WebSphere Portal V4.1
Windows 2000 Installation

Install and administer WebSphere Portal in a Windows 2000 environment

Implement the IBM SecureWay Directory Server

Easy to understand step-by-step instructions

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WebSphere Portal V4.1 Windows 2000 Installation

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

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This edition applies to Version 4, Release 1, Modification 2 of IBM WebSphere Portal Enable and Extend offerings for Windows 2000 operating systems.

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Preface

This IBM Redpaper will help you plan, install, and administer the IBM WebSphere Portal Version 4.1.2 Enable offering product in a Microsoft Windows 2000 environment, so that existing enterprise applications can be accessed from portlets using the IBM WebSphere Portal product.

This Redpaper provides easy, step-by-step examples allowing you to rapidly deploy IBM WebSphere Portal Version 4.1.2 on Microsoft Windows 2000 — therefore providing you with a solid foundation to begin importing and using existing portlets to access your enterprise applications. IBM recommends and supports the use of WebSphere Portal Setup Manager to perform your installations. However, because of multiple-tier configurations that Setup Manager may not resolve during installation, this Redpaper provides the manual process for installing IBM WebSphere Portal and its components. This manual process is an alternative to using the Setup Manager to configure different multi-tier environments. In addition, this manual process allows you to view those activities that take place during the overall installation process.

A basic knowledge is assumed for Windows 2000, 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.

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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 functions 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](image)

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 Internet 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 3, 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, and so on 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
Chapter 1. Overview

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**
This 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**
This 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.


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
WebSphere Portal V4.1 Windows 2000 installation

This chapter provides a set of procedures to help you setup and install WebSphere Portal V4.1 in a Microsoft Windows 2000 environment using IBM Secureway. This process does not include the use of the Setup Manager tool, therefore, you are able to witness all activities involved in building your WebSphere Portal solution.

2.1 Pre-installation tasks

This section describes the actions that must be performed prior to beginning installation. We assume that your system has already been setup and configured to run Windows 2000.

2.1.1 Create db2admin user for DB2

The first step to installation is to create the required users and groups. We are creating a user ID that will act as the administrator of DB2. This process is as follows:

1. Log in as an administrator of the machine that WebSphere Portal Server will be installed on. Create a Windows 2000 user with the following settings:
   - User ID = db2admin
   - Locally defined (not a member of a Windows domain)
   - Member of Administrators group

You can create local users and assign group memberships by clicking:

Control Panel -> Administrative Tools -> Computer Management -> System Tools -> Local Users and Groups

2. Assign the proper permissions to the db2admin user. This is done as follows:

   a. Click Start -> Settings -> Control Panel. Double-click Local Security Policy. You will see a window similar to Figure 2-1.
b. Double-click **Local Policies** and then double-click **User Rights Assignment**. You will see a window similar to Figure 2-2.

c. Double-click **Act as Part of the operating system** and select **Add**. This will pop a new window that looks similar to Figure 2-3. Locate the db2admin account. Select the account and then click **Add**. Multiple accounts may be selected by holding the Ctrl key when selecting.

Click **OK** when finished. Click **OK** again to exit Local Security Policy Setting for Act as part of the operating system.
Repeat the process for the following User Rights Assignments:

– Log on as a Service
– Create a token object
– Increase quotas
– Replace a process level token

2.1.2 Create wasadmin for WebSphere Application Server

In this section, we will create the user ID wasadmin. The wasadmin user will be used to run both the IBM HTTP Server and WebSphere Application Server. The remainder of this chapter assumes that wasadmin is used. Perform the following steps:

1. Create the Windows 2000 user with the following settings:
   – User ID = wasadmin
   – Locally defined (not a member of a Windows domain)
   – Member of Administrators group.

You can create local users and assign group memberships by clicking:

Control Panel -> Administrative Tools -> Computer Management -> System Tools -> Local Users and Groups

2. Assign the following rights to this user:
   – Act as part of the Operating System
   – Log on as a Service

You can assign user rights by clicking:


Reboot the system to ensure that the User Rights Assignments have taken place.
2.1.3 Verify static IP address

We strongly recommend that the machine is configured with a static IP address. This can be verified by:

a. Click Start -> Settings -> Control Panel.
b. Double-click on Network and Dial-up Connections. Double-click Local Area Connection.
c. This will bring up a new window. Click the Properties button. Click Internet Protocol (TCP/IP). Click the Properties button. You should see a window similar to Figure 2-4. Obtain an IP address automatically should not be selected. Please see your network administrator if you wish to obtain a static IP address.

![Internet Protocol (TCP/IP) Properties](image)

Figure 2-4 TCP/IP Properties in Windows

Tip: In some instances, you may wish to install WebSphere Portal Server in a virtual network environment and a static IP address may not be available. The Microsoft Loopback Adapter may be used simulate a network. Please see [http://www.microsoft.com](http://www.microsoft.com) for details of Loopback Adapter.

Check that IP ports are unused

From a command prompt enter the command:

D:\>netstat -an

Check that there are no existing active services that use the following IP ports on the server.

- These ports are reserved for DB2:
  - 523 (DB2 Administration Server)
  - 50000 (DB2 instance connection port)
  - 50001 (DB2 instance interrupt port)
  - 50002 (DB2 Control Server)
2.2 Server environment

For our setup of WebSphere Portal, we used the following hardware and software.

**Hardware:**

IBM Netfinity 8658-51Y:
- 1x Pentium III 933MHz w/ Front Side Bus: 133MHz
- 1 GB RAM, type = SDRAM ECC
- 1x 18 GB hard disk
- 1x 40X CD-ROM drive
- 1x 100 Mbps Ethernet
- 1x S3 Inc. S3 Trio3D graphics card

**Software:**

- Microsoft Windows 2000 with Service Pack 3
- DB2 Universal Database V7.2 Enterprise Edition
- WebSphere Application Server 4.02
- WebSphere Portal V4.1
- SecureWay Directory Server V3.2.2
- WebSphere Personalization V4.0

2.3 DB2 Universal Database V7.2 Enterprise Edition installation

In this section, we will install the IBM DB2 Universal Database solution. DB2 is the industry's first multimedia, Web-ready, relational database management system delivering leading capabilities in reliability, performance, and scalability. DB2 Universal Database Enterprise Edition (EE) a multi-user object-relational database for complex configurations and large database needs for Intel to UNIX platforms and from uniprocessors to the largest SMP's. It is ideal for midsize to large businesses and departments, particularly where Internet and enterprise connectivity is important.

To begin the installation of DB2 UDB, complete the following instructions:

1. Insert the WebSphere Portal Multiplatform V4.1.1 Disk 2-1 CD (DB2 Universal Database Enterprise Edition for Windows) into your CD-ROM drive and navigate to the db2\win subdirectory.

2. Run the Setup.exe file. This will install DB2. You will see a window similar to Figure 2-5.
3. Click **Install**. You will see a window similar to Figure 2-6.

4. Accept the default, DB2 Enterprise Edition and click **Next**. You will see a window similar to Figure 2-7.
5. Select **Custom** and click **Next**. You will see a window similar to Figure 2-8.

6. At the Select Components window, select only the following components:
   - Application Development Interfaces
   - Documentation (optional)
   - Base DB2 UDB Support
   - Administration and Configuration Tools (optional)
   - Getting Started (optional)
You will need to use the scroll bar to select all of these components. Click **Next**. You will see a window similar to Figure 2-9.

![Create DB2 Instance window](image)

**Figure 2-9  Create DB2 Instance window**

7. Accept the default response, Yes to create the default DB2 instance, and then click **Next**. You will see a window similar to Figure 2-10.

![Configure DB2 Services window](image)

**Figure 2-10  Configure DB2 Services window**

8. Accept the default, DB2 Instance, and click **Next**. You will see a window similar to Figure 2-11.
9. Accept the default User name, db2admin. In the password and confirm password field, type db2admin. This is the default for DB2 and is the user that was created in 2.1.1, “Create db2admin user for DB2” on page 9. Accept the default selection of Use the same values for the remaining DB2 Username and Password settings. Click Next.

**Note:** If the db2admin user was not previously created you will see a window similar to Figure 2-12. Click Yes and DB2 will create the user db2admin for you.

10. You will see a window similar to Figure 2-13. Take a moment to familiarize yourself with the components that will be installed. Click Next to continue. DB2 Setup will be copying files to your systems hard drive. Click Finish when DB2 has completed its installation.

**Note:** An error that the SATCTLDDB could not be created may occur if the user is not the administrator on the local machine.
Complete and submit the IBM Product Registration then Exit. Exit the First Steps window if it is shown. Remove the CD from the CD-ROM drive.

2.4 DB2 Universal Database V7.2 Fixpack 5 installation

This section describes the installation of fixpack 5 to DB2. If the fixpack is not installed, WebSphere Portal Server may not install correctly.

1. Click Start -> Settings -> Control Panel -> Administrative Tools -> Services. Right-click each DB2 service and select Stop. Note that all DB2 services are preceded by the word DB2.

Stopping all of the DB2 services is necessary to allow the fixpack to be installed properly.

2. Insert the WebSphere Portal Multiplatform V4.1.1 Disk 2-10 CD (DB2 Universal Database fixpack for Windows) into your CD-ROM drive and navigate to the db2fp\win subdirectory.

   Note: We are installing DB2 Universal Database V7.2 fixpack 5 Service Level WR21294.

3. Run the Setup.exe file. If all of the processes were not properly stopped in DB2, you will see a window similar to Figure 2-14.
4. If you receive a warning that several DB2 processes are running, DB2 fixpack will shut down these services for you before continuing with the installation. The exact processes listed will depend on which DB2 components were installed.

   Click Yes to proceed and you will see a window similar to Figure 2-15.

5. Accept the default and click Next. Click Next again to begin the copying of files to your system.

6. Once the files have been copied and your system files are updated, click Finish. Exit First Steps and Product Registration.

   For additional details on the installation, view the log file in c:\DB2Log\db2.log.
2.4.1 Upgrade the JDBC drivers

JDBC is a Java API for executing SQL statements on any database with JDBC drivers. WebSphere Application Server uses JDBC 2.0 drivers to access DB2. DB2 must be upgraded from JDBC 1.0. To upgrade the drivers, do the following:

1. Click Start -> Settings -> Control Panel. Double-click Administrative Tools -> Services. You will see a window similar to Figure 2-16.

![Services window](image)

Figure 2-16 Services window

1. Stop all DB2 services by right-clicking each service that contains DB2 as a prefix and click Stop.
2. Open a Command Prompt and change directory to C:\Program Files\SQLLIB\java12. Run the command `usejdbc2`. You will see a window similar to Figure 2-17.
Verify that the script file ran successfully and that no errors appeared.

**Tip:** In the C:\Program Files\SQLLIB\java12 directory is a file named in use. The contents of this file describe which JDBC driver is being used. Open a command prompt and enter the command `type inuse`. The command prompt should display:

```
JDBC 2.0
```

## 2.5 WebSphere Application Server and IBM HTTP installation

WebSphere Application Server acts as the main engine for WebSphere Portal Server. It provides scalability, clustering capability, a servlet engine, EJB server, administration features, and security features.

IBM HTTP Server is a Web server that serves documents to Web browsers from WebSphere Portal Server. Web servers provide the communications link between browser-based applications and the other components of WebSphere Application Server.

The following steps describe the installation of WebSphere Application Server and IBM HTTP Server. WebSphere Application Server will install IBM HTTP Server as part of its installation process.

1. Click **Start -> Settings -> Control Panel**. Double-click **Administrative Tools** and double-click **Services**. Verify that the following processes are running:
   - DB2 - DB2
   - DB2 - DB2CTLDSV

   If they are not running, right-click on them and select **Start**.

2. Insert the WebSphere Portal Multiplatform V4.1.2 Disk 3-2 CD (WebSphere Application Server Advanced Edition for Windows and Linux) into your CD-ROM drive and navigate to the was\win subdirectory.

3. Run the Setup.exe file. You will see a window similar to Figure 2-18.
4. In the Choose Setup Language window. Accept the default, English, and click **OK**.

**Note:** Before you proceed with the installation, you must shut down any Web servers on the machine as well as all Windows programs.

5. Click **Next** to continue. You will see a window similar to Figure 2-19.

6. Select **Custom Installation** and click **Next**. You will see a window similar to Figure 2-20.
7. Ensure all components have been checked. Click **Next**. You will see a window similar to Figure 2-21.

8. Accept the default, IBM HTTP Server. Click **Next** to continue. You will see a window similar to Figure 2-22.
9. By default this window will contain the current user ID, shown here as db2admin. We recommend that this user ID is changed to wasadmin (for our example), or another account that is specifically used to administrate WebSphere Application Server.

   The user name must be an administrator and have the privilege to Act as part of the operating system and Log on as a service, or you will see the window in Figure 2-23 and the install will not complete. Details on how to create users and add privileges to user names are covered in 2.1, “Pre-installation tasks” on page 9.

   Click Next to continue.

10. You may get a dialog box similar to Figure 2-23. If you do not receive this message, it means that the user ID specified has the proper privileges for the install. Proceed to Step 11. If the dialog box does appear, the user ID does not have sufficient privileges. Ensure the proper privileges have been added to the user before continuing or the install will not work properly. See 2.1.1, “Create db2admin user for DB2” on page 9 for details on modifying user privileges.
11. You will see a window similar to Figure 2-24. Accept the default directory locations and click **Next**. You will see a window similar to Figure 2-25.

12. Accept the defaults and type in the database user ID and password. For our example, we typed `db2admin` and its password. In our configuration the database will run locally. The installer will create a new database called WAS40 in DB2 that will contain WebSphere
Application Server data. Click **Next** to continue. You will see a window similar to Figure 2-26.

![Select Program Folder window](image1)

**Figure 2-26** Select Program Folder window

13. Accept the default for the Program Folders name and click **Next** to continue. You will see a window similar to Figure 2-27.

![Install Options Selected window](image2)

**Figure 2-27** Install Options Selected window

14. Take a moment to review and verify the options you chose and those listed as default. Click **Next** to begin the copying files and the installation of WebSphere Application Server V4.0 and IBM HTTP Server to your system.

15. A window will pop up asking if you wish to view the Readme file now. Click **Finish**.

16. Accept the default, (No, I will restart my computer later) and click **OK**.
2.6 WebSphere Application Server 4.0 Fixpack 2 installation

The following steps describe how to update the WebSphere Application Server 4.0 with fixpack 2.

1. From the WebSphere Portal Multiplatform V4.1.2 Disk 3-2 CD (WebSphere Application Server Advanced Edition for Windows and Linux), copy the was\win\fixpack2 folder to C:\temp.

2. From the C:\temp\fixpack2 directory run install.bat. You will see a window similar to Figure 2-28. Do not press Enter until after completing Step 3.

3. Follow the instructions stated in Figure 2-28. Proceed to click Start -> Settings -> Control Panel and double-click Administrative Tools -> Services. You will see a window similar to Figure 2-29.

4. In the Services window, verify that IBM HTTP Server and IBM WS AdminServer 4.0 are not started. If started, stop them. Return to the command prompt where you executed install.bat and press the Enter key. You will see a window similar to Figure 2-30.
5. Enter the directory where WebSphere Application Server 4.0 is installed. In our example, we typed `C:\WebSphere\AppServer`. Press the Enter key to install the fixpack 2 files.

While the installation is taking place be sure to watch for errors. The install process will have several prompts that require a response.

The installation may ask you if you wish to overwrite existing backups. Type Yes and then press Enter. The fixpack is attempting to create a backup of several .jar files during its install. This allows the fixpack to return to the backups it created if the fixpack is removed. Type Yes for all prompts to overwrite existing backups.

6. The install should continue and appear similar to Figure 2-31. At the **Please view the log for details** stage, notice the line above it, where `jdk_ptf_2.jar` installed with no errors. If an error occurs, we recommend that you read the log files in `C:\WebSphere\AppServer\logs`.

Press Enter to continue.

![Figure 2-31 Fixpack 2 installation window](image)

7. Next, you are asked if you would like to upgrade the IBM HTTP Server. Type Yes and press the Enter key.

8. Next, you are asked to enter the directory where the IBM HTTP Server 1.3.19 is installed. In our example, we typed `C:\IBM HTTP Server` and pressed the Enter key. You will see a window open similar to Figure 2-32.

![Figure 2-32 Connector Architecture for WebSphere (J2C) window](image)

9. Type Yes and press Enter to install the Connector Architecture for WebSphere (J2C).
The Connector Architecture for WebSphere Application Server allows applications to be developed that interact with Enterprise Information Systems (EIS) such as CICS and IMS. This is based on the J2EE Connector Architecture.

10. The fixpack will complete its install. A prompt will be displayed asking the user to press any key to continue. Press Enter and the window will close.

11. Reboot your system. Log back into the system.

12. During login you may see a window similar to Figure 2-33 and Example 2-1. Do not close either of these windows. They are creating database tables for WebSphere Application Server. Continue to Step 13 when the windows have automatically closed.

It is possible that neither of these windows will appear. This is not an error. Continue to the next step.

```
db2start
SQL1026N The database manager is already active.

CREATE DATABASE was40
```

Figure 2-33  Create database window

```
Example 2-1  cmd.exe
C:\>call C:\WebSphere\AppServer\bin\createdb2.bat

C:\>echo IBM WebSphere Application Server
IBM WebSphere Application Server

C:\>C:\SQLLIB\bin\db2cmd.exe /W /c db2 -o -v -t -f
C:\WebSphere\AppServer\bin\createwasdb.scr -zC:\WebSphere\AppServer\logs\wasdb2.log
```

13. The WebSphere First Steps window may have been launched. If it has, you will see a window similar to Figure 2-34. If it has not, manually start WebSphere First Steps by clicking:

   **Start -> Programs -> IBM WebSphere -> Application Server V4.0 -> First Steps**
14. From the First Steps window shown in Figure 2-34, click **Start Administrative Server**. You will see a message in Figure 2-35. Since WebSphere Administrative database has already been created, the install may proceed. Click **Yes**.

**Figure 2-35** Verify creation of WebSphere Application Server database

### 2.6.1 Verify WebSphere Application Server install

The installation of WebSphere Application Server 4.0.2 will now be verified.

1. Click **Start -> Settings -> Control Panel**. Double-click **Administrative Tools -> Services**. You should see a window similar to Figure 2-36 that shows IBM WS AdminServer 4.0 has been started.
2. If the service has not been started, right-click on the IBM WSAdminServer 4.0 service and select **Start**.

3. Now that we have verified that the AdminServer is running, we must start the Default Server in WebSphere. The Default Server contains the example which we will use to verify a successful installation. In the First Steps window, click **Launch the Administrative Console**.

4. Start the Default Server by expanding **WebSphere Administrative Domain -> Nodes -> [your node name] -> Application Servers**. You will see a window similar to Figure 2-37.
5. Right-click **Default Server** and select **Start**.

6. A window will appear verifying that the default server was successfully started. See Figure 2-38. Click **OK** to continue.

7. Now that the default server is running, the Snoop sample that is provided with WebSphere Application Server is tested. Open a browser window.

8. Enter the URL http://localhost/. You should see a window similar to the HTTP Server window shown in Figure 2-39. This verifies that HTTP Server is running.
9. Enter the URL http://localhost/servlet/snoop. The browser should look similar to Figure 2-40. This verifies that WebSphere Application Servers snoop sample is running correctly.
You have now successfully installed WebSphere Application Server.

### 2.6.2 Apply WebSphere Application Server eFixes

WebSphere Application Server requires several eFixes applied in order for it to work with WebSphere Portal Server. The steps are outlined as follows:

1. Click **Start -> Settings -> Control Panel.** Double-click **Administrative Tools.** Double-click **Services.** You should see a window similar to Figure 2-73. If IBM HTTP Server or IBM WS AdminServer 4.0 are running, select them, right-click and select **Stop.** These services cannot be running or the e-Fixes will not be applied properly.

![Services window](image)

2. Insert the WebSphere Portal V4.1.2 CD Disk 3-2 (WebSphere Application Server Advanced Edition for Windows & Linux) into the CD-ROM drive. Navigate to the was\eFixes directory.

3. Copy the eFixes folder to your C:\WebSphere\AppServer directory.

4. Using your Web browser go to:
   
   http://www-1.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg24001336

5. Click on the hyperlink marked PQ60461. Save the file to the C:\WebSphere\AppServer\eFixes directory. Make sure the file is saved as PQ60461_eFix.jar and not as PQ60461_eFix.jar.zip. If you are using Internet Explorer, you can ensure it is stored as PQ60461_eFix.jar by setting the Save as type to All Files rather than the default WinZip File. This is demonstrated in Figure 2-42.
6. Open up a command prompt and go to the C:\WebSphere\AppServer\eFixes directory. You will see a window similar to Figure 2-43.

```
C:\WINNT\system32>cd c:\WebSphere\AppServer\eFixes
C:\WebSphere\AppServer\eFixes
```

7. Run the command:

```
C:\WebSphere\AppServer\java\jre\bin\java -jar PQ55941_eFix.jar -target c:\WebSphere\AppServer
```

Note that c:\WebSphere\AppServer was specified as the default location of WebSphere Application Server's install. Change this value if you did not install to the default location.

8. The system may ask to, Please reply 'yes' to overwrite the existing file. Type yes and press Enter.

9. Verify that the script ran without any errors. The activity log in c:\WebSphere\AppServer\logs\activity.log contains additional details.

10. Repeat Steps 7, 8 and 9, with each of the following commands. The order in which these commands are executed is important. These commands will apply the necessary eFixes that WebSphere Application Server needs.

    a. C:\WebSphere\AppServer\java\jre\bin\java -jar PQ56615_eFix_AEserver_AEsServer.jar -target c:\WebSphere\AppServer
    
    b. C:\WebSphere\AppServer\java\jre\bin\java -jar PQ58678_eFix.jar -target c:\WebSphere\AppServer

Tip: WebSphere Application Server patches, fixes, and service packs can be downloaded from http://www-3.ibm.com/software/webservers/appserv/support.html
c. `C:\WebSphere\AppServer\java\jre\bin\java -jar PQ57814_eFix_AEServer.jar -target c:\WebSphere\AppServer`

d. `C:\WebSphere\AppServer\java\jre\bin\java -jar PQ58289_eFix.jar -target c:\WebSphere\AppServer`

e. `C:\WebSphere\AppServer\java\jre\bin\java -jar PQ58795_Test_AEServer_AEsServer.jar -target c:\WebSphere\AppServer`

f. `C:\WebSphere\AppServer\java\jre\bin\java -jar PQ59932_eFix_AEServer_AEsServer.jar -target c:\WebSphere\AppServer`

g. `C:\WebSphere\AppServer\java\jre\bin\java -jar PQ60461_eFix.jar -target c:\WebSphere\AppServer`

h. `C:\WebSphere\AppServer\java\jre\bin\java -jar PQ60787_eFix.jar -target c:\WebSphere\AppServer`

**Note:** If the installation is performed in Japanese, the fixpack PQ57024 must be applied to display Japanese characters in the Administrators Console correctly. This fixpack may be downloaded from:


It can be applied after the other fixpacks have been installed.

11. Reboot the machine. Verify that WebSphere Application Server is still running correctly. This can be achieved by repeating the steps in 2.6.1, “Verify WebSphere Application Server install” on page 30.

### 2.7 IBM Secureway V3.2.2 installation

IBM SecureWay provides a Lightweight Directory Access Protocol (LDAP) server that provides user lookups to WebSphere Portal Server.

Before installing Secureway V3.2.2, you must have a fully qualified host name for your computer. This will allow SecureWay to properly identify the address of your machine. If you are unaware of the fully qualified host name for your machine, please contact your system administrator.

Complete the following steps to install and configure IBM Secureway V3.2.2:

1. From your Windows Services Panel, shut down your IBM HTTP Server. Proceed to click **Start -> Settings -> Control Panel** and double-click **Administrative Tools -> Services**. You will see a window similar to Figure 2-44.
2. If IBM HTTP Server status is set to Started, then right-click and select **Stop**.

3. If IBM WS Admin Server 4.0 status is set to Started, then right-click on IBM WS AdminServer 4.0 and select **Stop**.

4. Insert the WebSphere Portal Multiplatform V4.1.1 Disk 5 CD (Secureway Directory) into your CD-ROM drive and navigate to the swd\win\ldap32_us subdirectory. Double-click **Setup.exe**.

5. Accept the default language, English, and click **OK**.

6. Select **Accept** and click **Next** to advance beyond the Software License Agreement window.

7. Click **Next** to begin the installation of Lightweight Directory Access Protocol (LDAP).

8. You will see a window similar to Figure 2-45.

9. Review the applications that have been installed. The GSKit, DB2, and IBM HTTP Server have been installed in previous steps. GSKit provides SecureWay with the ability to handle SSL connections. Click **Next** to continue. You will see a window similar to Figure 2-46.
10. Click the **Custom** button. You will see a window similar to Figure 2-47.

11. Accept the default to install LDAP and click **Next**. You will see a window similar to Figure 2-48.
12. Accept the defaults and click **Next**.

13. Accept the default for the name of the program folder, IBM Secureway Directory, and click **Next**. The DB2 V7.2 and IBM HTTP have already been installed and therefore are not checked. You will see a window similar to Figure 2-49.

14. Ensure all three checkboxes have been selected. Click **Next** to continue. You will see a window similar to Figure 2-50.
15. Accept cn=root for the administrator distinguished name and enter a password in the Administrator password field and enter the password again in the to confirm field. In our example, we used the word password for cn=root. Click **Next**. You will see a window similar to Figure 2-51.

16. Accept the default, Create a native language DB2 database (UTF-8), and click **Next**. You will see a window similar to Figure 2-52.
17. Unless you have several options on where to create your database, accept the default and click **Next**. You will see a window similar to Figure 2-53.

18. Accept the default location of your httpd.conf file and click **Next**. You will see a window similar to Figure 2-54.
19. Take a moment to review your current settings and then click **Next** to continue.

20. If you are interested in reviewing the Readme file, click **Yes**. In our example, we chose No and continued to see a window similar to Figure 2-55.

   If you do choose to read the Readme file, note that it may become overlaid by another window.

21. Accept the default, **Yes, I want to restart my computer now** and click **Finish**. Your machine will reboot.
2.8 IBM SecureWay Directory administration

On the reboot, IBM SecureWay Directory will configure a DB2 instance and create a database (see Figure 2-56). Before proceeding, please wait until this process has been completed. The window will close automatically.

Figure 2-56   ldapcfg.exe window

2. Right-click IBM SecureWay Directory V3.2.2 and click **Start**.

3. Start up a browser and go to the URL `http://<hostname>/ldap`. You will see a window similar to Figure 2-58.

4. In the Admin ID field, type `cn=root`. In the password field, type `password` (this was used in our example). Click **Logon**. You will see an introduction page.

5. In the left panel under Directory Server, click **Settings -> Suffixes**. You will see a window similar to Figure 2-59.
6. At the right of the Directory Server under Suffixes, you must add the distinguished name of the suffix you plan to use. In the example, the computer name is ibm662e305.itso.ral.ibm.com. Therefore, the suffix should be dc=ibm, dc=com. Type dc=ibm, dc=com into the Suffix DN field and click Update. You will see a window similar to Figure 2-60.

![SecureWay Directory Server Web Admin: ibm662e305 window](image)

Figure 2-59  SecureWay Directory Server Web Admin: ibm662e305 window
7. Click the black circle in upper right hand corner of the browser to restart the LDAP server. Wait until the server notifies you that the directory server is running. This may take a few moments. When it is ready you will see a window as shown in Figure 2-61.
2.8.1 Importing the Portal Server LDIF file

The next step will import WebSphere Portal Server users into SecureWay’s LDAP using a Lightweight Directory Interchange Format (LDIF) file. LDIF are ASCII files that allow transfer of directory information between LDAP servers.

This step imports an LDIF file into SecureWay. The LDIF file contains all of the LDAP definitions for the portal server. It also creates the wpsbind and wpsadmin IDs that are used for the portal install and administration.

1. Insert the IBM WebSphere Portal V4.1.2 CD Disk 7 (Portal Server) into your CD-ROM drive. Copy the wps\WPSconfig.ldif file to a temp directory. Remove the Read-Only attribute. This is accomplished by right-clicking the copied file in Windows Explorer and selecting Properties.
Deselect the Read-only checkbox under Attributes, and then click Apply and OK.

2. Open the WPSConfig.ldif file using your favorite text editor.

3. Modify the WPSConfig.ldif file so that it matches your host suffix. The LDIF file is configured for "yourco.com". In our example, the suffix is "ibm.com", so we must replace all instances of "yourco" with "ibm".

Additionally, if your suffix does not end with .com, you must edit the file appropriately. For example, if your suffix is "sandwich-club.org" you must replace all instances of "yourco" with "sandwich-club", as well as replace all instances of "com" with "org".

After you have made all appropriate changes, save the file and you will see a window similar to Figure 2-63.
4. Review the changes you have made to the WPSConfig.ldif file and click **File -> Save**. Make sure that you save the file as WPSConfig.ldif and not WPSConfig.ldif.txt. This is a common problem with WordPad.

5. Return to your opened browser, SecureWay Directory Server Web Admin (see Figure 2-61 on page 47).
6. From the Directory Server panel, click the arrow beside Database. This will expand the navigation bar. Click Import LDIF. Enter the path and file name of the modified WPSConfig.ldif file. For our example, we typed C:\temp\WPSConfig.ldif as shown in Figure 2-64. Click Import. You will see a window similar to Figure 2-65.
7. In the Completed task messages box, you will see that six entries have been added. If any errors have occurred, please recheck your LDIF file.

8. Close your browser at this time.

2.9 WebSphere Personalization

WebSphere Personalization allows you to personalize the content of a Web site, intranet or extranet so it matches the unique needs and interests of each user. Personalization makes the site more interesting and easier to use.

**Note:** Personalization Server must be installed on the same machine as WebSphere Portal Server.

Before you install WebSphere personalization, it is necessary to create the WebSphere Portal Application Server.

1. Click **Start -> Settings -> Control Panel.** Double-click **Administrative Tools -> Services.** Ensure the following services are running. If they are not, right-click on the service name and select **Start.**
   - DB2 - DB2
   - DB2 - LDAPDB2
2. Click Start -> Programs -> IBM WebSphere -> Application Server V4.0 -> Administrator's Console. From the Administrative Console, navigate to Domain -> Nodes -> [computer-name] -> Application Servers. Right-click Application Servers and select New. Enter WebSphere Portal as the Application Server name. **Spelling, case sensitivity, and spacing is very important.** Click OK. A dialog box will confirm successful creation. Your console should now appear similar to Figure 2-66.

![Figure 2-66   Adding WebSphere Portal Application Server from Admin Console](image)

3. Insert the IBM WebSphere Portal V4.1.2 CD Disk 4 (WebSphere Personalization Recommendation Engine) into the CD-ROM drive. Navigate to the personalization folder. Copy the personalization folder to your C:\temp folder.

4. Navigate to the C:\temp\personalization\silent\response_files\nt folder. Right-click nt folder and click Properties. You will see a window similar to Figure 2-67.
5. Uncheck the Read-only box. Click Apply. You will see a window similar to Figure 2-68. Select Apply changes to this folder, subfolders and files. Click OK.

6. Go to the c:\temp\personalization\silent\response_files\nt directory (see Figure 2-69).
7. In the directory, edit the pzn_silent_server.txt file (see Figure 2-70).

8. Change the line:
   
   -W bean28.appServer="Default Server"
   
   to:

   -W bean28.appServer="WebSphere Portal"

   Save the file. Ensure that the file is saved as a .txt file.

   **Important**: It is crucial that the entry of WebSphere Portal in Step 8 is exactly as shown, otherwise the install will not work. This includes case-sensitivity and any blank spaces.

9. Navigate to the C:\temp\personalization\silent\nt directory. You will see a window similar to Figure 2-71.
Chapter 2. WebSphere Portal V4.1 Windows 2000 installation

2.10 WebSphere Portal install using Secureway LDAP

WebSphere Portal Server will now be installed. The installation will be configured to use IBM SecureWay’s LDAP for its directory lookups.

1. Click Start -> Settings -> Control Panel. Double-click Administrative Tools -> Services. Verify that IBM SecureWay Directory V3.2.2, IBM HTTP Server, and IBM WSAdminServer 4.0 services are running. If their status is not set to Started, right-click them and select Start.
2. Insert the IBM WebSphere Portal Server V4.1.2 CD Disk 7 (Portal Server) in the CD-ROM drive, navigate to the wps directory and run install.bat. You will see a window similar to Figure 2-74.

3. Click **Next** to continue. You will see a window similar to Figure 2-75.

**Note:** When you notice a command prompt running in the background during your WebSphere Portal installation, do not stop the command prompt window from running. It must continue to run until your WebSphere Portal installation has been fully completed.
4. Review the prerequisites window to verify that you have complied with the required list of products. Click **Next**.

5. Read the license agreement and select I accept the terms in the license agreement and click **Next**. You will see a window similar to Figure 2-76.

6. Select **Standard** installation. A standard installation is used in production environments. The development option is for individuals who are deploying within a local environment.
that does not require security. This is ideal for individual developers needing a lighter set of tools and simpler environment than would be used in a production environment. Click **Next** and you will see a window similar to Figure 2-77.

![Authentication mode for Members Services window](image)

**Figure 2-77**  Authentication mode for Members Services window

7. Select **Database + LDAP** as an authentication mode and click **Next**. You will see a window similar to Figure 2-78.

![Global security window](image)

**Figure 2-78**  Global security window

8. Select **Configure global security**. This step will configure the WebSphere Portal Server’s Application Server with the proper authentication schemes. This includes enabling Single
Sign On, using LDAP with the proper Host, Security Server ID and JNDI Context Factory. Click **Next** and you will see a window similar to Figure 2-79.

9. Enter `wpsbind` for the LTPA password. Click **Next** and you will see a window similar to Figure 2-80.

10. Using the standard installation mode, Portal Server leverages the security features provided with WebSphere Application Server for authentication, including Lightweight Third Party Authentication (LTPA). Portal Server uses the Custom Form-based
Authentication mechanism of WebSphere Application Server to prompt users for identity. WebSphere Portal Server may also be configured with third-party authentication tools such as Tivoli Access Manager.

Select **No** because our example will not use a third-party authentication tool such as Tivoli’s Access Manager or Netegrity’s SiteMinder. Click **Next** to continue. You will see a window similar to Figure 2-81.

**Figure 2-81** LDAP type of server window

11. Select **IBM SecureWay Directory** as your LDAP Directory Server and click **Next**. You will see a window similar to Figure 2-82.

**Figure 2-82** Access information for LDAP Server window
12. Complete the fields with the information provided below:

   - Server hostname = <your fully qualified hostname>
   - Port = 389
   - User DN = cn=root
   - Password = password
   - Confirm password = password

   It is crucial that the server name is entered correctly.

   To determine the server name:
   
   a. Open a command prompt.
   b. Enter the command `ipconfig /all`.

   ![IPConfig](ibm662e305.itso.ral.ibm.com)

   c. The server hostname is the hostname concatenated with the Connection Specific DNS Suffix. In the above example, the server hostname would be `ibm662e305.itso.ral.ibm.com`.

   **Important**: If the Connection-specific DNS Suffix entry is empty, please contact your system administrator to determine what this value should be. WebSphere Portal Server will not work if the DNS Suffix is incorrect.

   d. Verify that the server hostname is correct. Type `ping <server hostname>` and you should see a window similar to Figure 2-84.
e. Once you have confirmed the correct server hostname, click **Next** and you will see a window similar to Figure 2-85.

13. Type the suffix in the Suffix field. In our example, we typed `dc=ibm,dc=com`. The suffix should map back to your host domain. Click **Next** and you will see a window similar to Figure 2-86.
14. Accept the default, Use default LDAP settings, and click Next. You will see a window similar to Figure 2-87.

15. Enter the node name of your system running WebSphere Application Server. The node name is the hostname taken from Step b on page 61. Do not concatenate the Connection Specific DNS Suffix. Click Next. You will see a window similar to Figure 2-88.
16. Enter the fully qualified hostname in the hostname field. For our example, we typed `ibm662e305.itso.ral.ibm.com`. Accept the default Base URI, `/wps`. Click **Next** to continue. You will see a window similar to Figure 2-89.

17. Accept the defaults, `/portal` and `/myportal`. This determines the URL with which you reach the portal. Click **Next**. You will see a window similar to Figure 2-90.
18. Enter the fully-qualified hostname and port of your organization’s proxy. This information is needed by WebSphere Portal Server to access content through the Internet. If your organization does not use a proxy server, leave both fields blank.

You can verify the use and the fully qualified hostname of your organization’s proxy server using Internet Explorer.

a. Click Start -> Programs -> Internet Explorer. Select Tools -> Internet Options. Click the Connections tab. Click the LAN Settings... button. You should see a window similar to Figure 2-91.

b. If the Use a proxy server button is checked, your organization is using a proxy server. To get the name of the proxy server, click the Advanced button. You should see a window similar to Figure 2-92.
c. In our example, the socks server is socks.ibm.com and the port is 1080. If your organization is using a proxy server, enter the socks server name and the port. Otherwise, leave these fields blank. Click **Next** to continue. You will see a window similar to Figure 2-93.

19. Accept the default, Deploy base portlets into Portal Server, and click **Next**. You will see a window similar to Figure 2-94.
20. Accept the default, IBM DB2, and click **Next**. You will see a window similar to Figure 2-95.

21. In our example, a new instance of the WPS41 database will be created, so select **Create and initialize a new database**. If an existing instance of WebSphere Portal Server’s database had existed, you would select **Use an existing and initialized database** to ensure that user profile and portal information was retained. Click **Next** and you will see a window similar to Figure 2-96.
22. Enter the user ID and password of the database administrator. This was configured in Step 9 on page 17. In our example, we used db2admin as the database user ID and db2admin as the user ID's password. Click **Next**. You will see a window similar to Figure 2-97.

23. Accept the default paths for the JDBC driver and library source and click **Next**. You will see a window similar to Figure 2-98.
24. Accept the default, Create and initialize a new database, and click **Next**. If an existing instance of WebSphere Portal Server had existed with existing users, the option to Use an existing and initialized database would have been used. You will see a window similar to Figure 2-99.

25. Enter the user ID and password of the database administrator. This was configured in Step 9 on page 17. In our example we used db2admin as the database user ID and
db2admin as the user ID’s password. Accept the default Database name, WMS. Click **Next** to continue. You will see a window similar to Figure 2-100.

![JDBC URL window](image)

**Figure 2-100**  JDBC URL window

26. Accept the default JDBC URL prefix, jdbc:db2. Click **Next**. You will see a window similar to Figure 2-101.

![Installation directory window](image)

**Figure 2-101**  Installation directory window

27. Accept the default Directory name, C:\WebSphere\PortalServer. Click **Next**. You will see a message that the directory does not exist. Click **Yes** to create it. You will see a window similar to Figure 2-102.
28. Click **Next** to install WebSphere Portal.

29. After copying the files you will see a window similar to Figure 2-103. Click **Next** to continue. The database will be initialized. Wait for a message indicating that the database has been initialized successfully (see Figure 2-104).
30. Click **Next**. WebSphere Portal installation will now create the WMS database. You will see a window similar to Figure 2-105.

31. Click **Next** to initialize the database. You will see a window similar to Figure 2-106.
32. Click **Next**. You will see a window similar to Figure 2-107.

33. Click **Next** and the application server will begin its configuration. This process will take several minutes. The install is configuring the databases. When it is complete, you will see a window similar to Figure 2-108.

In this step we have configured the default host in WebSphere Application Server, created the node, imported the JDBC drivers, imported the WebSphere Member Subscriptions (WMS) enterprise application, imported the PCO Enterprise application and the WebSphere Proxy Enterprise Application.
34. Click **Next**. You will see a header message indicating that the HTTP plug-in is being regenerated. This will take a moment to complete. When it has completed, you will receive another header message stating that the configuration of the application server is complete (see Figure 2-109). Note that the text window remains blank.

35. Click **Next** to continue. You will see a window similar to Figure 2-110. Stop and restart the IBM HTTP Server. Click **Start** -> **Settings** -> **Control Panel**. Double-click **Administrative Tools** -> **Services**. Right-click **IBM HTTP Server** and click **Stop**. After the server stops, right-click **IBM HTTP Server** and click **Start**.
36. Return to WebSphere Portal Server Installer (Figure 2-110) and click **Next**. The Installer will begin to back up your configuration. You will see a window similar to Figure 2-111.

37. Click **Next** and the installer will once again configure the application server. Click **Next** again. You will see a window similar to Figure 2-112.
38. In Figure 2-112, the installer indicates that the administration server needs to be restarted. Note that the installer will automatically do this for you. Before going on to the next step, take a moment to view your Services window to ensure that the IBM WS AdminServer 4.0 has been started. This may take a moment. Click the refresh button to be sure it is running.

39. Click **Next** to continue. You will see a window similar to Figure 2-113. This may also take a moment.
Chapter 2. WebSphere Portal V4.1 Windows 2000 installation

Figure 2-113   Setting the Admin Role window

40. Click Start -> Settings -> Control Panel. Double-click Administrative Tools -> Services. Right-click IBM HTTP Server and click Stop. After the server stops, right-click IBM HTTP Server and click Start. This will refresh the IBM HTTP Server with new settings that were modified during the install.

41. Click Start -> Programs -> IBM WebSphere -> Application Server V4.0 AE -> Administrator’s Console. This will start to open the Administrative Console for WebSphere Application Server. You will see a window similar to Figure 2-114.
42. When prompted for a user ID and password, type `wpsbind` in the User Identity field and type `wpsbind` in the User Password field. Click **OK**. You will see a window similar to Figure 2-115.

![WebSphere Advanced Administrative Console window](image)

**Figure 2-115  WebSphere Advanced Administrative Console window**

43. Select **Console -> Security Center**.

44. Click the **General** tab and verify that the option Enable Security is selected.

45. Click the **Administrative Role** tab. You will see a window similar to Figure 2-116.
46. In the list of Roles, select **AdminRole** and then click **Select**. The Select Users/Groups - AdminRole dialog is displayed (see Figure 2-117).
47. Click **Select users/groups** and then type * (the asterisk character) in the Search field. Click **Search** to display a list of users and groups.

48. In the list of Available Users/Groups, click **uid=wpsadmin** under Users, and then click **Add** button.

49. In the list of Available Users/Groups, click **cn= wpsadmins** under Groups, which is the group for portal administrators. Click the **Add** button. Your window should appear similar to Figure 2-118.

![Figure 2-118 Select Users/Groups - AdminRole window](image)

50. Click **OK**. This will complete adding the AdminRole privileges to the user wpsadmin and the group wpsadmins.

51. Click **OK** to close the Security Center. You will return to the main Administrative Console Window shown in Figure 2-119. Expand **WebSphere Administrative Domain-> Nodes** -> **[your node name]** and select WebSphere Portal Server.
52. In the left navigation area of the Administrative Console, expand **Nodes - portal_node** (for example, ibm662e305) - **Application Servers - WebSphere Portal**, where portal_node is the node for the WebSphere Portal installation.

53. In the right pane for the WebSphere Portal application server, click **JVM Settings** tab. Verify that the field Maximum java heap size is set to 256 or a higher value. If you change the field, click the Apply button.

54. Click on the portal node. In our example, it is ibm662e305. Right-click **ibm662e305** and click **Stop** as in Figure 2-120. The system will create a warning dialog box that says, You are trying to stop the node that the console is connected to. This will cause the console to exit after the node is stopped. Do you want to continue? Click **Yes**. This will cause the console to exit after the node is stopped.
55. From the Services window, restart the Administrative Server for WebSphere Application Server. Click Start -> Settings -> Control Panel. Double-click Administrative Tools -> Services. Right-click IBM WS AdminServer 4.0 and click Start. Once the IBM WS AdminServer 4.0 is started, continue with this installation.

56. Return to the IBM WebSphere Portal Server Installer. However, do not close it.

**Note:** Do not stop the command prompt window from running in the background.

57. Click Start -> Programs -> IBM WebSphere -> Application Server V4.0 AE -> Administrator's Console. At the login window, enter wpsbind for the user ID and password. Click OK. You will see a window similar to Figure 2-121.
58. If WebSphere Portal is running, right-click **WebSphere Portal** and click **Stop**. Click **OK** when the information dialog window indicates that Command “WebSphere Portal.stop completed successfully”. Right-click **WebSphere Portal** and click **Start**. Click **OK** when the information dialog window indicates that Command “WebSphere Portal.start” completed successfully.

59. Start your Internet browser and verify you can get to the following URL: [http://[localhost]/wps/portal](http://[localhost]/wps/portal). You will see a window similar to Figure 2-122.
60. Return to the WebSphere Portal Server Installer as shown in Figure 2-113. Click **Next** to continue. You will see a window similar to Figure 2-123. The installer is now deploying portlets to WebSphere Portal Server.

61. When the portlet deployment is complete click **Next**. You will see a window similar to Figure 2-124.
Figure 2-124  WebSphere Portal Final installation action window

62. Click **Next**. You will see a window similar to Figure 2-125.

Figure 2-125  Installation complete window

63. Click **Finish**. The IBM WebSphere Portal Server Installer will close as well as its associated command prompt window.

64. Test your install. From a browser, enter the following URL again:

   http://[localhost]/wps/portal

   You will see a window similar to Figure 2-126.
Figure 2-126 WebSphere Portal Welcome window
Related publications

The publications listed in this section are considered particularly suitable for a more detailed
discussion of the topics covered in this Redpaper.

IBM Redbooks

For information on ordering these publications, see “How to get IBM Redbooks” on page 88.

- IBM WebSphere V4.0 Advanced Edition Handbook, SG24-6176
- WebSphere Solution Bundles: Implementation and Integration Guide, SG24-6550
- IBM WebSphere V4.0 Advanced Edition Security, SG24-6520
- IBM WebSphere V4.0 Advanced Edition Scalability and Availability, SG24-6192
- WebSphere Application Server V4 for Linux, Implementation and Deployment Guide, REDP0405

Referenced Web sites

These Web sites are also relevant as further information sources:

- WebSphere Application Server Advanced Edition 4.0-PTF and FixPaks
- WebSphere Software Platform
  http://www.ibm.com/websphere
- IT and Professional Training
  http://www.ibm.com/services/learning
- Portlet Development Guide
- Microsoft Home Page
  http://www.microsoft.com
- Ldap Performance Problems
  http://www-1.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg24001336
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IBM Redbooks collections

Redbooks are also available on CD-ROMs. Click the CD-ROMs button on the Redbooks Web site for information about all the CD-ROMs offered, as well as updates and formats.
This IBM Redpaper will help you plan, install, and administer the IBM WebSphere Portal Version 4.1.2 Enable offering product in a Microsoft Windows 2000 environment, so that existing enterprise applications can be accessed from portlets using the IBM WebSphere Portal product.

This Redpaper provides easy, step-by-step examples allowing you to rapidly deploy IBM WebSphere Portal Version 4.1.2 on Microsoft Windows 2000 — therefore providing you with a solid foundation to begin importing and using existing portlets to access your enterprise applications. IBM recommends and supports the use of WebSphere Portal Setup Manager to perform your installations. However, because of multiple-tier configurations that Setup Manager may not resolve during installation, this Redpaper provides the manual process for installing IBM WebSphere Portal and its components. This manual process is an alternative to using the Setup Manager to configure different multi-tier environments. In addition, this manual process allows you to view those activities that take place during the overall installation process.

A basic knowledge is assumed for Windows 2000, 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.