Infomation Technology Essentials

COMP106

Instructor :

Asaad Alhijaj

Chapter 8
Installing and Configuring Operating Systems

Objectives

♦ In this session, you will learn to:

◆ Install Microsoft Windows.

◆ Upgrade Windows from a given version to a later version.

◆ Add devices to an installation of Microsoft Windows.

◆ Optimize an installation of Microsoft Windows.

Install Microsoft Windows

◆ Before installing Microsoft Windows, you need to understand the following:

- ◆ Windows system requirements
- ◆ Hardware compatibility
- ◆ Installation methods
- ◆ Installation options
- ◆ Windows update
- ◆ Microsoft product activation

Windows System Requirements

Operating System	Requirements
Windows 2000 Professional	•Pentium 133 MHz or greater •32 MB RAM required (64 MB recommended) •Hard disk: 2 GB with 1 GB free space •VGA video adapter •Keyboard, mouse
Windows XP Professional	•233 MHz minimum (300 MHz recommended), various processors •64 MB RAM required (128 MB recommended) •Hard disk: 1.5 GB free space •Super VGA video adapter •Keyboard, mouse
Windows XP Home	•233 MHz minimum (300 MHz recommended), various processors •64 MB RAM required (128 MB recommended) •Hard disk: 1.5 GB free space •Super VGA video adapter •Keyboard, mouse
Windows XP Media Center	Media Center PC

Hardware Compatibility

- Options for checking hardware compatibility are:
    - Check all hardware manual
    - Perform Microsoft tests for different versions
    - Windows Marketplace Tested Products List
    - Microsoft Windows Setup Advisor

Installation Methods

◆ Installation methods for Windows are:

- ◆ Local source
- ◆ Network source
- ◆ Unattended
- ◆ System imaging

Installation Options

◆ Installation options for Windows are:

- ◆ Disk and file system
- ◆ Regional, date and time settings
- ◆ Computer name
- ◆ Network settings
- ◆ Workgroup or domain membership
- ◆ Internet connection
- ◆ Local accounts

Windows Update

Microsoft.com Home | Site Map

Microsoft **Windows**

Search Microsoft.com for:

[ ] Go

Windows Update

Windows Family | Windows Marketplace | Office Family | Microsoft Update

Windows Update Home

Install Updates (0)

Select by Type

High Priority (0)

Software, Optional (7)

Hardware, Optional (2)

Options

Review your update history

Restore hidden updates

Change settings

FAQ

Get help and support

Customize your results

Select High-Priority Updates

To help protect your computer against security threats and performance problems, we strongly recommend you install all high-priority updates.

Review and install updates

Total: 0 updates , 0 KB , 0 minutes

High-priority updates
No high-priority updates for your computer are available. To select other updates, use the options to the left.

3 categories of updates

Obtain latest updates

Microsoft Product Activation

Anti-piracy technology

Activate Windows

Let's activate Windows

To help reduce software piracy, please activate your copy of Windows now. Activation over the Internet is quick and easy.

You don't need to give your name or other personal information when you activate Windows.

Do you want to activate Windows now?

- ● Yes, let's activate Windows over the Internet now
- ○ Yes, I want to telephone a customer service representative to activate Windows
- ○ No, remind me to activate Windows every few days

Activation methods →

Grace period →

If you wait to activate, you can still use Windows, but you will receive periodic reminders. After 35 day(s), you must activate Windows before you can continue to use it.

Microsoft is committed to your privacy. For more information, read the Windows Product Activation Privacy Statement

To continue, click Next.

Next

Activity 8-1

Activity on Installing Windows XP Home

Upgrade Windows

◆ Before updating Windows, you need to understand the following:

- ◆ Supported upgrade paths
- ◆ Hardware upgrade compatibility
- ◆ Software upgrade compatibility

Supported Upgrade Paths

◆ Following is the supported upgrade path for Windows:

Current Operating System	Can Be Upgraded To
Windows 95	Windows 98, Windows 2000 Professional
Windows 98 / 98 SE / Me	Windows 2000 Professional, Windows XP Professional
Windows NT Workstation 4.0	Windows 2000 Professional, Windows XP Professional
Windows 2000 Professional	Windows XP Professional, Windows Vista
Windows XP Home Edition	Windows XP Professional
Windows XP Professional	Windows Vista

Hardware Upgrade Compatibility

◆ To find hardware upgrade compatibility you need to:

- ◆ Check against tested products list
- ◆ Run Windows setup advisor
- ◆ Setup will run compatibility check

Software Upgrade Compatibility

◆ To find software upgrade compatibility you need to:

- ◆ Check against tested products list
- ◆ Run Windows setup advisor
- ◆ Setup will run compatibility check
- ◆ Legacy applications might need compatibility fixes
- ◆ Select compatibility mode after upgrade

Add Devices to Windows

◆ Before adding devices to Windows, you need to understand the following:

- ◆ Driver signing
- ◆ Unsigned driver installation options
- ◆ Installation permissions

Driver Signing

- A signed device driver is:
  - A driver that has been tested and verified for a particular operating system.
  - A driver includes piece of encrypted data, called a digital signature.
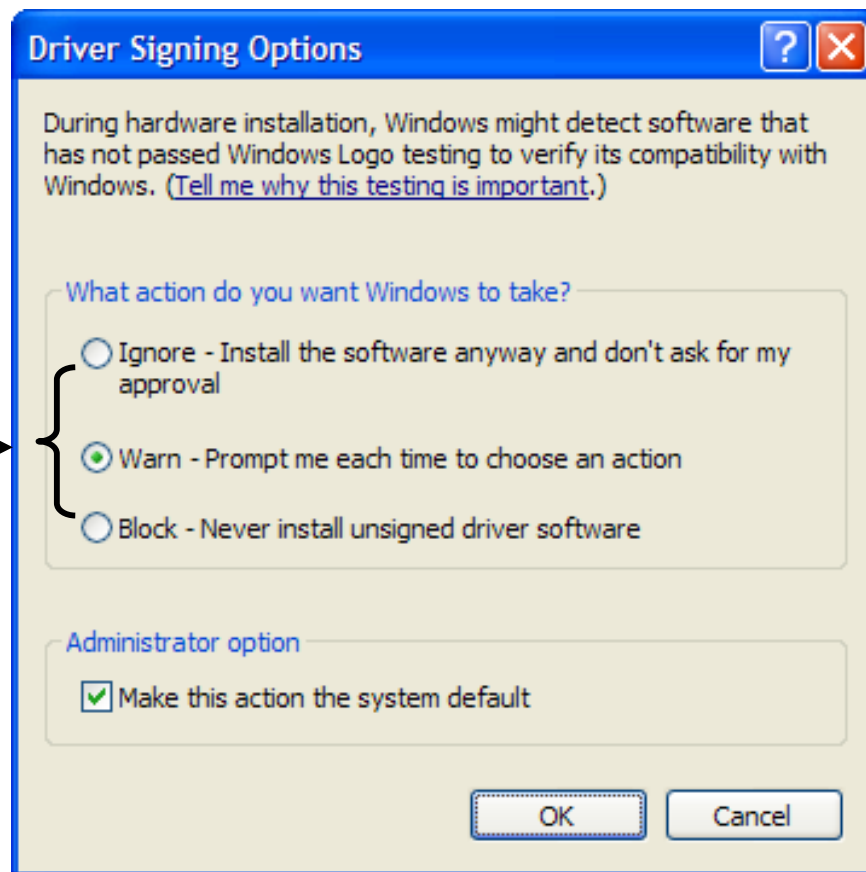 - A driver which cannot been altered.
  - A driver does not overwrite files.

Driver tested and verified

Encrypted signature attached

Unsigned Driver Installation Options

There are three driver-signing options:

- Ignore
- Warm
- Block

Driver-signing options

Driver Signing Options

During hardware installation, Windows might detect software that has not passed Windows Logo testing to verify its compatibility with Windows. (Tell me why this testing is important.)

What action do you want Windows to take?

○ Ignore - Install the software anyway and don't ask for my approval

⊙ Warn - Prompt me each time to choose an action

○ Block - Never install unsigned driver software

Administrator option

☑ Make this action the system default

OK   Cancel

Installation Permissions

◆ Installation permissions are:

◆ Administrators can install permanent devices

permanent devices

◆ Users can install Plug and Play devices only

Plug and Play devices

Activity 8-6

Activity on Configuring Driver Signing Verification

Optimize Windows

- Before optimizing Windows, you need to understand the following:
  - Virtual memory
  - The virtual memory process
  - Windows services
  - The windows XP boot process
  - Temporary files
  - Windows optimization software tools

Virtual Memory

◆ **Virtual memory** is the ability of the computer system to use a portion of the hard disk as if it were physical RAM.

Physical memory

4 GB

Virtual Memory Manager

Virtual memory addresses
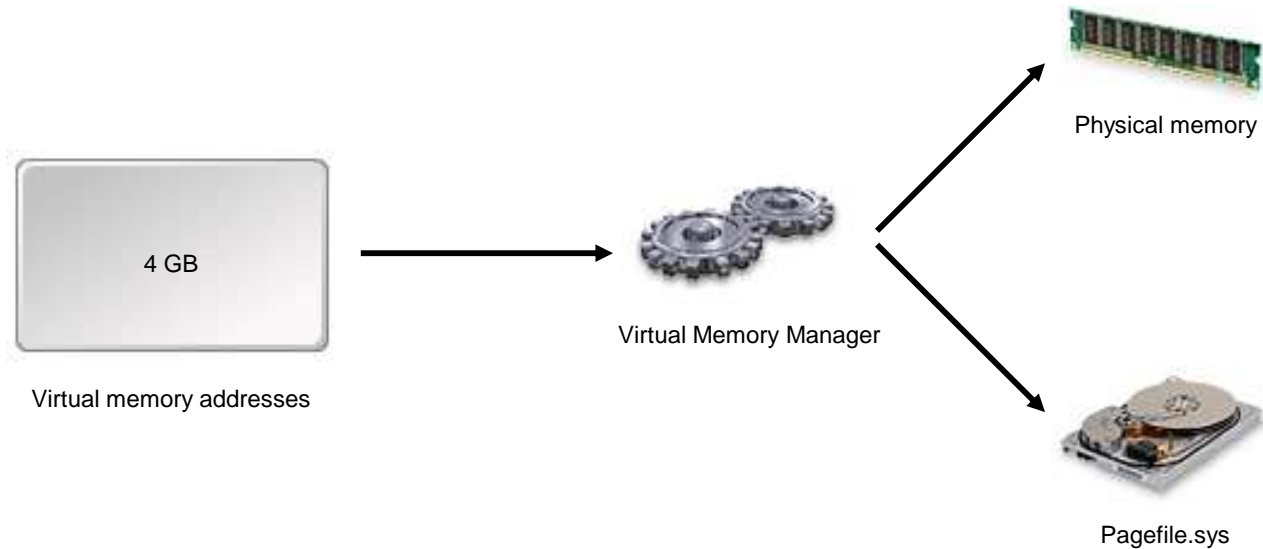
Pagefile.sys

The Virtual Memory Process

◆ Following are the steps to store data in virtual memory:

1. Application requests memory
2. VMM assigns memory page
3. Application stores data
4. VMM maps to physical RAM
5. VMM moves data to pagefile when RAM full

1

Virtual Memory Manager

2

3

Memory page

4GB

Virtual memory addresses

4

Physical memory

5

Pagefile.sys
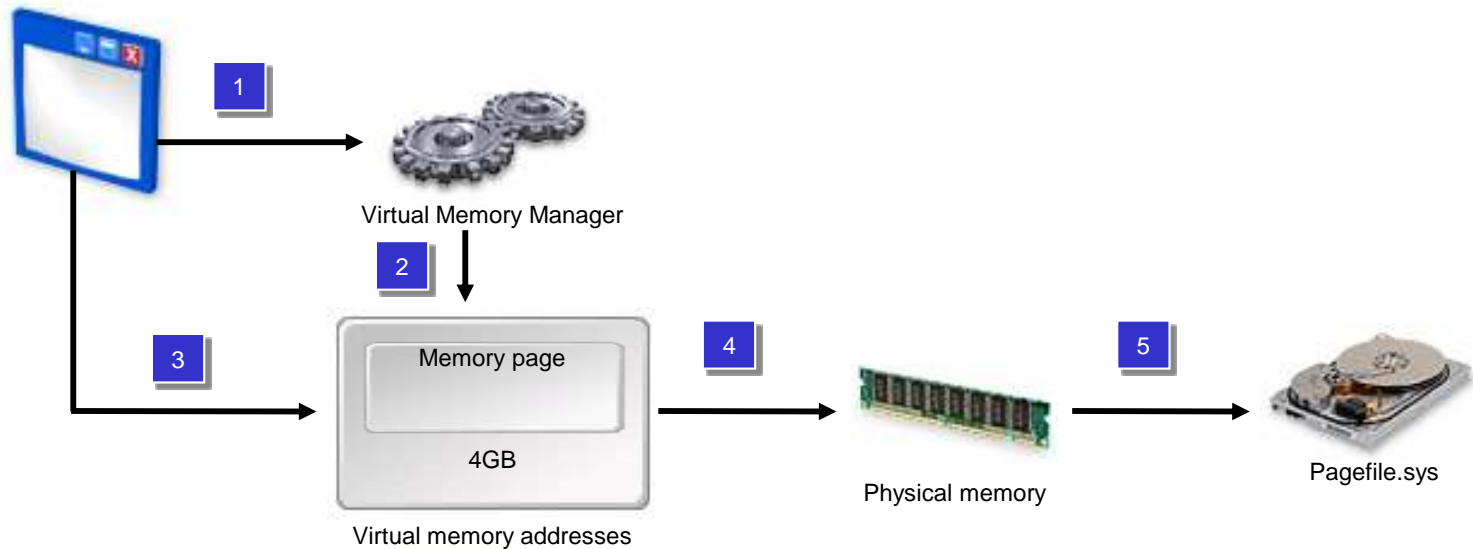
The Virtual Memory Process (Contd..)

◆ Following are the steps for retrieving data from virtual memory:

5

1

Virtual Memory Manager

2

3

Physical memory

4

Pagefile.sys
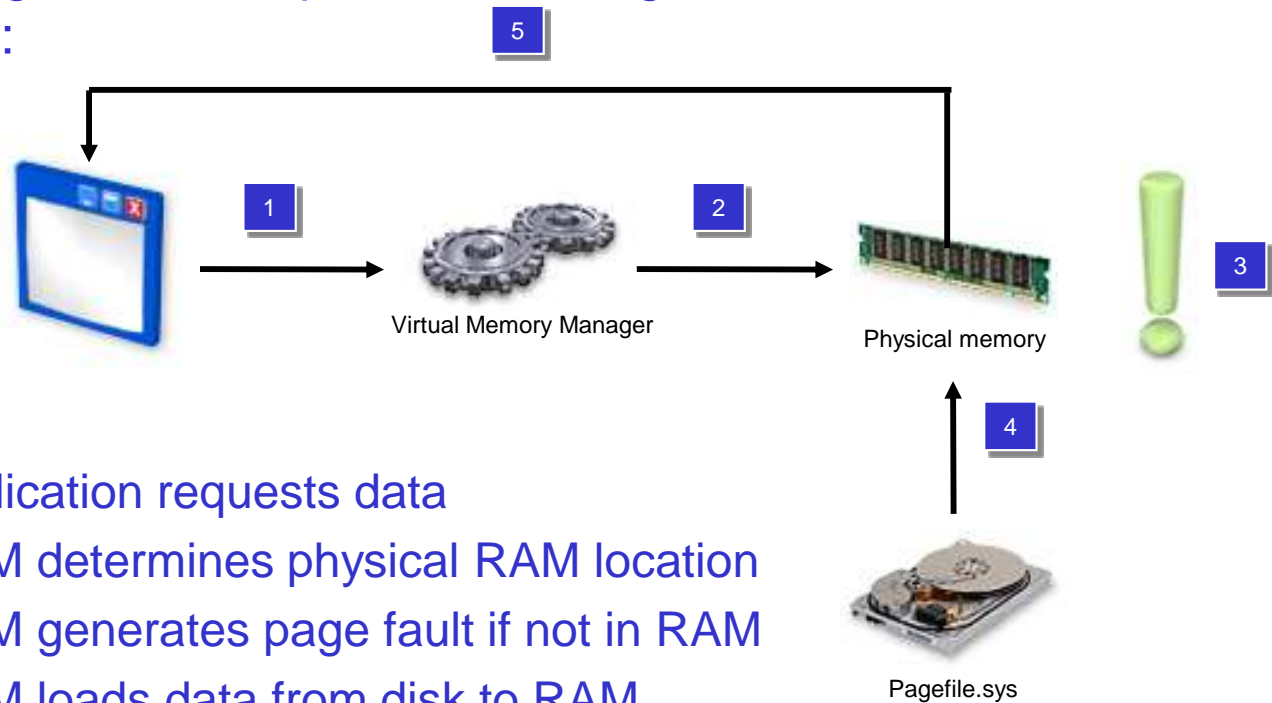
1. Application requests data
2. VMM determines physical RAM location
3. VMM generates page fault if not in RAM
4. VMM loads data from disk to RAM
5. Application retrieves data

Windows Services

◆ A ***Windows service*** is a background process that performs a specific operation.

◆ Startup type of Windows services can be:

- Automatic
- Manual
- Disable

Windows Services (Contd..)

The Windows XP Boot Process

◆ The sequences occur during the Windows XP Professional boot process are:

- ◆ Pre-boot sequence
- ◆ Boot sequence
- ◆ Kernel load sequence
- ◆ Kernel initiation sequence
- ◆ Logon sequence

Pre-boot   Boot   Kernel load   Kernel initialization   Logon
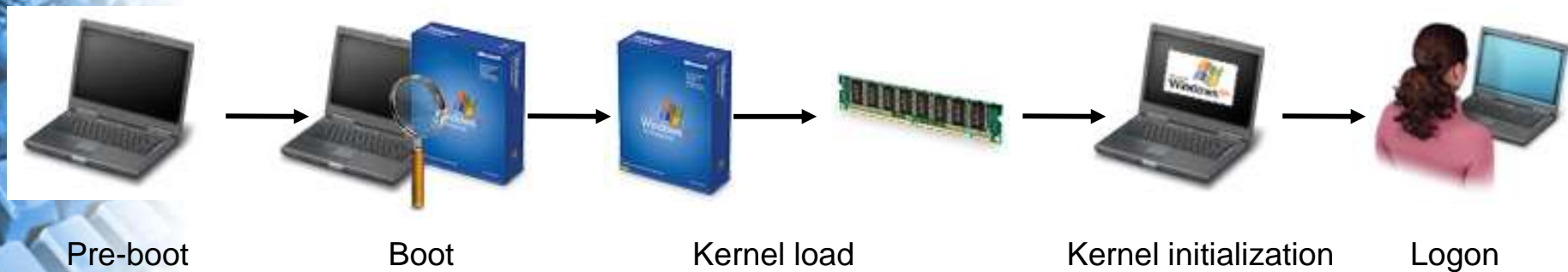
Temporary Files

◆ Temporary files:

- ◆ Contains temporary information required by Windows operating system, applications, and services.
- ◆ Often have an extension of *.tmp or *.temp.
- ◆ May store in a folder called \Windows\Temp or \Tmp.

Windows operating system

Windows applications

Windows services

C:\ Temp
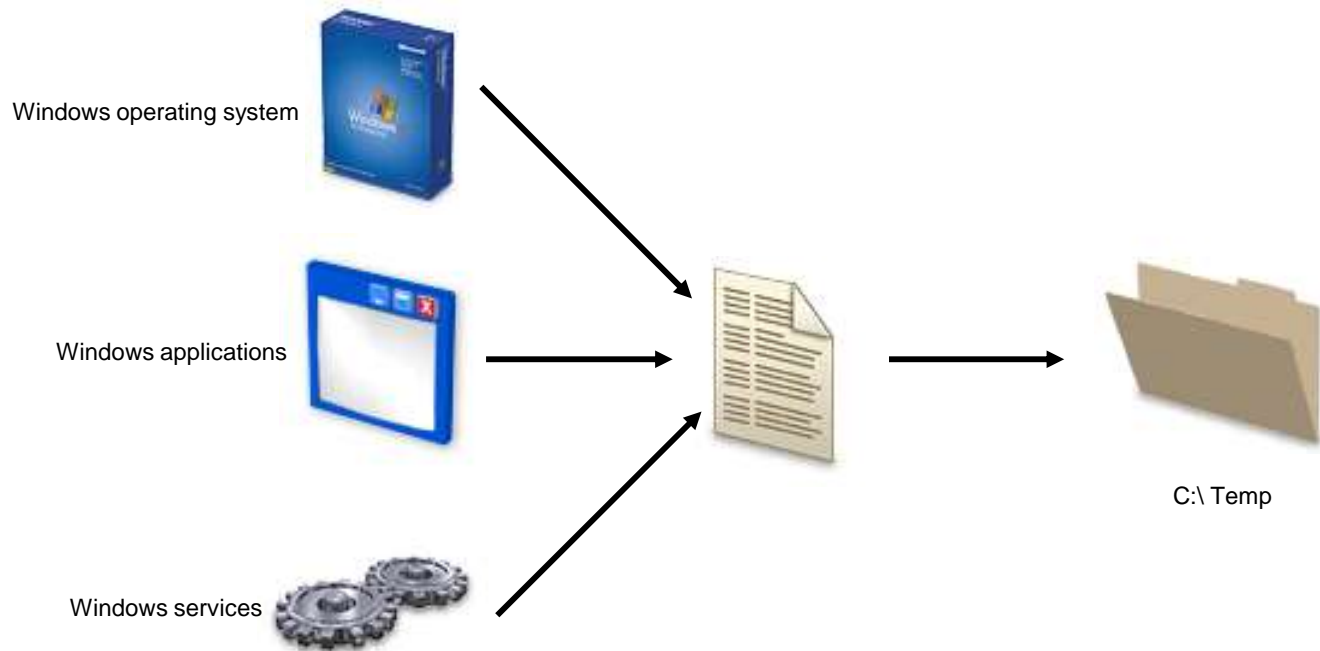
Activity 8-8

**Activity on Viewing
Windows Temporary Files**

Windows Optimization Software Tools

◆ Software tools to optimize Windows performance are:

- ◆ Virtual memory
- ◆ Hard drives
- ◆ Temporary files
- ◆ Windows services
- ◆ Startup
- ◆ Applications

Activity 8-10

Activity on Disabling the Remote Registry Service

Summary

♦ In this session, you learned that:

- Before installing Microsoft Windows you need to find what are the Windows system requirements.

- There are various Windows installation methods, such as Local and Network source.

- Installation options includes disk and file system, regional, date and time settings, computer name and network settings.

- Windows provide update options, such as supported upgrade path, hardware and software compatibility.

- Virtual memory stores and allows retrieve data from memory.

- Pre-boot, boot, Logon, kernel load and initiation sequence occur during Windows booting process.