WebSphere 6.1 installation guide for PDM applications

Including step-by-step WebSphere Application Server configuration information

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Abstract

This document provides detailed step-by-step installation and configuration instructions for IBM WebSphere Application Server for IBM AIX 6.1. This guide is intended as a mechanism to educate Advanced Technical Support (ATSS) and Field Technical Support Specialist (FTSS) personnel on the installation and configuration of WebSphere Application Server on AIX servers, in support of sales engagements.

Introduction

This guide supplements the IBM® WebSphere® Application Server installation documentation that is already available on the **ibm.com** Web site. It does not replace it. 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 V6.1 and IBM AIX® V6.1 are used on the IBM System p™ 570 server.

Install images

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

In the following instructions, the WebSphere images are downloaded from the IBM software Web site. The installation directory **(/was_install_images/~)** was then NFS-mounted from a remote NFS server.

Download install images

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

1. Download WebSphere Application Server 6.1 images from the IBM software download Web site (**ibm.com**/software/support) or use product media CDs.
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 10 GB.
2. Increase /tmp so that it has at least 500 MB of free space.

WebSphere hints and tips

Here are some administration tips:

- To start server 1, type **/usr/IBM/WebSphere/AppServer/bin/startServer.sh server1**.
- To stop server 1, type **/usr/IBM/WebSphere/AppServer/bin/stopServer.sh server1**.
- To start IBM HTTP Server, type **/usr/IBM/HTTPServer/bin/apachectl start**.
- To stop IBM HTTP Server, type **/usr/IBM/HTTPServer/bin/apachectl stop**.
- To deploy WebSphere Application Server in a browser, type **http://server_name:9060/ibm/console**.

Installing WebSphere Application Server

WebSphere Application Server Version 6.1 is installed first.

In this example, the install procedure for WebSphere uses the Firefox Mozilla browser. Therefore, you need to ensure that this browser is installed on your AIX server.

Installing base WebSphere Application Server V6.1

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

1. As root, run the cd command to change the directory to /was_install_images/.

2. Run the ./launchpad.sh command.

3. Click **Launch the installation wizard for WebSphere Application Server**. (See Figure 1.)

Figure 1. Launchpad base for installing WebSphere Application Server Version 6.1

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4. You will be presented with a *Welcome* page. Click **Next**. (See Figure 2.)
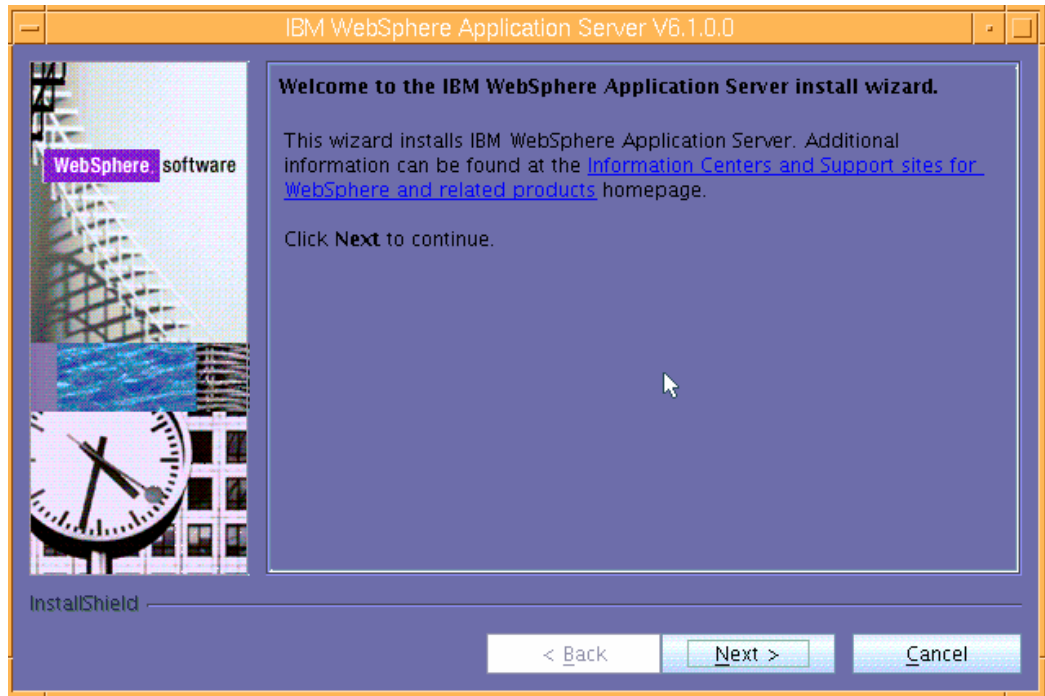

Figure 2. Welcome page for installing WebSphere Application Server V6.1

5. Select **I accept both IBM and the non-IBM terms**, then click **Next**. (See Figure 3.)
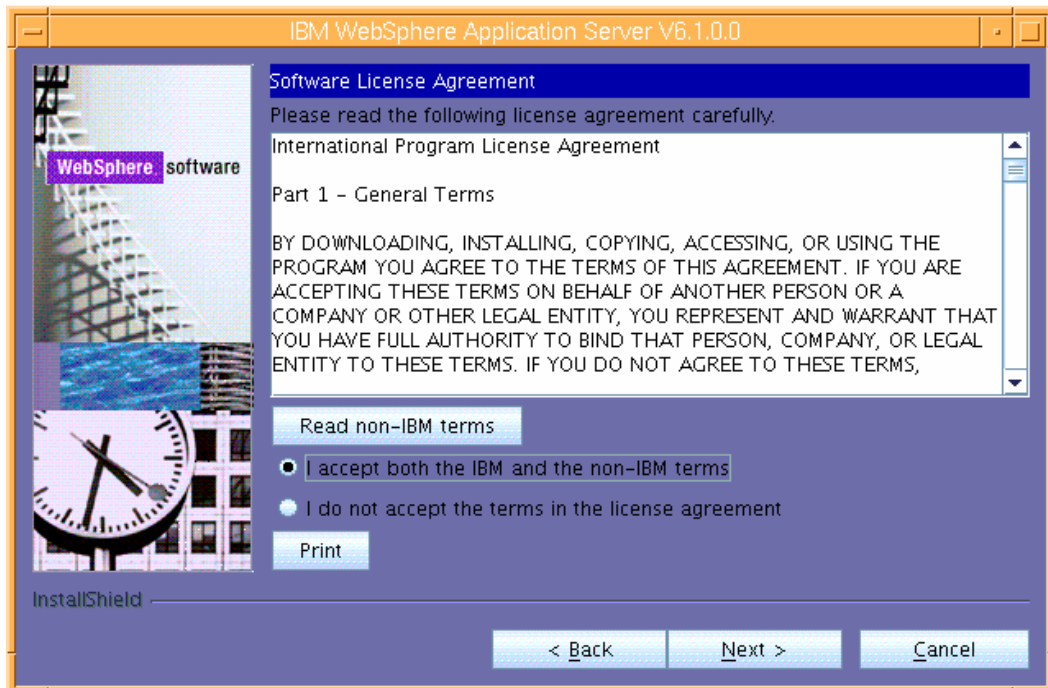

Figure 3. License terms

6. You will then see that the wizard has checked for the expected system prerequisites. Ignore the warning message and click **Next**. (See Figure 4.)
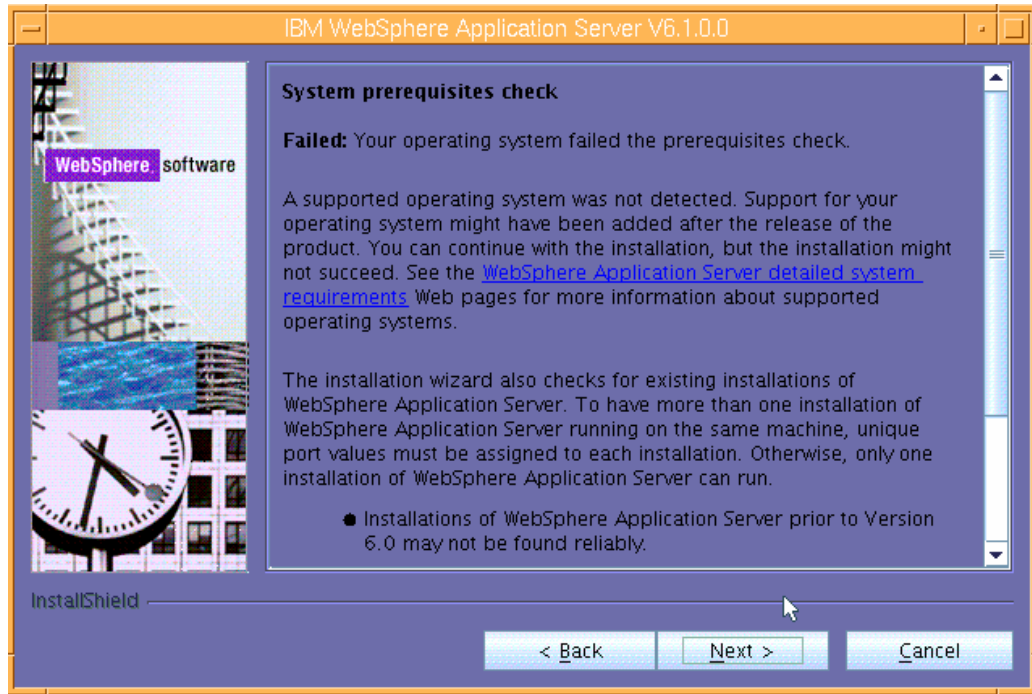

Figure 4. The install wizard verifies the presence of the prerequisites

7. Select **Install the sample applications** then click **Next**. (See Figure 5.)
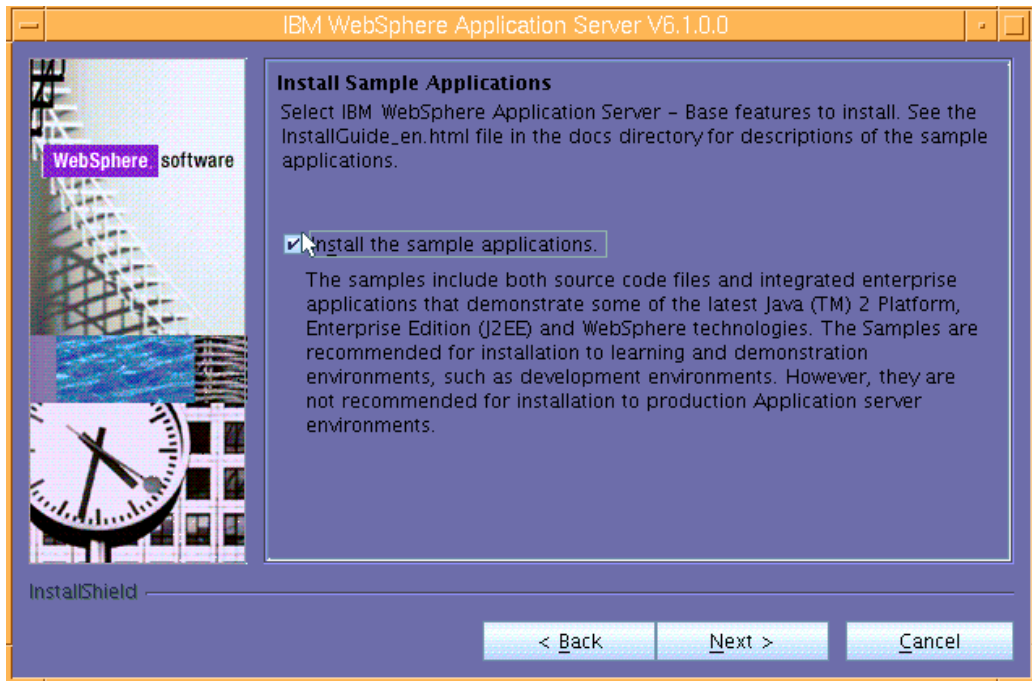
Figure 5. Installing sample applications

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8. 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 6.)
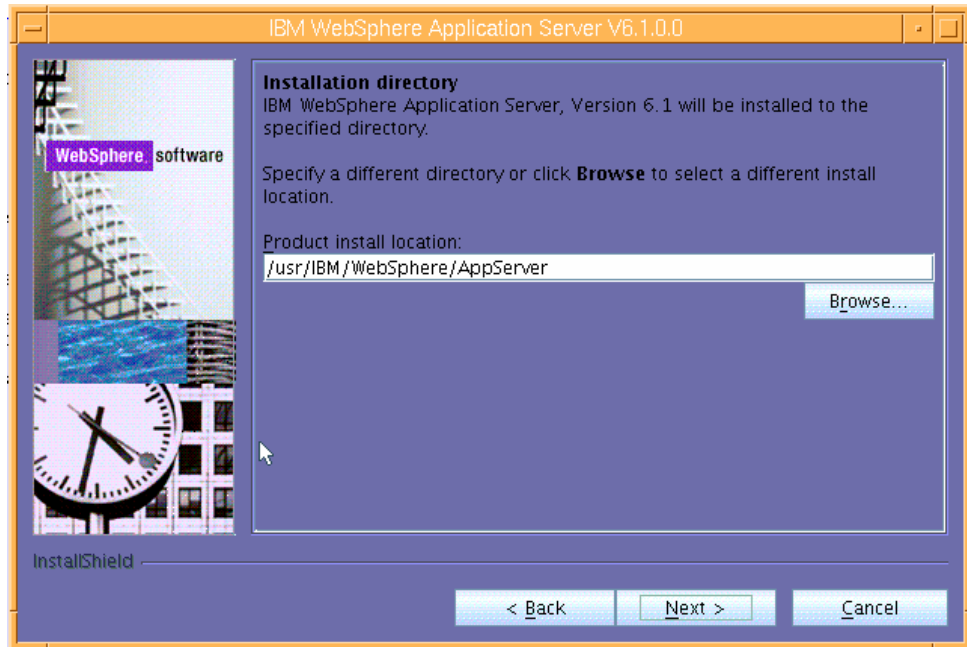
Figure 6. Enter the directory name for the installation location

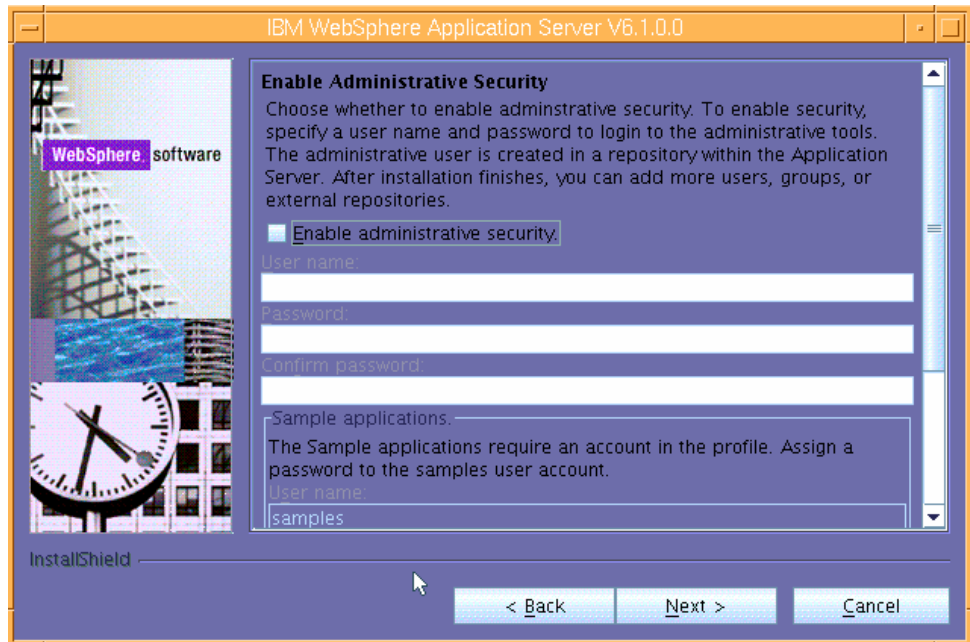9. Uncheck **Enable Administrative security** then click **Next**. (See Figure 7.)

Figure 7. Opting not to enable administrative security

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10. Review the information on the Installation Summary page, then click **Next**. (See Figure 8.)

11. The installer will begin the installation, which will take between 5 to 10 minutes.
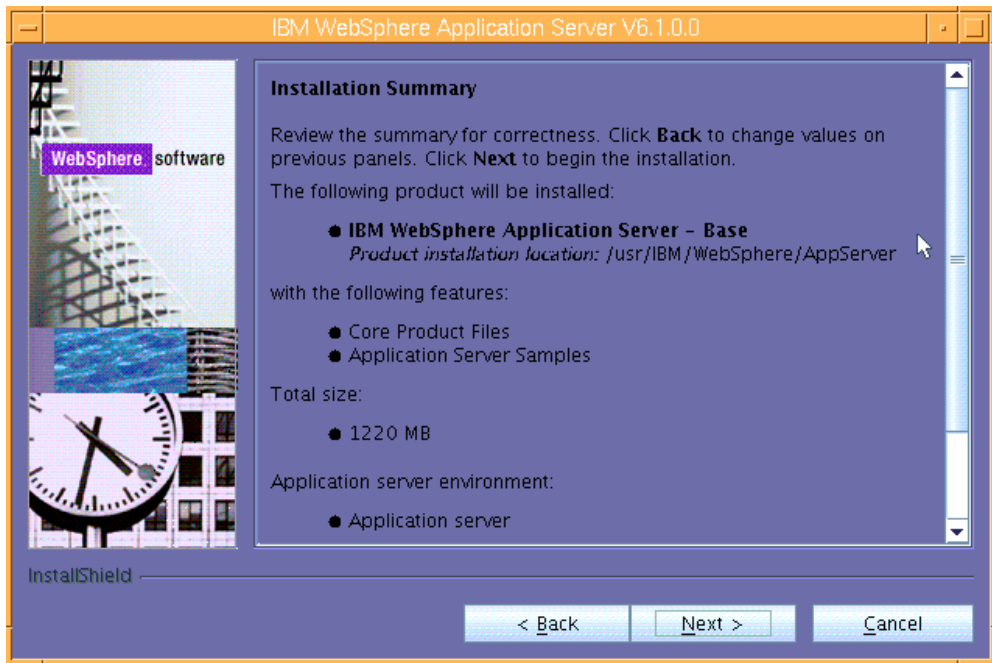
Figure 8. Installation Summary page

12. After the wizard completes the WebSphere Application Server installation, you are presented with the installation results**.** Click **Finish**. (See Figure 9.)
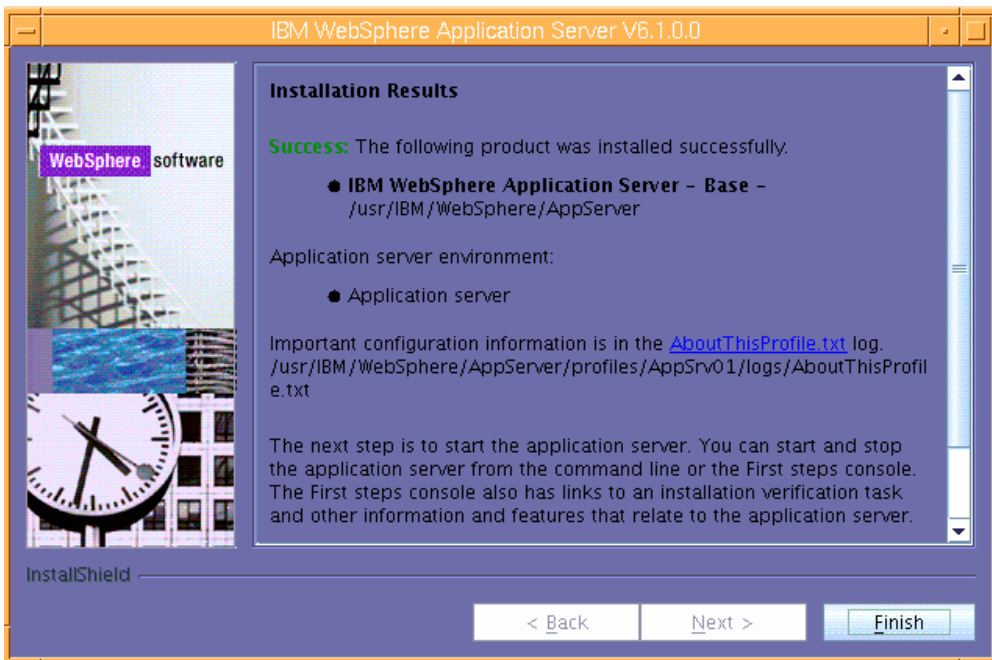

Figure 9. Installation Results page

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13. Select **Installation verification**. (See Figure 10.)
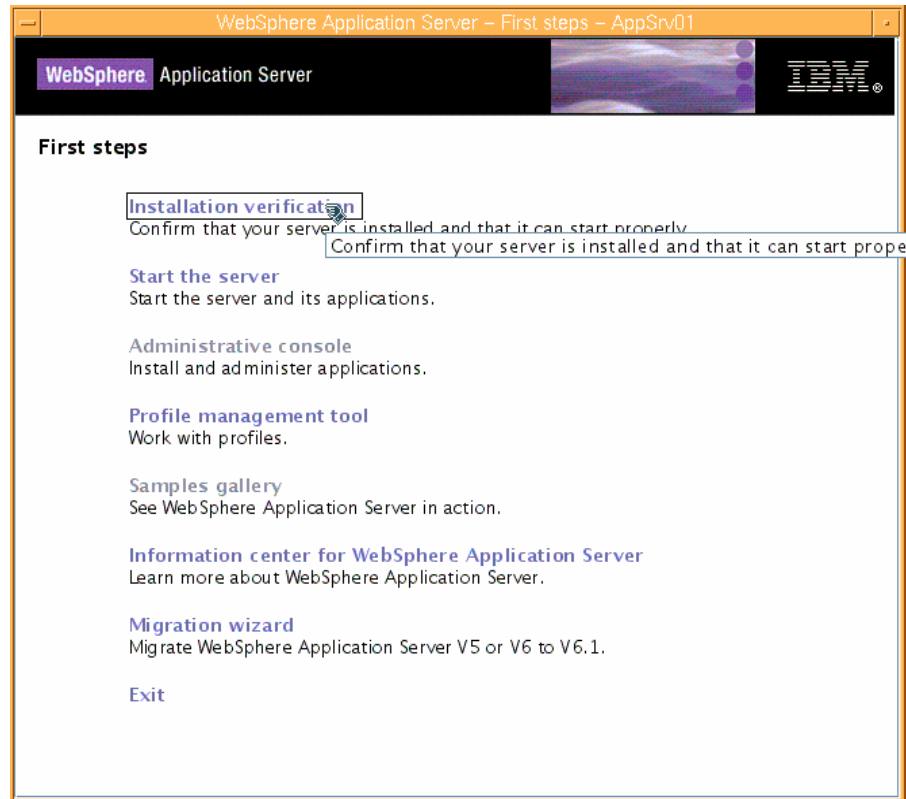
Figure 10. First steps to test the successful installation of WebSphere Application Server

14. Review the results of the installation-verification process in the pop-up window (see Figure 11), then close the window.
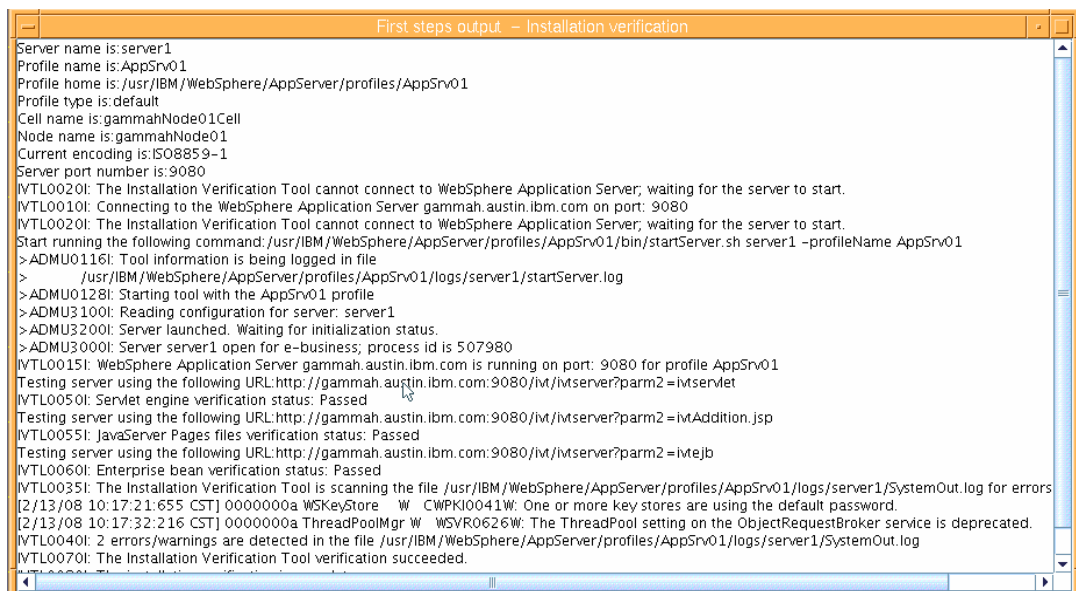

Figure 11. Results of the installation-verification process
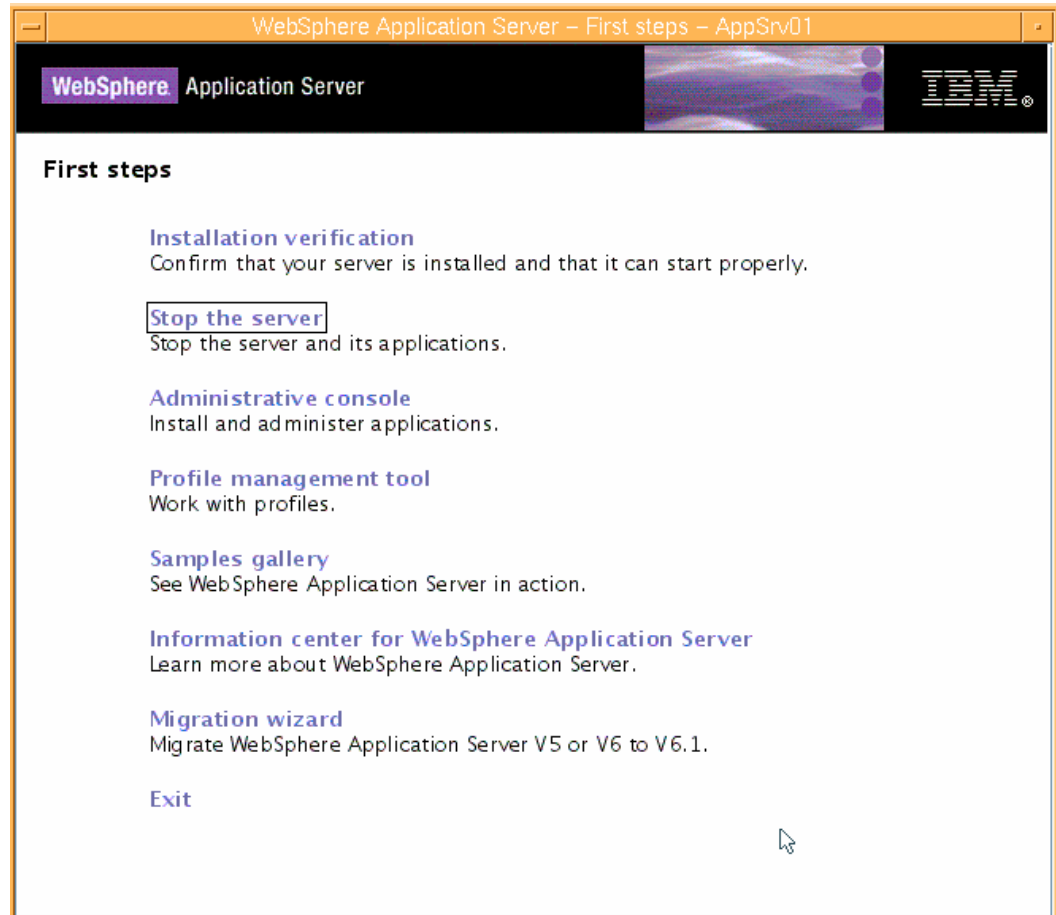
15. Select **Stop Server**. (See Figure 12.)

Figure 12. Stopping the server

16. Close the window that has been produced by the Stop Server process. (See Figure 13.)

Figure 13. Results of the Stop Server process

17. To complete the First Steps processes, click **Exit**.

Installing IBM HTTP Server

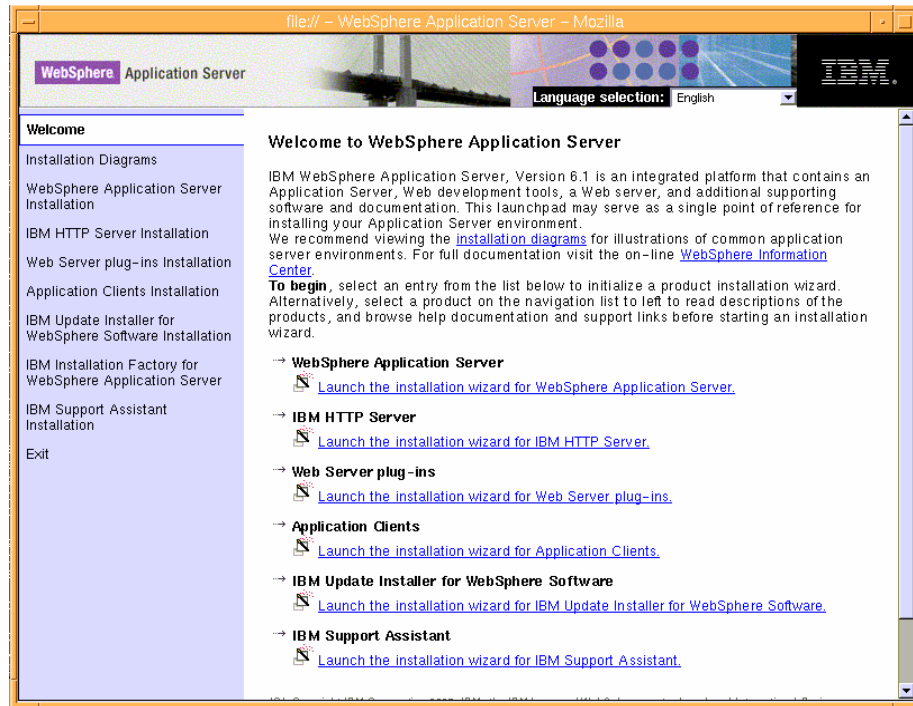1. Select **Launch the installation wizard for IBM HTTP Server**. (See Figure 14.)

Figure 14. Select to install IBM HTTP Server

2. To begin installing IBM HTTP Server 6.0, at the Welcome page, click **Next**. (See Figure 15.)
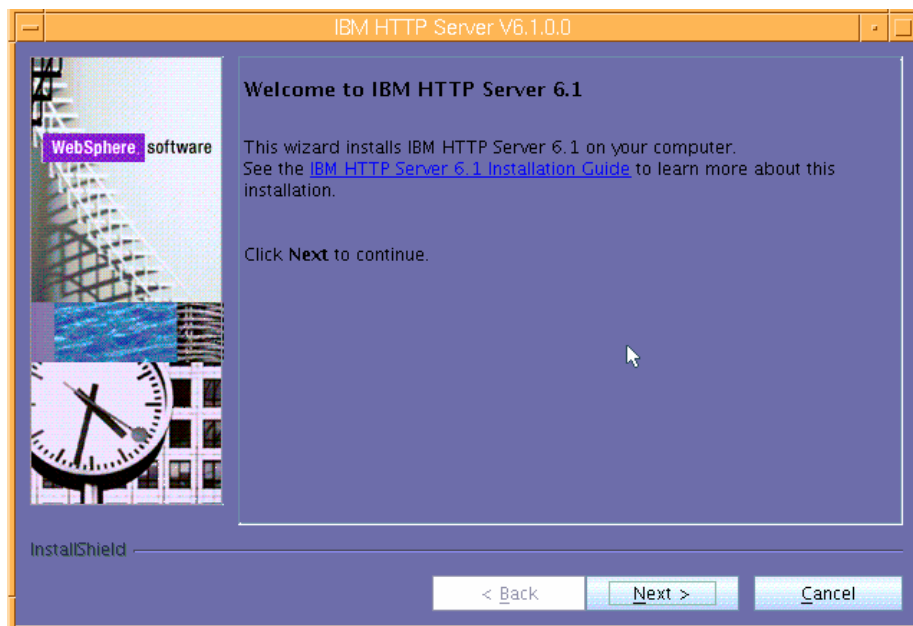

Figure 15. Welcome page for installing IBM HTTP Server

3. Select **I accept both the IBM and non-IBM terms** the click **Next**. (See Figure 16.)
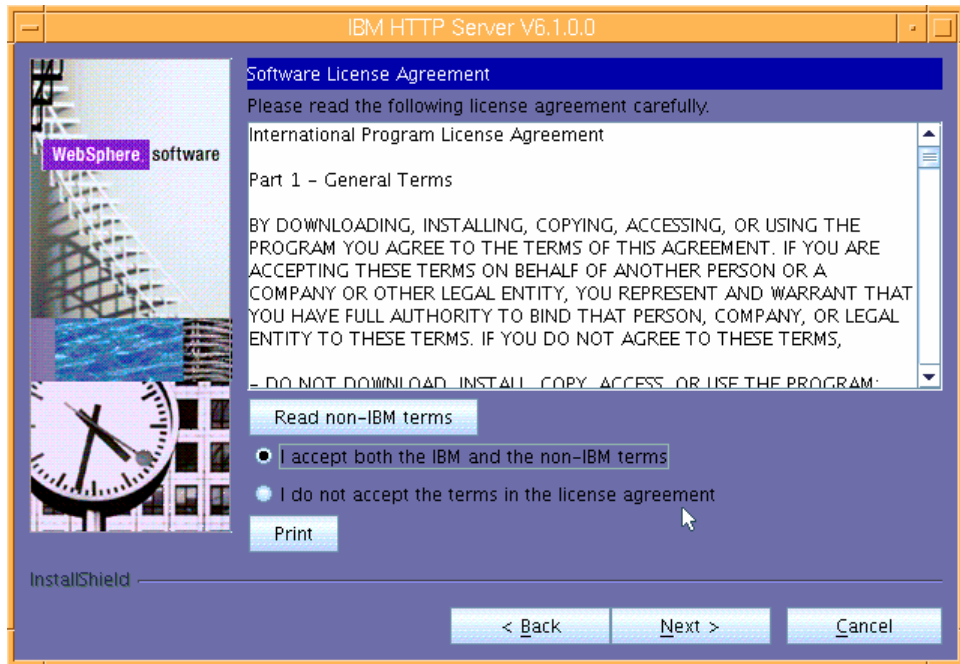

Figure 16. License agreement

4. You will then see that the wizard has checked for the expected system prerequisites. Click **Next**. (See Figure 17.)
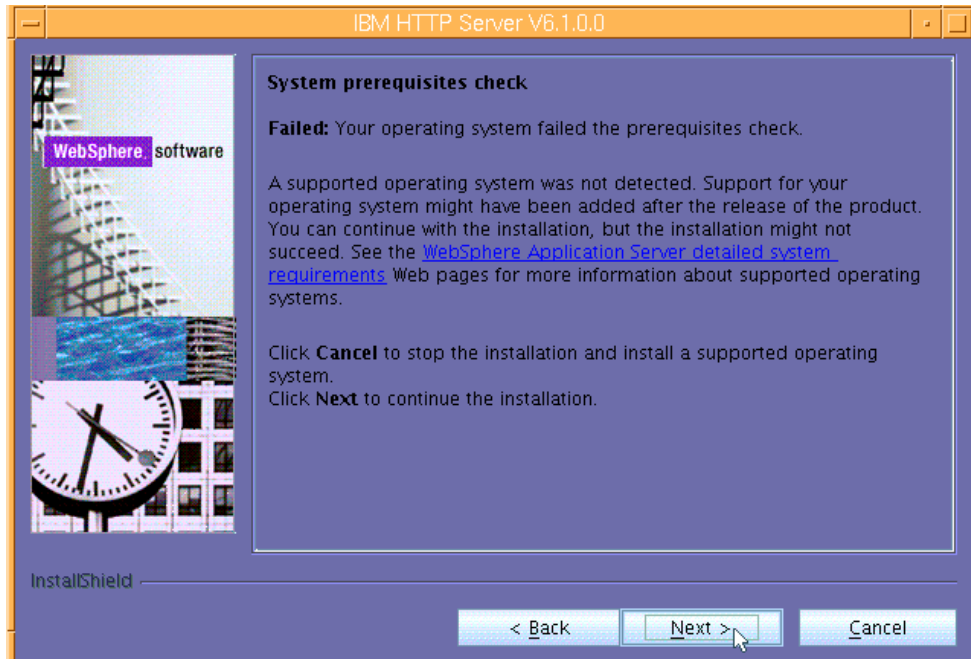

Figure 17.Verifying system prerequisites

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5. Enter the directory name for the IBM HTTP Server instance. (This example uses the default install location of /usr/IBM/HTTPServer.) Click **Next**. (See Figure 18.)
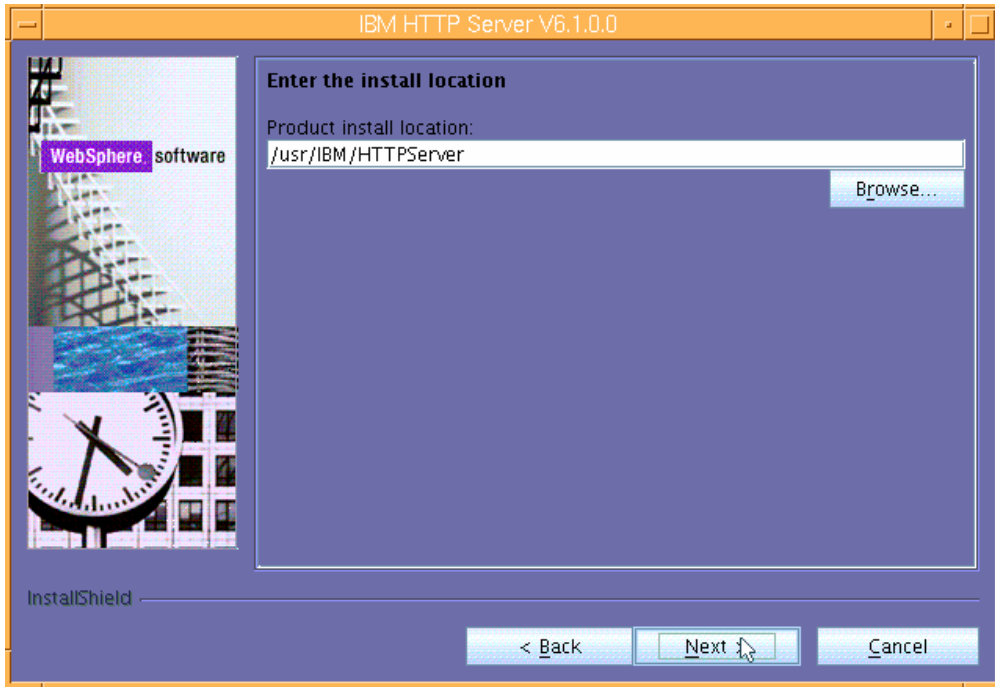

Figure 18. Choosing the default installation directory

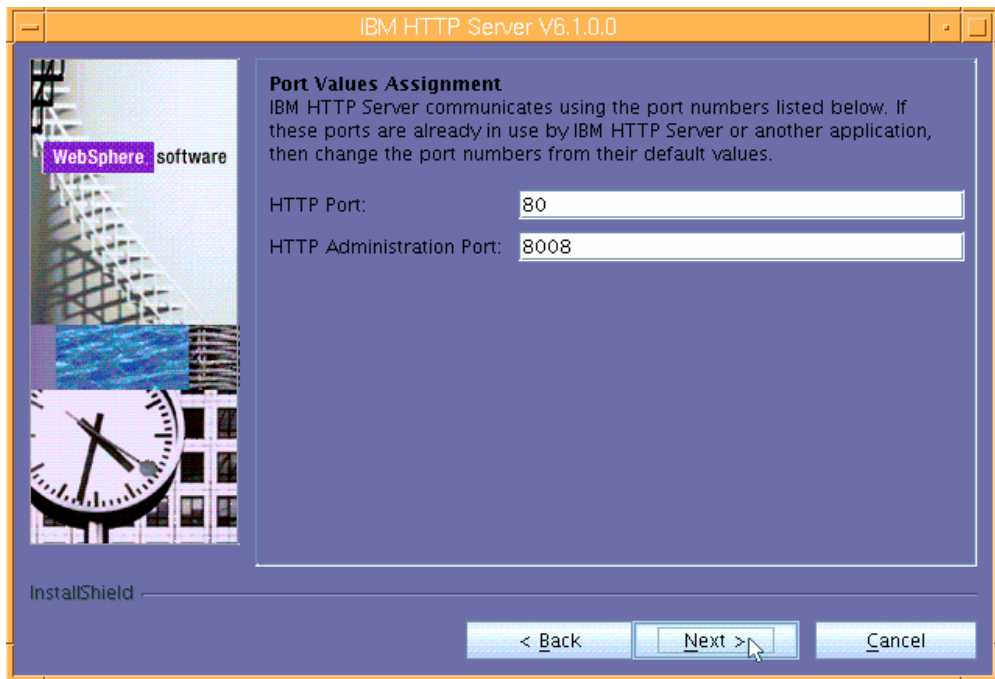6. The default ports are acceptable. Click **Next**. (See Figure 19.)

Figure 19. The default prots

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7. In this example, no user is created for administration. Uncheck **Create a user ID for IBM HTTP administration server authentication** then click **Next**. (See Figure 20.)
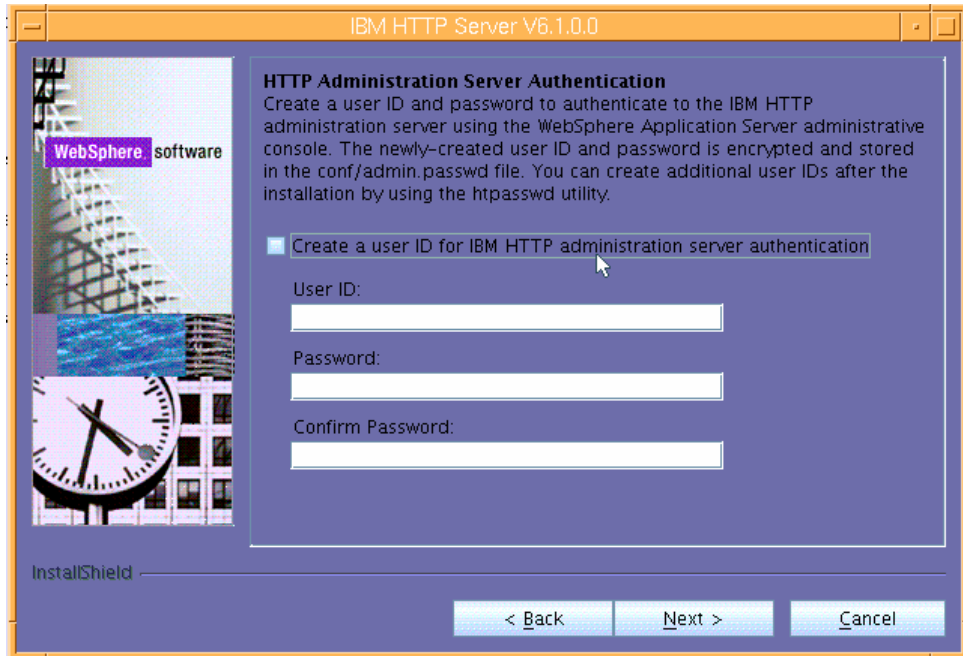

Figure 20. Bypassing the creation of an administrative user

8. This example also does not set up the use of an HTTP administration server. Uncheck both **Setup IBM HTTP Server administration server to administer IBM HTTP Server** and **Create a unique user ID for IBM HTTP Server administration**, then click **Next**. (See Figure 21.)
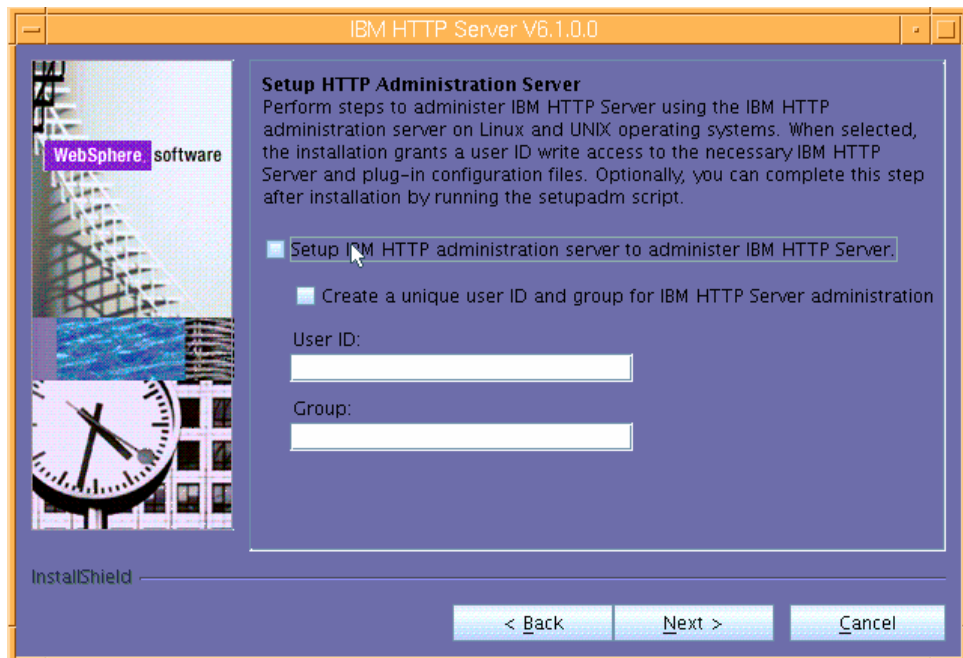

Figure 21. Bypassing the creation of an administration server

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9. Because the plug-in will be installed separately, uncheck **Install the IBM HTTP Server Plug-in for IBM WebSphere Application Server,** then click **Next.** (See Figure 22.)
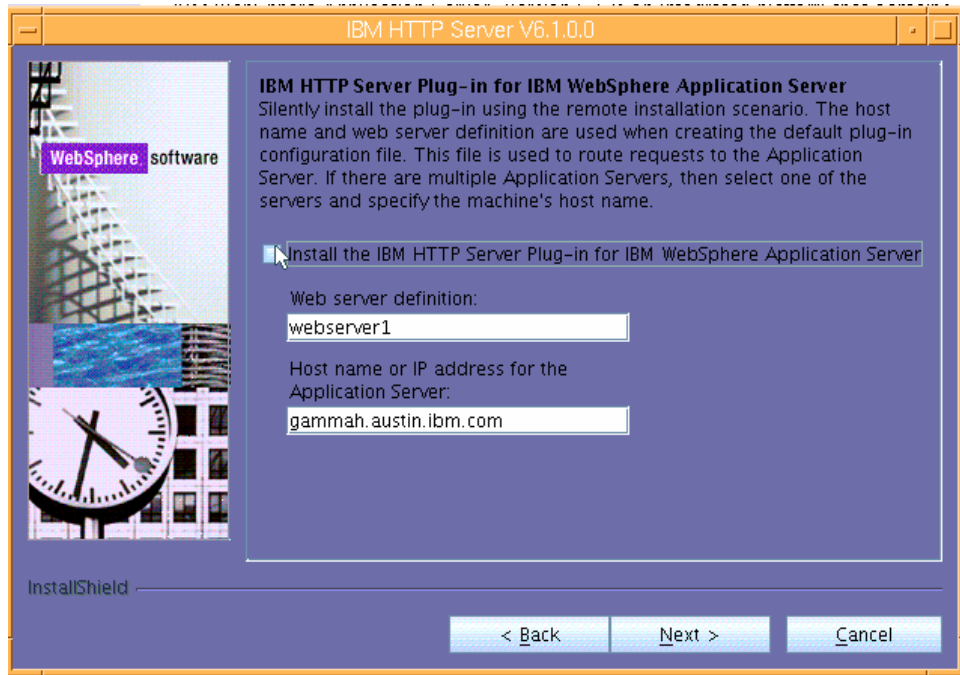

Figure 22. Do not install the plug-in at this time

10. Review the contents of the Installation Summary page, then click **Next**. (See Figure 23.)

Note: The installation will proceed and take several minutes to complete.
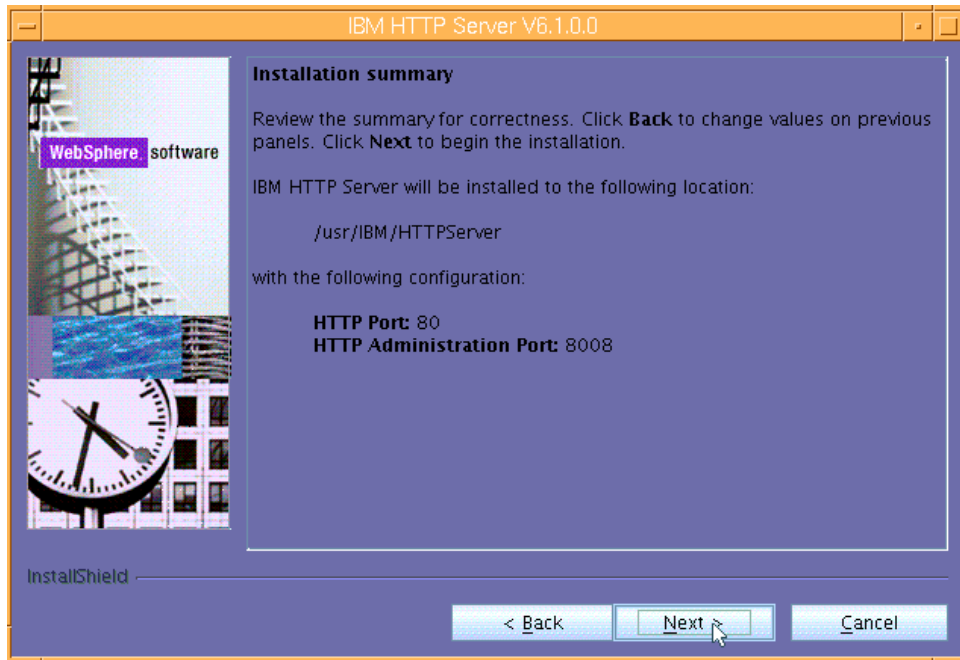

Figure 23. Installation Summary page

11. After completing the install processes for IBM HTTP Server, the wizard will display an informational page that indicates a successful installation. Click **Finish**. (See Figure 24.)
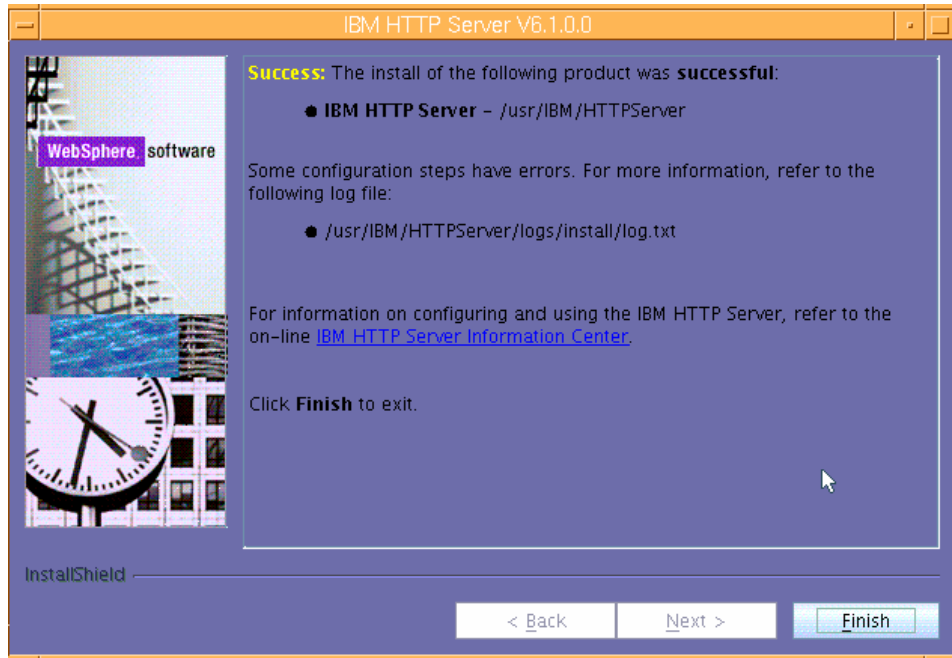

Figure 24. Successful installation of IBM HTTP Server

Installing IBM WebSphere plug-ins

1. Select **Launch the installation wizard for Web Server plug-ins**. (See Figure 25.)
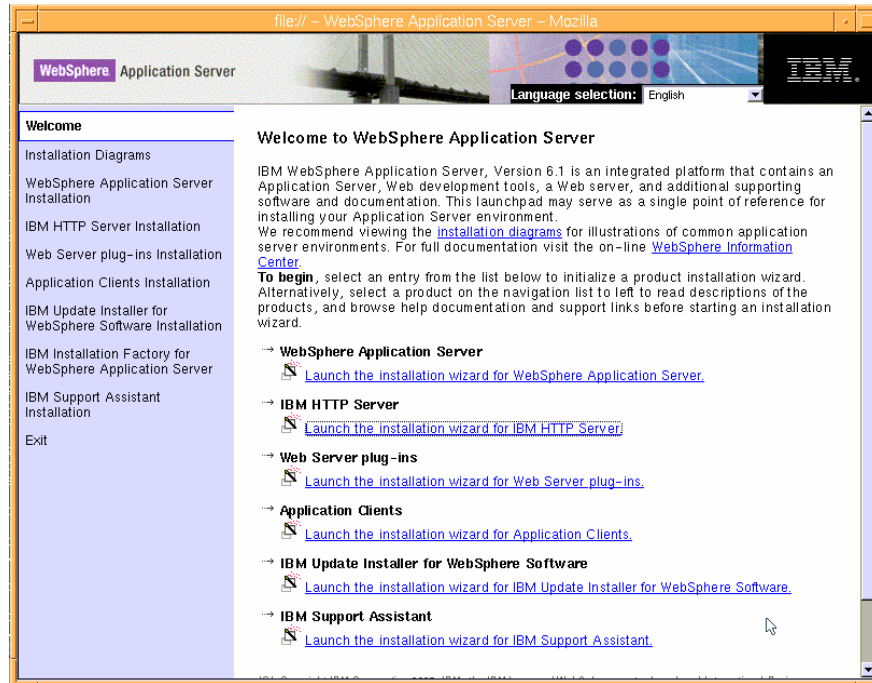

Figure 25. Launching the install wizard for the plug-ins

2. Deselect **Installation roadmap: Overview and installation scenarios**, then click **Next**. (See Figure 26.)
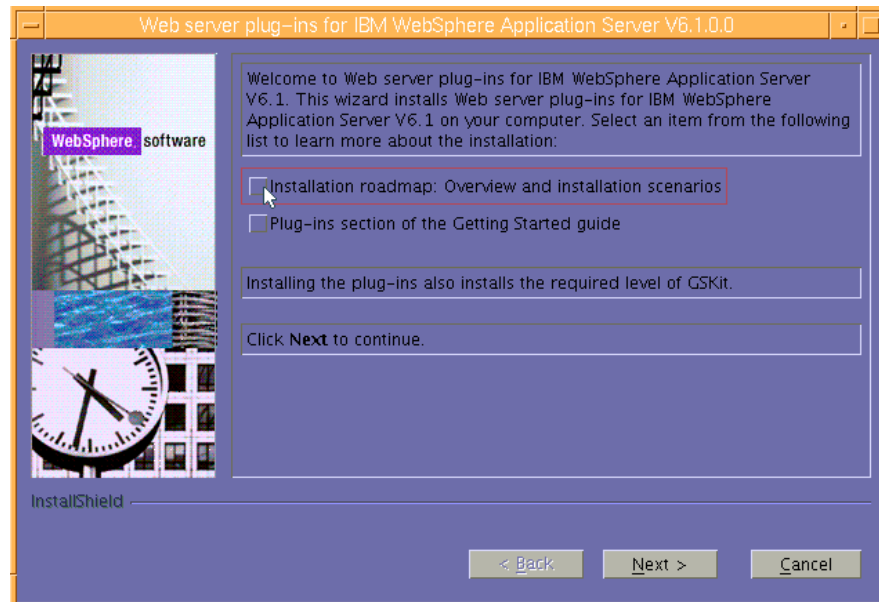

Figure 26. Elect not to view the Installation roadmap

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3. On the Software License Agreement page, select **I accept both the IBM and non-IBM terms** then click **Next**. (See Figure 27.)
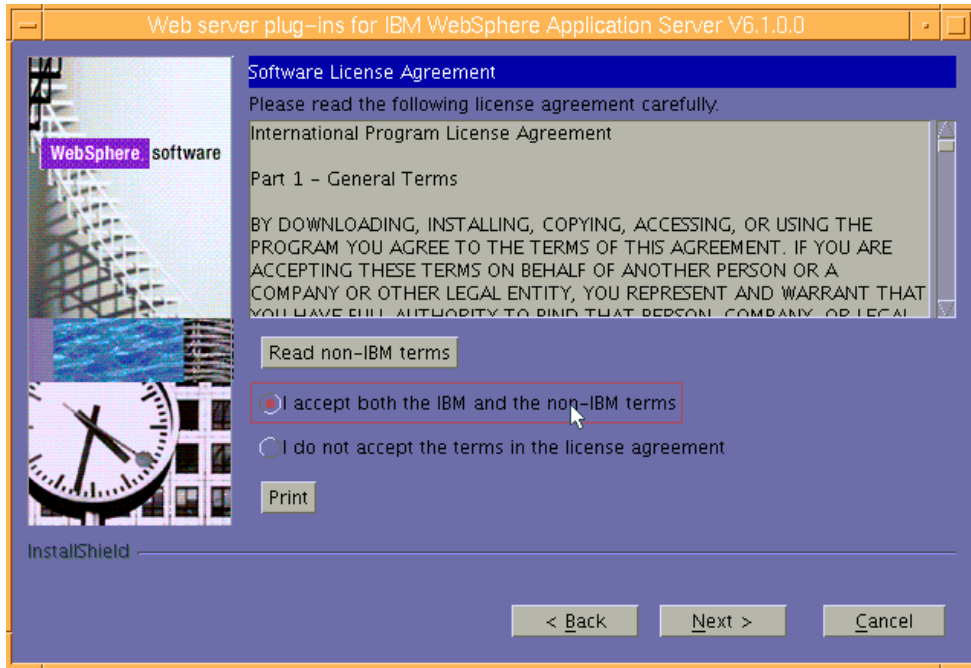

Figure 27. Software License Agreement

4. You will then see that the wizard has checked for the expected system prerequisites. Ignore the error message with regard to system prerequisites. Click **Next**. (See Figure 28.)
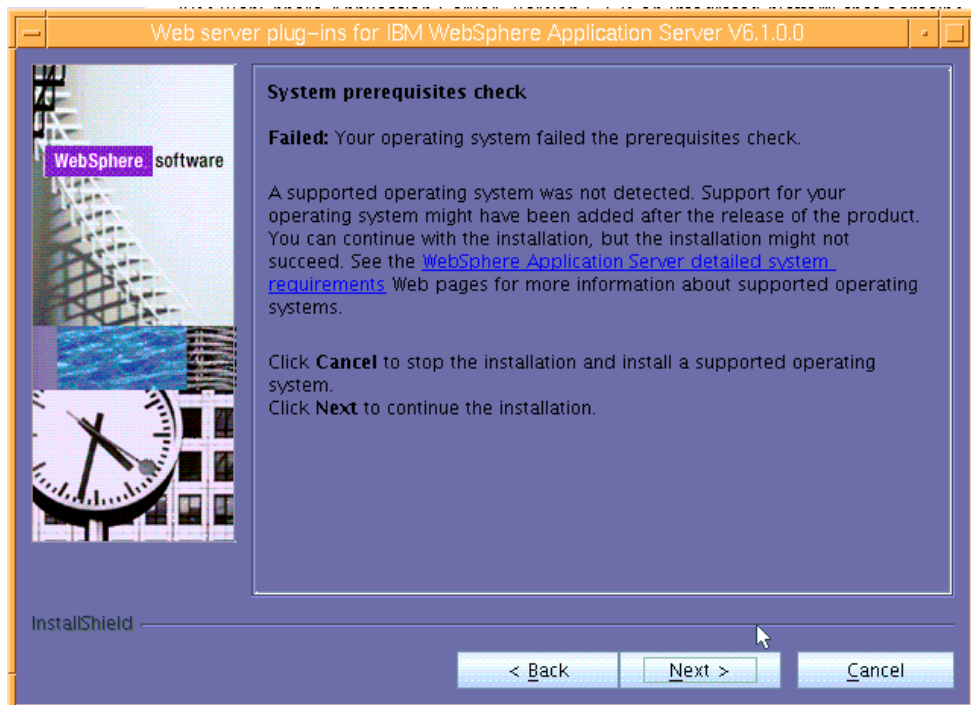

Figure 28. Checking for system prerequisites

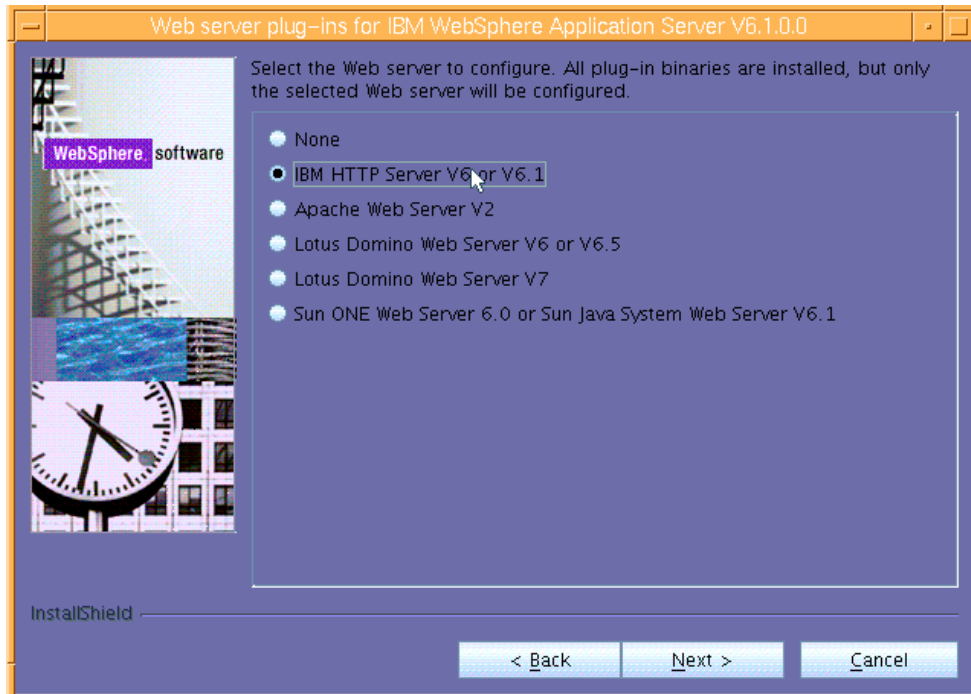**5.** Select **IBM HTTP Server V6 or V6.1,** then click **Next**. (See Figure 29.)

Figure 29. Selecting IBM HTTP Server plug-ins to be installed

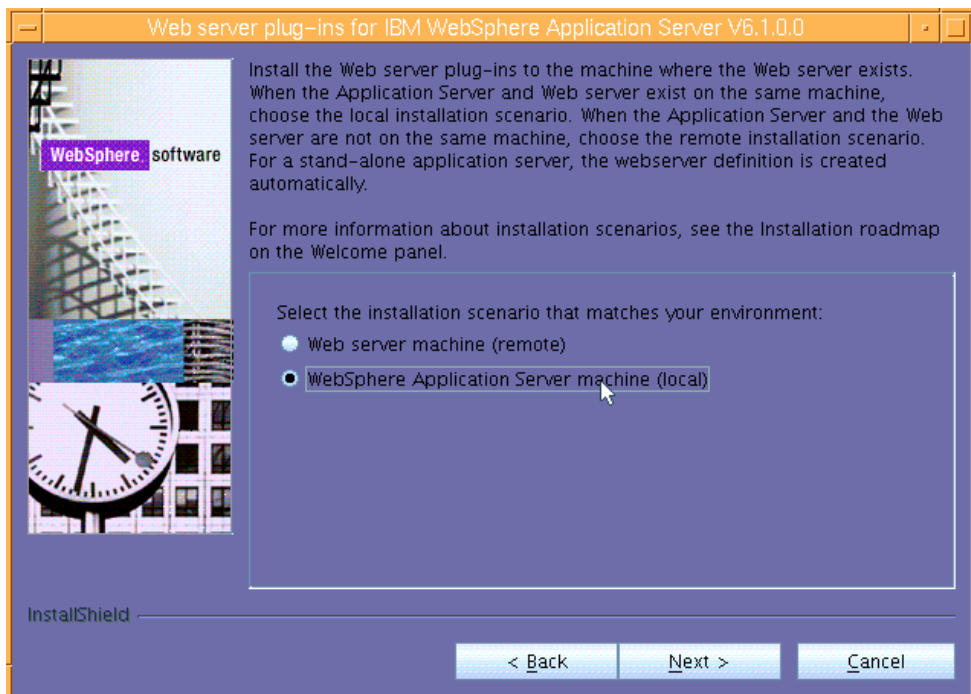**6.** Select **WebSphere Application Server machine (local)** then click **Next**. (See Figure 30.)

Figure 30. Selecting WebSphere Application Server plug-ins to be installed

7. The default plug-in location, which is shown as /usr/IBM/HTTPServer/Plugins, is appropriate as the install location. Click **Next**. (See Figure 31.)
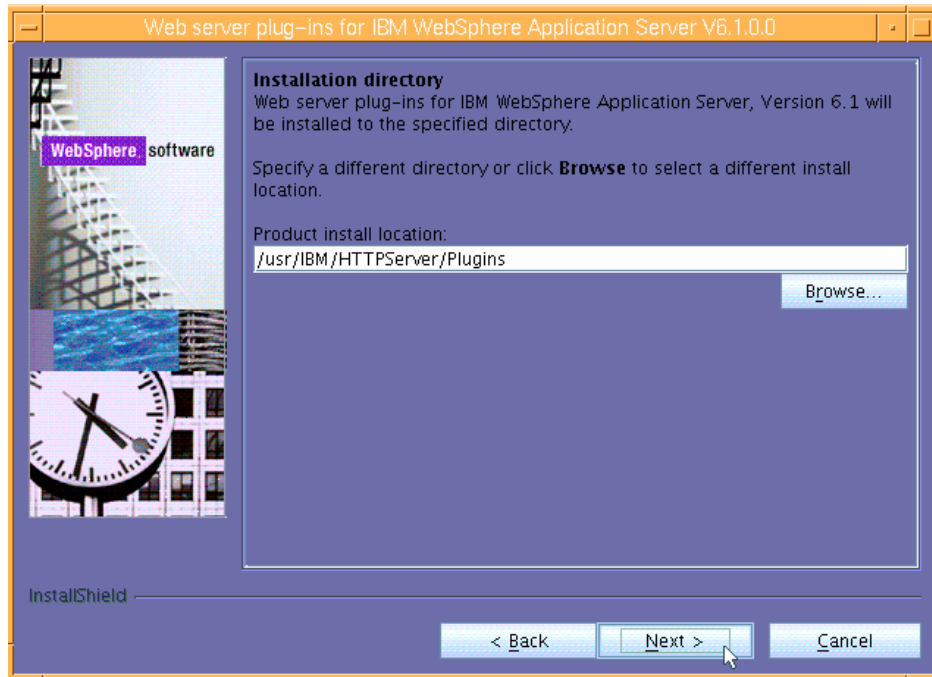

Figure 31. Verifying the install location for the plug-ins

8. WebSphere Application Server 6.1 was previously installed in /usr/IBM/WebSphere/AppServer; therefore, the proposed installation location (shown on the next page) is correct. Click **Next**. (See Figure 32.)
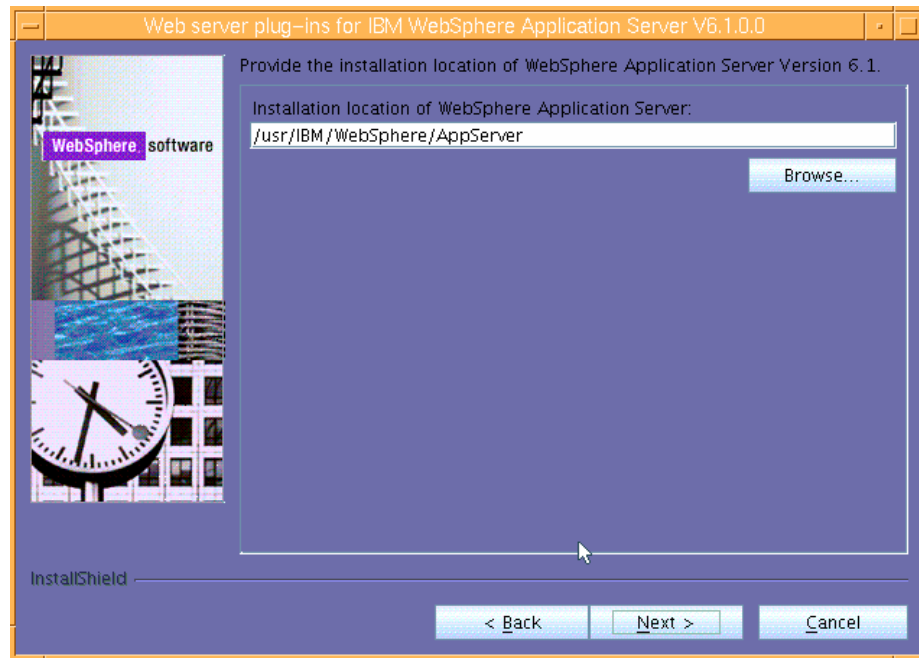

Figure 32. Providing location information regarding WebSphere Application Server

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9. The location of the httpd.conf file and the Web server port are both correct. Click **Next**. (See Figure 33.)
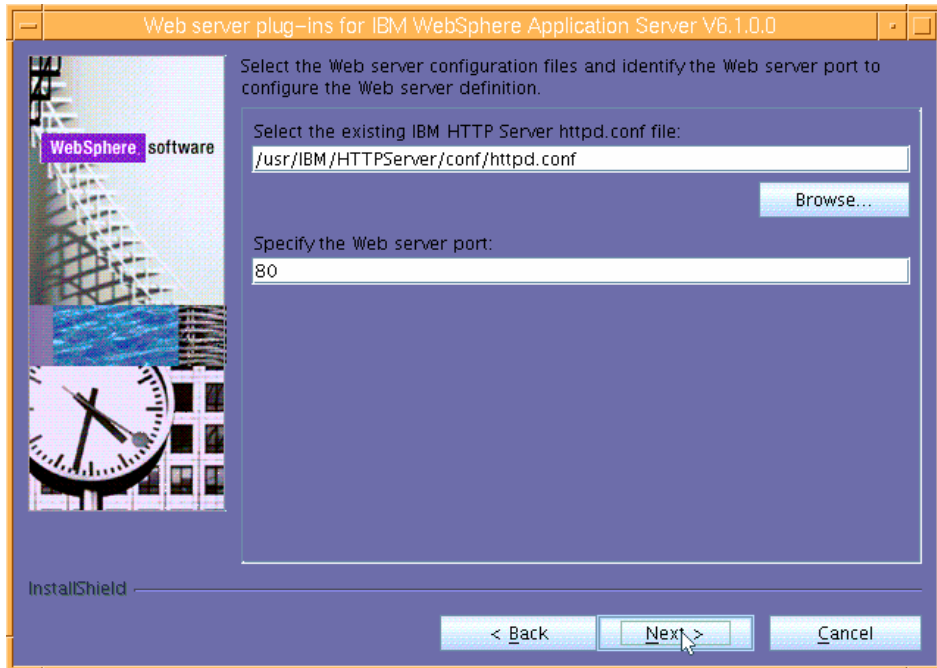

Figure 33. Verifying the location for the httpd.conf file and the port for the Web server

10. The proposed unique Web-server definition name is acceptable. Click **Next**. (See Figure 34.)
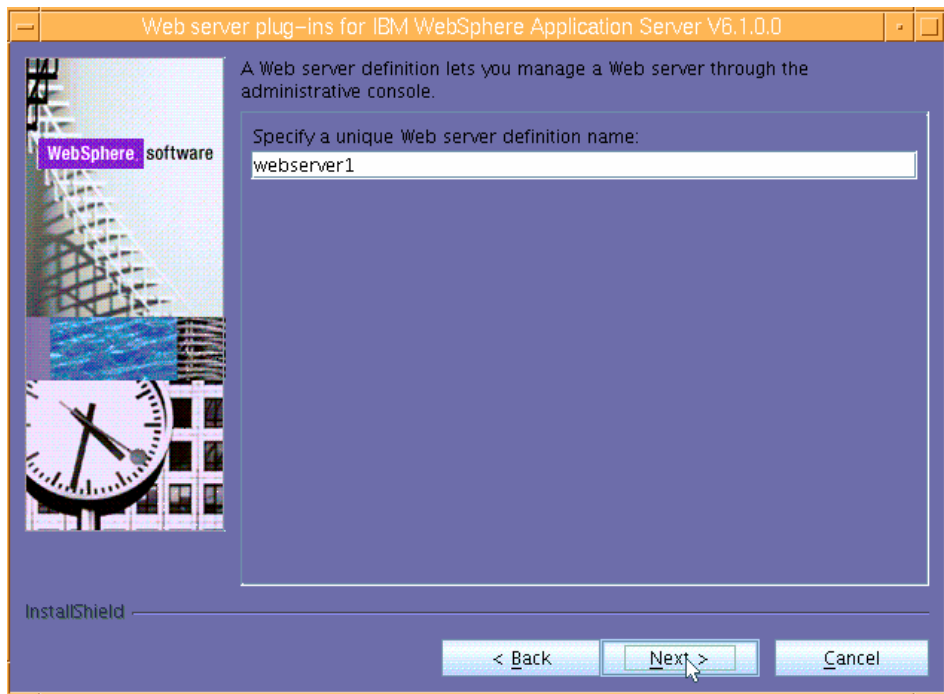

Figure 34. Unique Web-server definition name

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11. Notice that the wizard has provided a default location where it will generate a plugin-cfg.xml file. This location is acceptable. Click **Next**. (See Figure 35.)
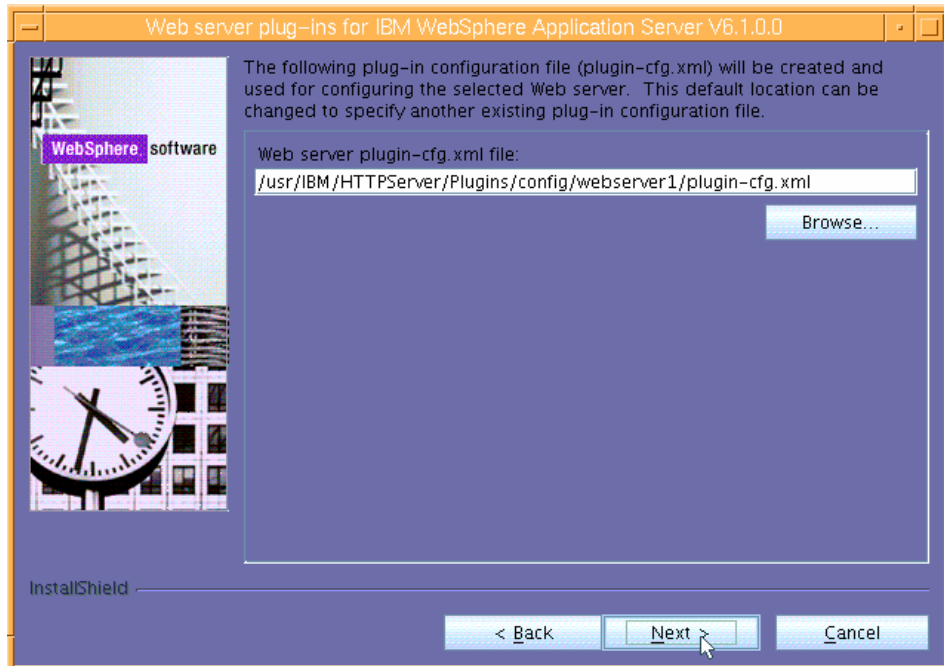

Figure 35. Location of the plugin-cfg.xml file

12. The next page is informational. Review the details that it provides, then click **Next**. (See Figure 36.)
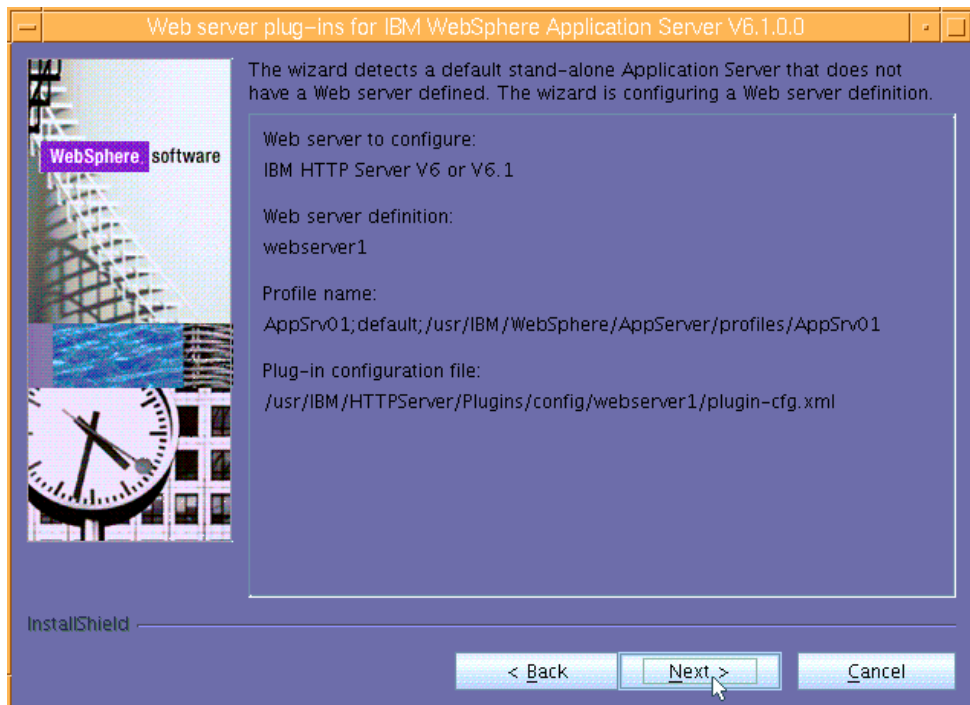

Figure 36. Informational page regarding a default stand-alone application server

13. The next page is informational, too. Review the installation summary it provides, then click **Next** to begin the installation. (See Figure 37.)
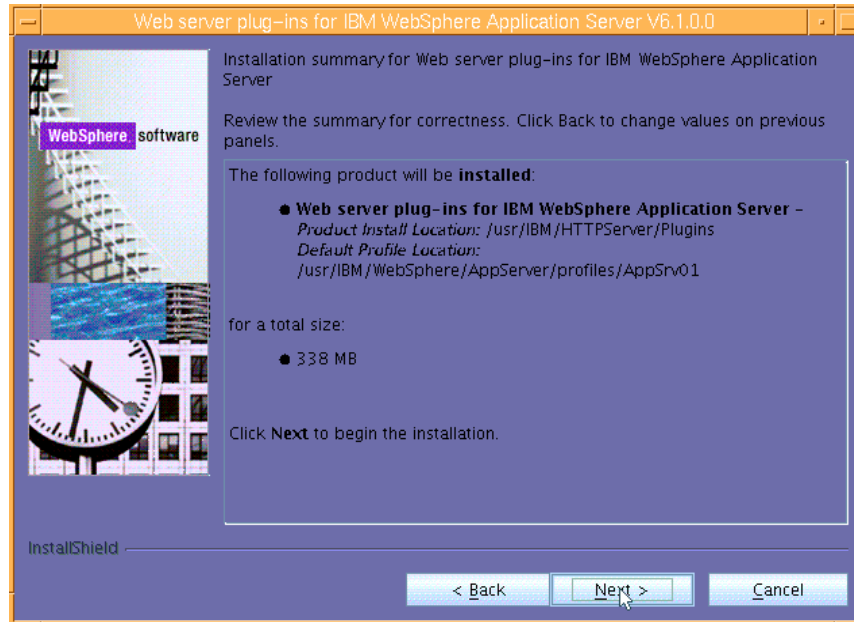

Figure 37. Informational page regarding the location and size of the Web server plug-ins

14. The wizard will display the results of the plug-in installation process. Notice that you will be shown a page that provides details regarding definition and profile names as well as other relevant information. When prompted, click **Next**. (See Figure 38.)
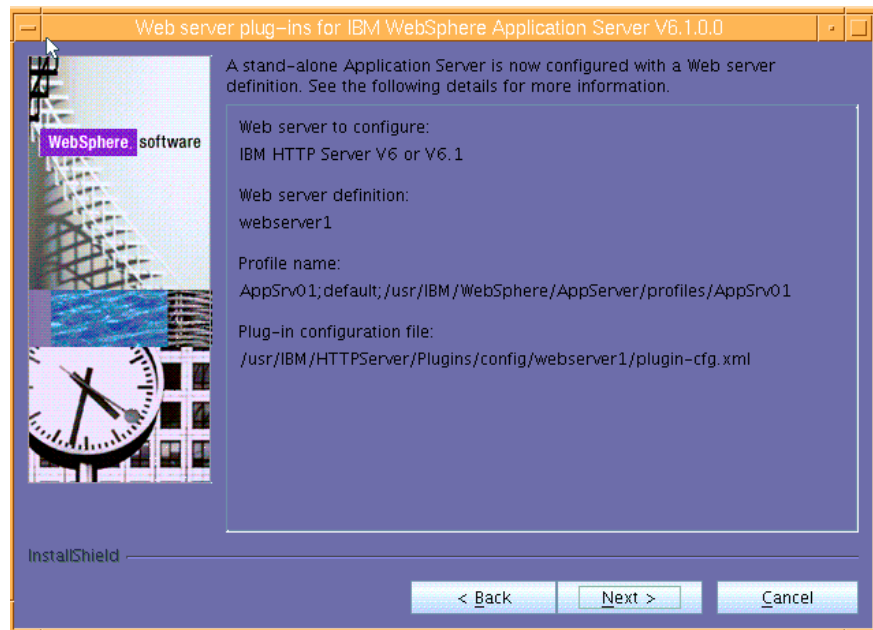

Figure 38. Informational page regarding IBM HTTP Server and the plug-ins

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15. Click **Finish**. (See Figure 39.) Then, close the browser window that shows the WebSphere plug-ins installation roadmap for WebSphere Application Server 6.1.
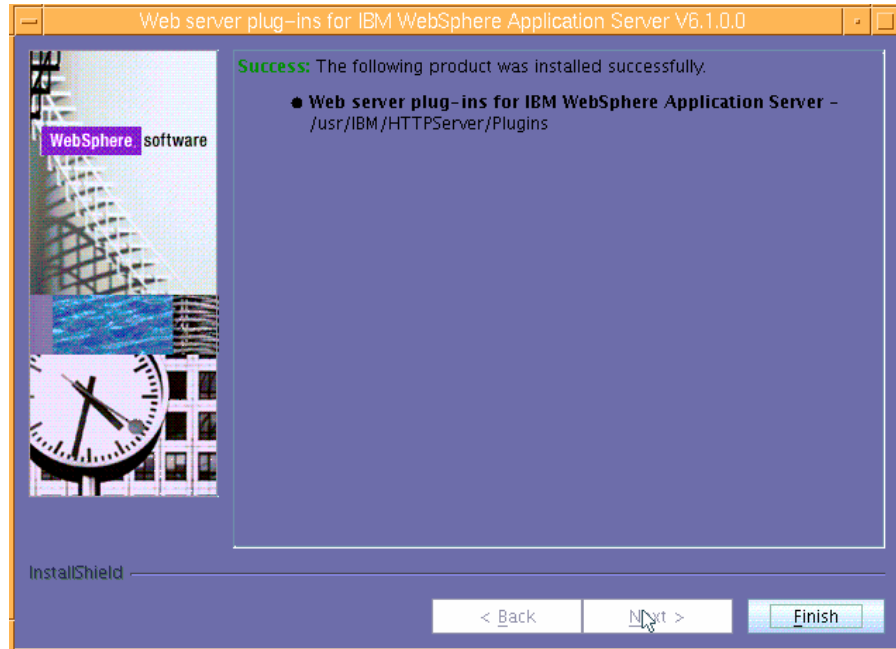

Figure 39. Successful installation of the WebSphere plug-ins

16. You have now installed WebSphere Application Server, IBM HTTP Server and the related plug-ins. Click **Exit**. (See Figure 40.)
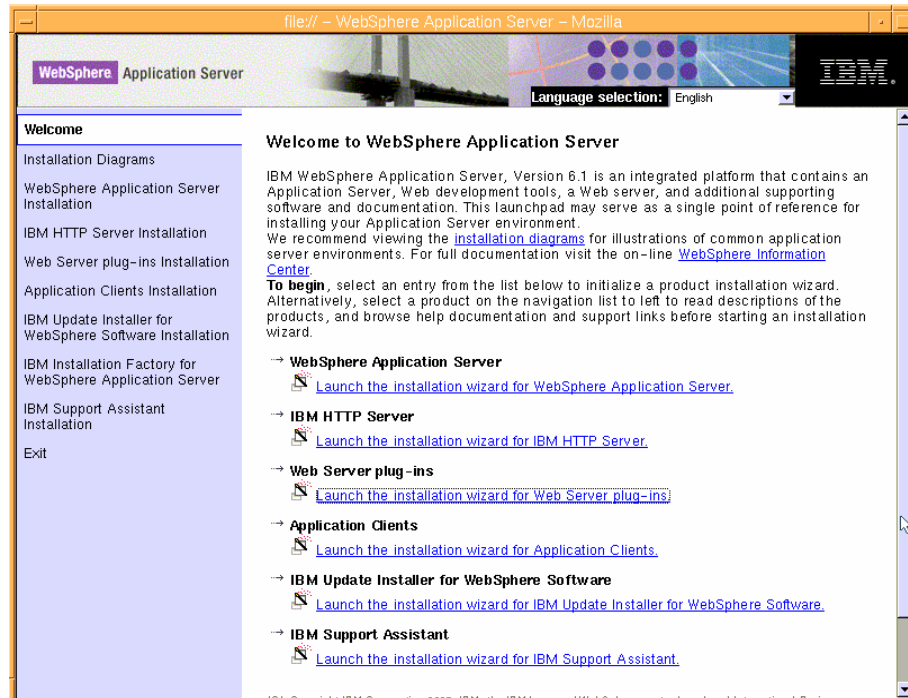

Figure 40. Exiting from the WebSphere installation wizard

Verifying the installation

You can verify the WebSphere Application Server installation by invoking example browser-based applications.

1. Start server 1 (as the root), enter **/usr/IBM/WebSphere/AppServer/bin/startServer.sh server1**.

2. Start IBM HTTP Server (as the root), enter **/usr/IBM/HTTPServer/bin/apachectl start**.

3. Access the WebSphere Application Server console from a browser by entering the following URL:
   http://server_name:9060/ibm/console
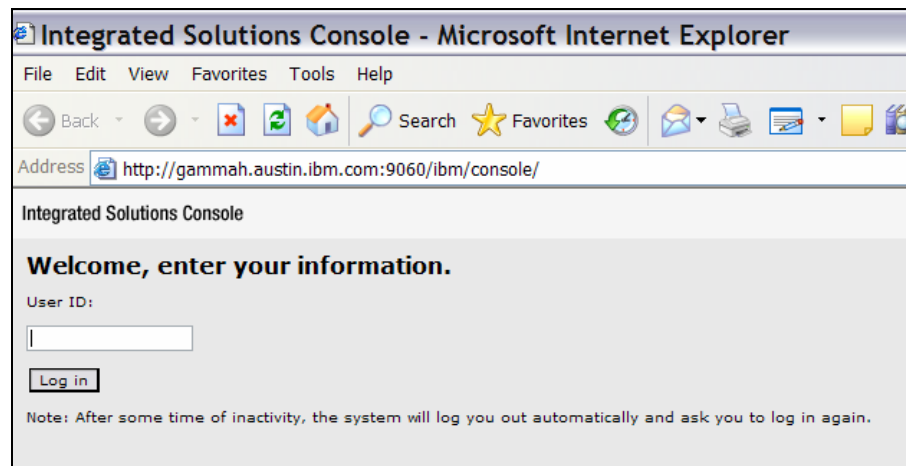
4. Log in as administrator (admin). (See Figure 41.)

Figure 41.

5. Verify that itvApp is running by opening the following URLs (which are case-sensitive) in your browser (see Figure 42): **http:/server_name:9080:/PlantsByWebSphere** and **http:/server_name/PlantsByWebSphere**.
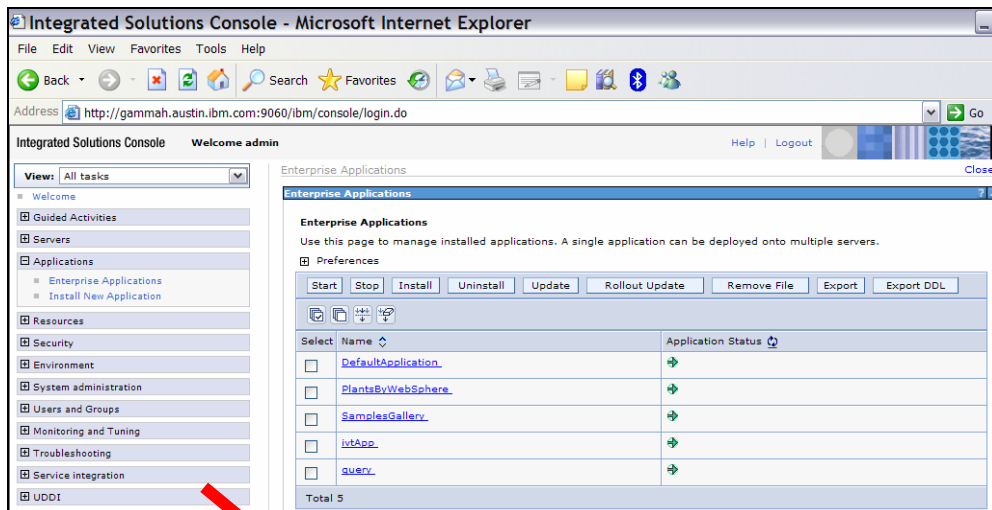

Figure 42. Using a browser to verify that itvAPP is running

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6. If you are able to access the PlantsByWebSphere application by using both port 9080 and default port 80, you have verified that WebSphere Application Server is running, and that its integration with IBM HTTP Server is correctly established. (See Figure 43.)

Figure 43. Accessing the PlantsByWebSphere application

Installing Fix Pack 13

The installation of the fix pack requires that you download the latest version of the Update Installer utility, as well as several pack files that contain the maintenance to be applied. This section explains the optional step of applying fixpack13, which was the latest version of maintenance available when this white paper was written.

1. Before installing, you need to download the files from the IBM WebSphere support site (**ibm.com**/software/webservers/appserv/was/support). An example of the location that is to be accessed for obtaining the files is shown in Figure 44.

2. Stop the server processes by running the following commands (as the root):

    /usr/IBM/HTTPServer/bin/apachectl stop
    /usr/IBM/WebSphere/AppServer/bin/stopServer.sh server1

3. Before performing the updates, run the **slibclean** command to purge access to any executable programs and libraries that might have been accessed.

Downloading files and preparing to install the update-installer program

This next series of steps shows you how to download the pack files and prepare for the installation of the Update Installer program.

1. Use the AIX mv command to rename all of the downloaded files (except for download.updii.61013.aixppc32.zip) to eliminate the zip extension.
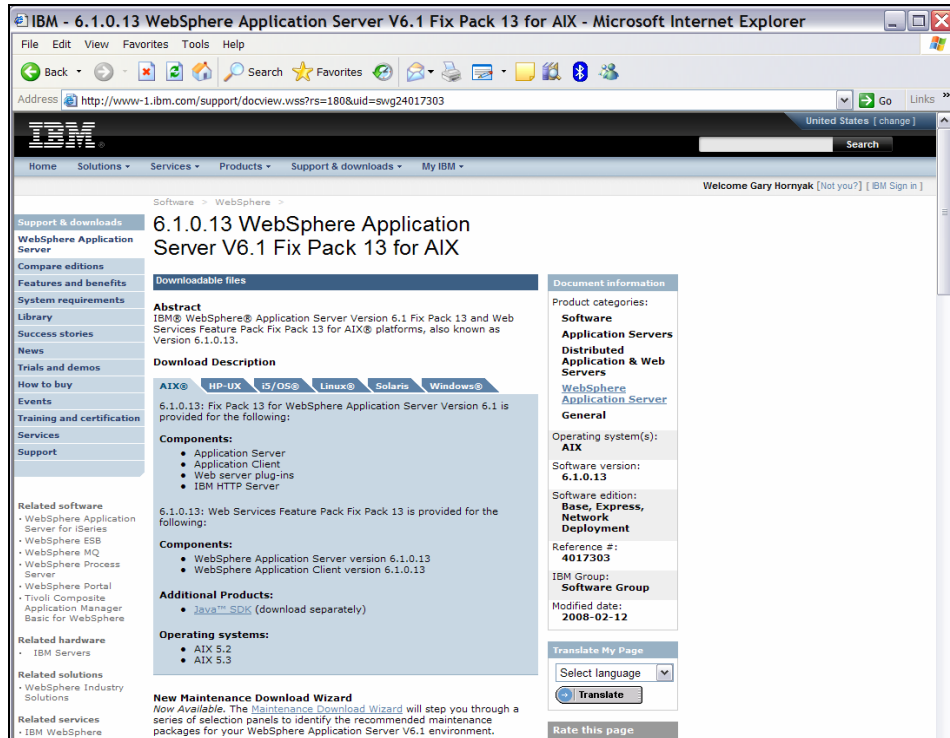

Figure 44. The WebSphere Application Server Fix Pack Web site

2. Figure 45 provides a listing of the pack files that are used to update WebSphere Application Server V6.1.0.0 to V6.1.0.13.

Figure 45. Listing of the update files to move to WebSphere Application Server 6.1.0.13

3. Use the **jar xvf download.updii.61013.aixppc32.zip** command to expand the contents of this file. This creates the UpdateInstaller directory for the next step.

Running the installation of the Update Installer utility

Use the following procedures to install the Update Installer utility.

1. Enter cd UpdateInstaller.

2. Enter **chmod 755 install** to add execution permission to the install file.

3. Run the **./install** command to start the Update Installer utility.

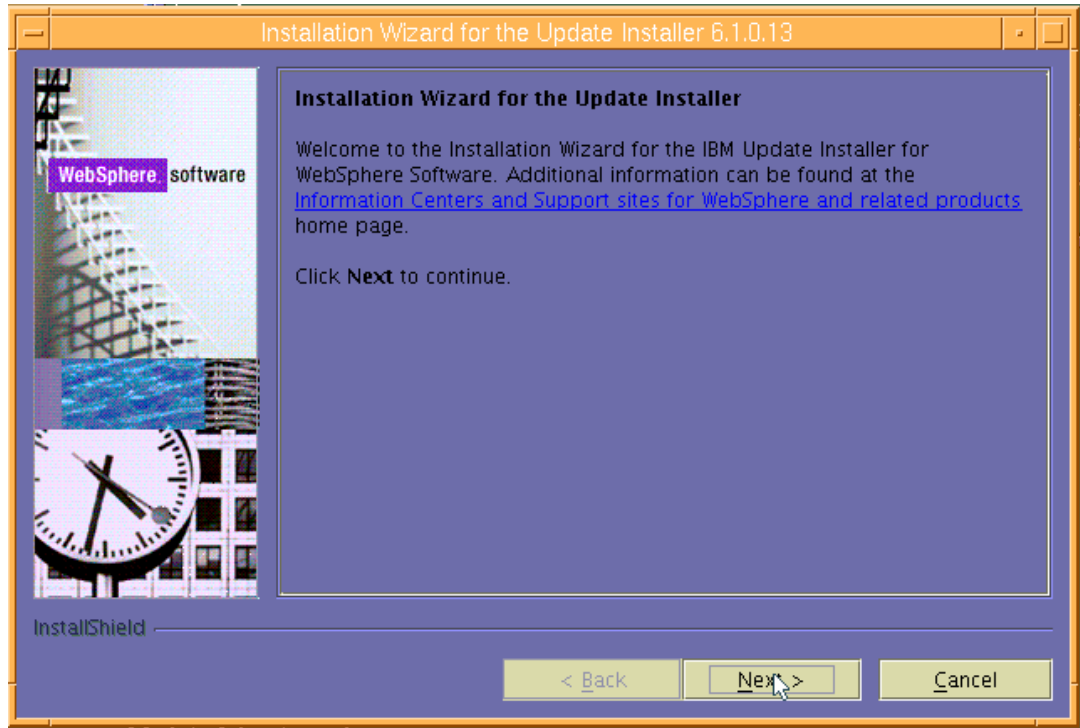4. The ./install command starts the installation wizard for the Update Installer. Click **Next**. (See Figure 46.)

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

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

Figure 47. Software license agreement

6. You will then see that the wizard has checked for the expected system prerequisites. Click,**Next** to continue with installation, even though there is a warning about missing prerequisites.
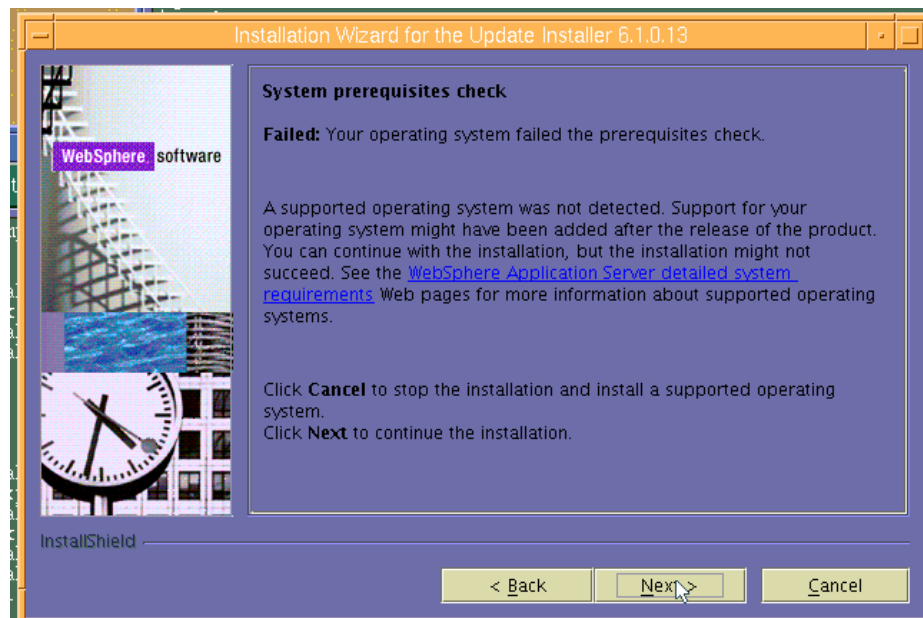

Figure 48. Checking for prerequisites

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7. 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.)
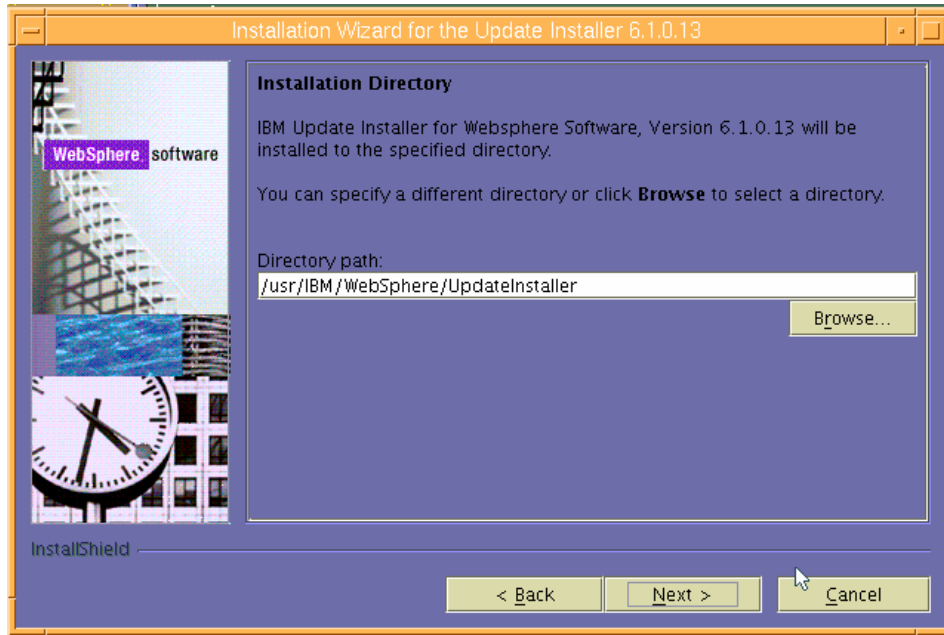
Figure 49. Directory path for the Update Installer utility

8. Review the Installation Summary page, then click **Next** to begin the installation. (See Figure 50.)
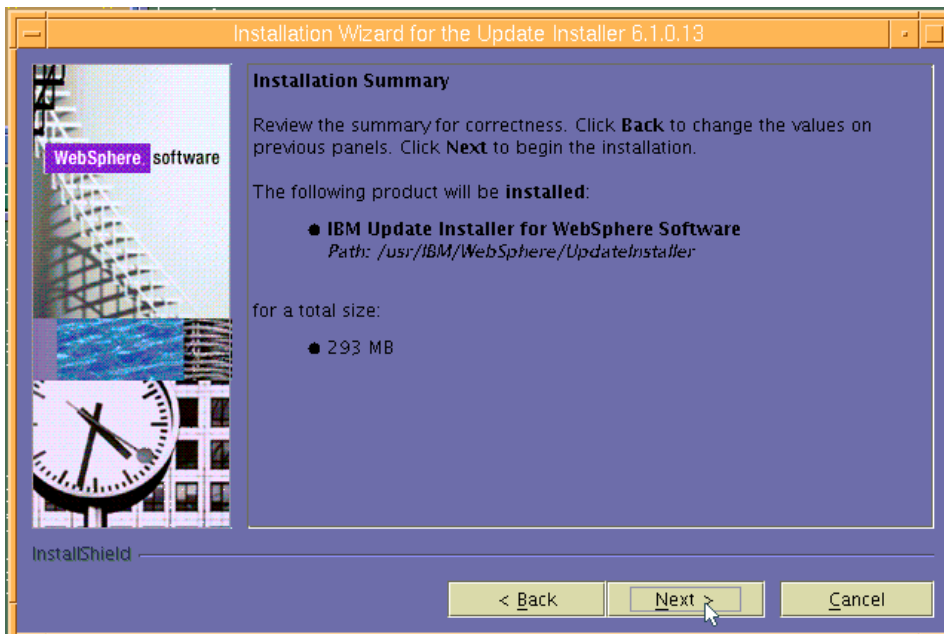

Figure 50. Summary information regarding the installation

9. Deselect **Launch IBM Update Installer for WebSphere on exit**, then click **Finish** to complete the installation of the Update Installer utility. (See Figure 51.)
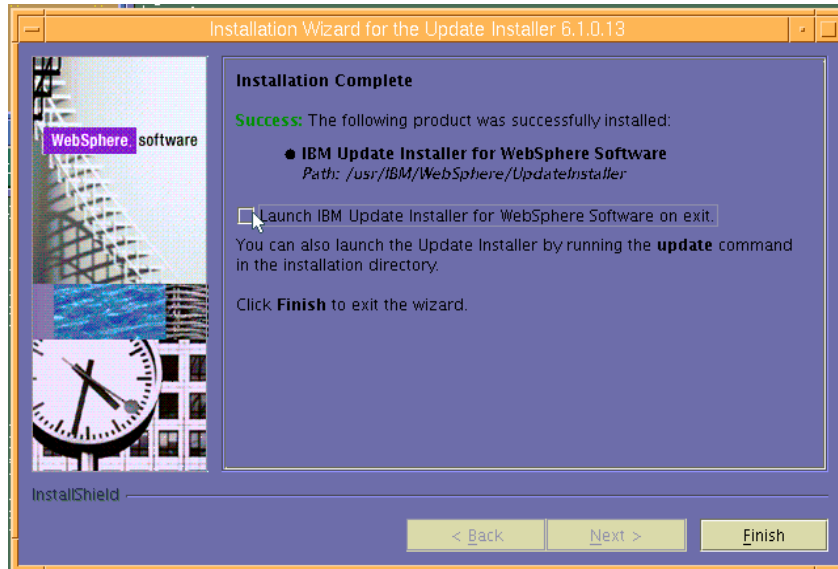
Figure 51. Installation Complete

Updating the WebSphere plug-ins

To update the WebSphere plug-ins, follow these steps:

1. Copy the pack files into /usr/IBM/WebSphere/UpdateInstaller/maintenance by using the following AIX command: **cd /usr/IBM/WebSphere/UpdateInstaller**.

2. Run the AIX **update.sh** command.

3. Click **Next**. (See Figure 52.)

Figure 52.

29
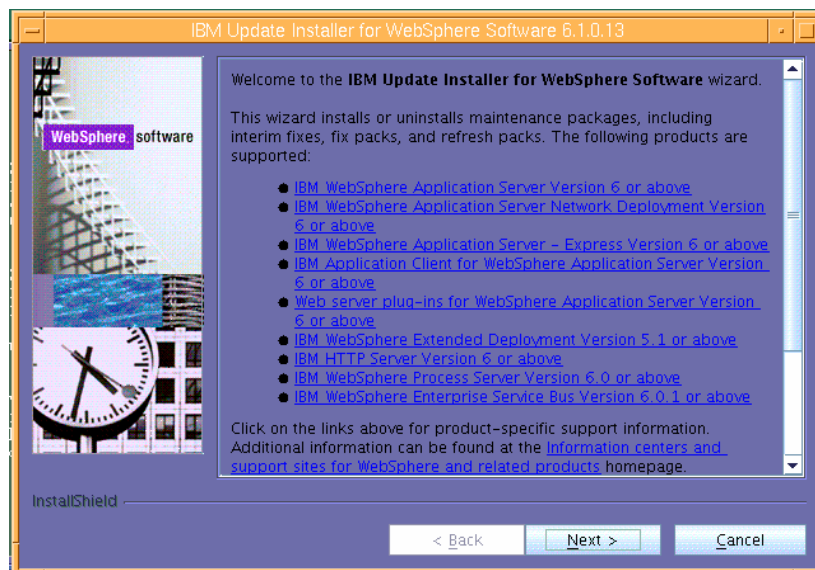
4. The first product that is suggested for updating is the plug-ins, click **Next**. (See Figure 53.)
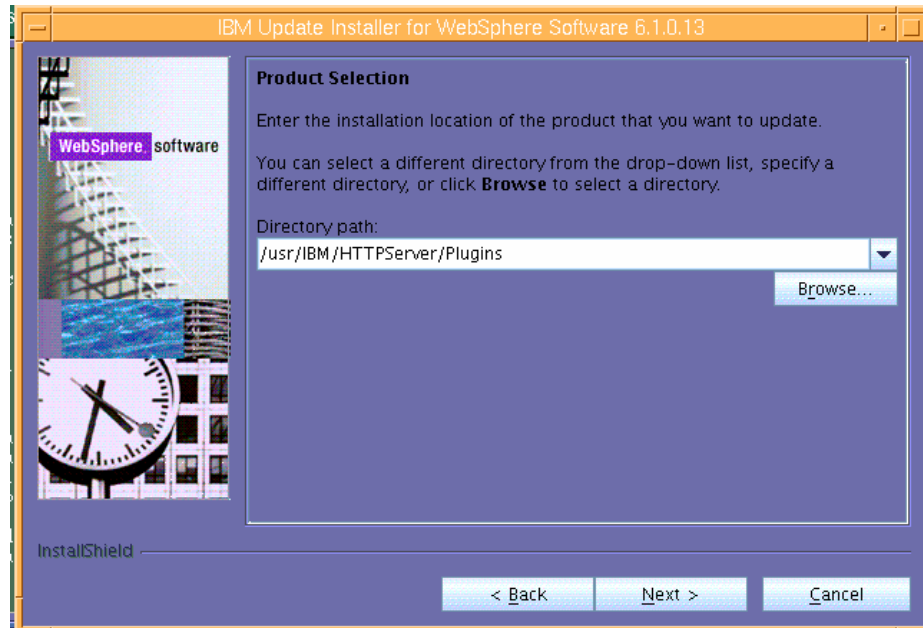

Figure 53. Selecting plug-ins to update

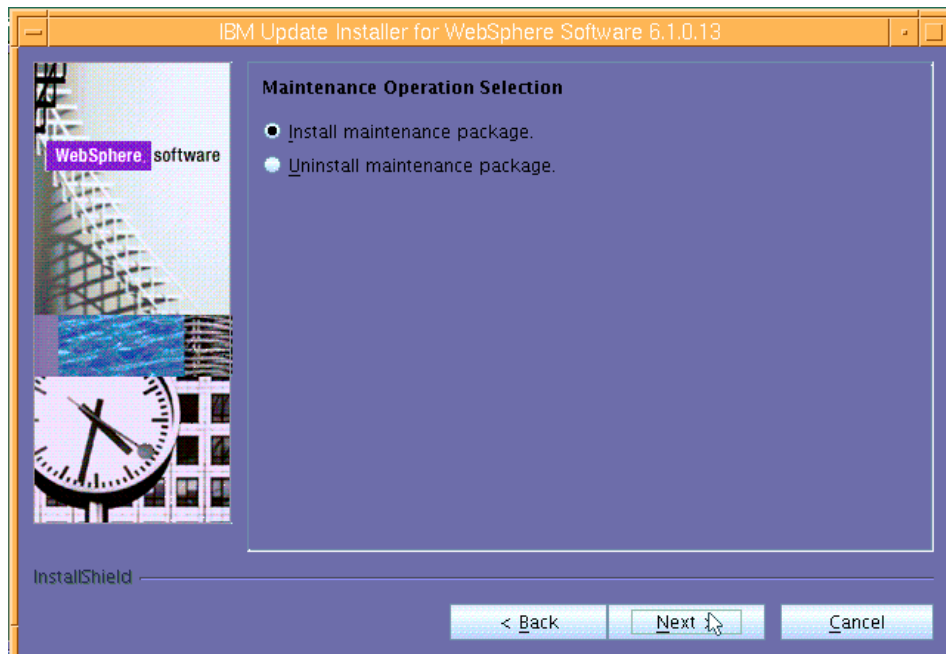5. Ensure that **Install maintenance package** is selected, then click **Next**. (See Figure 54.)

Figure 54. Selecting the maintenance operation

6. In this example, the pack files are copied into the default (suggested) directory (/usr/IBM/WebSphere/UpdateInstaller/maintenance directory), so click **Next**. (See Figure 55.)
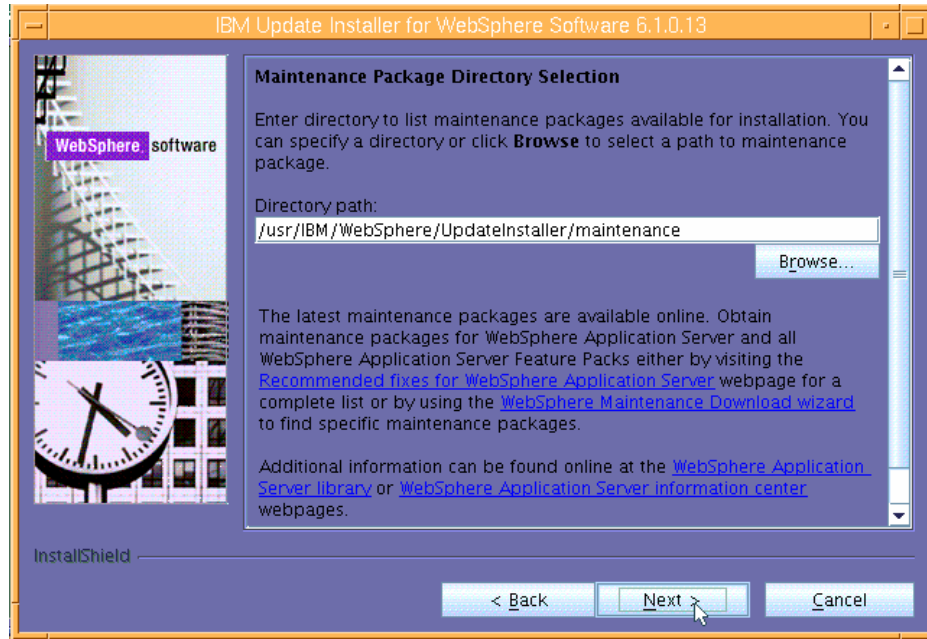

Figure 55. Selecting the maintenance-package directory

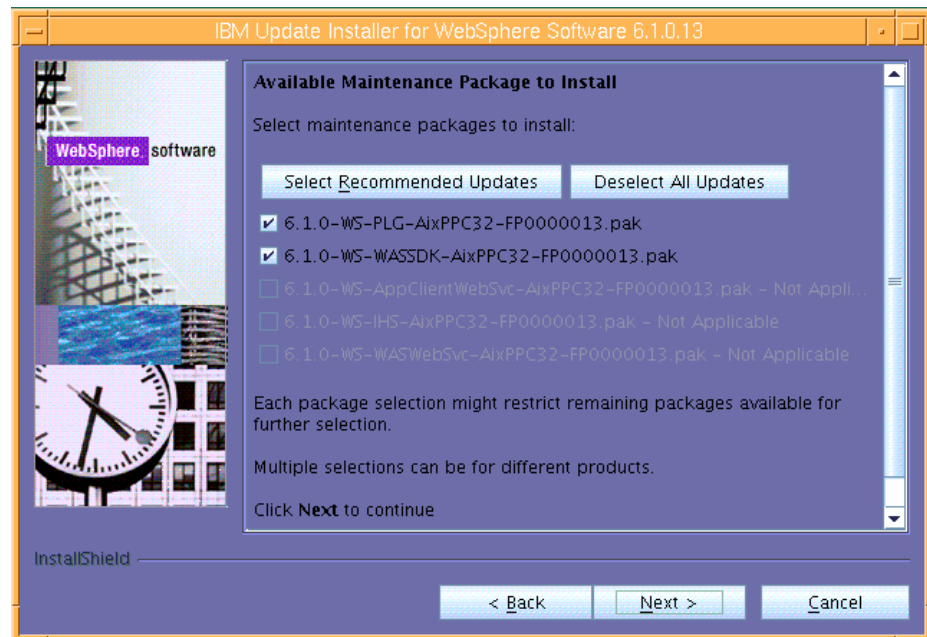7. Install the **Recommended Updates** by clicking **Next**. (See Figure 56.)

Figure 56. Available maintenance packages to install

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8. The next page provides installation summary information. Click **Next** after reviewing the installation summary. (See Figure 57.)
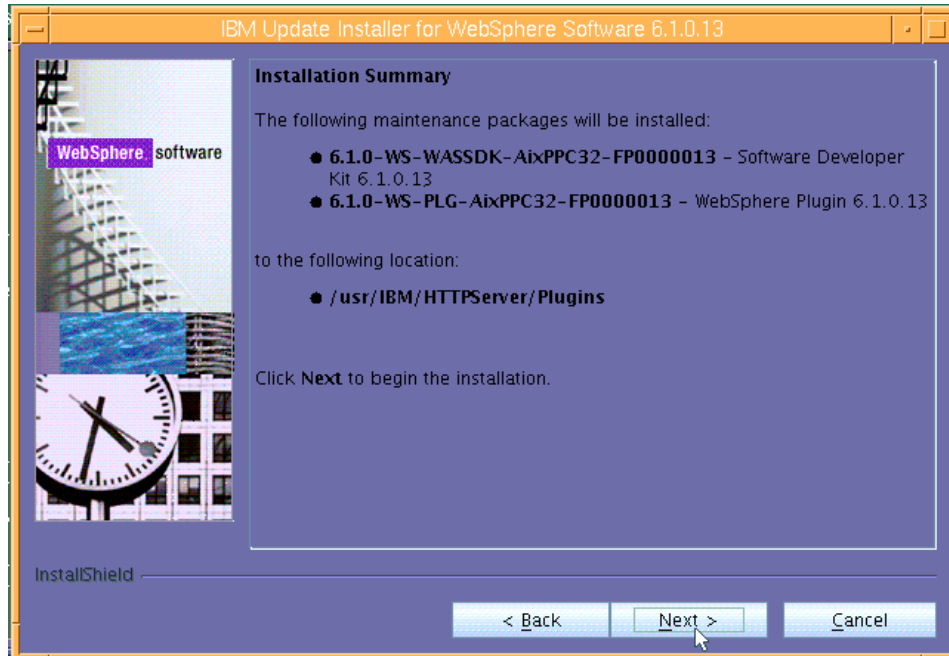

Figure 57. Informational page regarding the installation summary

9. Upon the completion of the installation, you will see the following informational page, which pronounces the successful installation of the maintenance packages . Click **Relaunch** to continue. (See Figure 58.)
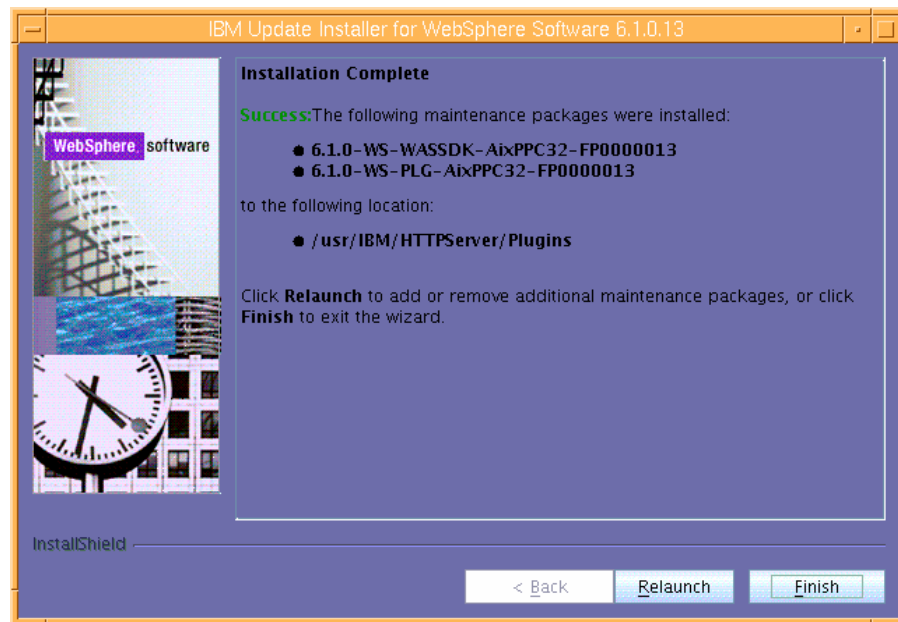

Figure 58. Informational page that verifies the successful installation of the maintenance packages

Installing the IBM HTTP Server maintenance packages

The following steps are used to install the updates to IBM HTTP Server.

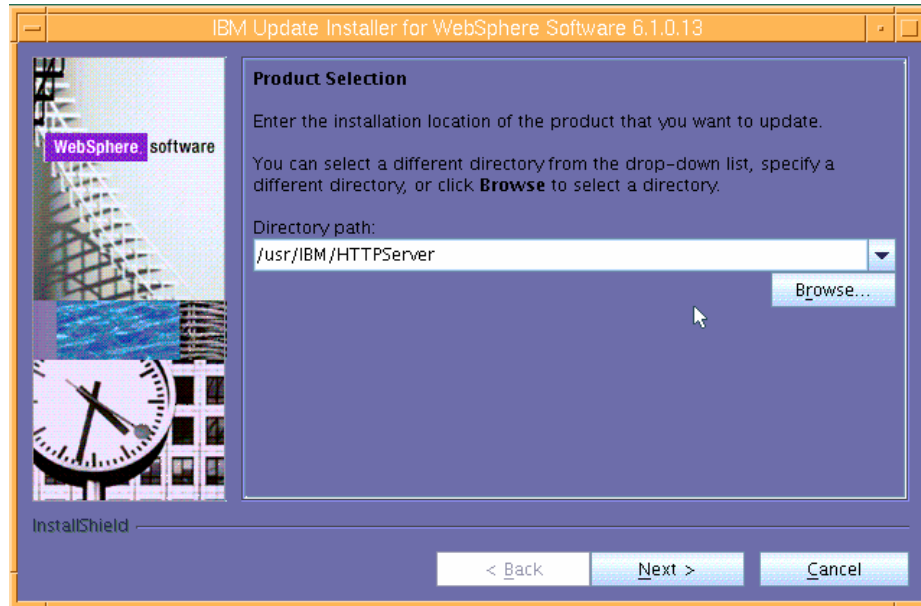1. Select **/usr/IBM/HTTPServer** then click **Next**. (See Figure 59.)

Figure 59. Product Selection

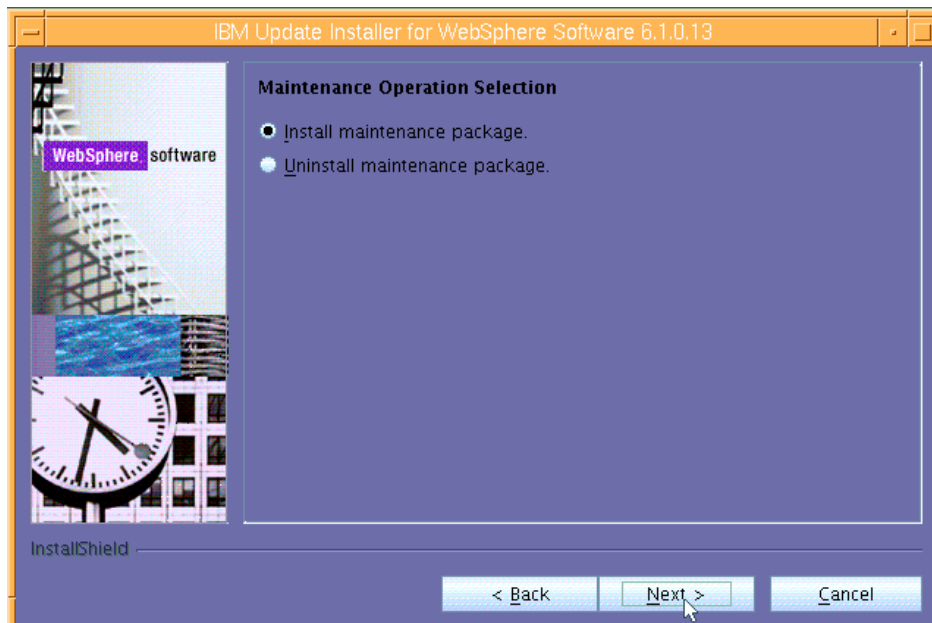2. Ensure that **Install maintenance package** is selected, then click **Next**. (See Figure 60.)

Figure 60. Selecting the maintenance operation

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3. In this example, the pack files are copied into the default (suggested) directory (/usr/IBM/WebSphere/UpdateInstaller/maintenance directory), so click **Next**. (See Figure 61.)
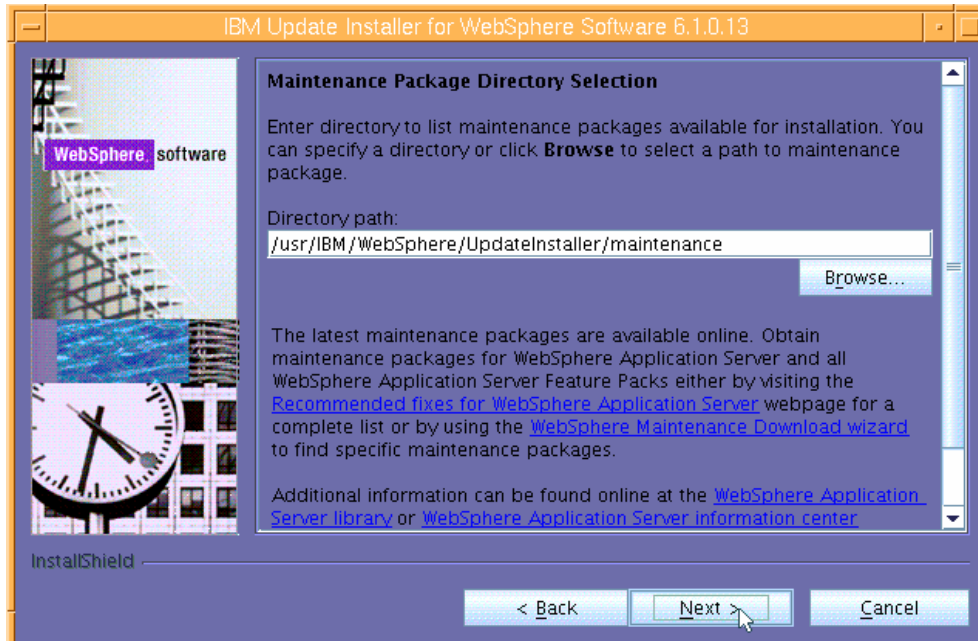

Figure 61. Selecting the maintenance-package directory

4. The recommended updates are already checked for you. Therefore, you install the recommended updates by simply clicking **Next**. (See Figure 62.)
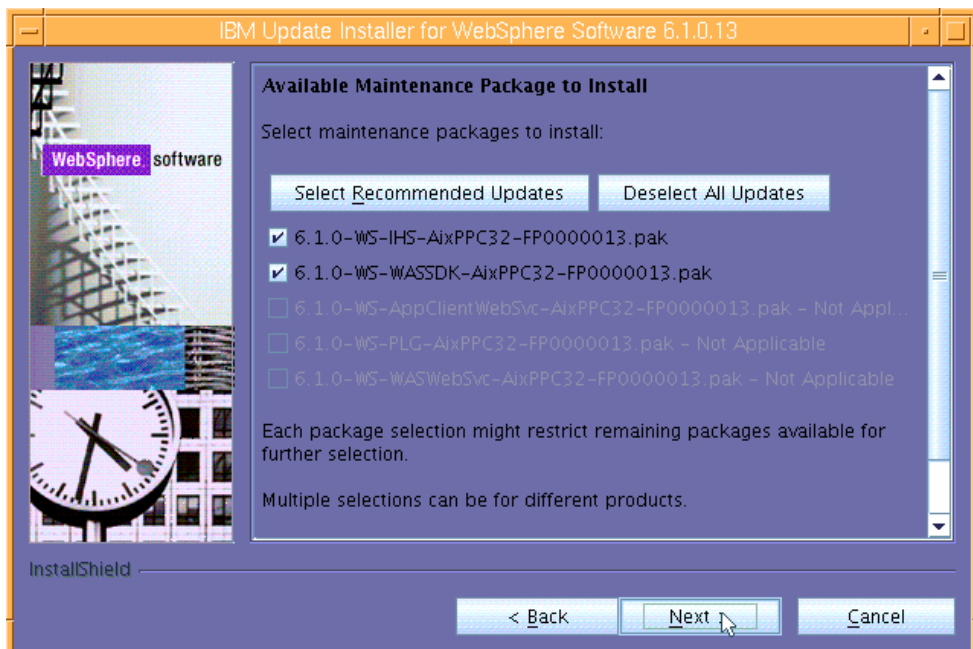

Figure 62. Available maintenance packages

5. Review the Installation Summary, then click **Next** to begin the installation. (See Figure 63.)
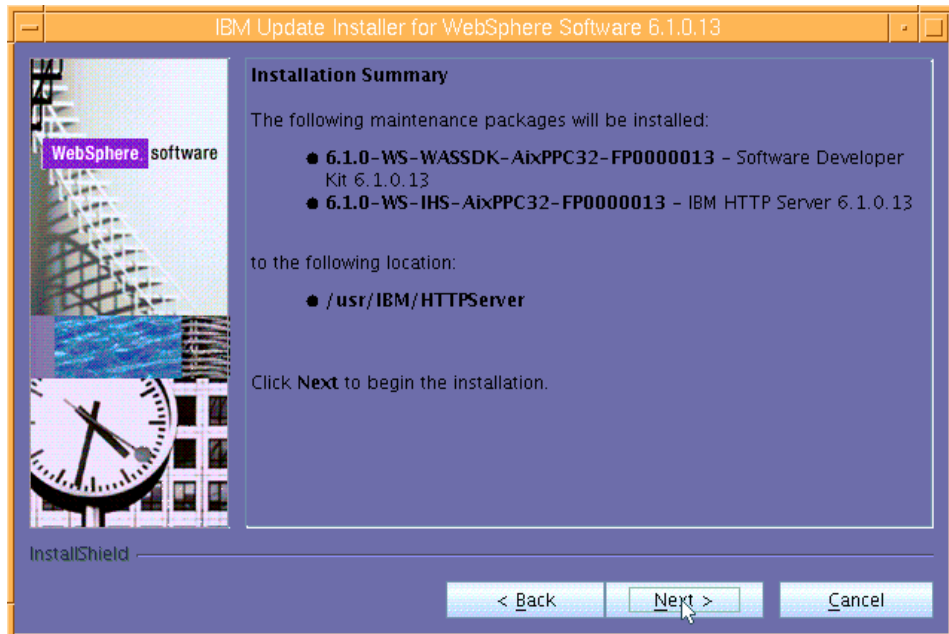

Figure 63. Informational page regarding the installation summary

6. The next page (Figure 64) is an informational page that pronounces the successful installation of the maintenance packages. Click **Relaunch** to continue..
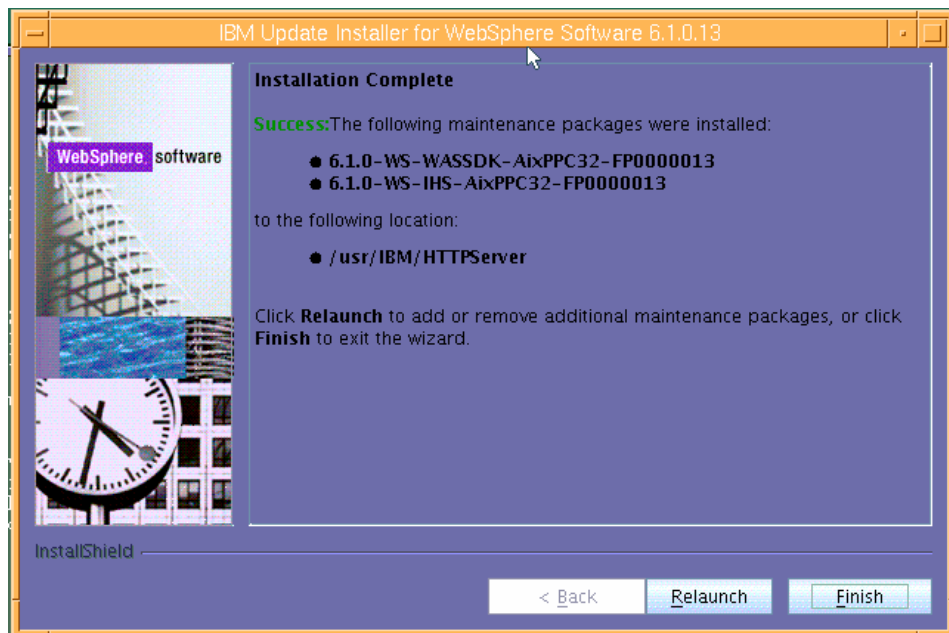

Figure 64. Informational page that verifies the successful installation of the maintenance packages

Updating WebSphere Application Server

The following steps explain how to update WebSphere Application server with the appropriate maintenance packages:

1. Select /usr/IBM/WebSphere/AppServer as the directory path for the product you want to update, then click **Next**. (See Figure 65.)
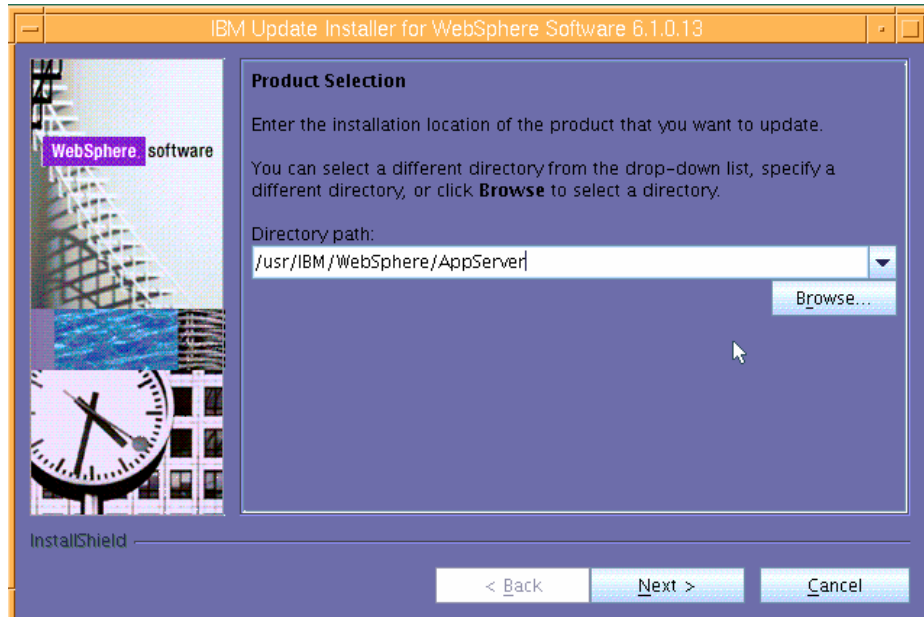

Figure 65. Selecting the WebSphere Application server to update

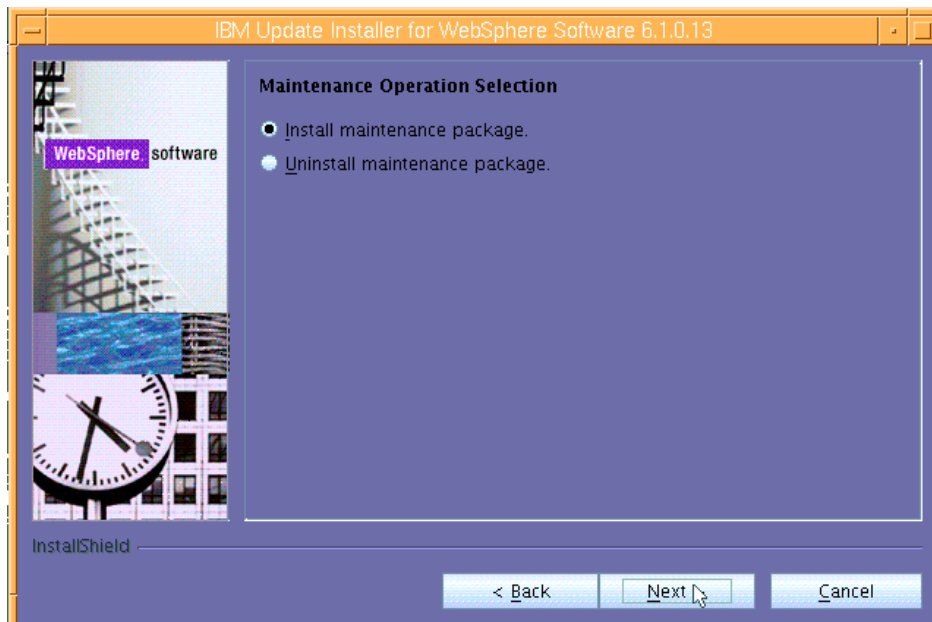2. Make sure that **Install maintenance package** is selected, then click **Next**. (See   Figure 66.)

Figure 66. Selecting the maintenance operation

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3. In this example, the pack files are copied into the default (suggested) directory (/usr/IBM/WebSphere/UpdateInstaller/maintenance directory), so click **Next**. (See Figure 67.)
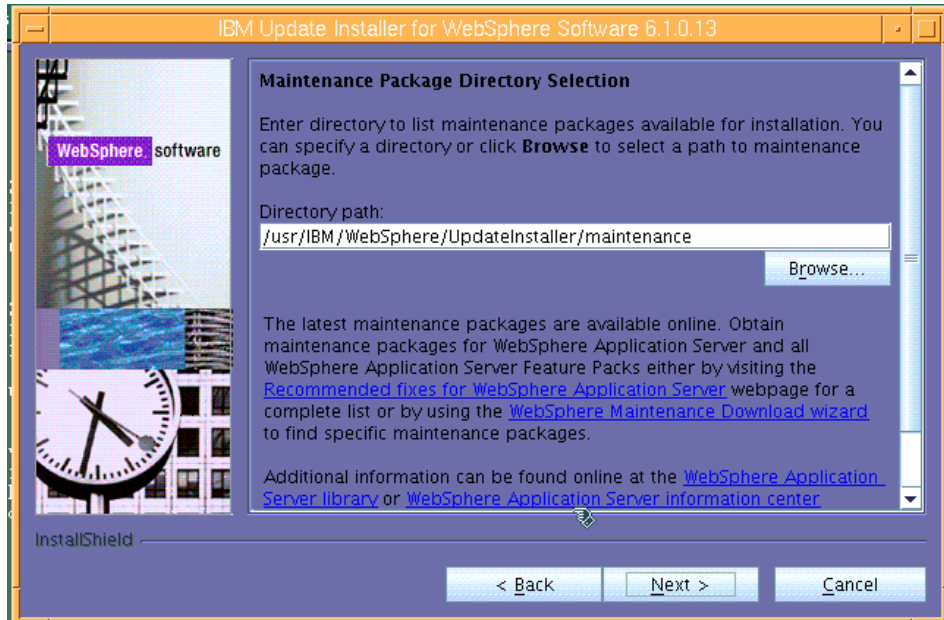

Figure 67. Selecting the maintenance-package directory

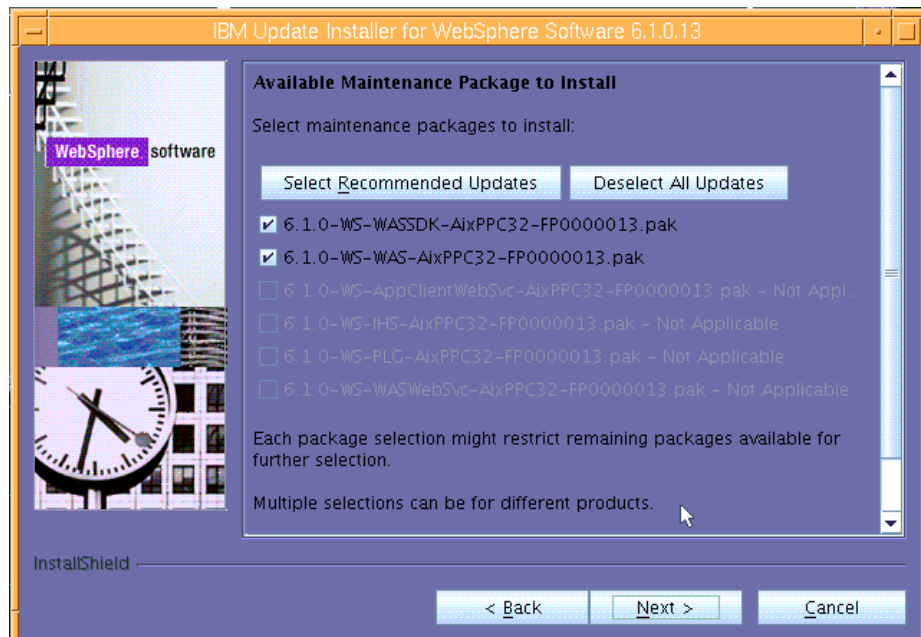4. Click **Select Recommended Updates** then click **Next**. (See Figure 68.)

Figure 68. Available maintenance packages to install

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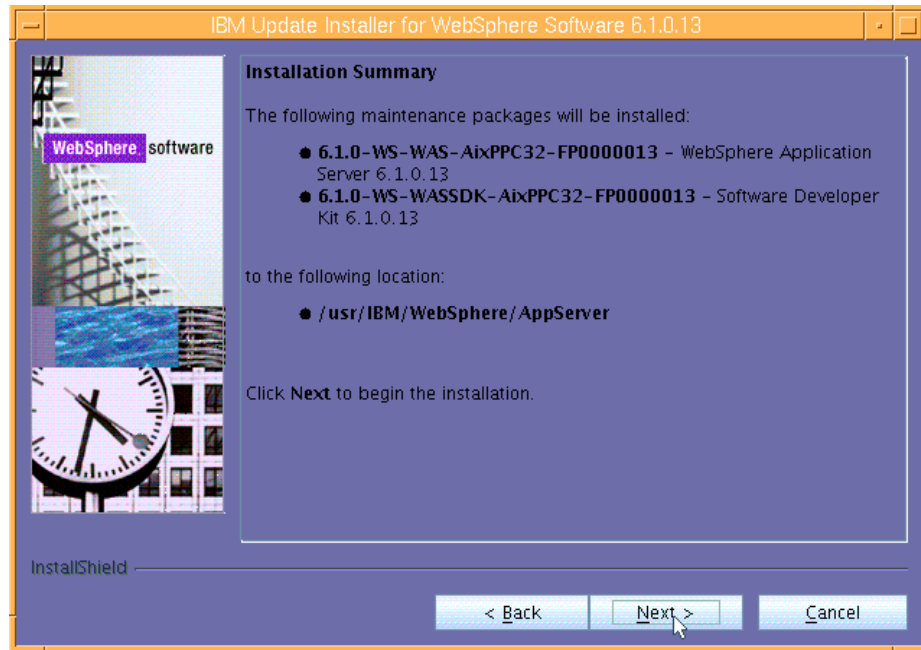5. Review the information in the Installation Summary page (Figure 69), then click **Next**.

Figure 69. . Informational page regarding the installation summary

6. The next page is an informational page that pronounces the successful installation of the maintenance packages. Click **Finish** to exit the update installer program. (See Figure 70.)
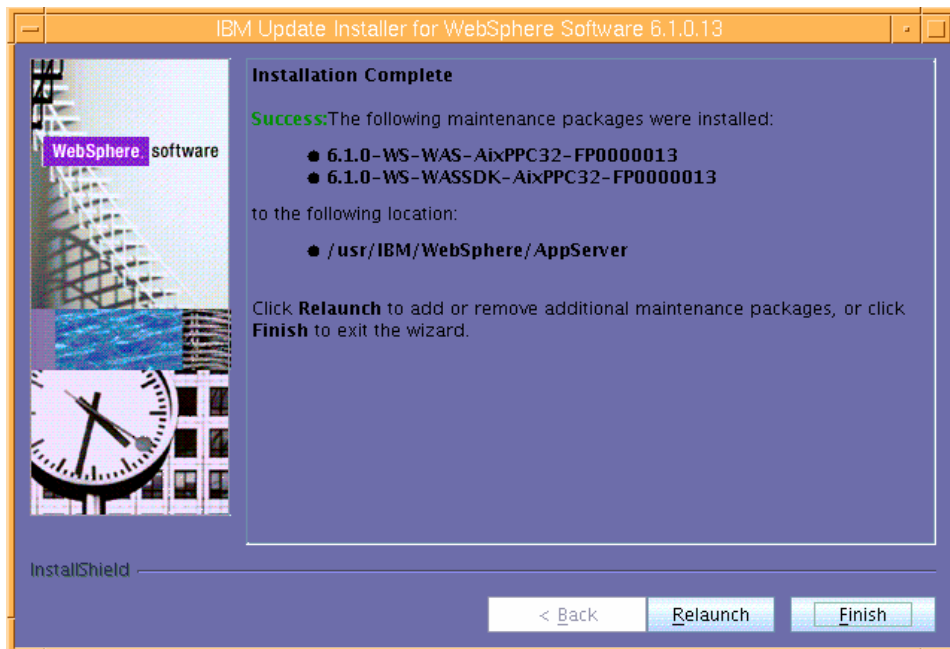

Figure 70. Informational page that verifies the successful installation of the maintenance packages

Restarting processes and validating WebSphere Application Server is at 6.1.013

The following procedures allow you to restart the Web application processes and to validate that WebSphere Application Server is running at 6.1.013.

1. to restart WebSphere Application Server and IBM HTTP Server, enter the following commands:

    /usr/IBM/HTTPServer/bin/apachectl start
    /usr/IBM/WebSphere/AppServer/bin/startSerever.sh server1

2. After logging into the Integrated Solution Console, you will now observe that WebSphere Application Server has been upgraded to Version 6.1.0.13. (See Figure 71.)
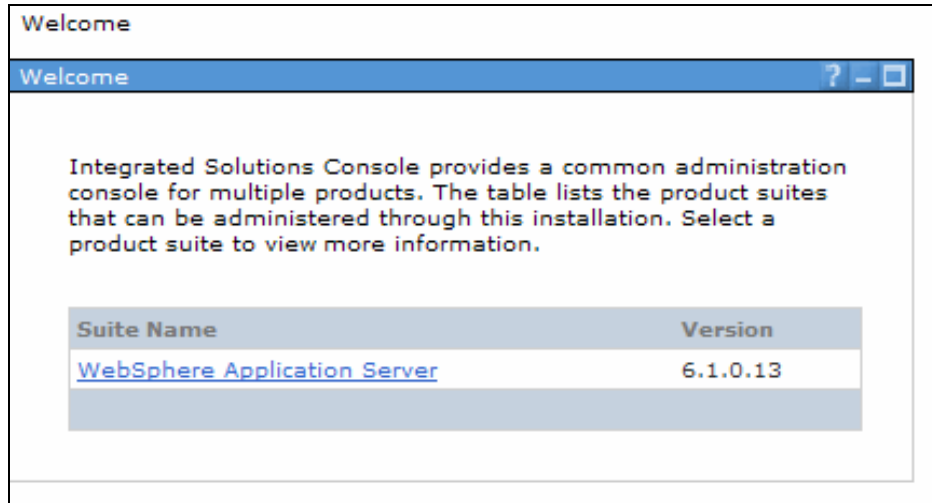

Figure 71. Verifying the updates to WebSphere Application Server

Summary

This white paper has provided detailed installation and configuration instructions for WebSphere Application Server Version 6.1 on an IBM System p server with AIX 6.1 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 Web sites that are provided in the Resources section of this white paper.

Resources

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 WebSphere Portal
- http://www-306.ibm.com/software/info1/websphere/index.jsp?tab=products/apptransaction

- IBM Publications Center
  www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi?CTY=US

- IBM Redbooks®
  ibm.com/redbooks

- IBM WebSphere support site
  ibm.com/software/webservers/appserv/was/support

- IBM System p on IBM PartnerWorld®
  ibm.com/partnerworld/systems/p

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