

Adaptec EZ-SCSI 4.0

for Windows

Quick Reference

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Welcome to Adaptec EZ-SCSI® 4.0. Adaptec EZ-SCSI gives you what you need to use your SCSI devices most effectively with Windows® 95 and Windows NT™. You can also use Adaptec EZ-SCSI on computers running DOS, Windows® 3.1x, or Windows for Workgroups 3.1x.

To learn about Adaptec EZ-SCSI Windows applications, see their online Help. Use this *Quick Reference* to learn about Adaptec EZ-SCSI system requirements and installation procedures; it also has handy troubleshooting information and an explanation of the DOS device drivers and formatting utilities included with Adaptec EZ-SCSI.

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System Requirements (for full installation)

- A 386-based PC or higher with at least 4 MBytes of memory, 10 MBytes of free disk space, and a 3.5-inch floppy drive
- An ASPI-compliant SCSI host adapter and a CD-ROM drive
- Microsoft Windows 95, Windows NT version 3.51 or above, Windows 3.1x, Windows for Workgroups 3.1x, or DOS 6.x or above

Quick Start Instructions

First, install your host adapter and other SCSI devices (see the hardware documentation for details). Then follow the instructions for your operating system software in one of the following sections.

We recommend that after you install Adaptec EZ-SCSI you run *SCSITutor* to learn more about the features of SCSI.

Windows 95 or Windows NT

If you want to install Windows 95 or Windows NT on a new computer system, you may not be able to access your SCSI CD-ROM drive at first. (Usually, you install Windows 95 and Windows NT from a CD-ROM disc.) To gain access to your CD-ROM drive, follow the DOS Quick Start instructions on page 4. Then reboot your computer and follow these instructions:

- 1 Install Windows 95 or Windows NT version 3.51 or above, and start it running on your computer.
- 2 Insert the Adaptec EZ-SCSI Setup Diskette in your floppy disk drive.
- 3 Click the **Start** button and select **Run**.
- 4 Type a:\setup if you are using the A drive or b:\setup if you are using the B drive. Then click **OK**.
- 5 Follow the instructions that appear on the screen.

Windows/Windows for Workgroups 3.1x

- 1 Install Windows 3.1x or Windows for Workgroups 3.1x and start it running on your computer.
- 2 Insert the Adaptec EZ-SCSI Setup Diskette in your floppy disk drive.
- 3 Select **File/Run** from the Program Manager menu.
- 4 When the Run dialog box appears, type a:\setup if you are using the A drive or b:\setup if you are using the B drive. Then click **OK**.
- 5 Follow the instructions that appear on the screen.

DOS

- 1 Install DOS 6.x or above and start it running on your computer.
- 2 Insert the Adaptec EZ-SCSI Setup Diskette in your floppy disk drive.
- 3 At the DOS prompt, type `a:\dosinst` if you are using the *A* drive or `b:\dosinst` if you are using the *B* drive. Then press **Enter**.
- 4 Follow the instructions that appear on the screen.

Troubleshooting Tips

SCSI Device Troubleshooting

Review this checklist if your newly-installed SCSI disk drives, CD-ROM drives, and other devices do not seem to work properly:

- Be sure that termination is correctly set for all devices on the SCSI bus, as described in your host adapter documentation.
- Be sure there are no hardware conflicts such as devices in your computer trying to use the same interrupts (IRQs) or DMA channels.
- Be sure the cables connecting the external and internal SCSI devices and the host adapter are attached securely. Also be sure the pin-1 orientation is correct for internal cables. See the host adapter documentation for more information.
- Be sure that each SCSI device connected to the host adapter has a unique SCSI ID.
- Be sure CD-ROM drives and other SCSI devices are attached to a power source and are turned ON.

Windows 95/Windows NT Troubleshooting

What is a miniport driver, and how do I make sure that the miniport driver for my host adapter is installed correctly?

Miniport drivers are a new kind of 32-bit protect mode device driver used by Windows 95 and Windows NT to control host adapters and other kinds of devices. Windows 95 and Windows NT include a set of miniport drivers for various types of SCSI host adapters. The host adapter miniport driver is automatically installed and configured during Windows 95 and Windows NT installation if your host adapter is already installed. To make sure the driver is installed correctly in systems running Windows 95, open the Control Panel, double-click on **System**, and click the **Device Manager** tab. Then double-click the **SCSI Controllers** icon; you should see the model name of the SCSI host adapter(s) installed in your system.

What if there is no SCSI controllers icon under Device Manager, or the model name of the host adapter does not appear under Device Manager?

If the SCSI controllers icon or your host adapter's model name do not appear, open Control Panel and double-click the **Add New Hardware** icon. Let Windows search for the host adapter by selecting **Yes** on the second screen of the Add New Hardware Wizard.

If Windows does not detect the host adapter, run the Add New Hardware Wizard again. This time, select **No** on the second screen of the

wizard, then select **SCSI controllers** on the next screen. Select the name of your host adapter when it appears.

If the name of your SCSI host adapter does not appear, you may be able to find its miniport driver on the Windows 95 CD-ROM or on the Adaptec EZ-SCSI Setup Diskette. Follow these steps:

- 1 Place the Windows 95 CD-ROM in your CD-ROM drive and run the Add New Hardware wizard.
- 2 Select **No** on the second screen, and select **SCSI controllers** on the next screen.
- 3 Click on the **Have Disk** button, then click the **Browse** button.
- 4 Look in the `\drivers\storage` directory of the CD-ROM and select the name of your SCSI host adapter if it appears.

Follow steps 1-3 to check for miniport drivers on the Adaptec EZ-SCSI Setup Diskette. When you click the **Browse** button on the wizard screen, simply select the floppy drive where the Setup diskette is located. (The Setup diskette only ships with the CD-ROM version of Adaptec EZ-SCSI.)

What if a yellow exclamation point or a red X appears in Device Manager in front of my host adapter?

This means there is some kind of resource problem. First, see if the names of any host adapters appear that are not actually installed in your computer. If so, select the name and click **Remove**. If a red X

appears in front of your host adapter name, remove all the host adapter references under SCSI Controllers and run Add New Hardware, as described in the previous question/answer. If a yellow exclamation point appears in front of your host adapter name, the resources that the driver uses probably do not match the resources used by the hardware. Double-click the host adapter name, then click on the Resource tab. Deselect the Use automatic settings box and edit the resources (Interrupt Request, Direct Memory Access, etc.) so they match those used by the host adapter. If the problem still remains, there is probably a hardware resource conflict between the host adapter and other hardware in your computer. You can fix this by changing the hardware resource settings. (See your hardware documentation.)

What do I need to do if I change or upgrade my host adapter?

- 1 Open the Control Panel, double-click on **System**, and click the **Device Manager** tab.
- 2 Double-click the **SCSI Controllers** icon, select the name of the old host adapter, and click **Remove**.
- 3 Turn OFF the computer and physically remove the currently installed host adapter.
- 4 Install the new host adapter according to the instructions in the hardware documentation.

- 5 Turn the computer ON. If the new host adapter supports Plug and Play, Windows will install and configure it automatically. Otherwise, run Add New Hardware to make sure the new driver is loaded.

If I am running under Windows 95, do I need lines for the Adaptec real mode ASPI drivers and mscdex in my config.sys and autoexec.bat files?

Usually, you do *not* need to use these real mode ASPI drivers, because the new Windows miniport drivers support most SCSI host adapters and SCSI devices. However, you need to load the drivers (including *mscdex*, if you have a CD-ROM drive) if any of the following is true:

- You are running in MS-DOS mode
- You are using a scanner or another SCSI device with *config.sys*- or *autoexec.bat*-based drivers, such as HP's *sjix.sys*
- You have an older model SCSI-1 CD-ROM drive that Windows 95 does not support
- You are using a CD-Recorder drive (however, some newer models of CD-Recorder drives can use the embedded Windows miniport drivers)

To install the Adaptec EZ-SCSI DOS drivers, click the **Start** button and select **Restart the computer in MS-DOS mode**. When the DOS prompt appears, follow the Quick Start instructions for DOS on page 4.

My CD-ROM drive doesn't work properly under Windows 95.

Some older models of SCSI CD-ROM drives are not compatible with the embedded Windows 95 CD-ROM driver. You can add support for the CD-ROM drive by doing the following:

- 1 Click the **Start** button and select **Restart the computer in MS-DOS mode**.
- 2 When the DOS prompt appears, follow the Quick Start instructions for DOS on page 4.
- 3 When you are finished running Adaptec EZ-SCSI for DOS, find the file named *cdtsd.vxd* in the *windows\system\iosubsys* directory and rename it *cdtsd.sav*.

My CD-ROM drive shows up as more than one icon under My Computer.

The mapping between *mscdex*, which runs in real mode, and the Windows 95 CD-ROM driver does not match. You can correct this in one of two ways:

- Comment out the line that loads *mscdex.exe* in the *autoexec.bat* file.
- Change the /L switch on the line that loads *mscdex.exe* in the *autoexec.bat* file so it assigns the CD-ROM drive the next highest logical drive letter after the hard disk drives.

SCSI Tape Backup Emergency File Restore

Adaptec EZ-SCSI includes a 32-bit Windows 95 backup application for SCSI tape drives. (This application is currently not supported under Windows NT.) If you back up your files regularly, following the online instructions for this program, you will be able to recover your data in the event of file loss or disk failure.

If you lose your files for some reason, follow these steps to restore the files from the tape backups:

- 1 Repair or replace your disk drive, if necessary.
- 2 Reinstall Windows 95, if necessary.
- 3 Reinstall Adaptec EZ-SCSI 4.0, which includes the tape backup application.
- 4 Restore the files from your tape backups, following the online directions.

Information for DOS/Windows 3.1x Users

The following information may be useful if you install Adaptec EZ-SCSI on a computer running DOS, Windows 3.1x, or Windows for Workgroups 3.1x.



Note: The *Windows 95/Windows NT Troubleshooting* section on page 6 describes a few situations when you may need to use the DOS/Windows 3.1x drivers and ASPI managers under Windows 95 or Windows NT.

DOS and Windows 3.1x Device Drivers

Device drivers are software programs that enable your computer to communicate with SCSI devices such as hard disk drives, CD-ROM drives, and scanners. Each kind of device requires a different device driver. Adaptec EZ-SCSI includes several DOS/Windows 3.1x device drivers that are copied to your hard disk during installation. Adaptec EZ-SCSI adds command lines to your *config.sys* and *autoexec.bat* files to load these device drivers if it finds these kinds of devices on your computer.

To learn more about the Adaptec EZ-SCSI device drivers, including their command line option information, see the online *Adaptec EZ-SCSI Online Reference*, a Windows Help application.

DOS and Windows 3.1x ASPI Managers

ASPI (Advanced SCSI Programming Interface) managers are software programs that enable the SCSI device drivers, your host adapter, and your SCSI devices to communicate with each other. ASPI managers are written for a specific operating system, such as DOS, and a specific family of Adaptec host adapters.

Adaptec EZ-SCSI includes several ASPI managers for DOS/Windows 3.1x. When you install Adaptec EZ-SCSI on these operating systems, it detects what kind of host adapter is installed in your computer and automatically configures your system with the correct ASPI manager. To learn more about these ASPI managers, including their command line option information, see the *Adaptec EZ-SCSI Online Reference*, a Windows Help application.

DOS Formatting Utilities

Adaptec EZ-SCSI includes several DOS-based formatting utilities:

Low-level Formatter (*scsifmt*)

Use the DOS-based *scsifmt* utility for low-level formatting of SCSI hard disk drives, removable media, Floptical[®] drives, and magneto-optical drives. You can also use it to scan a disk device for surface defects before you store data on it.

Run *scsifmt* from the DOS prompt, not from the Windows MS-DOS prompt. Before you run it, be sure the disk devices you want to format are connected to the host adapter and that they are powered. Then follow these steps:

- 1 Change to the directory where *scsifmt.exe* is located (usually *c:\scsi*), type *scsifmt* at the DOS prompt, and press **Enter**.



Note: If you are formatting a SCSI disk device that supports more than one LUN (for example, Iomega's Bernoulli dual multidrives) type *scsifmt /L* at the command line.

- 2 When the first screen appears, read it and press **Enter** to continue. (Press **F1** at any time to view Help.) Information about your SCSI disk devices appears on the screen.
- 3 Use the arrow keys to move the highlight bar to a disk device you want to format or verify, then press **Enter**.
- 4 When the next screen appears, select either **Format** or **Verify** (to verify that the disk is free of surface defects), then press **Enter**.



Caution: Back up important data before you format the disk device! A low-level format erases *all data* from the disk.

- 5 If you select **Format**, confirm that you want to format the disk, then wait while the disk device is formatted. This may take a long time if the disk is large.

If you select **Verify**, you can press **Esc** at any time to stop the verification process. (This does not damage the disk.) If the utility finds bad blocks on the disk, it displays information about them. You can reassign the bad block(s) to prevent data from being stored there.

- 6 Repeat steps 3, 4, and 5, as needed, to format or verify other disk devices. When you are finished, press **Esc** to exit.

Formatter and Partitioner (*afdisk*)

Use the DOS-based *afdisk* utility to partition and format SCSI hard disk drives, Floptical drives, and magneto-optical drives. You can also use *afdisk* to remove DOS and non-DOS partitions from a disk drive and to format removable media in standard hard disk format, OS/2 floppy format, or DOS V (Japanese) format.



Note: Use *afdisk* only if the disk device is *not* controlled by the host adapter BIOS—that is, if the host adapter does not have a BIOS or if its BIOS is not enabled. If the disk device *is* controlled by the host adapter BIOS, use the DOS *fdisk* utility to partition and format the disk device. (See the MS-DOS documentation.)

Run *afdisk* from the DOS prompt only, not from the Windows MS-DOS prompt. Before you run it, be sure the disk devices you want to format and partition are connected to the host adapter and that they are powered. Then follow these steps:

- 1 Change to the directory where *afdisk.exe* is located (usually *c:\scsi*), type *afdisk* at the DOS prompt, and press **Enter**.

Information about your SCSI disk devices appears on the screen. (The number that appears after *Target* is the device's SCSI ID.)

- 2 Use the arrow keys to move the highlight bar to the disk device you want to partition, then press **Enter**.
 - If the selected disk device is *controlled by the host adapter BIOS*, you can view information about it but you cannot partition it with *afdisk* (Use the DOS *fdisk* and *format* utilities.)
 - If the selected disk device is *unpartitioned*, you must partition it before you can format it. To do this, follow the instructions on the screen. (Press **F1** to see an explanation of the partitioning options.)

Information about the selected disk device appears in the lower left of the screen. Disks smaller than 1 Gigabyte have 64 heads, 32 sectors per track, and cylinders equal to the number of MBytes of available capacity. Disks larger than 1 Gigabyte have 255 heads, 63 sectors per track, and one cylinder per 8 MBytes of available capacity.

- 3 To create a new partition on the disk device, press **Ins**. A screen similar to this appears:

Adaptec SCSI Disk Setup Program v3.33

Select SCSI Device to Partition		Type	Start	End	Megs
HA #0 - Target 0	QUANTUM LP1				
HA #0 - Target 4	IOMEGA BET				

Logical Drive Info	
64	head
32	sectors/track
85	cylinders
512	bytes/sector
85 megabytes	
2AEEFh blocks	

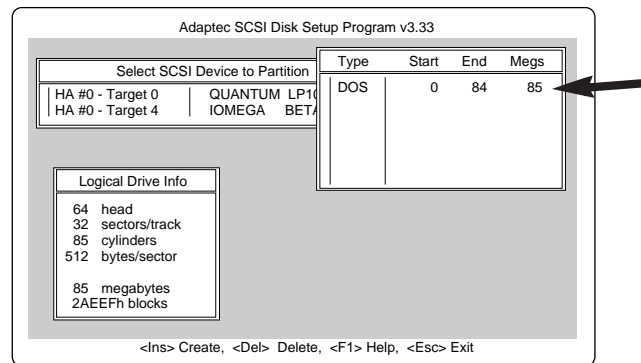
Create a DOS Partition	
Start Cylinder:	0
End Cylinder:	84

<Ins> Create, Delete, <F1> Help, <Esc> Exit

The Create a DOS Partition window suggests that you create one partition on the disk device, equal to its entire capacity. If this is what you want to do, skip to step 5.

- 4 To change the size of the partition, use the arrow keys to select **Start Cylinder** and **End Cylinder**, and type in the numbers you want. Partitions up to 2 Gigabytes are supported.
- 5 When the number of cylinders is what you want, press **Esc**. When the confirmation prompt appears, select **Yes** and press **Enter** to create the partition.

To create more partitions on the same disk device, repeat steps 3, 4, and 5. As you create partitions on the disk, they are added to the window at the upper right of the screen, as shown here:



- 6 Press **Esc** to return to the Select SCSI Device to Partition window. If you want to partition a different disk device, select the device from the list and repeat the earlier steps.
- 7 To quit *afdisk*, press **Esc** and select **Yes** to confirm that you want to quit.

Removable Media Manager (rmvtool)

Use the DOS-based *rmvtool* utility to lock, unlock, and eject removable media—for example, a cartridge in a SyQuest removable cartridge drive. You run *rmvtool* by entering commands at the DOS prompt. Here are the commands for a removable drive installed at SCSI ID 5:

- To lock the disk media: `rmvtool /lock /ID=5`
- To unlock the disk media: `rmvtool /unlock /ID=5`
- To eject the disk media: `rmvtool /eject /ID=5`



Note: Some devices do not support the Eject command.

If the device is at another SCSI ID, type that number instead of 5. If you are not sure which device is at which SCSI ID, type `rmvtool /?` at the DOS prompt and press **Enter**. A list of SCSI devices appears. (Devices that support removable media are marked.)

If your computer has two or more host adapters, you need to add another number to the command. For example, if you have two host adapters, one of them is host adapter 0 and the other is host adapter 1. (This information appears when you type the `rmvtool /?` command.) So if the removable disk drive is at SCSI ID 3 on host adapter 1, you would enter this command to lock the disk media:

```
rmvtool /lock /ID=1:3
```

You can issue *rmvtool* commands for two or more devices, and you can add the commands to the *autoexec.bat* file. If you add this command line to your *autoexec.bat* file, *rmvtool* locks the media in the two devices when the computer boots. This prevents the disk media from being removed until another command is issued to unlock it.

```
rmvtool /lock /ID=4 /ID=5
```

Adaptec Customer Support

If you have questions about installing or using Adaptec EZ-SCSI, read this *Quick Reference* first—you will find answers to most of your questions here. Also, refer to the Adaptec EZ-SCSI *readme.txt* file. If you need further assistance, please contact us. We offer the following support and information services:

- For technical support (answers to technical questions, information about the Adaptec BBS, FTP and WWW Servers, and access to the Interactive Fax system), call 800-959-SCSI (7274) or 408-945-2550, 24 hours a day, 7 days a week. To speak with a product support representative, call 408-934-SCSI (7274), M–F: 6:00 a.m. to 5:00 p.m., Pacific Time. After these hours, on weekends, and on holidays, product support is also available for a fee at 800-416-8066.
- For sales information, call 800-959-SCSI (7274) or 408-945-2550, M–F: 6:00 a.m. to 5:00 p.m., Pacific Time.
- The Adaptec Electronic Bulletin Board Service (BBS) provides information on software upgrades, answers to common questions, and other topics. The BBS is available 24 hours a day, 7 days a week, at 408-945-7727; 1200/2400/9600/14,400/28,800 bps, 8 data bits, 1 stop bit, no parity.
- The Adaptec FTP and WWW Servers provide information on software upgrades, product literature, answers to common questions, and other topics. The FTP and WWW Servers are available from the Internet 24 hours a day, 7 days a week, at [ftp.adaptec.com](ftp://ftp.adaptec.com) and <http://www.adaptec.com>.
- The Adaptec Interactive Fax system provides answers to common questions, product literature, and current information about Adaptec products and services. The Adaptec Interactive Fax system is available 23 hours a day, 7 days

a week. The Fax system is out of service 1 hour each day. You can call this service directly at 408-957-7150.

- To order Adaptec software and SCSI cables, call 800-442-SCSI (7274) or 408-957-SCSI (7274), M-F: 6:00 a.m. to 5:00 p.m., Pacific Time.
- To request additional documentation for Adaptec products, call 800-934-2766 or 510-732-3829, M-F: 6:00 a.m. to 5:00 p.m., Pacific Time.