

# INSTALLING NON-DOS OPERATING SYSTEMS

## On Hard Drives with Capacities Exceeding 528MB



Your Western Digital hard drive is compatible with all PC operating systems including DOS, Novell Netware, Unix, Windows 3.x, Windows NT, Windows 95 and OS/2.

If you are installing an operating system on a hard drive with a capacity over 528 MB\*, your computer system may or may not support the hard drive's full capacity. Most computer systems manufactured before 1994 do not support hard drive capacities greater than 528 MB unless the system BIOS (Basic Input Output System) has been updated, or a third-party software package such as Ontrack Disk Manager has been installed. If you are using Novell or Unix you may not need a BIOS upgrade. Refer to those sections of this document for more information.

A BIOS that allows your system to recognize hard drive capacities greater than 528 MB is called a translating BIOS.

To verify that a system manufactured in 1994 or later will support your drive we suggest the following:

1. Contact your system or BIOS manufacturer and verify that your system supports hard drive capacities over 528 MB.
2. Enter your CMOS setup, look for options such as "LBA," "Large Disk Access," or "Translation," and enable these options.
3. Frequently, but not always, you must select an auto config drive type. If you see a value greater than 16 heads, you probably have a translating BIOS.

If you have determined that your system will **not** support drive capacities over 528 MB, you may contact your system or BIOS manufacturer and obtain an updated BIOS that will support your drive. This is usually referred to as a "translating BIOS" or "Enhanced IDE BIOS." Some of the more common BIOS manufacturers and their phone numbers are:

AMI	(404) 263-8181
Award	(415) 968-4433
Micro Firmware (Phoenix)	(405) 321-8333
MR BIOS	(508) 686-6468
Phoenix	(617) 551-4000

Note: All BIOSs are different. The information supplied here is not meant to be followed step-by-step, but is provided as a guideline. The following sections describe how to prepare your drive for use with specific non DOS-based operating systems.

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## NOVELL NETWARE

Your Novell Netware version includes the hard disk driver IDE.DSK file. If your IDE.DSK file is dated prior to 9/94, we recommend that you obtain the version dated 9/94 or later because it will allow you to work with both translating and non-translating BIOS's. Older versions of IDE.DSK do not work with translating BIOSs.

### *For Systems With a Translating BIOS*

If you have the hard disk driver IDE.DSK dated 9/94 or later, go into your CMOS setup and select a drive type that will recognize the full capacity of your drive. This is usually done by selecting the auto config drive type.

If you have an older version of IDE.DSK, go into your CMOS setup, select a user defined drive type and use these parameters: cylinders = 1024, heads = 16, sectors = 63. This will disable the translation feature in your BIOS.

### *For Systems Without a Translating BIOS*

Go into your CMOS setup, select a user defined drive type and use these parameters: cylinders = 1024, heads = 16, sectors = 63. Note: Even though you are manually setting your cylinders at 1024, Novell Netware will automatically adjust that number to enable you to use the full capacity of your drive.

**CAUTION: If using the older version of IDE.DSK, do not install the drive using an auto config drive type in the CMOS setup. Do not enter more than 1024 cylinders or 16 heads for any drive with a capacity over 528 MB.**

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## UNIX

Current Unix operating systems do not work with translating BIOSs so you must set up your BIOS without enabling the translation feature.

Enter your CMOS setup and select a user defined drive type. Enter these parameters: cylinders = 1024, heads = 16, sectors = 63. This will disable the translation feature in your BIOS.

**CAUTION: Do not install the drive using an auto config drive type in the CMOS setup. Do not enter more than 1024 cylinders or 16 heads for any drive with a capacity over 528 MB.**

You may need to manually enter the number of cylinders during Unix partitioning to obtain the full capacity of your drive. See the following table for these values.

\* Western Digital defines a megabyte as 1,000,000 bytes. CMOS setup and some utility software programs define a megabyte as 1,048,576 bytes. A 528 MB partition is shown on the screen as a 503 MB partition in many CMOS setup programs due to the difference in the definition of a megabyte.

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DRIVE	<sup>1</sup> Actual Cylinders	Heads	Sectors/ Track	Actual Capacity (MB)
AC2540	1048	16	63	540.8
AC2700	1416	16	63	730.8
AC2850	1654	16	63	853.6
AC31000	2100	16	63	1083.8
AC31200	2484	16	63	1281.9
AC31600	3148	16	63	1624.6

<sup>1</sup> Don't enter these numbers in CMOS. These numbers are used during the partitioning segment of the Unix installation.

### WINDOWS NT 3.1 & 3.5 AND WINDOWS 95 (BETA)

These operating systems are capable of recognizing the full capacity of hard drives larger than 528 MB. However, some restrictions apply to systems without a translating BIOS.

#### For Systems With a Translating BIOS

Enter your CMOS setup and select a drive type that will recognize the full capacity of your drive. This is usually done by selecting the auto config drive type. The boot partition can be set up to be as large as the full capacity of your hard drive.

#### For Systems Without a Translating BIOS

Enter your CMOS setup and select a user defined drive type. Enter these parameters: cylinders = 1024, heads = 16, sectors = 63. Your system's first bootable partition will be limited to a maximum of 528 MB. You can manually create additional partitions to utilize the remaining disk space after installation is complete.

### OS/2 WARP 3.0 AND OS/2 2.11

These operating systems are capable of recognizing the full capacity of hard drives larger than 528 MB. However, some restrictions apply to systems without a translating BIOS. Refer to the Ontrack Disk Manager section for additional information on OS/2 Warp.

#### For Systems With a Translating BIOS

Enter your CMOS setup and select a drive type that will recognize the full capacity of your drive. This is usually done by selecting the auto config drive type. The boot partition can be set up to be as large as the full capacity of your hard drive.

#### For Systems Without a Translating BIOS

OS/2 does not support bootable partitions in excess of 503 CMOS MB\* in systems without a translating BIOS. In this case, you must partition manually. Follow these steps for OS/2 installations.

1. During the installation process, you are asked to accept or define the bootable partition. Choose **Define Partition**. This will run the FDISK utility.
2. Define the primary partition to be no larger than 503 CMOS MB\* to prevent an installation failure. The capacity of a hard drive that exceeds 503 CMOS MB must be accessed as a separate partition. Set the remaining disk space to an extended partition. Normally, the remaining free space is set to an extended partition or other configuration as desired.
3. Set the primary partition to **installable** or **bootable**.
4. Exit the FDISK utility and follow the prompt to replace the floppy disk in drive A. Reboot the system.
5. The installation should now continue normally.
6. Refer to your OS/2 documentation for additional information.

### ONTRACK DISK MANAGER

Ontrack Disk Manager 6.03 is a third-party software package that allows you to access the full capacity of your hard drive under DOS, Windows and Windows 95. It is **not** compatible with Unix, Novell Netware, Windows NT, and some versions of OS/2.

There are two different editions of IBM's OS/2 Warp version 3.0. The original edition of OS/2 Warp is described on the packaging as "Enhances your existing DOS and Windows." This edition's packaging has a red spine and requires that you already have DOS and Windows installed on your hard drive. Note: This edition is **not** compatible with Ontrack Disk Manager version 6.03.

A later edition of OS/2 Warp is described on the packaging as "Includes DOS and Windows Application Support." This edition's packaging has a blue spine and does not require that DOS and/or Windows be installed on your hard drive. Note: This edition is compatible with Ontrack Disk Manager version 6.03.



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