The setup program automatically installs the necessary files on your
computer's hard drive and updates two files that affect your computer's
operation - CONFIG.SYS and AUTOEXEC.BAT.

Some users may need to manually change these files. If so, refer to
"Manually Editing CONFIG.SYS and Manually Editing AUTOEXEC.BAT", later in
this text for instructions.

Before installing the CD-ROM software, verify that the computer is running
MS-DOS version 3.30.00 or higher. If the computer is running version 5.0,
see "DEVICEHIGH" under "Manually Installing MS-DOS Extensions for CD-ROM,"
for additional information. (later in this text)

The diskettes provided with your CD-ROM drive contain the following files:

° MSCDEX.EXE contains the MS-DOS Extensions for CD-ROM.
° DD250.SYS is the device driver for the adapter interface card in an
  AT-type computer. DD250.SYS runs on an Intel 80286, 80386, and 80486 or
  higher processor (or compatible). If you attempt to load DD250.SYS on a
  noncompatible computer, an error message appears and DD250.SYS does not
  load.
° DD250XT.SYS is the device driver for XT-type computers. DD250XT.SYS runs
  on an Intel 8086 or an 8088 (or compatible) processor.
° SETUP.EXE is an automated installation program.
° USRGUIDE.TXT is an information file that contains the latest software
  updates. Below is a listing of topics discussed in USRGUIDE.TXT.

        Section 1: If there will be only one CDROM drive on your system
        Section 2: If there will be more than one CDROM drive
        Section 3: If you are connected to a network
        Section 4: If you want to load the CDROM software into upper memory
        Section 5: If you just want to update the CDROM software files
        Section 6: If you want to verify the CDR-3100 host adapter settings
        Section 7: If you want to use host RAM for buffers (/M option)

To view this file simply use the MS-DOS TYPE command. First change to the
drive where the file is located, and then follow the example below:

        type usrguide.txt |more and press ENTER

This will show the contents of the USRGUIDE.TXT file one page at a time.

Installing CD-ROM Extensions Using SETUP.EXE:

Now that the adapter interface card and the CD-ROM drive are installed, you
must load the instructions that let your CD-ROM work. Your CD-ROM drive
comes with both 5 1/4-inch and 3 1/2-inch diskettes. Use the diskettes that
correspond to Drive A on your system.

Notes:

° If you have created a sophisticated AUTOEXEC.BAT file, you might want to
  manually install the MS-DOS Extensions for CD-ROM to control the
  sequencing of command lines. (See "Manually Editing AUTOEXEC.BAT.")

° If the computer is connected to a network, do not use the automated SETUP
  program.

To install the CD-ROM software on your computer's hard drive, do the
following:

1. Insert the CDR-3100 Device Driver diskette into Drive A.

2. Type a: and press ENTER to change the default drive to Drive A.

3. At the prompt, type setup and press ENTER.

4. Follow the screen prompts to proceed with setup.

Note: Press F1 on the keyboard to access the HELP screen if you need more
      information.

SETUP.EXE asks you questions that let you configure the system to your
preferences. It also provides you with an option to escape and quit the
installation procedure without making any changes to your system.

Note: Your CD-ROM Drive does not work until you complete SETUP.EXE or manual
      software installation.

Select the default settings by pressing RETURN on the computer keyboard. To
change the default response (due to changes made on the adapter interface
card), type in your choice at the prompt.

SETUP.EXE does its best to make the correct entries in your AUTOEXEC.BAT and
CONFIG.SYS files. However, if you do not like the changes made, you can
recover your original files. SETUP.EXE has saved them under the names
AUTOEXEC.001 and CONFIG.001.

After SETUP.EXE has stored the options, the user is prompted to reboot the
system to allow the changes to take place.

Manually Installing MS-DOS Extensions for the CD-ROM:

This section explains how to manually install the CD-ROM software and
configure the MS-DOS Extensions.

Note: Follow the procedures in this section only if you do not use
      SETUP.EXE.

To install the CD-ROM software, follow these directions:

1. Make a CD-ROM directory. Type:

    c: and press ENTER

    When the c: prompt appears, type:

    cd\ and press ENTER

    At the c: prompt, type:

md CDROM and press ENTER

2. When the c: prompt appears again, change into your new directory. Type:

     cd CDROM and press ENTER

3. Copy all files from the CD-ROM diskettes onto the hard drive. Type:

     copy a:*.* and press ENTER

Now you are ready to manually configure the MS-DOS Extensions.

Manually Editing the CONFIG.SYS:

CONFIG.SYS automatically configures the computer at start-up by installing
software to control optional devices. When you turn on your computer, it
reads this file and loads the specified drivers.

You must add or make changes to the CONFIG.SYS file (using MS-DOS EDLIN or
another ASCII text editor) so your system recognizes the CD-ROM hardware.
For detailed information on the CONFIG.SYS file, refer to your MS-DOS
manual.

LASTDRIVE

Look at the contents of your CONFIG.SYS file to determine if there is a
LASTDRIVE command.

At start-up, MS-DOS recognizes five drive letters (A to E), no matter how
many physical drives you have on your system. The LASTDRIVE command sets the
maximum number of drives that you can access and should be the first line in
the CONFIG.SYS file. Any extra drives that you want to use must be defined
with LASTDRIVE.

Modify or add this command so that it reads:

LASTDRIVE = [letter]
(where [letter] is any letter from D to Z).

Notes:
° Do not type in the brackets ([]); just enter the letter
° Common practice is to set LASTDRIVE = Z which permits maximum expansion.

DEVICE

The DEVICE command in CONFIG.SYS loads the device driver for the CD-ROM
drive. At the same time, it names and configures the device with parameters
so the MSCDEX.EXE extensions can find the device driver and any selected
options.

This command is formatted as:

DEVICE=C:\driver.sys /D:Device NAME /P:port addr /I:IRQ /C:cache /M:bfrs /V:

Note: This should be typed as a one-line entry.

DEVICE = C:\ indicates the Root Directory on Drive C.

/D: - is the device identifier. The Device NAME parameter is what MSCDEX.EXE
      uses to find the device driver. Before the device driver is installed,
      you can edit the CONFIG.SYS file to change the default name to an
      alternate Device NAME.

MS-DOS requires every device to have a different name. The command line
parameter /D: provides a simple way for you to change this name when a file
or application is using the default name as a file or device driver. If you
do not use the default Device NAME, select your Device NAME according to the
following guidelines:

° Be sure the device name is not also a filename. If there is a file in your
  current directory that has the same name as the device driver, MS-DOS
  attempts to open the file instead of the device driver.
° Choose a Device NAME that is not likely to be chosen as a file name in the
  future.
° The Device NAME can be up to eight characters long.
° Legal characters in the device name are the same as those used for
  filenames.

Example:

DEVICE = C:\DD250.SYS /D:MY_ID

Record the device name you choose. You use it again later in the
installation procedure.

/I: - lets you change the IRQ line selection from the default (3) to 4, 5,
      or 6.

Faxback Document # 2398 provides information on selecting an IRQ setting.

Note: Ensure that the IRQ line selection in the software selection matches
        the IRQ number physically selected on the adapter interface card.

/V: - sets the driver to display the initial boot message. If you do not
      want to see the message, omit this option.

/C: - lets you select 0-99 tracks for the Table of Contents (TOC) cache
      size. If you select 53, the TOC cache size shows 53. If you do not
      make any changes, TOC (/C:) enters the default number of "99" (/C:99).

/P: - lets you select a port address other than the default value of 340h.
      Selections are 300h, 310h, and 330h. The letter "h" indicates that the
      value is in hexadecimal code; do not enter the "h" when entering the
      value.

Faxback Document # 2398 provides information on selecting a port address.

Note: Verify that the port address does not conflict with existing device
      assignments.

/M: - lets you allocate read buffers in system RAM to supplement the 13
      buffers on the adapter card. Each additional buffer hold one 2K sector
      and increases the size of the device driver by 2500 bytes. You can

select up to 32 additional buffers; however, the recommended value is 6 (/M:6). /M reflects the number of additional buffers you choose. If no choice is made, the Device NAME (/M:) reflects the default of "0" (/M:0).

DEVICEHIGH

DEVICEHIGH affects only 80386 computers running MS-DOS 5.0, with upper memory enabled. DEVICEHIGH lets you load device drivers into high memory so more conventional memory is available to you. If there is not enough upper memory available, the driver is loaded into conventional memory as usual. Refer to an MS-DOS 5.0 User's Guide for details on how to use DEVICEHIGH.

Note: Before you can use DEVICEHIGH, you must enable the upper memory area. You use the same option parameters whether you load the CDR-3100 device driver with DEVICE or DEVICEHIGH.

We recommend you first use DEVICE, with all desired option settings, and the /V option to determine how much memory the device driver requires.

Note the value listed for Size of resident memory. Enter this, without the h, as the hexadecimal size parameter in the DEVICEHIGH statement, as described in the MS-DOS 5.0 User's Guide.

Changing the value of the /C: or /M: options changes the size of the device driver. If the driver is loaded high with enough memory for the basic driver but not enough for all requested memory buffers, the driver allocates only as many buffers as will fit.

┌─────────────────────────────────────┐
│ Manually Editing the AUTOEXEC.BAT: │
└─────────────────────────────────────┘

You must edit AUTOEXEC.BAT it includes an entry that reads MSCDEX.EXE each time you turn on your computer. Refer to your MS-DOS User's Manual for more information on the AUTOEXEC.BAT file.

Notes:

° MSCDEX.EXE does not function if it is loaded in upper or high memory. Do not "loadhigh" these extensions in the AUTOEXEC.BAT file.
° If your computer is connected to a network, the network software must load before the MSCDEX.EXE, (the MS-DOS Extensions for CD-ROM) does not let the network drivers load.

Using EDLIN or another text editor, edit AUTOEXEC.BAT to contain a command line with the following format:

C:[Path]MSCDEX.EXE /D:Device NAME /M:[val]/L:[drive][/V][/E]

Note: This should be typed as a one-line entry.

Example:

C:\BIN\MSCDEX.EXE /D:MSCD001 /M:8

[Path] is to be replaced by the full pathname where MSCDEX.EXE is located. MSCDEX.EXE should be found in a sub-directory.

Note: MSCDEX.EXE is the CD-ROM Extensions program provided by Microsoft.

Device NAME (/d:) - is the CD-ROM Device NAME. This must match the name you
                    assigned in the DEVICE command line in CONFIG.SYS. If
                    you used the default device name in the CONFIG.SYS file,
                    enter MSCD001 here.

/M:[val]   - the value following the /M: parameter is the number of
                    2K-byte buffers that MSCDEX.EXE allocates when it loads.
                    The larger the value is, the faster you can move through
                    your CD-ROM directories.

If you run out of memory in some applications, you can reduce the number of
buffers. However, the minimum value is 4 buffers per drive (i.e., if you use
three drives, the number of buffers must be set to at least 12.) The /M
option is not a substitute for the BUFFERS command found in many CONFIG.SYS
files, although it is similar.

```
Option Parameters In The AUTOEXEC.BAT Command Line:
```

Example:

C:MSCDEX /D:MSCD001 /M:8 /L:L /E /V

/L: [drive] - /L: [ ] specifies the letter that MSCDEX.EXE allocates to the
              first CD-ROM drive. When the /L: option is used, MSCDEX.EXE
              begins assigning drive letters at this specified letter rather
              than at the first available drive. This option is useful for
              software that requires a specific letter for the CD-ROM drive.
              This also helps if you frequently use RAM disks and need
              consistent letter assignments from one configuration to
              another.

When you do not specify /L: [drive], CD-ROM assignments depend on where the
MSCDEX.EXE line appears in AUTOEXEC.BAT. If MSCDEX.EXE appears before the
RAMDISK line, the CD-ROM drives are assigned drive letters before the
RAMDISK. The CD-ROM drives are assigned the next drive letter after that of
the hard drive. The RAMDISK assignments begin after that.

Regardless of whether the CD-ROM driver or the RAMDISK driver is assigned
first, MSCDEX.EXE works its way through the alphabet, and the letters follow
the scheme of CONFIG.SYS LASTDRIVE allowances.

The assigned letters must not be higher than the letter specified using the
LASTDRIVE command in the CONFIG.SYS. (For more information on LASTDRIVE and
RAMDISK, refer to your MS-DOS User's Manual.)

/V - is a parameter that instructs MSCDEX.EXE to display on-screen memory
     usage to include resident code, resident data, and memory used by
     buffers when the system boots up.

/E - is a parameter that instructs MSCDEX.EXE to use expanded memory if it
     is available.

If you manually install the MS-DOS Extensions for CD-ROM, be sure to reboot

your system by pressing RESET or CTRL+ALT+DEL.

┌─────────────────────────────┐
│ Rebooting Your Computer: │
└─────────────────────────────┘

After you run SETUP or during any system reboot, your screen should display
something similar to that shown here.

If you have not selected the /V: option in SETUP.EXE, you see an abbreviated
message momentarily on the screen, similar to this.

CDR-3100 Device Driver for MSCDEX.
Version 1.00.00
CDR-3100 Drive ready
Initialization complete

You also see this message:

MSCDEX Version 2.21

Copyright   Microsoft Corporation
1986, 1897, 1988, 1989, 1990. All
rights reserved.

Drive D: = Driver MSCD001 unit 0

If you have selected the /V: option, you will see a message on the screen
similar to what is shown below. This message indicates that the Microsoft
Extensions are loaded and informs you of the drive letter defined for the
CD-ROM drive. The drive letter depends on choices you made during SETUP.EXE
or while manually installing MS-DOS extensions for CD-ROM.

CDR-3100 Device Driver for MSCDEX.
Version 1.00.00

CDR-3100 Drive ready
MS-DOS version   : 5.00
File loaded   : C:\DD250
Device name   : MSCD001
Adapter type   : CM250
IRQ number   : 03
Port address   : 0340
Header address   : 02A0:0000
End of resident   : 0A89:000E
Size of resident   : 07EA0H Bytes
Memory limit   : 8FE9:0000
TOC cache size   : 99
Memory Buffers   : 6

Initialization complete

Press any key to continue...

These messages indicate that the device driver is installed and can
communicate with the adapter interface card.

If you have modified the /D: option in SETUP.EXE, the message shows the new device name.

If you have modified the /I: option in SETUP.EXE, the IRQ number messages indicates 4, 5, or 6. IRQ number 3 is the default.

If you have modified the /P: option in SETUP.EXE, the message displays the current port address: 0300, 0310, or 0330. The default is 0340.

If you have modified the /C: option in SETUP.EXE, the message indicates the number of track entries (0-99) in the Table of Contents (TOC) cache. The default size is 99. (99 track entries equal 396 bytes.)

If you have modified the /m: option in SETUP.EXE, the message shows the number of additional memory buffers you have requested.

If your CD-ROM Drive fails to function properly, first check for any error messages displayed. (Refer to "Troubleshooting Tips" for explanations of typical operational error messages.)

If the boot messages indicate an initialization error, or if there is an obvious problem with drive operation, verify that the hardware and software installation procedures have been properly followed.

(smm 08/25/93)