Installation and Configuration of Windows Server 2003

Before You Begin

This chapter will guide you through the steps required to configure a computer running Windows Server 2003. You will be able to use that computer for the hands-on exercises throughout this training kit. The computer should have at least one disk drive that can be erased and used to install Windows Server 2003.

Windows Server 2003 Editions

Although the list of features introduced by Windows Server 2003 SP1 and R2 is extensive, the evaluation of the operating system becomes more interesting because Windows Server 2003 is available in multiple flavors including the 32-bit, 64-bit, and embedded versions. But the most important distinctions are those among the four product editions, listed here in order of available features and functionality, as well as by price:

- Windows Server 2003, Web Edition
- Windows Server 2003, Standard Edition
- Windows Server 2003, Enterprise Edition
- Windows Server 2003, Datacenter Edition

Web Edition

To position Windows Server 2003 more competitively against other Web servers, Microsoft has released a stripped-down-yet-impressive edition of Windows Server 2003 designed specifically for Web services. The feature set and licensing allows customers easy deployment of Web pages, Web sites, Web applications, and Web services.

Web Edition supports 2 gigabytes (GB) of RAM and a two-way symmetric multiprocessor (SMP). It provides unlimited anonymous Web connections but only 10 inbound server message block (SMB) connections, which should be more than enough for content publishing. The server cannot be an Internet gateway, DHCP or fax server. Although you can remotely administer the server with Remote Desktop, the server cannot be a terminal server in the traditional sense of supporting multiple concurrent user sessions. The server can belong to a domain but cannot be a domain controller.

Windows Server 2003 R2 is not available in a Web Edition.

Standard Edition

Windows Server 2003, Standard Edition, is a robust, multipurpose server capable of providing directory, file, print, application, multimedia, and Web services for small to medium-sized businesses. Its comprehensive feature set is expanded, compared to Windows 2000, with a free, out-of-the-box Post Office Protocol version 3 (POP3) service which, combined with the included Simple Mail Transfer Protocol (SMTP) service, allows a server to function as a small, stand-alone mail server; and Network Load Balancing (NLB), a useful tool that was included only with the Advanced Server edition of Windows 2000.

The Standard Edition of Windows Server 2003 supports up to 4 GB of RAM and four-way SMP.

Enterprise Edition

The Enterprise Edition of Windows Server 2003 is designed to be a powerful server platform for medium- to large-sized businesses. Its enterprise-class features include support for eight processors, 32 GB of RAM, and eight-node clustering (including clustering based on a Storage Area Network [SAN] and geographically dispersed clustering) and availability for 64-bit Intel Itanium-based computers, on which scalability increases to 64 GB of RAM and 8-way SMP. Other features that distinguish the Enterprise Edition from the Standard Edition include:

- Support for Microsoft Metadirectory Services (MMS), which enables the integration of multiple directories, databases, and files with Active Directory.

- Hot Add Memory, so that you can add memory to supported hardware systems without downtime or reboot.

- Windows System Resource Manager (WSRM), which supports the allocation of CPU and memory resources on a per-application basis.

Datacenter Edition

The Datacenter Edition, which is available only as an OEM version as part of a highend server hardware package, provides almost unfathomable scalability, with support on 32-bit platforms for 32-way SMP with 64 GB of RAM and on 64-bit platforms for 64 way SMP with 512 GB of RAM. There is also a 128-way SMP version that supports two 64way SMP partitions.

64-Bit Editions

Windows Server 2003 SP1 Enterprise Edition and Windows Server 2003 SP1, Datacenter Edition, are available for computers running Intel Itanium processors. Windows Server 2003 Standard x64 Edition, Enterprise x64 Edition, and Datacenter x64 Edition were released in 2005 and share a code base with Windows Server 2003 SP1, even though the x64 editions are not designated as SP1. These editions run on processors that include AMD Opteron, AMD Athlon 64, Intel Xeon, and Pentium with Intel EM64T. Each of the x64 editions, but not the Itanium versions, is available in the Windows Server 2003 R2 server family.

Windows Server 64-bit editions provide for higher CPU clock speeds and faster floating point processor operations than the 32-bit editions. CPU coding improvements and processing enhancements yield significantly faster computational operations. Increased access speed to an enormous memory address space allows for smooth operation of complex, resource-intensive applications such as massive database applications, scientific analysis applications, and heavily accessed Web servers.

Some features of the 32-bit editions are not available in the 64-bit editions. Most notably, the 64-bit editions do not support 16-bit Windows applications, real-mode applications, POSIX applications, or print services for Apple Macintosh clients.

Windows Small Business Server 2003

Windows Small Business Server 2003 (SBS 2003), also available in the SP1 and R2 product lines, delivers an out-of-the-box solution for small businesses that includes file and print services, e-mail (Microsoft Exchange Server 2003 and Microsoft Outlook), intranet and Web services (Microsoft Windows SharePoint Services), group faxing (Microsoft Shared Fax Service), and, in the premium edition, Internet proxy and firewall (Microsoft ISA Server), database (Microsoft SQL Server 2000 and, in R2, SQL Server 2005 Workgroup Edition) and Web development (Microsoft Office FrontPage 2003).

The 70-290 certification exam does not address features unique to SBS 2003.

Practice: Installing and Configuring Windows Server 2003 SP1

In this practice, you will configure a computer to run Windows Server 2003 SP1. You will then promote the server to become a domain controller in the contoso.com domain.

Exercise 1: Installing Windows Server 2003 SP1

This exercise should be performed on a computer compatible with Windows Server 2003 SP1. It assumes that the primary hard drive is completely empty. If your disk already has partitions configured, you can modify the exercise to match the configuration of your system.

1. Configure the computer's BIOS or the disk controller BIOS to boot from the CDROM. If you are not sure how to configure your computer or disk controller to boot from the CD-ROM, consult your hardware documentation.

2. Insert the Windows Server 2003 SP1 installation CD-ROM into the CD-ROM drive and start the computer.

3. If the primary disk is not empty, a message appears prompting you to press anykey to boot from the CD. If you see this message, press any key. After the computer starts, a brief message appears explaining that your system configuration is being inspected, and then the Windows Setup screen appears.

4. If your computer requires special mass storage drivers that are not part of the Windows Server 2003 driver set, press F6 when prompted and provide the appropriate drivers.

5. The system prompts you to press F2 to perform an Automated System Recovery (ASR). ASR is a new feature in Windows Server 2003 that replaces the Emergency Repair Disk feature of previous versions of Windows, and is described in Chapter 13. Do not press F2 at this time. Setup will continue.

Notice that the gray status bar at the bottom of the screen indicates that the computer is being inspected and that files are loading. This is required to start a minimal version of the operating system.

6. If you are installing an evaluation version of Windows Server 2003, the Setup Notification screen appears informing you of this. Read the Setup Notification message, and then press ENTER to continue. Setup displays the Welcome To Setup screen. Notice that, in addition to the initial installation of the operating system, you can use Windows Server 2003 Setup to repair a damaged Windows installation. The Recovery Console is described in Chapter 13.

7. Read the Welcome To Setup message, and then press ENTER to continue. Setup displays the License Agreement screen.

8. Read the license agreement, pressing PAGE DOWN to scroll to the bottom of the screen.

9. Press F8 to accept the agreement. Setup displays the Windows Server 2003 Setup screen, prompting you to select an area of free space or an existing partition on which to install the operating system. This stage of setup provides a way for you to create and delete partitions on your hard disk.

To complete the exercises in this book, you will need to configure a partition large enough to host the operating system installation (recommended minimum size is 3 GB) and unallocated space of at least 1 GB. The following steps assume your disk is at least 4 GB in size and is currently empty. You may make adjustments to accommodate your situation.

10. Press C to create a partition.

11. To create a 3-GB partition, type **3072** in the Create Partition Of Size (In MB) box and press ENTER.

12. Confirm that your partitioning is similar to that shown in Figure 1-2. Again, the recommendations for the hands-on exercises is a C partition of at least 3 GB and 1 GB of unpartitioned space.

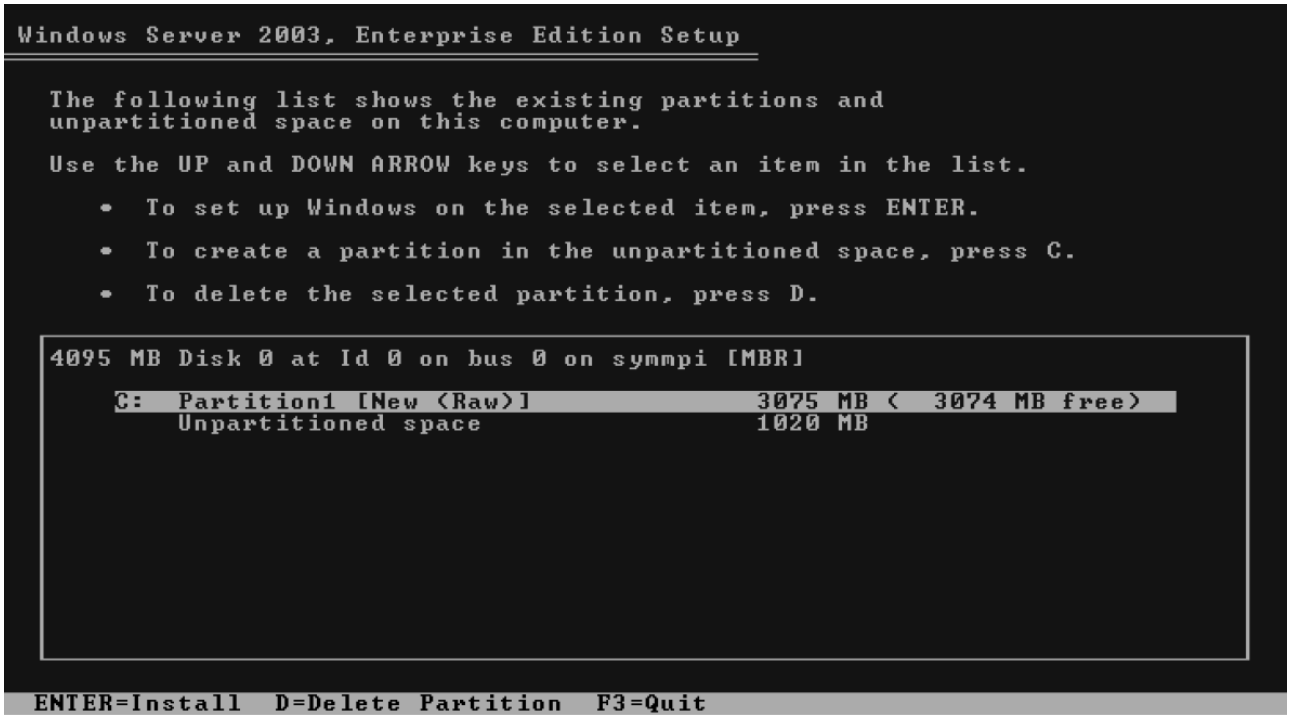

Figure 1-2 Partitioning the hard drive for setup

13. Select C Partition1 [New (Raw)] and press ENTER to install.
You are prompted to select a file system for the partition.

14. Verify that the Format The Partition Using The NTFS File System option is selected, and press ENTER to continue.

Setup formats the partition with NTFS, examines the hard disk for physical errors that might cause the installation to fail, copies files to the hard disk, and initializes the installation. This process takes several minutes.

Eventually, Setup displays a red status bar that counts down for 15 seconds before the computer restarts and enters the GUI mode of the setup process.

15. After the text mode of setup has completed, the system restarts. Do not, when prompted, press a key to boot to the CD-ROM. Windows Setup launches and produces a graphical user interface that tracks the progress of installation in the left pane. Collecting Information, Dynamic Update, and Preparing Installation options are selected. Collecting Information was completed

before the GUI appeared, and Dynamic Update is not used when starting from the CD-ROM. The system is now Preparing Installation by copying files to the local disk drive.

16. On the Regional And Language Options page, choose settings that are appropriate for your language and text input requirements, and then click Next. Setup displays the Personalize Your Software page, prompting you for your name and organization name.

17. In the Name text box, type your name; in the Organization text box, type the name of an organization, and then click Next. Setup displays the Your Product Key page.

18. Enter the product key included with your Windows Server 2003 SP1 installation CD-ROM (Evaluation edition software CD 1), and then click Next. Setup displays the Licensing Modes dialog box, prompting you to select a licensing mode.

19. Verify that the Per Server Number Of Concurrent Connections option is 5, and then click Next.
Setup displays the Computer Name And Administrator Password page.
Notice that Setup uses your organization name to generate a suggested name for the computer. If you didn't enter an organization name earlier in the installation process, Setup uses your name to generate part of the computer name.

20. In the Computer Name text box, type **Server01**.
The computer name displays in all capital letters regardless of how it is entered. Throughout the rest of this self-paced training kit, the practices refer to Server01

21. In the Administrator Password text box and the Confirm Password text box, type a complex password for the Administrator account (one that others cannot easily guess). ***Remember this password*** because you will be logging on as Administrator to perform most hands-on exercises.

If the server has a modem installed, you will be presented with the Modem Dialing Information dialog box.

22. Type your area code, and then click Next. The Date And Time Settings page appears.

23. Type the correct Date & Time and Time Zone settings, and then click Next.

Important Windows Server 2003 services depend on the computer's time and date settings. Be sure to enter the correct time and date, and to select the correct time zone for your location.

Setup installs networking, and then the Networking Settings page appears.

24. Select Typical Settings, and then click Next. The Workgroup Or Computer Domain page appears.

25. Verify that the first option is selected and that the workgroup name is Workgroup, and then click Next.

Setup installs and configures the remaining operating system components. When the installation is complete, the computer restarts automatically and the Welcome

To Windows dialog box appears. You may continue with Exercise 2.

Exercise 2: Performing Post-installation Configuration of Windows Server 2003 SP1

Windows Server 2003 SP1 and Windows Server 2003 R2 increase the security and reliability of a server by guiding you through the steps required to apply software updates that Microsoft has released subsequent to SP1. This process is called Windows Server Post-Setup Security Updates (PSSU). To further enhance security, Windows Firewall blocks all inbound connections, other than those specifically opened during setup or by policy settings. After PSSU is complete, Windows Firewall is disabled.

After Windows Server 2003 has completed booting and the Welcome To Windows dialog box has appeared, complete the following steps:

1. Press CTRL+ALT+DELETE to initiate logon and type the password you configured for the Administrator account.

If you installed the system using the Evaluation edition software included with this book or any other version of Windows Server 2003 R2, you will be prompted to insert CD 2, which contains the new features of R2.

Important The practices in this book assume you have *not* installed R2 features. If you choose to install R2 features, you might have to modify the steps in the practices.

2. Click Cancel to complete setup without installing R2 features. Windows Setup will remind you that you can complete the installation of R2 features by running

Setup2.exe from CD 2. Click OK.

Note Some editions of Windows Server 2003, including the Evaluation Edition provided with this book, require that you activate the operating system after you install it. Activation must occur within 14 days of installation. The activation process is simple and can be completed over the Internet or by telephone. If you acquire your license to use Windows Server 2003 through one of the Microsoft volume licensing programs, you are not required to activate the license.

3. Click the balloon that appears in the System tray to initiate activation of Windows Server 2003. Follow the prompts.

Note To activate by Internet, you will have to connect Server01 to the network and you might have to adjust the TCP/IP properties of your network interface card (NIC) to reflect an appropriate IP address, subnet mask, default gateway, and DNS server address.

The Windows Server Post-Setup Security Updates page appears. You will follow the instructions on the page.

4. Click Update This Server.

The Microsoft Windows Update site opens in Internet Explorer. Internet Explorer prompts you that Microsoft Internet Explorer's Enhanced Security Configuration is currently enabled.

5. Click OK to acknowledge the Internet Explorer Enhanced Security Configuration message.

An Internet Explorer Security Warning prompts you to install Windows Update.

6. Click Install.

7. Follow the prompts of the Windows Update Web site to install updates. The exact steps will vary depending on the updates that have been released by Microsoft since the release of SP1. Typically, choosing an Express update will enable you to install high-priority updates, including security updates. Certain updates might require you to restart the server.

8. Repeat steps 4–8 until Windows Update reports that there are no high-priority updates remaining.

9. On the Windows Server Post-Setup Security Updates page, click Configure Automatic Updating For This Server.

The System Properties dialog box appears, with the Automatic Updates tab selected.

10. Click Automatic.

11. Click OK.

12. On the Windows Server Post-Setup Security Updates page, click Finish.

Windows Server Post-Setup Security Updates prompts you to confirm that you have downloaded and installed all available security updates.

13. Click Yes.

Windows Firewall will be disabled, allowing inbound connections. You may enable and configure Windows Firewall by opening Windows Firewall from Control Panel.

The Manage Your Server page appears. You may continue with Exercise 3.

Exercise 3: Configuring the Server

In this exercise, you will configure the server as the first domain controller in an Active Directory domain called **contoso.com.**

1. If it is not already open, open the Manage Your Server page from the Administrative Tools program group.

2. Click Add Or Remove A Role. The Configure Your Server Wizard appears.

3. Click Next and the Configure Your Server Wizard detects network settings.

4. Click Domain Controller (Active Directory), and then click Next.

5. In Active Directory Domain Name, type **contoso.com**.

6. Verify that NetBIOS Domain Name reads CONTOSO and click Next.

7. Verify that the Summary Of Selections matches that shown in Figure 1-3 and click Next.

The Configure Your Server Wizard reminds you that the system will restart and asks you to close any open programs.

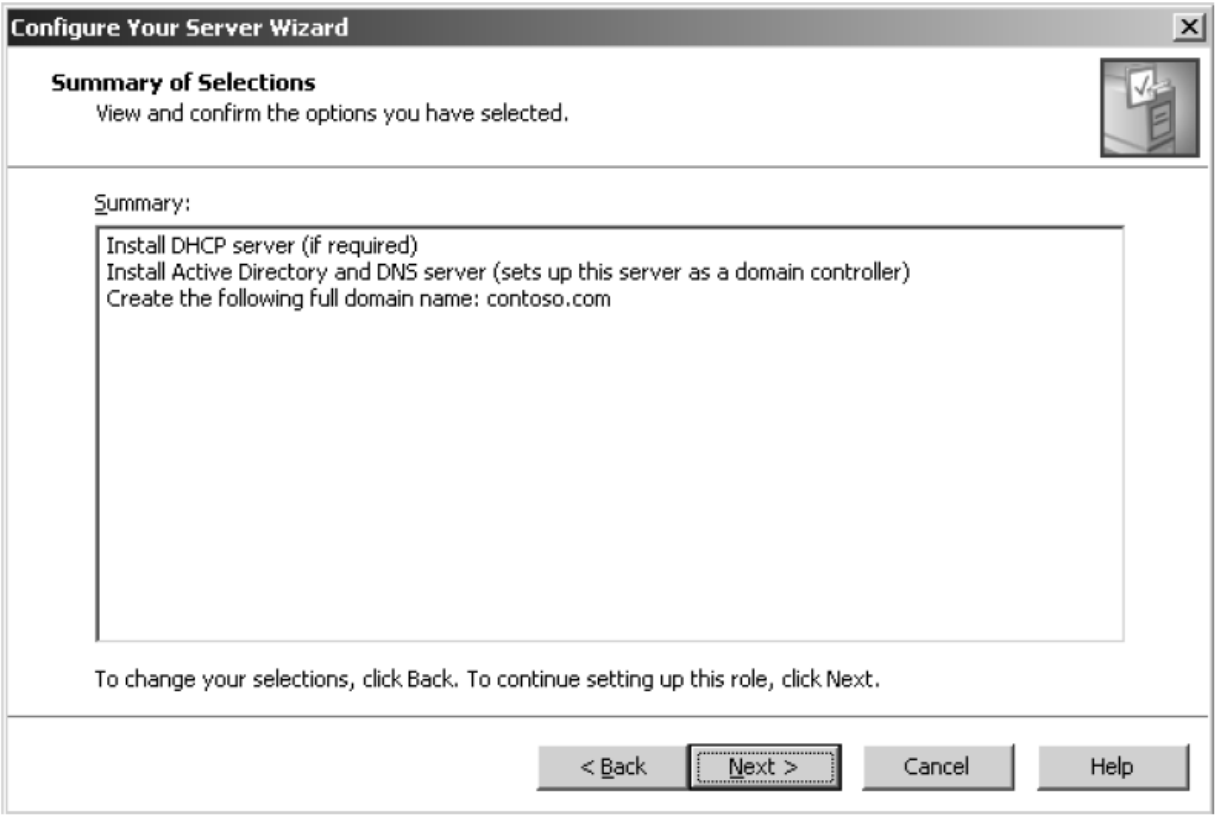

Figure 1-3 Summary Of Selections

8. Click Yes.

9. After the system has restarted, log on as Administrator.

10. The Configure Your Server Wizard will summarize its final steps, as shown in Figure 1-4.

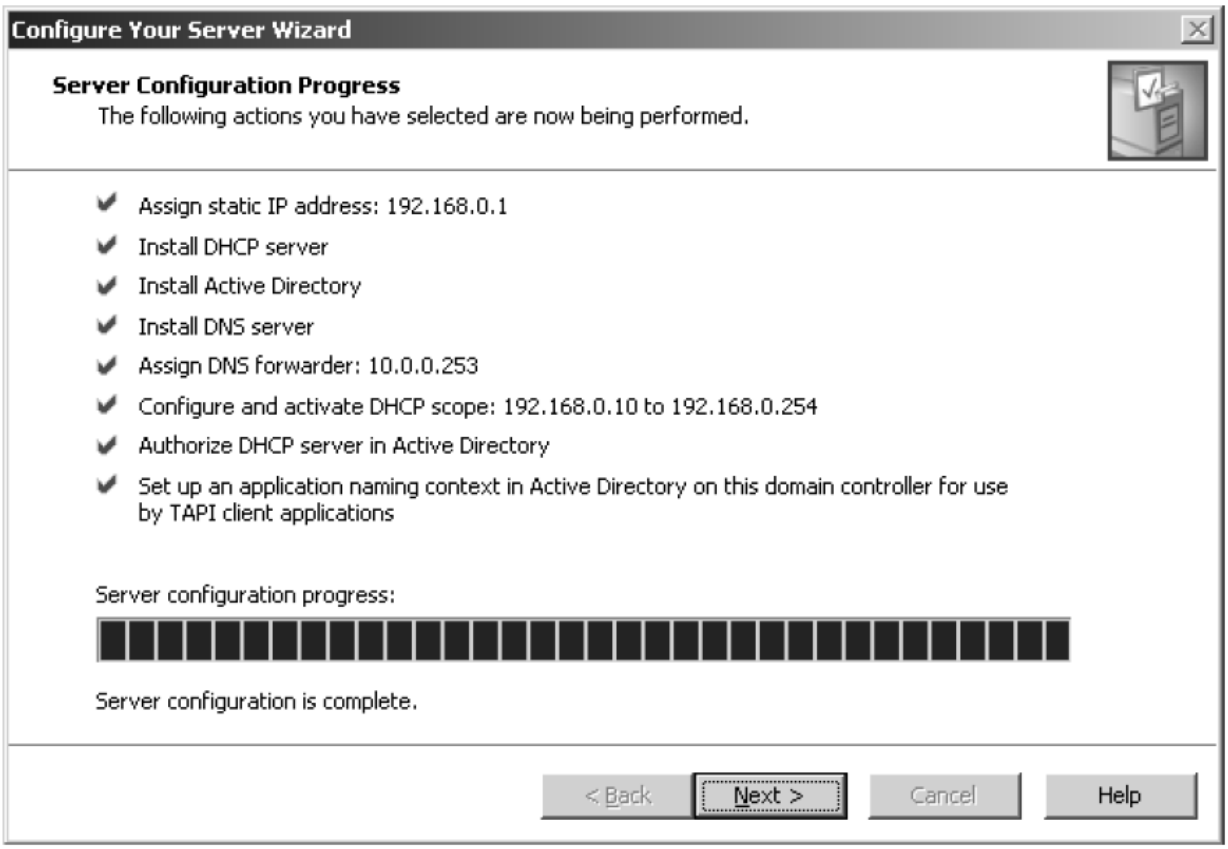

Figure 1-4 The Configure Your Server Wizard

11. Click Next and then click Finish.

12. Open Active Directory Users And Computers from the Administrative Tools program group. Confirm that you now have a domain called *contoso.com* by expanding the domain and locating the computer account for Server01 in the Domain Controllers OU.

Lesson Review

1. Which of the following versions of Windows Server 2003 require product activation? (Choose all that apply.)

a. Windows Server 2003, Standard Edition, retail version

b. Windows Server 2003, Enterprise Edition, evaluation version

c. Windows Server 2003, Enterprise Edition, Open License version

d. Windows Server 2003, Standard Edition, Volume License version

2. What are the distinctions among a domain, a tree, and a forest in Active Directory?

3. Which of the following is true about setup in Windows Server 2003 SP1? (Choose all that apply.)

a. Setup can be launched by booting to the CD-ROM.

b. Setup can be launched by booting to setup floppies.

c. Setup requires a nonblank password to meet complexity requirements.

d. Setup will allow you to enter all 1's for the Product ID.

e. The server will not allow inbound connections until after PSSU has been completed.

Lesson Summary

1. Windows Server 2003 retail and evaluation versions require product activation.

2. Windows Server 2003 SP1 Post-Setup Security Updates enables Windows Firewall and, thereby, prevents inbound connections, until an administrator applies high priority security updates and enables Automatic Updates.

3. The Manage Your Server page and the Configure Your Server Wizard provide helpful guidance to the installation and configuration of additional services based on the desired server role.

4. Active Directory—the Windows Server 2003 directory service—is installed on a server using the Active Directory Installation Wizard, which is launched using the Configure Your Server Wizard or by running DCPROMO from the command line.