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Configuring IDE RAID Hard Drive(s) (Controller: VIA VT6410)

To set up IDE RAID hard drive(s), you have to follow the steps below:

- (1) Install IDE hard drive(s) in your computer.
- (2) Configure VT6410 IDE controller mode and boot sequence in BIOS Setup.
- (3)* Configure RAID set in RAID BIOS.
- (4) Make a floppy disk containing the IDE RAID controller driver
- (5) Install the IDE RAID controller driver during OS installation.

Before you begin

Please prepare:

- (a) Two IDE hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity). If you do not plan to create RAID with the VT6410 controller, you may prepare only one hard drive.
- (b) An empty formatted floppy disk.
- (c) Windows XP/2000 setup disk.
- (d) Driver CD for your motherboard.

(1) Installing IDE hard drive(s) in your system

Attach one end of the IDE cable to the rear of the IDE hard drive and the other end to IDE port(s) controlled by the VT6410 RAID controller on the motherboard. (To ensure that your IDE CD-ROM can work properly, please connect it to the IDE1 port (controlled by the Southbridge) and connect your hard drives to IDE2/IDE3 ports). Then connect the power connector from your power supply to the hard drive(s).

*** Skip this step if you do not want to create RAID.array on the IDE controller

(2) Configuring VT6410 IDE controller mode and boot sequence in BIOS Setup

You have to make sure whether the VT6410 IDE controller are configured correctly in system BIOS Setup and set BIOS boot sequence for the IDE RAID hard drive(s).

Step 1:

Turn on your computer and press the Del key to enter BIOS Setup during POST (Power-On Self Test). To enable the VT6410 IDE controller, please select **Onboard H/W RAID** under the **Integrated Peripherals** menu and then press ENTER. Make sure the **Onboard H/W RAID** item is set to **Enabled** (Enabled by default) (Figure 1). If you set this option to **Disabled**, the VT6410 IDE controller will be disabled and will not support any devices.

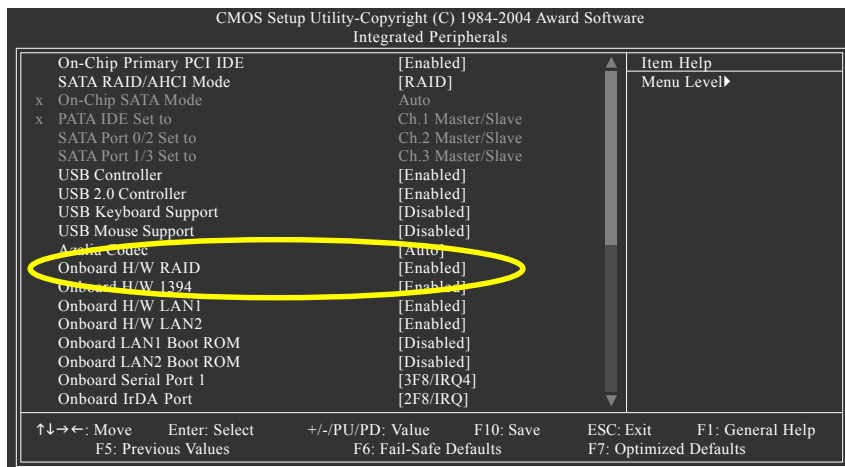


Figure 1

Step 2:

Select **Hard Disk Boot Priority** under the **Advanced BIOS Features** menu and then choose the model of the IDE hard drive onto which you want to install Microsoft Windows 2000/XP (Figure 2).

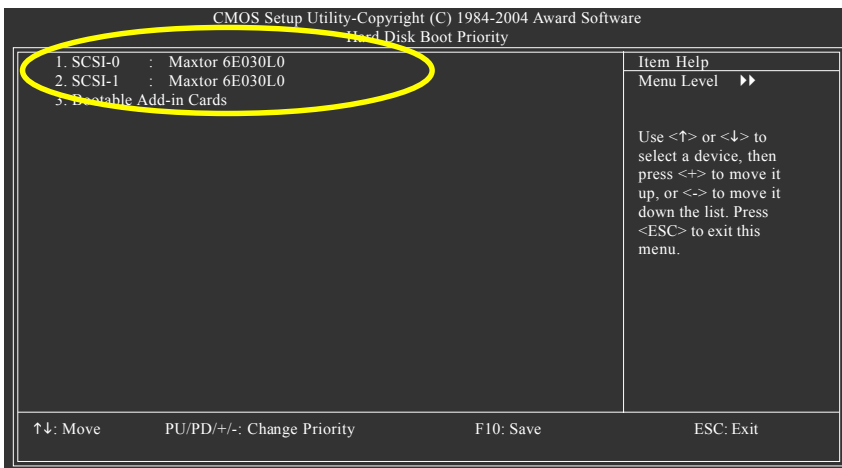


Figure 2

Step 3:

Set **First Boot Device** under the **Advanced BIOS Features** menu to **CD-ROM** to boot from CD-ROM after system restarts (Figure 3).

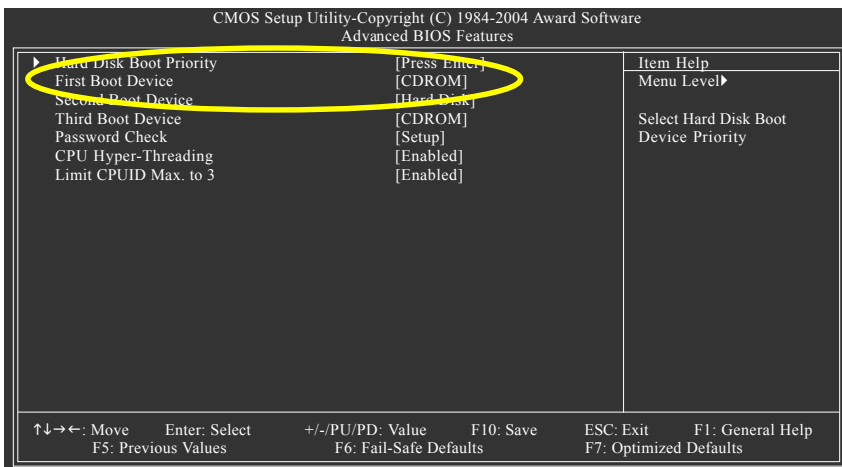


Figure 3

Step 4:

Save and exit BIOS Setup.

(3) Configuring RAID set in RAID BIOS

To create RAID on the VT6410 controller, you have to enter the RAID setup utility. Skip this step and proceed with Section 4 on page 10 if you do not want to create RAID.

Step 1:

After the Power-On Self-Test (POST) memory test begins and before the operating system boot begins, look for a message which says "Press <Tab> key into User Window"(Figure 4). Hit the TAB key to enter the RAID setup utility.

```
VIA Technologies, Inc. VIA VT6410 RAID BIOS Setting Utility V2.11
Copyright (C) VIA Technologies, Inc. All Right reserved.
```

```
Press <Tab> key into User Window!
Scan Devices, Please wait...
Primary Master : Maxtor 6E030L0
Primary Master : No Device
Secondary Master : Maxtor 6E030L0
Secondary Master : No Device
```

Figure 4

Step 2:

After you press the TAB key, a screen similar to that below will appear (Figure 5). You can press the UP and DOWN ARROW keys to highlight the option you need.

VIA Tech. RAID BIOS Ver 2.11

<ul style="list-style-type: none">▶ Create Array▶ Delete Array▶ Create/Delete Spare▶ Select Boot Array▶ Serial Number View	<p>Create a RAID array with the hard disks attached to VIA RAID controller</p> <p>F1 : View Array/disk Status ↑, ↓ : Move to next item Enter : Confirm the selection ESC : Exit</p>																														
<table border="1"><thead><tr><th>Channel</th><th>Drive Name</th><th>Array Name</th><th>Mode</th><th>Size(GB)</th><th>Status</th></tr></thead><tbody><tr><td>Channel0 Master</td><td>Maxtor 6E030L0</td><td></td><td>ATA133</td><td>28.63</td><td>Hdd</td></tr><tr><td>Channel0 Slave</td><td>No Drive</td><td></td><td></td><td></td><td></td></tr><tr><td>Channel1 Master</td><td>Maxtor 6E030L0</td><td></td><td>ATA133</td><td>27.24</td><td>Hdd</td></tr><tr><td>Channel1 Slave</td><td>No Drive</td><td></td><td></td><td></td><td></td></tr></tbody></table>		Channel	Drive Name	Array Name	Mode	Size(GB)	Status	Channel0 Master	Maxtor 6E030L0		ATA133	28.63	Hdd	Channel0 Slave	No Drive					Channel1 Master	Maxtor 6E030L0		ATA133	27.24	Hdd	Channel1 Slave	No Drive				
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Channel1 Slave	No Drive																														

Figure 5

A.Create Array:

Use the UP and DOWN ARROW keys to highlight the **Create Array** command and press ENTER to call out the list of creation steps as shown in Figure 6 below.

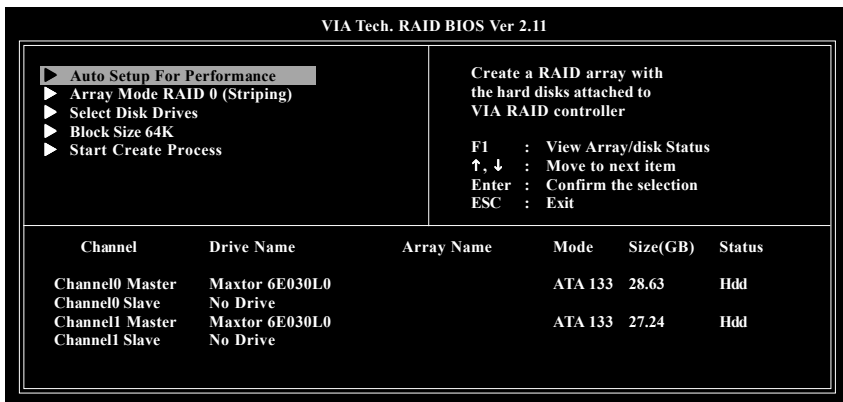


Figure 6

The first step is to set the RAID mode. Highlight the Array Mode option and press ENTER and a list of RAID modes will appear (Figure 7), including **RAID 0 for performance**, **RAID 1 for data protection**, **RAID 0/1**, and **RAID SPAN for capacity**. Use the UP and DOWN ARROW keys to highlight the RAID mode you want to create and press ENTER to confirm the selection.

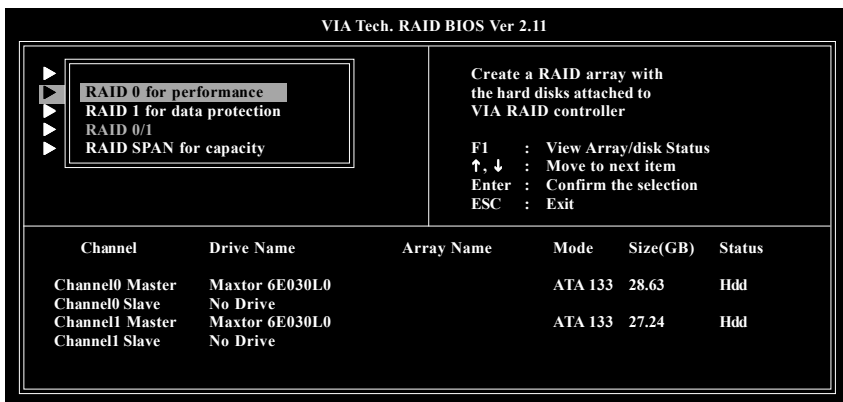


Figure 7

After selecting an array mode, you have to decide the way to create the array. There are two methods to create a disk array. One method is **Auto Setup** and the other is **Select Disk Drives**. **Auto Setup** lets BIOS select the disk drives and create array automatically but it does not duplicate the mirroring drives even user selects Create and duplicate for RAID 1 and 0+1. It is suitable when the disk drives with which you want to create an array are new ones. **Select Disk Drives** lets user select the array drives as required. When using the Select Disk Drives method, the channel column will be activated. Just highlight the target drives that you want to use and press ENTER to select them respectively. The selected hard drives will be marked with an asterisk (see Figure 8).

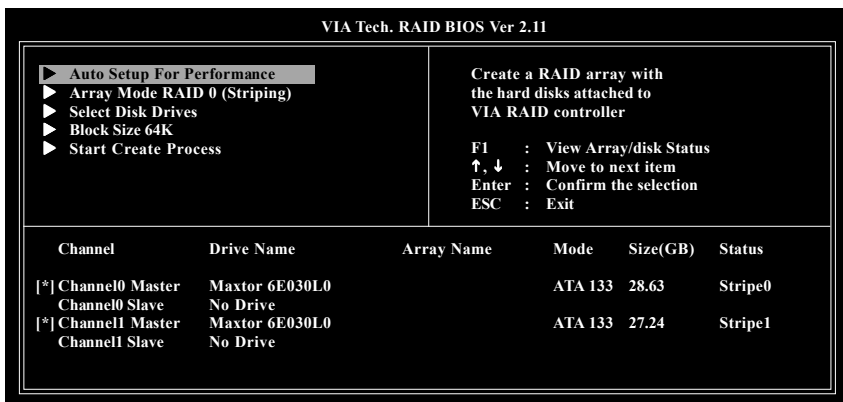


Figure 8

Use the arrow keys to highlight the Block Size item and press ENTER, then a list of block size options will appear. The block size can be selected from 4K to 64K Bytes (Figure 9). Use the arrow keys to highlight the block size you need and press ENTER.

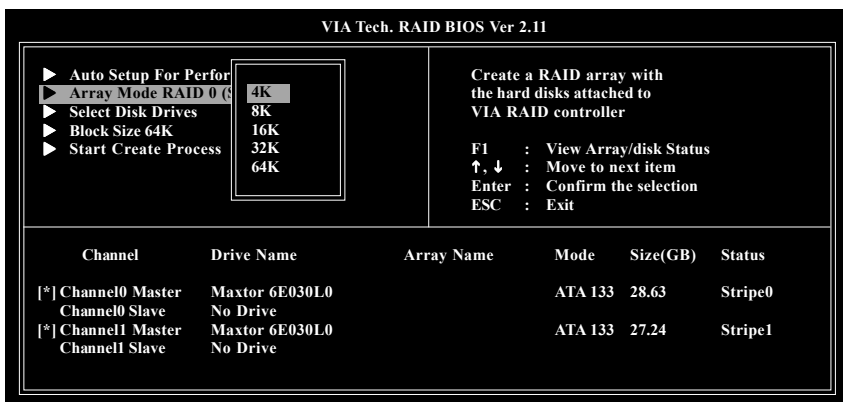


Figure 9

Next, use the arrow keys to highlight **Start Create Process** and press ENTER to begin the creation of RAID array, then you should see a warning message which says "The data on the selected disks will be destroyed. Continue? (Y/N)]." Press Y to finish the creation, or press N to cancel the creation. The content of hard drive will be destroyed after array creation.

Delete Array:

If you want to delete an existing RAID array, use the arrow keys to highlight the Delete Array item in main menu interface, and press ENTER. Use the arrow keys to highlight a member of an array that you want to delete and press ENTER. A warning message will display (Figure 10). Press Y to delete a specific array or press N to cancel.

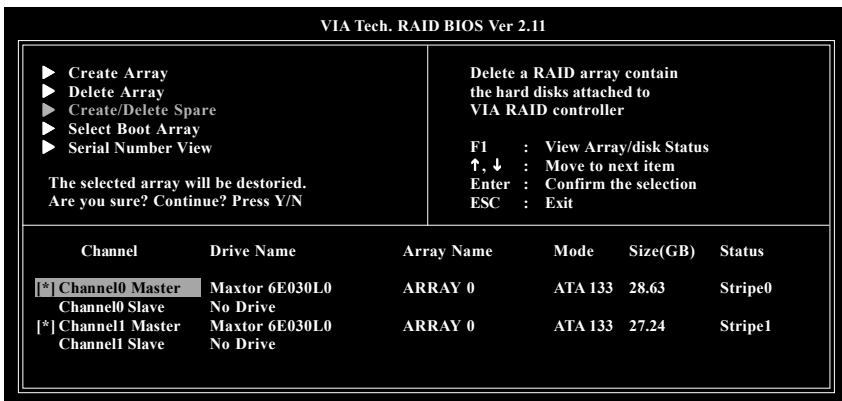


Figure 10

Deletion of a disk array will destroy all the data on the disk array except for RAID 1. When a RAID 1 array is deleted, the data on the two hard drives will be reserved and will become two normal drives.

C. Select Boot Array:

User can select a disk array as boot device if user wants to boot operating system from an array. Boot disk array can be not selected if user does not boot operating system from disk array. Use the arrow keys to highlight the Select Boot Disk item then press ENTER. The channel column will be activated. Just use the arrow keys to highlight the target disk array then press ENTER. If user select a disk array that has a boot mark (an asterisk) and press ENTER, then its boot setting will be cancelled (see Figure 11).

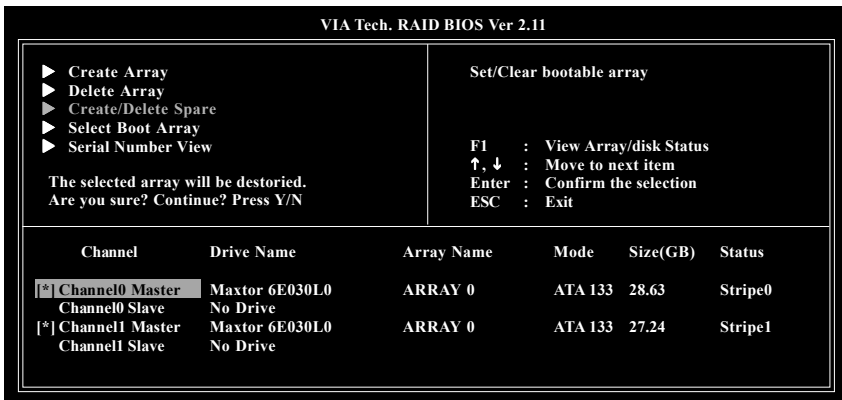


Figure 11

D. Serial Number View:

Highlight the Serial Number View item in main menu and press ENTER. Use the arrow key to select a hard drive. User can see the serial number of the selected drive at last column. Serial number is assigned by manufacturers of hard drives.

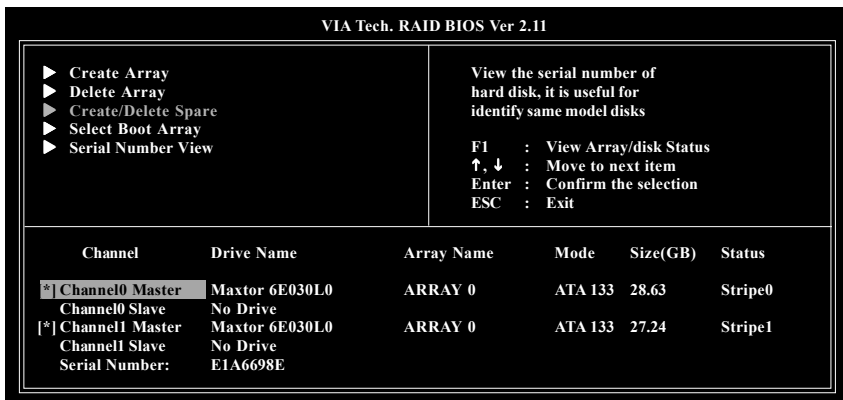


Figure 12

E. View Array Status:

Press the F1 key to show the array status on the lower screen. If there are no disk arrays then nothing will be displayed on the screen (Figure 13).

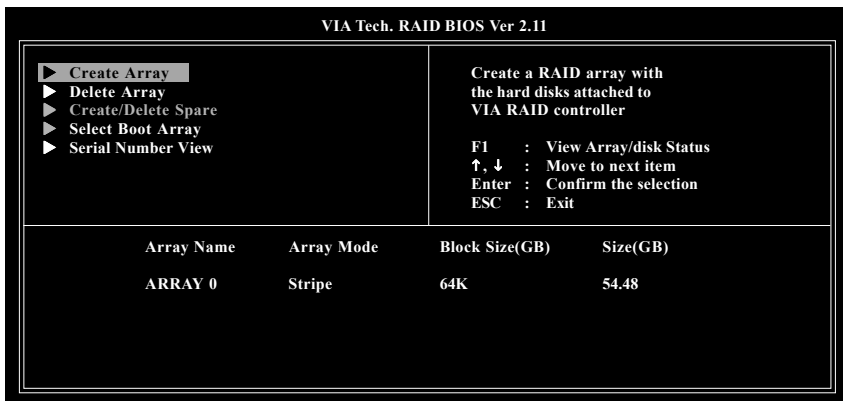


Figure 13

(4) Making a IDE RAID controller driver disk

To install Windows 2000/XP onto a IDE hard disk on the VT6410 controller successfully, you need to install required driver for the IDE RAID controller on your motherboard during OS installation. Without the driver, the hard disk may not be recognized during the Windows setup process.

First of all, you have to copy the driver for the IDE RAID controller from the motherboard driver CD to a floppy disk. The instructions below explain how to copy the driver.

Step 1: Find an available system and insert the motherboard driver CD into the CD-ROM drive. The installation utility will appear automatically. Quit the installation utility first.

Step 2: Go to **My Computer** and right-click the **CD-ROM** icon (this procedure assumes Drive D) and select **Open** (Figure 14).



Figure 14

Then you should see folders and files contained in the driver CD. Go to the **BootDrv** folder and look for a file named **MENU.exe**.

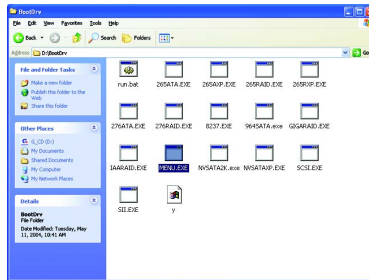


Figure 15

Step 3:

Double-click MENU.exe. An MS-DOS prompt screen similar to Figure 16 will appear.

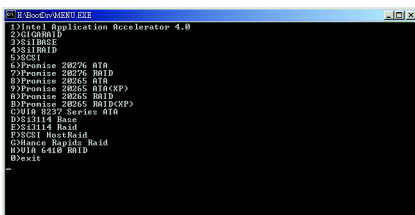


Figure 16

Step 4:

Insert an empty floppy disk and press **H** to select **VIA 6410 RAID**. Then it will take about one minute to copy the IDE RAID driver from the motherboard driver CD to the floppy disk.

Step 5:

Press **0** to exit when the procedure is completed (Figure 17). You have copied the IDE RAID driver successfully.



Figure 17

(5) Installing IDE RAID controller driver during OS installation

Now that you have prepared a floppy disk with the IDE RAID driver and adjusted BIOS settings, you can begin to install Windows 2000/XP onto your IDE hard disk with the IDE RAID driver. This procedure assumes Windows XP installation.

Step 1: Restart your system to boot from the Windows 2000/XP Setup disk and press F6 as soon as you see a message which says "Press F6 if you need to install a 3rd party SCSI or RAID driver." After pressing the F6 key, there will be a few moments of some files being loaded before you see the next screen for you to specify the IDE RAID controller on your motherboard.

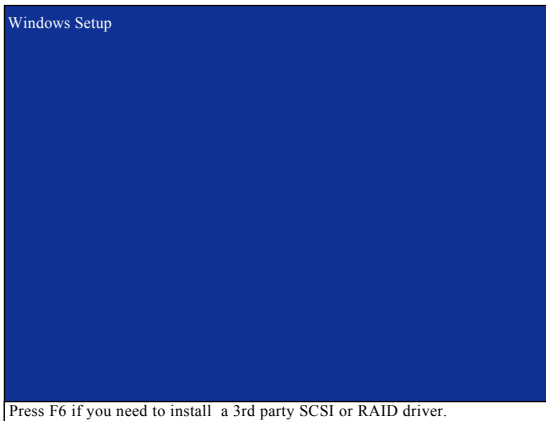


Figure 18

Step 2:

When a screen similar to that below appears, insert the floppy disk containing the IDE RAID driver and press S to specify the IDE RAID controller. Then you will be asked to select the IDE RAID controller on your motherboard.

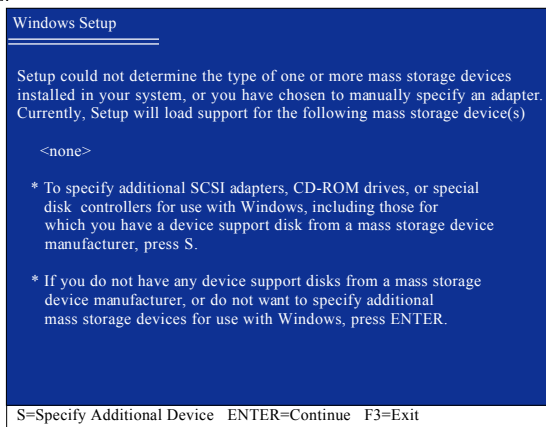


Figure 19

Step 3:

Use the arrow keys to select **VIA RAID Controller(Windows XP)*** (Figure 20) and press ENTER. Then it will begin to load the IDE RAID driver from the floppy disk.

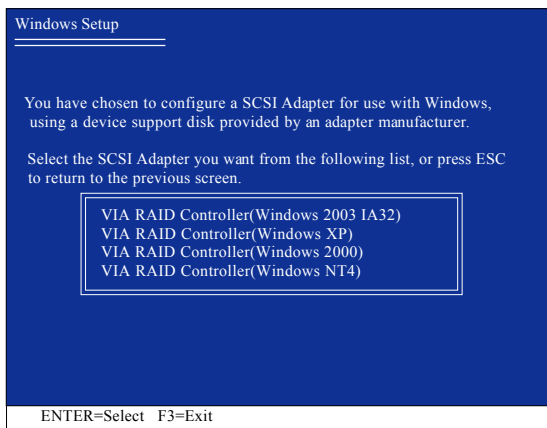


Figure 20

Step 4:

When the screen as shown below appears, press ENTER to proceed with IDE RAID controller driver installation from the floppy disk. The driver installation will be finished in about one minute.

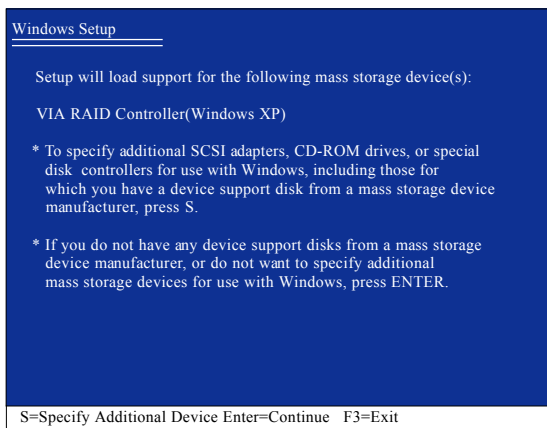


Figure 21



If a message appears saying that one or some files cannot be found, please check the floppy disk or copy the correct IDE RAID driver again from the motherboard driver CD.

*** Please select the driver according to which of the following operating systems you want to install: Windows 2003 IA32, Windows XP, Windows 2000, or Windows NT4.

After the IDE RAID driver installation is completed, you should see a screen similar to Figure 22 below. It indicates that you have installed the IDE RAID driver successfully. You can proceed with the Windows 2000/XP installation.

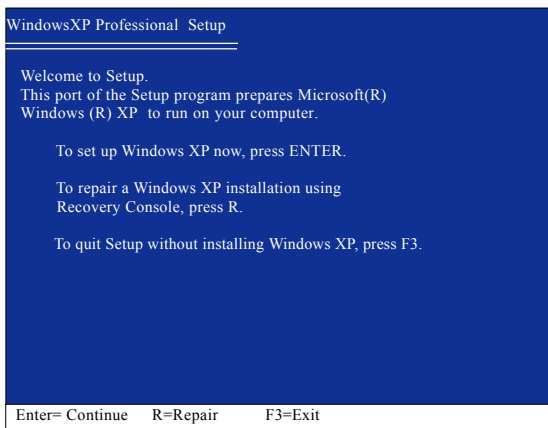


Figure 22

(Note: Each time you add a new hard drive to a RAID array, the RAID driver will have to be installed under Windows once for that hard drive. After that, the driver will not have to be installed.)