

Hands-On Microsoft Windows Server 2008

Chapter 2 *Installing Windows Server 2008*

Objectives

- Plan and make the appropriate preparations for installing Windows Server 2008
- Understand the different installation methods used and install Windows Server 2008
- Set up Windows Server 2008 from the Initial Configuration Tasks window
- Activate Windows Server 2008

Objectives (continued)

- Install and configure Windows Deployment Services
- Install service packs
- Troubleshoot installation problems
- Uninstall Windows Server 2008

Preparing for Installation

- Preinstallation tasks:
 - Identify the hardware requirements and check hardware compatibility
 - Determine disk partitioning options
 - Understand the file system
 - Determine upgrade options
 - Plan user licensing
 - Determine domain or workgroup membership

Preparing for Installation (continued)

- Preinstallation tasks: (continued)
 - Choose a computer name
 - Determine whether to install Server Core or the full version
 - Identify the server roles to implement
 - Determine the immediate preparations

Identifying Hardware Requirements and Determining Compatibility

- Most operating systems come with a list of minimum hardware requirements
- Always better to exceed the minimum recommendations
- **Redundant array of inexpensive disks (RAID)**
 - An array of multiple hard drives designed to extend the life of disk drives.
 - It is a storage technique for hard disks that helps to:
 - Enlarge the storage capacity
 - Prevent data loss when a hard disk fails.

Identifying Hardware Requirements and Determining Compatibility (continued)

- Hardware compatibility testing
 - The most up-to-date listing of compatible hardware (and software) is the Catalog of Tested Products on Microsoft's Web site
 - www.windowsservercatalog.com
 - Recommended that you select hardware listed on the Catalog labeled with the Certified for Windows Server 2008 logo
 - Might still be necessary to upgrade the **basic input/output system (BIOS)**

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Determining Disk Partitioning Options

- Creating a partition
 - A process in which a hard disk section or a complete hard disk is prepared for use by an operating system
- A disk can be formatted after it is partitioned
- The Windows Server 2008 installation program will detect how your hard disk is currently partitioned
 - Allows you to install the operating system on an existing partition or create a new one

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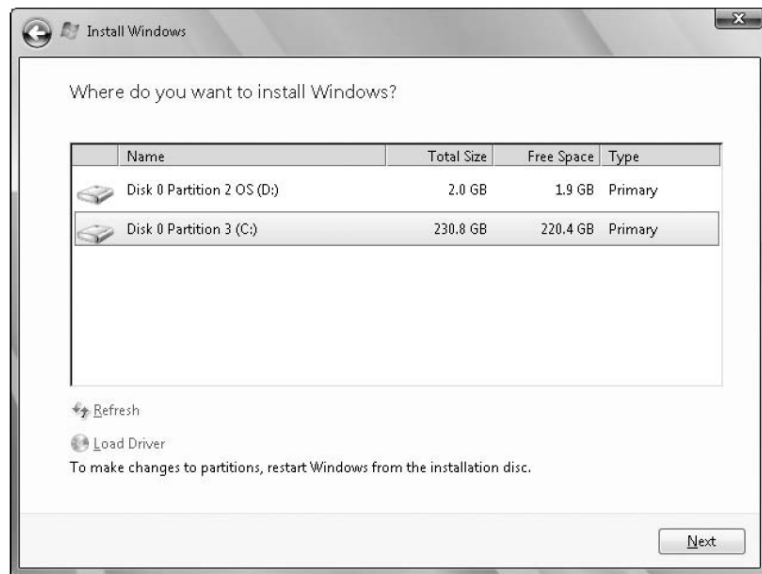


Figure 2-1 Installation program detecting existing partitions

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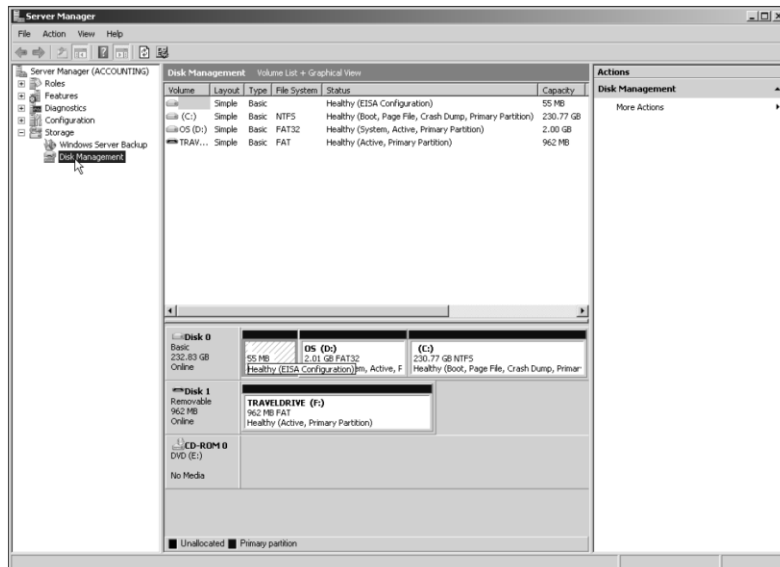


Figure 2-2 Using Server Manager to manage disks after an installation

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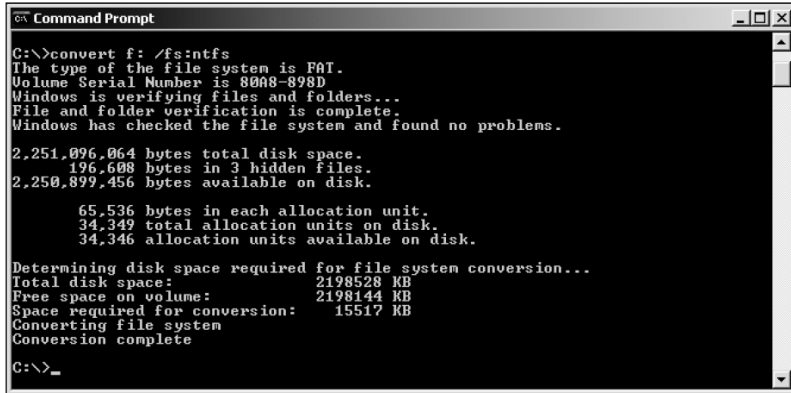
Understanding NTFS

- **New Technology File System (NTFS)**
 - The native Windows Server file system
- NTFS features include:
 - Local security through file and folder permissions
 - Compression
 - Disk quotas
 - Encryption
 - Indexing

Understanding NTFS (continued)

- You cannot install Windows Server 2008 on a FAT volume (FAT is an older file system technique)
 - Check to ensure that any File Allocation Table (FAT) volumes are first converted to NTFS

Understanding NTFS (continued)



```
C:\>convert f: /fs:ntfs
The type of the file system is FAT.
Volume Serial Number is 80A8-898D
Windows is verifying files and folders...
File and folder verification is complete.
Windows has checked the file system and found no problems.

2,251,096,064 bytes total disk space.
196,608 bytes in 3 hidden files.
2,250,899,456 bytes available on disk.

    65,536 bytes in each allocation unit.
    34,349 total allocation units on disk.
    34,346 allocation units available on disk.

Determining disk space required for file system conversion...
Total disk space:      2198528 KB
Free space on volume:  2198144 KB
Space required for conversion: 15517 KB
Converting file system
Conversion complete
C:\>_
```

Figure 2-4 Converting a FAT volume to NTFS in Windows Server 2003

Determining Domain or Workgroup Membership

- Determine the type of network access for which your computer will be configured
- You can specify a domain or workgroup on the Initial Configuration Tasks window
- Requirements for adding the computer to a domain:
 - Provide the DNS name of the domain you want to join
 - You must have a computer account in the domain you want to join
 - One domain controller and a DNS server must be online before you can join the domain

Determining Whether to Install Server Core or the Full Version

- Some scenarios for a Server Core installation:
 - Your organization is medium or large in size and wants to dedicate one server to operate as a DHCP
 - Dynamic Host Configuration Protocol (DHCP) server: is a server that automatically assign an IP address to a computer in network.
 - Your organization offers many shared folders to users for their work and the organization wants to centralize all of the shared folders on one computer

Determining Whether to Install Server Core or the Full Version

- Some scenarios for a Server Core installation:
 - The server contains only centralized databases accessed by users
 - The server holds critical files for the organization and needs to have the smallest attack surface
 - The server is dedicated to one task

Determining Whether to Install Server Core or the Full Version (continued)

- Sample scenarios for installing the full version are:
 - Your organization is a small or medium-size business
 - You prefer to work in a GUI environment
 - The server administrator is relatively new to Windows Server 2008 and wants to use wizards for guidance
 - The server must have .NET Framework for the applications on it.

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Server Roles

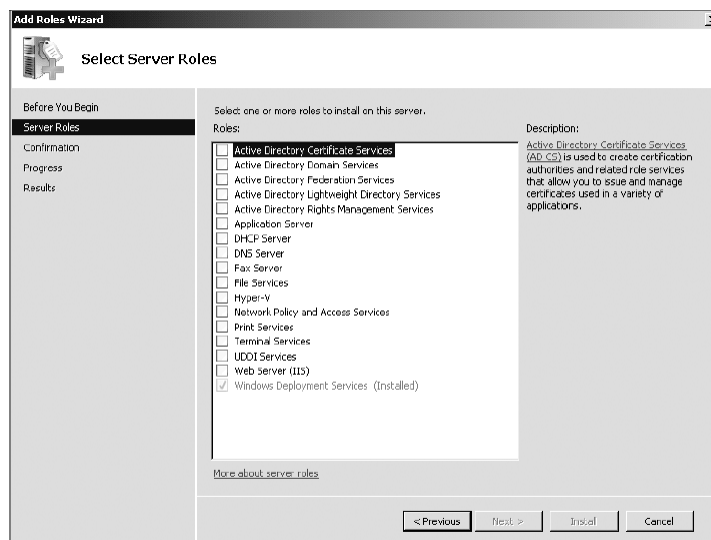


Figure 2-5 Viewing server roles that can be installed

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Identifying Server Roles

- Active Directory Certificate Services Role
 - offers the ability to establish digital certificates.
 - The purpose of A digital certificate is to show that the source of the file or communication is confident
- Active Directory Domain Services Role
 - Central to implementing Active Directory and creating one or more domains
- Active Directory Federation Services
 - Used to manage security services on a Windows Server 2008 Web-based network

Identifying Server Roles (continued)

- Active Directory Lightweight Directory Services
 - Intended for servers that primarily manage applications for users
- Active Directory Rights Management Services Role
 - Uses security capabilities such as encryption, user authentication to help safeguard information
- Application Server Role
 - Places the Windows Server 2008 server in the role of a computer that makes applications available to users on a network or over the Web

Identifying Server Roles (continued)

- DHCP Server Role
 - Role in which the server gives IP addresses to network clients
- DNS Server Role
 - DNS maintains tables that helps to translates domain and computer names into IP addresses and vice versa
 - Example: DNS table:

Domain Name	IP
Edugate.ksu.edu.sa	127.567.1.3
google	192.167.1.98

- Fax Server Role
 - Through the Fax Server role, you can manage all fax resources on a network

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Identifying Server Roles (continued)

- File Services Role
 - Enables users to access and share files through one or more servers
- Hyper-V Role
 - Enables Windows Server 2008 to function as a virtual server
- Network Policy and Access Services Role
 - A network is kept secure and healthy by having policies governing who can access it

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Identifying Server Roles (continued)

- **Print Services Role**
 - Includes a service to make a Windows Server 2008 server a formal Print Server that manages print jobs printers.
- **Terminal Services Role**
 - Enable client computers to run services and software applications on the server instead of on the client.

Identifying Server Roles (continued)

- **Web Server (IIS) Role**
 - Enables Windows Server 2008 to provide an ever-expanding range of Web services
- **Windows Deployment Services Role**
 - Enables an organization to purchase multiple computers without operating systems and then install Windows Server 2008 on all of the computers

Overview of Windows Server 2008 Installation Methods

- The primary installation methods are as follows:
 - DVD installation
 - Upgrade from Windows Server 2003
 - Installation for a virtual server using Hyper-V
 - Windows Deployment Services

DVD Installation

- To start the installation from DVD:
 - Make sure the computer's BIOS is set to boot first from the CD/DVD drive
 - Insert the Windows Server 2008 installation DVD
 - Power off the computer
 - Turn on the computer, and if necessary, press the key combination to boot from the CD/DVD drive
 - Follow the instructions for installing Windows Server 2008

Upgrading from Windows Server 2003

- The general steps to begin an upgrade are as follows:
 - Boot the computer to use its current operating system
 - Insert the Windows Server 2008 installation DVD
 - If you see the Autoplay window, click the option to Run setup.exe.
 - When you see the Install Windows window, click Install now
 - Follow the instructions for installing Windows Server 2008

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Figure 2-6 Starting the installation

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Installation for a Virtual Server Using Hyper-V

- The actual installation steps of Windows Server 2008 as a virtual server are nearly the same as those for a DVD installation
 - But first you need to go through the steps to set up a virtual server

Windows Deployment Services

- The WDS role is designed to enable the installation of Windows operating systems, Windows 7 and Windows Server 2008, on multiple computers
- When you use WDS, it's not necessary to stay at the computer during the operating system installation
- An installation DVD is not necessary
 - The installation files are sent over a network from the Windows Server 2008 Windows Deployment Services server

Performing a DVD-Based Installation

- Activity 2-4: Installing Windows Server 2008 from DVD
 - Time Required: Approximately 30–60 minutes (depending on the speed of your computer)
 - Objective: Install Windows Server 2008 from DVD

Using the Initial Configuration Tasks Window for Setup

- In this window, you can do the following:
 - Provide Computer Information
 - Update This Server
 - Customize This Server
- You don't need to complete all of the tasks at this time
 - But you should complete some preliminary tasks right away
- After configuring the computer information, plan to configure how to update the computer

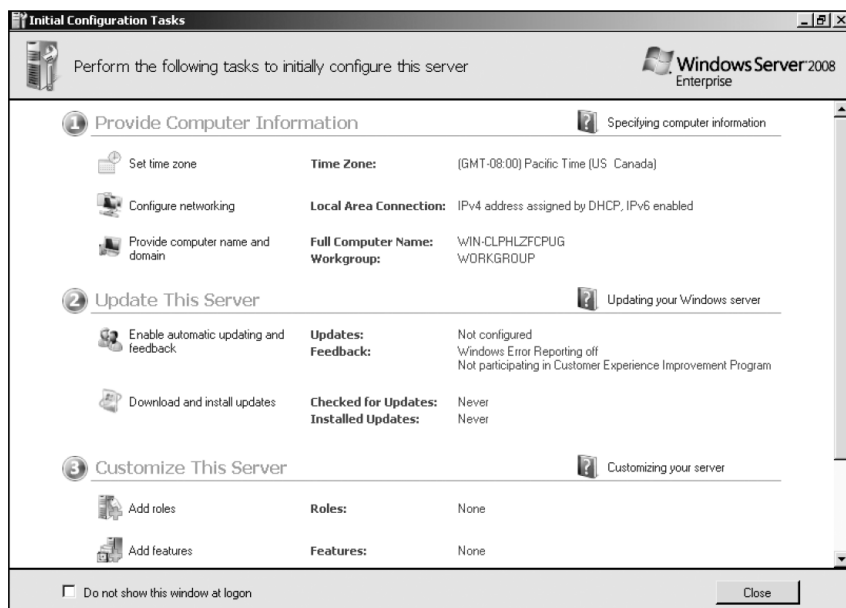


Figure 2-10 The Initial Configuration Tasks window

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Using the Initial Configuration Tasks Window for Setup (continued)

- Activity 2-5: Performing Initial Configuration Tasks
 - Time Required: Approximately 15–20 minutes
 - Objective: Use the Initial Configuration Tasks window to start configuring Windows Server 2008

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Server Activation

- After Windows Server 2008 is installed
 - Necessary to activate the copy of the operating system
- You need to activate your copy of Windows Server 2008 before the short activation period expires
 - Or else many functions of the operating system are disabled
- Windows Server 2008 can be activated through the Internet or by telephone

Using Windows Deployment Services

- Benefits
 - Installs Windows Server 2008 and Windows Vista
 - Retains the ability to install Windows Server 2003 and Windows XP
 - Enhances performance
 - Provides updated boot format
 - Can utilize broadcasting for network efficiency
 - Offers a redesigned presentation for choosing which operating system to install

Installing Windows Server Core

- The steps for installing Windows Server Core are nearly identical to the steps for a full installation
 - Until you reach the end of the process when you need to log on to the newly installed system
- You can implement all or portions of the following server roles:
 - Active Directory Domain Services
 - Active Directory Lightweight Directory Services
 - DHCP and DNS Servers
 - File, Print and Web Services

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Installing Windows Server Core (continued)

- For many of these roles, not all role services can be installed as in the full installation of Windows Server 2008
 - Less server roles means smaller attack surface to not attract attackers and malicious software
- Use the *start* command to install a particular role
 - Use the /uninstall option to uninstall a role
- At the command line, enter *help* to view a listing of commands

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Installing and Managing Service Packs

- Service packs are designed to correct things such as security issues
 - As well as problems affecting stability, performance, or the operation of features included with the operating system
- Guidelines when installing the latest service packs
 - Download the latest service pack from Microsoft's download site
 - Review the documentation that comes with the service pack

Installing and Managing Service Packs (continued)

- Guidelines when installing the latest service packs (continued)
 - Perform a full backup before you do the service pack installation
 - If the server is already available to clients, schedule when the service pack will be installed
 - Once the service pack is installed, document any problems that occurred and how you fixed them for future reference
- You can install the latest service pack by using Windows Update

Uninstalling Windows Server 2008

- Uninstalling Windows Server 2008 is a relatively straightforward process
 - And requires you to format the partition on which it has been installed
- If you are installing another operating system
 - You are usually given an opportunity to format the hard drive for that operating system
- You can also use the FDISK and FORMAT utilities
- Another option is to use the DISKPART utility