IBM® WebSphere® Application Server V7 – LAB EXERCISE

WebSphere Application Server Network Deployment V7 Installation guide

What this exercise is about

The objective of this lab is to show you how to install WebSphere Application Server Network Deployment V7 edition on distributed platforms. This lab will guide you through the installation process for WebSphere Application Server Network Deployment Package, including uninstalling previous images, installing the application server, and creating profiles.

Lab requirements

The system on which you are installing WebSphere Application Server must be running a supported distributed operating system. For more information on supported operating systems, see the WebSphere Application Server V7 information center. In addition, the system must have the following resources available:

- Approximately 1GB of hard drive space to store the installation image

- The appropriate WebSphere Application Server V7 installation image

- A utility to extract the installation image

- Another 1.5GB of hard drive space for the installed product and profile creation

What you should be able to do

At the end of this lab you should be able to:

- Install WebSphere Application Server Network Deployment V7

- Verify WebSphere Application Server Network Deployment installation

- Create profiles for WebSphere Application Server V7

Introduction

WebSphere Application Server Version 7 builds on improvements made in Version 6.1. A few of the major enhancements introduced in this release are the capabilities to:

- New profile types

- Import security certificates during profile creation

- Set the server name during profile creation

This lab is divided into the following parts, some of which are optional exercises.

Part 1: Perform the installation

In this section, you will perform the actual product installation for WebSphere Application Server V6.1. While it is possible to create a profile during the installation procedure, you will bypass that step in this lab and create your first profile after the installation is finished.

Part 2: Create a profile

During this piece of the lab, you will create an application server, using the new Profile Management Tool (PMT).

Part 3: Installation Verification

After creating the profile, you will use the installation verification tool to check the integrity of your installation.

Part 4: Optional – Uninstall WebSphere Application Server

If you have previously installed a WebSphere Application Server V6.1 driver, you should uninstall it before working with the new release.

Exercise instructions

Instructions and subsequent documentation use symbolic references to directories which are listed as follows:

| Reference Variable	**Windows** Location	**Linux UNIX** Location
<WAS_HOME>	C:\Program Files\IBM\WebSphere\AppServer	**Linux** /opt/IBM/WebSphere/AppServer **AIX** /usr/IBM/WebSphere/AppServer
<TEMP>	C:\temp	/tmp
<hostname>	Host name or host address for the machine where the profiles are being created	Host name or host address for the machine where the profiles are being created

Part 1: Perform the installation

_____ 1.   Start the WebSphere Application Server installation. This can be invoked by running the install command under the WAS directory.

__ a. In a command prompt, navigate to the <WAS_INSTALLER>\WAS directory.

__ b. Run the install command.

_____ 2.   Install WebSphere Application Server V7 using the wizard.

__ a. Review the information on the welcome screen and click **Next**.
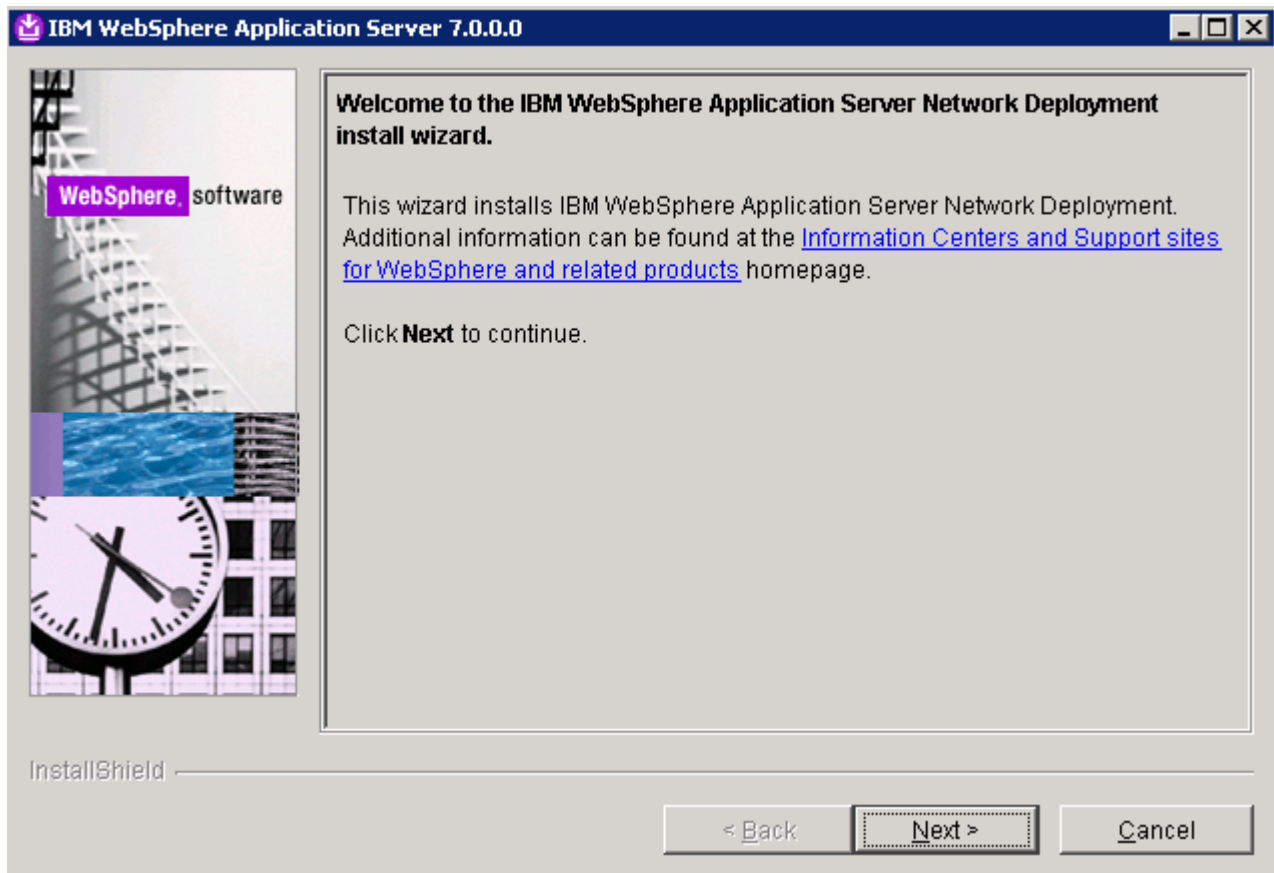
__ b. Review and accept the license agreement and click **Next**.

__ c. Verify that your system passes the prerequisite check and click **Next**. The product install can still continue if the prerequisite check fails, though the installation may not work properly.
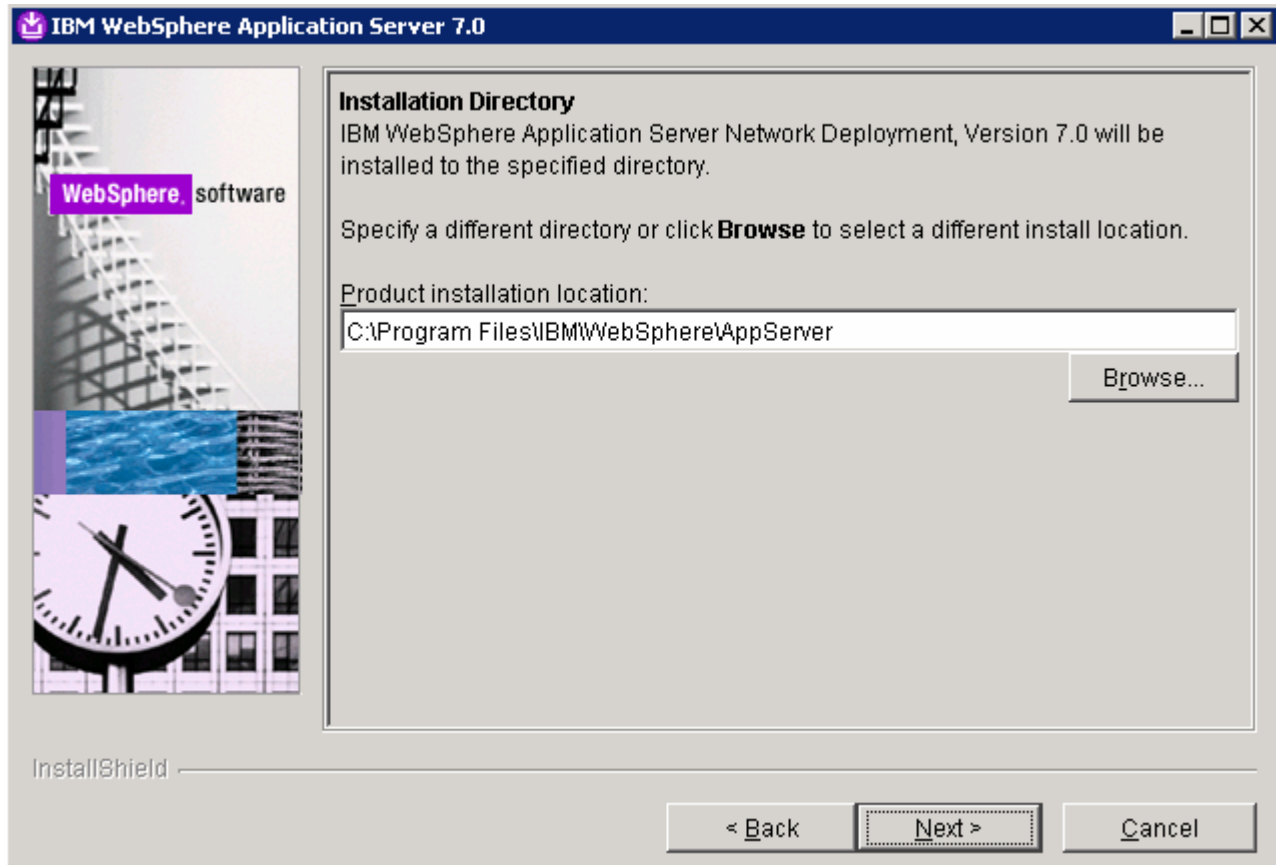
_____ 3.   The next screen allows you to select which features you want to install. If you do not opt to install the application server samples at this time, you will not be able to install the samples when you create the profiles later. WebSphere Application Server V7 introduces the ability to not install the non-English language packs; this can significantly reduce the size of the installation. For the purposes of this lab, ensure that the box next to **Install the sample applications** is checked and click **Next** to continue.
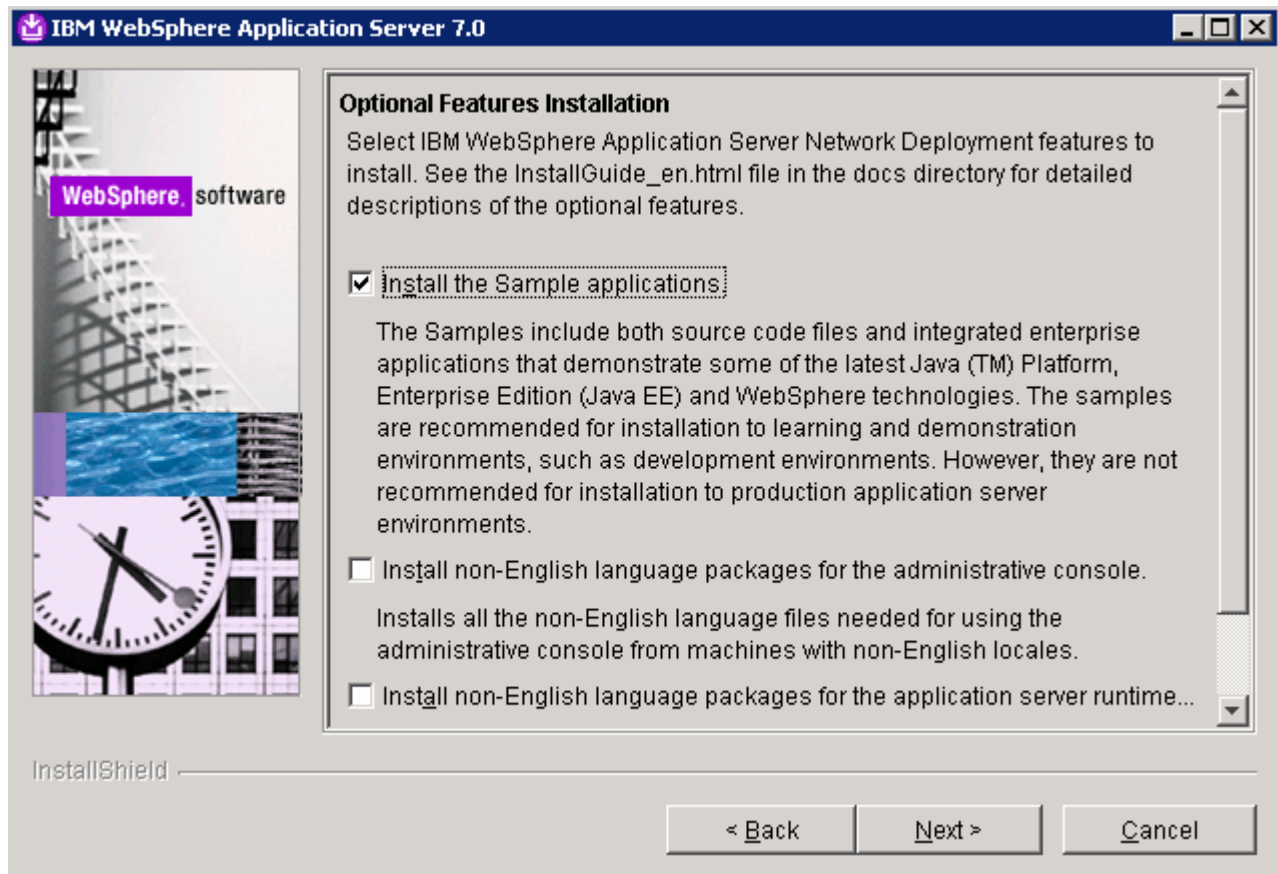
____ 4. On the next screen, use the default installation directory, if you will be using other IBM Education Assistant hands-on lab exercises, they may assume this installation location. Click **Next**.

For ▶Windows Type **C:\Program Files\IBM\WebSphere\AppServer**

For ▶ Linux Type **/opt/IBM/WebSphere/AppServer**

IBM WebSphere Application Server 7.0

WebSphere, software

Installation Directory
IBM WebSphere Application Server Network Deployment, Version 7.0 will be installed to the specified directory.

Specify a different directory or click **Browse** to select a different install location.

Product installation location:

C:\Program Files\IBM\WebSphere\AppServer

Browse...

InstallShield

< Back   Next >   Cancel

____ 5. Next, you will have the option to choose which profile you want to create during this installation. Take a moment to read through the following descriptions of the different types of profiles:

Cell template

A cell template contains a deployment manager profile and a federated application server node profile. You can federate additional application server nodes into this deployment manager profile after initial creation of the cell profile. The cell profile template is new in V6.1.

Management profile

The management profile creates the servers and services necessary to manage your WebSphere environment. For a Base WebSphere topology, an AdminAgent is provided. For a Network Deployment topology, the Deployment Manager is provided for tightly coupled management and the Job Manager is provided for a more loosely coupled management of multiple Base application servers.

Application server profile

An application server profile has a default server, named server1. The application server can be created with the default application (which includes the snoop servlet and the hitcount servlet) and application samples installed. You can federate an application server or use it as a stand-alone application server.

Custom profile

A custom profile is an empty node that you can customize to include application servers, clusters, or other Java processes, such as a messaging server. A custom profile must be federated into a cell to make it operational.

Secure proxy

A secure proxy profile for a DMZ node.

NOTE: In order for a WebSphere Application Server environment to be complete, at least one profile must be created. This profile is called the default profile. The default profile is often created at install time. However, for this lab you will be install product binary and then creating profiles separately using ProfileManagment tool. Both strategies – creating a default profile during the installation and creating a default profile after the product installation, are perfectly acceptable, and both will result in a fully functional WebSphere Application Server environment. ProfileManagment tool will provide Advance features to customize the profile where as if you choose to install profile along with binary install, profiles will be created with thee default values.
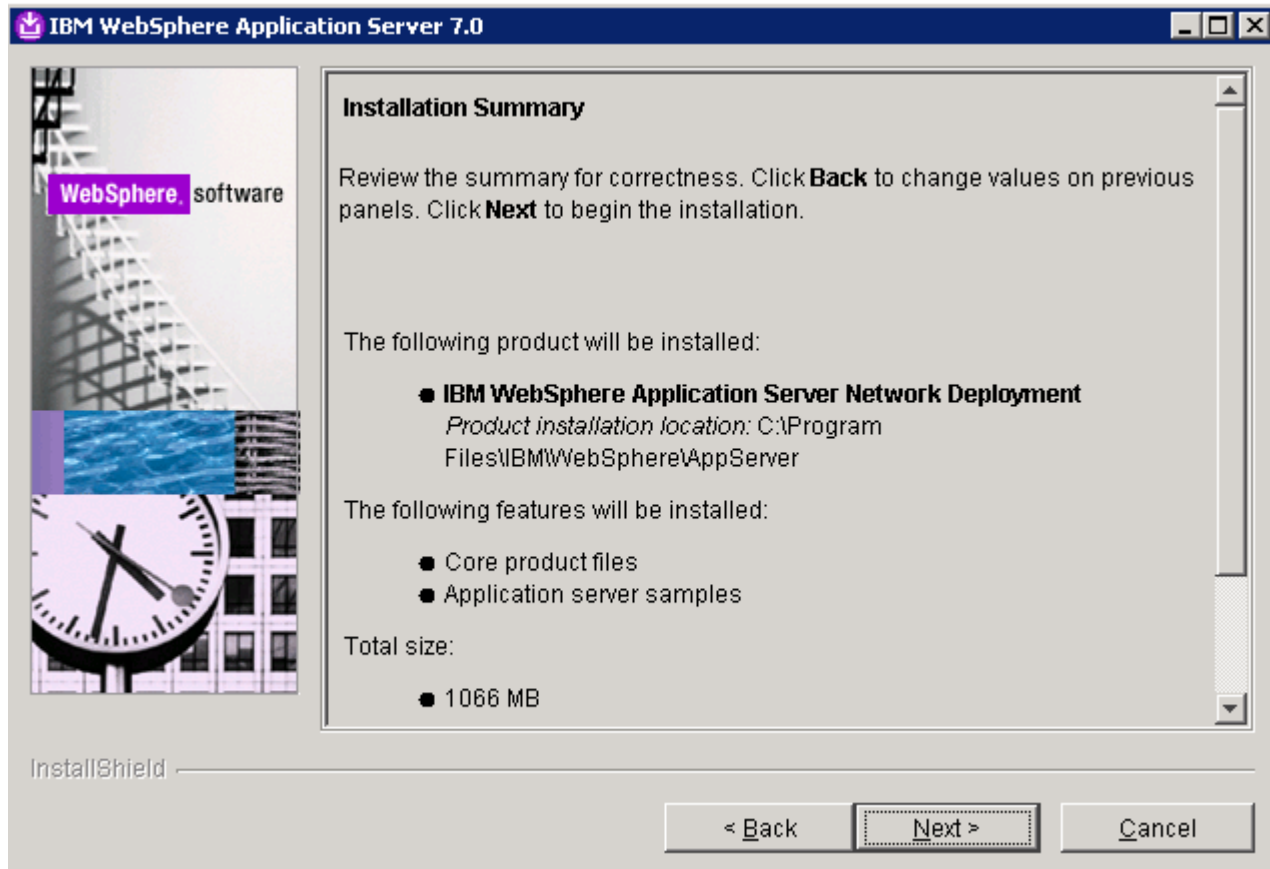

_____ 6.   On the WebSphere Application Server environments panel, choose **None**. The message at the bottom of the panel warns you that at least one profile is required for WebSphere Application Server V7to be functional. This is fine because you will be creating profiles later in the lab. Click **Next**. A dialog box will ask you to confirm that you do not want to create any profiles. Click **Yes** to continue with the installation process.
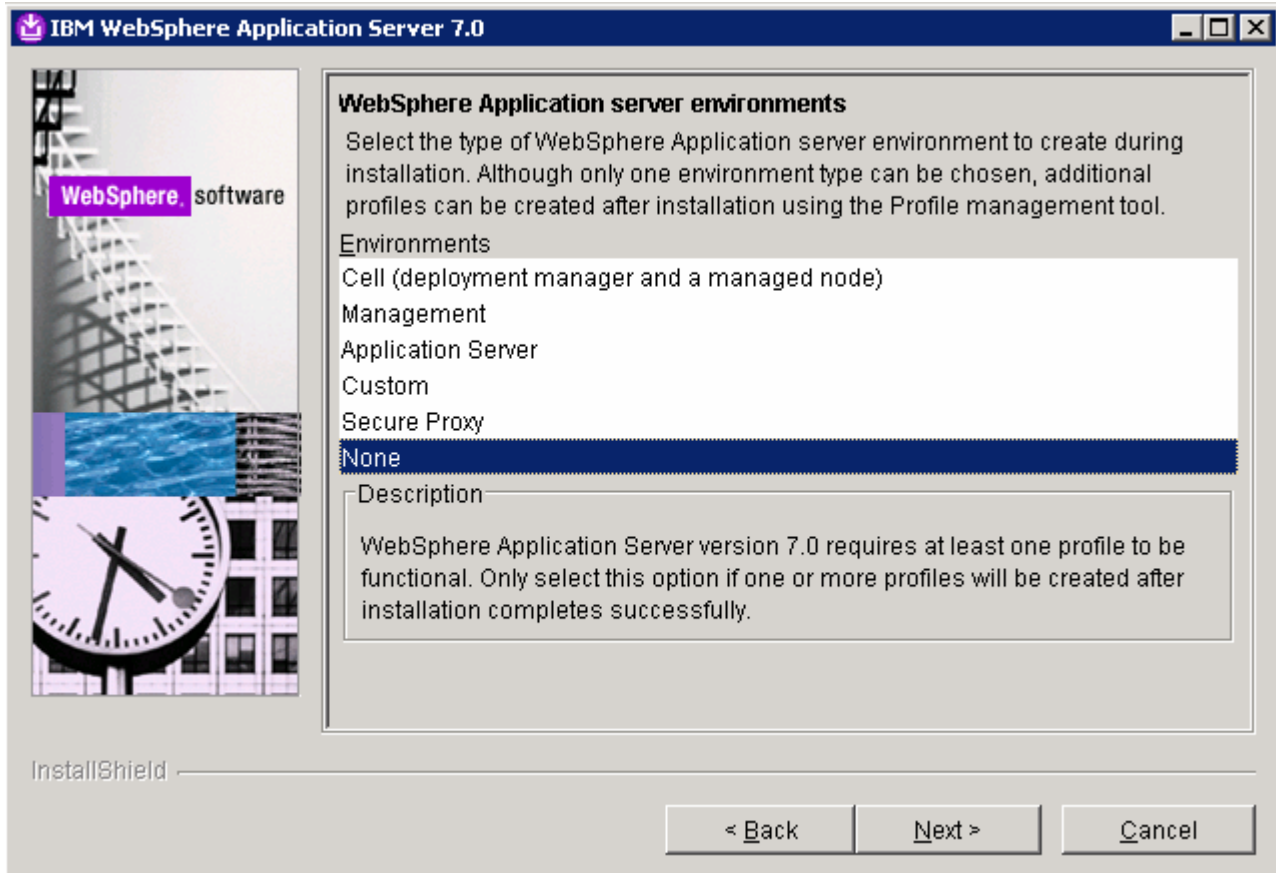
____ 7. Next is a new panel that gives you the option to create a repository for the centralized installation management feature. This will not be needed right now, so leave this unchecked. Click **Next**.
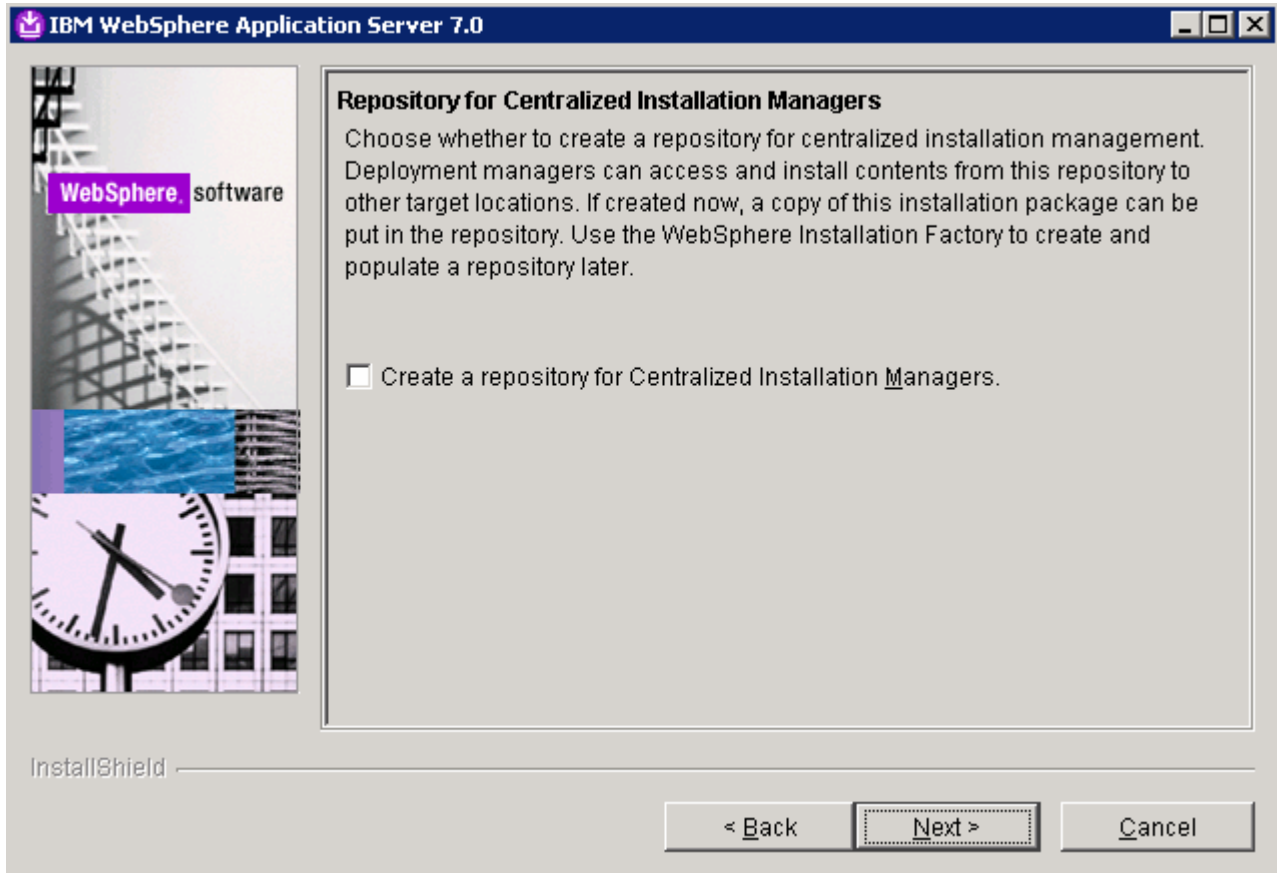
_____ 8.   Confirm that the installation summary information is accurate and click **Next** to begin the installation.

____ 9. When the installation is complete, verify that the status on the completion screen indicates **Success**. Select the check box next to **Create a new WebSphere Application Server profile using the Profile management tool** and click **Finish**.

 __ a. The Profile management tool can also be found under the C:\WebSphere\Appserver\bin\ProfileManagement\bin\PMT.exe.
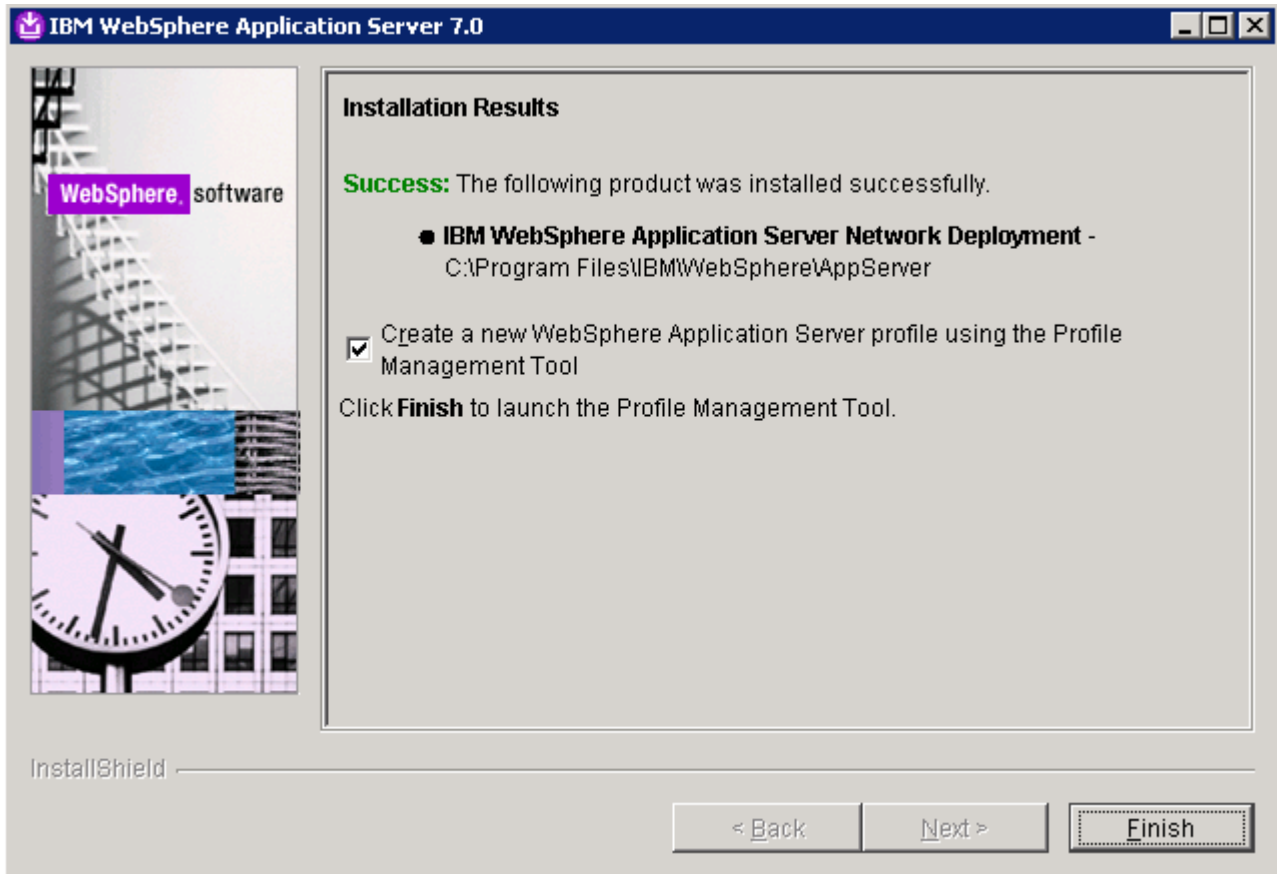
Part 2: Create a profile

In this section of the lab, you will be using the Profile Management Tool to create an application server environment using the application server template for profile creation.

____ 1. Step through the wizard to create the cell profile.

__ a. On the welcome screen, click the button for **Launch Profile Management Tool**.

Profile Management Tool 7.0	_ □ ×

File   Window   Help

Profile Management Tool   Welcome

Welcome ✕

Welcome to the Profile Management tool

Launch Profile Management Tool

This wizard creates run-time environments that are referred to as *profiles*. At least one profile must exist to have a functional installation.

An initial profile typically is created during the installation process. Use this wizard to create additional profiles that each contain a set of commands, configuration files, log files, deployable applications and other information that defines a single application server environment.

Click the *Launch Profile Management Tool* button or the Profile Management Tool tab above to begin managing your profiles.

The online information centers provide more information about the Profile Management tool and setting up typical topologies.

WebSphere Application Server - Online information center link

__ b. On the Profiles tab, choose the **Create** button.

__ c. Choose the **Application server** profile and select **Next**. See the previous section of the lab above for a review of the different profile types.
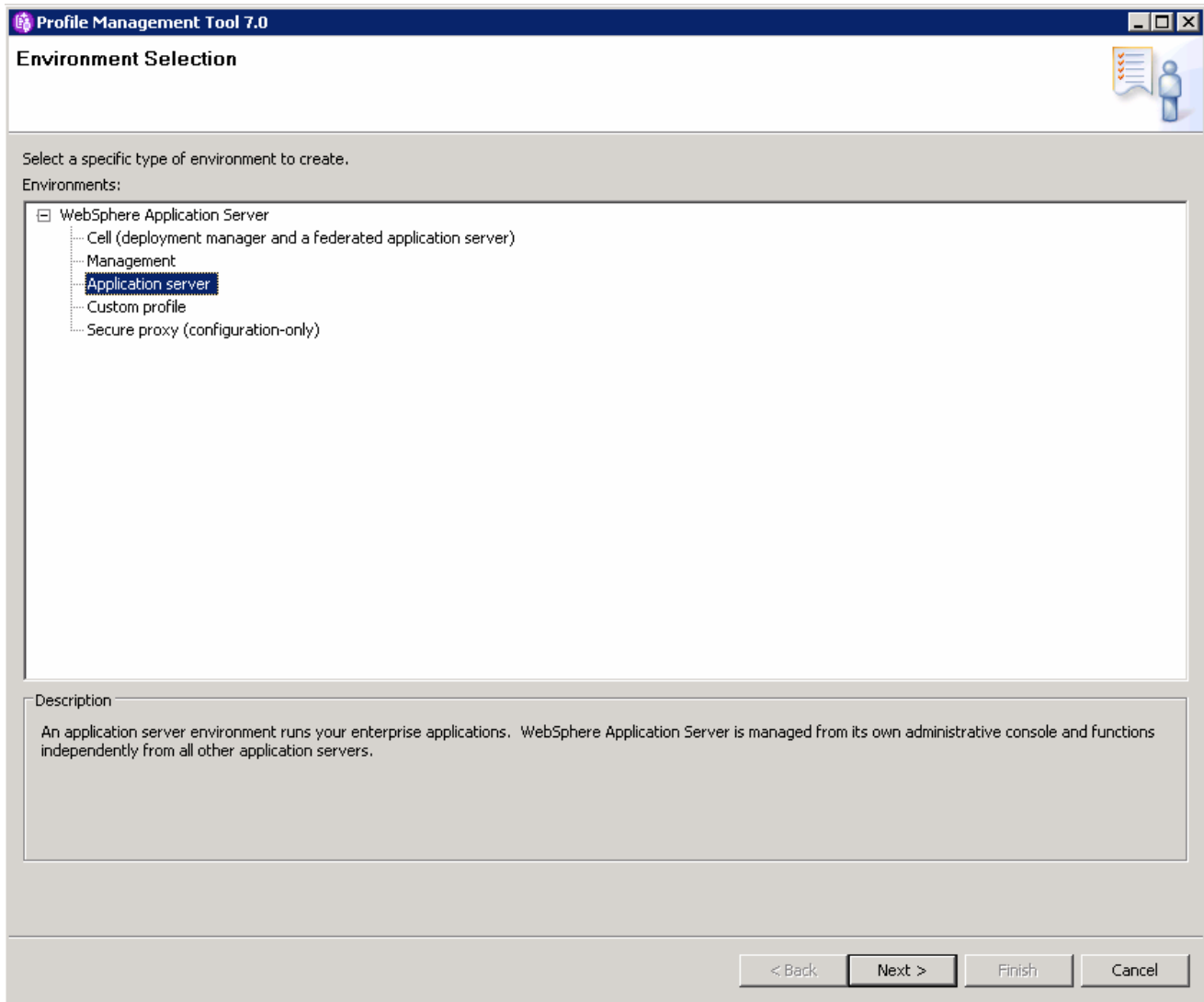
__ d. On the profile creation options screen, select the radio button **Advanced profile creation** and click **Next**. Choosing to create the profile with advanced options will allow you to customize more features.
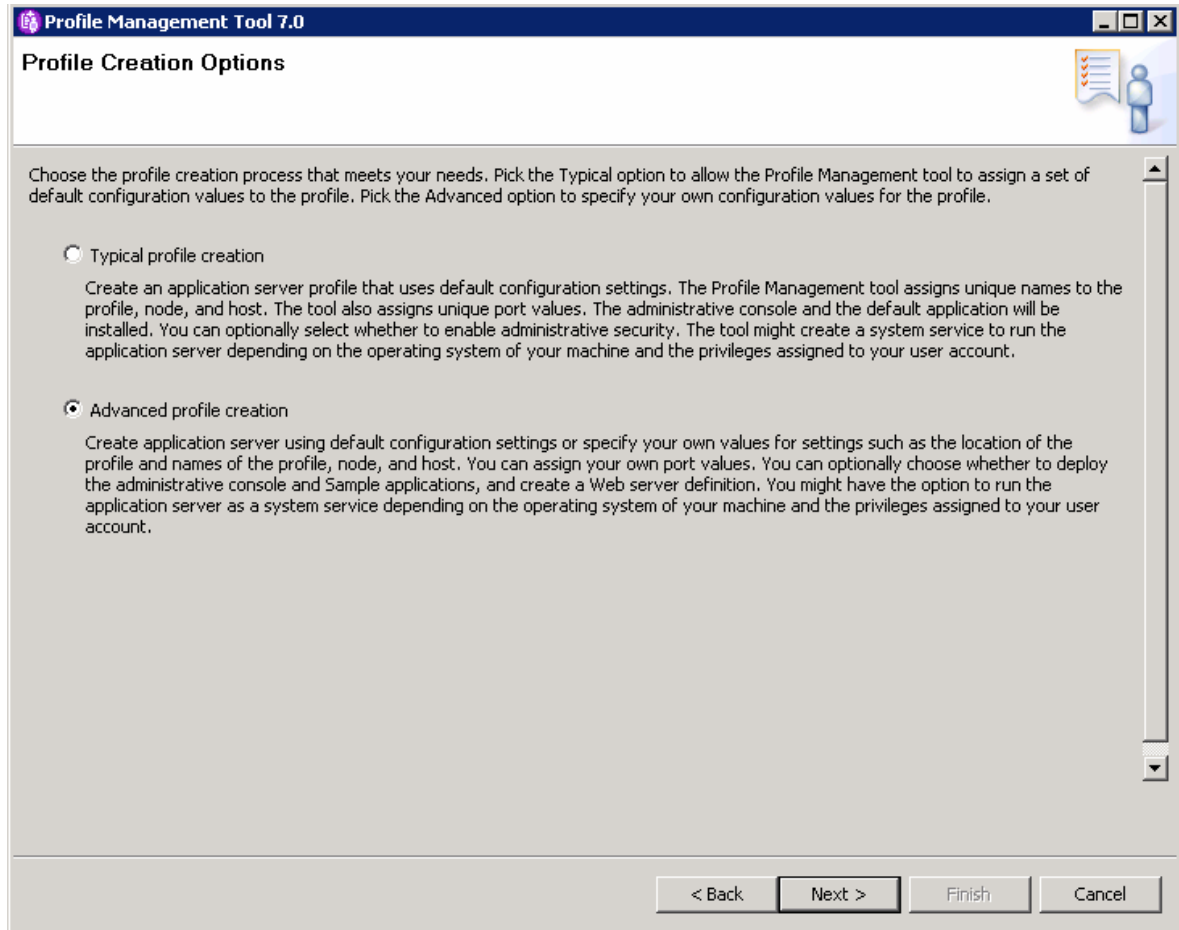
__ e. On the next panel select all the check boxes, and click **Next**.
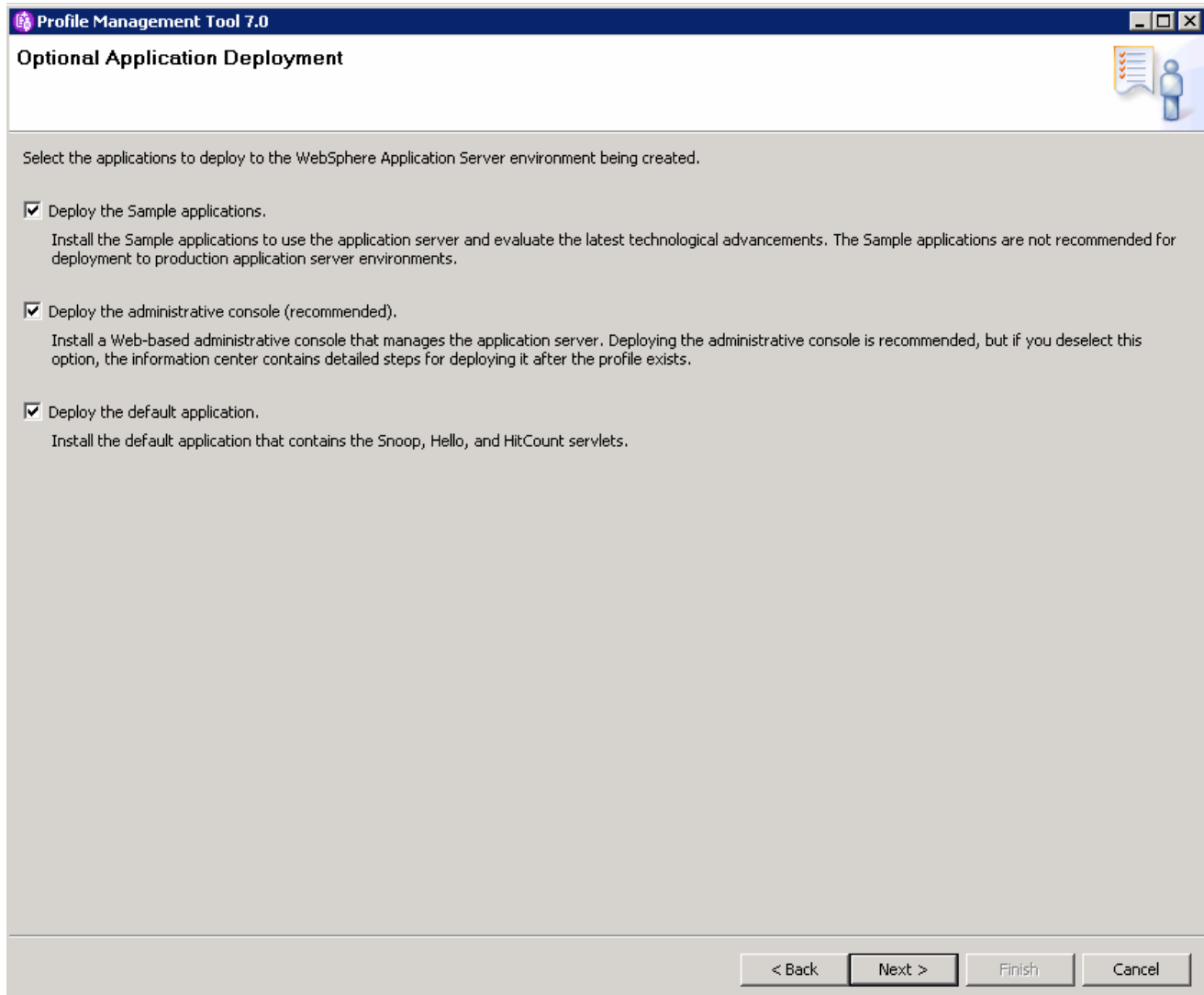
__ f. On the Profile Name and Location panel, take all of the defaults and continue. The Profile Management Tool will always supply default non-conflicting names during profile creation. Since this is the first profile being created under this installation of WebSphere Application Server, it will automatically become the default profile. As you create other profiles in the future, there will be an additional option on this screen asking if you want to make the profile that you are creating the default profile. Click **Next** to continue.
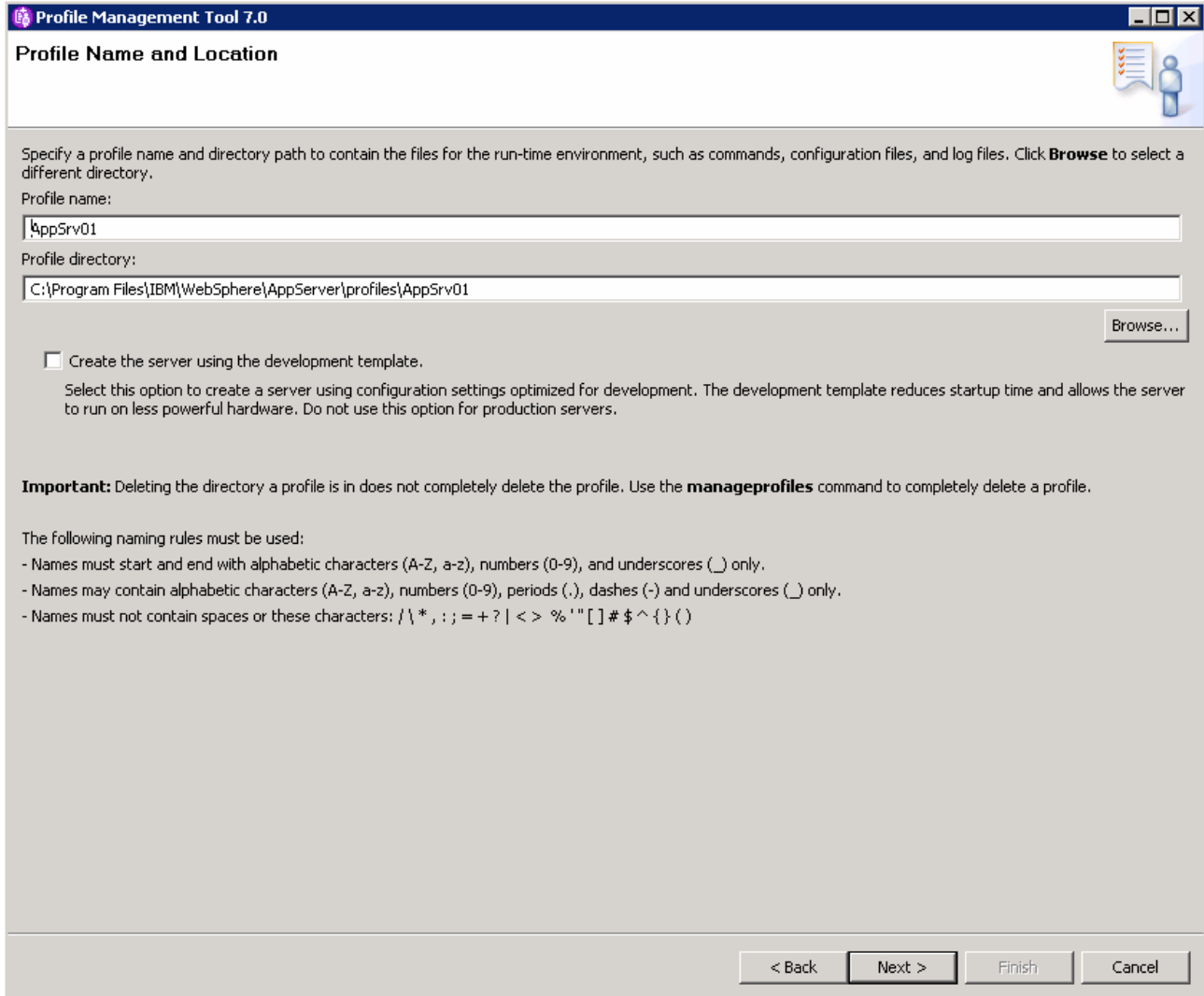
__ g. The next screen allows you to specify names for the deployment manager node, the host name, and new in this version the server name. Unique values will be generated based on the hostname of your system. Take the defaults on hit screen and click **Next**.

__ h. The next panel allows you to enable administrative security and specify a username and password for the administrator. Leave the check box selected, and provide a user name of **wsdemo**. Type in **wsdemo** for the password. The sample applications user account also requires a password, type in **wsdemo** for that as well.

__ i. Next is a set of new panels in WebSphere Application Server V7. The first panel allows a user to import an existing default personal certificate and root signing certificate. The default values will create these certificates from scratch, which was the behavior in past releases. Leave the options to create new certificates and click **Next.**

__ j. The following panel can be used to modify the certificate information to create new certificates during profile creation. At the bottom of this panel the default keystore password can also be set to a unique value. For this example click **Next**.

Profile Management Tool 7.0	_ □ ×

Security Certificate (Part 2)

Modify the certificate information to create new certificates during profile creation. If you are importing existing certificates from keystores, use the information to verify whether the selected certificates contain the appropriate information. If the selected certificates do not, click **Back** to import different certificates.

[Restore Defaults]

Default personal certificate (a personal certificate for this profile, public and private key):

Issued to distinguished name:

cn=AIMCP028,ou=AIMCP028Node01Cell,ou=AIMCP028Node01,o=IBM,c=US

Issued by distinguished name:

cn=AIMCP028,ou=Root Certificate,ou=AIMCP028Node01Cell,ou=AIMCP028Node01,o=IBM,c=US

Expiration period in years:

1 ▼

Root signing certificate (personal certificate for signing other certificates, public and private key):

Expiration period in years:

15 ▼

Default keystore password:

•••••

Confirm the default keystore password:

•••••

Note: The default value for the keystore is well documented in the Information Center and should be changed to protect the security of the keystore files and SSL configuration.

< Back	Next >	Finish	Cancel

__ k. The next panel lists all of the port values that will be assigned to the deployment manager, the application server, and the node agent. You can change the port values so long as there are no conflicts. The PMT performs automatic port conflict resolution and suggests ports on which it does not find any conflicts. For this lab, accept the suggested port assignments and click **Next** to continue.

__ I. On Windows platforms, the next display will be the Windows Service Definition screen. Uncheck the box next to Run the deployment manager process as a Windows service and click **Next.**

__ m. The next panel gives you the option to create a Web server definition for this profile. Notice that the default is not to create a Web server definition. For this lab, you will not be defining a Web server for this profile. Click **Next** to continue.

__ n. The final screen allows you to review all of the profile creation details. Review the profile creation summary and click **Create** to create the profile.
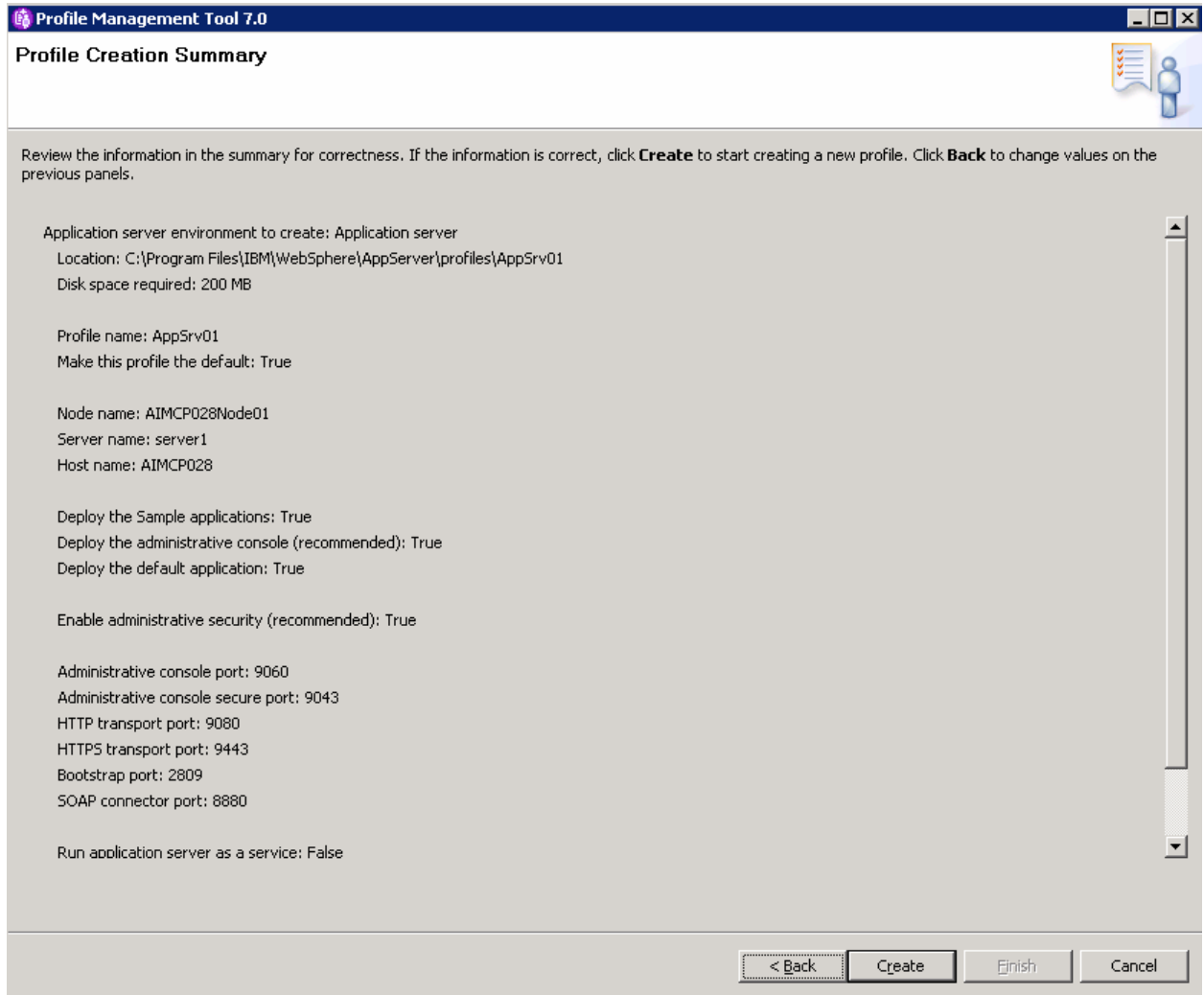
__ o. After the profile creation has completed, insure that it was successful. Verify that the box next to **Launch the First steps console** is checked and click **Finish**.

Part 3: Installation verification
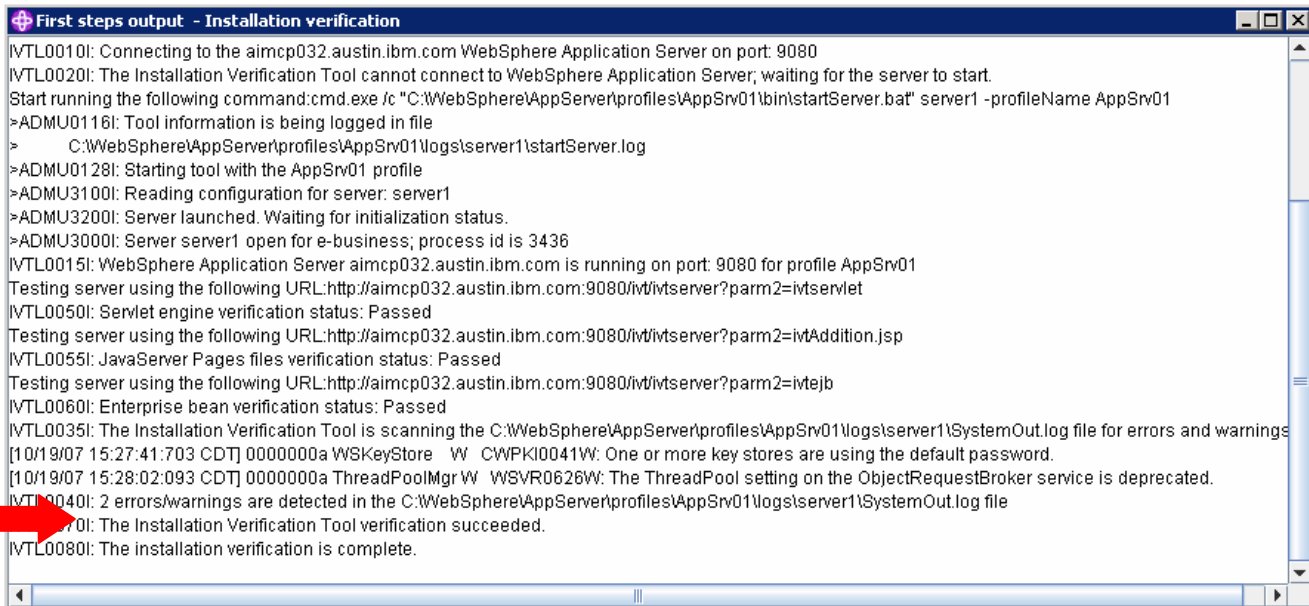
This section will cover Install verification using the Install Verification application.

____ 1.   From the previous section the First steps console will be launched. If not you can manually invoke First steps from the <WAS_Home>\profiles\AppSrv01\firststeps directory.

____ 2.   From the first steps console, choose **Installation verification**.

Note: Installation verification will start the application server if it is not already started. The process will then verify the state of installation and the profile creation of the application server.

_____ 3. The output from the verification process should look like the following. Verify that there are no error messages. You may see some warnings, as in the example below. Close the profile creation tool as well.

```
First steps output  - Installation verification                                                        _ □ ×
IVTL0010I: Connecting to the aimcp032.austin.ibm.com WebSphere Application Server on port: 9080
IVTL0020I: The Installation Verification Tool cannot connect to WebSphere Application Server; waiting for the server to start.
Start running the following command:cmd.exe /c "C:\WebSphere\AppServer\profiles\AppSrv01\bin\startServer.bat" server1 -profileName AppSrv01
>ADMU0116I: Tool information is being logged in file
>          C:\WebSphere\AppServer\profiles\AppSrv01\logs\server1\startServer.log
>ADMU0128I: Starting tool with the AppSrv01 profile
>ADMU3100I: Reading configuration for server: server1
>ADMU3200I: Server launched. Waiting for initialization status.
>ADMU3000I: Server server1 open for e-business; process id is 3436
IVTL0015I: WebSphere Application Server aimcp032.austin.ibm.com is running on port: 9080 for profile AppSrv01
Testing server using the following URL:http://aimcp032.austin.ibm.com:9080/ivt/ivtserver?parm2=ivtservlet
IVTL0050I: Servlet engine verification status: Passed
Testing server using the following URL:http://aimcp032.austin.ibm.com:9080/ivt/ivtserver?parm2=ivtAddition.jsp
IVTL0055I: JavaServer Pages files verification status: Passed
Testing server using the following URL:http://aimcp032.austin.ibm.com:9080/ivt/ivtserver?parm2=ivtejb
IVTL0060I: Enterprise bean verification status: Passed
IVTL0035I: The Installation Verification Tool is scanning the C:\WebSphere\AppServer\profiles\AppSrv01\logs\server1\SystemOut.log file for errors and warnings
[10/19/07 15:27:41:703 CDT] 0000000a WSKeyStore    W  CWPKI0041W: One or more key stores are using the default password.
[10/19/07 15:28:02:093 CDT] 0000000a ThreadPoolMgr W  WSVR0626W: The ThreadPool setting on the ObjectRequestBroker service is deprecated.
IVTL0040I: 2 errors/warnings are detected in the C:\WebSphere\AppServer\profiles\AppSrv01\logs\server1\SystemOut.log file
    70I: The Installation Verification Tool verification succeeded.
IVTL0080I: The installation verification is complete.
```

Part 4: Reference – Perform an uninstallation

This portion of the lab will guide you through the uninstallation process. Much like the installation process for WebSphere Application Server, the uninstall process is guided by a wizard.

Note: Before uninstalling WebSphere Application Server V7, make sure you **stop** all the servers that you might have running. Uninstallation will not complete successfully if servers are still running.

____ 1. Open a command prompt and navigate to the following directory.
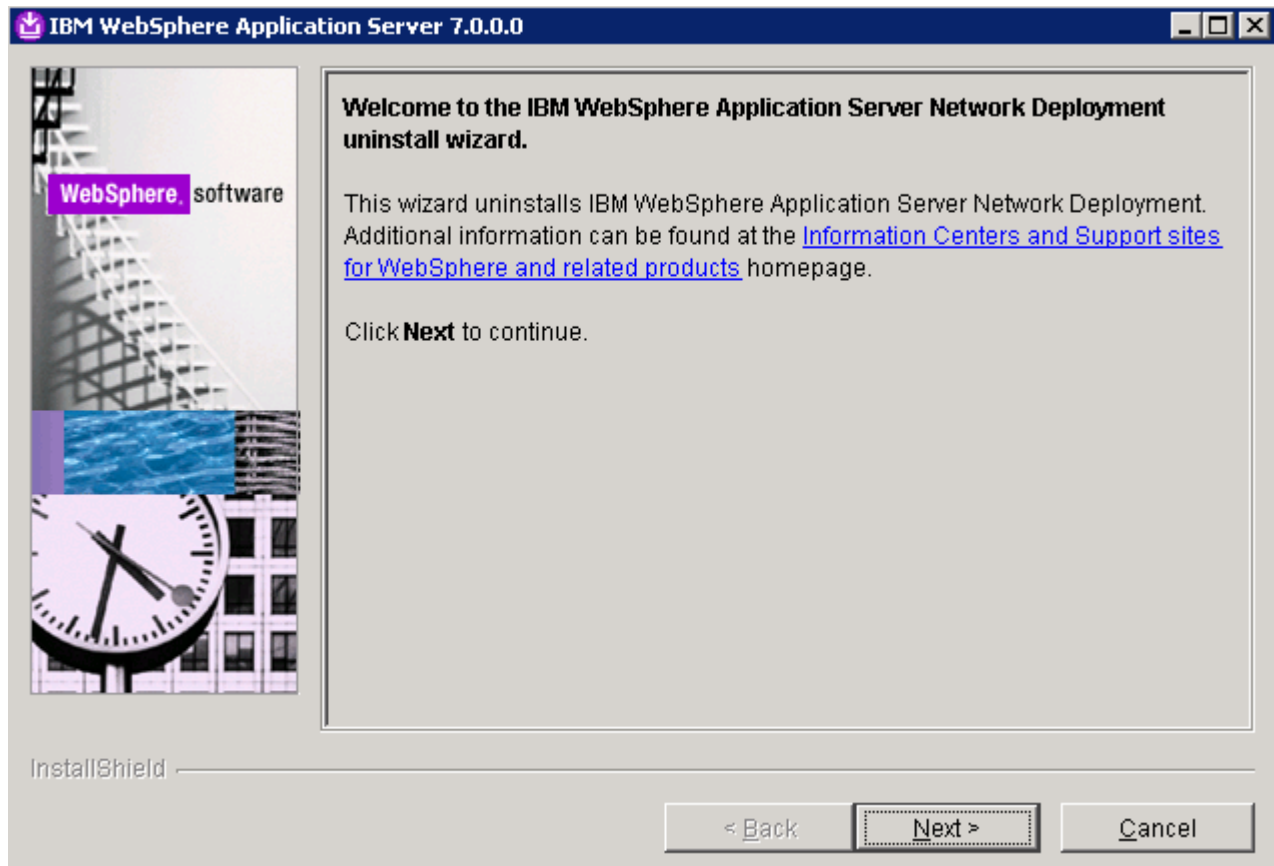
                <WAS_HOME>\uninstall

____ 2. Launch the uninstaller.

       ▶Windows   uninstaller.exe

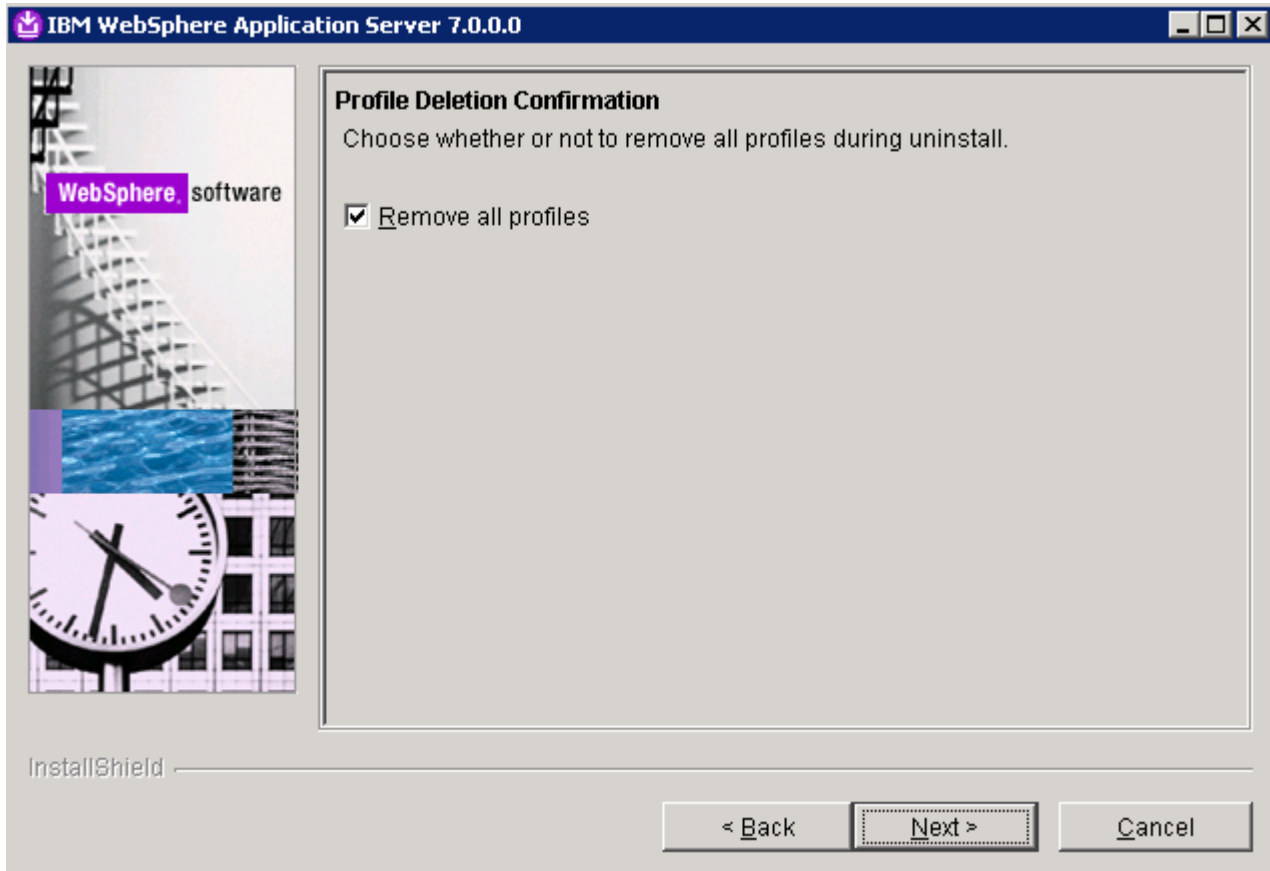   **▶Linux ▶UNIX**   ./uninstaller.bin

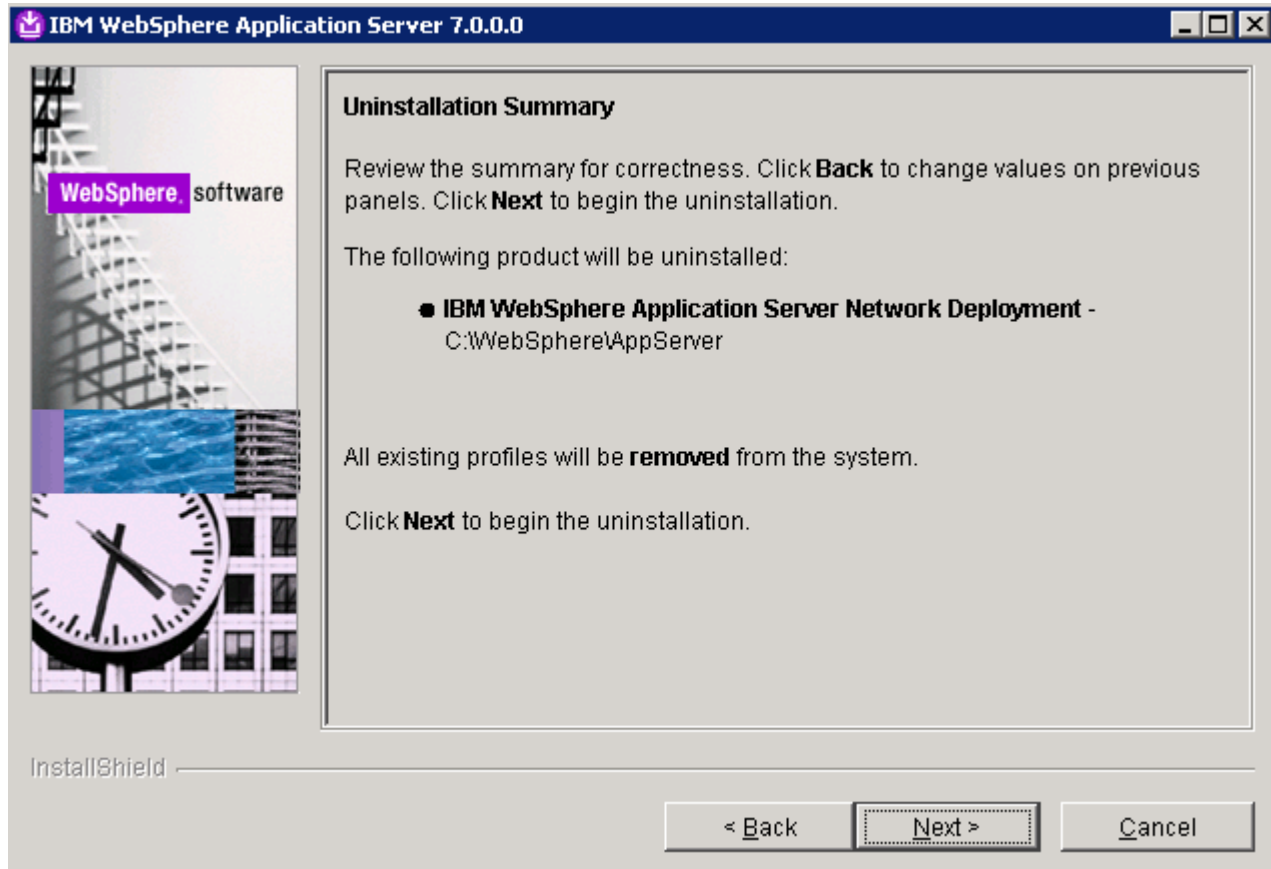____ 3. The wizard will guide you through the uninstall process.

     __ a. On the Welcome screen, click **Next**.

__ b. Select the option to **Remove all profiles** and click **Next**.

__ c. Verify the information on the Uninstallation summary screen and click **Next** to begin the uninstallation.

__ d. The more profiles that you have on your system, the longer the uninstallation will take. The wizard will keep you informed of the uninstallation progress.

__ e. After the uninstallation is complete, click **Finish** to close the wizard.

____ 4. After the uninstall process is complete, you will notice that some of the directories still exist within the <WAS_HOME> directory. Manually delete the <WAS_HOME> directory, and, if you have a Windows operating system, reboot your computer. You have now successfully uninstalled IBM WebSphere Application Server Network Deployment V7.

What you did in this exercise

In this lab you learned how to install WebSphere Application Server Network Deployment V7. You used the Profile Management Tool to create a stand-alone application server profile. You also learned how to verify the installation and uninstall the product.