

Floppy Drives - Chapter #7

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Key Terms

Boot record — The first sector of a floppy disk or logical drive in a partition; it contains information about the disk or logical drive. On a hard drive, if the boot record is in the active partition, then it is used to boot the OS. Also called boot sector.

Boot sector — See boot record.

Bootstrap loader — A small program at the end of the boot record that can be used to boot an OS from the disk or logical drive.

Cluster — One or more sectors that constitute the smallest unit of space on a disk for storing data (also referred to as a file allocation unit). Files are written to a disk as groups of whole clusters.

FAT12 — The 12-bit wide, one-column file allocation table for a floppy disk, containing information about how each cluster or file allocation unit on the disk is currently used.

File allocation unit — See cluster.

Formatting — Preparing a hard drive volume or floppy disk for use by placing tracks and sectors on its surface to store information (for example, FORMAT A:).

Read/write head — A sealed, magnetic coil device that moves across the surface of a disk either reading data from or writing data to the disk.

REVIEWING THE BASICS

1. How many sectors per track are there on a 3½-inch high-density floppy disk?

18

2. What two cables are connected to a floppy drive inside a computer?

Data and power cables

3. Is data written to both sides of a floppy disk?

no

4. What is the difference between a sector and a cluster?

Sector is a physical storage and a cluster is a logical storage

5. What is another name for a cluster?

File allocation unit

6. How does the Format command prepare a disk for use?

Creates tracks and sectors and places a boot record, file allocation table, and root directory on the disk

7. What is the purpose of the boot record on a disk?

To store basic information about how the disk is organized

8. If a floppy drive is not working, why is it better to replace the drive than to repair it?

Because floppy drives are now so inexpensive that repairing one is impractical

9. What might cause the error, "General failure reading drive A"?

If you put a disk in a faulty drive and issue a command to access the disk

10. What might cause the floppy drive light to remain on during a boot?

The cable not being attached correctly to pin 1

11. How can you look at a 3½-inch floppy disk and tell if it is a high-density or double-density disk?

High density has 1.44 MB and double density has 720K

12. How do you format a new floppy disk using an OS command? Using Windows Explorer?

Access command prompt and enter Format A: with window explorer you right click 3 1/2 floppy (A:) icon and select format

13. What do you check if you get the error, "Write-protect error writing drive A:"?

The switch, it must be toward the center of the disk

14. What causes the Invalid Drive Specification error?

Trying to access a drive that the OS does not know is available

15. List the steps that you would follow to install a new floppy drive as drive B.

Slide drive into bay, screw it down, connect cable and power cable, and change setup

16. How many pins does a floppy drive data cable have?

34 pin

17. How does the computer distinguish drive A from drive B?

The twist in the cable

18. What is the best way to find out whether a device is causing a problem during a troubleshooting session?

19. What do errors during POST in the 600 range indicate?

Floppy drive didn't pass POST test

20. Besides the physical condition of the drive, what should you check when troubleshooting a floppy drive?

Power supply, the controller board, the motherboard, and CMOS settings

21. How many floppy drives can be installed on a single floppy drive cable?

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THINKING CRITICALLY

1. Your floppy drive fails, so you replace it with a new one. When you power up and check Windows Explorer, you discover that the system does not recognize the new drive. What should you do first?

a. Reboot the PC, enter CMOS setup, and verify that CMOS has the drive configured correctly.

b. Open the case and check that you connected both the data cable and the power cable.

c. Open the case and verify that the floppy drive cable is not installed backward in the connector.

d. Return the drive to the store and ask for a replacement.

2. You purchase a new computer system, but it does not have a floppy drive installed. You purchase a floppy drive and open the case, ready to install it, but you don't find a 34-pin connector on the motherboard. Which of the following options would work for you, and which option is the best choice?

a. Buy a new data cable that uses 40 pins and connect the floppy drive to the 40-pin connector you find on the board.

b. Buy a special converter that lets you connect the floppy drive to the USB connector on the motherboard.

c. Return the floppy drive you purchased and buy an external floppy drive that connects to an external USB port on your system.

d. You cannot install a floppy drive on this system. Just get buy without it.