## 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<br>•32 MB RAM required (64 MB recommended)<br>•Hard disk: 2 GB with 1 GB free space<br>•VGA video adapter<br>•Keyboard, mouse |
| Windows XP Professional | •233 MHz minimum (300 MHz recommended), various processors<br>•64 MB RAM required (128 MB recommended)<br>•Hard disk: 1.5 GB free space<br>•Super VGA video adapter<br>•Keyboard, mouse |
| Windows XP Home | •233 MHz minimum (300 MHz recommended), various processors<br>•64 MB RAM required (128 MB recommended)<br>•Hard disk: 1.5 GB free space<br>•Super VGA video adapter<br>•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

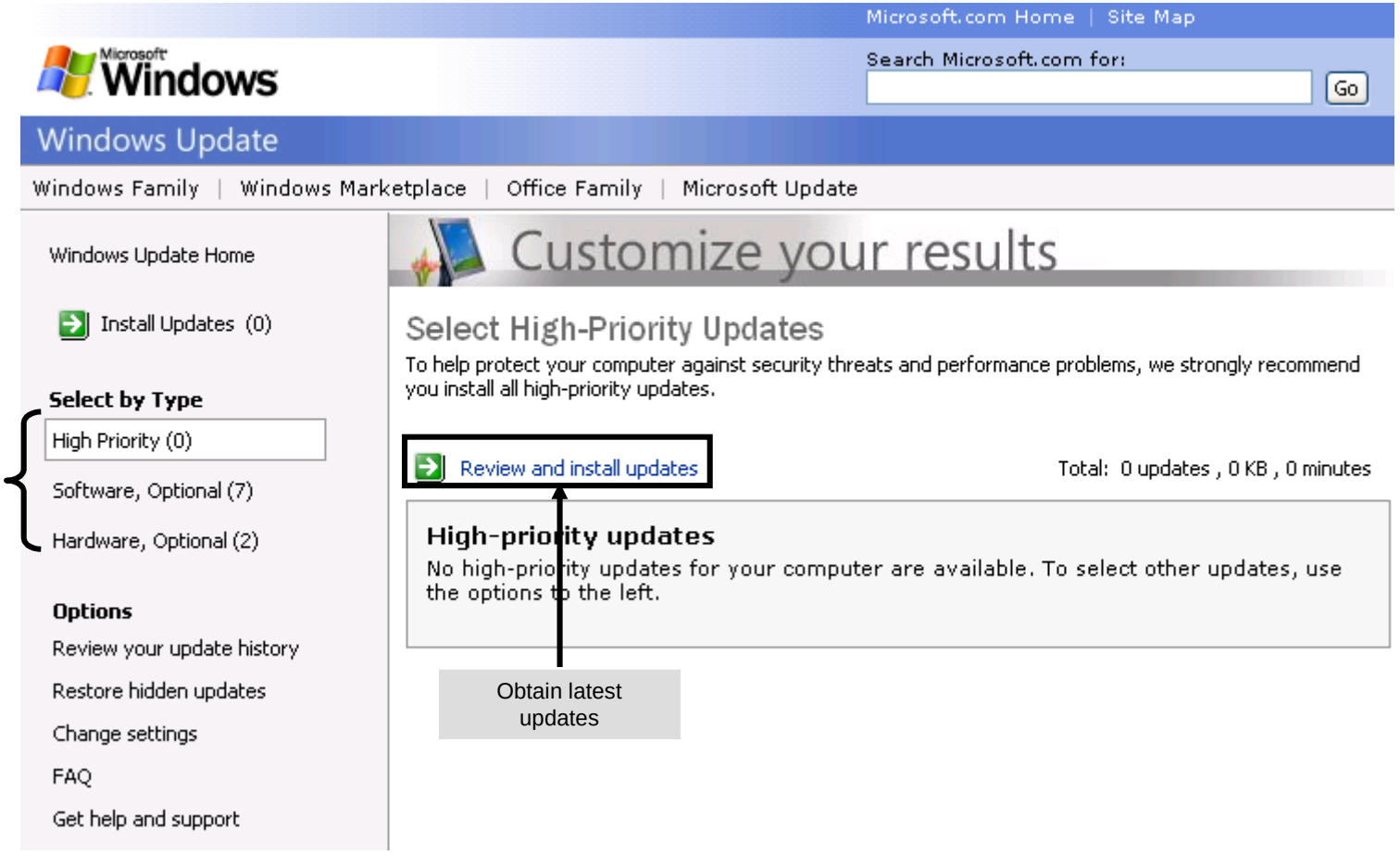
## Installation Methods

- 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

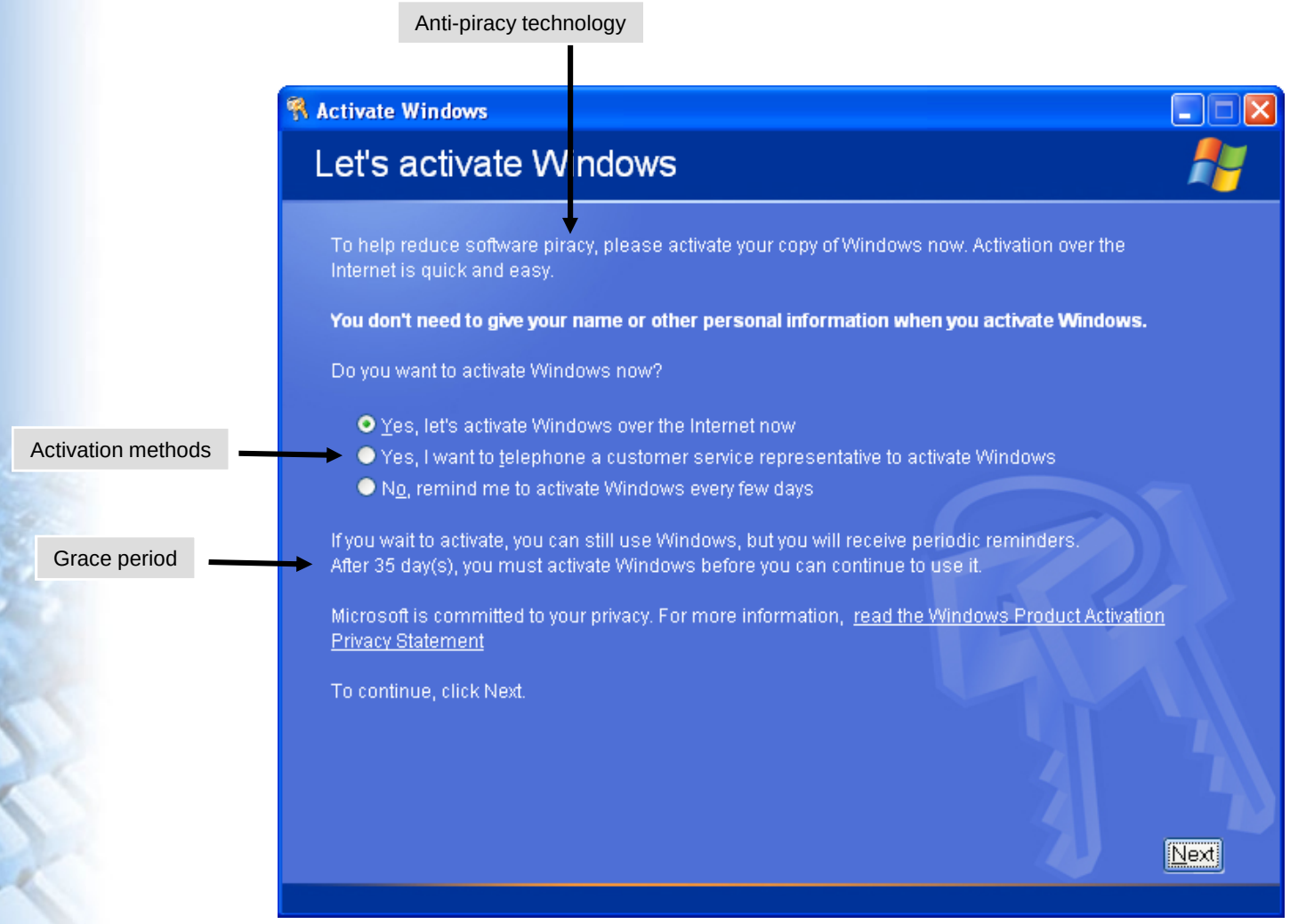
# Windows Update




3 categories of updates

Obtain latest updates

# Microsoft Product Activation



## 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

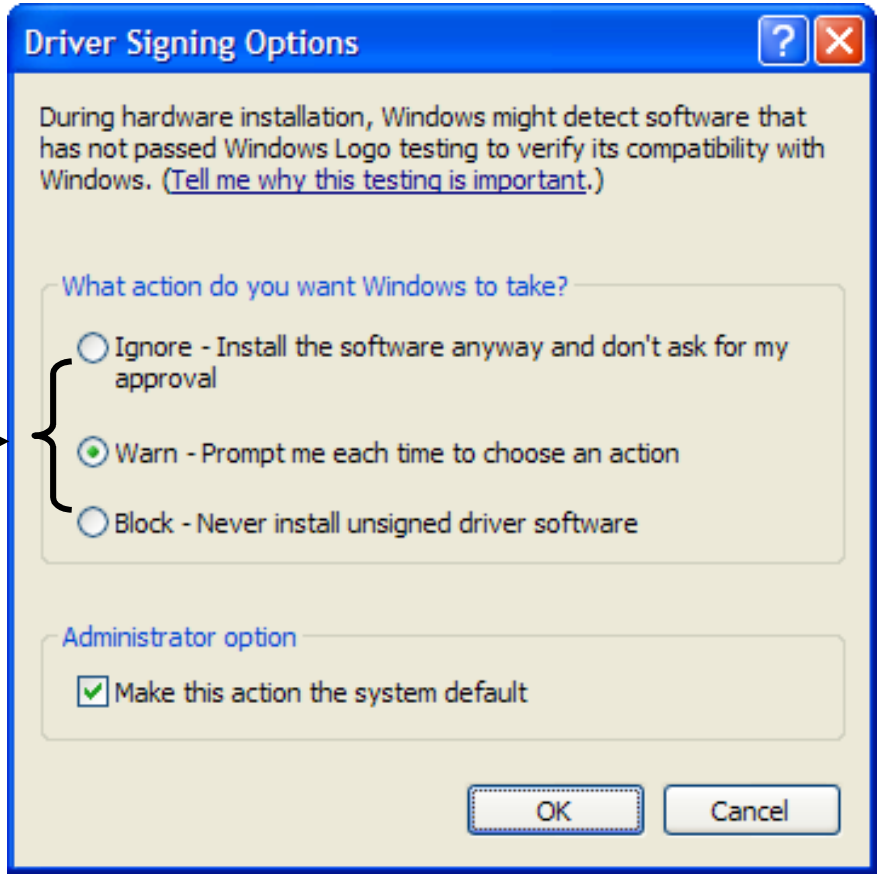
## Driver Signing

- 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.

# Unsigned Driver Installation Options

- There are three driver-signing options:
  - Ignore
  - Warm
  - Block

Driver-signing options



# 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

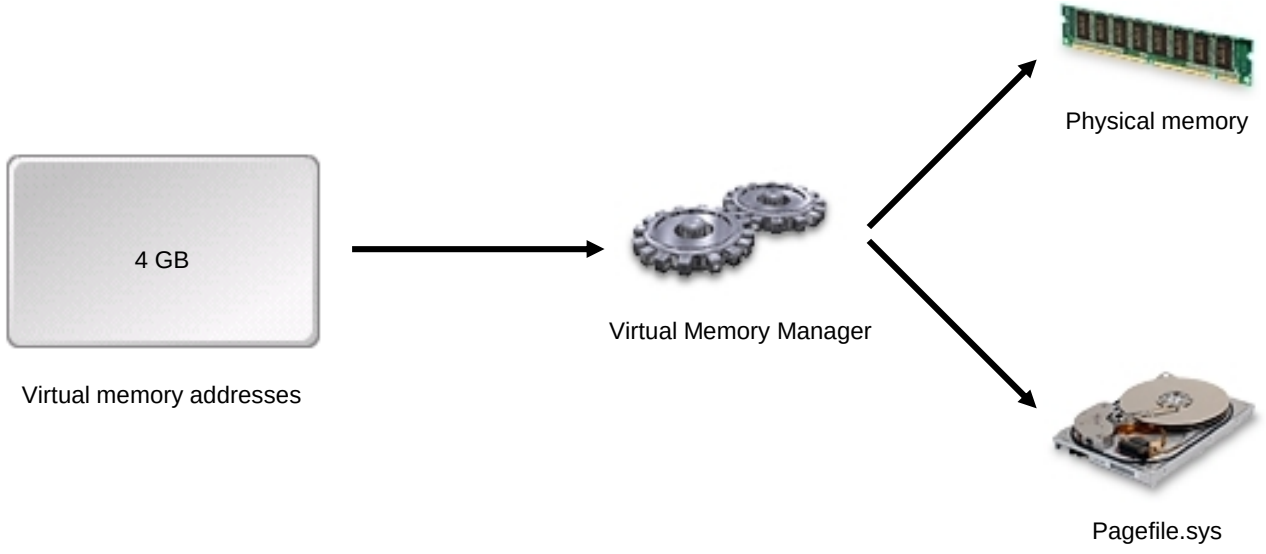
**Activity on Configuring Driver Signing Verification**

## 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

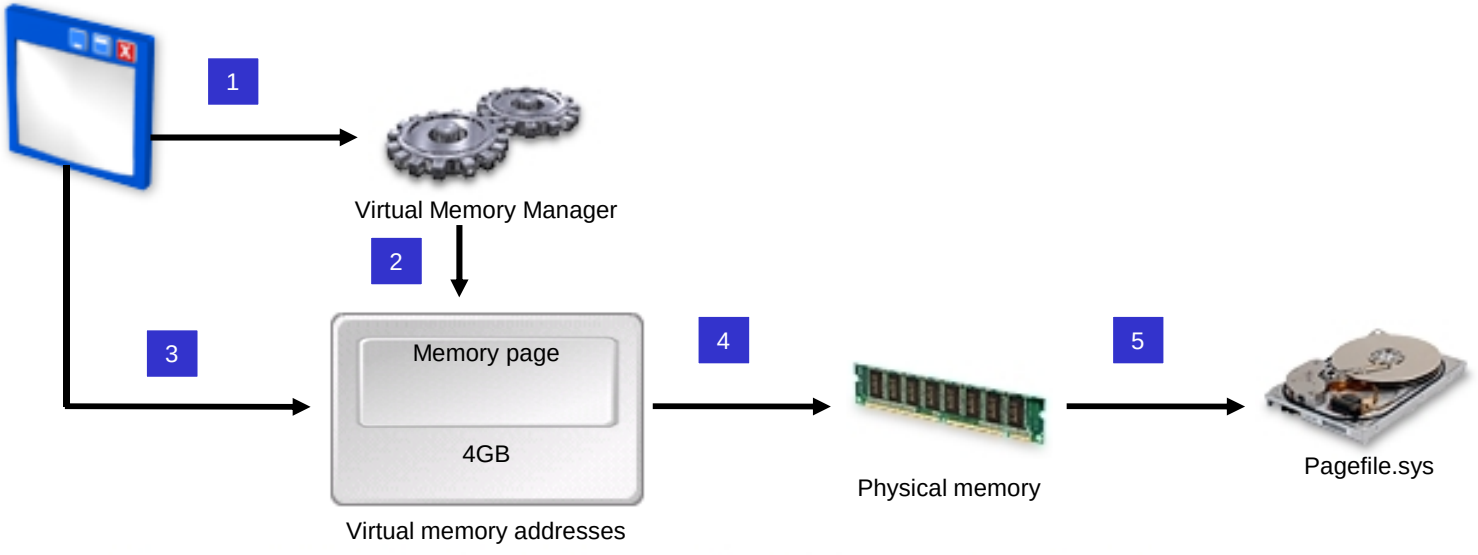
# Virtual Memory

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



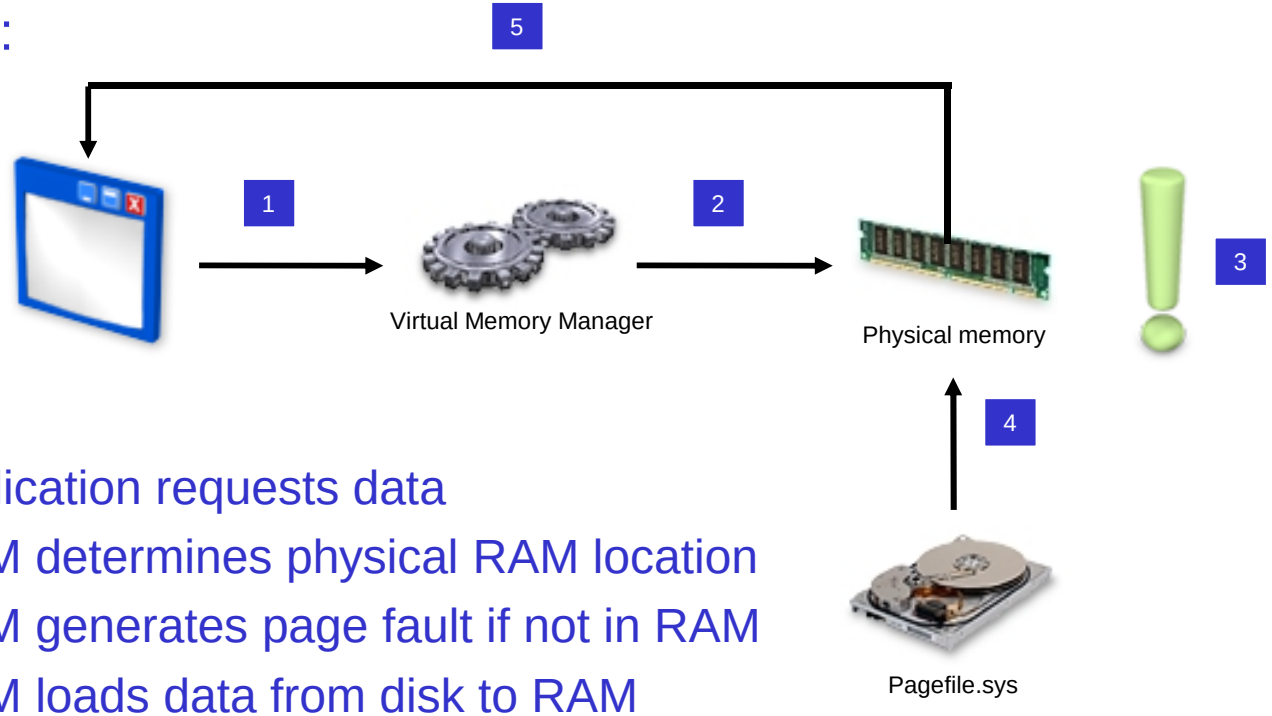
## The Virtual Memory Process

- 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



## The Virtual Memory Process (Contd..)

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



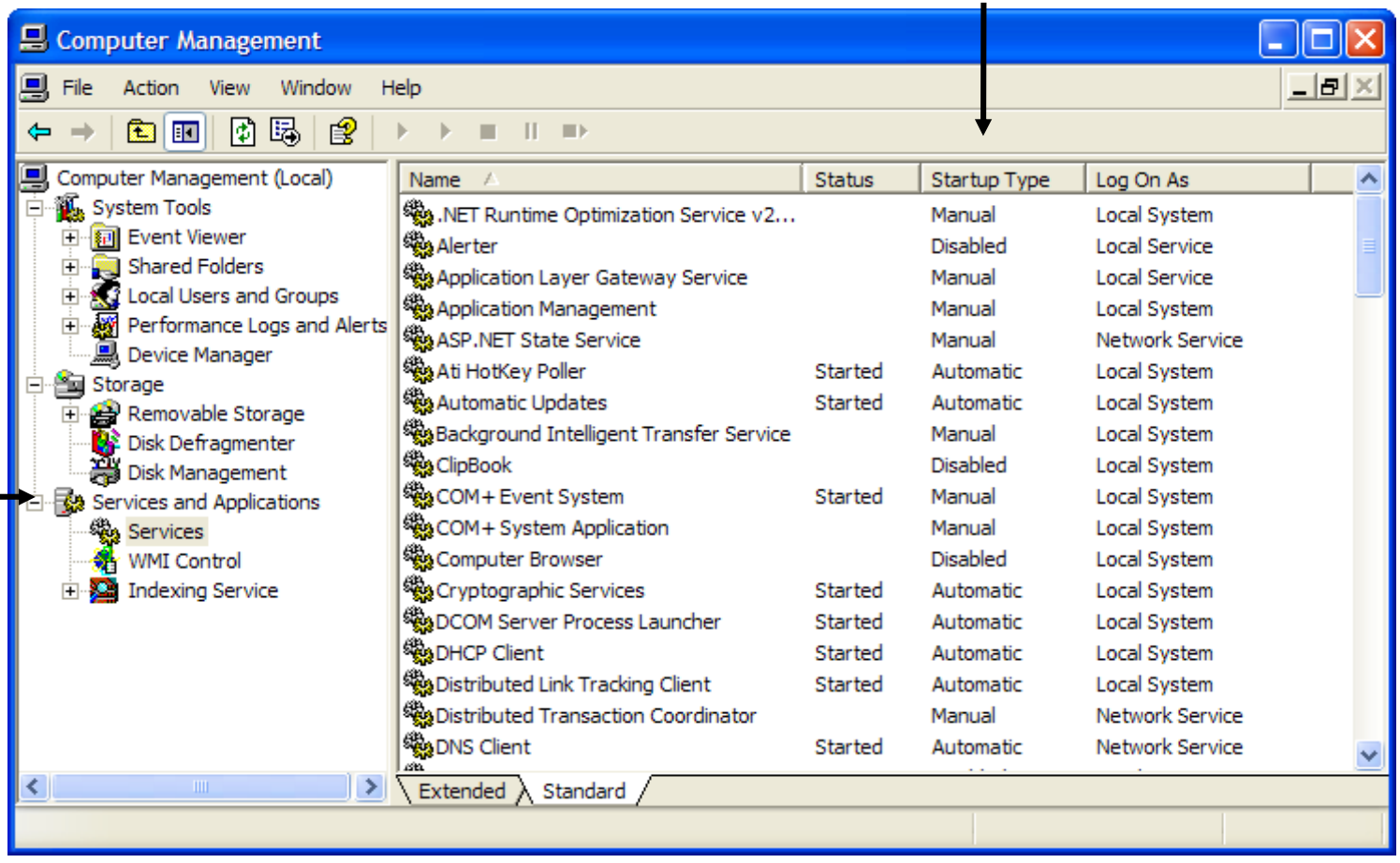

1. Application requests data
2. VMM determines physical RAM location
3. VMM generates page fault if not in RAM
4. VMM loads data from disk to RAM
5. Application retrieves data

## 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..)

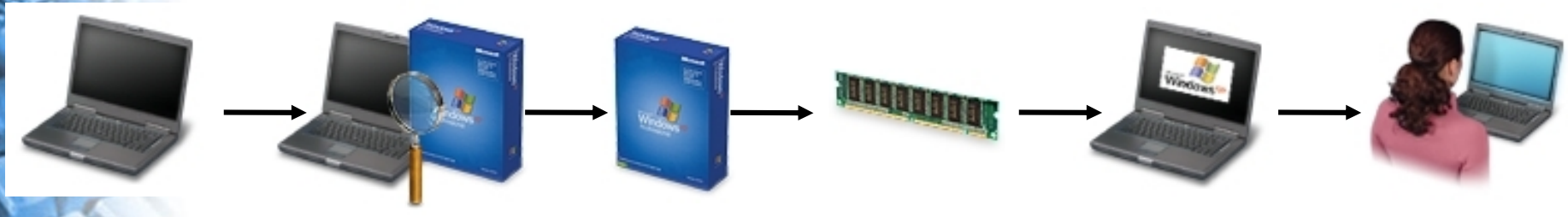
Windows services startup Type




Windows services

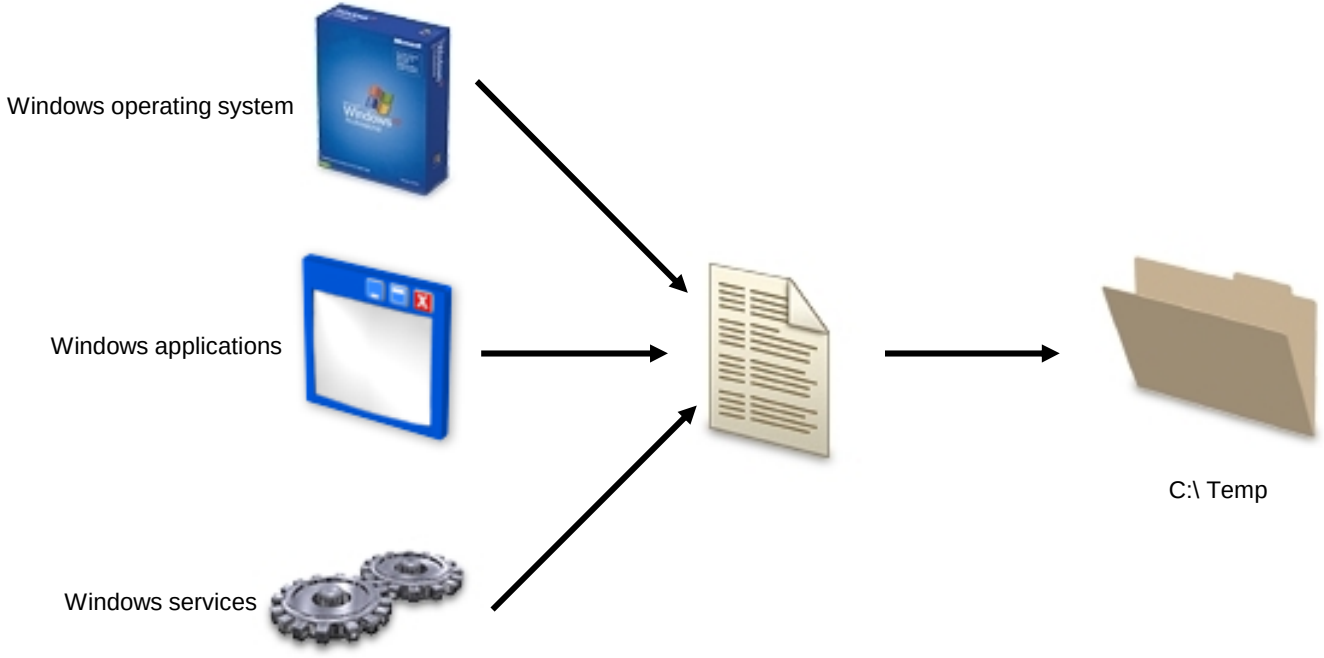
## The Windows XP Boot Process

- The sequences occur during the Windows XP Professional boot process are:
  - Pre-boot sequence
  - Boot sequence
  - Kernel load sequence
  - Kernel initiation sequence
  - Logon sequence



## 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.



## 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.