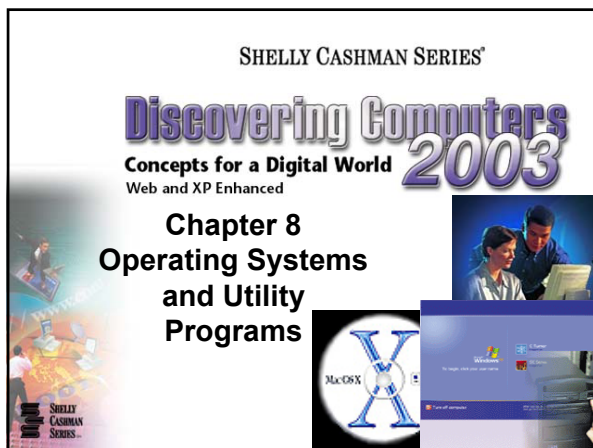




Discovering Computers 2003 Chapter 8 Objectives

Concepts for a Digital World
Web and XP Enhanced

- Describe the two types of software
- Identify various stand-alone operating systems
- Understand the startup process for a personal computer
- Identify various network operating systems
- Describe the term user interface
- Recognize devices that use embedded operating systems
- Explain features common to most operating systems
- Discuss the purpose of the following utilities: file viewer, file compression, diagnostic, uninstaller, disk scanner, disk defragmenter, backup, and screen saver
- Know the difference between stand-alone operating systems and network operating systems

Next
8.2

Discovering Computers 2003 Operating Systems

Concepts for a Digital World
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What is an operating system (OS)?

- Set of programs that coordinates all activities among computer hardware resources

Operating System

Next
8.3

Discovering Computers 2003 Operating Systems

Concepts for a Digital World
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What are the functions of an operating system?

Next
p.83 Fig. 8-1

- start up the computer
- monitor performance and provide housekeeping services
- manage memory
- administer security
- manage programs
- control a network
- schedule jobs and configure devices
- access the Web
- provide user interface

Discovering Computers 2003 Operating Systems

Concepts for a Digital World
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Where is the operating system located?

operating system resides on ROM in handhelds

operating system resides on hard disk in most cases

Next
8.3

Discovering Computers 2003 Operating Systems

Concepts for a Digital World
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What is a cross-platform application?

- One that runs identically on multiple operating systems

runs on Windows 95, 98, 2000, ME, and XP

Next
8.4 Fig. 8-2

Ketabton.com

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What is booting?

- Process of starting or restarting a computer

cold boot

Process of turning on a computer after it has been powered off completely

warm boot

Process of restarting a computer that is already powered on

Next
8.4

Discovering Computers 2003 Operating System Functions
Concepts for a Digital World
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What messages display on the screen when you boot the computer?

Labels on the left side of the screenshot:

- BIOS version and copyright notice
- total amount of memory
- devices detected and tested
- Windows message
- sound card and CD-ROM drivers loaded

Messages on the right side of the screenshot:

- ROM BIOS Version 2.10 A05
Copyright BIOS Tech Inc. 2003
All rights reserved
- 0065536 KB
- Keyboard.....Detected
Mouse.....Detected
Hard Disk Installed WCV AC41600H
Floppy A: Installed
- Starting Windows
- SoundUTIL TSR Version 1.20
Copyright SoundCard Technology 2002-03
- IDE CD-RW Device Driver Version V2.33 (4/20/03)
Copyright Gajin Electric Co.
1 drive(s) selected

Next
8.4 Fig. 8-3

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Concepts for a Digital World
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How does a personal computer boot up?

- 1: Power supply sends signal to components in system unit
- 2: The processor accesses BIOS to start computer

Step 2

Processor

BIOS

Next
8.5 Fig. 8-4

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Concepts for a Digital World
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Step 3: BIOS checks components such as mouse, keyboard connectors, and expansion cards

Step 3

processor

BIOS

expansion cards

CD-ROM drive

Next
8.5 Fig. 8-4

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Step 4: Results of POST are compared to data in the CMOS chip

Step 4

processor

BIOS

expansion cards

CD-ROM drive

CMOS

Next
8.5 Fig. 8-4

Discovering Computers 2003 Operating System Functions
Concepts for a Digital World
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Step 5: BIOS looks for system files in drive A (floppy disk drive) and then drive C (hard disk)

Step 5

processor

BIOS

expansion cards

CD-ROM drive

hard disk

floppy disk drive

CMOS

Drive that contains operating system is called **boot drive**

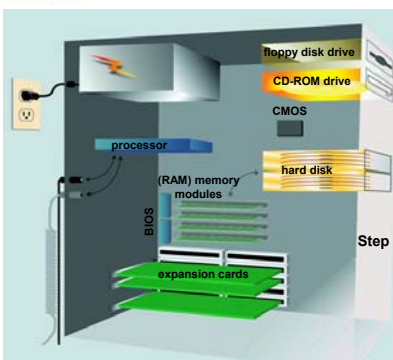
Next
8.5 Fig. 8-4

Discovering Computers 2003
Concepts for a Digital World
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Operating System Functions

Step 6: Boot program loads kernel of operating system into RAM from boot drive

Operating system in memory takes control of computer



Step 6

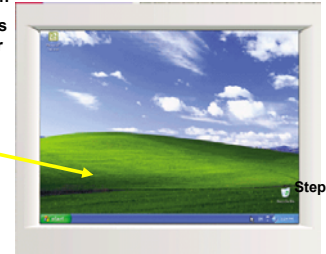
Next
8.5 Fig. 8-4

Discovering Computers 2003
Concepts for a Digital World
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Operating System Functions

Step 7: Operating system loads configuration information and displays desktop on screen

Operating system executes programs in StartUp folder



click Start to display list of applications you can run

Step 7

Next
8.5 Fig. 8-4

Discovering Computers 2003
Concepts for a Digital World
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Operating System Functions

What is an emergency **recovery disk**?

- Floppy disk that contains system files that will start computer when hard disk becomes damaged and computer cannot boot
- Also called **repair disk**, **boot disk**, or **rescue disk**



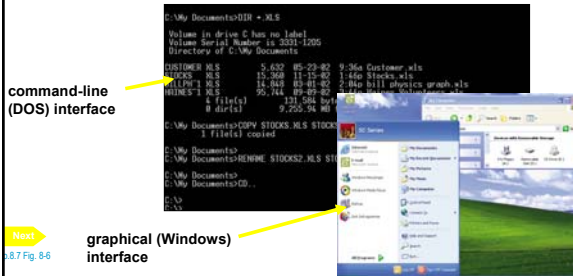
Next
8.6 Fig. 8-5

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Operating System Functions

What is a **user interface**?

- Controls how you enter data and instructions and how information displays on screen



command-line (DOS) interface

graphical (Windows) interface

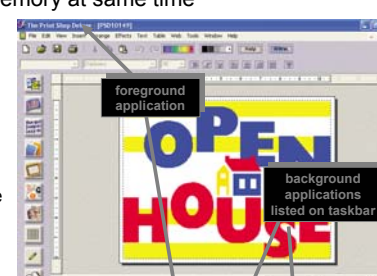
Next
8.7 Fig. 8-6

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Operating System Functions

What is **multitasking**?

- Allows single user to work on two or more applications that reside in memory at same time



foreground application

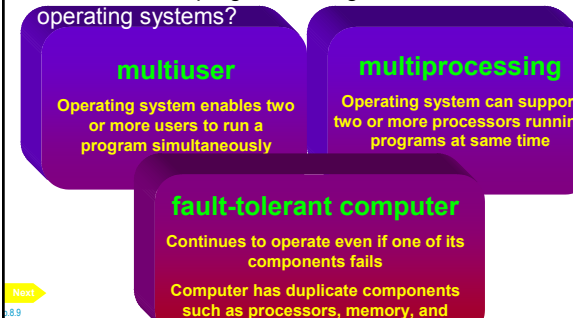
background applications listed on taskbar

Next
8.9 Fig. 8-8

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Concepts for a Digital World
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Operating System Functions

What are other program management features of operating systems?



multiuser
Operating system enables two or more users to run a program simultaneously

multiprocessing
Operating system can support two or more processors running programs at same time

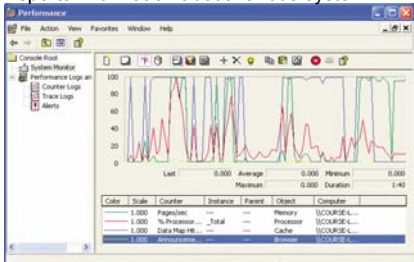
fault-tolerant computer
Continues to operate even if one of its components fails
Computer has duplicate components such as processors, memory, and disk drives

Next
8.9

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How does an operating system monitor performance?

- Provides a program, called **performance monitor**, that assesses and reports information about various system resources and devices

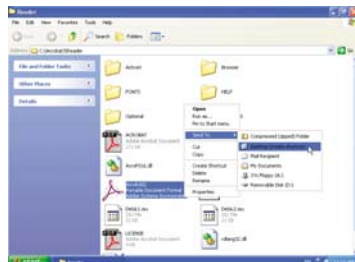


Next
8.14 Fig. 8-14

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How does an operating system manage files?

- Includes a program called **file manager**, such as **Windows Explorer**
 - Commands include Copy, Rename, Delete, Move, Format, and New Folder

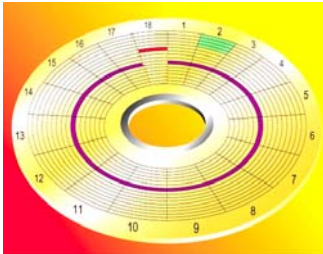


Next
8.15 Fig. 8-15

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What is a **file allocation table (FAT)**?

- A table of information that operating system uses to locate files on a disk
- Reformatting disk usually erases only file allocation table and leaves actual files on disk



Next
8.15

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What are features of a **network operating system**?

- Server** is computer that controls access to network and provides centralized storage area
- Other computers on network are called **clients**



Next
8.15 Fig. 8-16

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How do operating systems administer security?

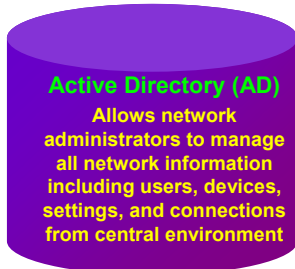
- Most multiuser operating systems allow each user to log on



Next
8.16 Fig. 8-17

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What is **Active Directory (AD)**?



Active Directory (AD)
Allows network administrators to manage all network information including users, devices, settings, and connections from central environment

Next
8.16

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Network Operating Systems

What is Linux?

- Popular, free, open-source multitasking UNIX-type operating system
- Open-source software means code is available to the public



Next
8.24 Fig. 8-25

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Network Operating Systems

What is Solaris?

- UNIX-type operating system designed specifically for e-commerce applications
- Can manage high-traffic accounts
- Incorporates security necessary for Web transactions
- Developed by Sun Microsystems



Next
8.25

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Embedded Operating Systems

What is an embedded operating system?

- Operating system found on most handheld computers and small devices
- Resides on a ROM chip



Pocket PC 2002
Palm OS®
Windows CE

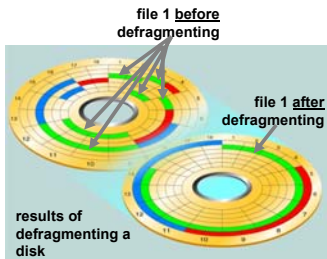
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Utility Programs

What is a utility program?

- System software that performs a specific task
- Examples include:
 - File viewer
 - File compression
 - Diagnostic utility
 - Uninstaller
 - Disk scanner
 - Disk defragmenter
 - Backup utility
 - Screen saver



file 1 before defragmenting
file 1 after defragmenting
results of defragmenting a disk

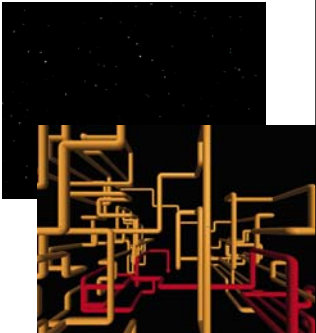
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Utility Programs

What is a screen saver?

- Causes monitor's screen to display a moving image or blank screen if there is no activity for a specified time period
- Prevents ghosting
- Popular for security, business, or entertainment purposes



Next
8.31 Fig. 8-35

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Summary of Operating Systems and Utility Programs

- System software
- Operating systems
- Operating system functions
- Types of operating systems
- Stand-alone operating systems
- Network operating systems
- Embedded operating systems
- Utility programs

Chapter 8 Complete

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