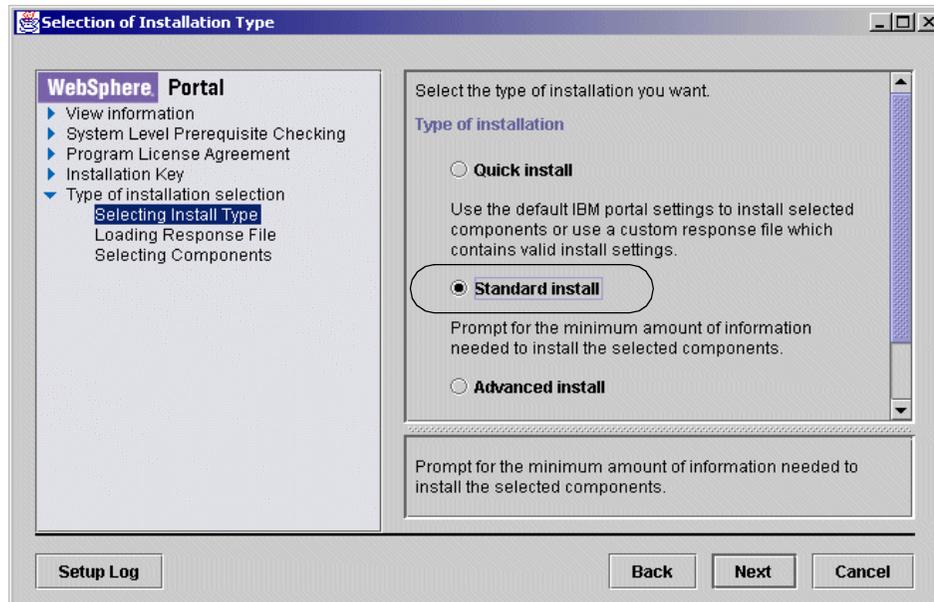


Figure 2-3 Installation type selection

**Tip:** Since you are prompted for a fairly large amount of information during the installation process, it is recommended that you gather your answers before you start the installation. You should also record and keep your answers in your planning worksheet for future reference.

### ***Step 7: Loading a response file***

Since this is a first installation, there is no response file at this time and the check box option is left unchecked. However, you can install WebSphere Portal using an existing response file. If you already have a response file, browse the file and select it. All components provided with the WebSphere Portal will automatically install.

After the installation, all the configuration information that you type during the installation will be stored in the response file, `/opt/IBMWPO/scripts/wprecord.script`. This file can be used for future installations, for example when you install again with the same configuration values. You can also use this response file when you perform another installation with the Quick install option.

### ***Step 8: Selection of components***

Choose the WebSphere Portal components by selecting the check boxes of the Portal components you wish to install in a specific machine. In this sample installation, the following components are selected:

- ▶ SecureWay Directory
  - SecureWay Directory Server
  - SecureWay Directory Client
- ▶ DB2 Universal Database
  - DB2 Universal Database Server
  - DB2 Universal Database Client (optional)
  - DB2 Universal Database Fix Pack 5

### ***Step 9: Remove old LDAP***

If you are going to use IBM SecureWay Directory for your LDAP Directory Server, you must remove any non-IBM versions of LDAP that might have been previously installed in your system. The procedure to uninstall LDAP is described in 2.3.1, “Uninstall Linux LDAP package” on page 16.

### Step 10: Collect LDAP suffix

Enter the configuration for the LDAP Server. As illustrated in Figure 2-4, in this sample scenario the following values are used:

Suffix	dc=ibm,dc=com
Administrative user	cn=root
Administrative password	***** (enter a proper password)
TCP/IP port to use	389

**Note:** User DN must be specified in the following format: cn= xxx. The user DN is used to bind the LDAP Server. The default LDAP port number is 389.

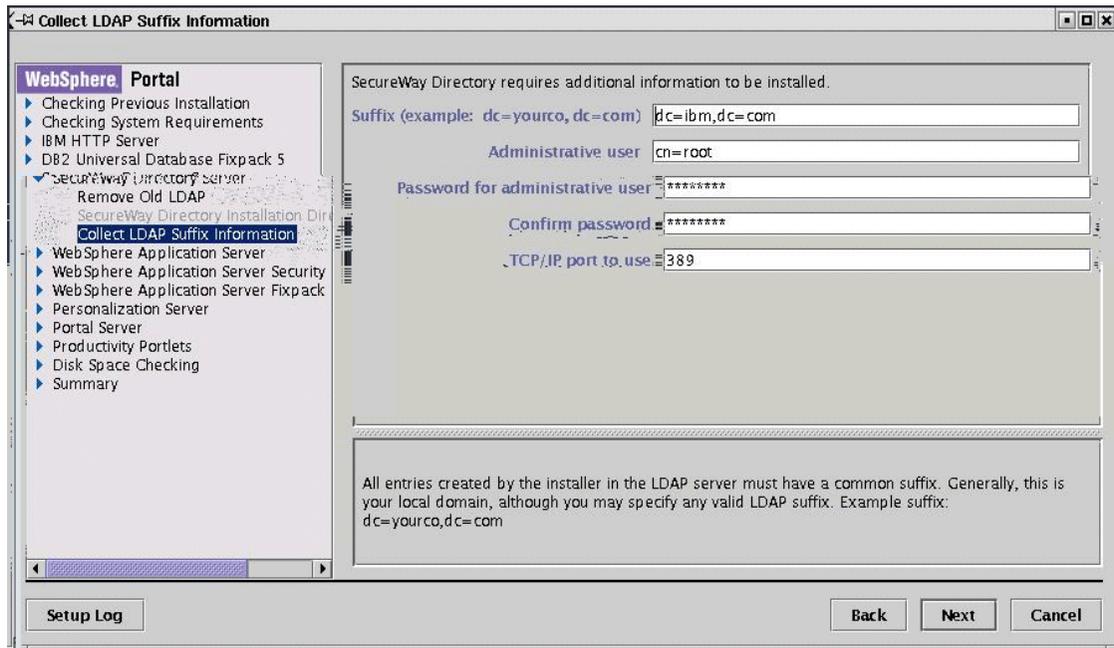


Figure 2-4 Collect LDAP suffix information

**Note:** When you specify the LDAP suffix (such as dc=xx, cn=yy), be sure to enter it in lowercase. Uppercase or mixed case can cause problems with WebSphere Member Services.

### Step 11: Display summary

Setup Manager displays a summary list with all the components to be installed.

### Step 12: Prompt to load next CD

Setup Manager prompts you to unmount, remove, mount, and insert the CDs of the components to install.



Figure 2-5 Remove CD

**Tip:** If for any reason you are not be able to unmount the CD, issue the `umount` command from a terminal session and then continue to install.

### **Step 13: Verify the LDAP installation**

The following is a recommended procedure to verify the LDAP installation:

1. Log in as root on the system where LDAP server is installed, and start a terminal session.
2. Check the process by entering the command:

```
# ps -ef |grep slapd
```

3. If no slapd process is shown, start LDAP and check the process again. For example, use the following command to start LDAP:

```
# slapd
```

## **2.4.2 WebSphere Portal installation**

### **Step 1: Starting the WebSphere Portal installation**

Start `install.sh` using the following commands:

```
# cd
# mount /mnt/cdrom
# pwd
/
# ./mnt/cdrom/install.sh
```

**Step 2: Welcome window**

The welcome window is displayed.

**Step 3: License agreement**

If required, the license agreement window is displayed.

**Step 4: License key**

Enter your license key number into the box.

**Step 5: Selection of installation type**

Select **Standard installation** and click **Next**.

**Step 6: Loading response file**

There is no existing response file in this sample installation.

**Step 7: Selection of components**

Choose the WebSphere Portal components by selecting the check boxes of the Portal components you wish to install. As shown in Figure 2-6 on page 26, the following components are selected in this sample configuration:

- ▶ WebSphere Portal
  - Productivity portlet
  - Portal Server
- ▶ WebSphere Personalization
  - Personalization Server
- ▶ WebSphere Application Server Advanced
  - WebSphere Application Server Fix Pack 2
  - WebSphere Application Server
- ▶ IBM HTTP Server
- ▶ DB2 Universal Database
  - DB2 Universal Database Server
  - DB2 Universal Database Client (optional)
  - DB2 Universal Database Fix Pack 5

**Note:** The installation of WebSphere Personalization includes rules-based personalization and a recommendation engine for collaborative filtering. If you also want to develop campaigns using Campaign Manager tools, you will need to install the Personalization Workspace subcomponent. This is a browser-based graphical tool that allows you to define, control, and preview a Web site's personalization behavior.

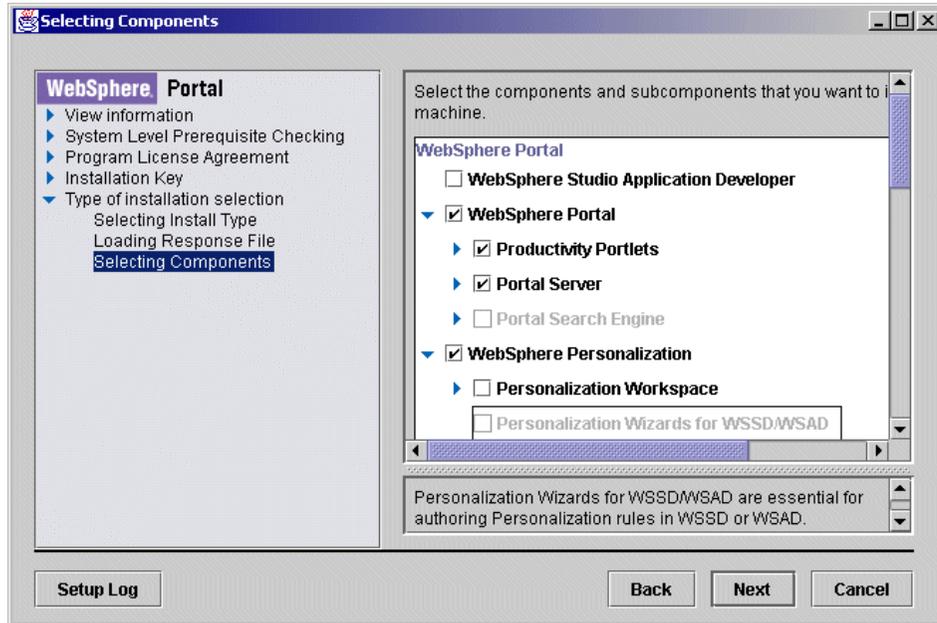


Figure 2-6 Components and subcomponents selection

### **Step 8: Checking a previous installation**

The WebSphere Portal install process performs a check for any previously installed WebSphere Portal components on the machine.

### **Step 9: IBM HTTP Server directory**

Browse the directory where you want to install IBM HTTP Server. The default location is /opt/IBMHTTPServer.

### **Step 10: Collecting administration user name for IBM HTTP Server**

Enter a user name, group, and password that will be managing IBM HTTP Server on this server (see Figure 2-7 on page 27). Setup Manager automatically creates a user and group that you specified in this step. For example:

- ▶ User name: inst1
- ▶ Group: inst1g



Figure 2-7 Collecting the administration user name for IBM HTTP Server

**Step 11: Installation directory**

Enter the location where you want to install WebSphere Application Server.

**Step 12: Specify a database location**

Select the database location. In this scenario (see Figure 2-8) a local database is used. Therefore, select **No** remote database in this scenario.

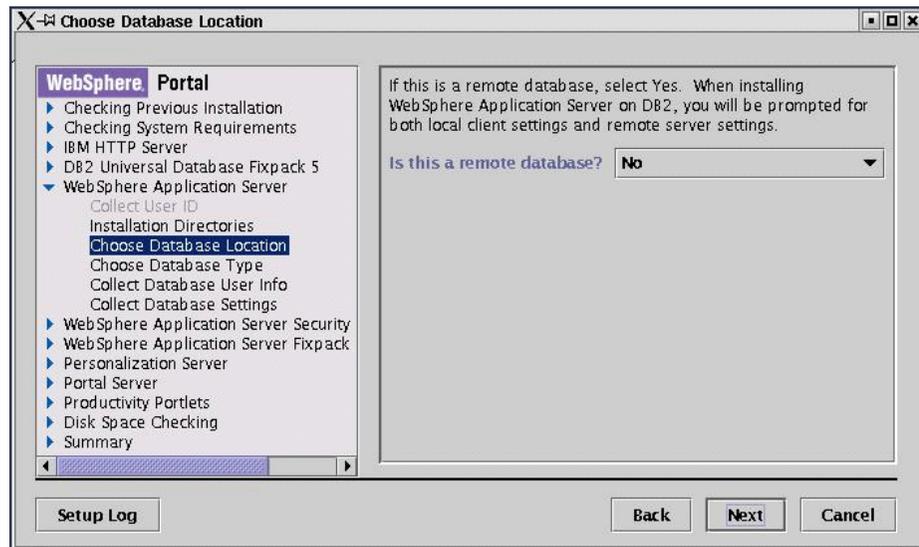


Figure 2-8 Choose database location

**Note:** If you will be using a remote database, you are prompted for local client settings and remote server settings. For further information, refer to InfoCenter, *DB configuration and tips* in the Requirements section.

### **Step13: Choose a database type**

Choose a database type. In this scenario DB2 will be used. Although not shipped with WebSphere Portal, you can also use Oracle Version 8.1.7 as the database software for Portal Server. If you want to use an Oracle database, the installation instructions are included in the InfoCenter.

### **Step 14: Collect database user information**

Enter the database information for WebSphere Application Server. In this sample installation, as shown in Figure 2-9, the following values are used:

Local Database Name	wasdbi
Local Database Alias Name	wasdb
Node Name	m23x2636
Database Server Port	55555

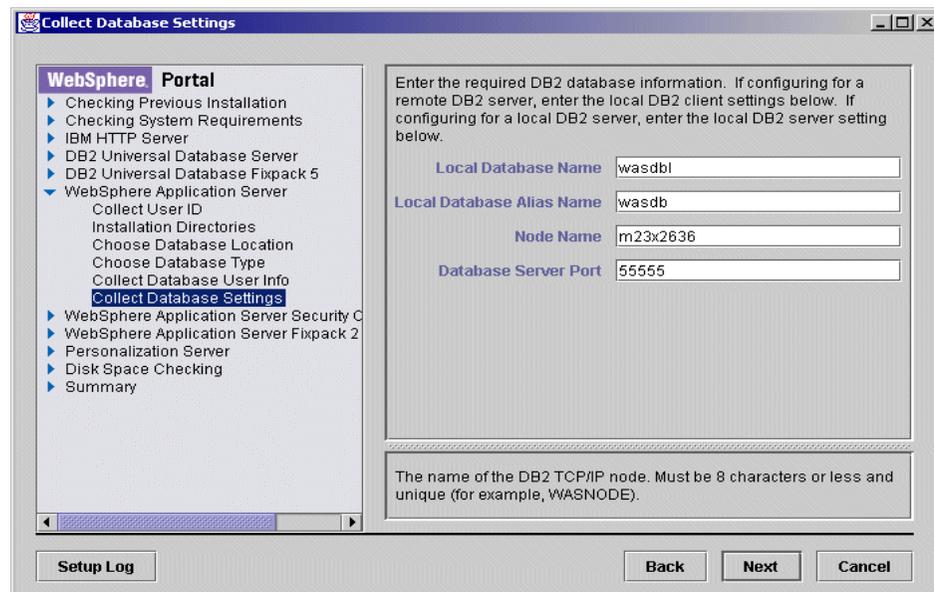


Figure 2-9 Collect database user info

**Note:** If you need to make sure that the database server port is not in use by another process, issue the following command to verify the port is not in use:

```
#netstat -a |grep 55555
```

### **Step 15: Choose application server for personalization server**

Choose a WebSphere Application Server to install the Personalization component.

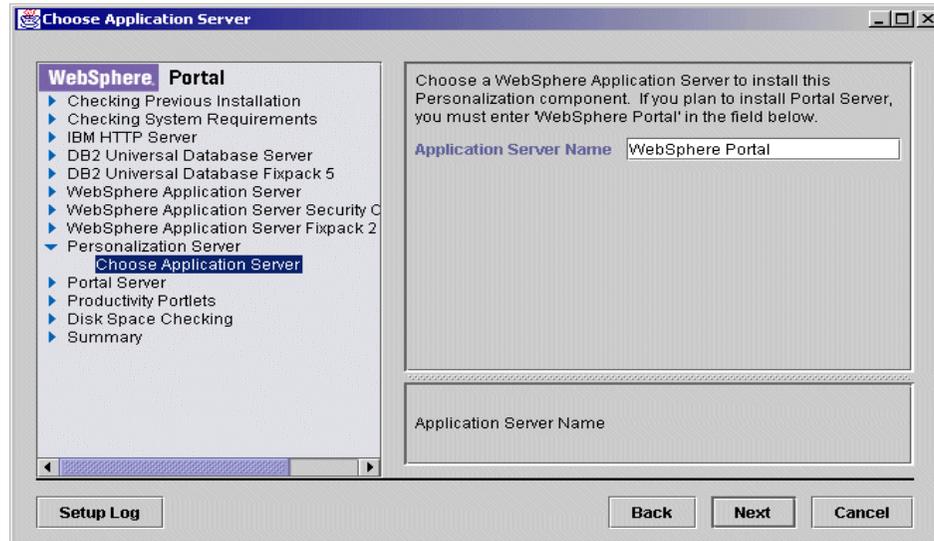


Figure 2-10 Choose application server

### **Step 16: Install type selection**

Select the install type for this installation. Choose the **Typical** install mode. The development installation does not have Application Server or third-party authentication proxy to verify proof of identity.

### **Step 17: Authentication mode**

Select the authentication mode for Portal member services. Authentication for the Portal member services function is done using a database and LDAP Directory mode.

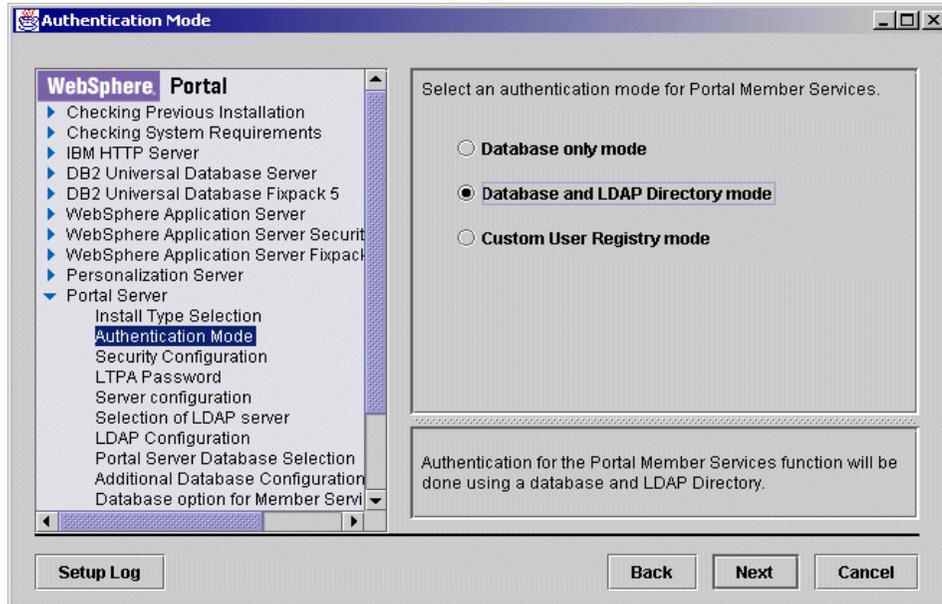


Figure 2-11 Authentication mode

### Step 18: Security configuration

If this is a first WebSphere Application Server install on your system or global security is not enabled, select **Now**. Otherwise, select **Later** if you have already enabled security.

### Step 19: LTPA password

Enter the LTPA password for WebSphere Application Server security (see Figure 2-12 on page 31). If you have just installed WebSphere Application Server or if you have not enabled security, you can enter a valid password.

**Important:** If global security has already been configured, you must provide exactly the same LTPA password that you have entered before, even if security is disabled. Otherwise, you will not be able to start WebSphere Application Server and it will cause an install failure.

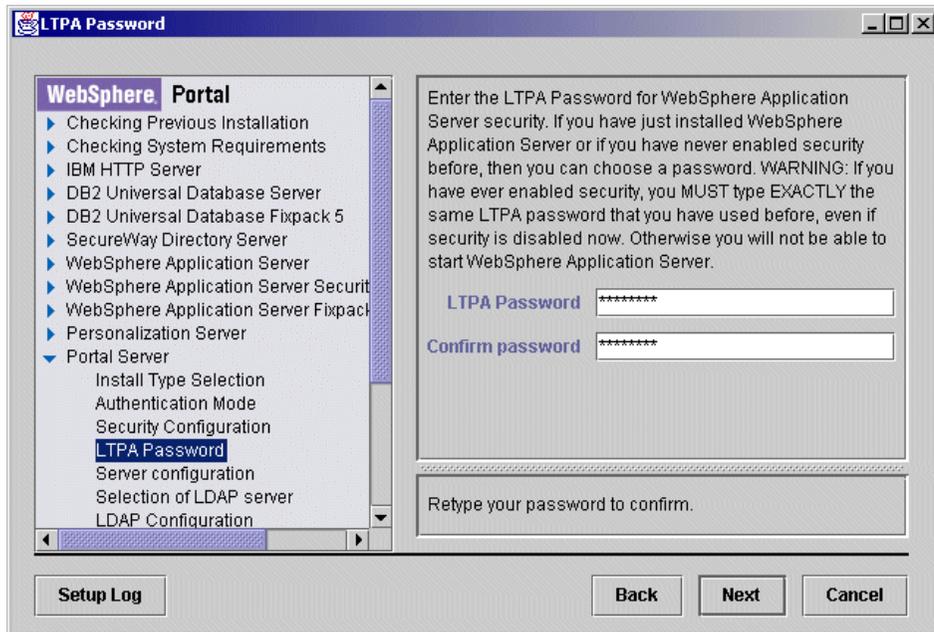


Figure 2-12 LTPA password

### Step 20: Server configuration

As illustrated in Figure 2-13 on page 32, enter the following WebSphere Portal server configuration values:

- ▶ Install directory: Default value is /opt/WebSphere/PortalServer.
- ▶ Hostname: Portal server's fully qualified host name.
- ▶ Base URI: Default value is /wps.
- ▶ Home page: Default value is /portal.
- ▶ Customized page: Default value is /myportal.
- ▶ For a connection through a proxy, enter the proxy information.

**Note:** Setup Manager sets these values based on your previous input. Also, if your network configuration is correct, the host name value will automatically appear in the box. In addition, hostname should be a fully qualified host name (case sensitive).

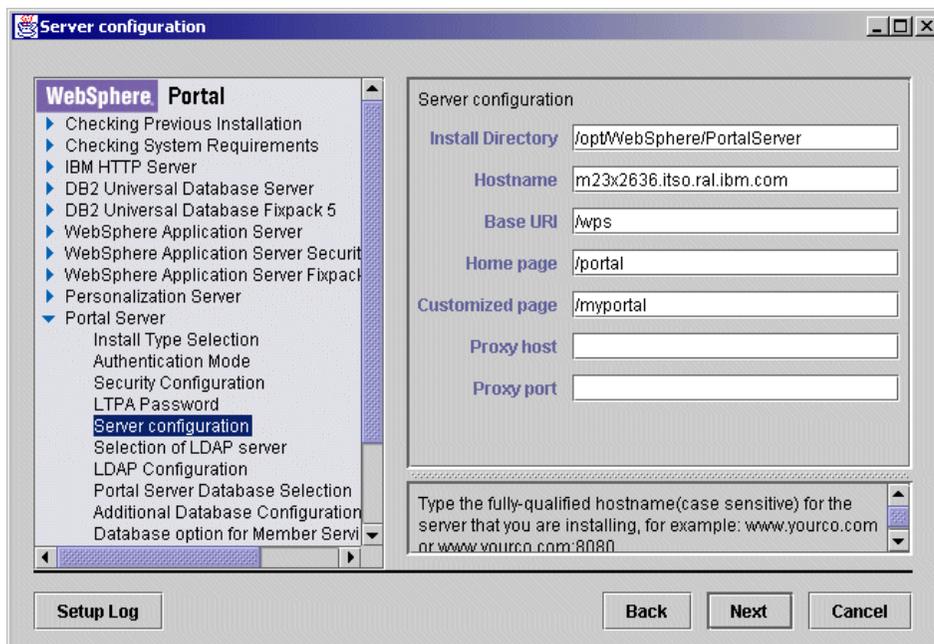


Figure 2-13 Server configuration

### Step 21: Selection of LDAP server

Next, as shown in Figure 2-14 on page 33, the WebSphere Portal installation process prompts you to enter which LDAP server you want to use for WebSphere Portal. IBM Secureway Directory is the recommended LDAP server but the following servers are also supported:

- ▶ IBM SecureWay Directory
- ▶ Lotus Domino Application Server
- ▶ iPlanet
- ▶ Microsoft Active Directory

Select your LDAP server type and fill in the boxes with the name of the LDAP Server, user DN, password, suffix, and LDAP port. You should be aware of the following considerations:

- ▶ The user DN must be specified in the following format: cn= xxx. The user DN is used to bind the LDAP Server.
- ▶ The default LDAP port number is 389.

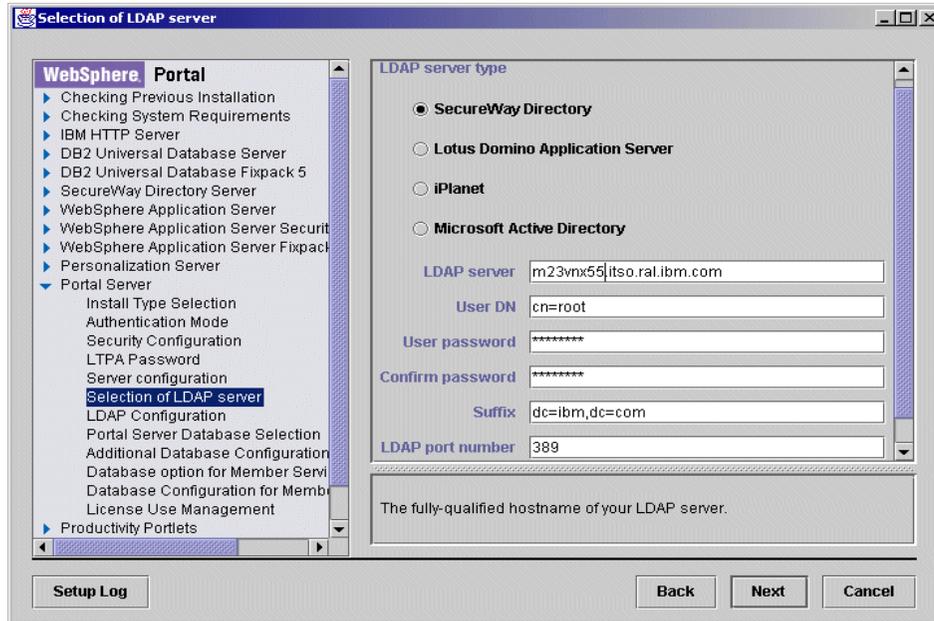


Figure 2-14 Selection of LDAP Server

When you enter the LDAP suffix (for example `dc=xx, cn=yy`), be sure to use lowercase. Using uppercase or mixed case can cause problems with WebSphere Member Services.

**Note:** If you want to use other LDAP servers for WebSphere Portal, there are known defects described in the release notes. If you need some workaround, refer to Release notes in IBM WebSphere Portal InfoCenter.

### Step 22: LDAP configuration

Figure 2-15 on page 34 shows the window where you will enter the LDAP configuration. Setup Manager sets the default values based on your previous input. Therefore in most cases you can use these values.

In this installation, the following values are used:

User Object Class	<code>inetOrgPerson</code>
User DN prefix	<code>uid</code>
User DN suffix	<code>cn=users,dc=ibm,dc=com</code>
Group Object Class	<code>groupOfUniqueNames</code>
Group of Member	<code>uniqueMember</code>
Group DN prefix	<code>cn</code>
Group DN suffix	<code>cn=groups,dc=ibm,dc=com</code>

Administration DN  
Administrative group DN

uid=wpsadmin,cn=user,dc=ibm,dc=com  
cn=wpsadmins,cn=groups,dc=ibm,dc=com

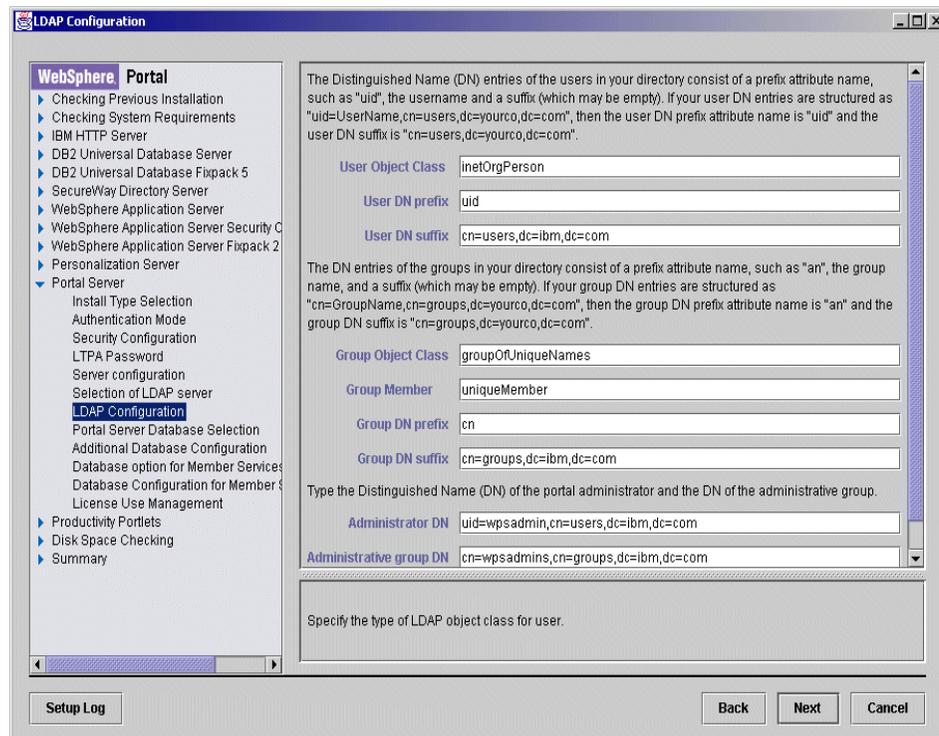


Figure 2-15 LDAP configuration

### Step 23: WebSphere Portal database selection

Select the database type and option for creating the WebSphere Portal database. For a new installation, choose the **Create and Initialize a new database (DB2 Only)** option.

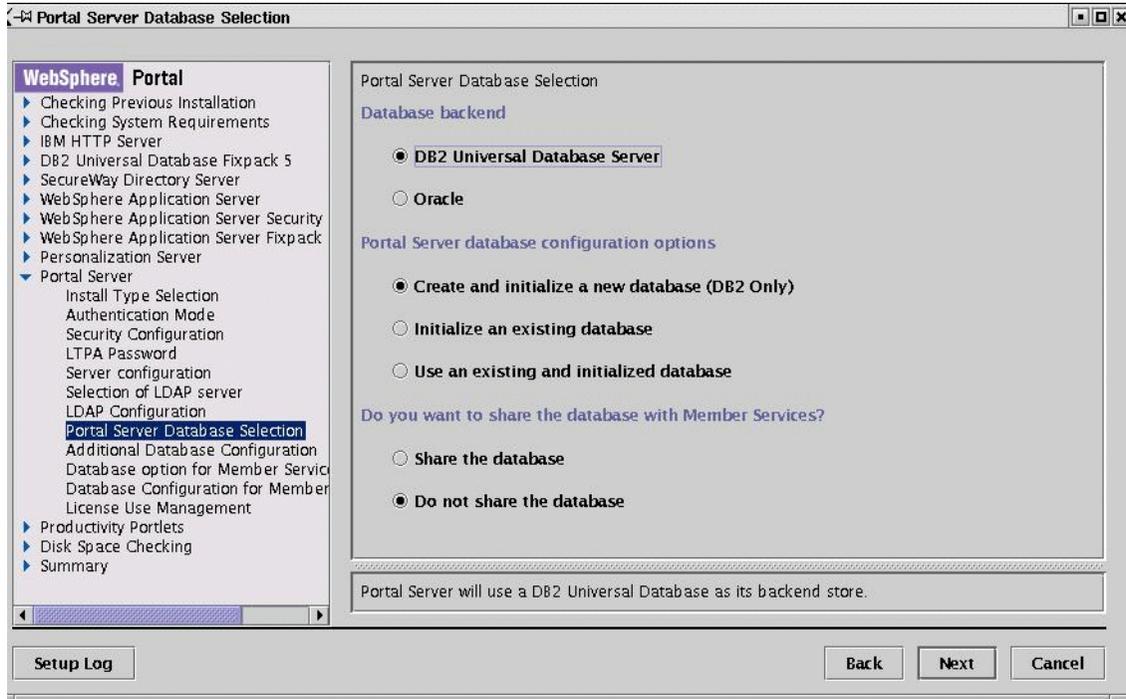


Figure 2-16 WebSphere Portal database selection

**Important:** Do not share the database with Member Services. Setup Manager creates the database for WebSphere Portal, but not for WebSphere Member Services. If you use a remote database, you will need to create and catalog a database.

### Step 24: Additional database Information

Figure 2-17 on page 36 shows the panel where you will enter any additional database configuration. You will need to specify an existing database user ID and password. Other related information has been set by Setup Manager.

In this sample installation, the following values are used:

Database name	wpsdb
Database user	wasinst
User password	a proper password
JDBC database driver	COM.ibm.db2.jdbc.DB2ConnectionPoolDataSource
JDBC URL prefix	jdbc:db2
JDBC driver library	/home/db2inst1/sqllib/java12/db2java.zip

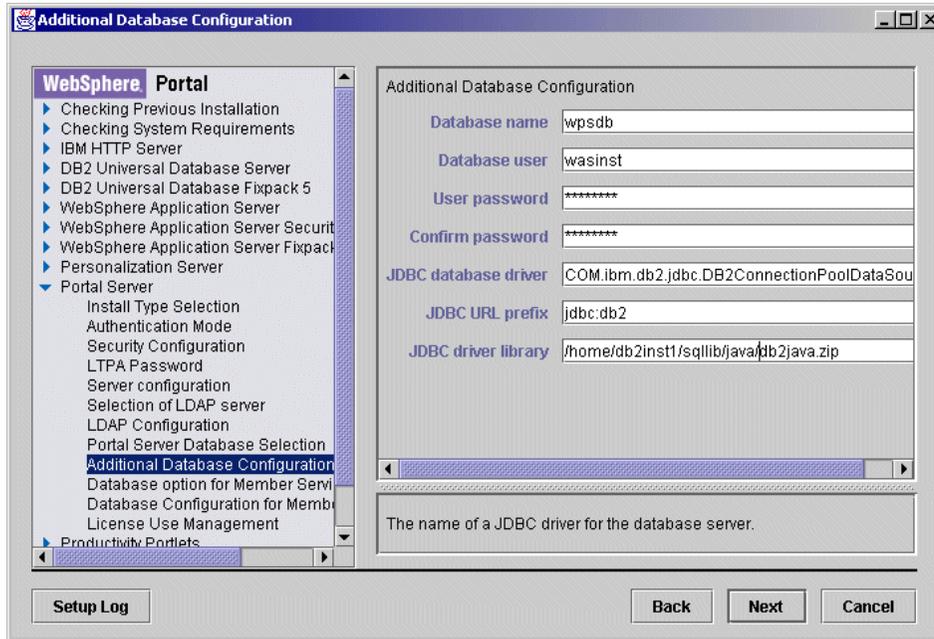


Figure 2-17 Additional database information

**Note:** Setup Manager will not create a database user for WebSphere Portal and Member Services. You must use an existing database user name such as “wasinst” for WebSphere Application Server. Otherwise you need to install DB2 database and create the user prior to WebSphere Portal installation.

### **Step 25: Database option for member services**

As illustrated in Figure 2-18 on page 37, for a new installation select **Create and Initialize a new database (DB2 Only)**.

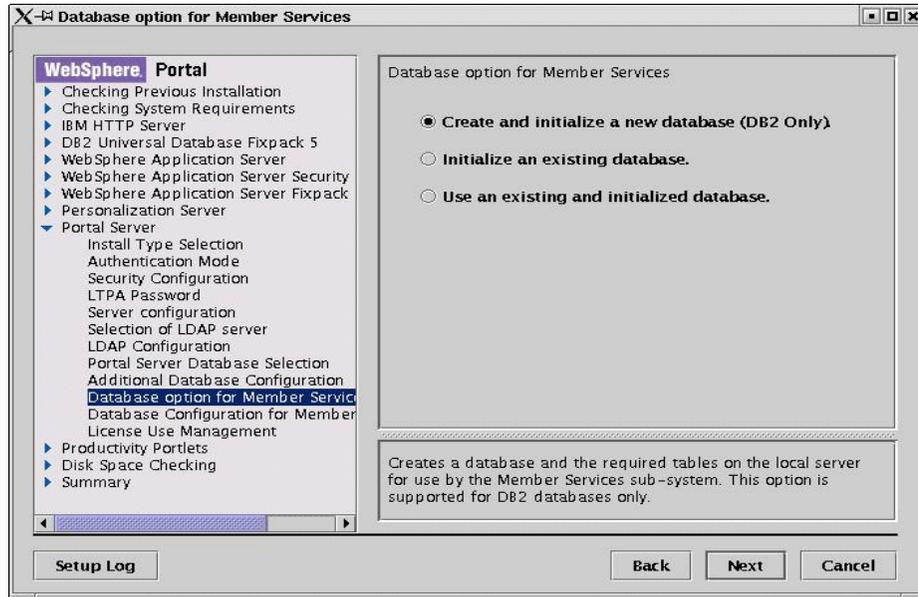


Figure 2-18 Database option for member services

### Step 26: Install type selection

As shown in Figure 2-17 on page 36, enter the DB2 database user ID and password for Member Services.

In this installation, the following values are used:

Database Name	wmsdb
Database user	wasinst
User password	*****
JDBC database driver	COM.ibm.db2.jdbc.DB2ConnectionPoolDataSource
JDBC URL prefix	jdbc:db2
JDBC driver library	/home/db2inst1/sqllib/java12/db2java.zip

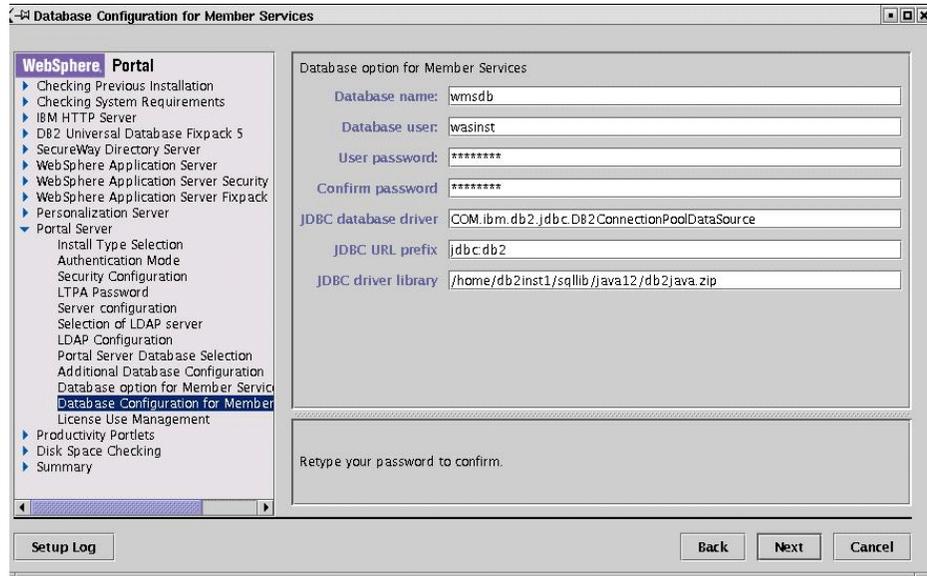


Figure 2-19 Database configuration for Member Services

### Step 27: License Use Management (LUM)

Select **License Use Management** install type and fill in the name of the Remote LUM Server.

License Use Management (LUM) is an IBM tool for managing and extending software licenses. If you choose to install LUM locally, the LUM installation program installs and configures LUM as a network license server, enrolls the WebSphere Portal product in the LUM database, and checks out the number of licenses corresponding to the number of processors you have online on the local server machine.

For example, as illustrated in Figure 2-20 on page 39, Local License Server is used for this sample installation.

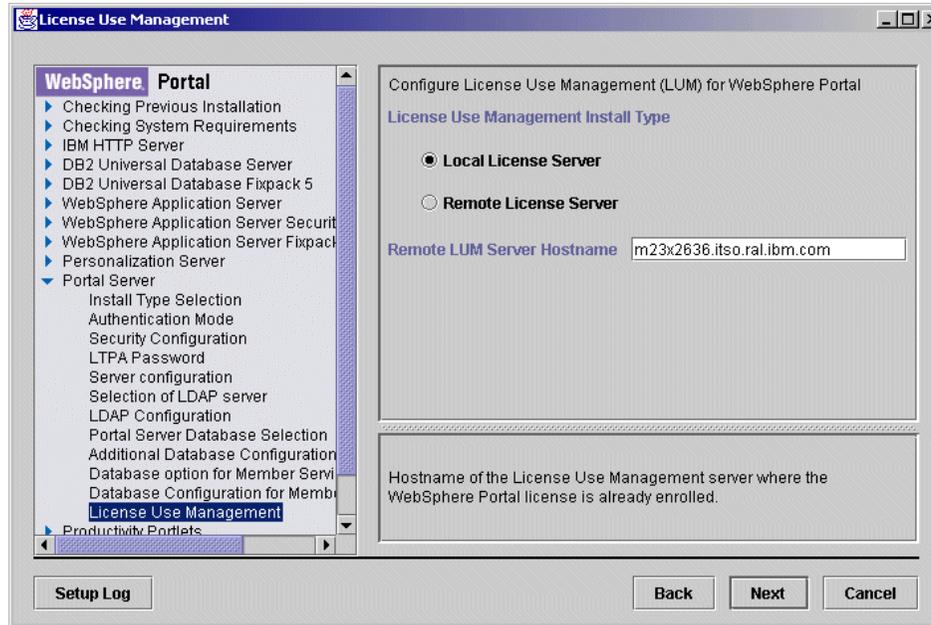


Figure 2-20 License Use Management (LUM)

### Step 28: Display summary

In this step, Setup Manager displays a summary list with all the components to be installed. All the selected components, subcomponents, and configuration information are displayed as illustrated in Figure 2-21 on page 40.

In addition the following actions can be executed:

- ▶ Click the **Back** button to go back to the component selection window to add or remove components from the list, or to change other configuration information.
- ▶ When the **Next** button is clicked, the installation process starts.

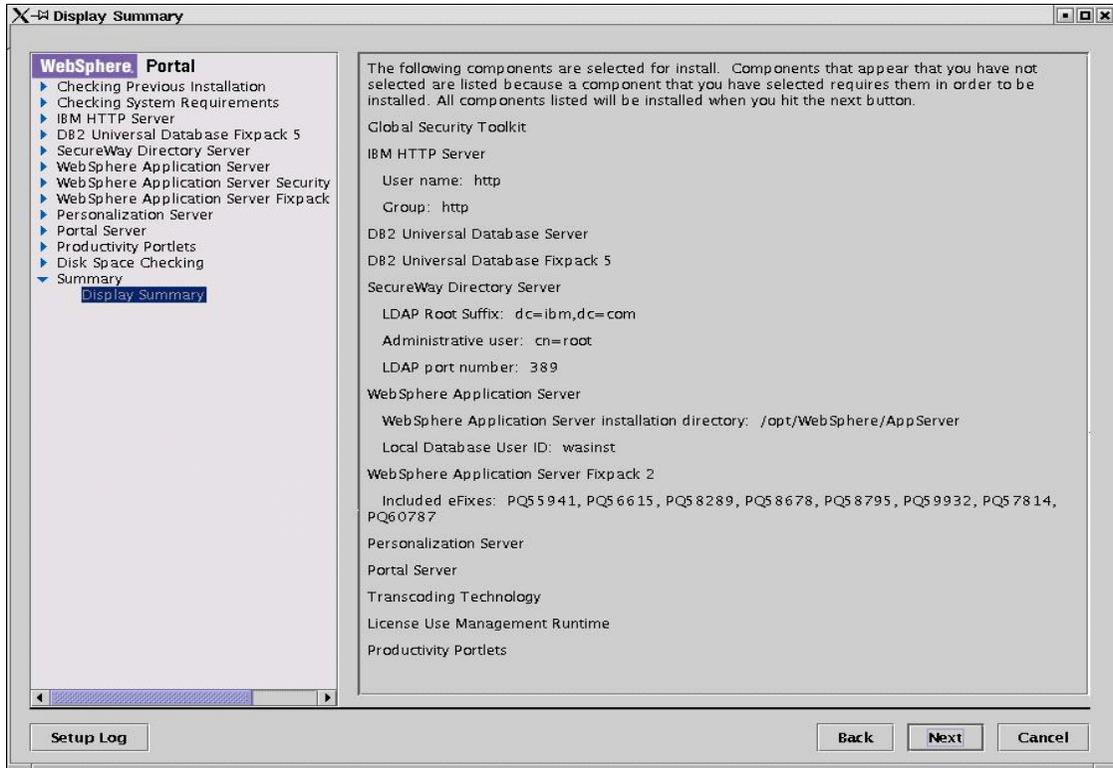


Figure 2-21 Display summary

### Step 29: Installation progress

As the installation process starts, a progress indicator is displayed that shows the status of the install (see Figure 2-22 on page 41). Any errors or problems that occur during the install process are displayed here. They are logged in the path `<wp_root>/install`.

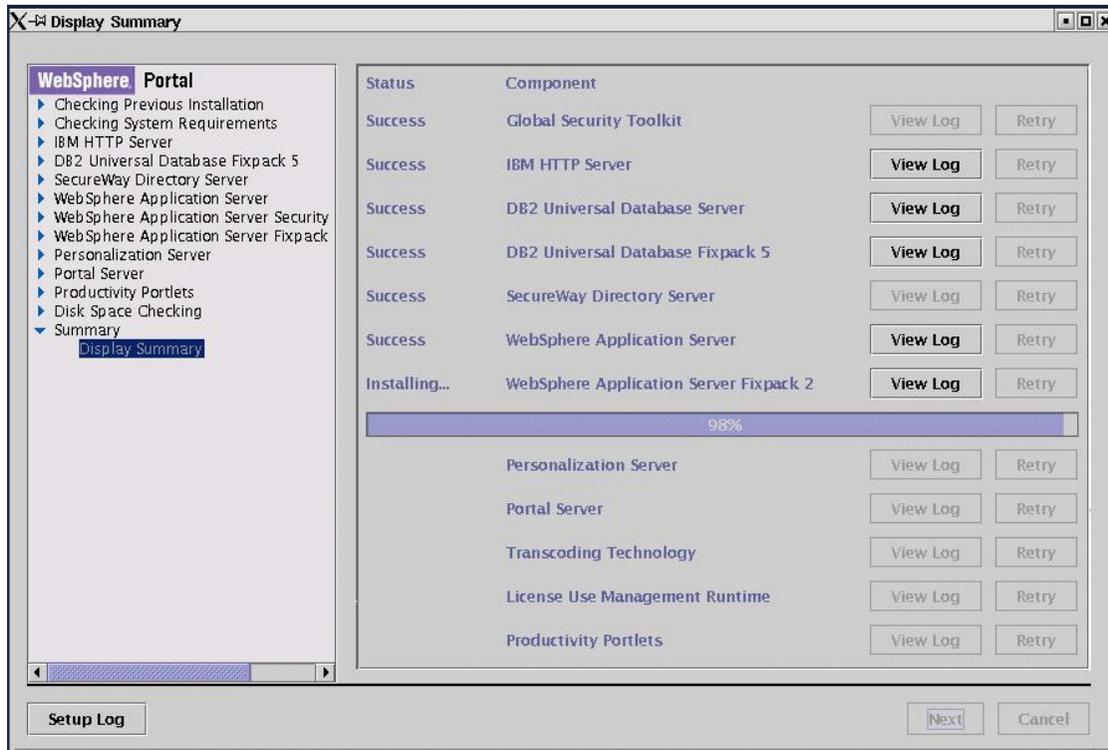


Figure 2-22 Installation progress

**Important:** When WebSphere Application Server Fix Pack 2 is installed, you must wait until the installation navigation bar reaches to 100%. The removal CD window prompts you to change CD #4 for Personalization, but WebSphere Application Server Fix Pack 2 installation is still in progress. Be sure that you wait and then change the CD once WebSphere Application Server Fix Pack 2 is installed completely.

### **Step 30: Enable WebSphere Application Server security**

During the installation of CD #7, Setup Manager prompts you to log in to the target server and configure the Administrative Role for WebSphere Application Server. The Administrative Role includes stopping and restarting the Web Server that the portal will use.

At this time, do not close the install window but execute the following suggested steps.

**Note:** This configuration step is critical. IBM WebSphere AdminService has been stopped and restarted by Setup Manager. Then, you must wait and ensure that the IBM WebSphere AdminService has restarted completely before continuing.

To check that IBM WebSphere Admin Service has been started, perform the following steps:

1. Log in as root.
2. Start the terminal session.
3. Stop IBM HTTP Server by using the following command:  

```
# cd <http_server_install_path>/bin/  
# ./apachectl stop
```
4. Check that the HTTP Server process is stopped by issuing the following command:  

```
# ps -ef |grep httpd
```
5. Start IBM HTTP Server by entering the following command:  

```
# cd <http_server_install_path>/bin/ (http_server_install_path)  
# ./apachectl start
```
6. Check that the HTTP Server process is stopped by entering the following command:  

```
# ps -ef |grep httpd
```

The output of this command should list several processes.
7. Check that the IBM WebSphere AdminService has been started by the following command:  

```
# ps -ef |grep java
```

The output of this command should list several processes.
8. If IBM WebSphere AdminService has not been started, issue the following command:  

```
# cd <WAS_HOME>/bin  
# ./startupServer.sh &
```

**Note:** The administrative server is up and running when you can see the following statement in the <WAS\_HOME>/logs/tracefile:

```
A WSVR0023I: Server _adminServer open for e-business
```

**Tip:** To check the output sent to tracefile, use the following commands:

```
# cd <WAS_HOME>/logs  
# tail -f tracefile
```

Once you have checked that the IBM WebSphere Admin Service has been restarted, perform the following steps:

1. Start IBM WebSphere Administrative Console by entering the following commands:

```
# cd <WAS_HOME>/bin  
# ./adminclient.sh &
```

2. From the WebSphere Administrative Console main menu, start the Security Center by selecting **Console -> Security Center**.
3. When the Security Center starts, check that the **Enable Security** option is selected on the General tab, as shown in Figure 2-23.

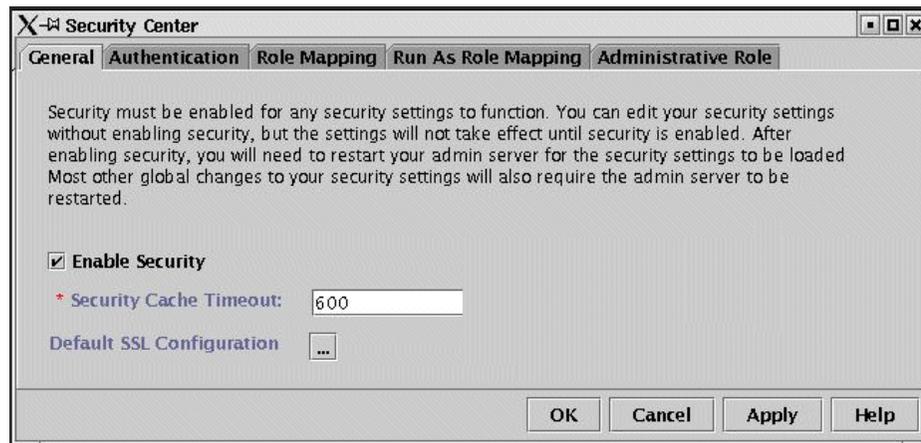


Figure 2-23 Enable security

4. Go to the Authentication tab, and make sure that **Enable Single Sign On (SSO)** is checked as illustrated in Figure 2-24 on page 44.

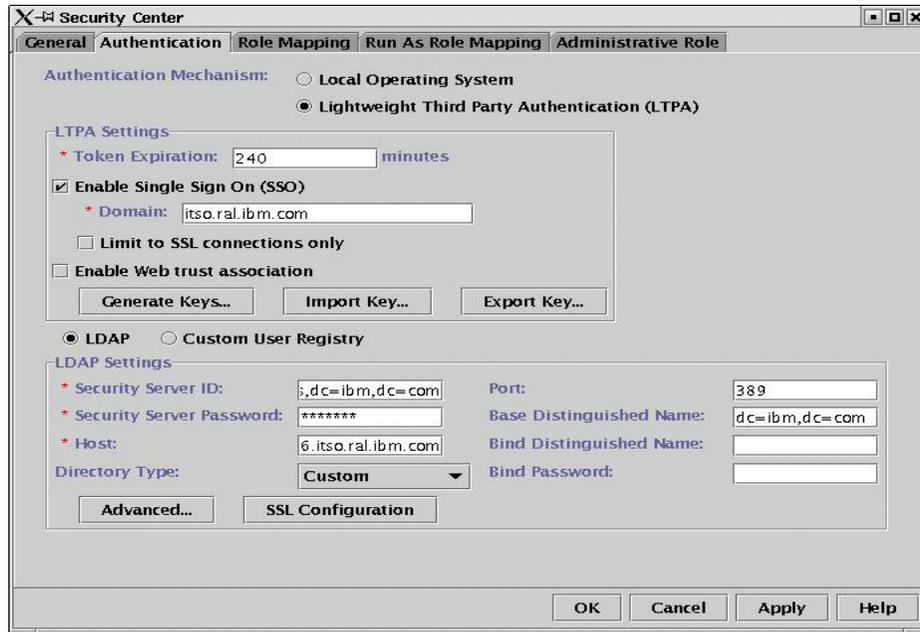


Figure 2-24 Authentication

5. Next, go to the Administrative Role tab. In the Role, click the **Admin Role** and then click **Select**.
6. Check the option **Select users/groups** and then type \* (the asterisk character) in the box and click **Search**.
7. In the list of available users and groups, click **wpsadmin** and **wpsbind**, and then click the **Add** button. See Figure 2-25 on page 45.

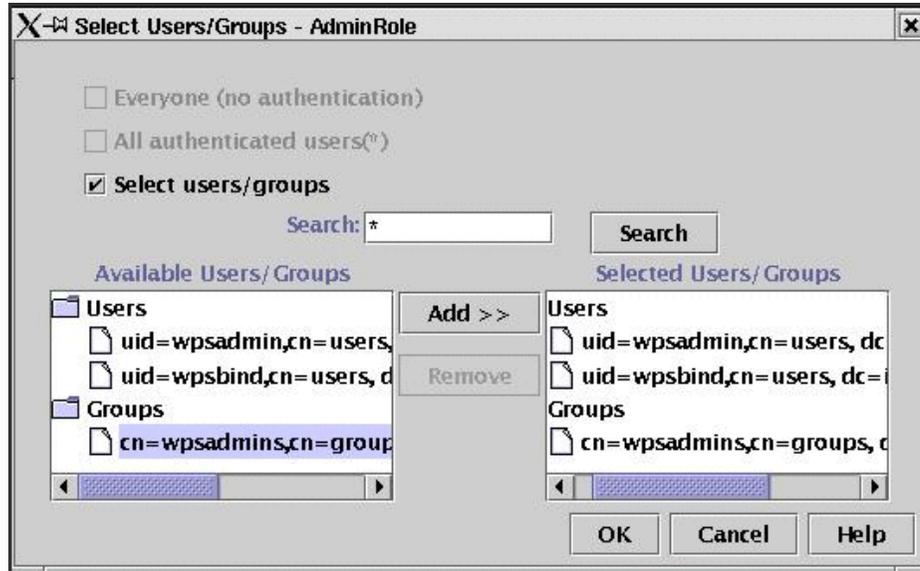


Figure 2-25 Select Users/Groups

8. Click **OK** to apply the changes on the Administrative tab.
9. Close the Security Center and IBM WebSphere Administrative Console.
10. Stop and start IBM WebSphere Admin Service as follows:

```
# cd <WAS_HOME>/bin
# wscp.sh
wscp> Node list
wscp> <node_name>
wscp> Node stop /Node:<node_name>/
wscp> exit
```

It may take a while for the process to be stopped. You will need to wait until the IBM WebSphere Admin Service has been stopped.

**Tip:** In order to verify that IBM WebSphere Admin Service has properly stopped, you can verify that the IP listening port is not in use by entering the following command:

```
# netstat -a |grep 9000
```

There will be no output generated when the IBM WebSphere Admin Service has really stopped. In some cases, this process may take some time.

11. Once you have checked that the IBM WebSphere Admin Service has stopped, start the IBM WebSphere AdminService by entering the following commands:

```
# cd <WAS_HOME>/bin
# ./startupServer.sh &
```

12. Check that the IBM WebSphere AdminService has been started by entering the following command:

```
# ps -ef |grep java
```

The output of this command should list a number of processes.

13. When the administrative server is up and running, you will see the following statement in the <WAS\_HOME>/logs/tracefile:

```
A WSVR0023I: Server _adminServer open for e-business
```

**Tip:** To see any output sent to the trace file, issue the following commands:

```
# cd <WAS_HOME>/logs
# tail -f tracefile
```

14. If IBM WebSphere AdminService has not been started, issue the following command:

```
# cd <WAS_HOME>/bin
# ./ startupServer.sh &
```

15. Start IBM WebSphere Administrative Console by entering the following commands:

```
# cd <WAS_HOME>/bin
# ./adminclient.sh &
```

16. As shown in Figure 2-26 on page 47, from the left pane of the WebSphere Administrative Console, click **WebSphere Administrative Domain -> Nodes -> <node\_name>** and start **WebSphere Portal**.

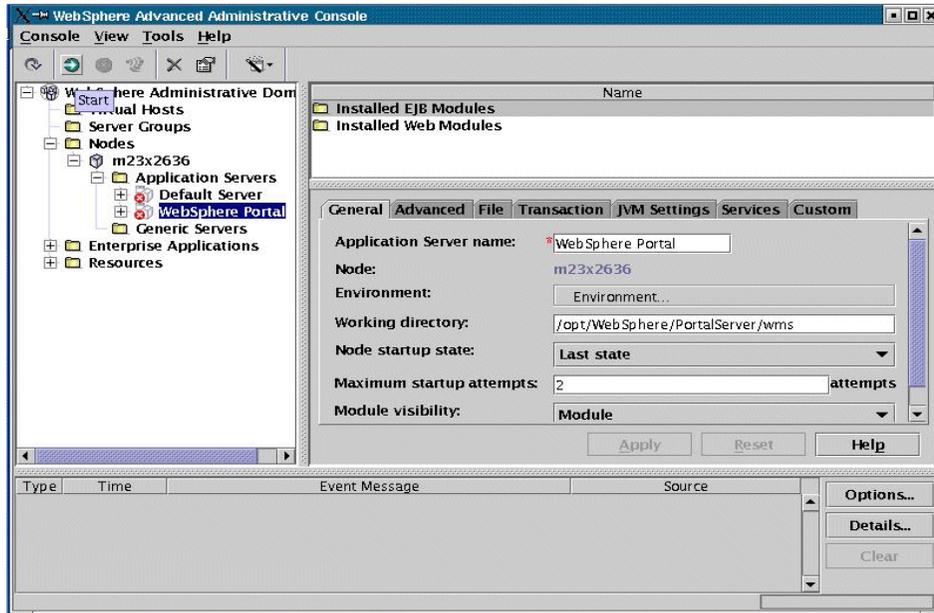


Figure 2-26 WebSphere Administrative Console

17. Close IBM WebSphere Administrative Console.

### **Step 30: Deploying portlets**

Click **OK** to continue the installation. This step will take a long time to complete since all portlets will be deployed at this time.

### **Step 31: Exit install**

When you see the message The install Shield Wizard has successfully installed IBM WebSphere Portal..., click **Finish**.

**Note:** After the installation process, it is recommended that you reboot the WebSphere Portal machine.

## 2.5 Installation validation procedure

This section describe how to validate your WebSphere Portal installation. It is important that all components are verified in order to make sure that all components are working correctly.

All the following processes must be started before WebSphere Portal is started. Check all the processes first, and start WebSphere Portal and then finally you will be able to access WebSphere Portal pages using a Web browser.

Check each process by using the `ps` command. The output may list a number of processes depending on the component. For example:

1. Verify the DB2 process by entering the following command:

```
# ps -ef |grep db2
```

2. Verify the LDAP Server process by entering the following command:

```
# ps -ef |grep slapd
```

3. Verify the IBM HTTP Server process by entering the following command:

```
# ps -ef |grep httpd process by the following command:
```

4. Verify the IBM WebSphere Application process by entering the following command:

```
# ps -ef |grep java
```

If any of these processes are not started, perform the verification procedure listed in this section.

## DB2 verification

Follow this procedure to verify your DB2 installation:

1. Log in as root, and start a terminal session.

2. Change to user <db2\_instance \_owner>:

```
# su - <db2_instance_owner>
```

For example:

```
# su - wasinst
```

3. Check the process:

```
# ps -ef |grep db2
```

4. If no db2 process is shown, start DB2 and check the process again:

```
# db2start
```

5. List all DB2 databases for the DB2 instance:

```
# db2 list db directory
```

This command should give you the following output:

```
Database 1 entry :  
Database alias = WPSDB  
Database alias = XWPSDB  
Node name = XWPSNODE
```

```
Database drive = 9.00
Comment =
Directory entry type = Indirect
Catalog node number = -1
```

6. List all DB2 nodes for the DB2 instance:

```
# db2 list db directory
```

This command should give you the following output:

```
Node 1 entry :
Node name = M23X2636
Comment =
Protocol = TCPIP
Hostname = 127.0.0.1
Service name = 55555
```

7. Test the connectivity to the database:

```
# db2 connect to <wps_db> user <db2_instance_owner> using <password>
```

For example:

```
# db2 connect to wpsdb user wasinst using password
```

## LDAP server verification

Follow this procedure to verify your LDAP installation:

1. Log in as root on the system that LDAP server is installed, and start a terminal session.
2. Check the process:

```
# ps -ef |grep slapd
```
3. If no slapd process is shown, start LDAP and check the process again:

```
# slapd
```
4. Start the Directory Management Tool (DMT). As shown in Figure 2-24, a DMT window will appear.
5. Click **Rebind** and type your user DN and password that you configured during the installation in “Step 21: Selection of LDAP server” on page 32.
6. Click **Directory tree -> Browse tree**. You can browse wpsadmin and wpsbind.

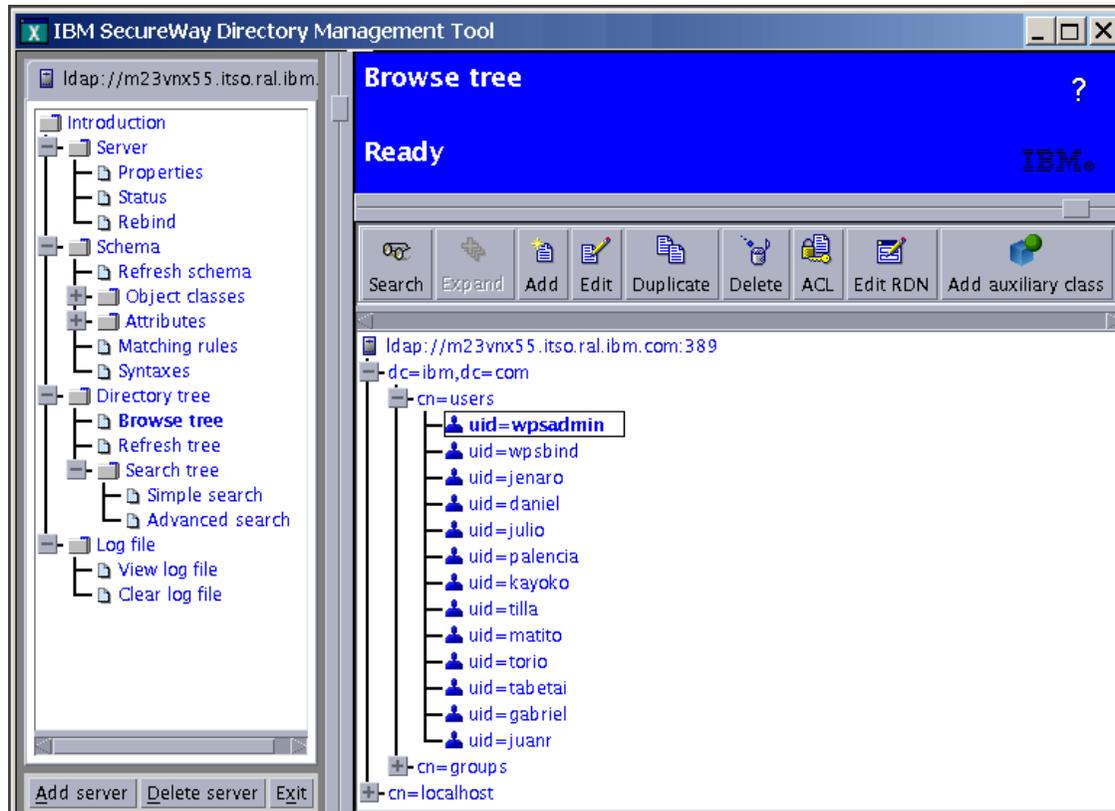


Figure 2-27 Directory Management Tool (DMT) window

## Verify the IBM HTTP Server

Follow this procedure to verify your IBM HTTP server installation:

1. Log in as root, and start a terminal session.
2. Check the process:
  - # ps -ef |grep httpd
3. If no httpd process is shown, start IBM HTTP Server and check the process again:

```
# cd <http_server_install_path>/bin/
```

For example:

```
# cd /opt/IBMHTTPServer/bin
```

```
# ./apachectl start
```

4. Check that the HTTP Server processes is stopped using the following command:

```
# ps -ef |grep httpd
```

The output should list a number of processes.

5. Check request handling:

Using a Web browser, request the following URL representing the IBM HTTP Server Web root for the home page:

```
http://<http_server_hostname>/
```

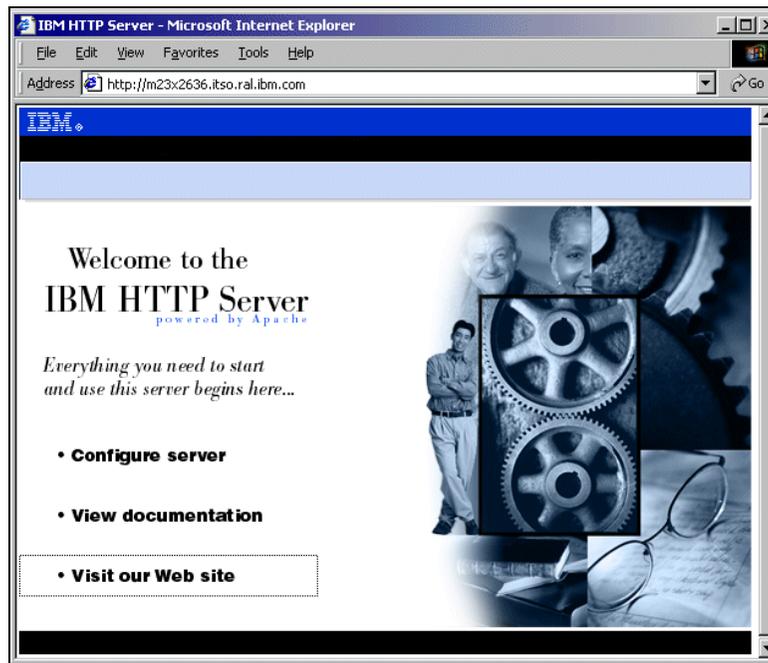


Figure 2-28 IBM HTTP Server home page verification

## IBM WebSphere Application Server verification

Follow this procedure to verify your WebSphere Application Server installation:

1. Log in as root, and start a terminal session.
2. Check the process:

```
# ps -ef |grep java
```

This output should list a number of processes.

3. If no Java process is shown, start IBM WebSphere AdminService and check the process again:

```
# cd <WAS_HOME>/bin
# ./startupServer.sh
```

4. Check the output sent to tracefile, using the following commands:

```
# cd <WAS_HOME>/logs
# tail -f tracefile
```

When the administrative server is up and running, you will see the following line in the <WAS\_HOME>/logs/tracefile:

```
A WSVR0023I: Server _adminServer open for e-business
```

5. The WebSphere Application Server installation sets up a default application server (Default Server) in the administrative domain. This application server and its servlet are used to check that the WebSphere Application Server is working correctly.

- a. Start the WebSphere Administrative Console by issuing the following commands:

```
# cd <WAS_HOME>/bin
# ./adminclient.sh &
```

As illustrated in Figure 2-29, you will be asked to enter the user identity and password to log in to WebSphere Administrative Console.

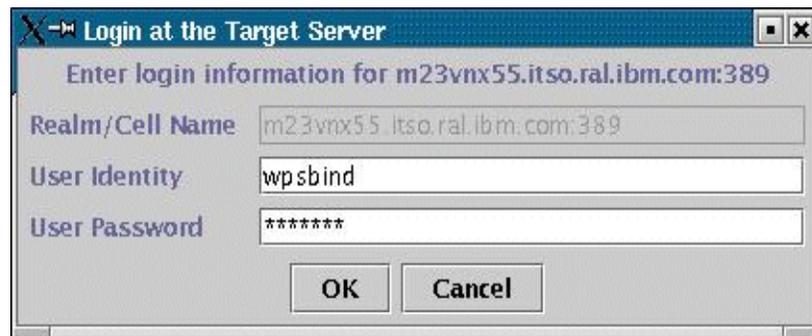


Figure 2-29 Login prompt for WebSphere Administrative Console

When global security is not enabled, you will not be asked to enter the user name and password to log in to WebSphere Administrative Console. In order to log in to WebSphere Portal, it is necessary that global security is enabled.

**Note:** Be sure the global security is enabled before WebSphere Portal is started.

- b. Click and expand **WebSphere Administrative Domain -> Nodes -> <hostname> -> Application Server.**
- c. Select **Default Host**, and right-click **Start**, if it is not already started.
- d. Run the snoop servlet by entering the following URL from a Web browser:

`http://<hostname>/servlet/snoop`

A page as shown in Figure 2-30 should be displayed after the login prompt.

You enter the same user name and password with the WebSphere Administrative Control login.

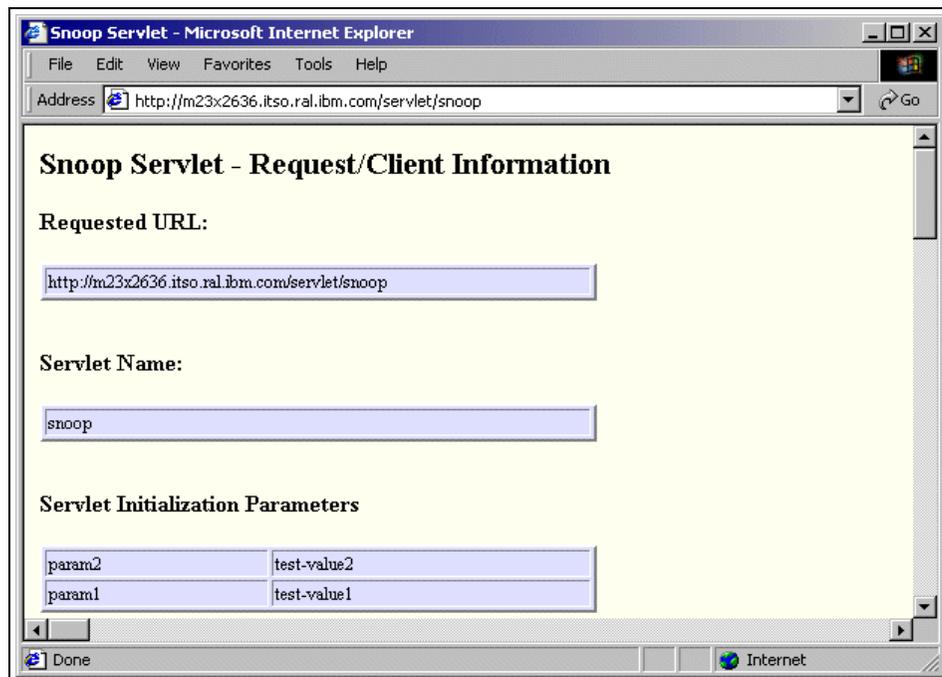


Figure 2-30 Snoop window

## IBM WebSphere Portal verification

Finally, you can have your portal welcome window by going to `http://<fully_qualified_host_name>/wps/portal`.

Click the key icon located at the right corner of window as shown in Figure 2-31 and the login window will appear.

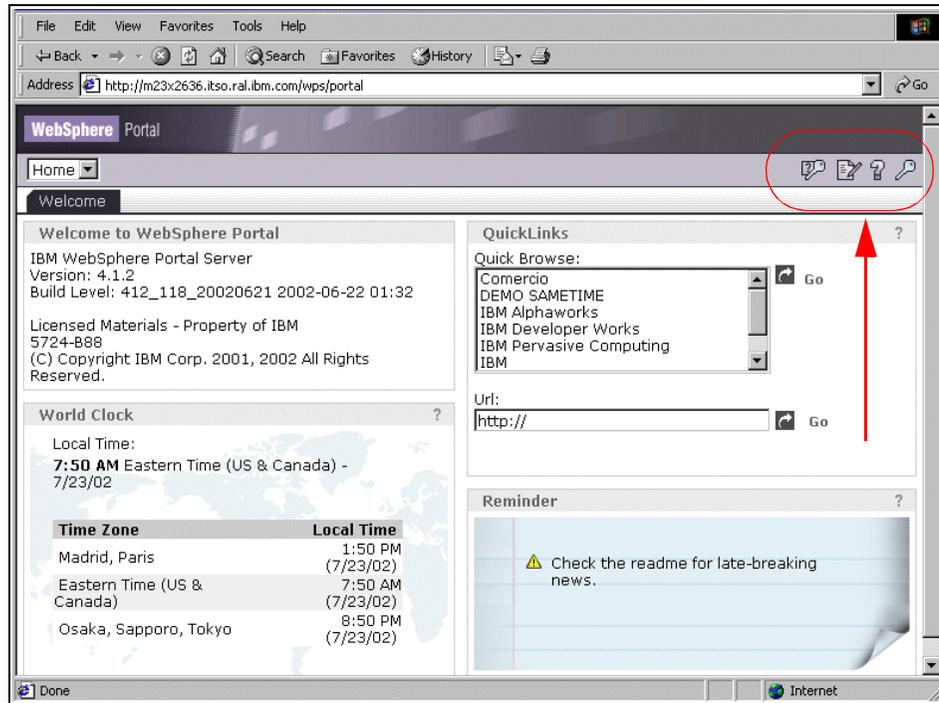


Figure 2-31 IBM WebSphere Portal Welcome page

Enter a user ID (wpsadmin) and password to log in to WebSphere Portal.

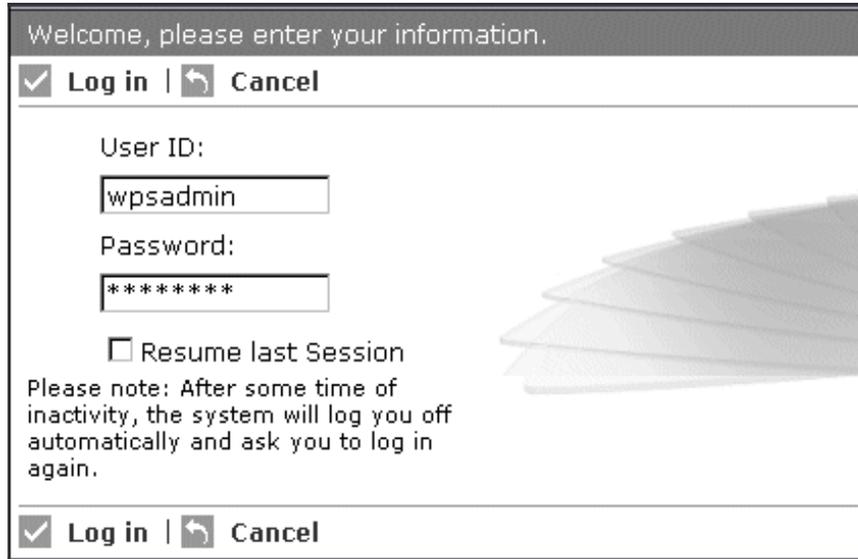


Figure 2-32 WebSphere Portal login window

## 2.5.1 Check installation log file

During the installation, all actions and outcomes are logged to install the log files in <wps\_home>/install/ listed in Table 2-2. These files contain information that can assist you in identifying and analyzing problems.

Table 2-2 Installation log files

Log file name	Description	Problem symptoms
ConfigureAppServer.log	Contains messages that were generated when the installer attempts to configure the WebSphere Portal Application Server under WebSphere Application Server.	Check this log if the portal installation stops before successful completion.
DbCreate.log DbInit.log WmsDbCreate.log WmsDbInit.log WmsDbPopulate.log	Contains messages that were generated by the scripts used to create and initialize the WebSphere Portal and WebSphere Member Service database instances.	Check these logs for error messages if you have problems logging in as the portal administrator after the portal is installed.

Log file name	Description	Problem symptoms
DeployAdminPortlets.log	Contains a message that indicates whether the base administration and customization portlets were successfully deployed. This file is updated whenever you install the portal using the automated installer. The log is also updated whenever you use the portal configuration interface to manually configure a portal.	If you need to determine whether the portal installation was successful, view this file to determine the status of the installation.
RegenerateHTTPServer Plugin.log	During portal installation, if the WebSphere Application Server plug-in cannot be regenerated, an entry is made in this log.	Check this log if problems occur during the portal installation or if you have portal problems after installation.
StartWPS.log	Contains messages generated when the portal installer attempts to start the WebSphere Portal Application Server running under WebSphere Application Server.	Check this log if you cannot open the portal after a successful installation.

## 2.6 A sample single-tier installation

This section provides guidelines to install WebSphere Portal in a single-tier environment. As illustrated in Figure 2-33, the standard WebSphere Portal components are all installed on the same server. Although this is not a recommended scenario for a production server, this configuration can be very useful for development platforms, testing, and proof of concept scenarios.

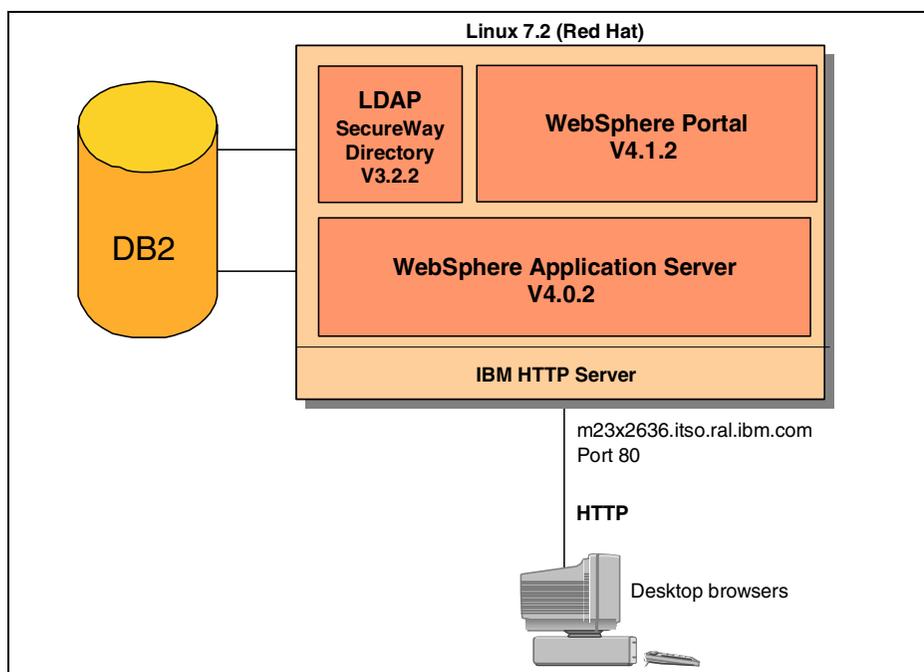


Figure 2-33 Sample WebSphere Portal single-tier scenario

**Note:** Details related to component installation are included in 2.4, “A sample two-tier installation” on page 19.

The installation steps are as follows:

1. Launch the installation script for Setup Manager.
2. IBM JRE is automatically installed.
3. Setup Manager is automatically launched.
4. View information and click **Next**.
5. Read the software license, check **Accept**, and click **Next**.
6. Validate the installation key. Enter the product installation key, and click **Next**.

7. Selection of installation type: Select **Standard install** and click **Next**.
8. Loading Response file: Leave the response file location blank and click **Next**.
9. Components: Select the following components and subcomponents:
  - WebSphere Portal Server
    - WebSphere Portal Server
    - Portlets
  - WebSphere Personalization
    - Personalization Server
  - WebSphere Application Server
    - WebSphere Application Server
    - WebSphere Application Server Fix Pack 2
  - IBM HTTP Server
  - IBM SecureWay Directory
    - IBM SecureWay Directory Client
    - IBM SecureWay Directory Server
  - DB2 Universal Database
    - DB2 Universal Database Fix Pack 5
    - DB2 Universal Database Client
    - DB2 Universal Database Server
10. Enter the administration user name for IBM HTTP Server. For example, enter the following information and click **Next**:
  - User name: inst1
  - Group: inst1g
  - Password: <your\_password>
11. You will need to remove any previously installed LDAP server. Click **Next**.
12. Enter the LDAP suffix information. For example, fill in the following information and click **Next**:
  - Suffix: dc=ibm,dc=com
  - Administrative user: cn=root
  - Password for administrative user: password
  - Confirm password: password
  - TCP/IP port to use: 389
13. Installation directories: Enter the WebSphere Application Server installation path and click **Next**.
14. Choose database location: Select **No** (no remote database) and click **Next**.
15. Choose database type: select **DB2** and click **Next**.

16. Enter database user information. For example, fill in the following information and click **Next**.
  - Local database user ID: wasinst
  - Local database group: wasgrp
  - Local database password: <your\_password>
17. Enter database settings. For example, fill in the following information and click **Next**:
  - Local database name: wasdbl
  - Local database alias name: wasdb
  - Node name: m23x2636
  - Database server port: 5555
18. Choose Application Server: Keep default value WebSphere Portal and click **Next**.
19. Install type selection: Select **Typical** and click **Next**.
20. Authentication mode: Select **Database and LDAP directory mode** and click **Next**.
21. Security configuration: Select **Now** and click **Next**.
22. LTPA password: Fill in your LTPA password and click **Next**.
23. Server configuration: Fill in your server configuration and click **Next**.
  - Installation directory: /opt/WebSphere/AppServer
  - hostname: <your hostname>
  - basic URL: /wps
  - Home Page: /portal
  - Customized Page: /myportal
  - Proxy host: (blank)
  - Proxy port: (blank)
24. Selection of LDAP server: Select **SecureWay Directory** and fill in the following LDAP configuration and click **Next**:
  - LDAP server: <your local hostname>
  - DN of user: cn=root
  - User password: <your\_password>
  - Suffix: dc=ibm, dc=com
  - TCP/IP port to use: 389
25. LDAP configuration: Keep default values in all fields and click **Next**.
26. Portal Server database selection: Select the following items and click **Next**:
  - Database back end: DB2 Universal Database
  - Portal Server Database configuration option
  - Create a new database and do initialization

- Sharing the database with Member Services?
- Share the database

**Note:** Make sure that option **Share the database** is also selected.

27. Additional database configuration: For example, enter the following values and click **Next**:

- Database name: wpsdb
- Database user: wasinst
- User's password: <your\_password>
- JDBC database driver:  
COM.ibm.db2.jdbc.DB2ConnectionPoolDataSource
- JDBC\_URL prefix: jdbc:db2
- JDBC driver library: /home/wasint/sqllib/java12/db2java.zip

28. Database option for Member Services: Select **initialize existing database** and click **Next**.

29. License Use Management: Fill in the following items and click **Next**:

- Installation type for license use: License server
- License Server: <your license hostname>

30. Display Summary: Check the list of components and click **Next**.

31. The installation process will start. When a CD-ROM change is required, unmount and change the CD and then click **OK** to continue.

32. At the Configuring for Admin Role window, follow the messages in the install window and when you finish the configuration for AdminRole, click **OK**.

33. At the Finish to install window, click **OK** and close Setup Manager.

34. Restart WebSphere Application Server Administration Server.

35. Launch WebSphere Application Server administrative console and start the Web application called "WebSphere Portal".

36. Launch a Web browser, then access the portal page by entering:

`http://<your host>/wps/portal`

## 2.7 Sample installation for a development platform

In this section a sample WebSphere Portal installation suitable for application portlet development is illustrated using a single Red Hat 7.2 machine. In this installation, as shown in Figure 2-34 on page 61, all the related information

regarding users will be stored in WebSphere Portal database and LDAP will not be used.

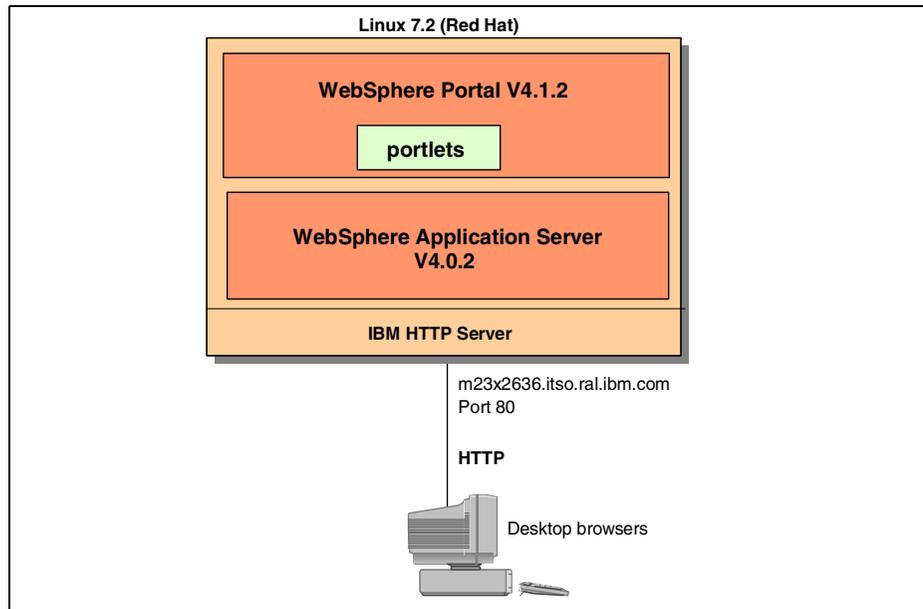


Figure 2-34 Sample WebSphere Portal scenario for a development platform

The installation requirements and required steps are very similar to the sample installation presented in 2.4, “A sample two-tier installation” on page 19.

**Note:** Again, before you start the installation you must be sure that the network has been properly configured.

A sample step-by-step installation follows:

1. Start Setup Manager and select **WebSphere Application Server** and **WebSphere Application Server fix pack, HTTP server, and DB2** components.
2. Once the Setup Manager has completed these tasks, verify that HTTP, DB2, and WebSphere Application Server are properly running and working.
3. Start setup manager again and select **WebSphere Portal** and **Personalization** components but do not select **LDAP**.
4. In the install type selection window, you will need to select **Development**.
5. Do not select **Security** when Setup Manager asks you if security is enabled in WebSphere Application Server. Security is typically not required for a development installation.

6. Supply all the parameters as in the two-tier installation. However, no LDAP parameters will be prompted.
7. A new window asking for the Personalization Workspace user will come up. Use the default value “wpsadmin”.
8. Once the WebSphere Portal installation starts, you will notice that Personalization Workspace will be installed, even though you did not select that component. It is installed by default when you select a development installation.
9. If you receive a message window reminding you to start LDAP, click **OK** and ignore it.
10. Another message window prompts you to restart your Web server. Do it and make sure that WebSphere Portal is running in your WebSphere Application Server.
11. The installation should finish with no problems, and WebSphere Portal will look the same as when using LDAP Directory Services.

By using this type of WebSphere Portal installation, you can develop portlets with WebSphere Studio and enhance your portlets with personalization rules. Portlets can also run in your development platform and they can also be published as WAR files to a production server.

## 2.8 Uninstall

WebSphere Portal can be removed using the uninstall program from your system. If you want to uninstall any component other than Portal, you must follow the specific instructions for uninstalling that component. Only the WebSphere Portal that is installed on the local server, where the uninstall program is running, can be uninstalled.

**Note:** Start IBM WebSphere AdminService before you uninstall WebSphere Portal.

To uninstall the WebSphere Portal, issue the following commands:

```
#cd <wp_home>/install
```

For example:

```
#cd /opt/WebSphere/PortalServer/install  
#./uninstall.sh
```

During the uninstall process, the Login at Target Server window may display multiple times. Type the use ID and password that are configured for the security settings in WebSphere Application Server.

**Note:** If you type an incorrect user ID or password, the application server configuration for WebSphere Portal can fail, and you must start the uninstallation again.

After uninstalling the WebSphere Portal, the Administrative Console lists one or all of the following entries:

- ▶ Personalization runtime
- ▶ Personalization e-mail
- ▶ WebSphere member subsystem
- ▶ WebSphere Portal enterprise application

If you receive an error message stating that you cannot remove the application server because you have modules installed on it, you have to remove all the JDBC providers and data sources under Resources in your Administrative Console.

If you need to remove JDBC providers, you first have to remove JDBC data sources. After you have removed the JDBC providers and data sources, you should stop the items in your Administrative Console listed above and then remove them. Refer to the WebSphere Application Server InfoCenter for details on removing an application server.

In your system, locate the <wps\_root>\_uninst directory and delete it.

**Important:** After you fully uninstall WebSphere Portal, you must also remove the empty WebSphere Portal install directory. Otherwise, the Setup Manager will read the stored configuration values and terminate the reinstall process.





# Administration

This chapter describes how to work with the administration portlets provided by WebSphere Portal. It also includes an overview about how to change the look and feel of your portal and how to create new themes, skins and pages as well as adding users using the out-of-the-box product functionality.

Even though this chapter has been developed using the Linux product version, it also applies to all WebSphere Portal supported platforms.

## 3.1 Working with themes, skins, and pages

The following WebSphere Portal components can be used to easily manage look and feel:

- ▶ Page Groups
- ▶ Pages
- ▶ Portlets
- ▶ Themes and Skins

In addition, the JSP-based nature of the portal provides many opportunities to customize the user interface.

### 3.1.1 Page groups and pages

Page groups provide a new level of page categorization. Pages can be grouped together and managed as a unit. The way pages are grouped is arbitrary and left up to the page group creator.

All pages must exist in a page group and there is no way to move or copy page groups between page groups, but it is possible to copy pages. Page groups can have specific access control applied to them as well as a specific theme.

There are several page groups installed by default within WebSphere Portal, for example Home, Work with Pages, and Portal Administration.

Portlets are laid out on pages. All WebSphere Portal functionality (administration, customization, etc.) is delivered via portlets. The "Portal Administration" pages use a "Portlet Selector" portlet to provide menu-like access to portlets on the page. When combined with the "NoSkin" skin, these functions appear to be single windows served to the user. This technique can be used on any type of page.

#### Creating page groups and pages

The "Work with Pages" page group provides the user with the ability to customize their experience. This includes creating page groups and pages, laying out portlets on pages, choosing skins, and locking portlets in place on a page. Users may only be allowed to customize their own experiences, or they may have access permissions that allow them to make changes that affect others.

Use the "Manage Page Groups and Pages" portlet to add a new page group. Type the name of your page group and click **OK**.



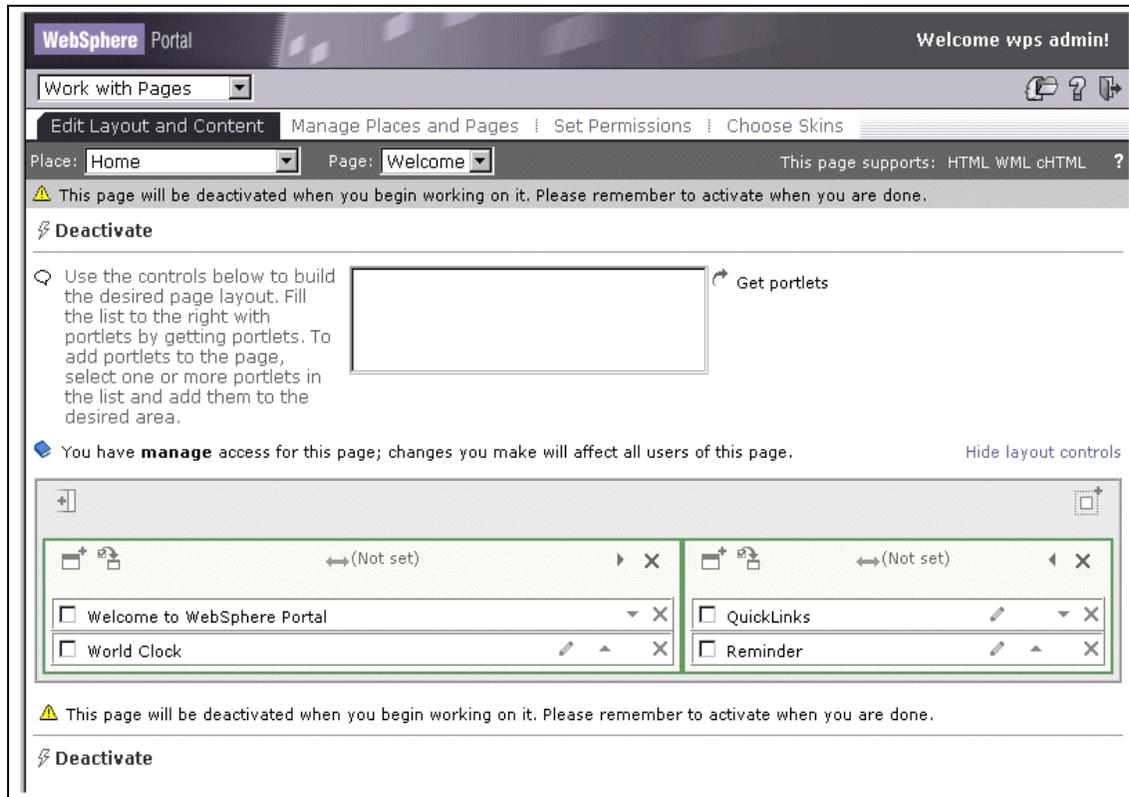


Figure 3-2 Layout change

The next step is to assign portlets to your pages:

1. Click **Edit Layout and Content**, choose your page group and then the page you want to populate.
2. Select the desired portlets by clicking **Get portlets**, add as many as you want, return to the previous page and set each portlet in the desired column/row.
3. By clicking **Show layout controls**, you will be able to modify the columns and rows settings, creating as much as you need.

**Note:** Remember to activate the page when you finish your personalization work. Pages are set automatically to inactive when you work with them.

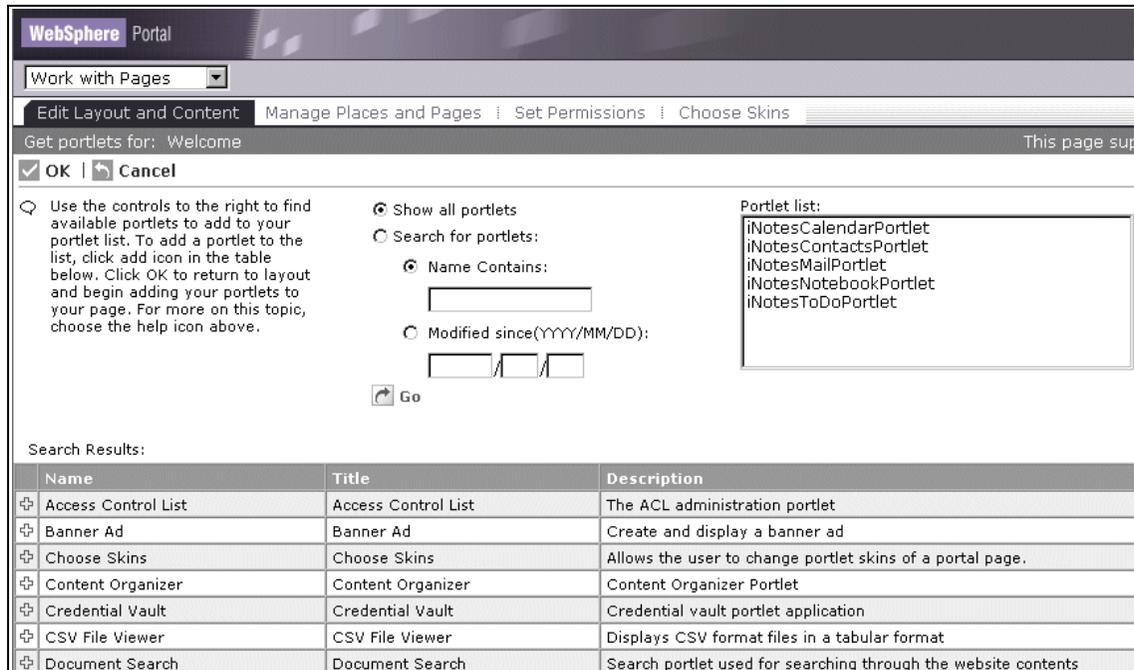


Figure 3-3 Adding portlets

The Set Permissions portlet (see Figure 3-4 on page 70) allows you to lock containers on a page and the contents of containers on a page. You can also decide which portlets can or cannot be deleted from the page. These settings control how a user can work with the page in the Edit Layout and Content portlet. Use the drop-down lists at the top to select the place and page that you want to modify. Then lock or unlock the containers or container contents. All changes occur as you make them. When you select a page to modify, the page becomes deactivated so that users cannot access it. Be sure to activate the page when you are finished making changes.

You must have *manage* access for a page in order to modify the permissions settings. An end user must have *EDIT* access for a page in order to modify unlocked containers or container contents.

A container is a row or a column on the page. A row container stacks content horizontally and is colored grey. A column container stacks content vertically and is colored yellow.

For additional information on how a container locker works, see the online context-sensitive help. The following is an outline of what you can and cannot do:

- Containers cannot be moved or deleted.

- ▶ Add portlets to the container.
- ▶ Remove portlets from the container.
- ▶ Move portlets inside of the container into other containers.
- ▶ Add subcontainers (columns or rows) to the container.
- ▶ Remove subcontainers (columns or rows) from the container.
- ▶ Modify portlet positions within the container.
- ▶ Modify subcontainer positions within the container.
- ▶ Set the width for the container.

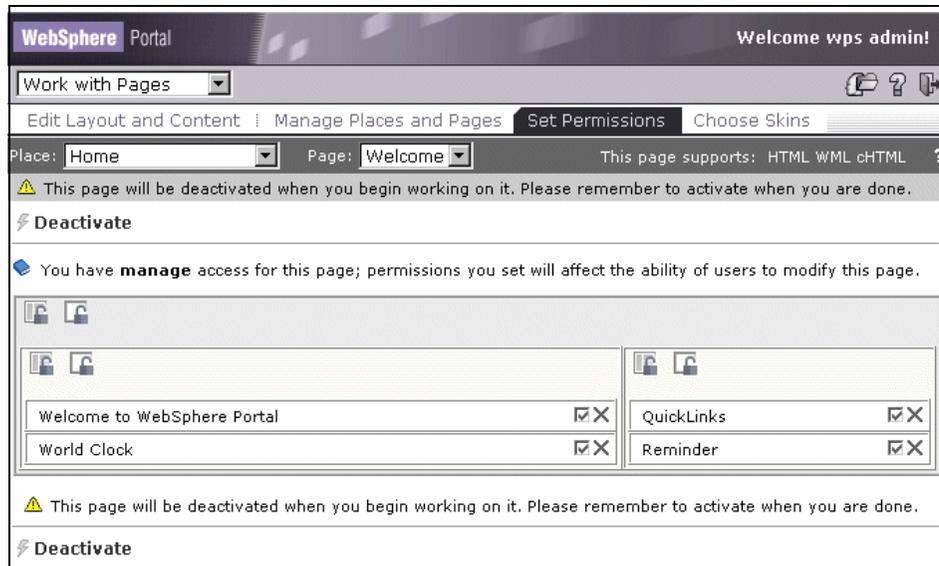


Figure 3-4 Set permissions

You can choose a different skin for each portlet in the same page. There are several skins created for you and you can easily add new ones. See “Creating a new skin” on page 76. You can also preview the skin by clicking the eye icon of each portlet, see Figure 3-5 on page 71.

Finally, when the customization job is done, you will have to give access to the page groups and pages to your users or users groups. To do this, go to the **Portal Administration** -> **Security** tab and here you can assign the appropriate permissions to your users.

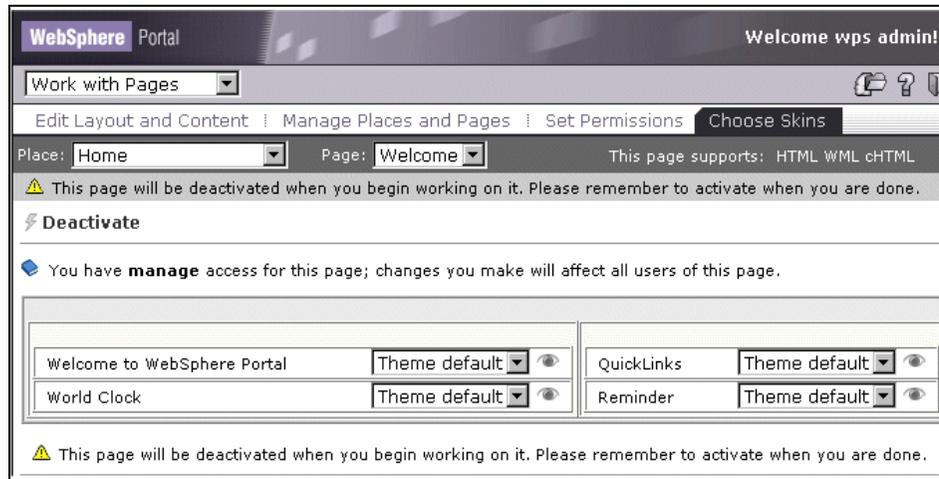


Figure 3-5 Skin selection

### 3.1.2 Themes and skins

Themes and skins are templates that provide a page group's look and feel. They provide specific control for branding, navigation, and decoration.

Branding is the general scheme of the page. It usually encompasses logos, color schemes, decorations, fonts, artistic layout, etc.

Navigation refers to the way in which the user gets around on the site. There are several themes that demonstrate some of the different navigation models.

Decorations are the icons and images that are used to provide function and content links as well as general look-and-feel enhancement.

#### Themes

A theme is an attribute of a page group, meaning you create page groups and then apply a theme to it. Themes are not user-specific. All users see the same theme that is applied to the page group. This means that a user could be presented with a completely different site experience when navigating from one page group to the next.

Themes contain various components:

- Cascading Style Sheets (CSS files) provides a mechanism to apply look and feel to specific HTML tags. This can be done on a broad scale by specifying the attributes of the specific HTML tag. Or you can create "classes" and apply specific classes to the HTML attributes as desired. For example, you can

specify a font size to be used on the <P> (paragraph) tag or you can create a class that specifies a font size, and then point to the class when you use the <P> tag. This second method provides the ability to apply different attributes to the same tag and achieve a variety of effects. CSS files can be found in the product install directory.

- ▶ Images provide specific brand, logos, and decorations. The image components of the theme's supported skins that are sensitive to theme settings are kept with the theme's images.
- ▶ Each theme contains its own set of JSPs to render the page groups and pages. This allows a completely different layout and brand experience from one page group to the next.
- ▶ Assets (images, JSPs, etc.) that are used in Themes and Skins are resolved by using WebSphere Portal supplied custom tags. There are several points within the directory structure where assets can be located. When the "<wps:urlFindInxxx>" tag is used, a search for the asset begins deep in the directory structure where the asset may be deployed for a specific country within a locale. If the assets is not found or the directory structure does not exist, the search continues by traversing "up" the directory tree. It's important to deploy default assets in the theme (or skin) root in order to avoid a "not found" situation.

The portal determines the theme for display as follows:

- ▶ If there is a theme associated with the displayed page group, the portal uses this theme.
- ▶ If there is no theme specified for the page group, the portal-wide default theme is used.
- ▶ If no portal default theme is set, the portal uses the theme settings given in the theme main directory, such as /theme/Tamil for HTML.

A default theme is not required for the portal.

Here is a search order example:

```
<...background='<wps:urlFindInTheme file="banner.jpg">'>
  \themes\html\science\ie5\en_US\default.jsp
  \themes\html\science\ie5\en\default.jsp
  \themes\html\science\ie5\default.jsp
  \themes\html\science\en_US\default.jsp
  \themes\html\science\en\default.jsp
  \themes\html\science\default.jsp
  \themes\html\en_US\default.jsp
  \themes\html\en\default.jsp
  \themes\html\default.jsp
  \themes\default.jsp
```

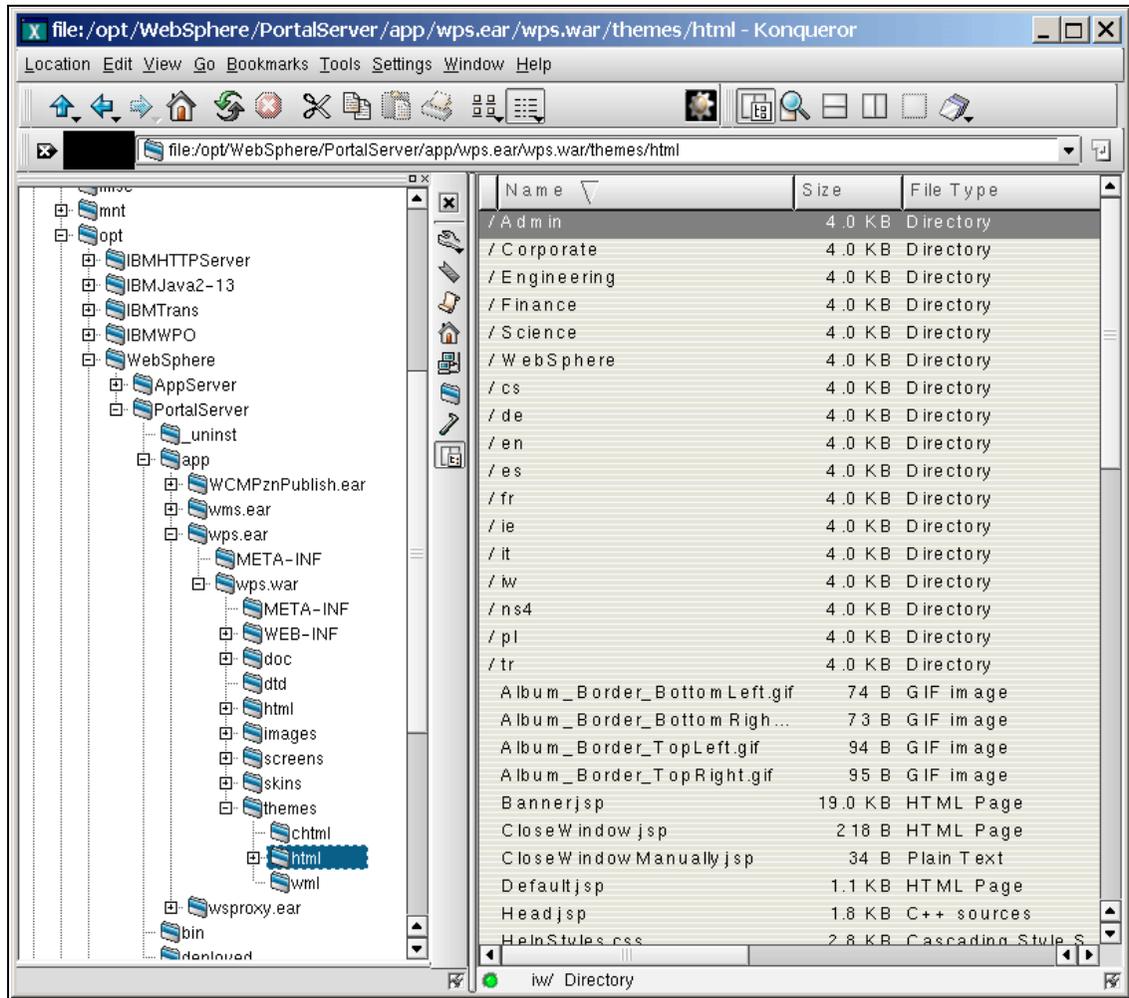


Figure 3-6 Themes location

## Creating a new theme

To create a new theme:

1. Create a new directory for your theme:  
`<WP_HOME>/app/wps.ear/wps.war/themes/html/YourTheme`
2. Choose a current theme closest to the layout you want:  
`/themes/html/Science`
3. Copy the resources into the appropriate directories
  - JSPs: Default.jsp, Banner.jsp, Navigation.jsp, ...

- Images: banner.jpg, navfade.jpg, ...
- Style Sheet: Styles.css

**Note:** You may modify the tag definitions and the class definitions.

4. Customize to get the look and feel you are looking for.
5. Click **Portal Administration -> Portal Settings -> Themes and Skins** portlet and choose **Add a theme**.
6. Enter a name of your choice.
7. Enter directory (for example, YourTheme). Do not include complete path.
8. Select the skins you want to be available for your new theme.
9. Select a default skin.

## Skins

Skins are used to apply specific decorations to portlets. They are used in conjunction with the theme in order to accomplish this. For instance, the theme's Cascading Style Sheet is used to specify the color of the portlet's title bar. Some skins use images to produce rounded corners on the title bar. The rounded corner images are stored with the different themes that support the skin. This is done so that the colors match across all of the components of the portlet's title bar. The rest of the skin assets are generic and apply to all theme uses, so they are kept in the skins folder.

Skins contain images that are used to create the visual effects of the portlet. The visual portlet container (lines, shadows, backgrounds, etc.) and the portlet navigation icons (edit, help, back, etc.) are the main components of a skin.

Skins are applied to the portlet via a JSP known as Control.jsp. Each skin has its own version of Control.jsp. It is used to specify the exact implementation of the skin and can be considered the "Portlet" container.

The search for skin assets works the same way as the themes search. Using the "<wps:urlFindInSkin>" tag, the file system is traversed starting with a specific country within a locale and working "up" to the skin default.

The portal determines the skin for display as follows:

1. If there is a skin specified for the portlet, the portal displays the component in that skin.
2. If there is no skin specified for the component, the portal looks for a skin on page level and uses it.
3. If no skin has been set for the page, the portal checks the page group for a skin setting.

4. If the page group has no skin specified, the portal uses the default skin of the page group.
5. If no skin has been found so far, the portal default skin is used.

While a default theme is not required for the portal, specification of a default skin is mandatory.

To create a new skin, make a copy of one of the existing ones and modify the images and the JSP in order to get the desired look and feel. Once you finish, you will be able to choose it from the administration portlets.

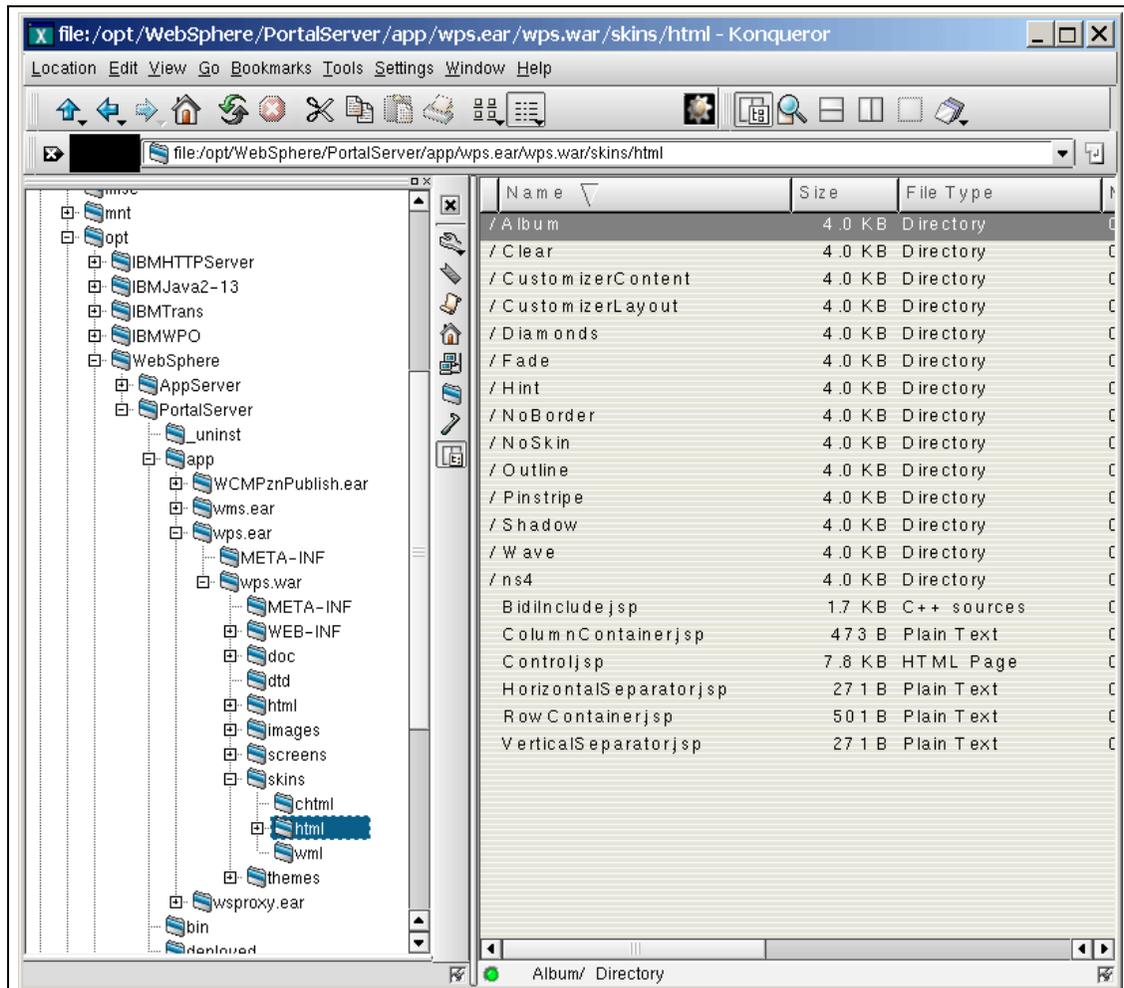


Figure 3-7 Skins location

## Creating a new skin

To create a new skin, execute the following steps:

1. Create a new directory for your skin  
(`<WP_HOME>/app/wps.ear/wps.war/skins/html/MyNewSkin`).
2. Choose a current skin closest to the layout you want (`/skins/html/Science`).
3. Copy the resources into the appropriate directories:
  - JSPs: `Control.jsp`, `RowContainer.jsp`, `ColumnContainer.jsp`, ...
  - Images: `title_edit.gif`, ...
4. Customize to get the look and feel you are looking for.
5. `Control.jsp` is the only JSP that you would want to modify.
6. Images may be modified or new ones created.
7. Select **Portal Administration** -> **Portal Settings** -> **Themes and Skins** portlet and choose **Add new skin**.
8. Enter a name of your choice.
9. Enter directory (for example `MyNewSkin`). Do not include complete path.
10. Associate the new skin with the desired theme.

## Example of creating a place

Now we will see how to create page groups (places), how to assign pages and portlets to those pages, and how to grant users to work with the new places.

1. Log on as administrator.
2. Go to **Manage Places and Groups** and create your new place. Then click **Manage Pages** and create pages assigned to the place created.

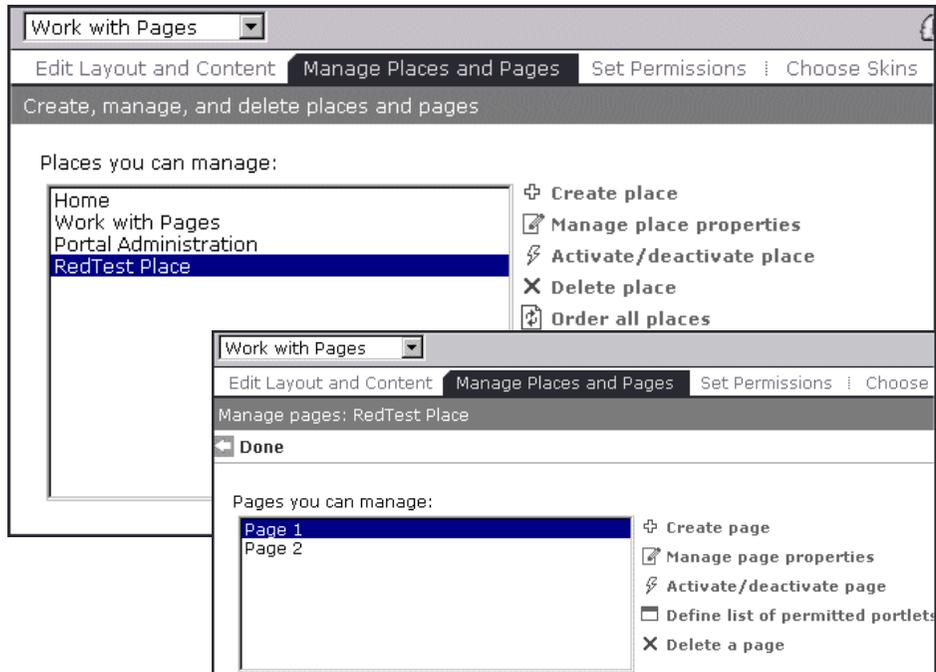


Figure 3-8 Create places and pages

3. Click **Edit Layout and Content** and add portlets to the new pages. First, get the portlets you want to publish and then assign them to the desired container.

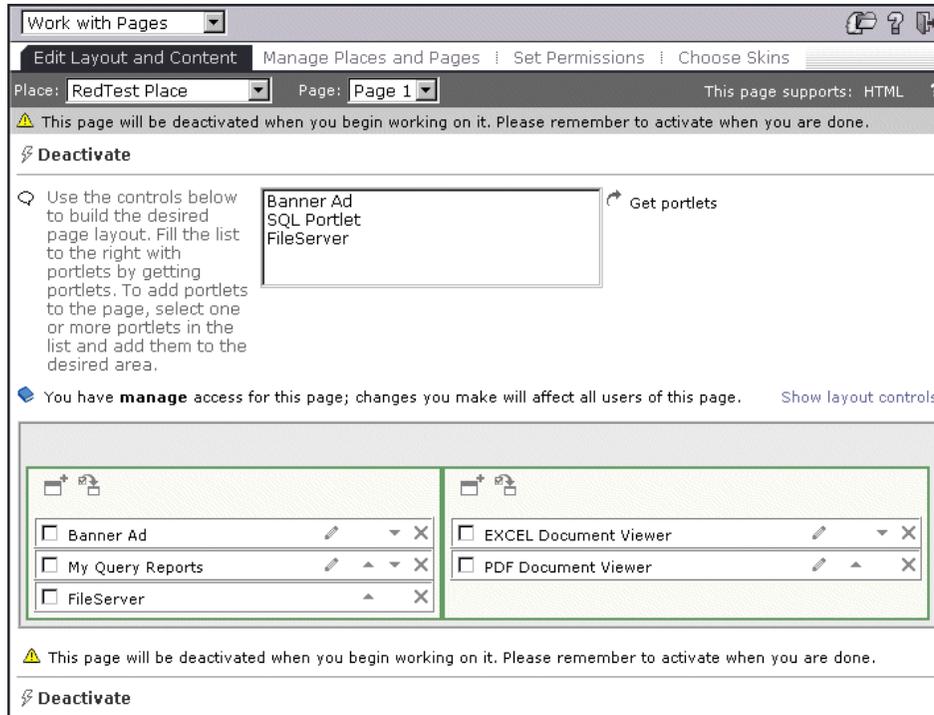


Figure 3-9 Adding portlets to page

4. Once you have portlets in your pages, you can change the default skin assigned by clicking **Choose Skins**, selecting the appropriate page, and changing the skins for each portlet.

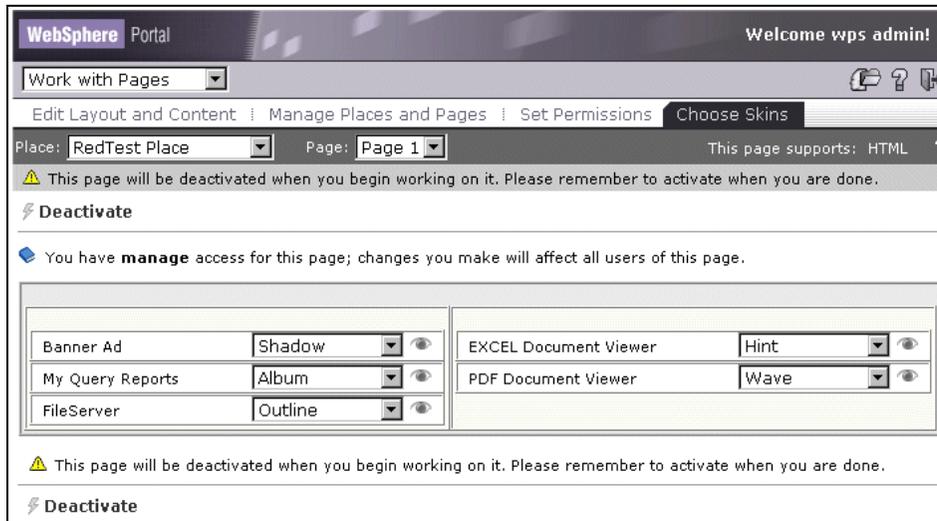


Figure 3-10 Choose different skin

**Note:** Remember always to activate the pages, as they are automatically deactivated when you work with them.

After completing the look and feel of your place, you will have to give access to them to your different users or groups, as follows:

1. Click **Portal Administration -> Security**.
2. Select the groups you want to grant and give them appropriate access to places and portlets posted in your pages. Different users and groups can have different access to the pages and portlets published.

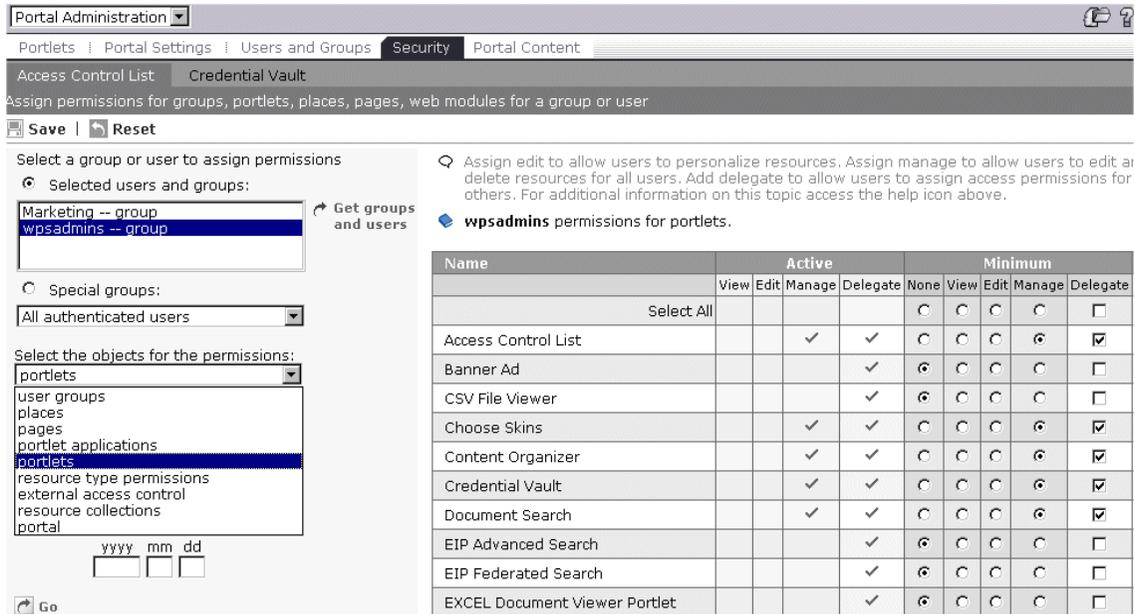


Figure 3-11 Assign permissions for places, portlets, pages, etc.

On completion of these steps, you will have your new place with all the pages and portlets. Experiment with permissions to see how different the place could be for each user.

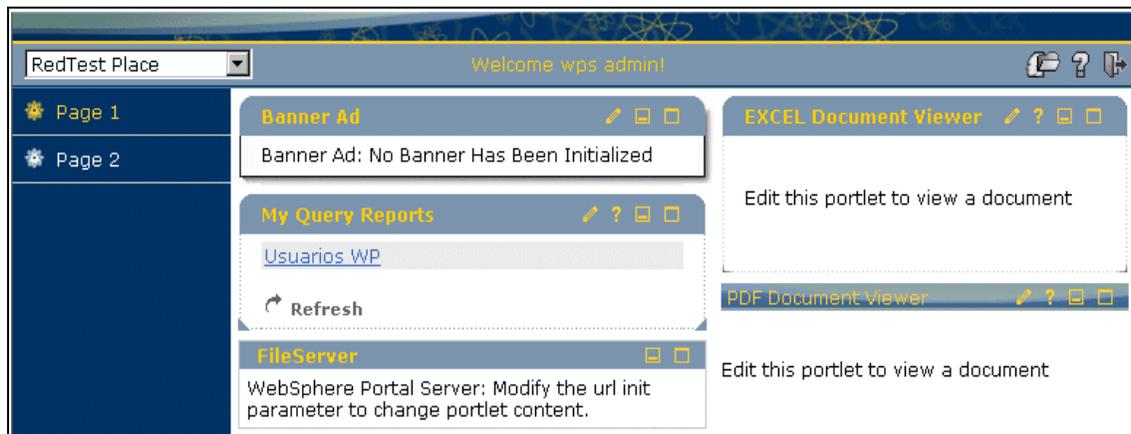


Figure 3-12 Test place created

## 3.2 Administering the portal

With this set of administration portlets, you are able to set up your portal easily. We comment on the different options in the following section. Figure 3-13 shows the WebSphere Portal administration window.

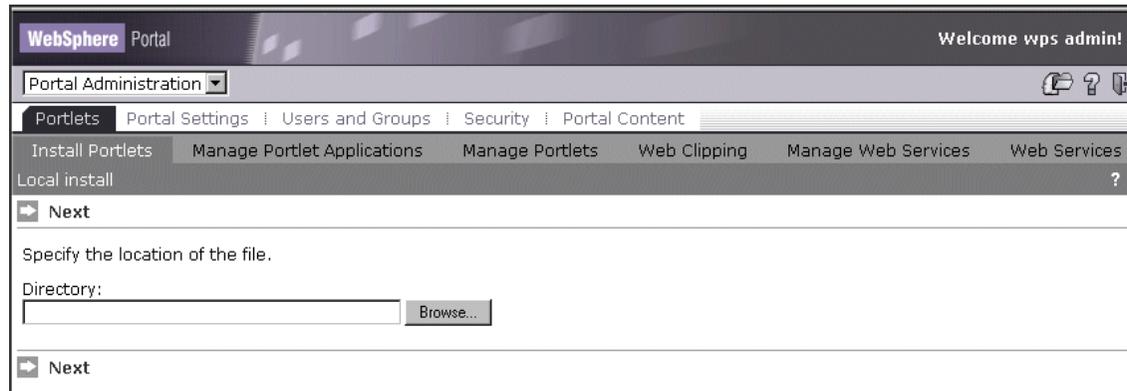


Figure 3-13 Portal Administration Page Group

### 3.2.1 Administering portlets

In this WebSphere Portal version there are many new portlets, such as:

- ▶ Install, copy and configure portlets
- ▶ Manage portlets and portlet applications
- ▶ Create clipping portlets
- ▶ Catalog portlets as Web services
- ▶ Find remote portlets to use locally
- ▶ Portal wide settings
- ▶ Add themes and skins
- ▶ Set portal defaults
- ▶ Manage clients types
- ▶ Manage markups
- ▶ Manage search index
- ▶ Enable tracing, etc.

#### Install portlets

You can install a portlet locally via a WAR file located in your server or your network or install remote portlets via UDDI directory (Web services portlet).

Once you install a portlet it is automatically activated but with no permissions.

Portlets represents a Web application stored in Web archive (WAR) files, which are standard Java archive files and can contain one or more portlet applications, servlets, JavaServer Pages (JSP) files, and other files.

Portlet applications are created implicitly when a WAR file is deployed. The portlet application holds one or more related portlets that come packaged in the same installation file.

**Note:** We do not cover portlet development in this Redpaper.

Figure 3-14 illustrates the tab to install a portlet.

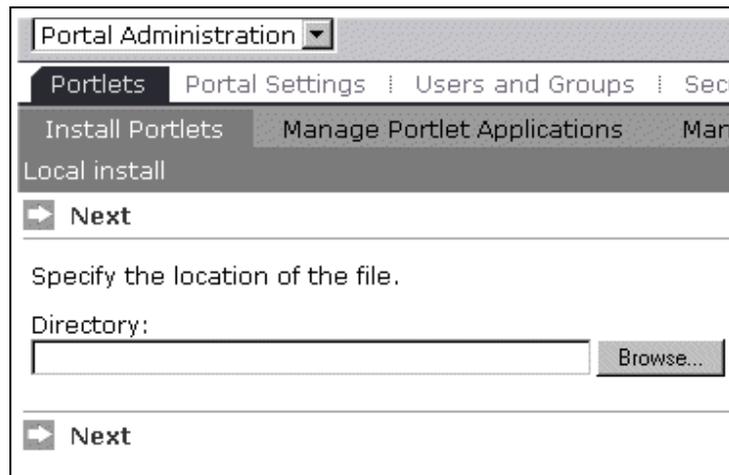


Figure 3-14 Install Portlet tab

To install a portlet, you have to locate the WAR file in your network and click **Install**. If a WAR file has been correctly deployed, the portlet will automatically get installed on your system.

## Manage portlets applications

With Web modules shown in Figure 3-15 on page 83 you are able to:

- ▶ Activate/Deactivate
- ▶ Update
- ▶ Show Info
- ▶ Uninstall

With portlet applications shown in Figure 3-15 you are able to:

- ▶ Activate/Deactivate
- ▶ Rename

- ▶ Copy
- ▶ Modify Parameters
- ▶ Show Info
- ▶ Delete

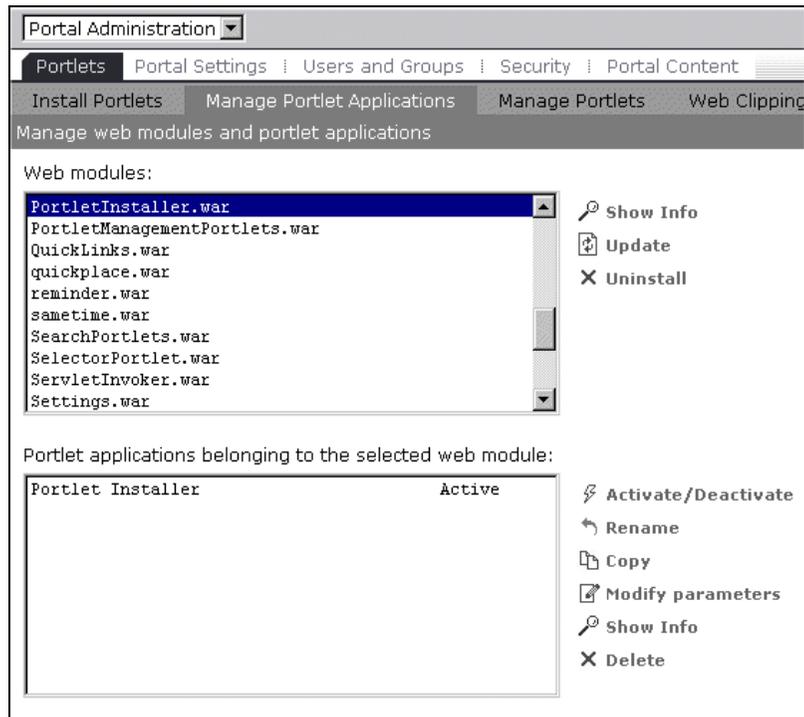


Figure 3-15 Manage web modules and portlet applications

## Manage portlets

With Manage portlets as illustrated in Figure 3-16 on page 84 you are able to:

- ▶ Activate/Deactivate
- ▶ Rename
- ▶ Copy (useful when different portlet configuration parameters are required for different instances of a portlet)
- ▶ Modify parameters (originally set in portlet.xml associated descriptor)
- ▶ Show Info
- ▶ Delete
- ▶ Portlet Search facility
  - List all

- List portlet(s) based on name
- Search active/inactive portlets
- Choose portlet from search results

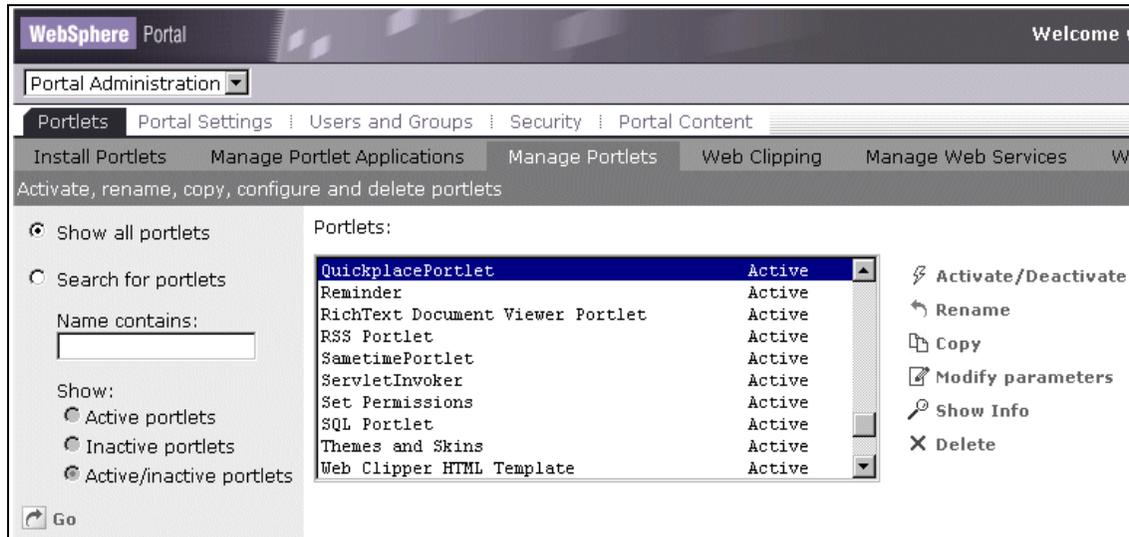


Figure 3-16 Manage Portlets tab

## Web Clipping

The Web Clipping portlet will display sections of existing Web pages, visually or between tags. The links can be displayed without leaving the portal and each clip creates a new portlet.

This portlet retrieves the current version of the Web page. There is no security, basic authorization, or forms-based authentication. Credentials are supplied by the user or administrator.

To add a Web clipping portlet you may want to execute the following steps:

1. Go to the Web Clipping tab (shown in Figure 3-17 on page 85).
2. Click **Add**.
3. Complete the information requested, for example:
  - a. Click **Modify clipping type** to select the HTML content to clip or clip all the URL.
  - b. Click **Modify firewall options** to specify firewall setting if needed to connect to the clipped page.
  - c. Click **Modify authentication options**. If you need a user ID and password to access the content, specify them here.

- d. Click **Modify rules for URL rewriting**. If the content of your Web clipper contains links, the URLs in those links will be modified to point to the portal server. However, you can create rules that exclude certain URLs from being modified in this manner. You can also specify URLs to be opened in new browser windows.
- e. Click **Modify security options**. If the Clipped URL contains JavaScript and you want it to run, you have to uncheck that option here.

Figure 3-17 illustrates the Web Clipping tab.

The screenshot shows a web browser window with a navigation bar containing 'Portlets', 'Portal Settings', 'Users and Groups', 'Security', and 'Portal Content'. Below this is a sub-navigation bar with 'Install Portlets', 'Manage Portlet Applications', 'Manage Portlets', 'Web Clipping', and 'Manage Web Services'. The main content area is titled 'Add a Web clipper' and includes a 'Next' button and a 'Cancel' button. The form contains the following fields and options:

- Name and default locale title:** A text input field containing 'IBM HTTP server Documentation'.
- Description:** A text input field containing 'IBM HTTP server Documentation'.
- Set locale specific titles and descriptions:** A link with a left-pointing arrow.
- URL to clip:** A text input field containing 'http://m23x2636.itso.ral.ibm.com'.
- Connection timeout (seconds):** A text input field containing '5'.
- Modify clipping type:** A link with a right-pointing arrow and the text 'Select how you will choose the content to clip.'
- Modify firewall options:** A link with a right-pointing arrow and the text 'If you use a proxy server to access the content, specify its settings here.'
- Modify authentication options:** A link with a right-pointing arrow and the text 'If you need a user ID and password to access the content, specify them here.'
- Modify rules for URL rewriting:** A link with a right-pointing arrow and the text 'If URLs in the clipped content need special handling, indicate that here.'
- Modify security options:** A link with a right-pointing arrow and the text 'Choose whether to include or remove JavaScript in the clipped content.'

Figure 3-17 Adding a Web Clipping window

As illustrated in Figure 3-18 on page 86, when you have finished entering all data, the clipped portlet will be available in the Manage Portlets tab. Work with it as a normal portlet.

**Note:** If you type a URL containing frames, you will get an error message.

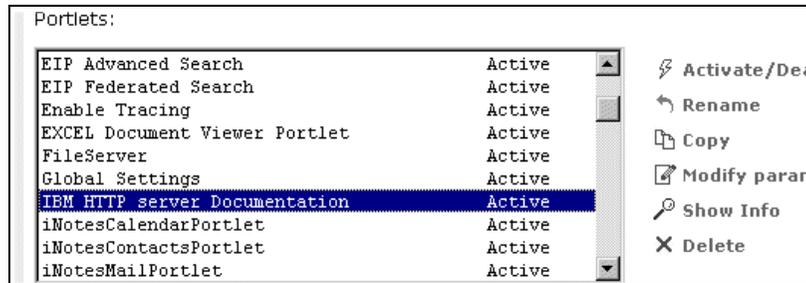


Figure 3-18 Clipped portlet inside Manage Portlets tab

## Manage Web services

A Web service is an interface that describes a collection of network-accessible operations. The interface is described using a standard XML description language called Web Service Description Language (WSDL), so that the service can be invoked without prior knowledge of the platform, language, or implementation design of the Web service. Web services are located using the standard Universal Description and Discovery Interface (UDDI), which may be a private or public registry of Web services.

WebSphere Portal provides extensive support for web services. Portal administrators can publish and bind remote portlets as web services, making the remote portlets available in the portal's registry dynamically. When a remote portlet is used, its services are invoked using Simple Object Access Protocol (SOAP).

## Web services

To see how portlet Web services might be useful, consider a large corporation that has several different portals, such as an employee portal, a supplier portal and a human resources portal. Each of these portals offers portlets to its users, and may choose to publish some of its portlets as Web services, making them available for access through other portals.

Completing the publishing step puts an entry for the portlet into a UDDI directory. An administrator at another portal can browse the UDDI directory to find all the portlets that have previously been published, and bind these into their local portal. This makes the portlet available as if it were locally installed. Of course, the portlet is actually running remotely, on the original portal server that published it.

The effect is to have a federated portal, where portlets may be running at any location in the network of portals. Individual portlets can also use Web services internally to deliver their functionality. For example, a search portlet might query

the user for a search string, then use a search Web service to search the Internet. A calendar portlet might act as a front end, providing views for a calendar Web service. WebSphere Studio Application Developer provides development tools for quickly developing Web services and for generating proxy classes from WSDL descriptions.

It is possible to make portlets available to many portals as if locally installed but running on the original portal. Portlets can run at any location in the network of portals.

Portlets can use Web services, that is, the search portlet queries users for a query string then uses a search Web service to search the Internet.

### ***How to manage Web services***

We will see how to integrate a Web service as a remote portlet in WebSphere Portal V4.1 and how to publish a portlet as a Web service.

The first step has to be done once for every UDDI registry you want to work with. It is not specific to WebSphere Portal.

1. First, register yourself with an UDDI registry.

IBM has a test registry. Go to

<https://www-3.ibm.com/services/uddi/testregistry/protect/registry.html>

Register yourself here: <https://www-3.ibm.com/registration/selfreg>

Microsoft's registry can be found at:

<http://uddi.microsoft.com/default.aspx>

HP's registry can be found at:

[http://www.hpmiddleware.com/products/hp\\_web\\_services/registry/default.htm](http://www.hpmiddleware.com/products/hp_web_services/registry/default.htm)

2. You will also need to know three things about the registry:

- a. The inquiry URL
- b. The publish URL
- c. tModel key

The corresponding values for the IBM UDDI registry are:

- <http://www.ibm.com/services/uddi/inquiryapi>
- <https://www.ibm.com/services/uddi/protect/publishapi>
- C1ACF26D-9672-4404-9D70-39B756E62AB4

<http://www-3.ibm.com/services/uddi/testregistry/protect/>

<https://www-3.ibm.com/services/uddi/testregistry/protect/publish>

Now you are ready to work with Web services within the context of WebSphere Portal.

3. Log into WebSphere Portal as administrator (wpsadmin).
  - a. Under Portal Administration, navigate to the Portlets tab and click **Manage Web Services** and click **Add**.
  - b. In the following window, enter the information related to the UDDI registry you want to work with. The Display name can be anything you want to use, but the Registry inquiry and publish URLs and the tModel key are site specific.
  - c. Click **OK** to save the information.

Figure 3-19 illustrates a sample Web services registry information.

The screenshot shows a web browser window with the following elements:

- Portal Administration dropdown menu
- Navigation tabs: Portlets (selected), Portal Settings, Users and Groups, Security, P
- Sub-navigation: Install Portlets, Manage Portlet Applications, Manage Portl
- Page title: Manage Web Services :: Edit registry information
- Buttons:  OK |  Cancel
- Form fields:
  - Display name for registry: IBM Registry
  - Registry inquiry URL: http://www.ibm.com/services/uddi/inquiryapi
  - Registry publish URL: https://www.ibm.com/services/uddi/protect/publishapi
  - tModel key: C1ACF26D-9672-4404-9D70-39B756E62AB4
- Bottom buttons:  OK |  Cancel

Figure 3-19 Web Services registry information

4. The next step is to provide authentication information. Click **Web Services** tab.
5. Click **Provide registry authentication information**. See Figure 3-20.

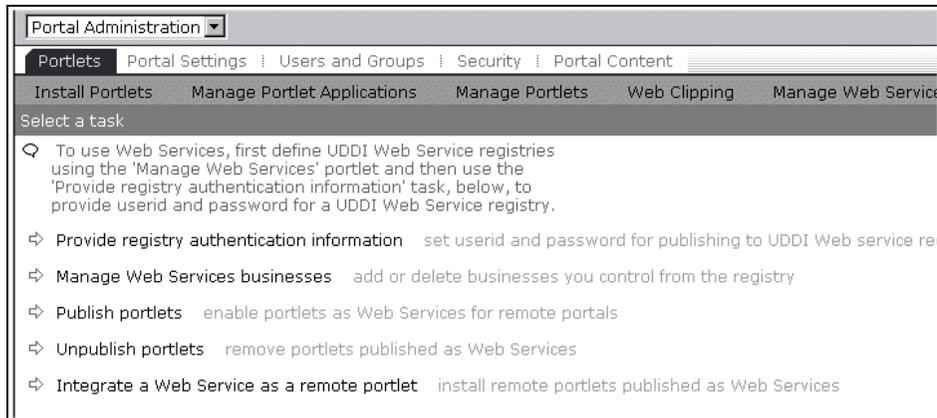


Figure 3-20 Web Services tab

6. Highlight the registry (in this case IBM Registry) and click **Set authentication**.
  - a. Enter the user ID and password you used to register yourself with the UDDI registry in step 1. Click **OK**.
  - b. You should see a message that reads `Credentials set successfully`.
  - c. Click **Done**.

If you use the test user UDDI `wstkDemo/wstkPwd` you will have portlets already published in the IBM Registry. We show how to retrieve them as a Web service. If you register yourself, you will have to create everything or publish portlets from your Portal.

7. From the Web Services window, click **Integrate a Web Service as remote portlet**.
  - a. In the following window, select your registry and select the radio button to **List all portlets**. Then click **Go**.
  - b. After a little while, the server will return with a list of portlets that you can select to install in your instance of WebSphere Portal.
  - c. Select any portlet by clicking in the box on the left side of the list. Then click **OK**.

Figure 3-21 on page 90 illustrates this window.

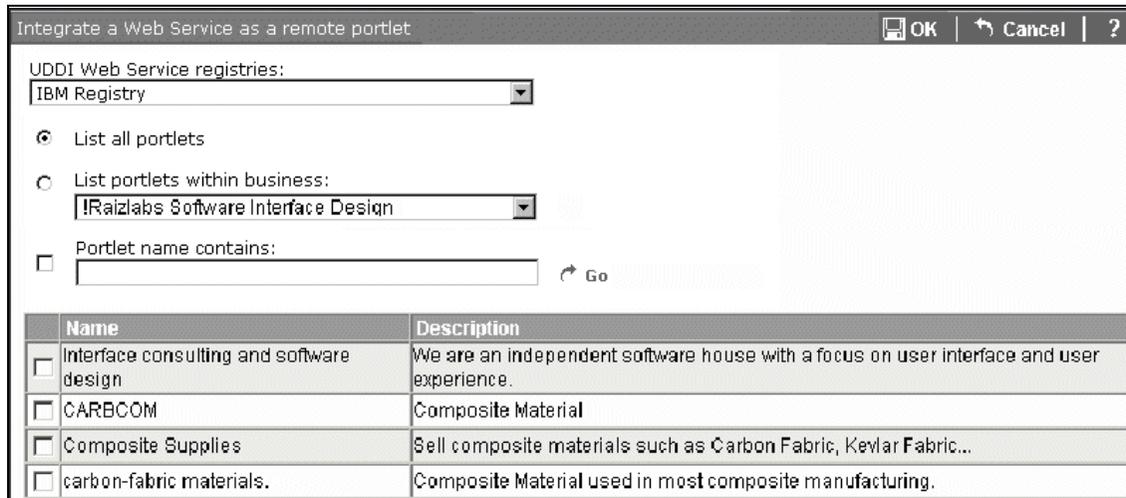


Figure 3-21 Integrate Web Service as remote portlet

### Publishing a portlet as a Web service

From the Web Services screen, click **Publish portlets**. Get a list of portlets and choose the **World Clock** portlet. Select the UDDI registry and click **Publish to a new business**. Click **Publish**. If published successfully, click **Done**.

## 3.2.2 Portal settings

In the Portal Settings tab, we will be able to set up the basics for our portal, such as default language, messages to users, and add new skins (as we saw in “Creating a new skin” on page 76), manage the clients (browsers) that your portal will support and give them the priority you want. Also, manage the markups available on your portal or create new ones, and manage tracing.

There are two different ways to enable traces:

1. Using the administration portlet. Set traces for the duration of the current session only.
2. Editing the JLog configuration property file:
  - a. For more than one session.
  - b. jlog.properties is in the was\_root/lib/app/config directory.

Log files are now in the <WP\_HOME>/log directory.

For managing and searching large collections of digital content, the WebSphere Portal Experience offering includes IBM Content Manager. Additional search

portlets from other search vendors (Verity, Inktomi, Autonomy) are also available and can be used.

WebSphere Portal provides integrated text search capabilities, including a search portlet, a crawler, and a document indexer. The search service can search the portal's document repository as well as Internet content. The portal server's built-in search engine is optimized for full-text searching of small and medium-sized collections where precision is essential.

The search engine supports free-text queries, with query assistance and query word completion. Search queries use advanced query operators (+ or -) to indicate keywords that must be in the document or keywords that must not be in the document. The search engine can search documents in any language, and also supports synonyms and stop word lists. Search results include document summarization and search results clustering.

To prepare for searching, the search engine builds a full-text index in order to search documents that are stored in the local file system. The indexer supports multi-word indexing for high precision. The index can be compressed, and the size can be controlled for situations where the size of the index needs to be limited. Administration portlets are provided for creating, updating, and managing the index.

Figure 3-22 on page 92 illustrates the window to configure a search index.

Portal Administration

Portlets Portal Settings Users and Groups Security

Global Settings Themes and Skins Manage Client

Configure Search Index

OK | Done

Index:

Location of the index:

Update index  New index  Delete index

enable CJK language support

Document types to be indexed:  
 HTML  plain text

Index documents by following links starting with URL:

Levels of linked documents to index:  
  Documents within domain only

Number of linked documents to index:

OK | Done

Figure 3-22 Manage search index

For a federated search, WebSphere Portal also integrates several other search technologies. Portlets using IBM Lotus Extended Search and IBM Enterprise Information Portal search can access and aggregate other search engines and indexes in a distributed fashion.

Customers seeking support for large document collections or support for searching a wide range of document types and data sources should consider using Lotus Extended Search (included with the WebSphere Portal Extend offering) or the IBM Enterprise Information Portal.

Figure 3-23 on page 93 illustrates the window to set default parameters for the portal.

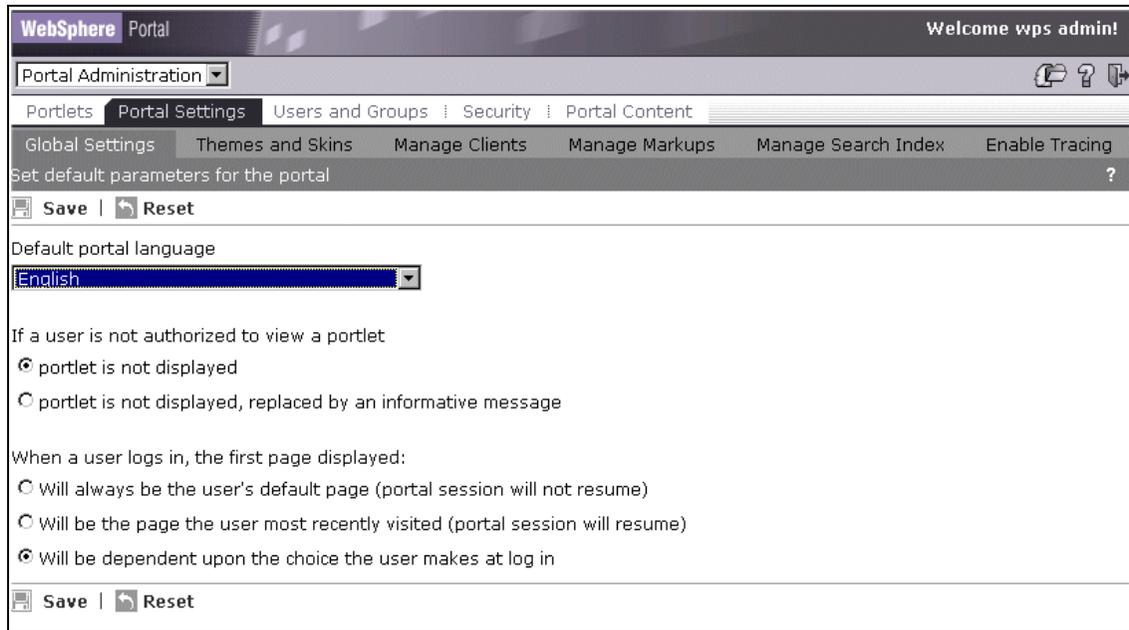


Figure 3-23 Portal global settings

### 3.2.3 Users and groups

This portlet is new in this WebSphere Portal version and the main intention is to help the administrator to create portal users and groups without using the LDAP interface directly.

- ▶ Users and groups can be created in different ways:
  - They can be created by the Portal Administrator.
  - They can be created by the LDAP Administrator (import LDIF file).
  - Users may self register.
- ▶ Portal will recognize an existing user/group in existing repository (LDAP).
- ▶ A user can modify his profile (except user ID).
- ▶ Users may belong to multiple groups.
- ▶ User membership can also be managed externally by using the LDAP Directory Management Tool (DMT).

#### Users

In the Manage Users window (see Figure 3-24) you can do the following:

- ▶ Create a new user (the window has the same look as in self registration).

- ▶ Edit a user profile.
- ▶ Delete a user.
- ▶ Show an ID.
- ▶ Search for users, having a list of all, list based on name (not ID) or the search can be restricted to a particular group.



Figure 3-24 Adding a user

The GUI to do this task is easy and simple. In just two steps you can create a user, and later sign to a group.

Figure 3-25 on page 95 illustrates the window to change user information in the Manage User tab.

Portal Administration

Portlets | Portal Settings | Users and Groups | Security

Manage Users | Manage User Groups

Change user information

OK |  Cancel

User ID: daniel

Password:

Confirm Password:

\* First Name:

\* Last Name:

Email:

Preferred language:

Interests:

\*Required Field

OK |  Cancel

Figure 3-25 User details

## Groups

In Manage Groups you no longer have to go to LDAP and you can manage groups and group memberships from within the portal.

Groups can contain groups and this can be managed in the same administration window. Even though you can manage users and groups from within the portal, you can Import an LDIF file or manage users and groups by using the LDAP Directory Management Tools.

This portlet provides you with tools to help you search and be able to assign users to your groups. Figure 3-26 on page 96 shown the window to add and delete groups as well as manage group membership.



Figure 3-26 Add groups window

**Note:** When the users register themselves, the administrator has to assign them to a group. If you do not do this, you will not see the users in the Manage Users tab. Go to Membership and assign them to groups there.

Figure 3-27 illustrates how to assign users to groups.

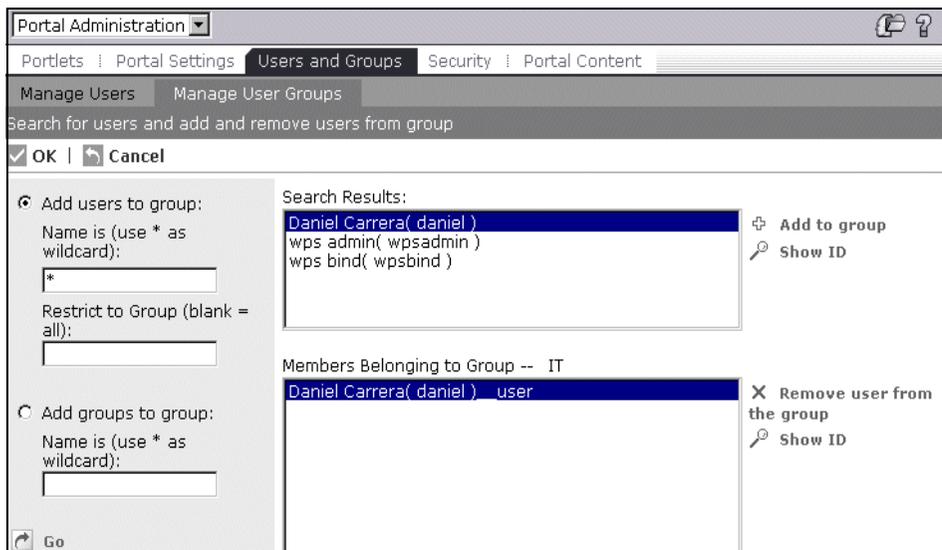


Figure 3-27 Assign users to groups

### 3.2.4 Security

In the Access Control List tab we are able to search for users or groups, choose an object, select a type, search on a name or date, and choose from a complete list.

Objects can be:

- ▶ User groups
- ▶ Pages
- ▶ Page groups
- ▶ Web modules
- ▶ Portlets
- ▶ Resource type permissions
- ▶ External access control
- ▶ Portals

Actions can be:

- ▶ View - allows the viewing of a resource.
- ▶ Edit - allows users to personalize resources (implies View).
- ▶ Manage - allows the editing and deleting of resources for all users (implies View and Edit).
- ▶ Delegate - allows the assigning of access permissions for others (implies no other rights).
- ▶ Create - allows the creating of new instance of a resource type. Creator gets Delegate and Manage permissions.

New permissions in WebSphere Portal Version 4.1 are as follows:

- ▶ Create:
  - Allows users to create a new resource.
  - Gets delegate and manage authority on that resource.
  - Applies to "resource type permissions" (that is, Users, Groups, Pages, Page Groups, Web modules, and Portlets).
- ▶ Delegate:
  - Allows users to create new permissions on a resource.
  - Can only delegate permissions they have on that resource.
  - Requires delegate permission on the subject.
  - Requires delegate permission on the resource object.
  - Implies no other permissions.

In this portlet you must give access to your pages and portlets to all your users or user groups so they can navigate through the pages you want them to see, so access control can be tuned to individual users or groups.

Portlet administrators no longer have all permissions on all resources unless they create a rule that allows them to do so.

Giving a user or group of users Manage authority on the object "Portal" effectively makes them administrators.

There are unlimited levels of delegation. Administrators can create subadministrators who can create sub-subadministrators, and so on.

Users with Edit permission can change resource settings, but only their view is changed. Users with manage permission can change resource settings such that all users with view access see the changes.

Access permission to a page does not automatically grant access to the portlets on that page. If this mismatch occurs (because of a change in portlet permissions, or because an admin set up the page without sufficient oversight) the portlet frame appears with a message You are not authorized to access this portlet. In all other cases, nothing is ever visible to you if you can't access it.

Delegate control of individual resources to external access control systems such as IBM Tivoli Access Manager or SiteMinder.

Figure 3-28 illustrates the window to assign permissions for groups, portlets, places, pages and Web modules for a group or user.

The screenshot shows the 'Portal Administration' window with the 'Security' tab selected. The main heading is 'Assign permissions for groups, portlets, places, pages, web modules for a group or user'. There are 'Save' and 'Reset' buttons. On the left, there are sections for 'Select a group or user to assign permissions' (with a list of users including Daniel Carrera (daniel)), 'Select the objects for the permissions' (set to 'pages'), and search filters. On the right, there is a table showing permissions for 'Daniel Carrera (daniel) permissions for pages'.

Name	Active				Minimum				
	View	Edit	Manage	Delegate	None	View	Edit	Manage	Delegate
Select All	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Administration			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Portal Content			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Portal Settings			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Portlets			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Security			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Users and Groups			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Home			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Welcome			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
RedTest Place			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
HOD			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

Figure 3-28 Access Management

## Vault Services

The Vault Service stores user IDs and passwords for various back-end resources. It is a portal service to assist portlets and portal users in managing multiple identities, perhaps among multiple Vault implementations.

A vault segment can contain one or more credential slots, which are containers where portlets store and retrieve a user's credentials. A credential slot contains only one credential and is linked to a resource in a vault implementation, the place where the credential secrets are actually stored.

A vault segment can be either administrator-managed or user-managed. Admin-managed could be corporate resources such as Lotus Notes databases or Intranet passwords.

WebSphere Portal provides one simple database vault implementation for user or admin-generated mappings to user IDs and passwords for other enterprise applications. It can also contain user-generated mappings to user IDs and passwords for non-enterprise applications (for example your Hotmail account in a Pop3 portlet).

**Note:** Portlets can (on behalf of a portal user) set and retrieve credentials in both types of segments. However, they can only create credential slots in user-managed segments.

The credential vault provided by WebSphere Portal distinguishes between three different types of credential slots:

- ▶ A system credential slot stores system credentials where the actual secret is shared among all users and portlets.
- ▶ A shared credential slot stores user credentials that are shared among the user's portlets.
- ▶ A portlet private slot stores user credentials that are not shared among portlets.

Many portlets need to access remote applications that require some form of user authentication. For accessing applications outside the portal's realm, portal server provides a credential vault service that portlets can use to store user IDs and passwords (or other credentials) for a user login to an application. Portlets can use these on behalf of the user to access remote systems. The credential vault supports either local database storage or the IBM Tivoli Access Manager for secure storage and retrieval of credentials.

Portlets obtain credentials by obtaining a `CredentialVaultPortletService` object and calling its `getCredential` method. With the returned credential, there are two options:

1. Use passwords or keys from a passive credential, passing them in application-specific calls. Portlets that use passive credentials need to extract the secret out of the credential and do all the authentication communication with the back-end application.
2. Call the `authenticate` method of an active credential. Active credential objects hide the credential's secret from the portlet, with no way to extract it out of the credential. Active credentials provide additional methods to perform the authentication.

The latter case allows portlets to trigger authentication to remote servers using basic authorization, SSL client authentication, digest authentication, or LTPA without knowing the credential values. Using active credentials means that the portal authenticates on behalf of the portlet, and the portlet can simply use the open connection. While this may not be possible for all cases, it is the preferred technique. For secure transmission of data, portlets can request a secure session (HTTPS) for accessing Web applications.

Portal server uses form-based authentication. Form-based authentication means that a user is prompted through an HTML form for the user ID and password for authentication when trying to access the portal. The portal requests that the application server validate the authentication information against a Lightweight Directory Access Protocol (LDAP) user registry.

WebSphere Application Server uses Lightweight Third Party Authentication (LTPA) as the authentication mechanism. A Common Object Request Broker Architecture (CORBA) credential is used to represent authenticated users and their group memberships. When a user tries to access a protected resource, the application server intercepts the request and redirects the request to the login form. This form posts the user ID and password to the portal that requests the application server to authenticate the user. If the user can be authenticated, a valid CORBA credential is created and an LTPA cookie is stored on the user's machine.

### 3.2.5 Portal Content

WebSphere Portal includes a content organizer portlet that enables portal users to contribute and share documents. The content organizer portlet provides a workspace for storing, navigation, viewing, and searching portal documents and other content. The organizer is preconfigured to work with files and Rich Site Summary (RSS) formats. Additional content types, formats, and back-end systems can be integrated easily.

The content organizer maintains properties and attributes of content, which can be searched by the portal's built-in search service.

The content model used by the organizer is a lightweight, open, extensible content model based upon the WebSphere Personalization resource engine. Third-party Web content management systems can also be integrated.

The purpose of this portlet is to provide a basic portal (enable version) with small content management capabilities.

We will highlight the Portal Content Organizer capabilities here. It is possible to upload content from both a file system and a Web site into Portal Content Organizer resource collections, and annotate and bookmark the content.

First of all, you will need to have users and groups tree to assign different permissions to folders. For example, if you want to create one to understand its capabilities, do the following:

1. Log in as wpsadmin and open the Portal Administration page group.
2. Create groups called xxxadmins and xxxusers.
3. Make the wpsadmins group a member of the xxxadmins group.
4. Add your non-administrative groups as members of the xxxusers group.

It is also possible to change the content format in Portal Content Organizer. For example:

1. Open the **Portal Content -> Manage Content Organizer** page.
2. Choose **Manage content formats**.
3. Choose **Document**, and then click **Modify selected content format**.
4. In the Show in details field, check the date box and save your change.

Figure 3-29 on page 102 illustrates the Manage Content Organizer portlet in WebSphere Portal.

Manage Content Organizer    Content Organizer

Manage content formats > Modify content format

Save | Cancel

Index content

Tags	Display name	Access method	Show in details	Show in explorer	Index Text
Title	<input type="text" value="Title"/>	<input type="text" value="getTitle"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Creator	<input type="text" value="Author"/>	<input type="text" value="getCREATOR"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subject	<input type="text" value="Subject"/>	<input type="text" value="getSUBJECT"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Description	<input type="text" value="Description"/>	<input type="text" value="getDESCRIPTIC"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Publisher	<input type="text" value="Publisher"/>	<input type="text" value="getPUBLISHER"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contributor	<input type="text" value="Contributor"/>	<input type="text" value="getCONTRIBUTOR"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date	<input type="text" value="Date"/>	<input type="text" value="getDCDATE"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	<input type="text" value="Type"/>	<input type="text" value="getDCTYPE"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Format	<input type="text" value="Format"/>	<input type="text" value="getFORMAT"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identifier	<input type="text" value="Identifier"/>	<input type="text" value="getIDENTIFIER"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Source	<input type="text" value="Source"/>	<input type="text" value="getSOURCE"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Language	<input type="text" value="Language"/>	<input type="text" value="getLANGUAGE"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relation	<input type="text" value="Relation"/>	<input type="text" value="getRELATION"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage	<input type="text" value="Coverage"/>	<input type="text" value="getCOVERAGE"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 3-29 Changing content format

Then you have to prepare the categories, as follows:

1. Open the **Portal Content -> Manage Content Organizer** page.
2. Choose **Define content categories**.
3. Add categories.

Figure 3-30 on page 103 illustrates the Manage Content Organizer portlet to define content categories.

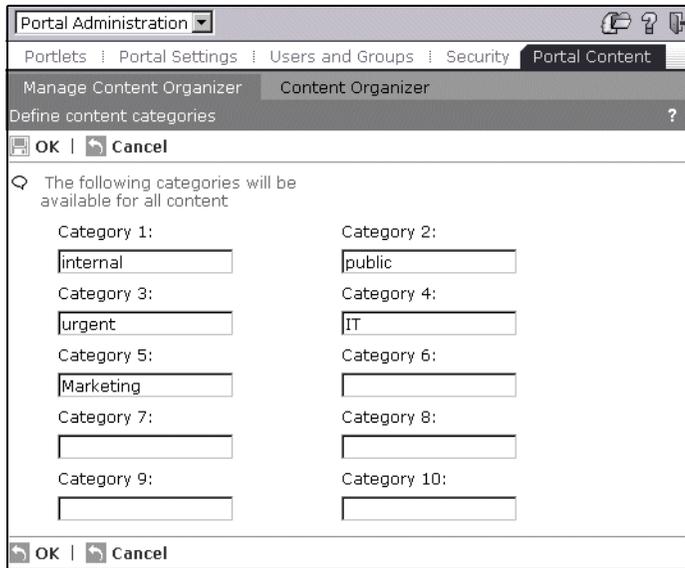


Figure 3-30 Adding content categories

Register all of the resource collections. Figure 3-31 shows the window to register resource collections.

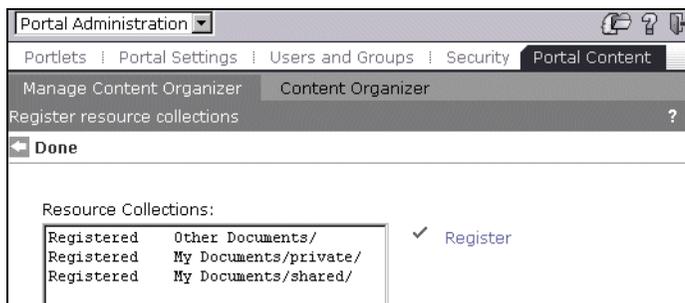


Figure 3-31 Registering resource collections

You can add the Content Organizer portlet to a page by opening the Work with Pages page group. For example, select Home place and Welcome page to add this portlet to the welcome page.

On the Content Organizer portlet, click the **Upload content** tab and choose **Browse**. Browse any folder containing documents. Choose files and make some, but not all, of the documents shared and then click **Upload** as illustrated in Figure 3-32 on page 104.

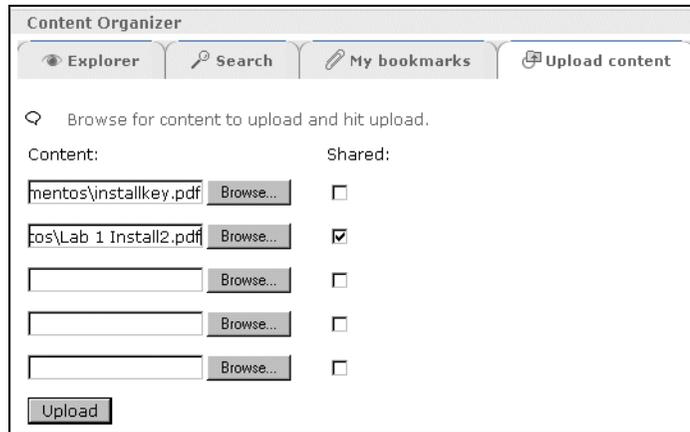


Figure 3-32 Upload content

Viewing and annotating content can be done as follows:

1. Click the **Explorer** tab and open the shared and private folders.
2. Click the radio button next to a PDF file, and then choose **View**.
3. Choose **Click here to download** and save the file to your local disk using a filename that you will remember.
4. When the download is complete, click **Open**.
5. Review the file, and then choose **File -> Exit**.
6. Use the **Close** button to close the Explorer view.
7. If you have the Microsoft Word Viewer or Microsoft Word on your machine, use the same procedure to open the Word file.
8. To add annotations to that Word file, choose **Annotate**.
9. Add a Document name, Description, Type, Subject, Title, and Author.
10. Click the **Auditing** category, and then click **OK**.

The annotations could be used for categorizing your content. Figure 3-33 on page 105 shows a content file list.

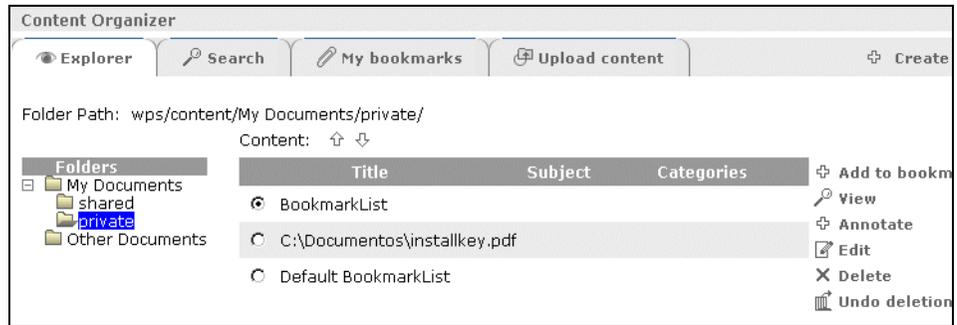


Figure 3-33 Content file list

Figure 3-34 illustrates the annotation window.

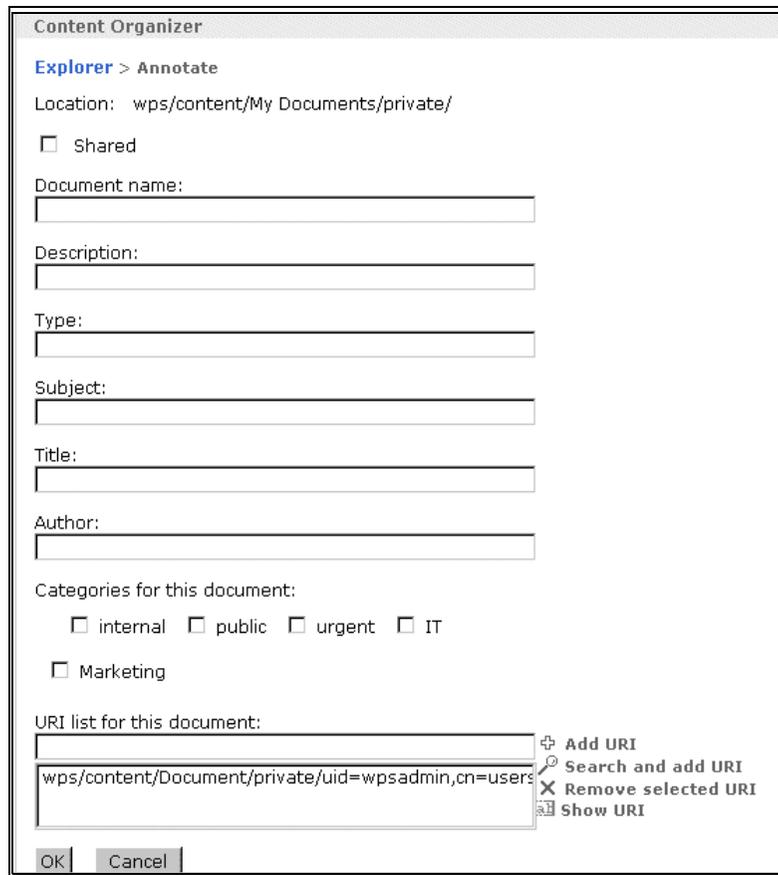


Figure 3-34 Annotation window

To bookmark content, bookmark files by selecting the file and clicking **Add to bookmarks**. You can also click the **My bookmarks** tab to review your bookmarks.

**Note:** If you log off and then log in as a different user, you will see that the PCO changes were made only for this user.

How to use Web content to create a new document:

1. Copy some files in an area that will be served by the Web server, for example the IBM HTTP Server htdocs directory.
2. On the Content Organizer portlet, click **Create new document**.
3. Complete the Document name, Description, Type, Subject, Title, and Author fields.
4. Choose a category and in the URI list for this document field, type `http://<your_server_name>/foldername` and then click **Add URI**.
5. Click **OK**.
6. Select the radio button to the left of your new entry in the Explorer.
7. Click **View**.
8. Select `http://<your_server_name>/foldername` and then click **View**.
9. Choose **Click here to download**. Portal Content Organizer launches a browser window showing the folder name home page.
10. Bookmark the home page by selecting the radio button to the left of the entry in the Explorer and then clicking **Add to bookmarks**.

Figure 3-35 on page 107 shows the window to create a new document.

Content Organizer

[Search](#) > Create new document

Location: wps/content/My Documents/private/

Shared

Document name:

Description:

Type:

Subject:

Title:

Author:

Categories for this document:

internal  public  urgent  IT

Marketing

URI list for this document:

 Add URI  
 Search and add URI  
 Remove selected URI  
 Show URI

Figure 3-35 Create a new document





## Using portlets

In this chapter we describe some of the most common portlets already available for WebSphere Portal V4.1. Some of these portlets require that you install one or more external software or server components. This chapter does not include information about these components; however, it provides information related to additional online documentation.

## 4.1 What is a portlet?

Portlets are reusable components that provide access to enterprise applications, Web-based content, and other resources. For example, Web pages, Web services, applications, and syndicated content feeds can be accessed through these portlets.

Any particular portlet is developed, deployed, managed, and displayed independent of other portlets. Administrators and end users create personalized portal pages by choosing and arranging portlets, resulting in web pages.

WebSphere Portal already includes a rich set of standard portlets for displaying syndicated content, performing XML transformation, accessing existing web pages, Lotus Notes and Microsoft Exchange productivity applications, Sametime instant messaging and Lotus QuickPlace team rooms.

### 4.1.1 IBM portlets

In this section we list some of the portlets that are available from IBM. For example:

- ▶ Banner Ad displays a predefined banner advertisement.
- ▶ Bookmarks displays bookmarks for visiting commonly visited Web sites.
- ▶ Clipping allows the administrator to clip content, images, tables, forms, table cells, and more from Web sites.
- ▶ Comma Separated File displays data from a file in a table.
- ▶ EIP Search presents an interface to search capabilities provided by a local or remote Enterprise Information Portal server.
- ▶ File Viewer browses an Excel, PowerPoint, Microsoft Word, PDF, or RTF file.
- ▶ File Download allows a user to connect to an FTP or HTTP file servers, and download files.
- ▶ Host On-Demand establishes Host On-Demand sessions in a portlet.
- ▶ JSP displays a Java Server Pages fragment.
- ▶ Multimedia Player includes QuickTime, Crescendo Player, Flash Player, Real Player and Media Player portlets.
- ▶ SQL portlet displays the results of SQL queries and displays a list of bookmarks for saved queries.
- ▶ Image Viewer displays an image from a URL. It allows the user to select a URL and modify the zoom level.

- ▶ LDAP Search allows users to search any LDAP directory that uses the inetOrgPerson schema.
- ▶ Lotus iNotes opens a user's calendar, address book, e-mail, or to-do list.
- ▶ Lotus Notes Mail (IIOP) provides access to a user's Lotus Notes mail database for devices that support HTML or WML browsing.
- ▶ Lotus QuickPlace launches Lotus QuickPlace.
- ▶ Lotus Sametime launches Lotus Sametime in a browser.
- ▶ Microsoft Exchange 2000 provides access to a user's Exchange e-mail.
- ▶ Microsoft Exchange 5.5 connects to an Exchange 5.5 server by interfacing with ASP files installed on the Exchange server.
- ▶ Moreover News allows users to view many news headlines compiled by Moreover, such as consumer health news, travel news, etc.
- ▶ POP3 and IMAP receive and send Web-based e-mail.
- ▶ Reminders lets users save and display short text messages.
- ▶ Web Search lets the user search the web using popular search engines.
- ▶ World Clock allows users to view current local times around the world.
- ▶ XSL portlet displays the result of an XML/XSL transformation.

### 4.1.2 Partner portlets

An extensive third-party partner program makes many more portlets available from the portlet catalog download site. The following list includes a sampling of portlets available from IBM's Business Partners:

- ▶ Atomica answers on demand, accesses Atomica's comprehensive set of general and industry-specific references.
- ▶ Crystal Decisions provides Crystal portfolio of managed reports.
- ▶ Divine portlets for content contribution, approval delivery, and management.
- ▶ Factiva Search and Track Modules with a free 30-day preview.
- ▶ FatWire Content management portlets.
- ▶ Hoovers Business news, industry news, SEC filings, travel guides, and search portlets for Hoover's online information.
- ▶ Inktomi portlet for Inktomi's search engine, with a free 30-day trial available.
- ▶ Kivera, an evaluation portlet that demonstrates location-based services, including mapping, driving directions and business listing searches.
- ▶ OnePage uses the Content Connect Studio Application to build portlets from information in HTML pages, databases, applications, EJBs, and XML.

- ▶ Presence Online, the Aprtix portlet client that displays the Aprtix Web page within a portlet window.
- ▶ Screaming Media provides breaking news headlines.
- ▶ Stellent portlets to submit, manage, search and approve business content.
- ▶ YellowBrix Business intelligence, stock prices, news, and company profiles, plus horoscopes and weather forecasts.

Portlet applications are more than simple views of existing Web content. A portlet is a complete application, following a standard model-view-controller design. Portlets have multiple states and view modes, plus event and messaging capabilities.

Portlets run inside the portlet container of a portal server, similar to a servlet running on an application server. The portlet container provides a runtime environment in which portlets are instantiated, used, and finally destroyed. Portlets rely on the portal infrastructure to access user profile information, participate in window and action events, communicate with other portlets, access remote content, look up credentials, and store persistent data. Generally, portlets are administered more dynamically than servlets. For example, portlet applications consisting of several portlets can be installed or removed while the server is running. The settings and access rights of a portlet can be changed by an administrator while the portal is running, even in a production environment.

### 4.1.3 Portlet modes

Portlet modes allow a portlet to display a different user interface, depending on the task required of the portlet. A portlet has several modes of display, which can be invoked by icons on the portlet title bar: View, Help, Edit and Configure. A portlet is initially displayed in its view mode. As the user interacts with the portlet, it may display a sequence of view states, such as forms and responses, error messages, and other application-specific states. Help mode is used to provide user assistance about the portlet. Edit mode provides a page for users to change the portlet settings. Users must be logged into the portal to access edit mode. If Configure mode is supported by a portlet, it provides a page for portal administrators to configure portlet settings that are shared by all users. Each portlet mode can be displayed in normal, maximized, or minimize states. When a portlet is maximized, it is displayed in the entire body of the portal page, replacing the view of other portlets. When a portlet is minimized, only the portlet title bar is displayed on the portal page.

## 4.1.4 Portlet API

Portlets are a special subclass of `HttpServlet`, with properties that allow them to easily plug into and run in the portal server. Portlets are assembled into a larger portal page, with multiple occurrences of the same portlet displaying different data for each user. Portlets rely on the portal infrastructure to access user profile information, participate in window and action events, communicate with other portlets, access remote content, look up credentials, and store persistent data. The portlet API provides standard interfaces for these functions.

The portlet API defines a common base class and interfaces for portlets, in order to cleanly separate the portlet from the portal infrastructure. In most respects, the portlet API is an extension of the servlet API, except that it restricts certain functions to a subset that makes sense for portlets running in the context of a portal. For example, unlike servlets, portlets may not send errors or redirects as a response. This is only be done by the portal itself, which controls the overall response page.

The markup fragments that portlets produce may contain links, actions and other content. The Portlet API defines URL rewriting methods that allow portlets to transparently create links, without needing to know how URLs are structured in the particular portal.

## 4.1.5 Portlet performance

Since portlets are servlets, similar reentrancy and performance considerations apply to both. A single portlet instance (that is, a single instance of the portlet's Java class) is shared among all requesters. There are a limited number of threads that process portlets and servlets, so it is important for each portlet to do its job as quickly as possible so that response time for the whole page is optimized.

Just as with servlet programming, you should consider optimizations such as limiting the use of the synchronized methods, limiting the use of expensive string operations, avoiding long-running loops, and minimizing the number of objects that are created. Another optimization is to use JavaServer Pages for rendering the portlet's views; in general, views created with JavaServer Pages are faster than views created with XSL.

Usually, many portlets are invoked in the course of handling a single request, each one appending its content into the overall page. Some portlets can be rendered in parallel, so that the portal server assembles all the markup fragments when all the portlets finish or time out. This improves the performance of portlets that access remote data by HTTP or SOAP requests. However, not all portlets are thread-safe; for example, portlets that access protected resources or

that use Enterprise Java Beans may not be run in parallel. The portlet deployment descriptor indicates whether the portlet is considered thread-safe; portlets that are not thread-safe will be rendered sequentially.

Portlet output can also be cached. The caching policies are configured in the portlet deployment descriptor, including an expiration time and whether or not the portlet markup can be shared among users or is user-specific.

### 4.1.6 Portlet communications

The portal server provides a mechanism for portlets to communicate with each other, exchanging data or other messages. In a production portal, portlet communication could be used to copy common data between portlets. This saves redundant typing by the user and makes the portal easier to use. To do this, the transactions portlet needs to obtain the corresponding account information when it displays the transaction details. This is accomplished by communication between the two portlets, using portlet actions and portlet messages.

Using the event and message feature helps unify portlet applications that access different back-end applications. IBM provides portlets that enable automatic data exchange based on user interaction. These are called click-to-action portlets.

The objective of the click-to-action portlets is to increase the productivity of portal users working with multiple portlets by easily enabling them to send information from one portlet to another. Click-to-action automatically matches the portlet information sources and possible actions based on their data type compatibility. Click-to-action does not rely on drag and drop or other non-standard browser features. A unique advantage of click-to-action is that it is designed to work in different browsers, making it more accessible to users.

### 4.1.7 Tools

Portlets can be grouped together in a portlet application. Portlet applications are distributed and deployed using Web archive files (WAR). There are portlet-specific extensions to the standard Web application deployment descriptor. WebSphere Studio Application Developer provides an excellent development, test, and debug environment for portlet applications. You can implement the Java classes for portlet classes, and also test and debug the Java code. Studio also provides tools for creating JavaServer Pages, HTML pages, images, and other related portal resources. The portal toolkit provides plug-ins to help build the portlet deployment descriptor and package it into a WAR file, and then easily deploy it to the runtime portal server.

## 4.2 Host On-Demand portlet

The Host On-Demand (HOD) portlet allows you to connect to host (mainframe) applications. In this scenario you are not required to install any host access client software in your workstation.

### Environment and requirements

To install this portlet you will need:

- ▶ A WebSphere Portal V4.1.2 environment up and running.
- ▶ A HOD V6.0.2 up and running
- ▶ At least one session configured to connect to a host application.
- ▶ HOD portlet.

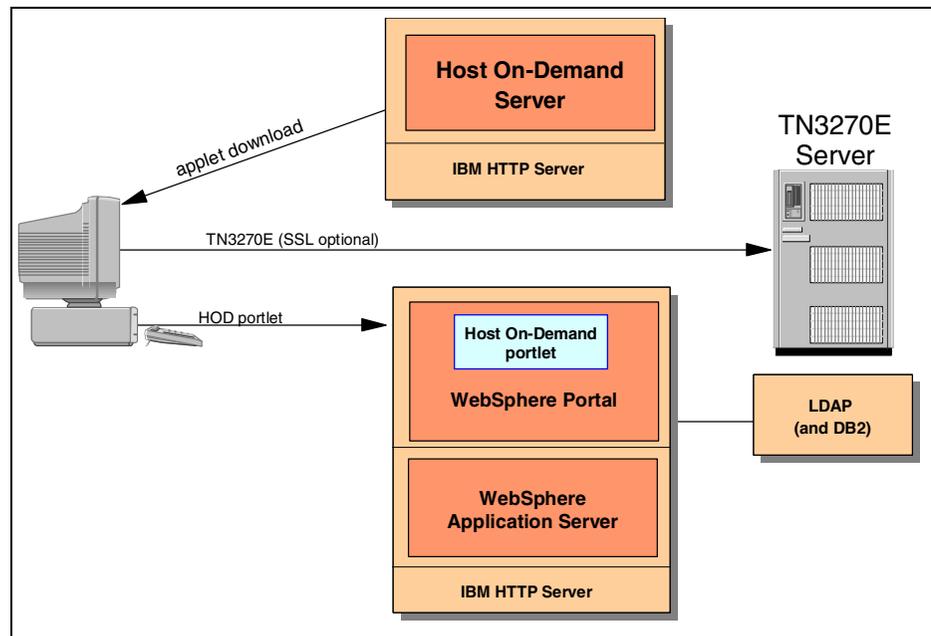


Figure 4-1 Host On-Demand portlet scenario

As shown in Figure 4-1, the HOD portlet works this way:

1. First the user logs in to the portal and receives the Host On-Demand portlet.
2. HOD Java classes are downloaded.
3. Then, a connection to a HOD server must be selected.
4. The TN3270E connection is established directly to the target TN3270E server.

The following issues must be considered:

- ▶ The Host On-Demand server requires a Web server, installed on the same machine, to provide the applet download to the client.
- ▶ The HOD Server provides functions to send the applet to the client, and manage users and groups, as well as keep the environment up to date.
- ▶ Using the Cached Client, the components will be stored on the user's browser, avoiding another download in the successive use. This is the Host On-Demand recommended method because startup is faster and it makes the best use of the network. However, when implementing a Portal Server solution where clients can possibly use different versions of Host On-Demand to access multiple suppliers, this can be a problem because multiple versions of the client cached are not supported by Host On-Demand.

**Important:** After the download of the cached client, users must restart the browser to complete the installation process.

The download client feature does not require a browser restart to use the function stored, like the cached client does, but in another access to the server, the components selected in the wizard will be downloaded again.

**Important:** Both clients work fine, but if you have Cached Client you will not be able to use download client in the same browser.

If you have clients outside the firewall connecting to any telnet server or Host On-Demand redirector inside your firewall, you should configure SSL connections to ensure your data is secure.

For more information about HOD portlet refer to Integrating Host Applications with e-business Portals, REDP0191, found at <http://www.redbooks.ibm.com/redpapers/pdfs/redp0191.pdf>

## Generic parameters

Portlet installation is the same as any other portlet. That is, click **Portal administration -> Portlets -> Install portlets**. Select the WAR file and install it. Then, publish the portlet and give access to your users. See "Example of creating a place" on page 76 for more details.

To set up the portlet in WebSphere Portal, click **Portal Administration -> Portlets -> Portlet Management** and choose the HOD portlet. Modify the `hodCodeBase` parameter and point it to your HOD installation. If you installed it using the default parameters, `hodCodeBase` should be `http://hostname/hod`.

Be sure that all the machines in the environment have a correct network configuration and all of them are in a DNS. In some cases it would be a good practice to have all of them in the hosts file.

WebSphere Portal

Administración del portal

Portlets | Valores del portal | Usuarios y grupos | Seguridad | Contenido del po

Instalar portlets | Gestionar aplicaciones de portlet | Gestionar portlets | Recc

Configurar parámetros y títulos

Guardar | Cerrar

Nombre de portlet: HOD 3270 Download

Editar parámetros:

Parámetro	Valor	
<input type="checkbox"/> hodCodeBase	http://9.24.105.112/hod	X Suprimir
<input type="text"/>	<input type="text"/>	+ Añadir

Editar títulos específicos del entorno local:

Entorno local	Título	
<input type="radio"/> Inglés	HOD 3270 Download	Establec

Guardar | Cerrar

Figure 4-2 HOD portlet generic parameter

## Pre-configuration steps

Once the portlet is in a page and users have access to it, they will see a window similar to one shown in Figure 4-3 on page 118.

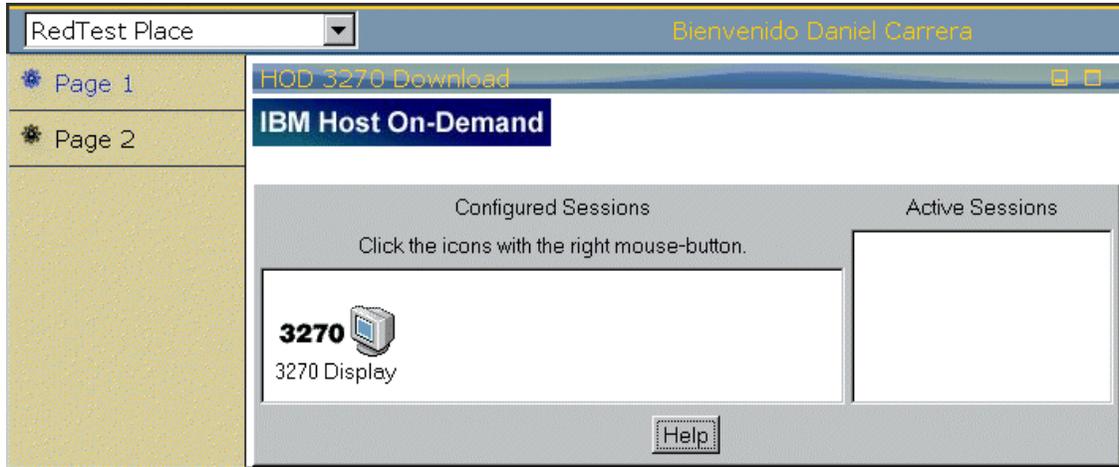


Figure 4-3 Initial HOD portlet window

Right-click the 3270 Display icon to get the parameters window or to start the session.

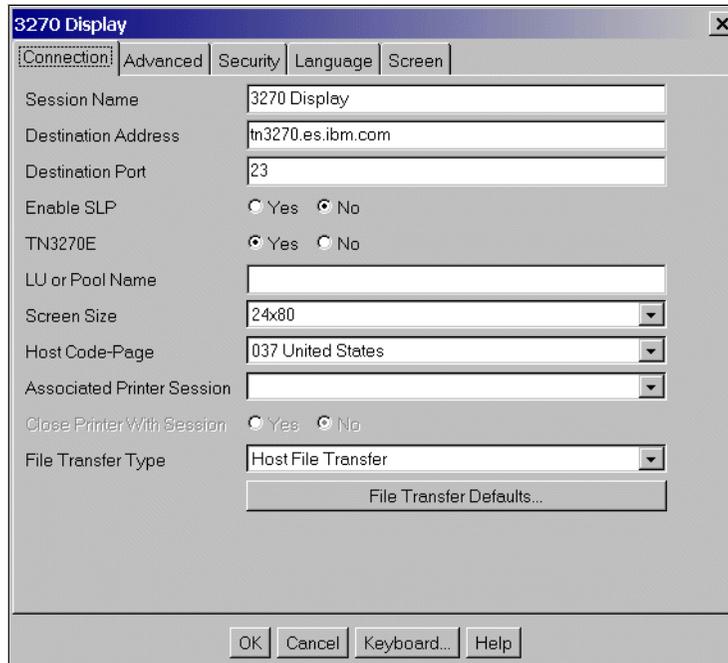


Figure 4-4 HOD session parameters

Once you have a valid host, the portlet will work as a normal host client.

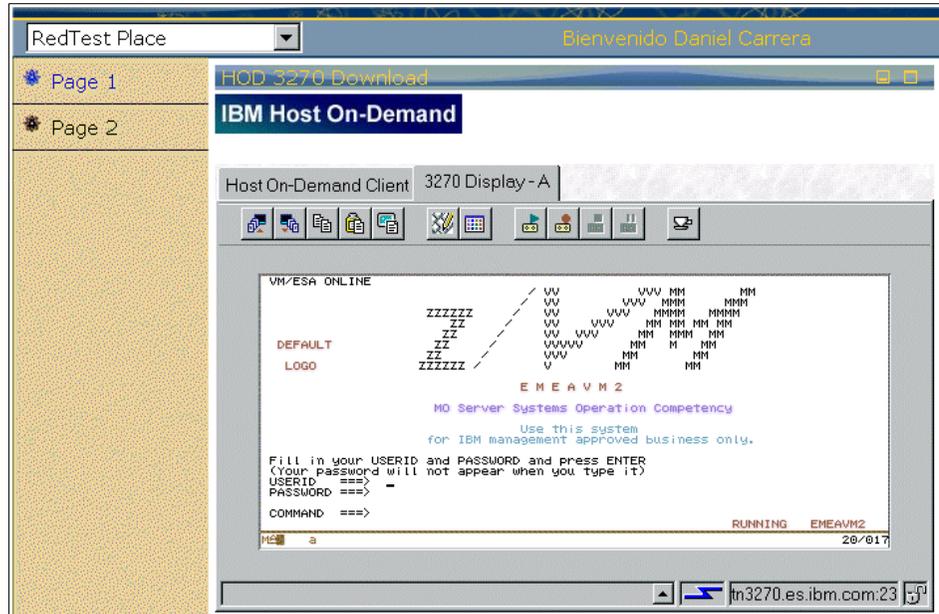


Figure 4-5 HOD portlet connect to a Host application

## 4.3 Sametime portlet

The Sametime portlet allows you to use Lotus Sametime without the Sametime client and use all the features, chat, video, audio, meetings, etc.

### Environment and requirements

The Sametime portlet is installed by default in WebSphere Portal V4.1.2. In addition, you will need your portal environment and a Sametime server.

The environment used in this scenario is shown in Figure 4-6 on page 120.

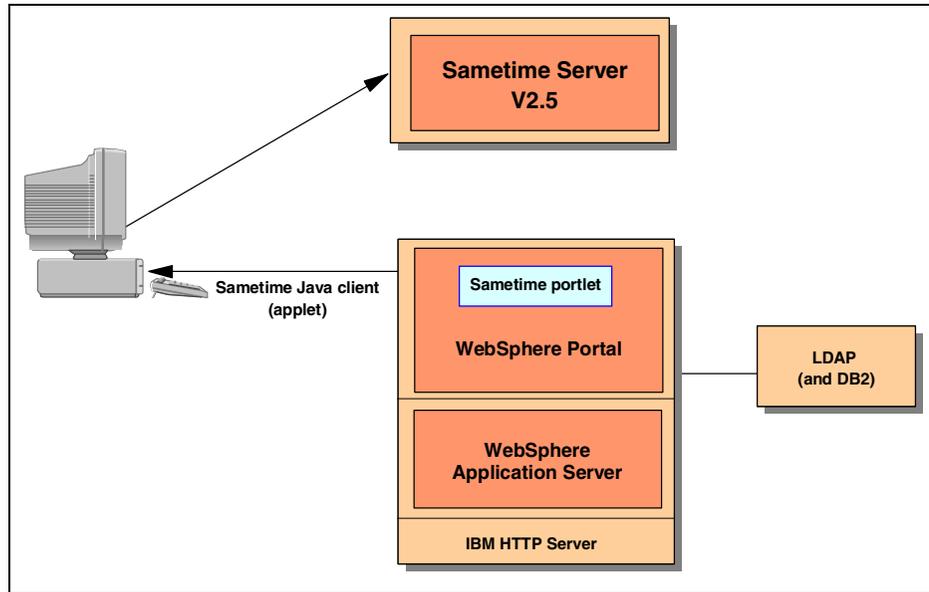


Figure 4-6 Sametime portlet scenario

As illustrated in Figure 4-6 the Sametime portlet on the WebSphere Portal launches the Sametime Java client (applet) on the client desktop, which then communicates with the Sametime Server.

In this scenario, using the WebSphere Portal Enable offering, this portlet is really a simple launcher that automatically downloads the Sametime Java client and it is not tightly integrated into the portal.

**Note:** If you require a tighter Sametime integration with WebSphere Portal, you should upgrade to the WebSphere Portal Extend offering.

### Generic parameters

The user connects to the Portal home and navigates to the Sametime portlet. An administrator can set the Sametime server parameters, or if the user has the appropriate permissions, he will be able to do it too. Figure 4-7 on page 121 illustrates the Sametime connection configuration.

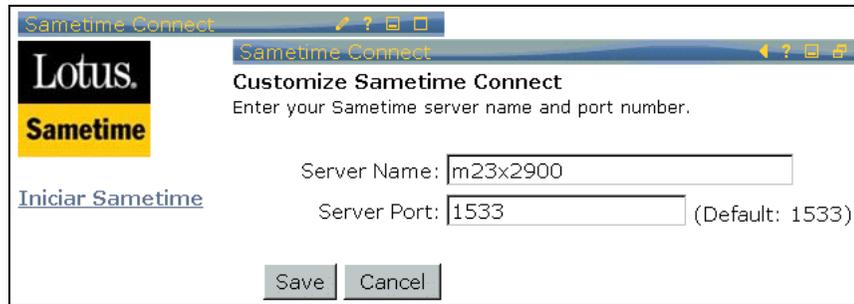


Figure 4-7 Sametime configuration

Once the Sametime Server is set, the user must click in the portlet, and a new browser window will display. This one is the Sametime Java client application.

The user will be asked for his/her user ID and password to log in to the server. Figure 4-8 illustrates a connection to the Sametime server.

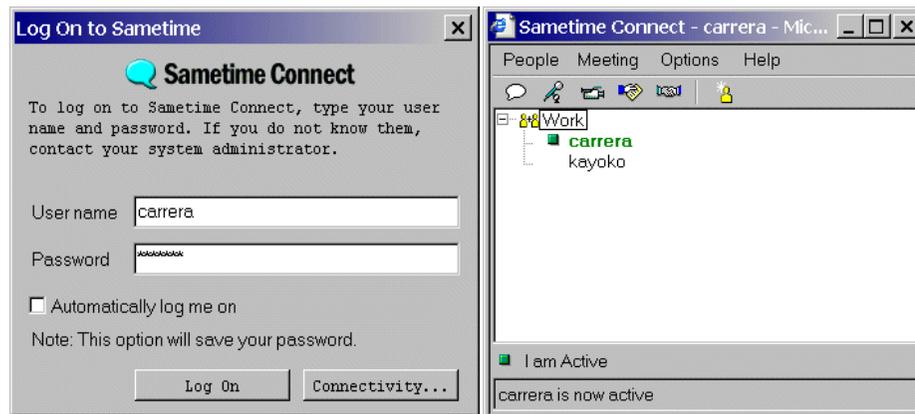


Figure 4-8 Connection to a Sametime server

The Web client works as the Windows client.

## Additional documentation

For additional information on Sametime and all the enhancements of the product, visit:

- ▶ Official Sametime home:  
<http://www.lotus.com/products/lotussametime.nsf/wdocs/homepage>
- ▶ Sametime Developers:  
<http://www.lotus.com/developers/sametime.nsf/wdocs/home>

- ▶ Sametime in Lotus Developer Domain:  
<http://www-10.lotus.com/ldd/products.nsf/products/sametime>
- ▶ Sametime 2.5 Demo System:  
<http://stdemo1.dfw.ibm.com/>
- ▶ Related Redbooks  
<http://publib-b.boulder.ibm.com/cgi-bin/searchsite.cgi?query=sametime>

## 4.4 QuickPlace portlet

IBM Lotus QuickPlace is the self-service Web tool for team collaboration. It provides you a secure and central online workspace structured for participation. WebSphere Portal provides two portlets for QuickPlace to have team collaboration within a portal.

Basically, this portlet is similar to the Sametime portlet in that it simply launches the identified QuickPlace in a separate window that is outside the context of the portal.

**Note:** If you require a tighter QuickPlace integration with WebSphere Portal, you should upgrade to the WebSphere Portal Extend offering.

### 4.4.1 QuickPlace portlet

The configuration for this portlet is quite simple. Select a name to identify the QuickPlace site and type the URI for that site. The QuickPlace.portlet is launched into a separate browser window. As shown in Figure 4-9 on page 123, the user can define up to six QuickPlace references.

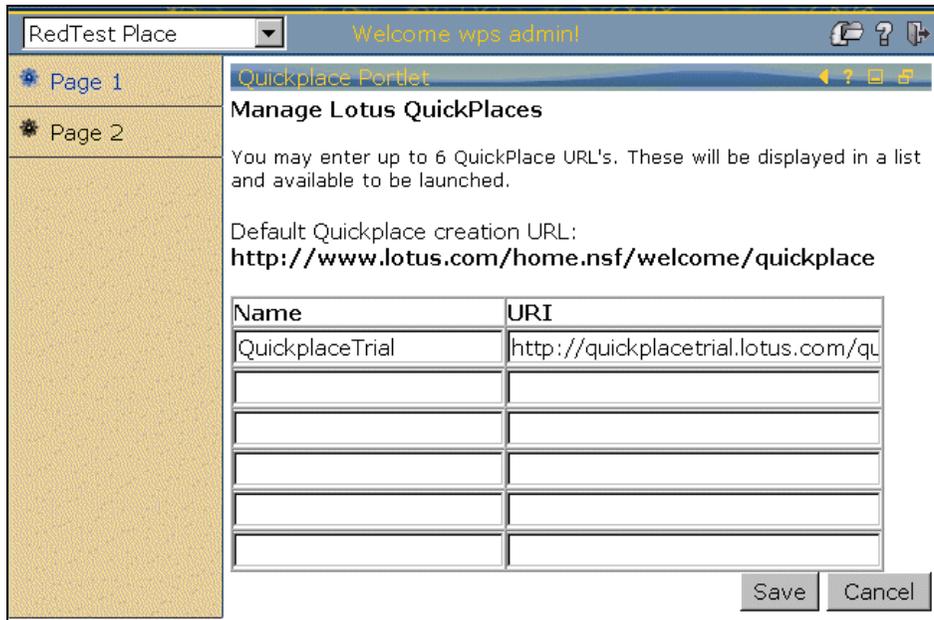


Figure 4-9 QuickPlace portlet configuration

Once you complete this step, select the QuickPlace you want to browse and a new browser window will come up with the selected site. Figure 4-10 shows the window to select a QuickPlace.

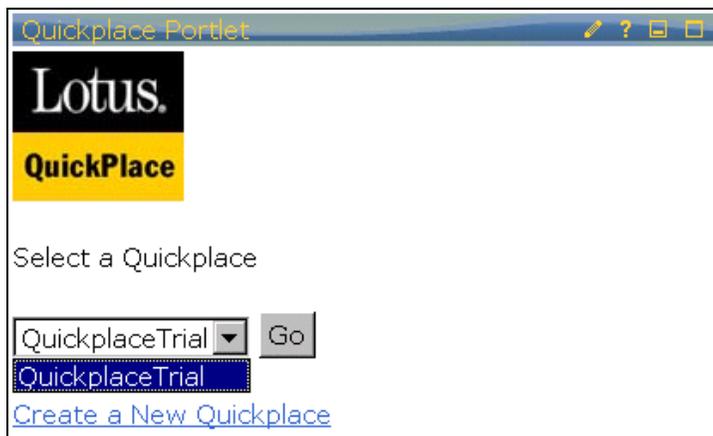


Figure 4-10 QuickPlace portlet

## 4.5 iNotes portlets

iNotes Web Access is a next-generation Web client that allows you to utilize the most popular Domino functionality with a Web browser. You can work on your mail, use your calendar for personal and group scheduling, and do some advanced task management. You have access to your contact information and a journal-like notebook. If your organization uses Notes clients to access mail and other services of Domino, you will still find iNotes Web Access useful. All the functionality of iNotes Web Access is available for you online as well as offline.

The iNotes portlets are Internet Explorer iframe wrappers around the existing iNotes Web GUI. The portlets give you options to wrap specific parts of the GUI such as the Calendar, to Do, and Mail. Other than the iframe technology, these portlets do not add any extra capabilities over the base iNotes.

**Note:** The iNotes portlets are not supported on any browser other than Internet Explorer, due to the use of iframes.

### Environment and requirements

To use this portlet, you will need a Domino Server V5.0.8 ready to use the iNotes templates.

To do this, your Domino administrator must issue some commands, which can be found in the readme.pdf file located on the Domino CD.

Administrator commands for iNotes on the server console are shown in Table 4-1.

Table 4-1 Administrator commands

Command	
<code>load compact -a mail\*</code>	Compacts and archive databases in the mail directory
<code>load convert mail\* * iNotes5</code>	Converts all databases in the mail directory to the iNotes5 template
<code>load upda11</code>	Rebuilds views in all the databases on this server

The environment used in this scenario is illustrated in Figure 4-11 on page 125.

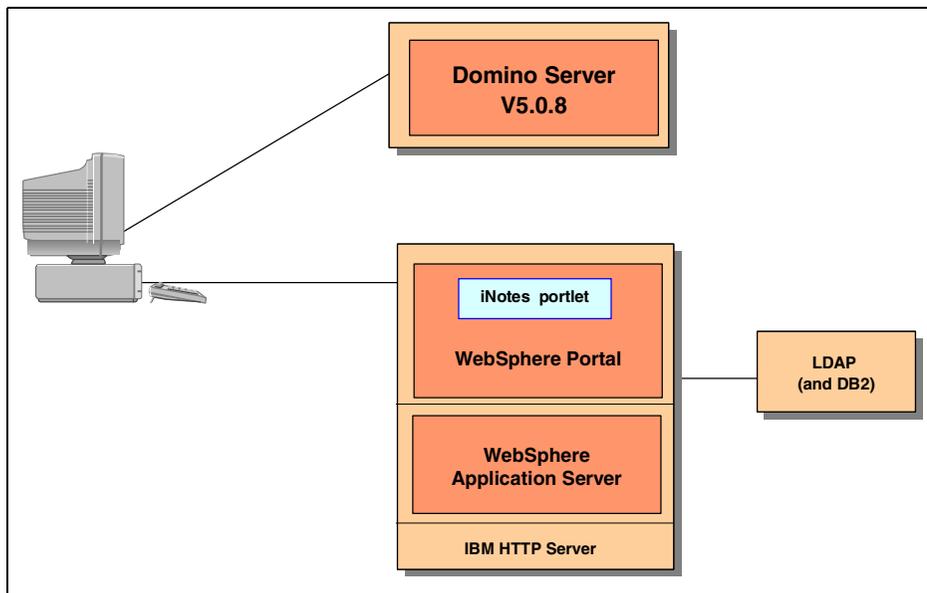


Figure 4-11 *iNotes portlets scenario*

It is recommended that you use Internet Explorer 5.5 or later because if you use this level of browser, once the portlet in the client has a connection with the Domino server, WebSphere Portal is not used as a bridge between the user working on his workstation and the server, so there is a direct communication and the performance is better.

### Generic parameters

Once the Domino Server is configured, each user needs to provide the connection parameters to use the portlet with his/her user, password and database name.

Figure 4-12 on page 126 illustrates the iNotes portlet parameters.

Figure 4-12 iNotes portlet parameters

If the server is properly connected, you can start to work with the different portlets. For further instructions on how to manage iNotes portlets, see the online help in each portlet, where each step is explained in some detail.

## iNotes Mail portlet

Using this portlet, you will be able to check your mail in the Domino Server. If you are familiar with the Notes client environment, you will see that is more or less the same thing.

Figure 4-13 shows the iNotes Mail portlet.

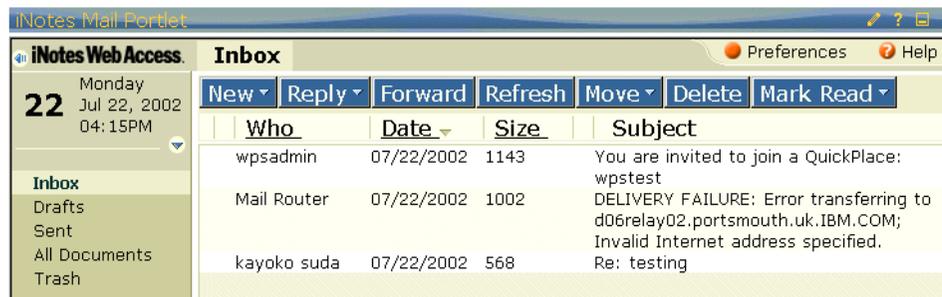


Figure 4-13 iNotes Mail portlet

To read a note, double-click the selected note and a new window will come up with the content and all the possible options to do with it: Reply, Forward, Move to another folder, Add sender to an address book, Print and Delete.

Click the **New** option to create new folders or send new mail. This window loads a graphic environment and you are able to send mail with rich text options, include attachments, change the priority, and create drafts.

Figure 4-14 illustrates how to send mail using the iNotes mail portlet.

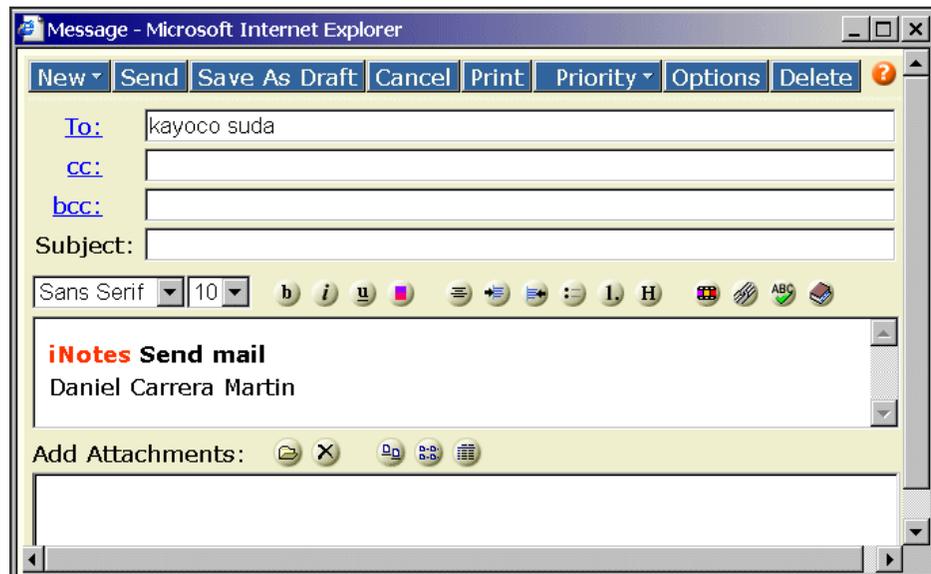


Figure 4-14 Send mail with iNotes mail portlet

### **iNotes calendar portlet**

With this portlet you can create new calendar events, meetings, etc., using a graphical GUI. The default view of the portlet is our own calendar in the current day.

Figure 4-15 on page 128 shows the iNotes calendar portlet.

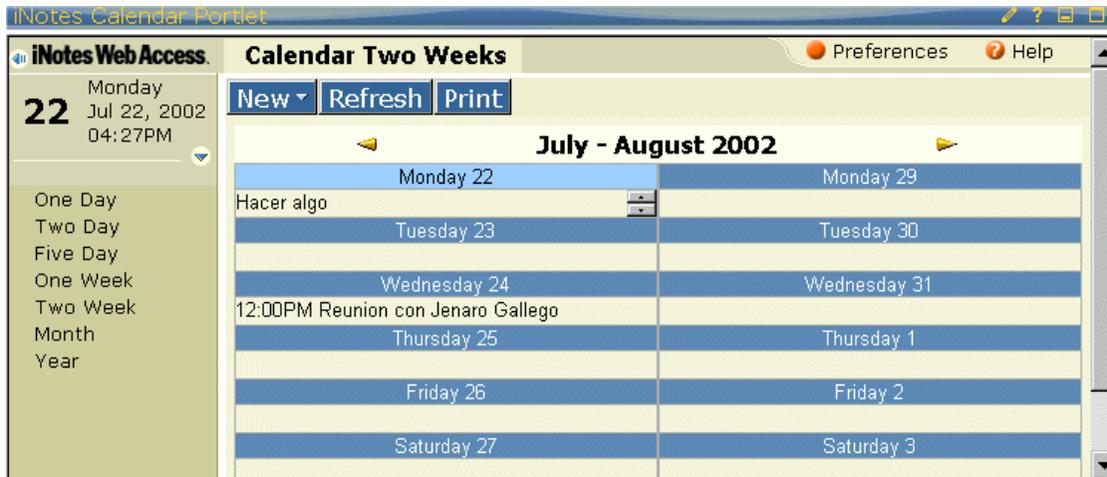


Figure 4-15 iNotes calendar portlet

You can include additional information and attachments in the new entry. A new window comes up with all the options available for the calendar entry creation, see Figure 4-16.

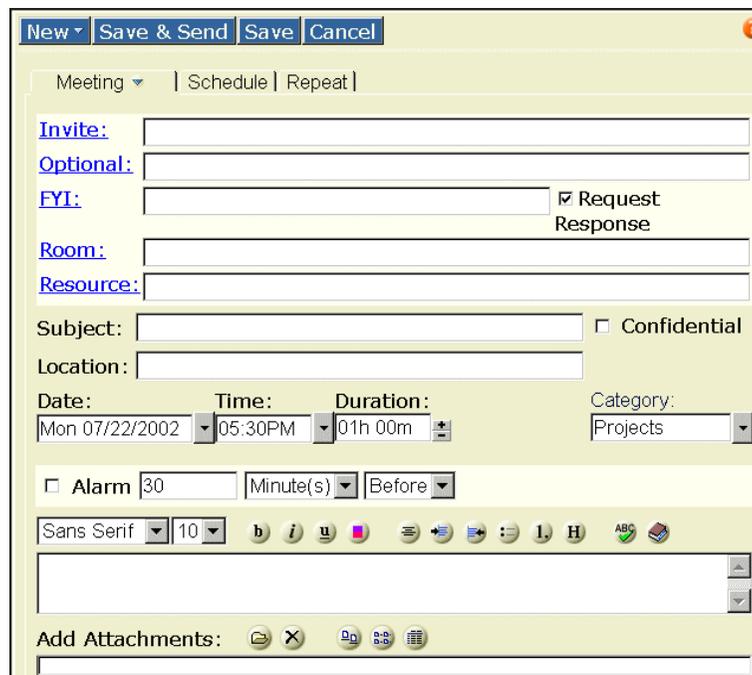


Figure 4-16 Create calendar entry

## iNotes contacts portlet

This portlet allows you to maintain the address book database (shown in Figure 4-17).



Figure 4-17 iNotes Contacts portlet

You can use this portlet or you can add the contact to your address book when you read the mail by clicking the **Add Sender...** button. A window asking for the contact info will appear to complete this task (see Figure 4-18).

The screenshot shows a "Create contact" window with a title bar containing "New", "Save & Close", "Save", and "Cancel" buttons. The form is organized into several sections. At the top, there are input fields for "Title", "First name", "Middle", "Last name", and "Suffix". Below this is a "Default E-mail" section with a dropdown menu set to "Work" and an adjacent text input field. The form is divided into three tabs: "Work", "Home", and "General". Under the "Work" tab, there are two columns of fields. The left column, titled "Phones:", includes "Work", "Work fax", "Pager", and "Assistant", each with a dropdown menu and a text input field. The right column, titled "Business:", includes "Job title:", "Company:", "Department:", and "Assistant:", each with a text input field. Below the phone fields is another section titled "E-mail and Web address:" with three rows: "Work", "Work 2", and "URL", each with a dropdown menu and a text input field. To the right of this section is the "Business address:" section, which includes "Street:", "City:", "State:", "Zip:", "Country/Region:", each with a text input field.

Figure 4-18 Create contact window

## iNotes To Do portlet

With this portlet we will be able to manage our To Do folder, creating new entries with details and attachments. There is also a view to see the To Do chart like a gant diagram.



Figure 4-19 iNotes To Do portlet

To create a new entry click **New -> To Do** and the window with the form appears (see Figure 4-20).

The screenshot shows the 'New To Do' form. It has a title bar with 'New', 'Save & Close', 'Save', and 'Cancel' buttons. The form contains the following fields and options:

- To do**: | Repeat |
- Subject**: [Text input field]
- Start Date**: [Mon 07/22/2002] | **Status**: [Current] | **Category**: [Dropdown menu]
- Due Date**: [Mon 07/22/2002] | **Priority**: [Medium] |  Confidential
- Milestone
- Alarm [1] [Day(s)] [Before]
- Rich Text Editor**: [Sans Serif] [10] [b] [i] [u] [Color picker] [Align] [List] [Link] [Unlink] [Print] [Help] [ABC] [Icons]
- Add Attachments**: [Email icon] [X] [Add icon] [Remove icon] [Refresh icon]

Figure 4-20 Create a new To Do entry

## iNotes Notebook portlet

Notebook Pages can contain anything you want. Use Notebook Pages to keep a journal or a diary.

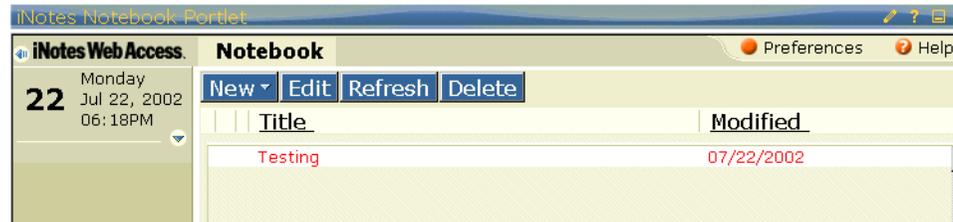


Figure 4-21 iNotes Notebook portlet

- ▶ You can save your work without closing the page by clicking **Save**.
- ▶ Attach pictures or files to your Notebook Pages using the attachments area at the bottom.
- ▶ Change the font and format of the text, insert an image or Web links, or check the spelling of your Notebook Page.
- ▶ Use Copy (Ctrl+C) and Paste (Ctrl+V) to turn any Notebook Page into an e-mail message. Simply select and copy the Notebook Page, then paste the contents into an e-mail message.
- ▶ You can open multiple Notebook Pages and new mail message windows at the same time.

Figure 4-22 show the window to create a new notebook entry.

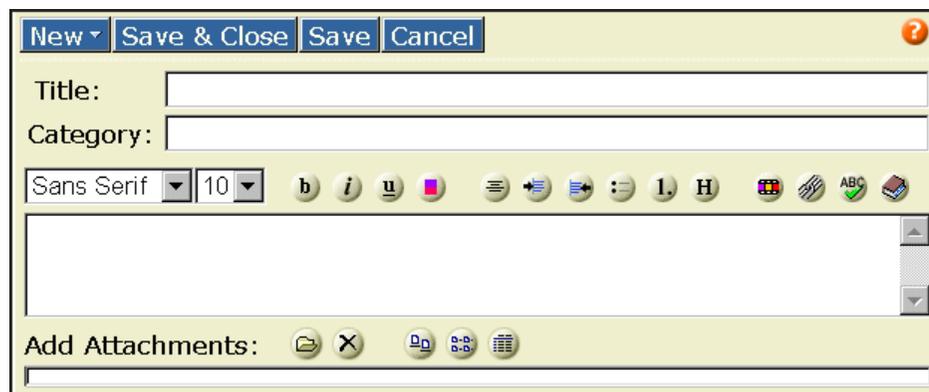


Figure 4-22 Create a new notebook entry

## Additional information

iNotes Web Access home:

<http://www.lotus.com/products/inotes.nsf/allpublic/53380DDF183DC9A38525697C006E652E?opendocument>

iNotes Web Access in Lotus Developer Domain:

<http://www-10.lotus.com/1dd/inoteswebaccesswelcome.nsf?OpenDatabase>

iNotes Web Access Redbook:

<http://www.redbooks.ibm.com/pubs/pdfs/redbooks/sg246518.pdf>

## 4.6 Notes portlets

The Notes portlets (mail, calendar, etc.) function differently than the iNotes portlets. While the iNotes portlets are iframe wrappers around existing iNotes GUI, the Notes portlets grab the text and formatting via XML from domino (that is, DXL), and rebuild the GUI in the portal. For this reason the iNotes portlet inbox looks very similar to the directly accessed iNotes inbox. However, the Notes mail portlet inbox looks very different than the directly accessed regular Notes Web GUI.

In addition, the Notes portlets will not function any differently when the mail files on Domino are enabled for iNotes. You can actually install both the iNotes portlets and the Notes mail portlets on the same portal page, and the portlets will retain their own look and feel.

**Note:** iNotes portlets require Internet Explorer, while the Notes mail portlets will work in any WebSphere Portal supported browser.

### Environment and requirements

The environment for this scenario is similar to the iNotes portlet scenario (see Figure 4-11 on page 125).

### Generic parameters

To set up a Notes portlet, you will need to provide the server name and your database name and path. You can also choose some configuration parameters for the portlet view. See Figure 4-23 on page 133.

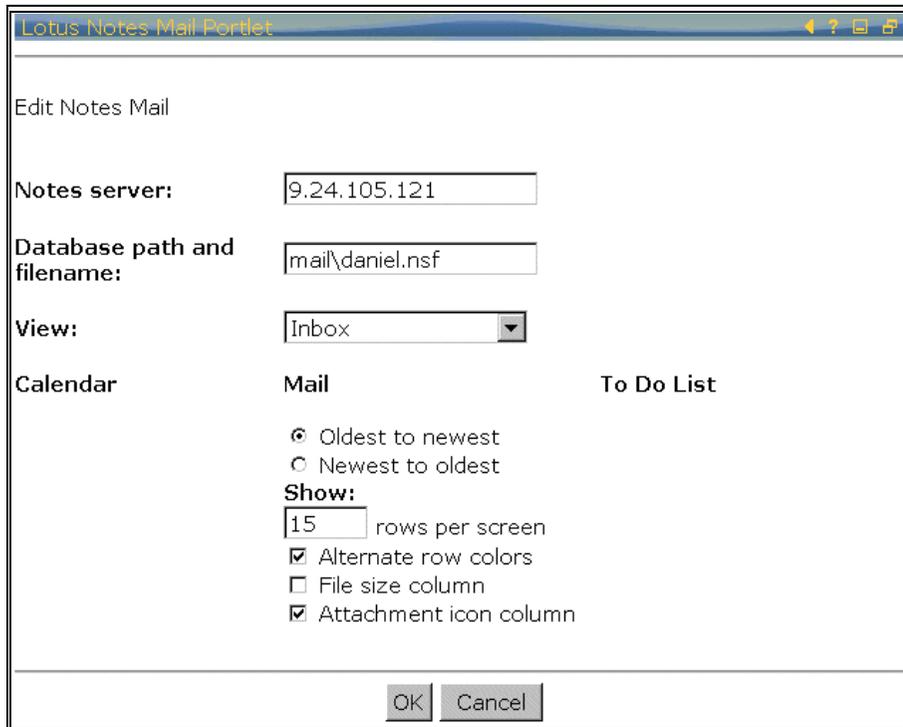


Figure 4-23 Lotus Notes mail parameters

## Notes mail portlet

This portlet will allow you to check your Notes mail in a text environment. All the options are the same as in the iNotes portlet.

Figure 4-24 illustrates the Lotus Note mail portlet.



Figure 4-24 Lotus Notes mail portlet

In the basic portlet you are able to read and compose new mail. To read the mail, click the subject and a new window with the content will appear. To create new mail, click the pencil icon and the appropriate window will come up.

Figure 4-25 shows the send mail with Notes portlet.

Send    Address...    Delivery Options...    Go to

**Juan Rodriguez**    To:

cc:

07/23/2002    bcc:

02:24 PM    Subject:

[Attachment\(s\)](#)     Browse...     Browse...

[Use Rich Text Applet](#)

Figure 4-25 Send mail with Notes portlet

If you click **User Rich Text Applet**, the window will still look like the regular Notes Webmail capabilities, but it will turn on the standard Notes Rich Text Applet support. This is a different applet than the one used in iNotes.

Basically, in all Notes portlet (view, mail, etc.) the initial view shown in the portlet will be handled by the portal server. Any time you click to open a document, etc., the portal is no longer in control and you will be in fact outside of the context of the portal. All functionality that is then shown is the generic notes functionality (Webmail, GUI of a specific database and so on).

Clicking **Go to** and selecting **In Box** will change to the Notes Mail template, out of the portlet. This look is similar to the Notes client, and you will be able to access your calendar from this window if you click the Calendar icon at the bottom of the window, and also your To Do, and all the folders in your Notes database. Figure 4-26 on page 135 shows the Lotus Notes main full window.

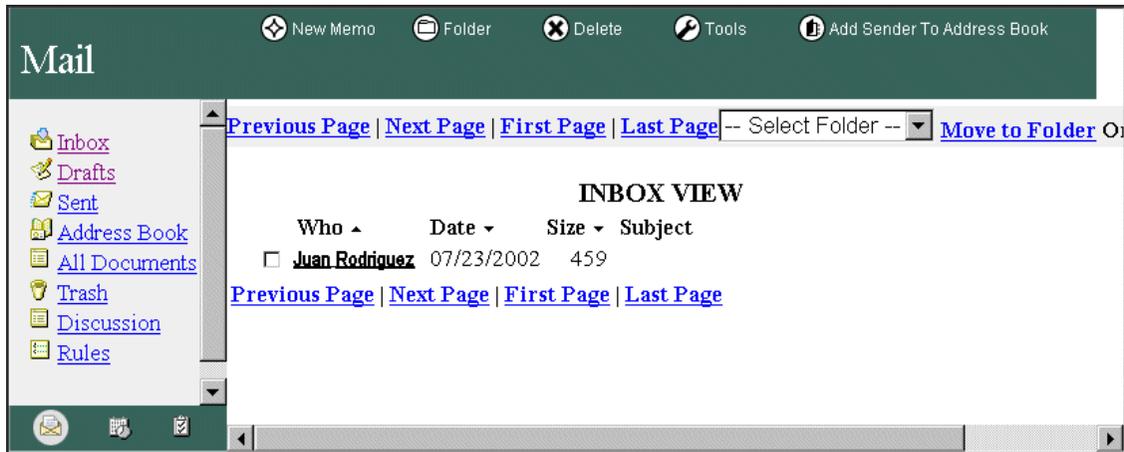


Figure 4-26 Lotus Notes mail full window

Figure 4-27 illustrates the Notes calendar window.

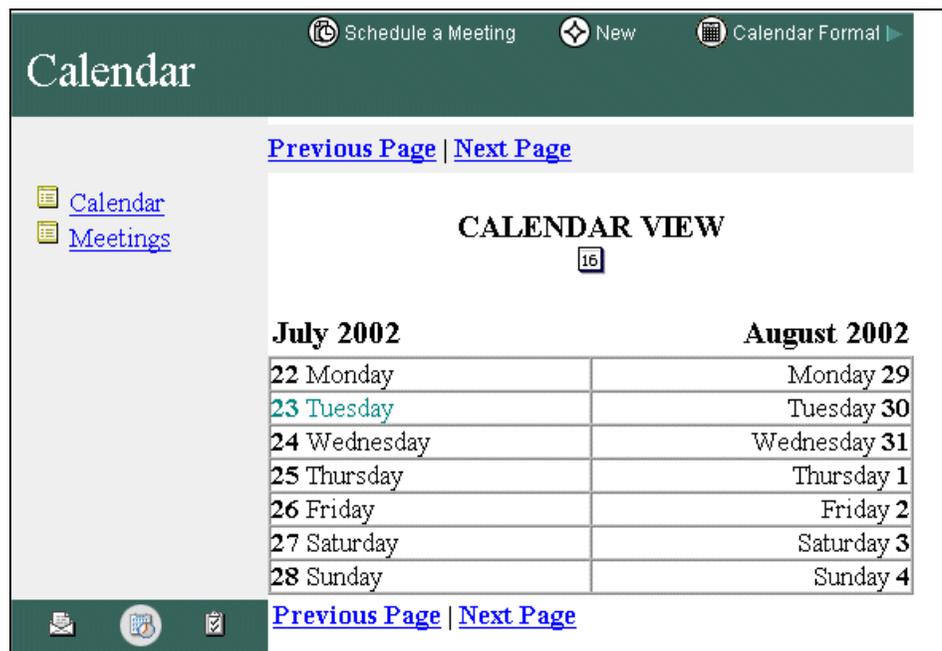


Figure 4-27 Notes calendar

## Notes View portlet

Lotus Notes View displays views of a Notes database. You can use it to display any view that you have reader access to over the Web. HTTP task must be running on the Notes server.

The parameters for this portlet are:

- ▶ Notes server: Name of the Notes server you want to use.
- ▶ Database path and filename: Path and name of the Notes database you want to view.
- ▶ View: Specifies the name of the view you want to appear when the database is displayed in the portal.
- ▶ Launch column: Denotes which column contains the links for launching documents. This is usually a Subject or Title column. Columns are listed by number, starting with zero. If the Launch column is "none" or if you click a column number that does not exist in the view, you will not be able to open documents.
- ▶ Rows per screen: Number of lines that will display at a given time.
- ▶ Alternate row colors: Specifies the appearance of the alternating rows of data. When selected, the background color for the alternating rows of data is derived from the theme. Deselect alternate row colors to make the background color of all rows white.
- ▶ New document: Determines whether you can create new documents in this Lotus Notes View. The check box sets whether the New Document button will display.
- ▶ Form: Specifies the Lotus Notes form to use for creating new documents. You can create only one type of document from the New Document button. You may be able to create other document types from the action bar in an open document.

Figure 4-28 on page 137 illustrates the Lotus Notes portlet parameters window.

The image shows a dialog box titled "Lotus Notes View Portlet" with a standard window header. The main content area is titled "Edit Notes View" and contains several configuration fields:

- Notes server:** A text input field containing "9.24.105.121".
- Database path and filename:** A text input field containing "help\help5\_admin.nsf".
- View name:** A text input field containing "Index".
- Show:** A section containing:
  - Launch column:** A dropdown menu with "2" selected.
  - 15 rows per screen:** A text input field containing "15".
  - Alternate row colors**
  - New document**

At the bottom of the dialog box are two buttons: "OK" and "Cancel".

Figure 4-28 Lotus Notes view portlet parameters

To open a document, click the link in that document's row. See Figure 4-29 on page 138.

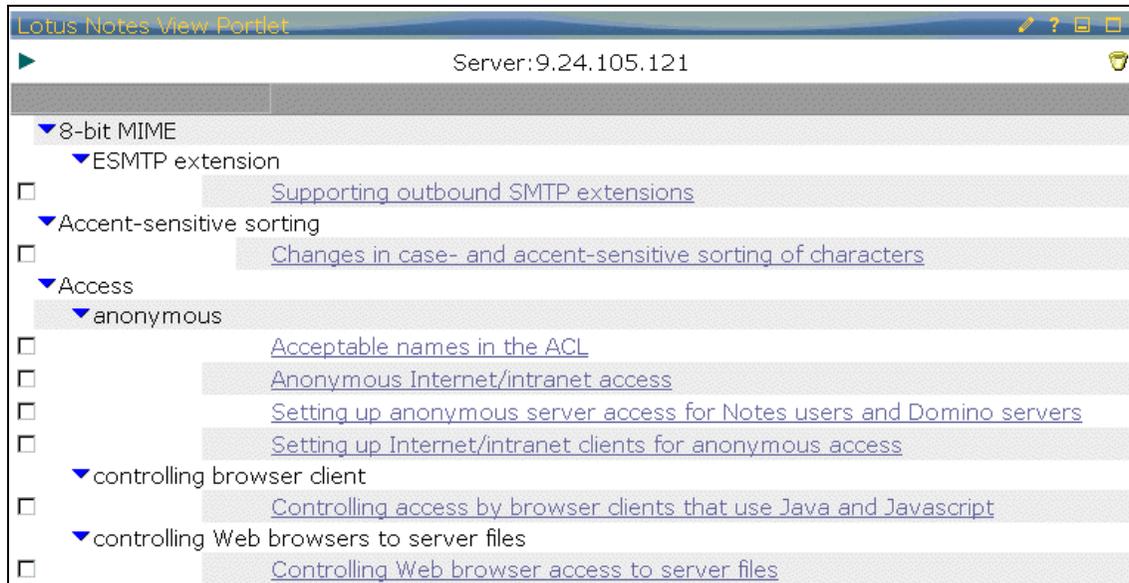


Figure 4-29 Lotus notes view portlet

### Additional information

Domino Home:

<http://www.lotus.com/products/r5web.nsf/webhome/nr5serverhp-new>

Domino in Lotus Developer Domain:

<http://www-10.lotus.com/1dd/products.nsf/products/notesdomino>

## 4.7 Host Publisher portlet

The Host Publisher portlet allows the user to run Host Publisher 4.0 applications in a portlet.

With this release, applications running Secure Sockets Layer (SSL) sessions are now supported. Applications secured via HTTP Basic Security are supported in this release, as well.

Forms-based security is still supported. The portlet handles that scenario without prior notification from the user. (The user no longer has to specify that forms-based security is being used). Redirection scenarios are better handled.

**Note:** This is an English-only offering and is not DBCS enabled.

## Environment and requirements

To use this portlet you will need your portal environment, one server running your Host Publisher application, and the host used by your application. Figure 4-30 illustrates the Host Publisher portlet scenario.

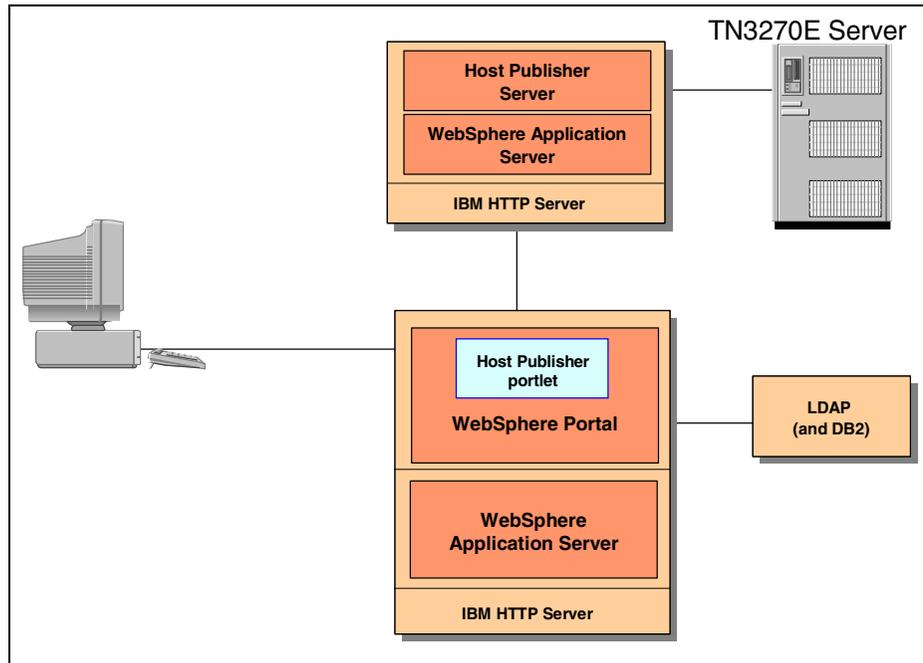


Figure 4-30 Host Publisher portlet scenario

## Portlet parameters

The user can modify the following information (see Figure 4-31 on page 140):

- ▶ Target Host Publisher Application URL. Enter the URL of the application you want to run. This parameter is required.
- ▶ Target Host Publisher Application Description. Enter a description or name for the application. This parameter is optional. You might want to enter the description to distinguish this application from other Host Publisher applications.
- ▶ Basic HTTP Authentication. Click this checkbox if the application has been configured to use Basic HTTP Authentication and WebSphere Security is enabled on the server where the application is deployed.

**Configure Host Publisher Portlet**

Target Host Publisher Application URL:

Target Host Publisher Application Description:

Using Basic HTTP Authentication

User ID:

Password:

Figure 4-31 Host publisher portlet parameters

Once you provide the application URL, you will be able to access it within the portlet. Figure 4-32 shows a sample CICS transaction executed from a portlet.

**IBM WebSphere Host Publisher**

Cics Access

---

**Credit Account Demonstration**

Enter account number:

**IBM WebSphere Host Publisher**

Cics Access

---

**Credit Account Demonstration**

Account Number: 10100  
 Last Name: REDBOOK  
 First Name: RESIDENT  
 Address: ITSO RALEIGH NORTH CAROLINA

[Back](#)

Figure 4-32 Host Publisher sample application

## Additional information

Host Publisher portlet can be found in the IBM portlet catalog page:  
<http://www-3.ibm.com/software/webservers/portal/portlet/catalog>

## 4.8 Additional example portlets

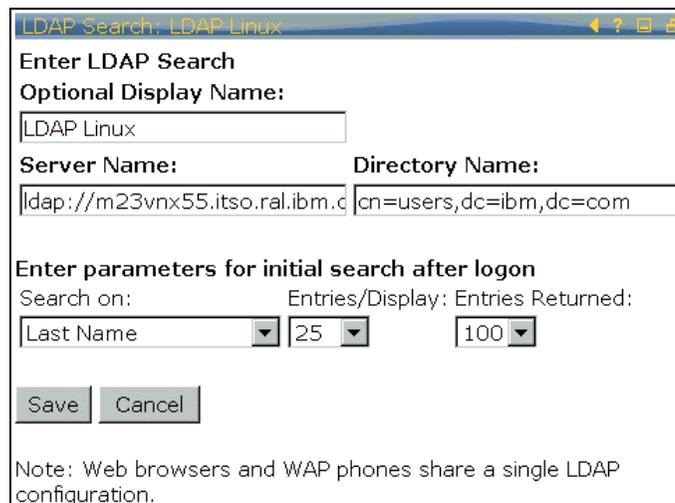
In this section we show some easy to use portlets. Studying the source of these portlets will help you to develop new ones. Some of these portlets are bundled with WebSphere Portal V4.1. The rest must be downloaded from the portlet catalog page at

<http://www-3.ibm.com/software/webservers/portal/portlet/catalog>.

### 4.8.1 LDAP Search

This example shows us how to access LDAP directory and make queries to the directory tree database. You have to download it from the portlet catalog Web site. If all the employee information is located in LDAP, this is a good way to have a Yellow Pages-like application to find information about one user. You may customize the portlet to display the fields you want.

You will need a LDAP server to be able to use this portlet. In this case you will use the LDAP used for the WebSphere Portal environment. You have to supply the LDAP server name and the directory name you want to see, as shown in Figure 4-33.



The screenshot shows a web browser window titled "LDAP Search: LDAP Linux". The page content includes the following fields and controls:

- Optional Display Name:** A text input field containing "LDAP Linux".
- Server Name:** A text input field containing "ldap://m23vnx55.itso.ral.ibm.c".
- Directory Name:** A text input field containing "cn=users,dc=ibm,dc=com".
- Enter parameters for initial search after logon:**
  - Search on:** A dropdown menu with "Last Name" selected.
  - Entries/Display:** A dropdown menu with "25" selected.
  - Entries Returned:** A dropdown menu with "100" selected.
- Buttons:** "Save" and "Cancel" buttons.
- Note:** "Note: Web browsers and WAP phones share a single LDAP configuration."

Figure 4-33 LDAP search portlet parameters

Once the parameters have been supplied, the default portlet will allow you to type a search string and find it in the different database fields shown in Figure 4-34.



Figure 4-34 LDAP Search portlet

You can type \* to find all the rows, and the output should be something like that shown in Figure 4-35.

Name	Department	Telephone Number	eMail address
Daniel Carrera			<a href="mailto:daniel_carrera@es.ibm.com">daniel_carrera@es.ibm.com</a>
Gabriel Cohen			
Jenaro Gallego			
Robeto Matito			
Ana Palencia			
Juan Rodriguez			
Julio Sanchez Cubas			
Kayoko Suda			
Yasushi Tabetai			
Aitor Tilla			
Susana Torio			
users			
wps admin			
wps bind			

Figure 4-35 LDAP Search portlet output

## 4.8.2 SQL portlet

This portlet shows how to manage queries using JDBC and how to show the results in the portlet.

It is a nice example of how different roles in the portal can be managed. You can assign manage permission to the IT group, and people from this group can

create the queries by clicking the **Edit** icon. The marketing group will have view access only to the portlet and will be able to see the query results only.

The parameters for this portlet are JDBC Driver, User and password, JDBC data base URL, and the query you want to make. You can see the default parameters if you use DB2. Figure 4-36 shows the SQL portlet parameters.

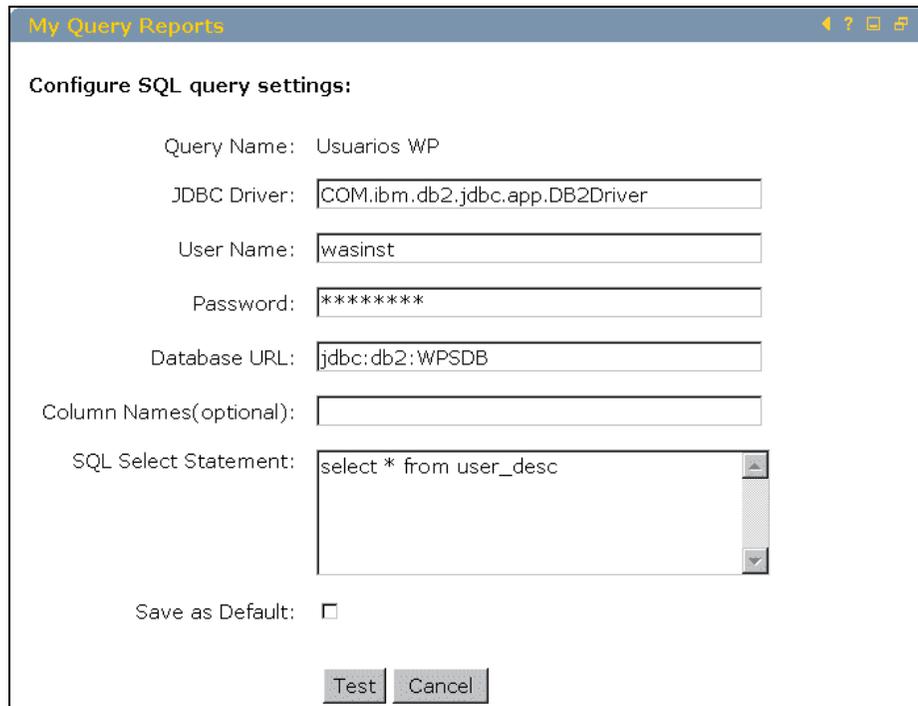


Figure 4-36 SQL portlet parameters

In this example we are using WPSDB and the user description table to make the query. This version of the portlet only supports SELECT queries. Figure 4-37 illustrates the SQO portlet.

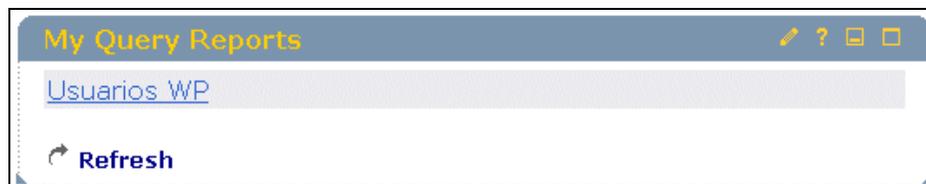


Figure 4-37 SQL portlet

Figure 4-38 shows a sample SQL portlet output with results.

**My Query Reports**

**Usuarios WP**

Results: 1-16 of 16

OID	NAME	TYPE	LAST_LOGIN	CREATED	MODIF
10	uid=wpsadmin,cn=users,dc=ibm,dc=com	1	null	1022882400000	102754
11	cn=wpsadmins,cn=groups,dc=ibm,dc=com	2	null	1022882400000	102691
101	uid=wpsbind,cn=users,dc=ibm,dc=com	1	null	1026492681934	102649
106	uid=daniel,cn=users,dc=ibm,dc=com	1	null	1026842258240	102754
103	cn=it,cn=groups,dc=ibm,dc=com	2	null	1026492764129	102744
104	cn=marketing,cn=groups,dc=ibm,dc=com	2	null	1026492771661	102691
105	uid=jenaro,cn=users,dc=ibm,dc=com	1	null	1026841411052	102684
107	uid=julio,cn=users,dc=ibm,dc=com	1	null	1026842560060	102692
108	uid=palencia,cn=users,dc=ibm,dc=com	1	null	1026842732207	102691
109	uid=kayoko,cn=users,dc=ibm,dc=com	1	null	1026913754740	102744
110	uid=tilla,cn=users,dc=ibm,dc=com	1	null	1026917830917	102691
111	uid=matito,cn=users,dc=ibm,dc=com	1	null	1026917858156	102691
112	uid=torio,cn=users,dc=ibm,dc=com	1	null	1026918012544	102691
113	uid=tabetai,cn=users,dc=ibm,dc=com	1	null	1026918603914	102744
114	uid=gabriel,cn=users,dc=ibm,dc=com	1	null	1027014231172	102701
115	uid=juanr,cn=users,dc=ibm,dc=com	1	null	1027447706337	102744

Results: 1-16 of 16

[Home](#)

Figure 4-38 SQL portlet output

### 4.8.3 POP3/IMAP portlet

This mail portlet allows you to access any POP3 or IMAP mail account.

#### Environment and requirements

To run this portlet, you will need to enable the POP3 mail task in your Domino Server.

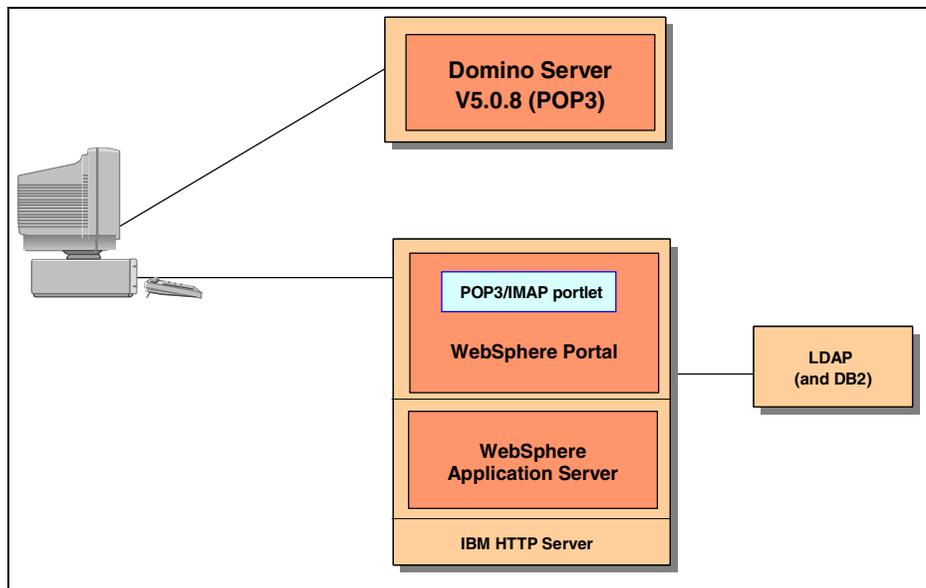


Figure 4-39 Mail portlet scenario

### Generic parameters

To set up this portlet, you will need to select the protocol used (IMAP or POP3), the server name, and the Outgoing mail server (if differs form the mail server), you must provide a valid user for that mail server.

Figure 4-40 on page 146 shows the POP3/IMAP mail configuration parameters.

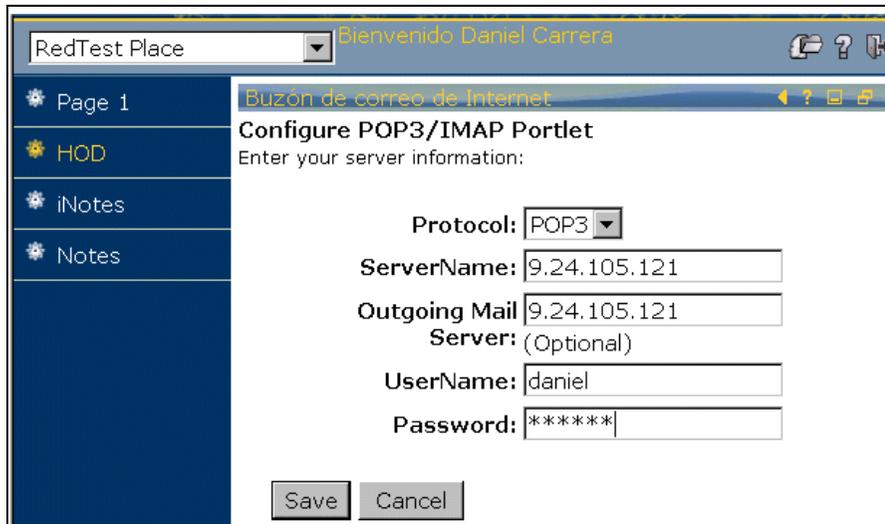


Figure 4-40 POP3/IMAP mail configuration parameters

Once the portlet parameters have been supplied, you receive information similar to the data shown in Figure 4-41.

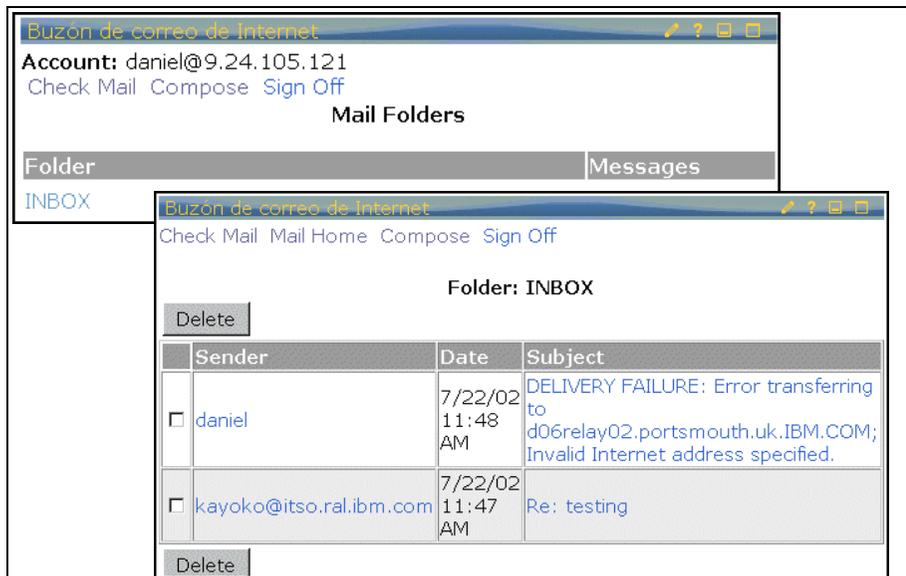


Figure 4-41 Mail portlet views

To reply to mail, click the user's name and the compose window will be displayed within the portlet (see Figure 4-42).

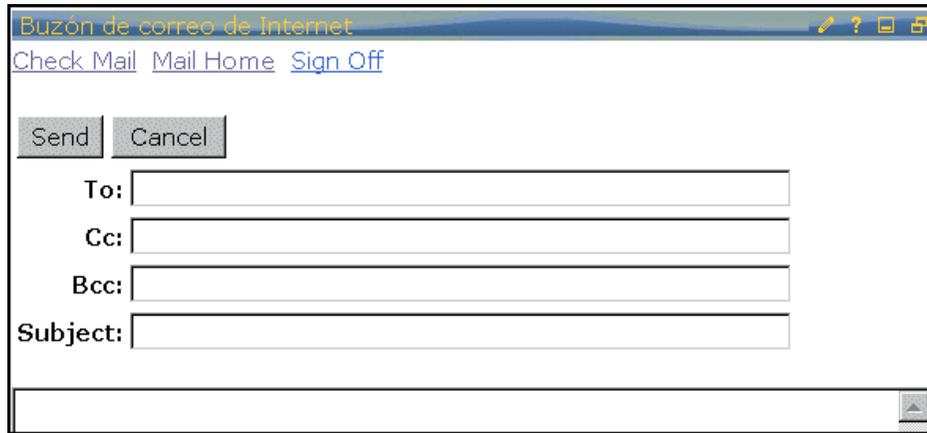


Figure 4-42 Send mail window

To see the message content, click the subject and the content will be displayed within the portlet.

#### 4.8.4 Document viewers

The Document viewer portlet is also included in WebSphere Portal by default. The same portlet allows you to view only the type of documents supported (.doc, .xls, .ppt, .pdf, .rtf). If you want to edit them, you will need the appropriate document client editor, for example MS Office or Acrobat.

Figure 4-43 on page 148 illustrates the default document viewers.

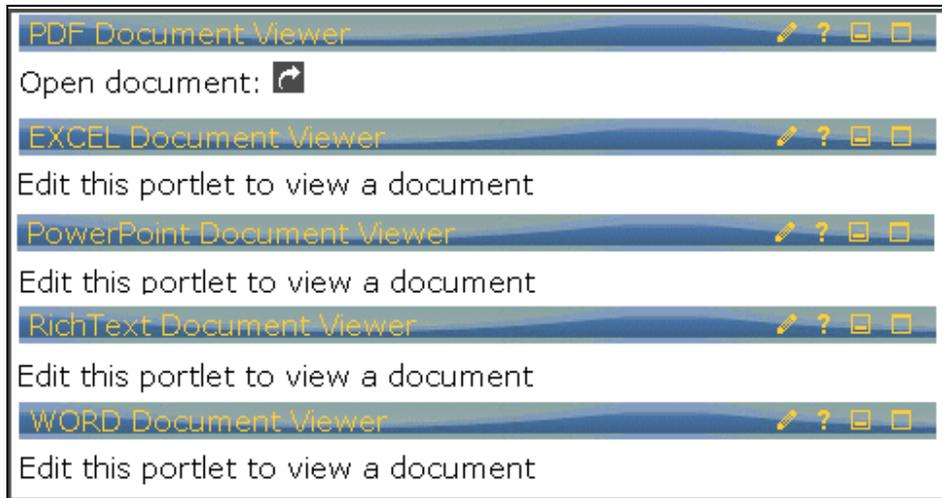


Figure 4-43 Default document viewers

The parameters for the different portlets generated are the file you want to open, if you want to see the document within the portlet (with this option you can select the size of the document inside the portlet window) or in a new window (if you want to see it in a new window you will require the software for that document).

If the user has manage permissions, he/she will be able to change the file. Otherwise, the user will be allowed to see only the files configured file by an administrator. Figure 4-44 shows the document view parameters.

**Enter document view information**

Document URL ( you must be authorized to access this file ):

View document in new window  
 View document within portlet: Height: Width:

Figure 4-44 Document view parameters

To view a document inside the portlet will also require the Web plug-in for that type of document. See Figure 4-45.

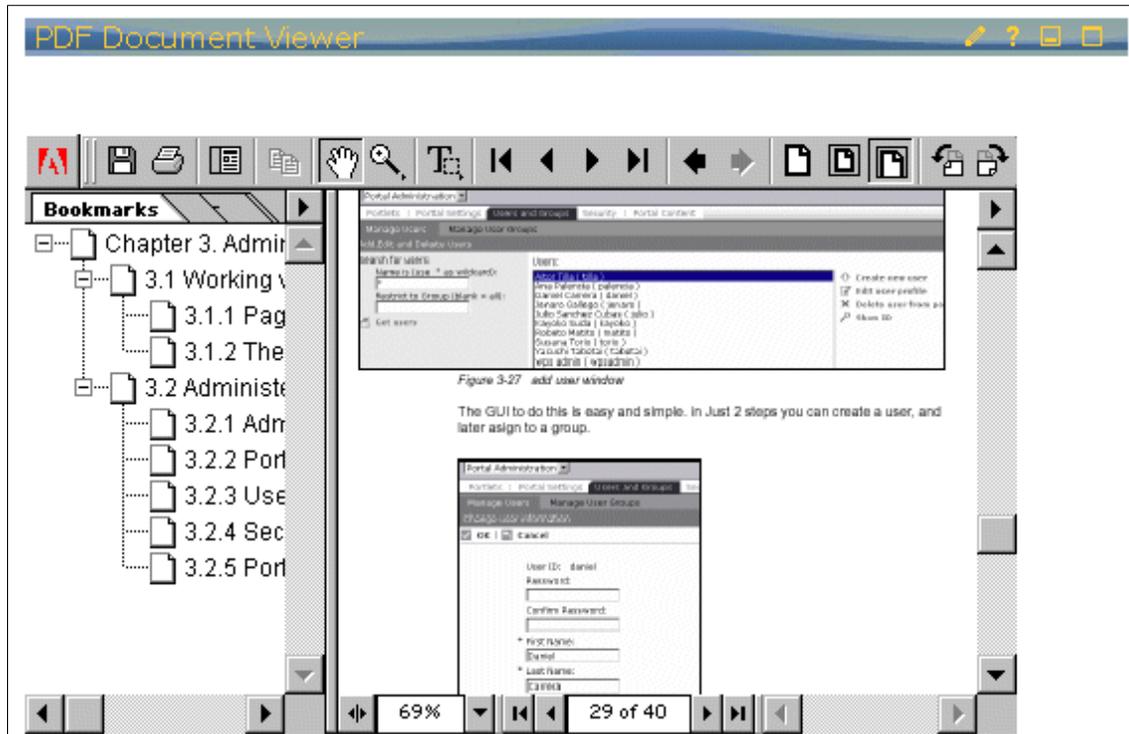


Figure 4-45 Document inside a portlet

**Note:** For more information on WebSphere Portal, visit:  
<http://www7b.software.ibm.com/wsdd/zones/portal/>







# IBM WebSphere Portal V4.1.2 in a Linux Environment



**Redpaper**

## **Install and administer WebSphere Portal in a Linux environment**

This Redpaper will help you plan, install and administer the IBM WebSphere Portal Version 4.1.2 Enable offering product in a Red Hat Linux environment so that existing enterprise applications can be accessed from portlets using the IBM WebSphere Portal product.

## **Import existing portlets to access enterprise applications**

In this Redpaper, you will also find step-by-step examples showing ways to rapidly import and use existing portlets to access your enterprise applications, such as Domino, Lotus Notes, iNotes, Sametime, IBM WebSphere Host On-Demand, IBM WebSphere Host Publisher and LDAP Directory Services data in an IBM WebSphere Portal environment. You will find numerous scenarios describing recommended ways to integrate your enterprise applications using the portlet support and generic portlets provided by this product release and other sources.

## **Portalize your mainframe legacy applications**

A basic knowledge of Red Hat Linux, LDAP Directory Services, WebSphere Portal, portlets, Java technologies such as servlets, JavaBeans, and JavaServer Pages (JSPs), as well as HTML and XML markup languages and the terminology used in Web publishing, is assumed.

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