



# **WebSphere V6.0 installation guide**

*Including step-by-step WebSphere Application Server  
configuration information*

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## Abstract

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*This guide provides detailed step-by-step installation and configuration instructions for IBM WebSphere Application Server for the IBM System p family of systems (IBM Power Systems) for product data management (PDM) applications. This guide is intended as a mechanism to educate Advanced Technical Support (ATS) and Field Technical Support Specialist (FTSS) personnel, in support of sales engagements.*

## Introduction

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This guide supplements the IBM® WebSphere® Application Server installation documentation that is already available on the **ibm.com** Web site. It does not replace them. The focus here is on the installation and configuration of WebSphere Application Server. The basic steps that are involved in applying updates to WebSphere Application Server are also presented in this documentation.

For this white paper, WebSphere Application Server Version 6.0.2 (FP25) and IBM AIX® Version 53 TL\_07 are used.

## Installing images

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Before beginning the installation, mount the CD-ROMs or hard-disk devices on the network node that will run the WebSphere Application Server installation wizard. You can either locally mount or use network file system (NFS) to remotely mount the CD-ROM or hard-disk devices.

In the following instructions, the WebSphere Application Server base and update images are downloaded from the IBM Web site. The installation directory (/was\_install\_images/~) is then NFS-mounted from a remote NFS server.

### Download installation images

Follow these two steps to download the WebSphere Application Server installation images:

1. Download WebSphere Application Server 6.0.2 and the fixpack25 from the IBM Web site.  
**ibm.com/software/support**
2. Extract the Installation files.

### Preinstallation setup

Before installing the WebSphere Application Server code, perform the following two steps:



1. Create /usr/IBM/ with a size of 20 GB.
2. Increase /tmp so that it has 500 MB free.

## WebSphere hints and tips

**Administration tips:** You can use the following commands and address to start or stop the server:

1. Start server 1:  

```
- /usr/IBM/WebSphere/AppServer/bin/startServer.sh server1
```
2. Start the HTTP server:  

```
/usr/IBM/HTTPServer/bin/apachectl start
```
3. Stop server 1:  

```
- /usr/IBM/WebSphere/AppServer/bin/stopServer.sh server1
```
4. Stop the IBM HTTP Server:  

```
/usr/IBM/HTTPServer/bin/apachectl stop
```
5. If there are problems starting server, then use the following command:  

```
- /usr/websm/bin/wmsserver -disable
```
6. Deploy WebSphere Application Server in a browser by typing in the following address:  

```
http://server_name:9060/ibm/console
```

## Installing WebSphere 6.0.2.25

WebSphere Application Server, the IBM HTTP server and the Web server plug-ins are first installed at version 6.0.1, then updated to the 6.0.2 product level. The update installer is installed and the products are updated to the FixPack25 level.

### Installing WebSphere Application Server 6.0.1

The following steps and screen captures explain the process of starting the WebSphere Application Server installer process:

1. As root, run the installation command:  

```
~/was_install_images/was_601_base/WAS/install
```
2. From the page shown in Figure 1, select **Launch the installation wizard for WebSphere Application Server**.

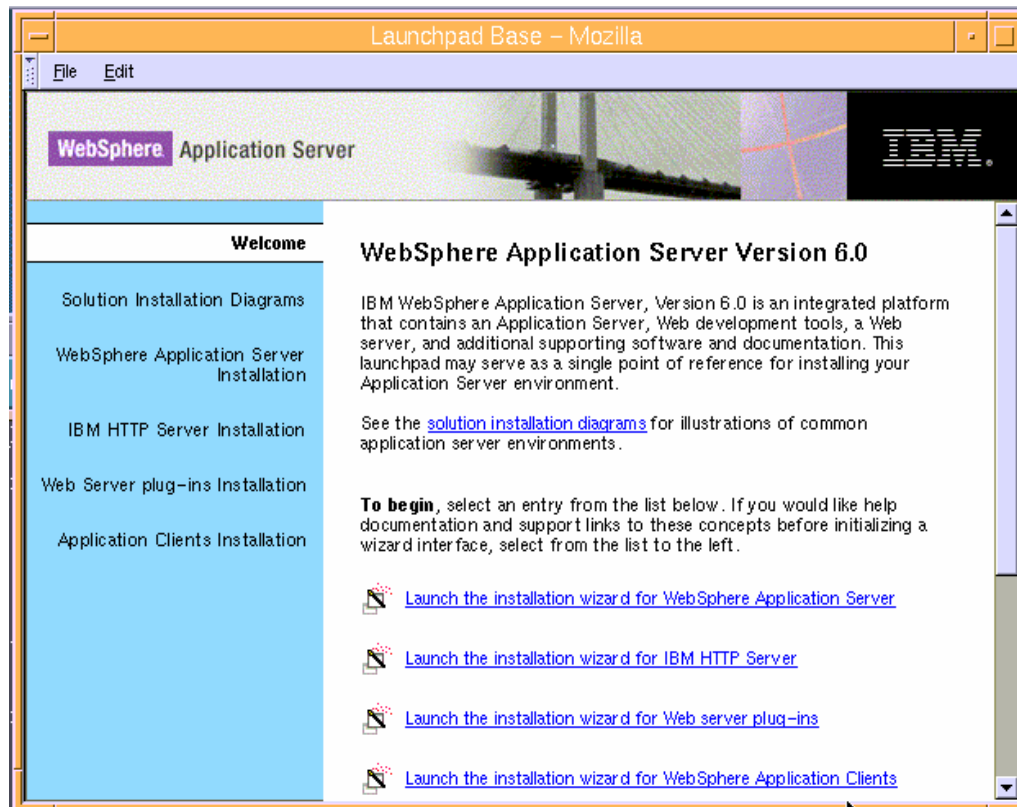


Figure 1. Launchpad base for installing WebSphere Application Server Version 6.0

3. You are presented with a *Welcome* page. Click **Next**. (See Figure 2.)



Figure 2. Welcome page for installing WebSphere Application Server V6

4. Accept the license terms and click **Next**. (See Figure 3.)

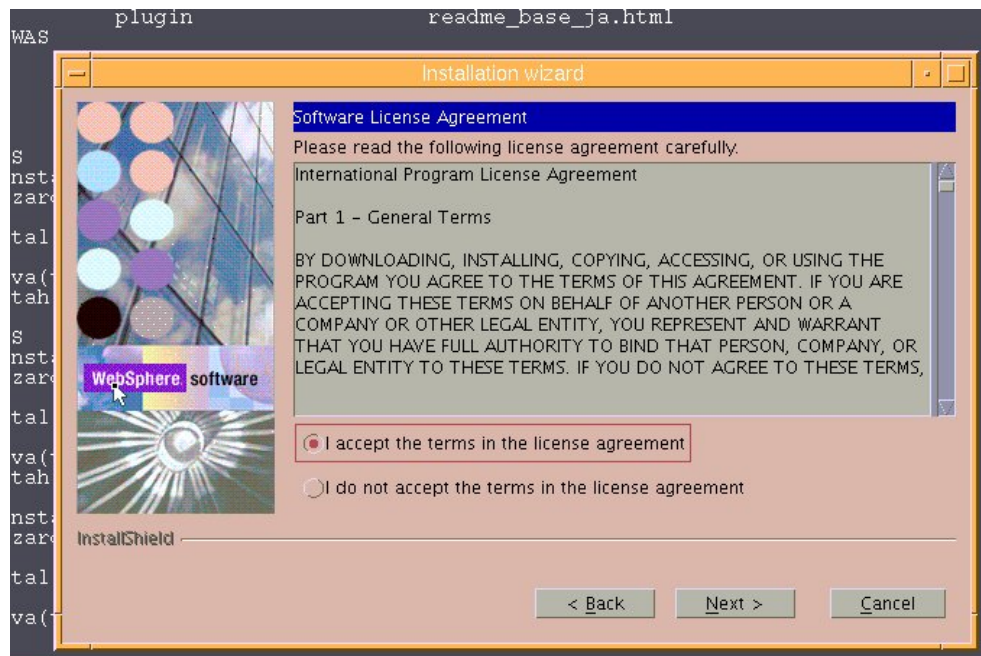


Figure 3. License terms

5. You then see that the wizard has checked for the expected system prerequisites. Click **Next**. (See Figure 4.)

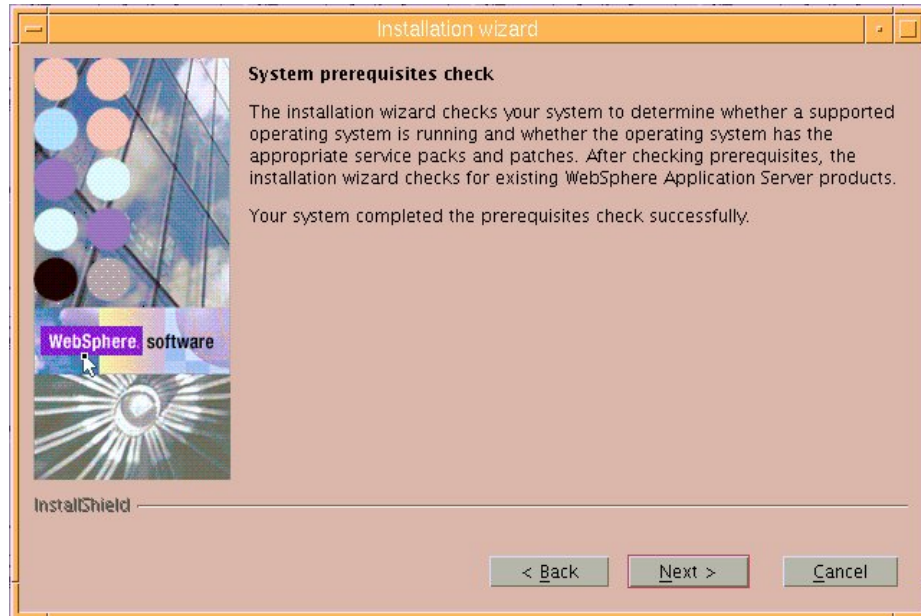


Figure 4. The installation wizard verifies the presence of the prerequisites

6. Enter the directory name for the WebSphere Application Server instance. (This example uses the /usr/IBM/WebSphere/Appserver default location as the directory name.) Then, click **Next**. (See Figure 5.)

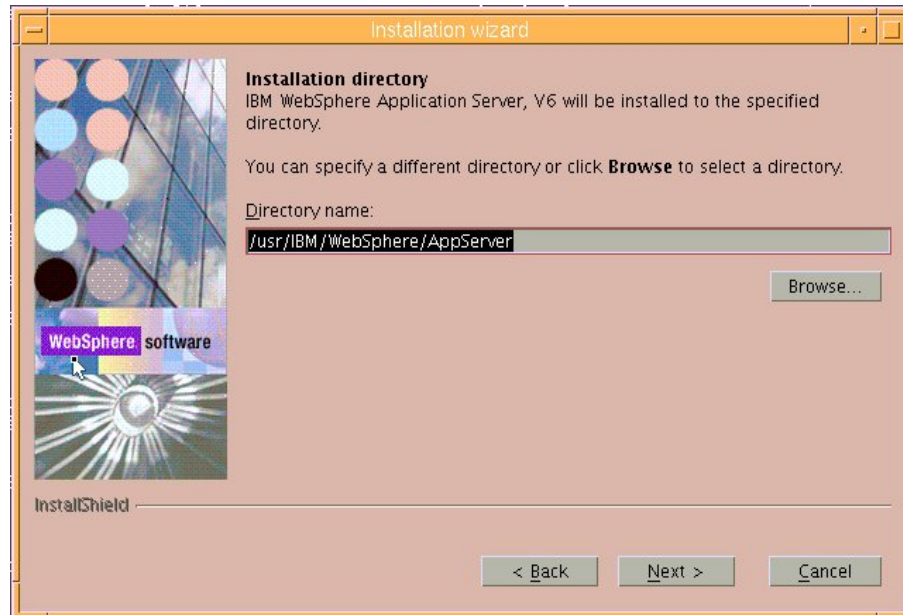


Figure 5. Enter the directory name for the WebSphere Application Server instance



7. Select **Full installation** to install everything that is necessary to run Web applications on your server with minimal prompts. Then, click **Next**. (See Figure 6.)

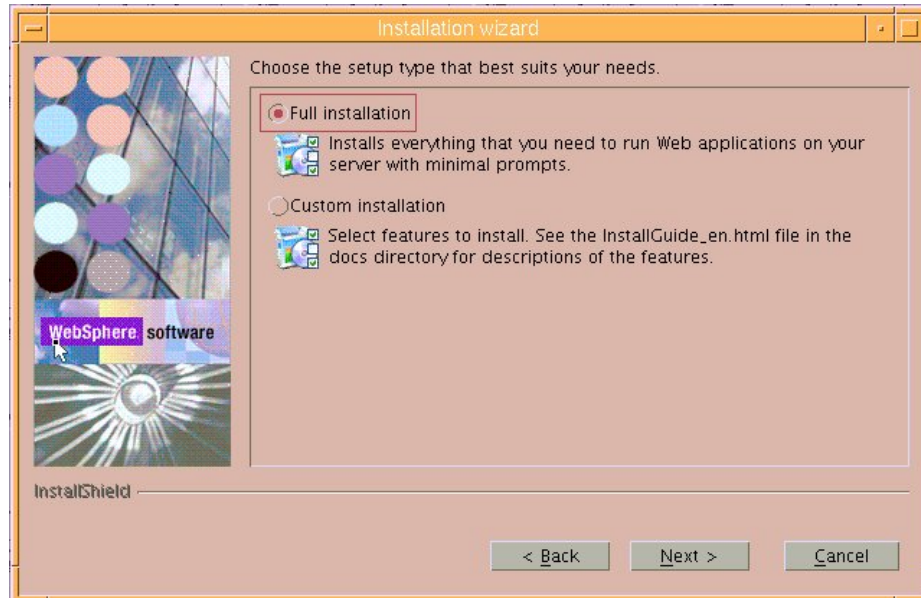


Figure 6. Select **Full installation**

8. Review the installation summary, then click **Next**. (See Figure 7.)

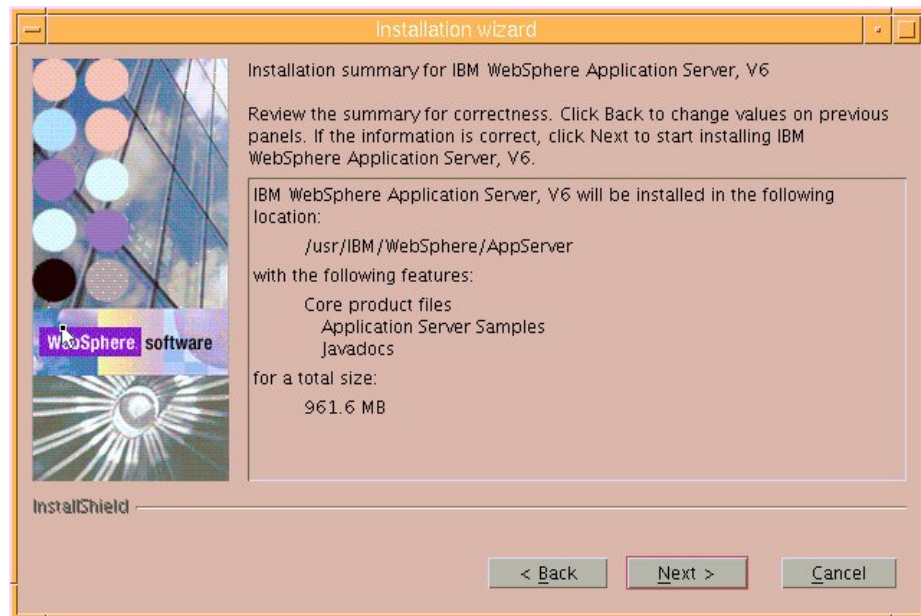


Figure 7. Installation summary



- The installation takes several minutes, displaying the status by updating the progress bar. (See Figure 8.)

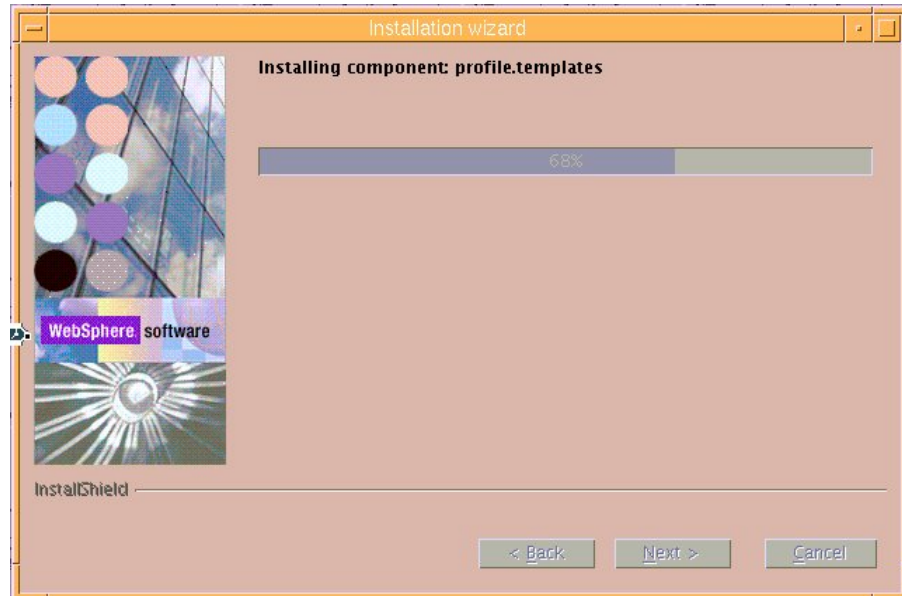


Figure 8. Installation progress

- Upon completion, Installation is complete is displayed. Ensure that **Launch the First steps console** is selected and then click **Finish**. (See Figure 9.)

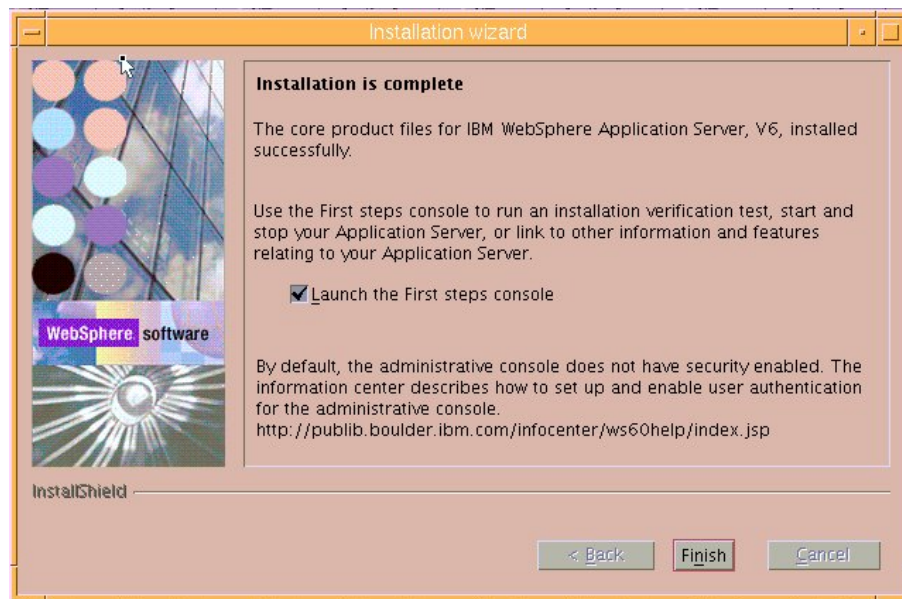


Figure 9. Installation of WebSphere Application Server is complete

11. At the First steps page, perform the following actions to verify that the installation of WebSphere Application Server 6.0.1 was completed successfully:
  - a. Select **Installation verification**.
  - b. In the pop-up window, select **Stop server**.
  - c. Click **Exit**.
  - d. Close the windows that were opened to perform the *Installation verification* and the *Stop server* processes. (See Figure 10.)

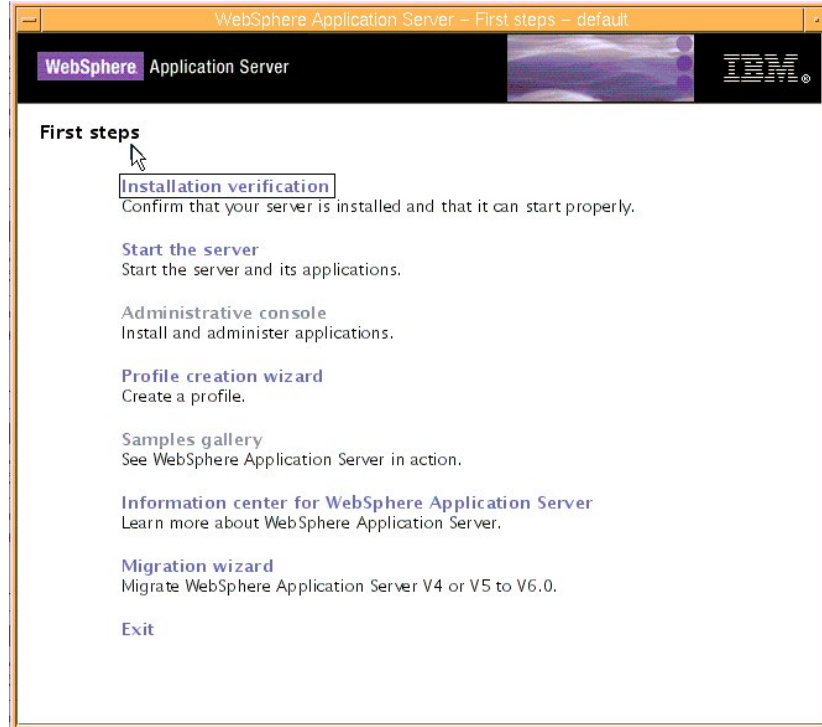


Figure 10. First steps to test the successful installation of WebSphere Application Server

## Installing IBM HTTP Server 6.0.1 and Web server plug-in 6.0.1

1. Select **Launch the installation wizard for IBM HTTP Server**. (See Figure 11.)

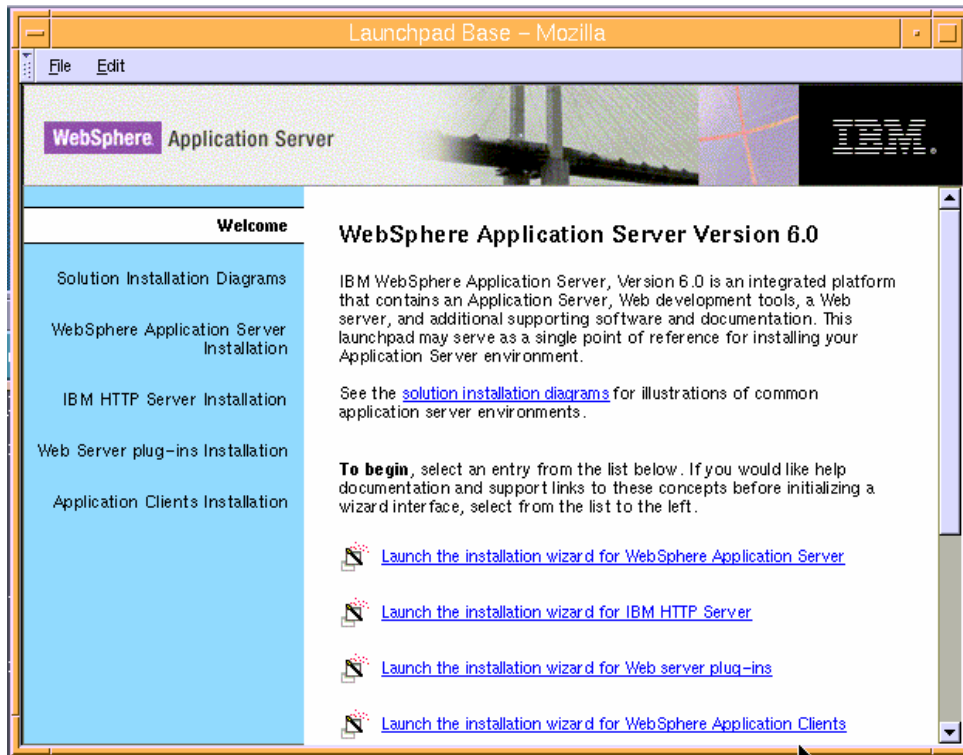


Figure 11. Select to install IBM HTTP Server

2. To begin the IBM HTTP Server 6.0 installation, click **Next**. (See Figure 12.)

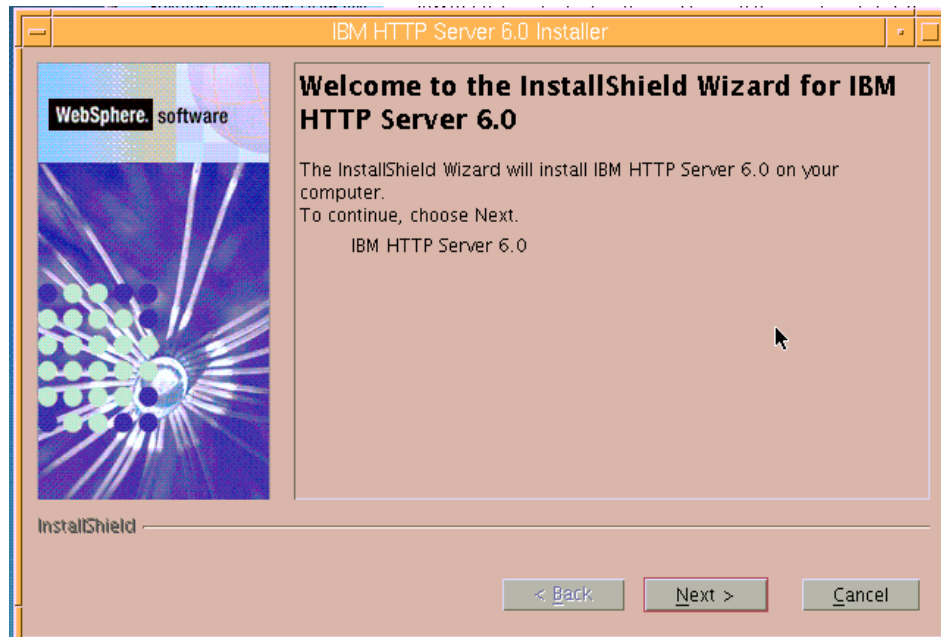


Figure 12. Welcome page for installing IBM HTTP Server

3. Select **I accept the terms in the license agreement**, then click **Next**. (See Figure 13.)



Figure 13. License agreement

4. Enter `/usr/IBM/HTTPServer` as the directory name, then click **Next**. (See Figure 14.)

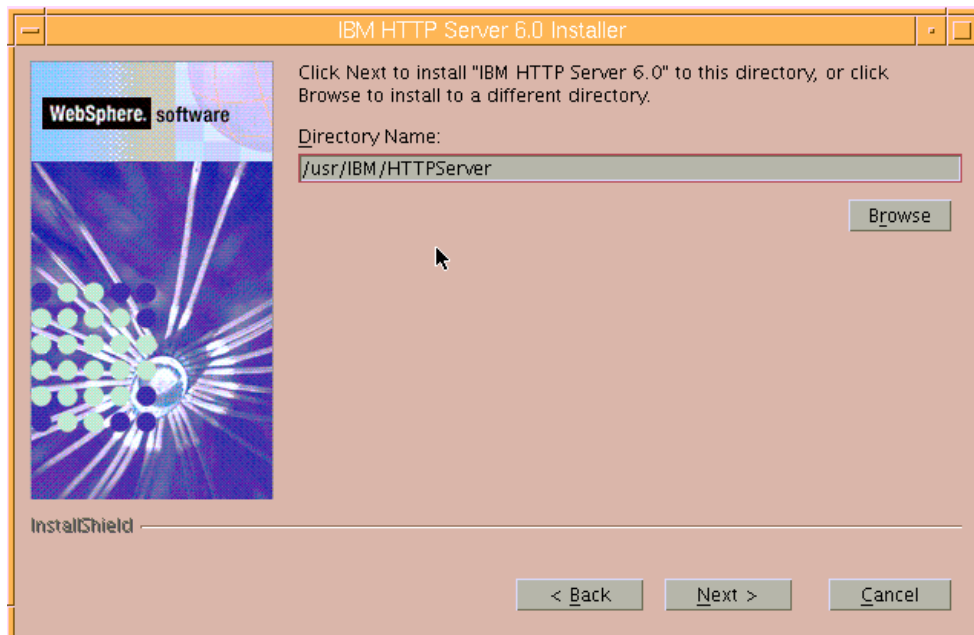


Figure 14. Directory name

5. Select **Custom** so that you can specify the features you want the installation wizard to install, then click **Next**. (See Figure 15.)

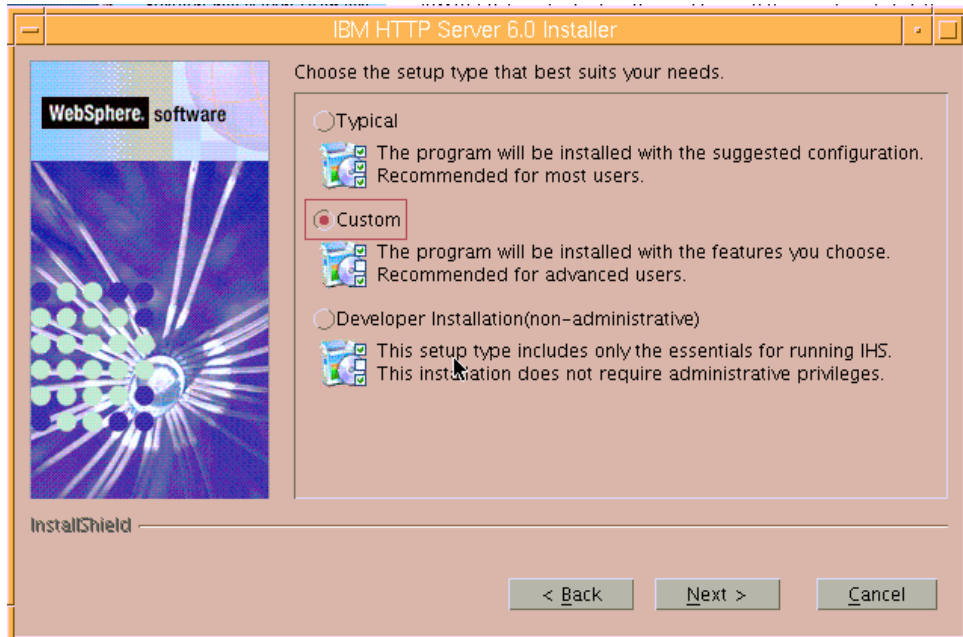


Figure 15. Custom installation

6. Clear **Security**, then click **Next**. (See Figure 16.)

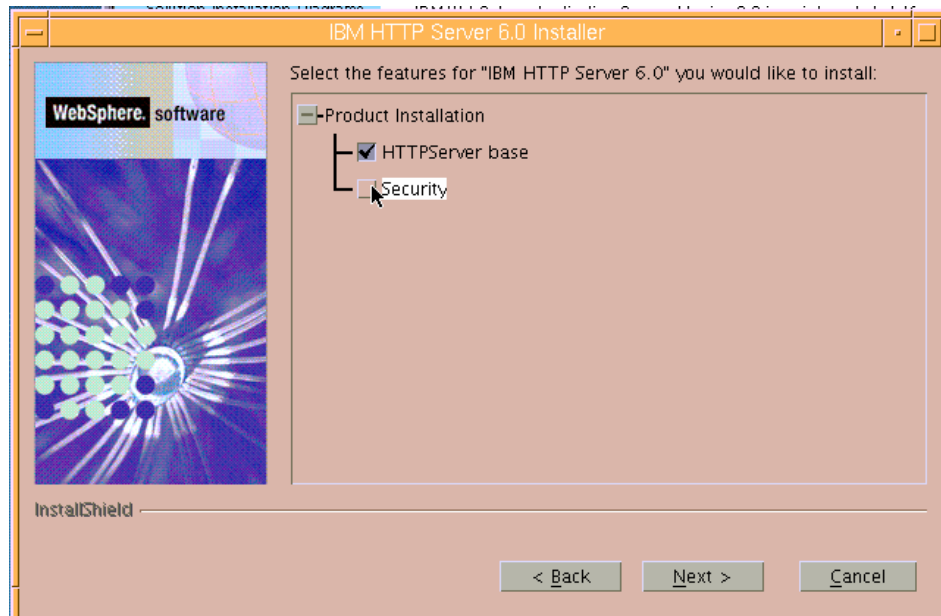


Figure 16. Clear the installation of security features

7. Click **Next** because the default ports are acceptable. (See Figure 17.)

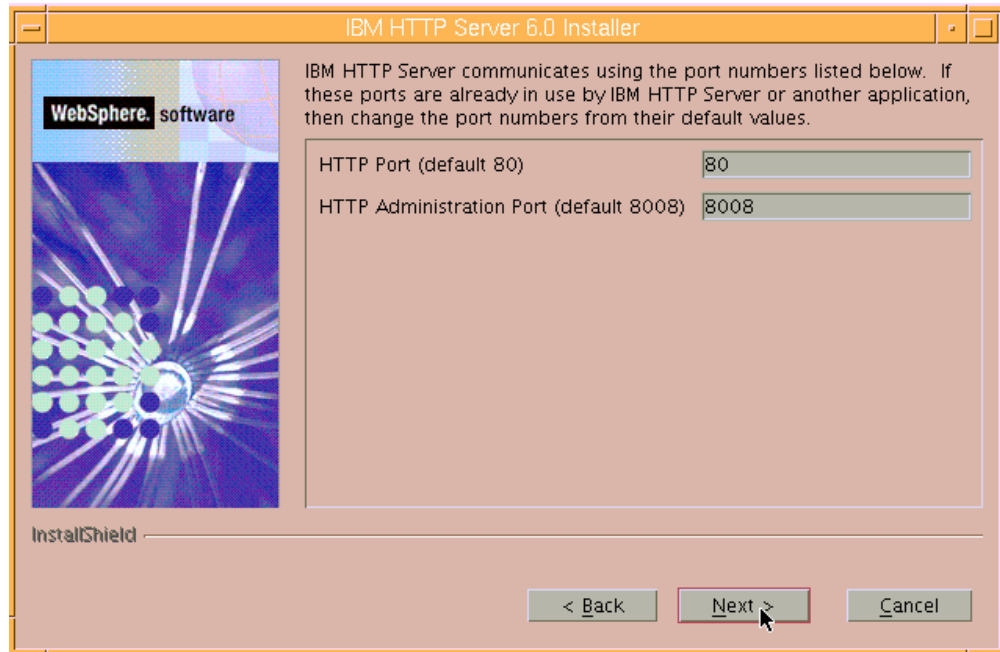


Figure 17. The default ports

8. Review the summary, then click **Next** to proceed with the installation. (See Figure 18.)

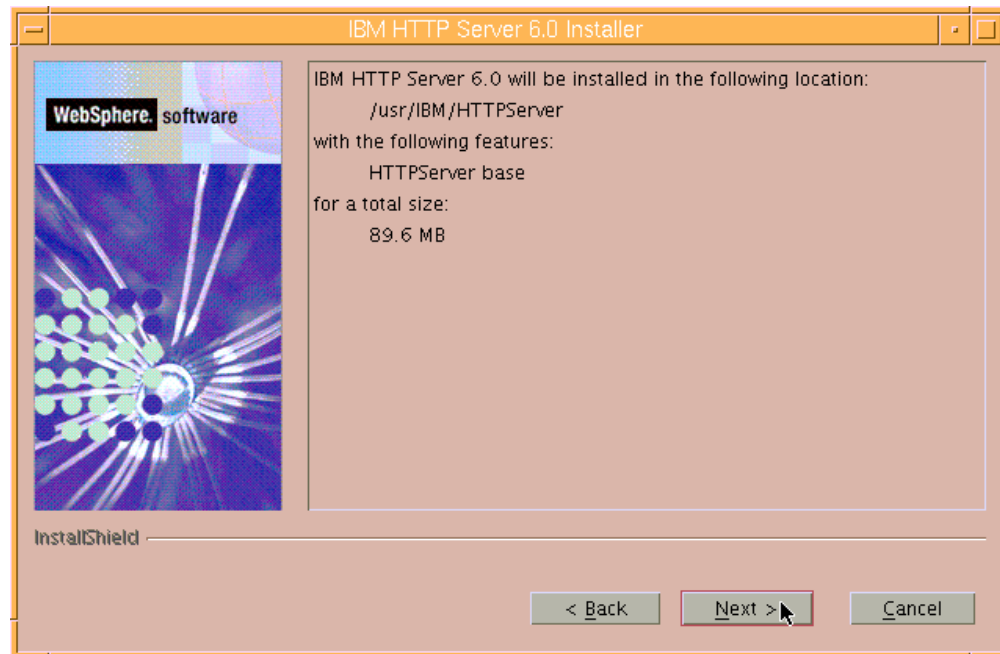


Figure 18. Summary of the IBM HTTP Server installation criteria



9. A status page with a progress bar is displayed while the installation proceeds.

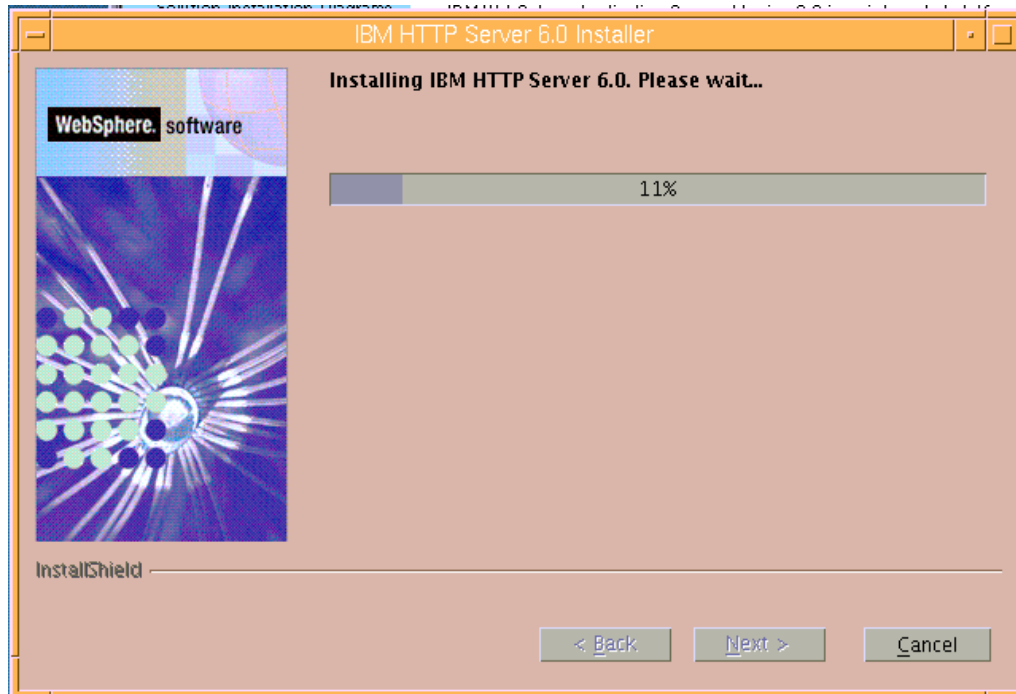


Figure 19. Installation status bar

10. When the installation is complete, click **Next**. (See Figure 20.)

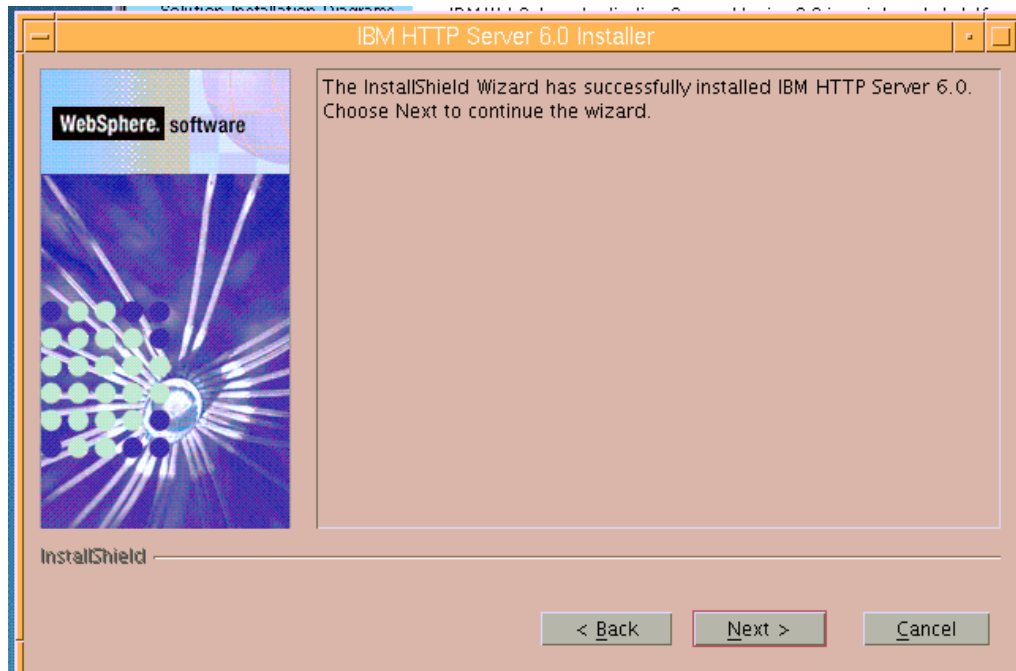


Figure 20. Successful installation of IBM HTTP Server



11. Ensure that **Launch the WebSphere Application Server – Plugin Install** is selected. Then, click **Finish** to proceed. (See Figure 21.)

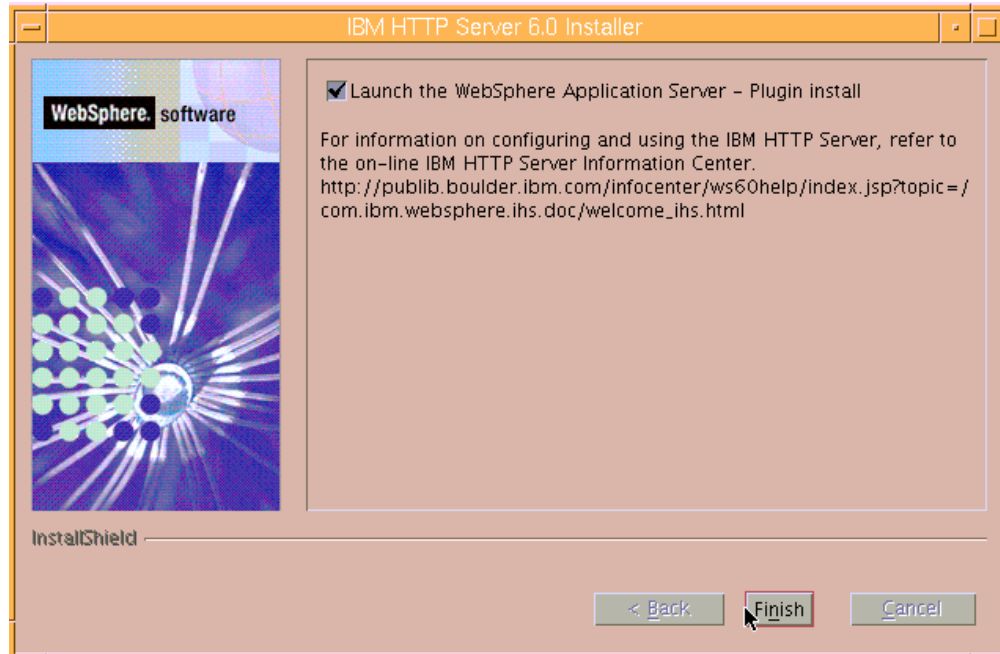


Figure 21. Launching the plug-in installer

12. Clear **Installation roadmap: Overview and installation scenarios**, then click **Next**. (See Figure 22.)

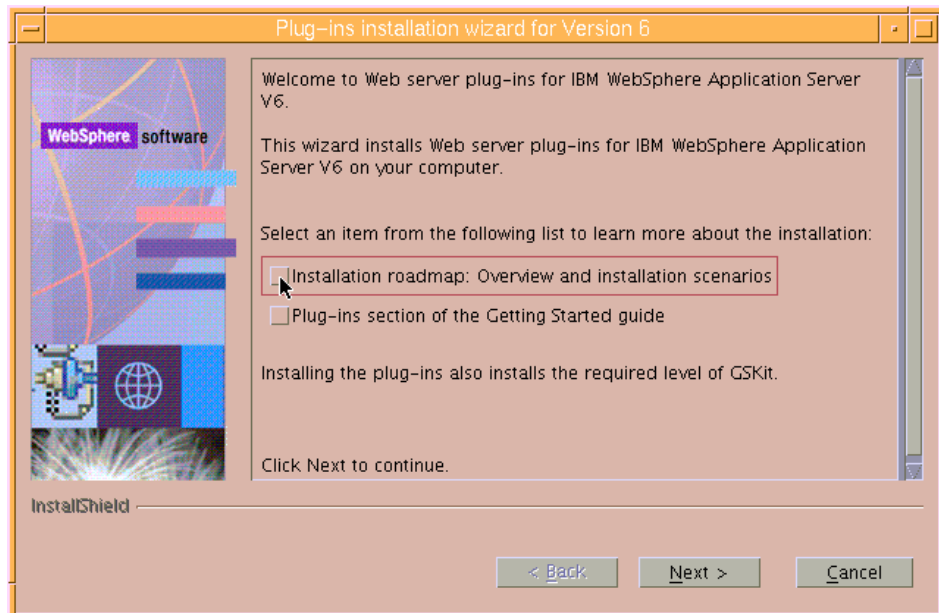


Figure 22. Deselecting *Installation roadmap*

13. Select **I accept the terms in the license agreement**, then click **Next**. (See Figure 23.)



Figure 23. License agreement

The installation wizard verifies that your System p server is running a supported operating system for WebSphere Application Server Version 6. It also checks to see that the required service packs and patches are installed. Finally, it determines whether any WebSphere products are already installed on your system.

14. Click **Next**. (See Figure 24.)

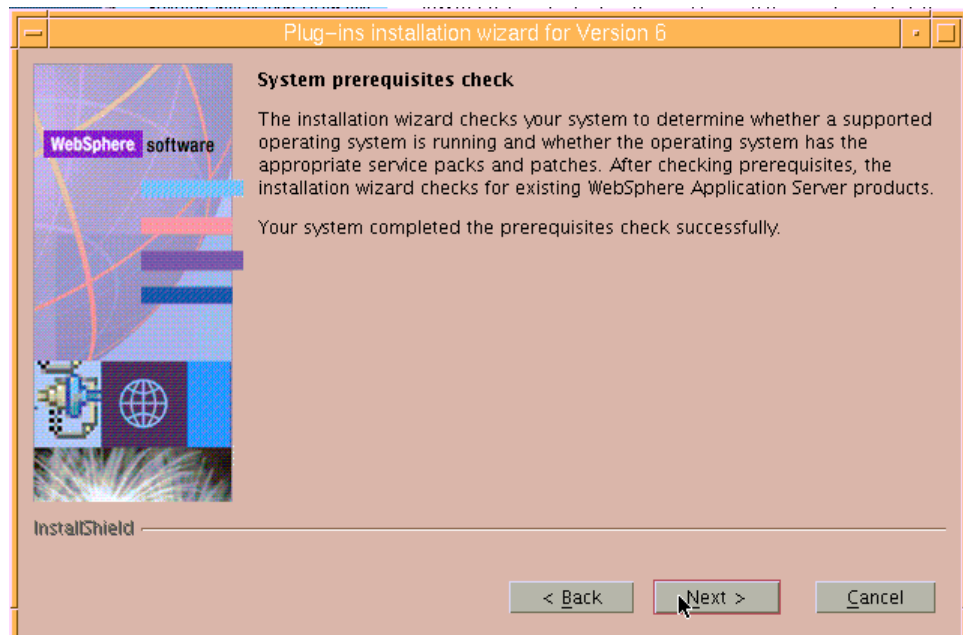


Figure 24. System prerequisite check

15. Select **IBM HTTP Server V6**, then click **Next**. (See Figure 25.)

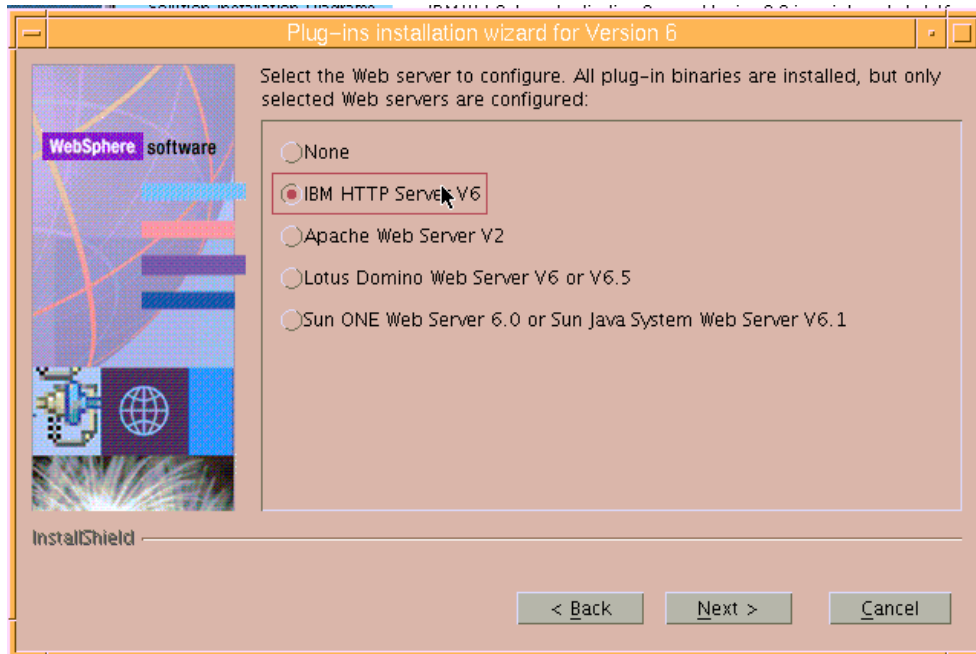


Figure 25. Selecting the preferred HTTP server

16. In this exercise, WebSphere Application Server and the Web server reside on the same system. Therefore, you should select **WebSphere Application Server machine (local)**, then click **Next**. (See Figure 26.)

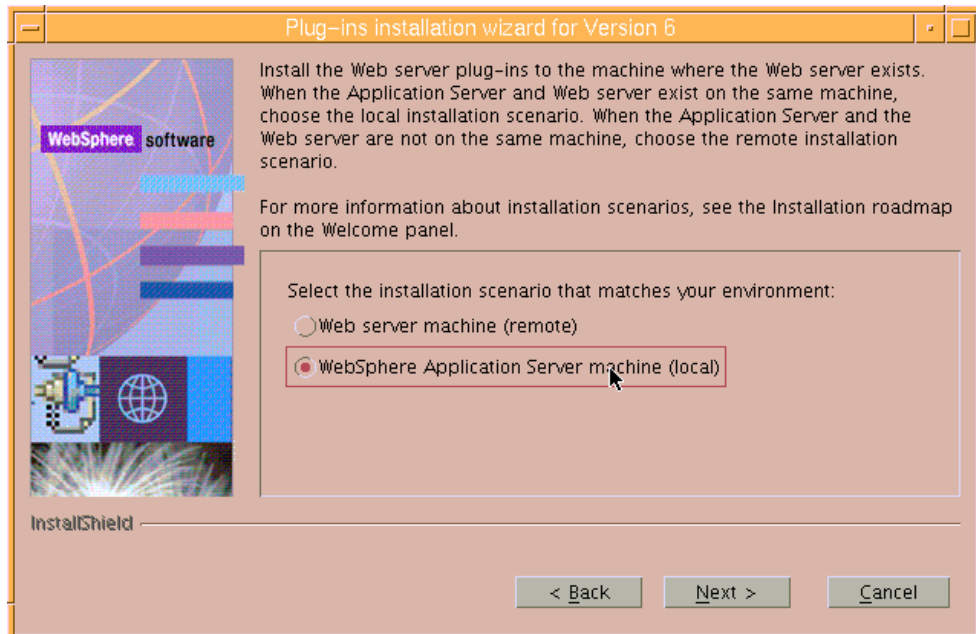


Figure 26. Installation scenario

17. The proposed Web server plug-in location of `/usr/IBM/WebSphere/Plugins` is good, so click **Next**. (See Figure 27.)

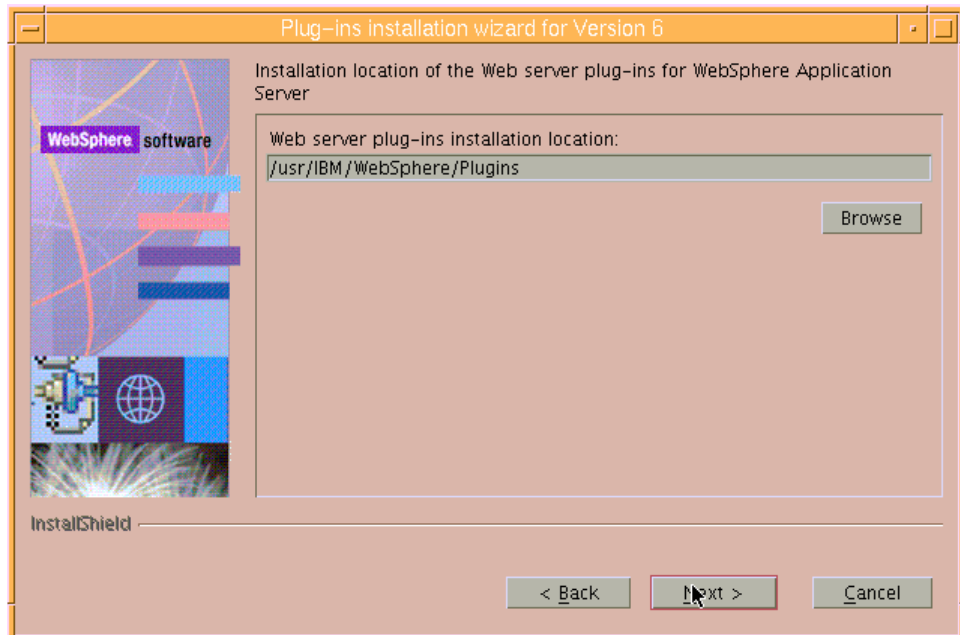


Figure 27. WebServer plug-in location

18. Verify that the location shown for WebSphere Application Server installation is correct, then click **Next**. (See Figure 28.)

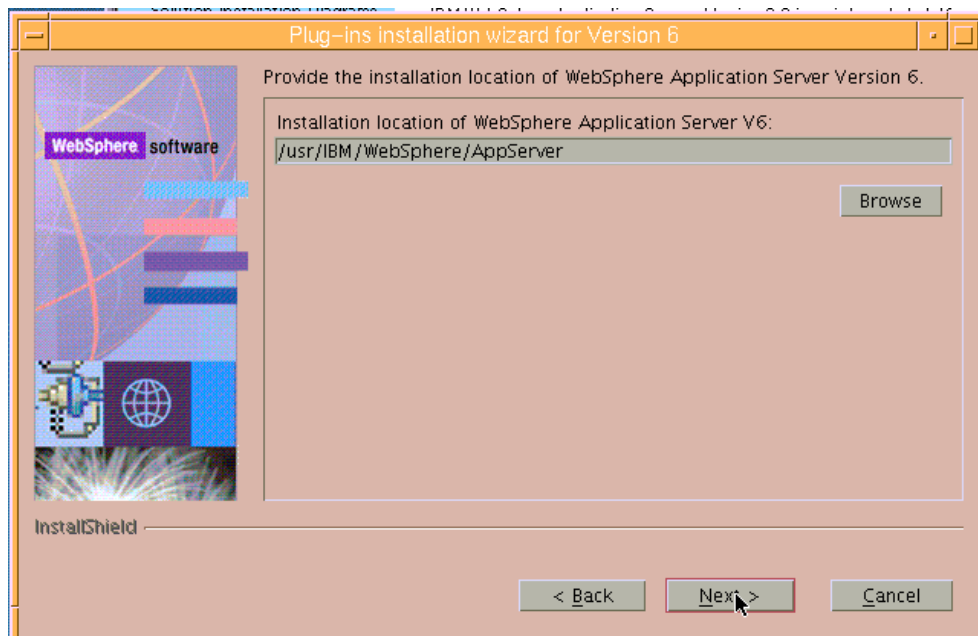


Figure 28. Location of WebSphere Application Server

19. Enter `/usr/IBM/HTTPServer/conf/httpd.conf` as the location for the HTTP configuration files and verify that the Web server port is 80, then click **Next**. (See Figure 29.)

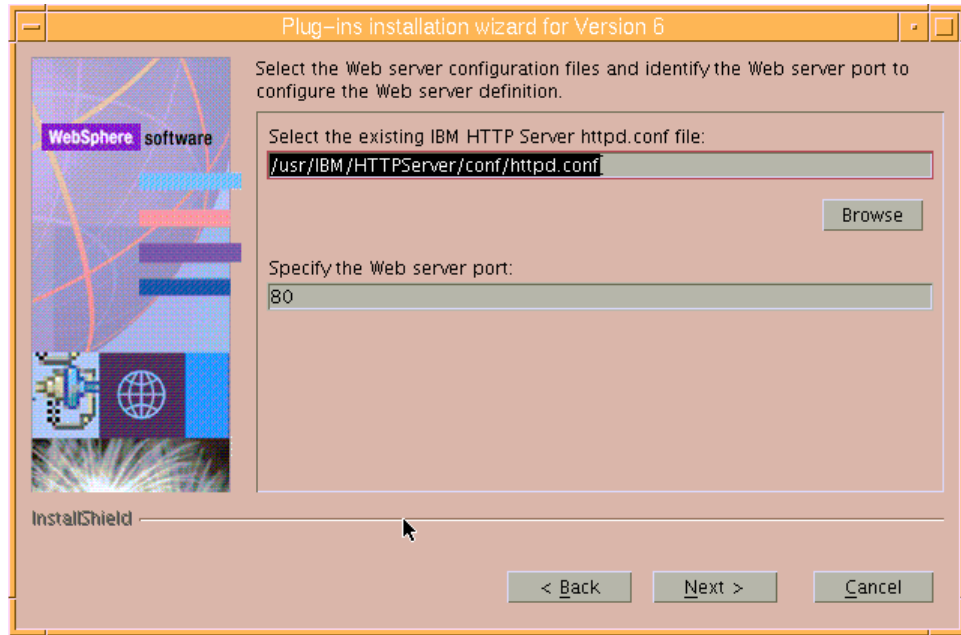


Figure 29. Web server configuration files and Web server port

20. A Web server definition makes it possible for you to manage your Web server through the administrative console. This is the point at which you assign a name to that Web server definition. In this example, the default definition name is used. Click **Next**. (See Figure 30.)

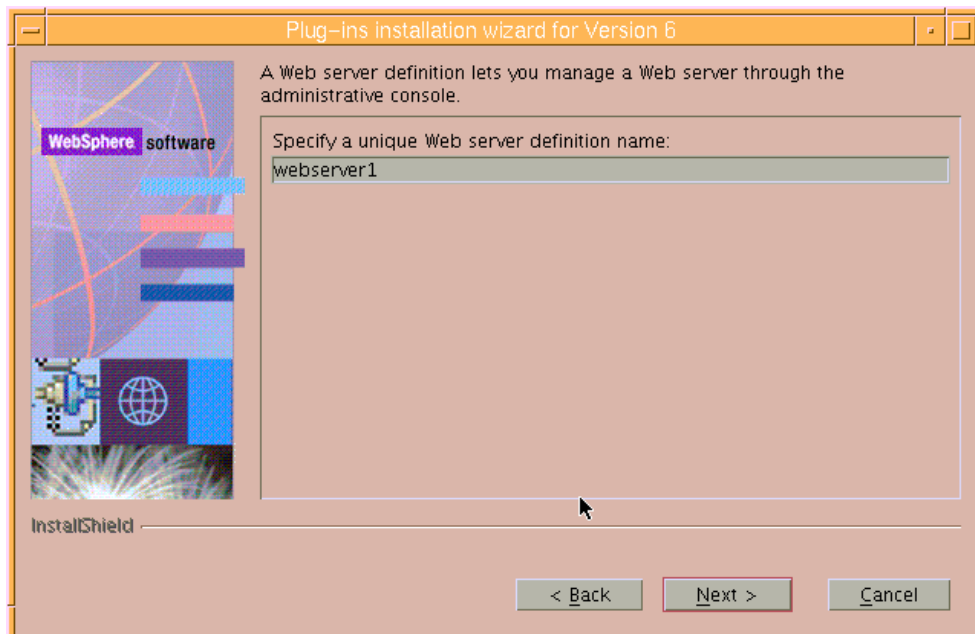


Figure 30. Web server definition name

- Notice that the wizard has provided a default location where it will generate a plugin-cfg.xml file. Click **Next**. (See Figure 31.)

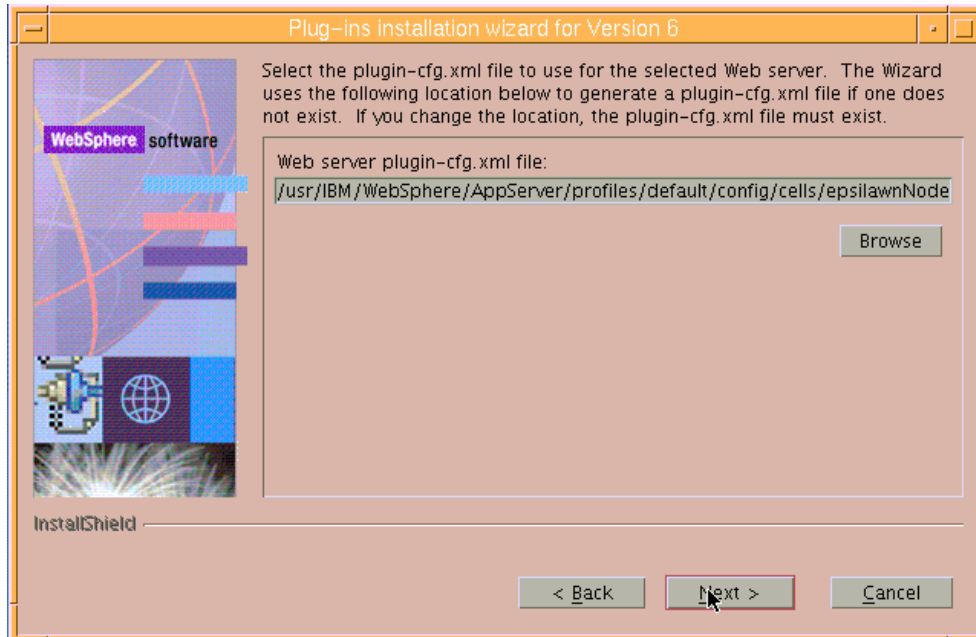


Figure 31. Location of the plugin-cfg.xml file

- The next page is informational. Review the details it provides, then click **Next**. (See Figure 32.)

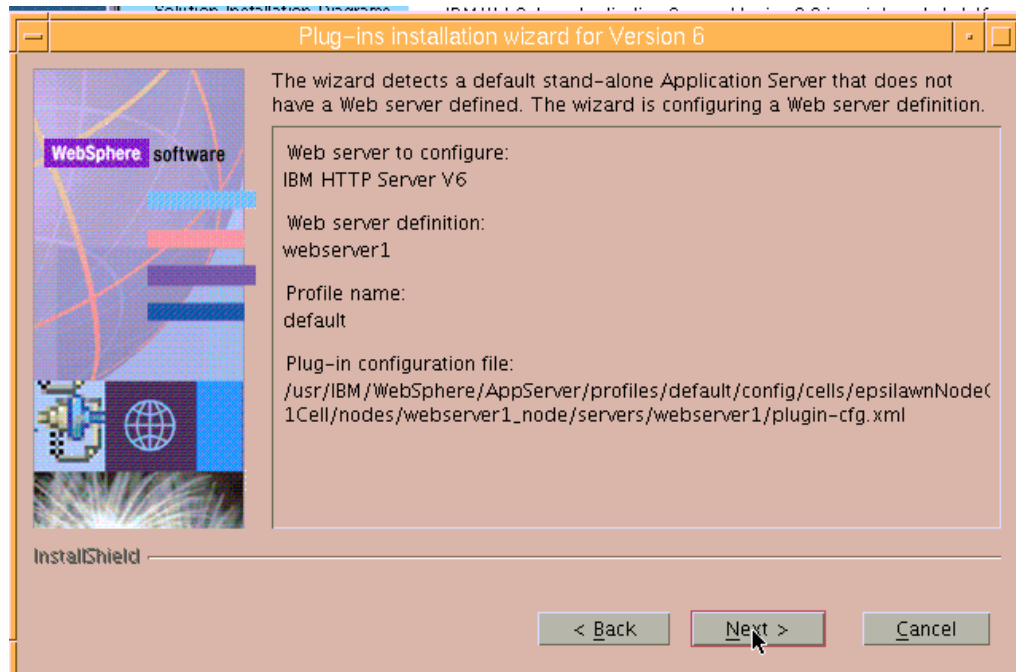


Figure 32. Informational panel regarding a default stand-alone application server



23. The next page is also informational. It provides details regarding the installation location and file size for the Web server plug-ins. Click **Next**. (See Figure 33.)

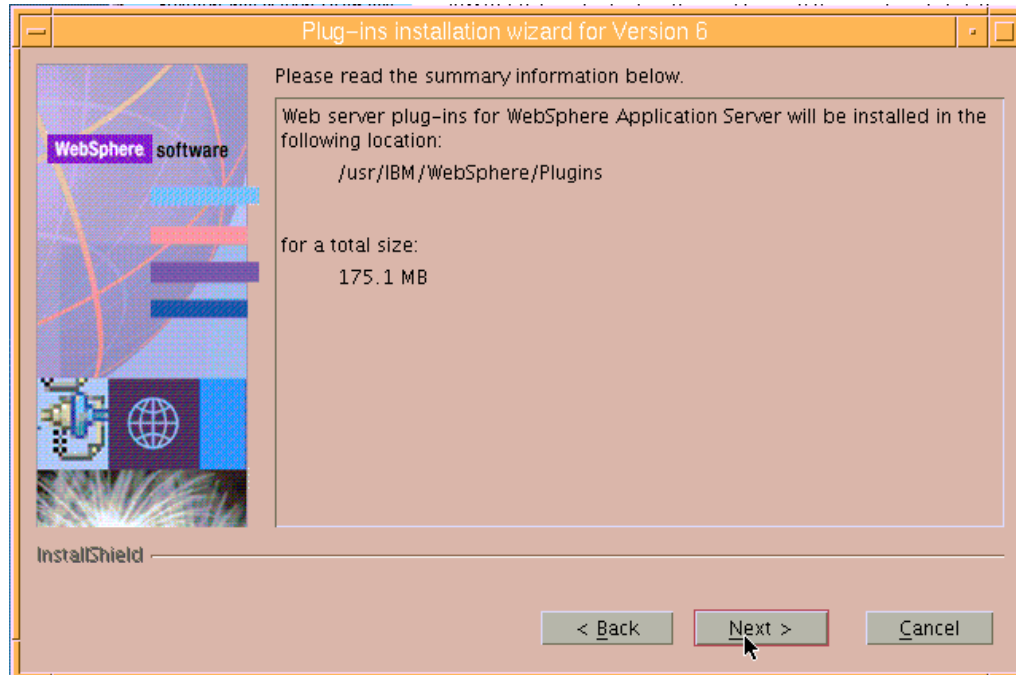


Figure 33. Informational page regarding the location and size of the Web server plug-ins

24. A progress window is displayed while the plug-in installation proceeds, which takes a couple of minutes. (See Figure 34.)

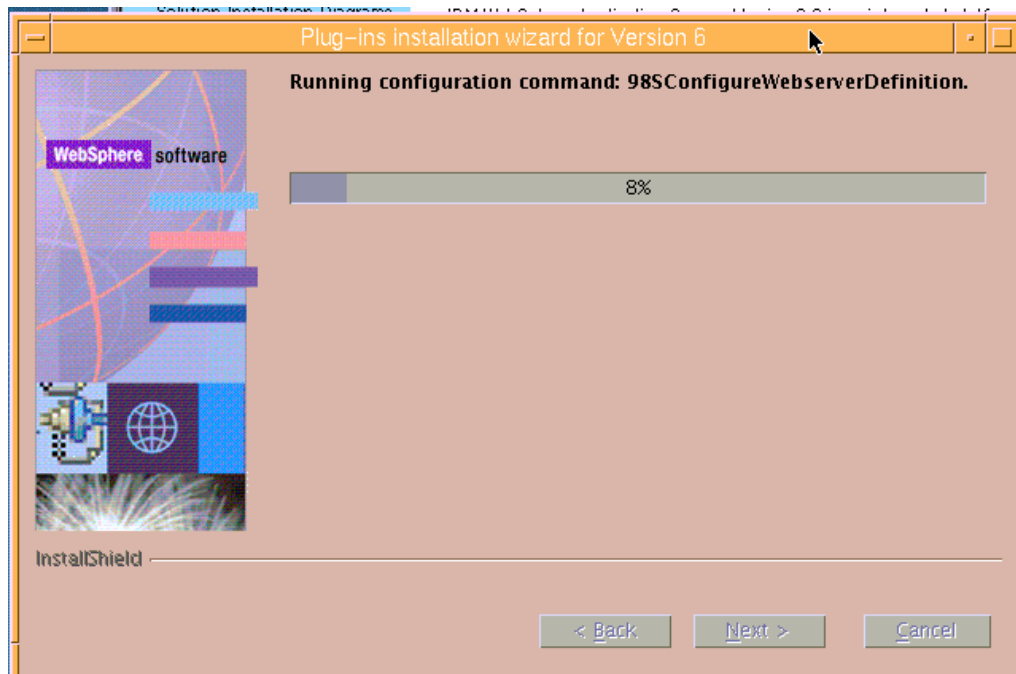


Figure 34. Progress window for the installation of the plug-ins



25. The next page provides details regarding definition and profile names as well as other relevant information. Click **Next**. (See Figure 35.)

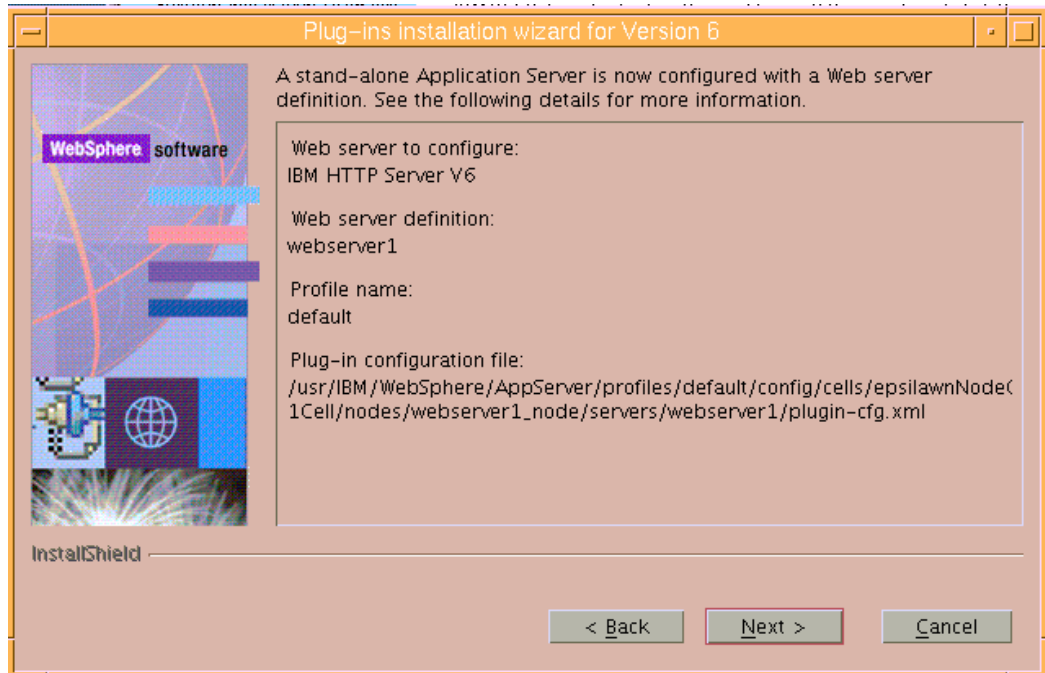


Figure 35. Informational page regarding IBM HTTP Server and the plug-ins

**Note:** No additional screen captures are provided for the final part of this installation process.

26. Close the Web browser window that has been opened by the installation wizard, and click **Finish** to end the installation wizard.
27. Exit the Launchpad window by clicking **File -> Quit**.

## Installing WebSphere Application Server 6.0.2 updates

The process to update WebSphere Application Server V6.0.1 to 6.0.2 requires the use of TAR files that are downloaded from the WebSphere support site ([ibm.com/software/webservers/appserv/was/support](http://ibm.com/software/webservers/appserv/was/support)). You can use these TAR files to update the plug-ins, IBM HTTP Server and WebSphere Application Server.

The following list of TAR files are necessary to update from WebSphere Application Server 6.0.1 to 6.0.2:

- 6.0-WS-WAS-AixPPC32-RP0000002.tar (to update /usr/IBM/WebSphere/AppServer)
- 6.0-WS-WAS-IHS-AixPPC32-RP0000002.tar (to update /usr/IBM/HTTPServer)
- 6.0-WS-WASPlugIn-AixPPC32-RP0000002.tar (to update /usr/IBM/HTTPServer/Plugins)

### Updating plug-ins

The process for updating Web server plug-ins is as follows. (**Note:** Perform all updates as root.)

1. Stop IBM HTTP Server and WebSphere Application Server, then run the `slibclean`
2. Change the directory to the installation location for the product that requires update.
3. Use the `tar` command to extract the contents of the TAR file that contains the tar file for the product that requires updating.
4. Use the `CD` command to move the contents of the TAR file into the `updateinstaller` subdirectory. Then, run the `./update` program that guides you through the update process.

```
cd /usr/IBM/HTTPServer/Plugins
tar -xvf 6.0-WS-WASPlugIn-AixPPC32-RP0000002.tar
cd updateinstaller
./update
```

5. The `/update` program displays a Welcome page. Click **Next**. (See Figure 36.)

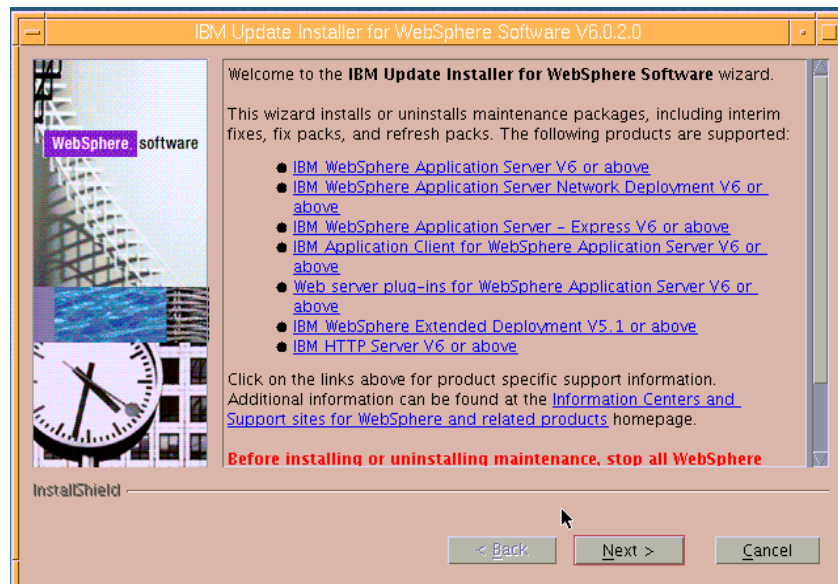


Figure 36. Welcome page for the `/update` program

6. Verify that the wizard has filled in the directory name for the plug-ins, then click **Next**. (See Figure 37.)

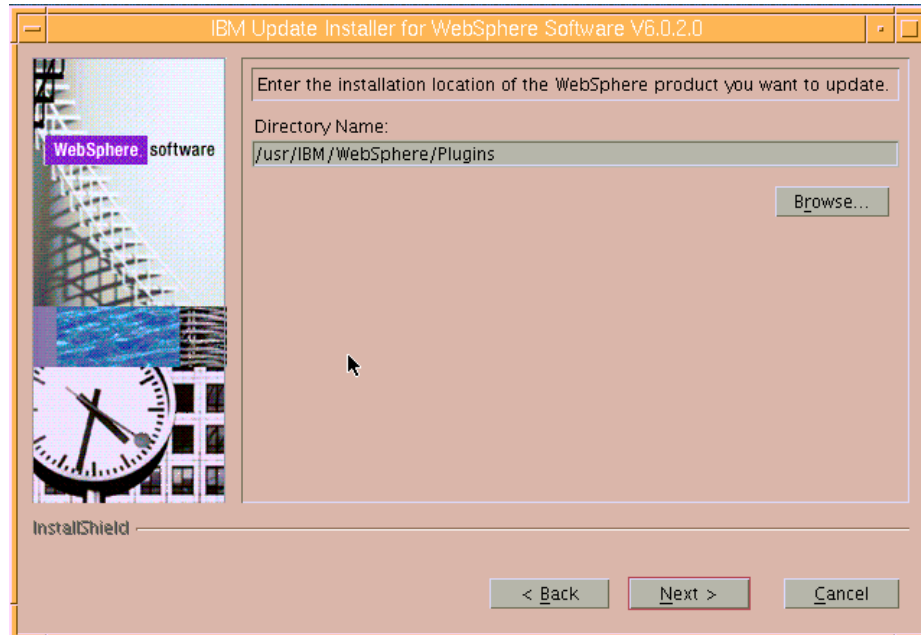


Figure 37. Directory name for the plug-ins

7. Notice that the next page already selects **Install maintenance package** as a default. Click **Next**. (See Figure 38.)

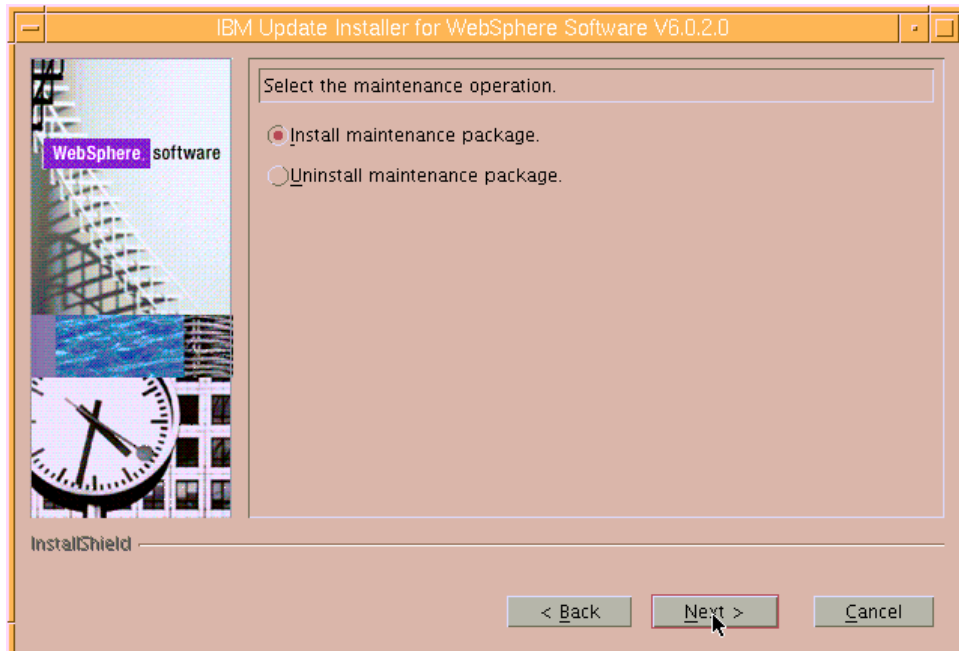


Figure 38. Selecting to install the maintenance package

- Notice that the wizard is continuing to fill in information relating to the installation of the maintenance package. All you need to do is click **Next**. (See Figure 39.)

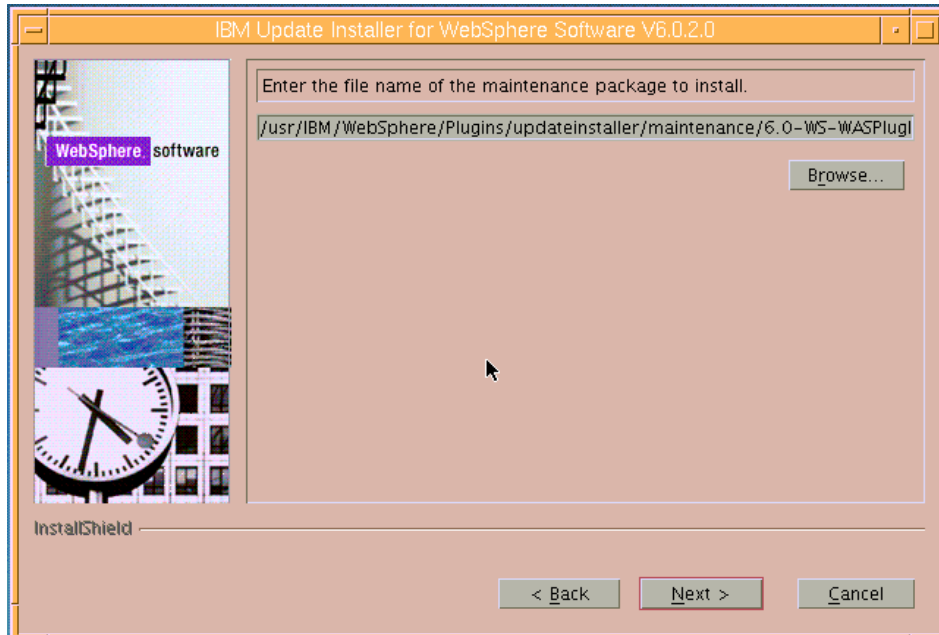


Figure 39. File name of maintenance package to install

- The next page provides information regarding the steps it is about to take in order to resolve an update issue. Click **Next**. (See Figure 40.)

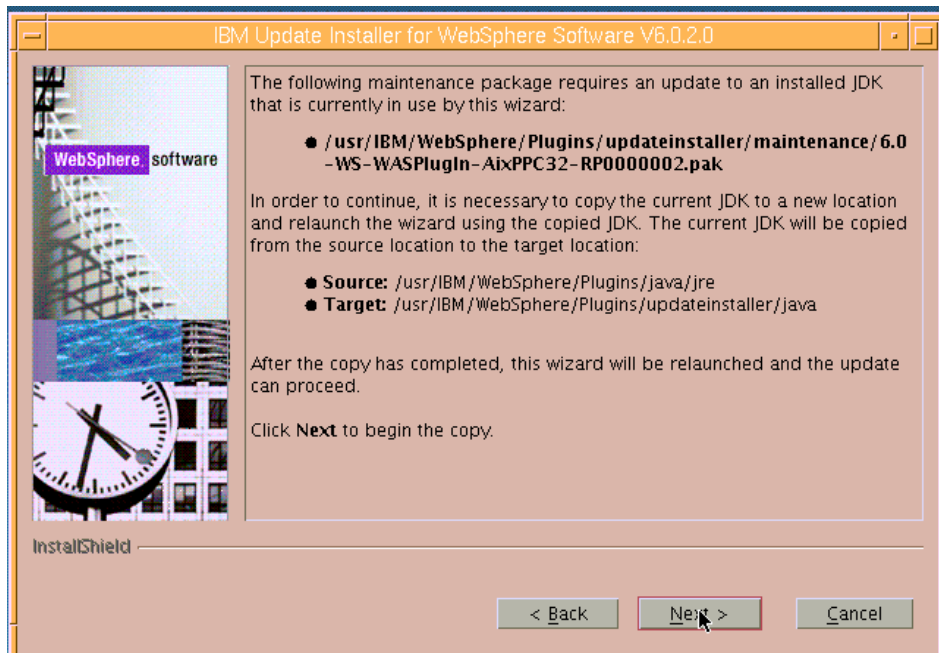


Figure 40. Informational page regarding an update issue that the wizard will handle for you

10. This page explains that it is now necessary to relaunch the installation wizard. Click **Relaunch**. (See Figure 41.)

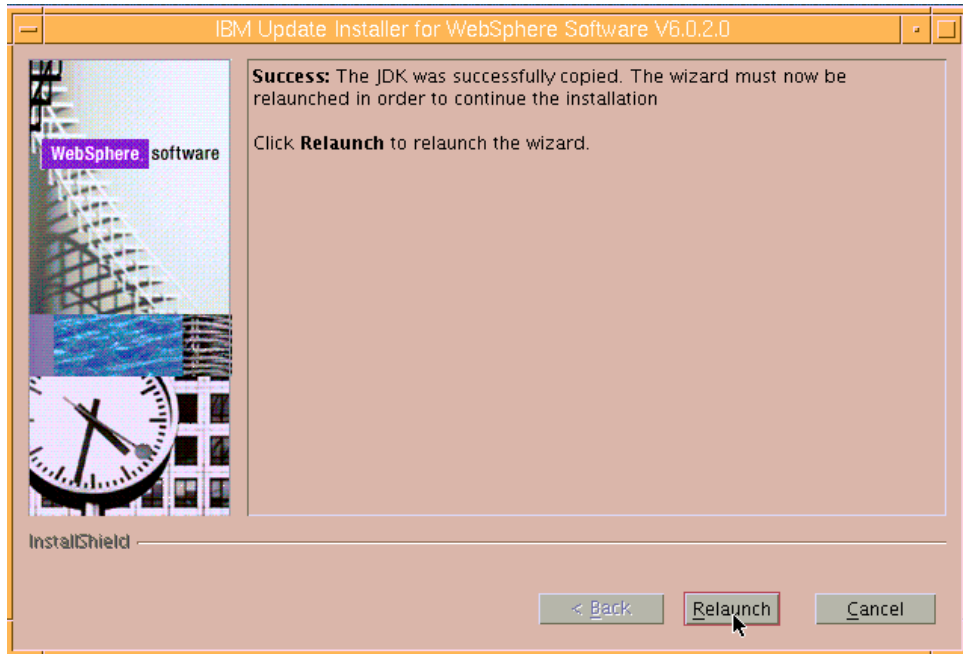


Figure 41. Relaunch the installation wizard

11. Confirm that the wizard has selected **Install maintenance package** again. Click **Next**. (See Figure 42.)

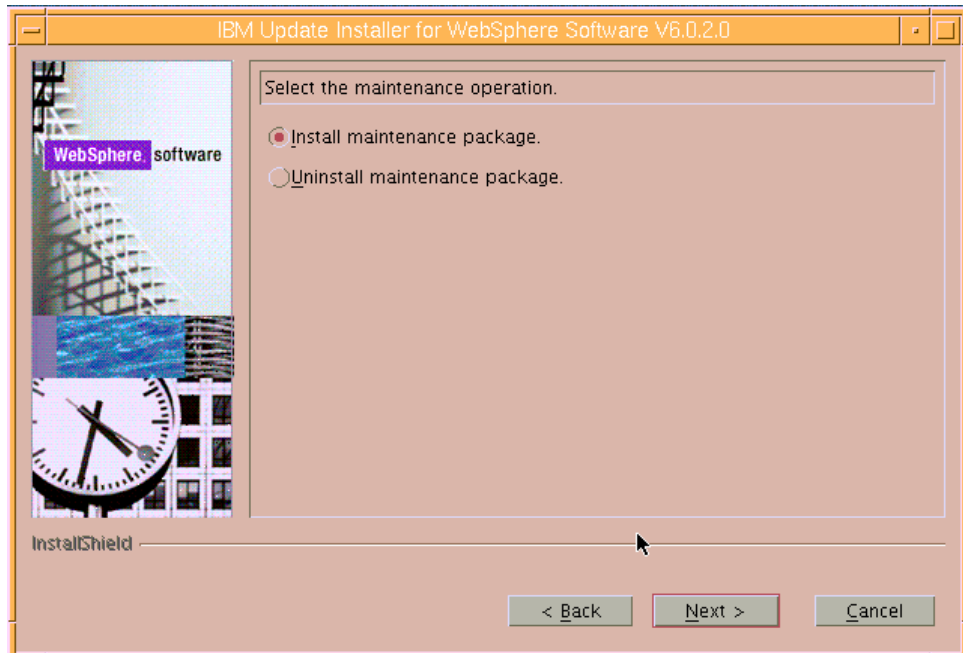


Figure 42. Again selecting to install the maintenance package

- Again, notice that the wizard is continuing to fill in information relating to the installation of the maintenance package. All you need to do is click **Next**. (See Figure 43.)

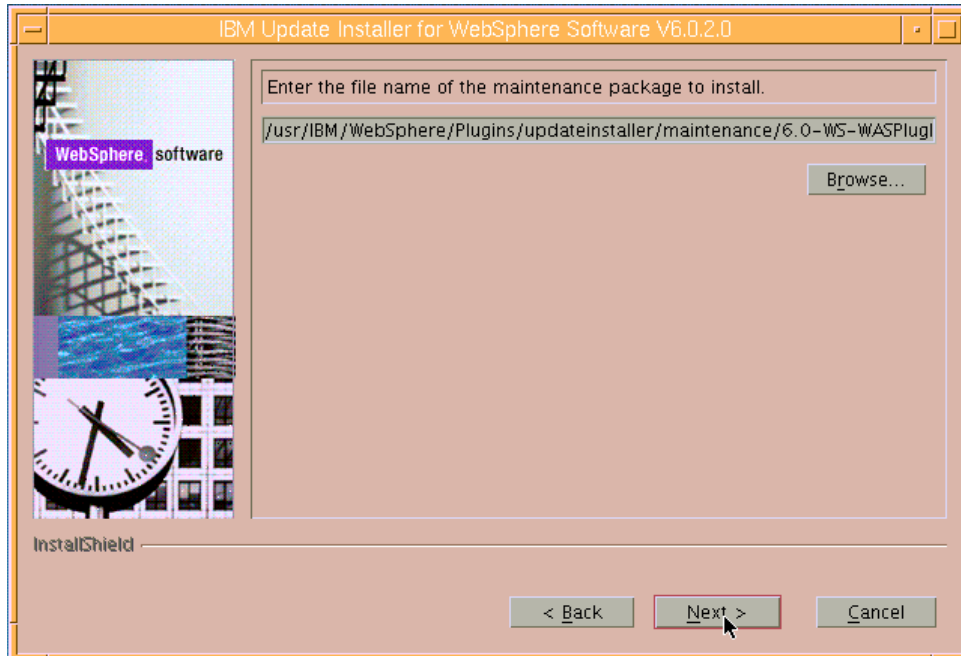


Figure 43. File name of maintenance package to install

- Notice that, now, this page shows that there are no prerequisite issues to resolve. Click **Next**. (See Figure 44.)

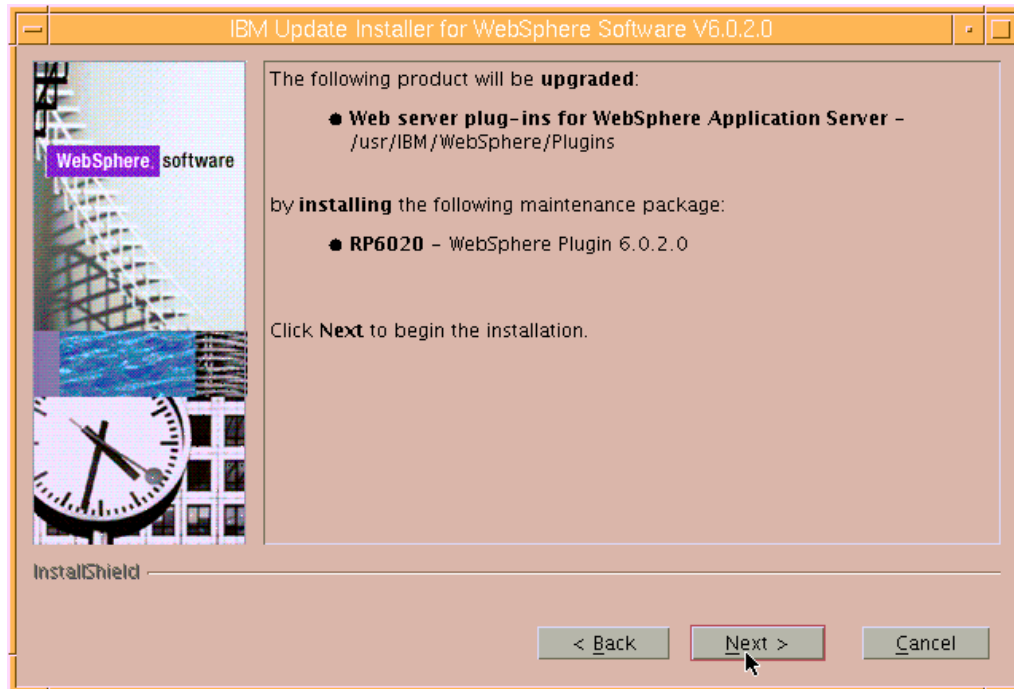


Figure 44. Informational page that shows installation is ready to perform

14. The next page shows that the installation of the maintenance package was successful. Click **Finish**. (See Figure 45.)

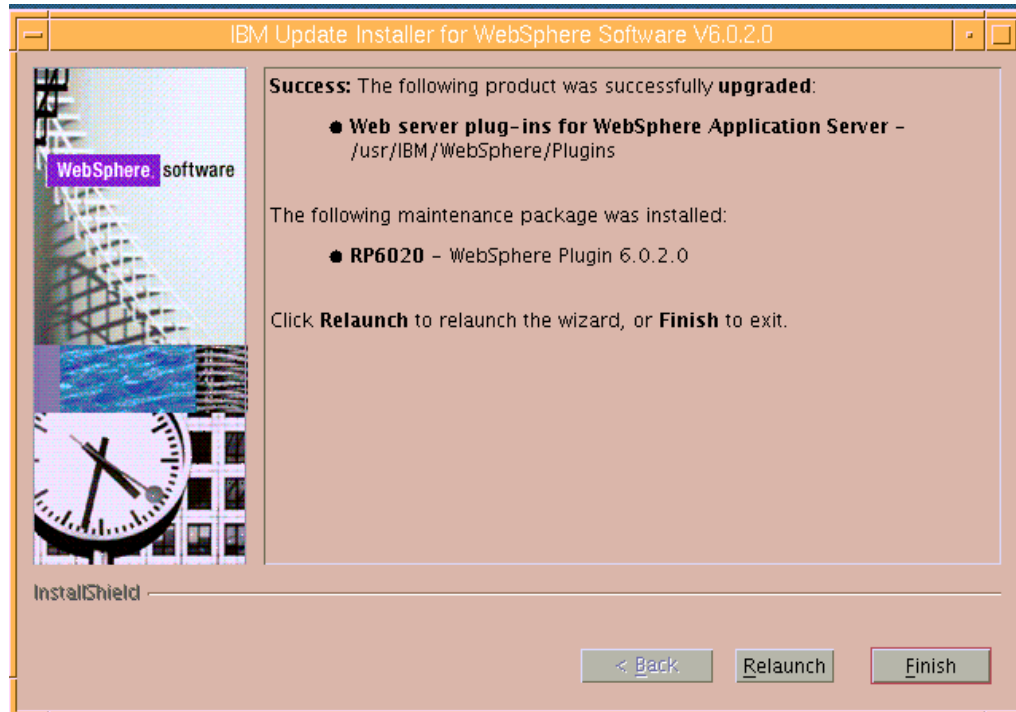


Figure 45. The installation of the maintenance package was successful





## Updating IBM HTTP Server

The process for updating IBM HTTP Server is as follows. (**Note:** All updates are performed as root.)

1. Stop IBM HTTP Server and WebSphere Application Server, then run `slibclean`.
2. Change the directory to the installation location for the product that requires update.
3. Use the `tar` command to extract the contents of the TAR file for the product that requires updating.
4. Use the **CD** command to move the contents of the TAR file into the `updateinstaller` subdirectory. Then, run the **.update** program that guides you through the update process.

```
cd /usr/IBM/HTTPSever/  
tar -xvf 6.0-WS-WASIHS-AixPPC32-RP0000002.tar  
cd updateinstaller  
./update
```

5. Follow the prompts in the displayed windows to update IBM HTTP Server.

## Updating WebSphere Application Server

The process for updating IBM HTTP Server is as follows. (**Note:** All updates are performed as root.)

1. Stop IBM HTTP Server and WebSphere Application Server, then run `slibclean`.
2. Change the directory to the installation location for the product that requires update.
3. Use the `tar` command to extract the contents of the TAR file for the product that requires updating.
4. Use the **CD** command to move the contents of the TAR file into the `updateinstaller` subdirectory. Then, run the **.update** program that guides you through the update process.

```
cd /usr/IBM/WebSphere/AppServer  
tar -xvf 6.0-WS-WAS-AixPPC32-RP0000002.tar  
cd updateinstaller  
./update
```

5. Follow the prompts in the displayed windows to update WebSphere Application Server.



## Installing WebSphere Application Server 6.0.2.25 updates

The procedure for updating from WebSphere Application Server V6.0.2 to Fix Pack V6.0.2.25 requires installation of an Update Installer utility along with applying maintenance packs (PAK files) to the products.

The following files need to be downloaded from the IBM WebSphere software support site ([ibm.com/software/webservers/appserv/was/support](http://ibm.com/software/webservers/appserv/was/support)) into the /usr/IBM/fixes directory:

- 6.0.2-WS-WAS-AixPPC32-FP00000025.pak.zip
- 6.0.2-WS-WASIHS-AixPPC32-FP00000025.pak.zip
- 6.0.2-WS-WASJavaSDK-AixPPC32-FP00000025.pak.zip
- 6.0.2-WS-WASPlugIn-AixPPC32-FP00000025.pak.zip
- 6.1.0-WS-UPDI-AixPPC32-FP0000013.zip

Each of the files that included *pak* in its name was renamed to remove the .zip extension by using the AIX mv command. This is the list of files that are now in the /usr/IBM/fixes directory:

- 6.0.2-WS-WAS-AixPPC32-FP00000025.pak
- 6.0.2-WS-WASIHS-AixPPC32-FP00000025.pak
- 6.0.2-WS-WASJavaSDK-AixPPC32-FP00000025.pak
- 6.0.2-WS-WASPlugIn-AixPPC32-FP00000025.pak
- 6.1.0-WS-UPDI-AixPPC32-FP0000013.zip

### Running the installation of the Update Installer utility

Use the following procedures to install the Update Installer utility:

1. Extract the contents of the 6.1.0-WS-UPDI-AixPPC32-FP0000013.zip file by using the **jar** command:

```
jar xvf 6.1.0-WS-UPDI-AixPPC32-FP0000013.zip
```

2. Enter `cd UpdateInstaller`.
3. Enter `chmod 755 install` to add execution permission to the install file.
4. Run the `./install` command to start the Update Installer utility.

- The `./install` command starts the installation wizard for the Update Installer. Click **Next**. (See Figure 46.)

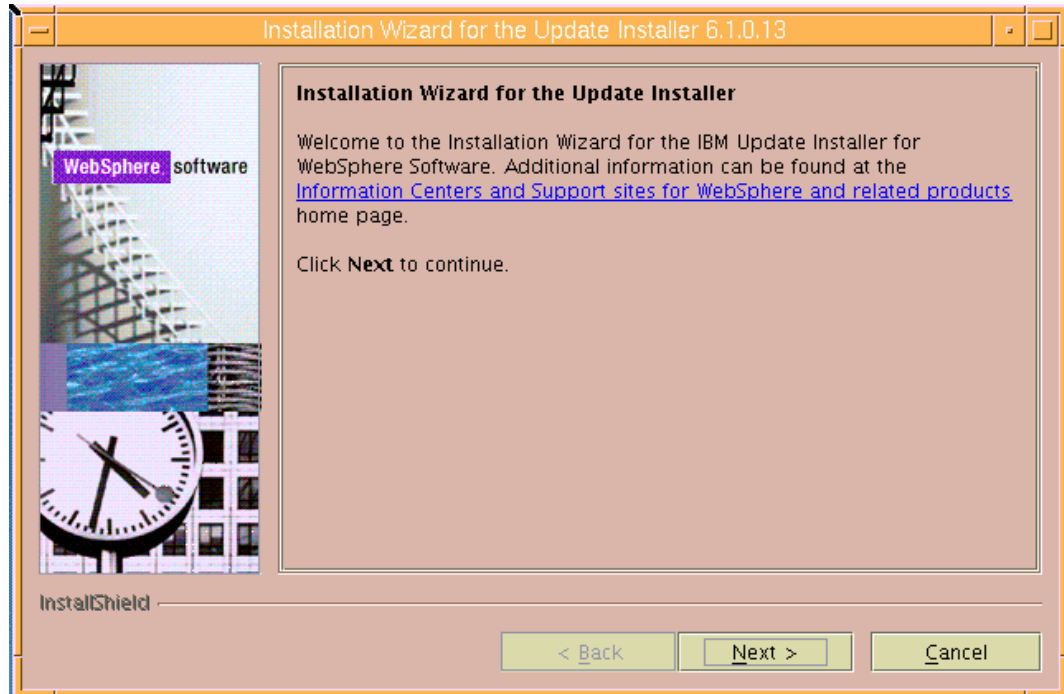


Figure 46. Welcome page for the installation wizard for Update Installer

- Select **I accept the terms in the license agreement**, then click Next. (See Figure 47.)

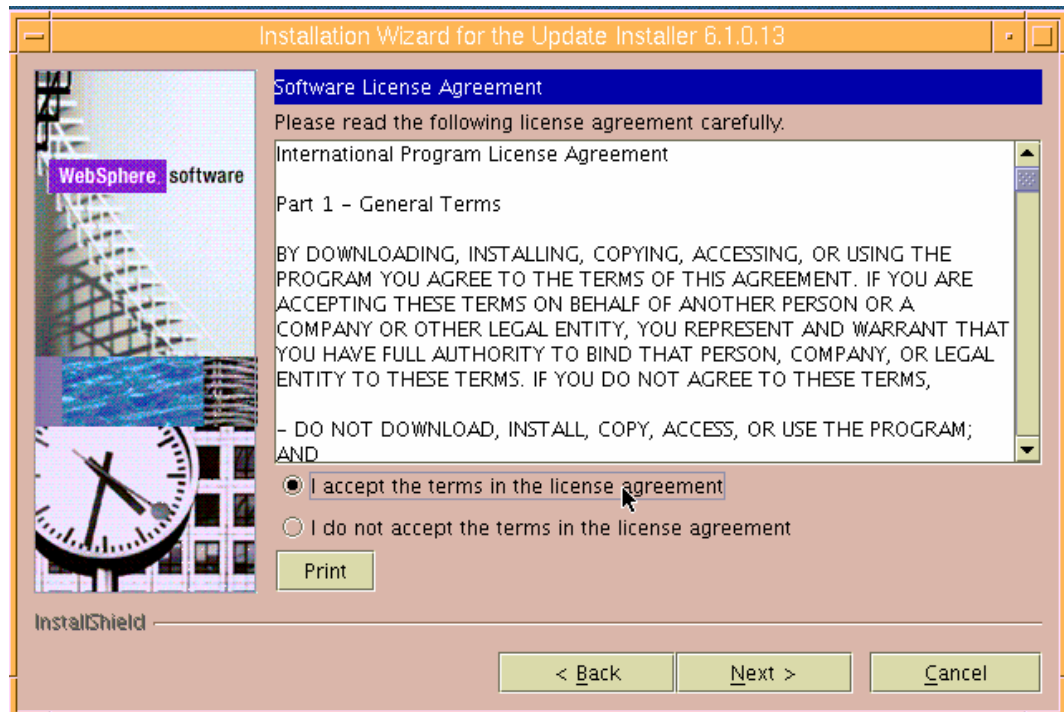


Figure 47. Software license agreement

7. You will then see that the wizard has checked for the expected system prerequisites. Click **Next**. (See Figure 48.)

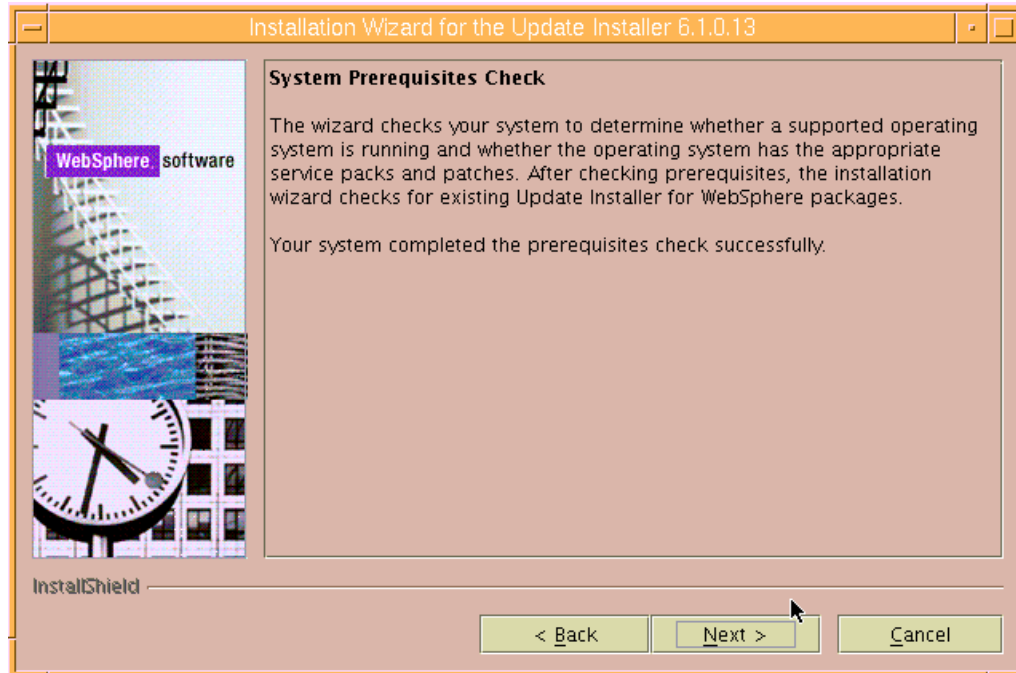


Figure 48. Checking for prerequisites

8. Enter the directory path (location) for the installation of the Update Installer utility, which is `/usr/IBM/WebSphere/UpdateInstaller`, then click **Next**. (See Figure 49.)

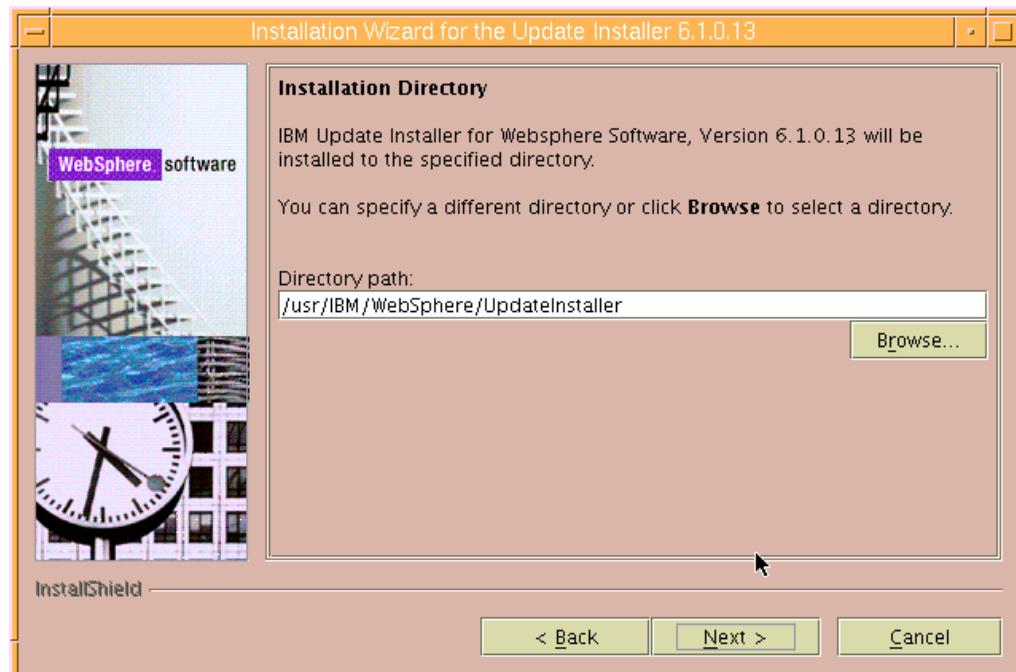


Figure 49. Directory path for the Update Installer utility

- The next page provides summary information regarding the installation. Click **Next**. (See Figure 50.)

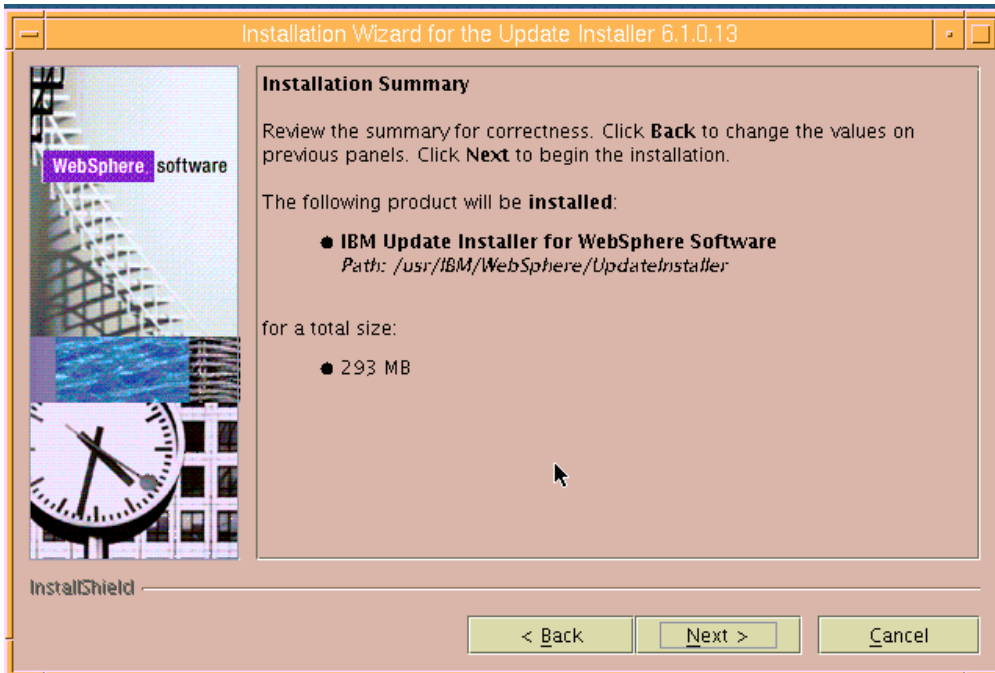


Figure 50. Summary information regarding the installation

- Verify that **Launch IBM Update installer for WebSphere Software on exit** is selected. Then, click **Finish** to complete the installation of the Update Installer. (See Figure 51.)

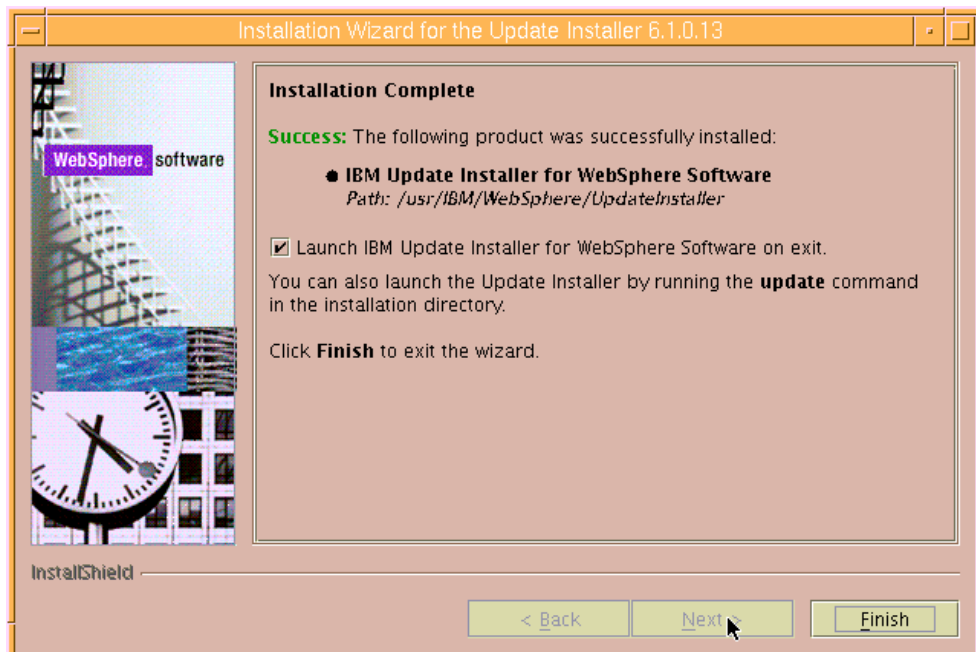


Figure 51. Installation Complete

## Updating IBM HTTP Server

1. Browse to /usr/IBM/HTTPServer to select the location of the IBM HTTP Server as the product to be updated, then click **Next**. (See Figure 52.)

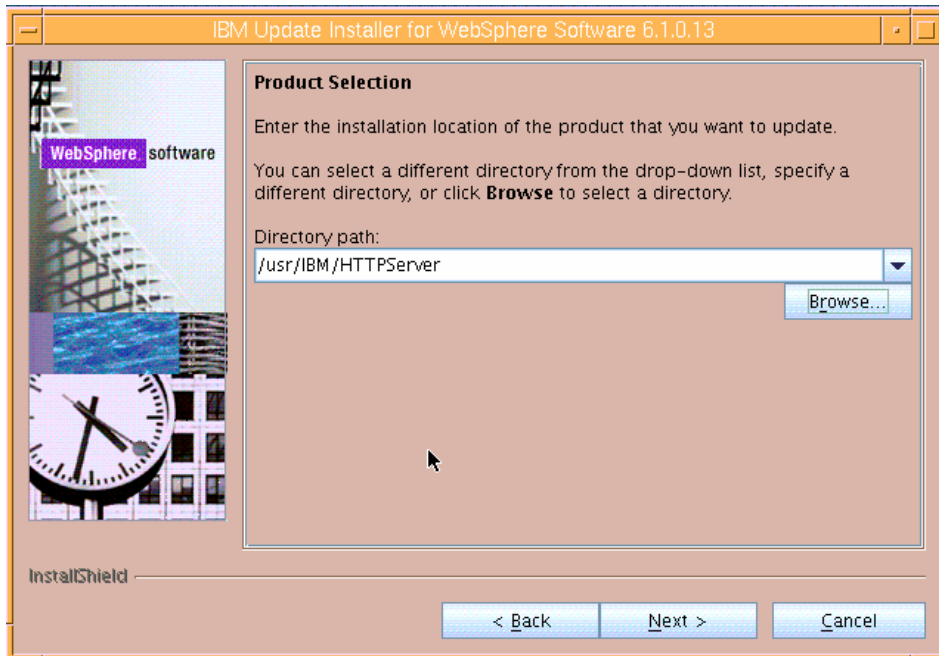


Figure 52. Product Selection page

2. Ensure that **Install maintenance package** is selected. Then, click **Next**. (See Figure 53.)

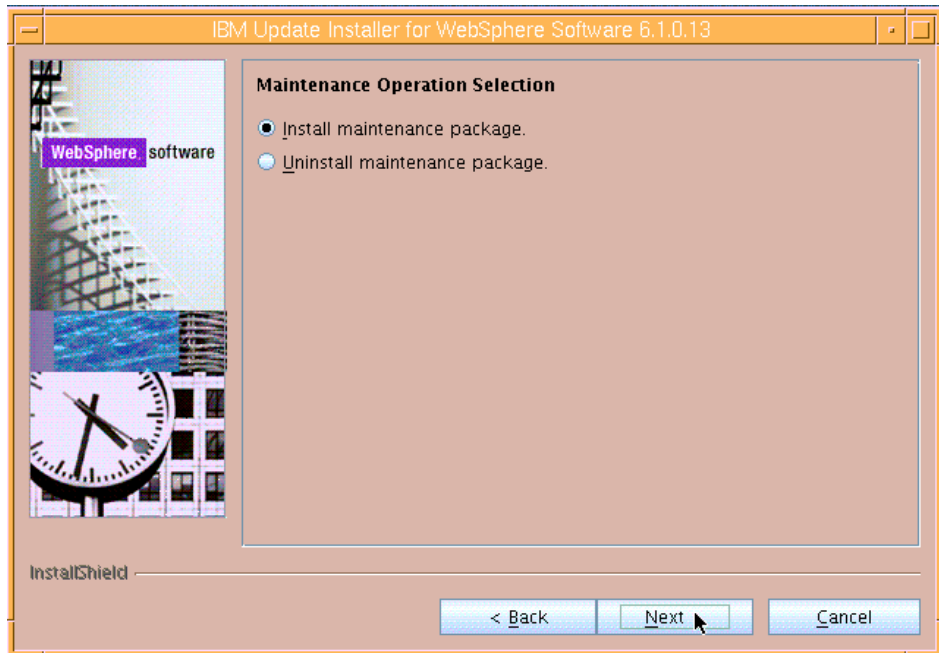


Figure 53. Selecting the maintenance operation



3. Browse to /usr/IBM/fixes as the location that has the pack files, then click **Next**. (See Figure 54.)

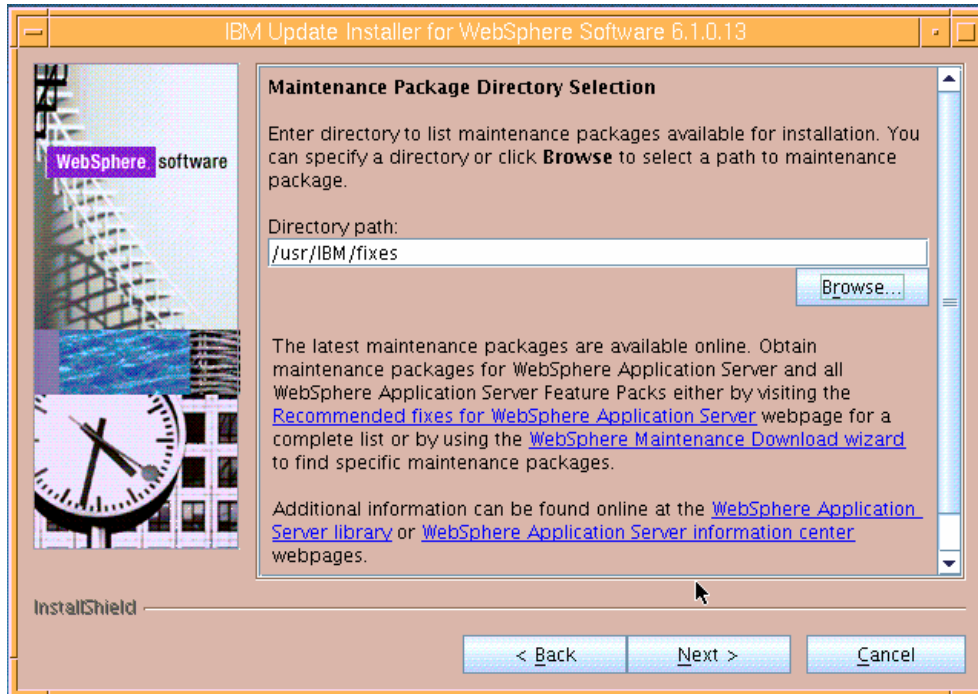


Figure 54. Selecting the maintenance-package directory

4. Click **Next** to install the two recommended updates (See Figure 55.)

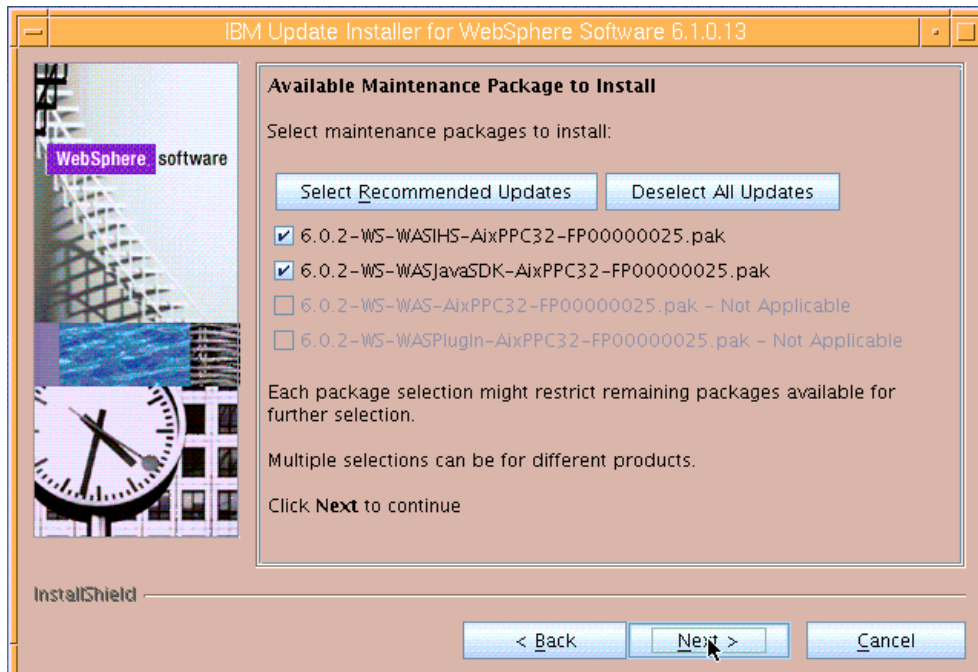


Figure 55. Available maintenance packages



- The next page provides installation summary information. Click **Next** to start the update process, which takes a couple of minutes. (See Figure 56.)

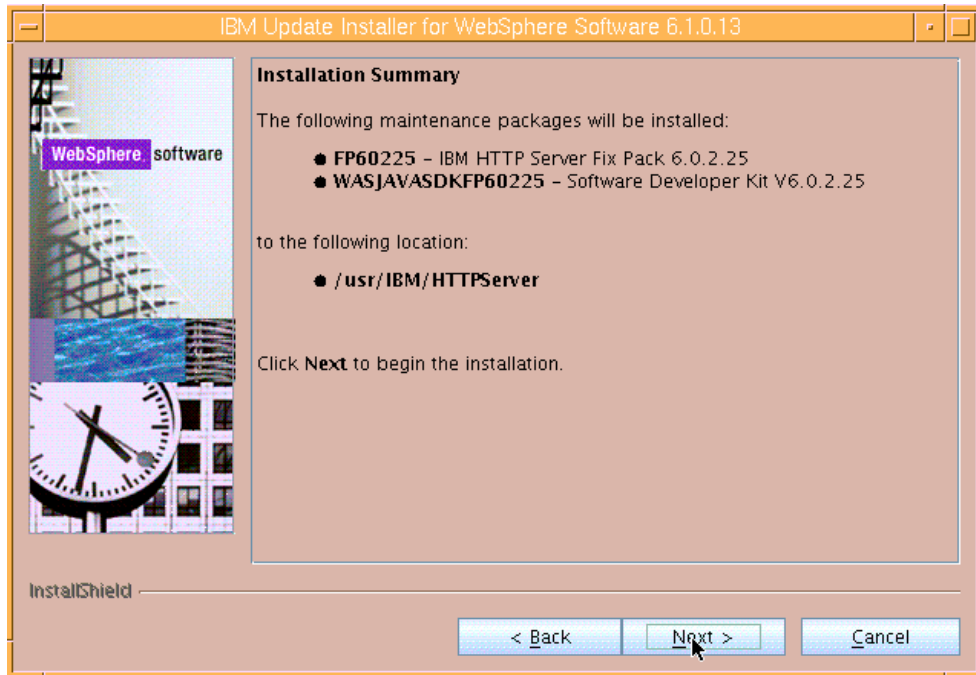


Figure 56. Informational page regarding the installation summary

- The next page is informational and verifies the successful installation of the maintenance packages. Click **Relaunch** to update another product. (See Figure 57.)

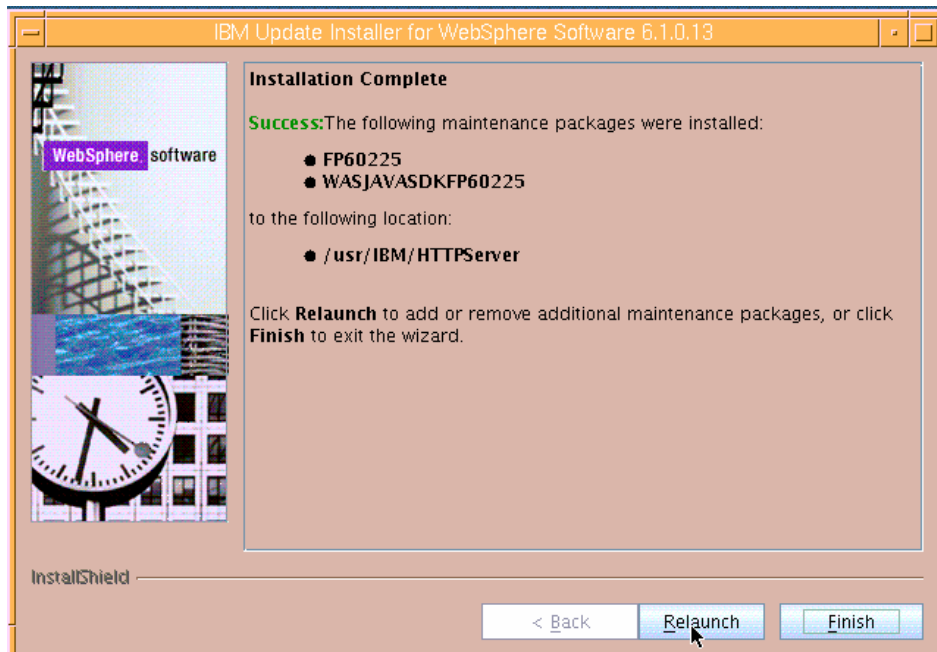


Figure 57. Informational page that verifies the successful installation of the maintenance packages

## Updating the Web server plug-ins

7. Browse to /usr/IBM/WebSphere/Plugins, then click **Next** to update the Web server plug-ins. (See Figure 58.)

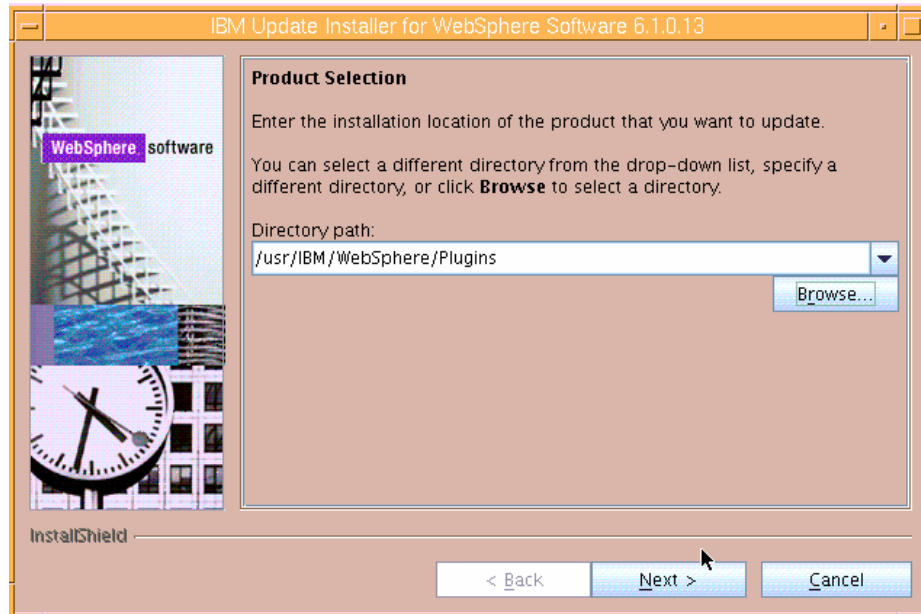


Figure 58. Selecting plug-ins to update

8. Ensure that **Install maintenance package** is selected. Then, click **Next**. (See Figure 59.)

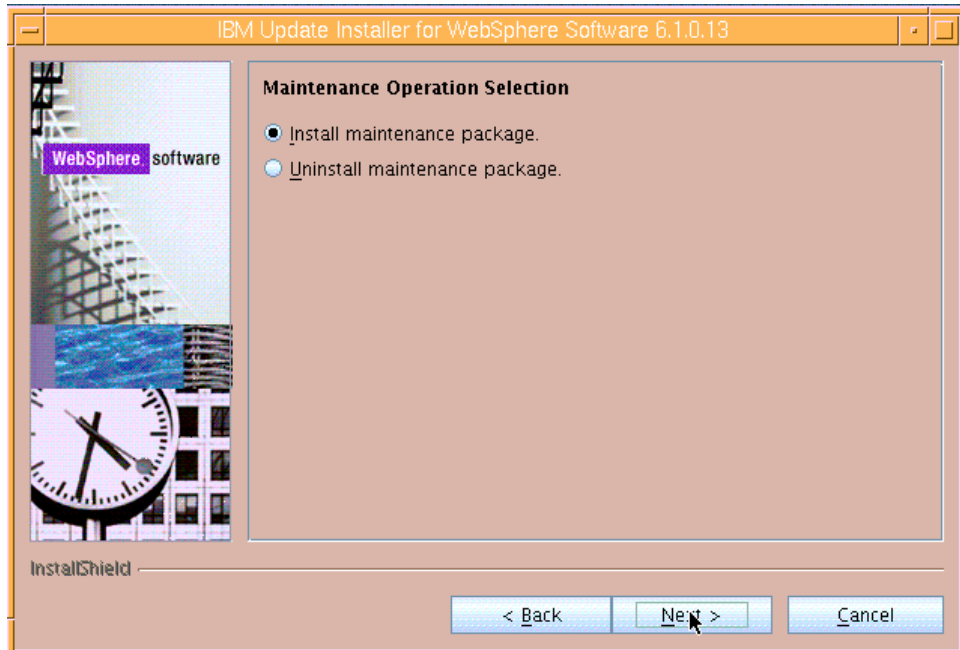


Figure 59. Selecting the maintenance operation

9. Ensure that the directory path shows the location that has updates (/usr/IBM/fixes) and click **Next**. (See Figure 60.)

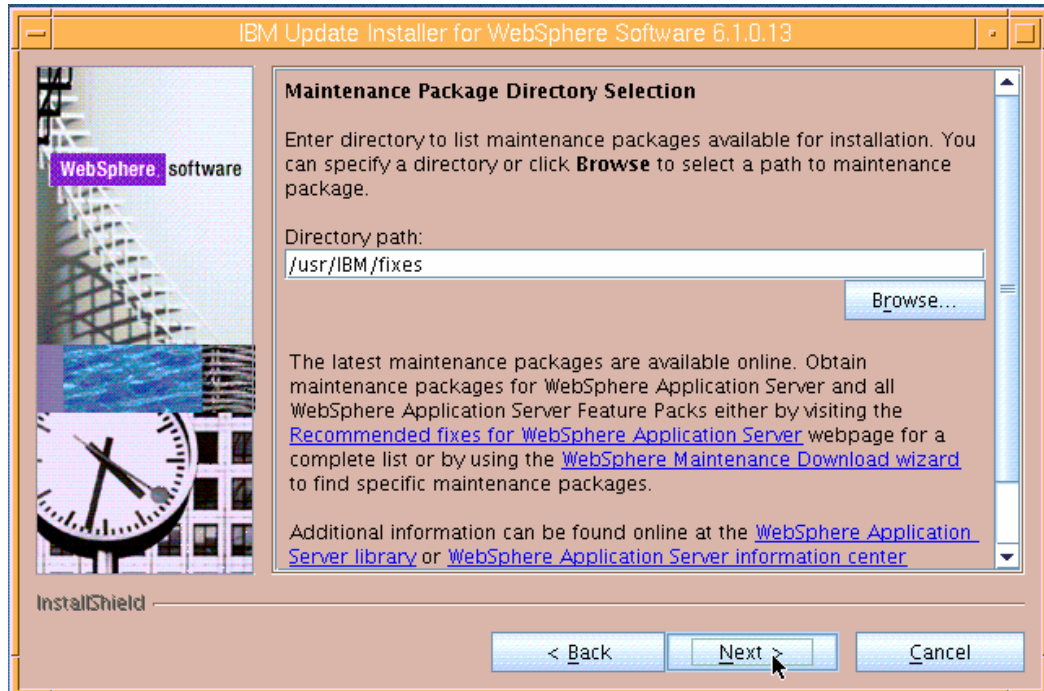


Figure 60. Selecting the maintenance-package directory

10. Click **Next** to install the recommended fixes. (See Figure 61.)

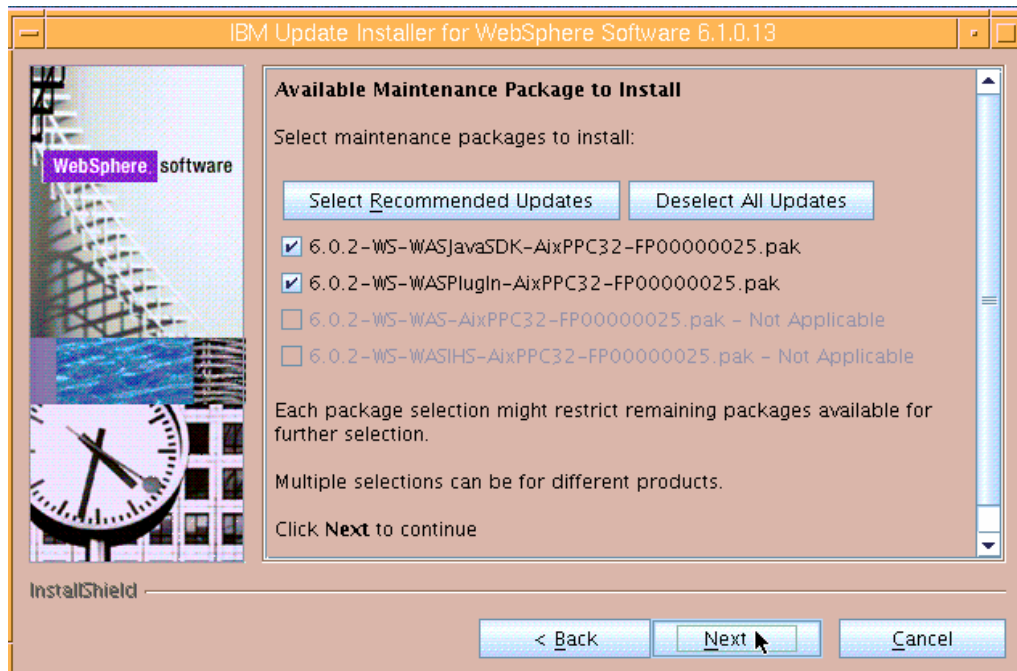


Figure 61. Available maintenance packages to install

- The next page provides installation summary information. Click **Next** after reviewing the installation summary, which might take a minute or two. (See Figure 62.)

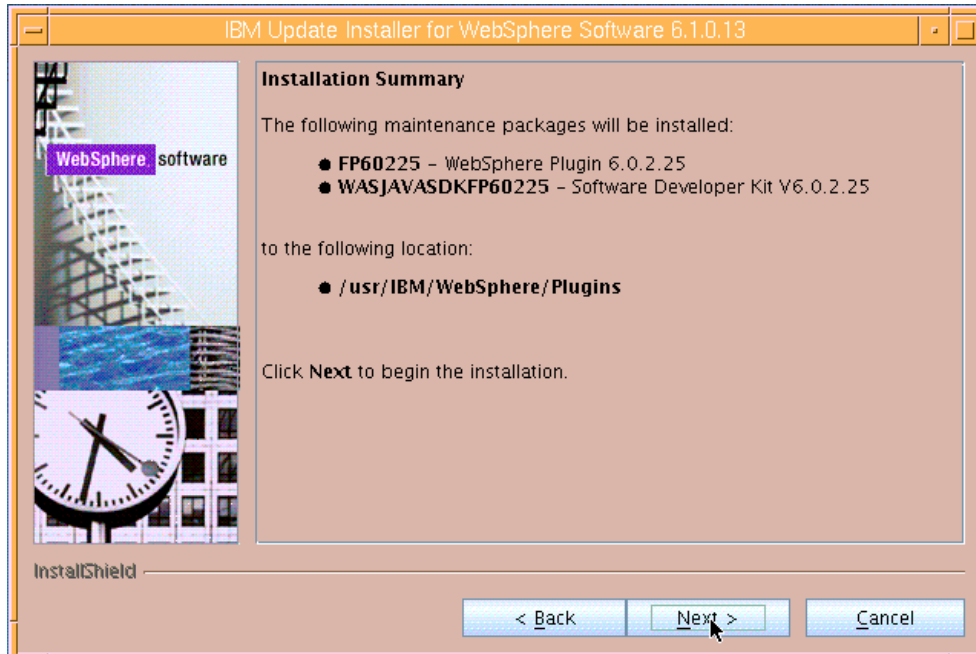


Figure 62. Informational page regarding the installation summary

- The next page is informational and verifies the successful installation of the maintenance packages. Click **Relaunch** to perform one additional product update. (See Figure 63.)

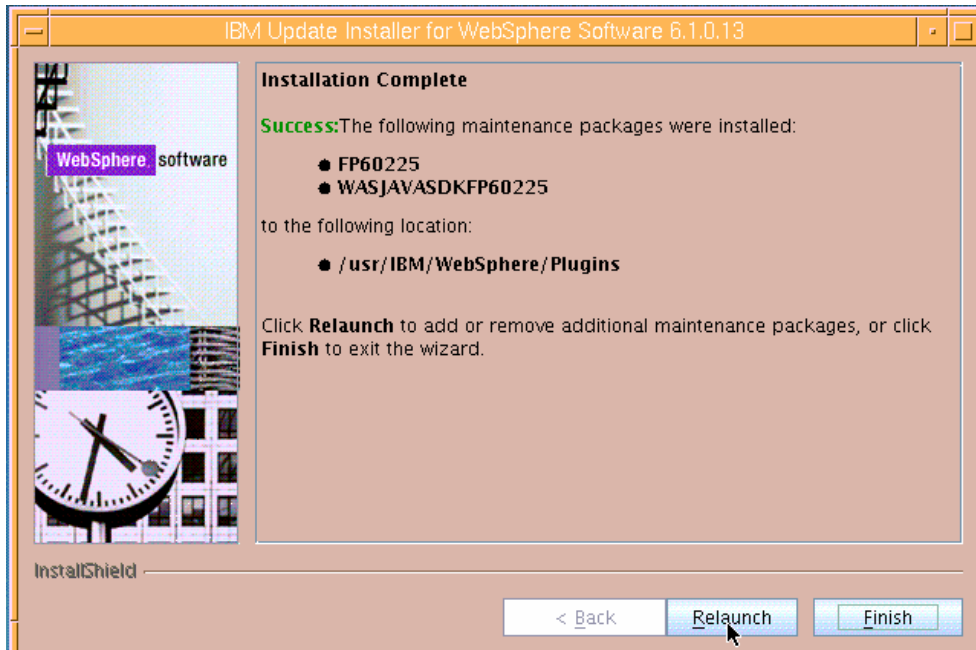


Figure 63. Informational page that verifies the successful installation of the maintenance packages

## Updating WebSphere Application Server

13. The directory that has the product to be updated is /usr/IBM/WebSphere/Appserver — enter this location, then click **Next**. (See Figure 64.)

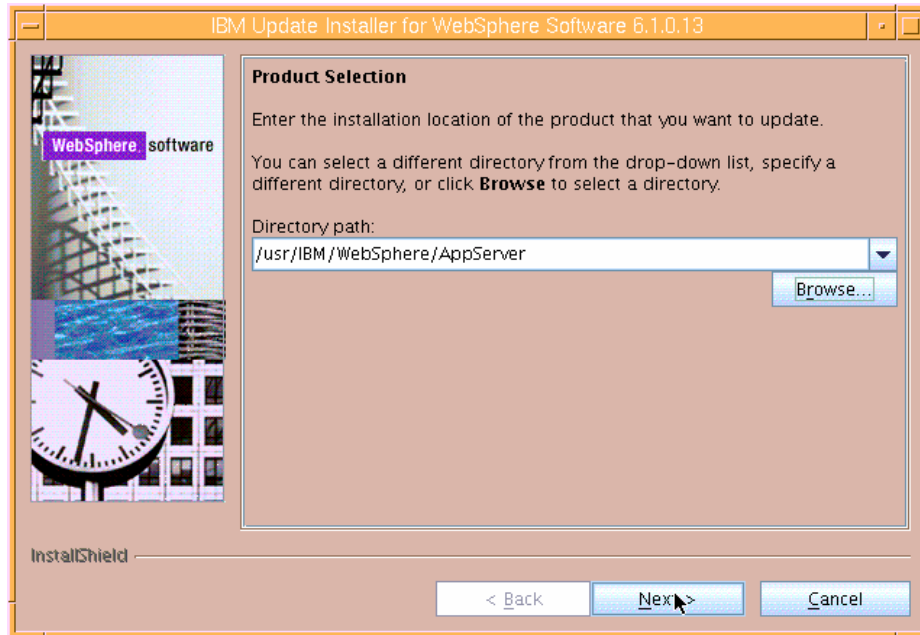


Figure 64. Selecting the WebSphere Application server to update

14. Select **Install maintenance package**, then click **Next**. (See Figure 65.)

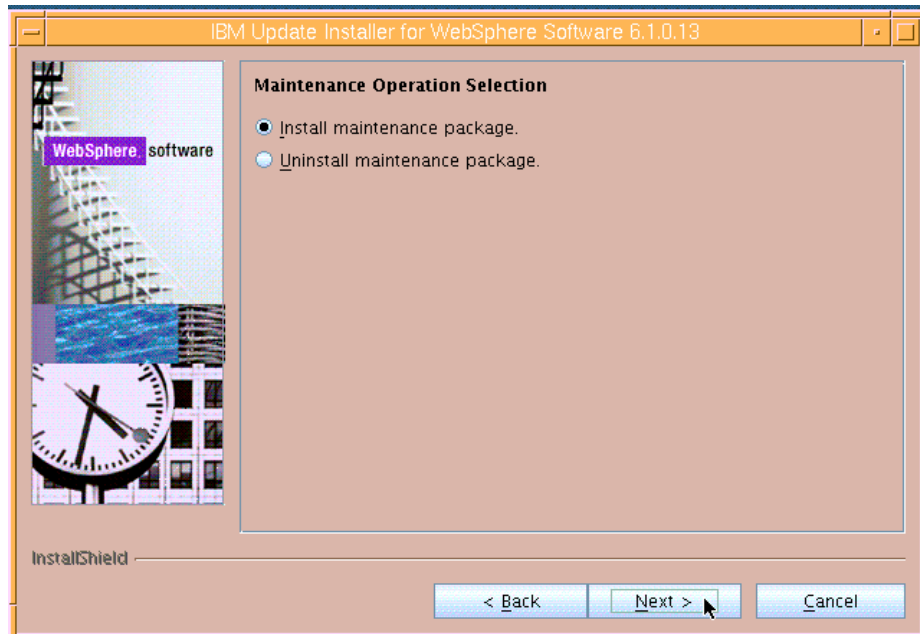


Figure 65. Selecting the maintenance operation



- Enter the location that has the PAK files' (/usr/IBM/fixes), then click **Next**. (See Figure 66.)

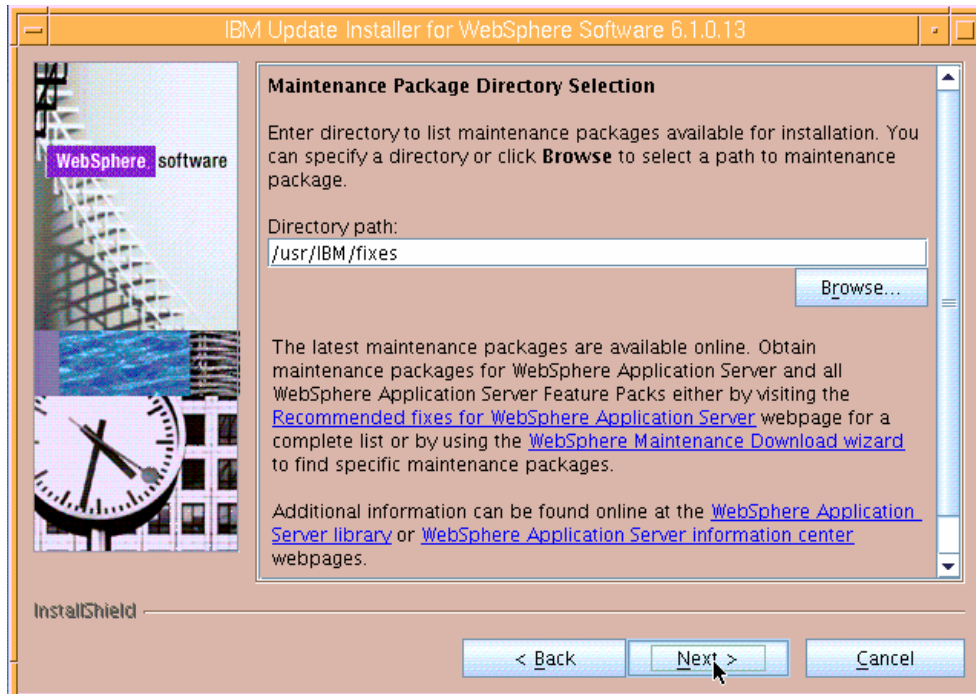


Figure 66. Selecting the maintenance-package directory

- Click **Select Recommended Updates**, then click **Next**. (See Figure 67.)

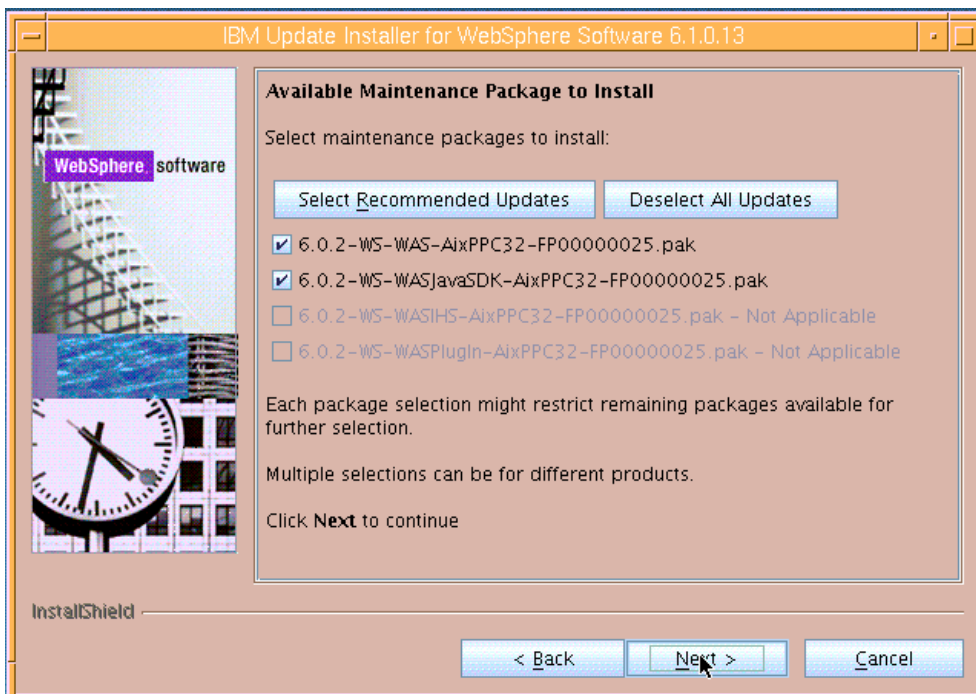


Figure 67. Available maintenance packages to install



- The next page provides installation summary information. Clicking **Next** begins the update process, which takes several minutes. (See Figure 68.)

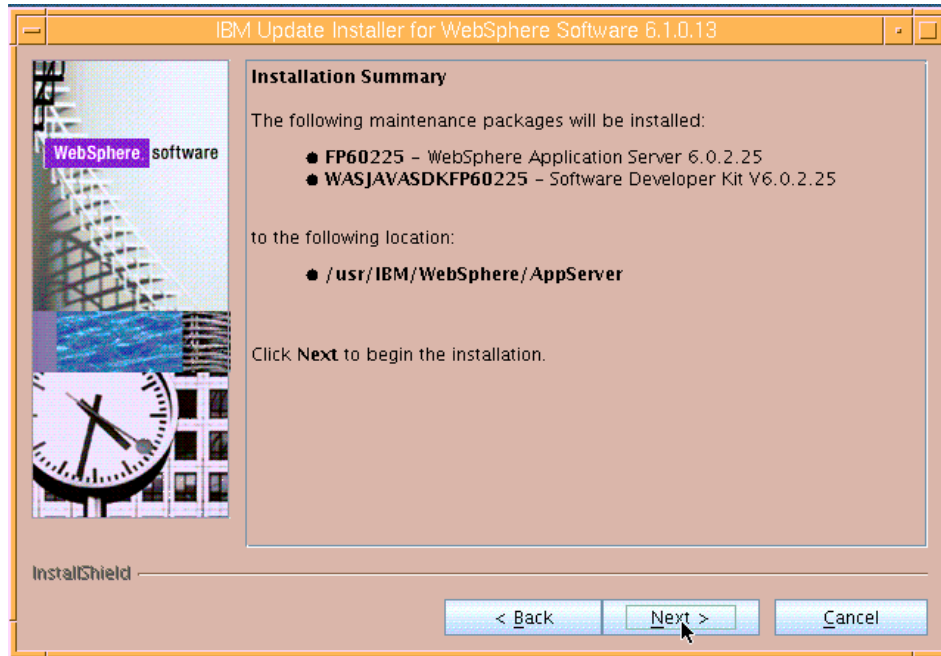


Figure 68. Informational page regarding the installation summary

- The next page is informational and verifies the successful installation of the maintenance packages. Click **Finish** to exit the Update Installer because WebSphere Application Server V6.0.2.25 is now updated. (See Figure 69.)

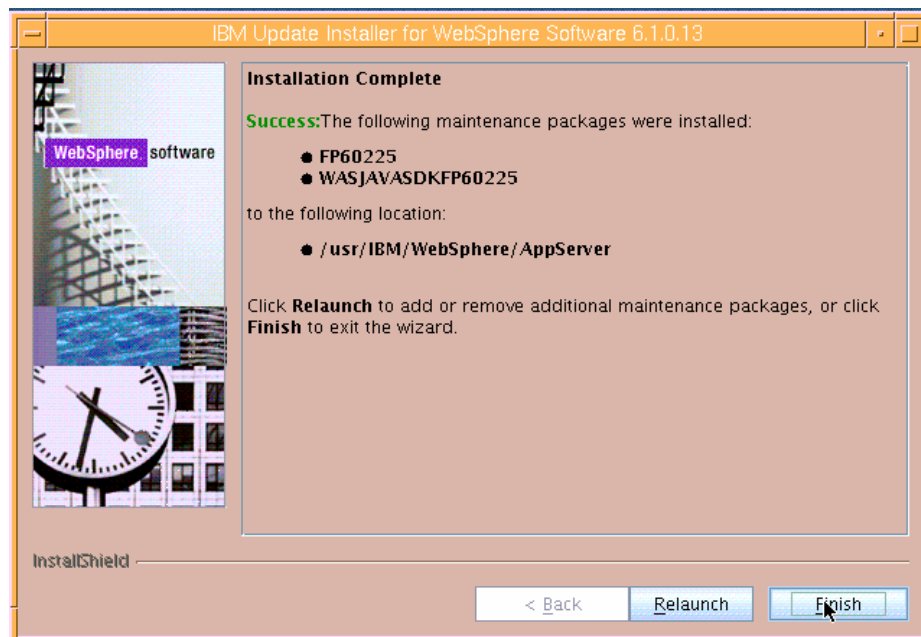


Figure 69. Informational page that verifies the successful installation of the maintenance packages

## Restarting IBM HTTP Server and WebSphere Application Server processes

The process of restarting IBM HTTP Server and WebSphere Application Server is as follows.

**(Note:** All updates are performed as root.)

1. To restart IBM HTTP Server, enter the following command:

```
/usr/IBM/HTTPServer/bin/apachectl start
```

2. To restart WebSphere Application server, enter the following command:

```
/usr/IBM/WebSphere/AppServer/bin/startServer.sh server1
```

## Verifying the update and accessing the sample application

To connect to the administrative console so that you can verify that the update has been completed and to access the sample application, perform the following steps:

1. Direct your browser to the following address:

```
http://"was_server_name":9060/ibm/console
```

2. Verify that it now says 6.0.2.25 as the WebSphere Application Server level. (See Figure 70.)

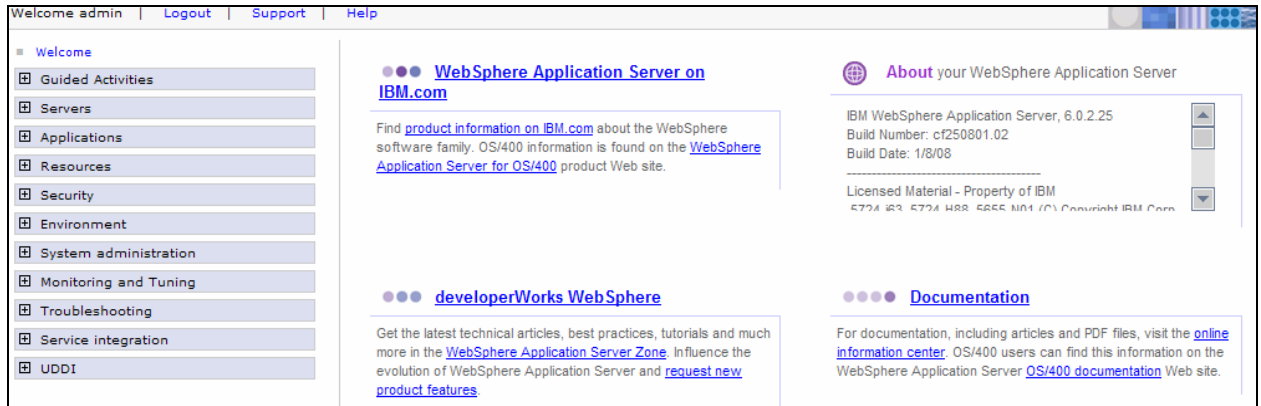


Figure 70. Verifying the updates to WebSphere Application Server

3. From your browser, access the Plants By WebSphere application to verify that WebSphere Application Server and IBM HTTP Server integration have been completed successfully. This application is found at the following URL: [http://"was\\_server\\_name"/PlantsByWebSphere/](http://).

**Hint:** If this fails, but [http://"was\\_server\\_name":9080/PlantsByWebSphere/](http://) works, there is either a problem with IBM HTTP Server not working or the Web server plug-in configuration that will need to be fixed.



## Summary

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This white paper has provided detailed installation and configuration instructions for WebSphere Application Server Version 6.0 on an IBM System p (IBM Power Systems) server. Also included are step-by-step instructions on how to update WebSphere Application Server to the latest version (FP25). In all, this white paper provides easy-to-follow instructions for ATS and FTSS personnel who want to install and configure WebSphere Application Server on IBM System p servers for their PDM applications.

For more information about the WebSphere Application Server products or other information that is not covered here, see the list of resources provided in the “Resources” section of this white paper.



## Resources

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These Web sites provide useful references to supplement the information contained in this document:

- IBM System p and AIX Information Center
- <http://publib.boulder.ibm.com/infocenter/pseries/index.jsp>
  
- IBM Power Systems on IBM PartnerWorld®
- [ibm.com/partnerworld/systems/p](http://ibm.com/partnerworld/systems/p)
  
- IBM AIX on IBM PartnerWorld®
- [ibm.com/partnerworld/aix](http://ibm.com/partnerworld/aix)
  
- IBM WebSphere Portal
- [ibm.com/software/info1/websphere/index.jsp?tab=products/appttransaction](http://ibm.com/software/info1/websphere/index.jsp?tab=products/appttransaction)
  
- IBM Publications Center  
[www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi?CTY=US](http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi?CTY=US)
  
- IBM Redbooks®  
[ibm.com/redbooks](http://ibm.com/redbooks)
  
- IBM WebSphere support site  
[ibm.com/software/web servers/appserv/was/support](http://ibm.com/software/web servers/appserv/was/support)

## About the authors

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