

IDE RAID

User Guide

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Handling Precautions

Warning:

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.
4. Never run the processor without the heatsink properly and firmly attached. **PERMANENT DAMAGE WILL RESULT!**

Observe the following basic precautions when handling the motherboard or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, motherboards, and modules with the *golden fingers* connectors plugged into the expansion slot. It is best to handle system components by their mounting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

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Handling Precautions

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If your mainboard has an optional jumper and two extra IDE connectors (besides Primary IDE and Secondary IDE connectors). Please set the jumper that allows you to select your hard disk either being used as regular ATA100 hard drives or IDE RAID devices.

Setting Jumper

1. Default ATA100 option



ATA100 (Default)

The mainboard allows you to connect *at most* eight hard drives, that means, each IDE connectors may have two hard drives on it.

2. RAID 0/1 option



RAID 0/1

The mainboard allows you to connect one hard drive on each IDE RAID connector. The system will treat the two IDE hard drives as one storage device.

Logical IDE Device Size of RAID 0 (stripping):

In this case, the capacity of the device is the minimal size of the two hard disks multiply by two. Please also read Page 1, Introduction. For example, if one hard disk on each IDE RAID connector, one is of 2.0 GB, the other is of 1.5 GB, the logical RAID 0 device becomes a size of 3 GB (1.5 x 2).

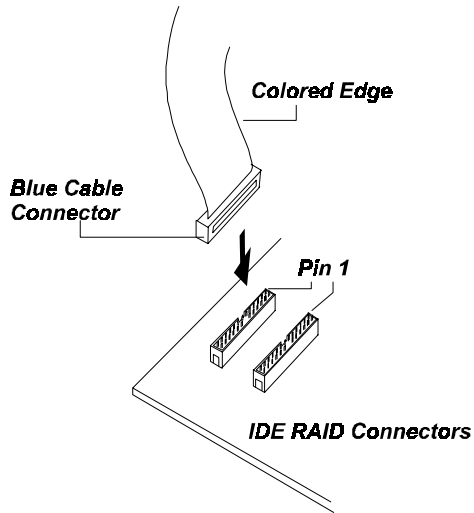
Logical IDE Device Size of RAID 1 (mirroring):

In this case, the capacity of the device is the minimal size of the two hard disks. Please also read Page 1, Introduction. For example, if one hard disk on each IDE RAID connector, one is of 2.0 GB, the other is of 1.5 GB, the logical RAID 0 device is of 1.5 GB.

{Turn Over This Page}

Connecting Cables

Connect one Ultra ATA cable to each hard disk. The colored edge of the cable(s) indicates pin 1, and the blue cable connector must be attached to the IDE RAID connector.



Please refer to the manual for the rest part of IDE RAID installation.

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INTRODUCTION

The IDE RAID is designed to provide a cost-effective, high performance RAID card that adds performance and/or reliability to PC desktops and/or servers using Ultra ATA/100, Ultra ATA/66, or EIDE drives.

IDE RAID function supports striping (RAID 0) or mirroring (RAID 1) for master only.

With striping, identical drives can read and write data in parallel to increase performance. Mirroring increases read performance through load balancing and elevator sorting while creating a complete backup of your files.

IDE RAID offers RAID 1 mirroring (for two drives) to protect data. Should a drive that is part of a mirrored array fail, it uses the mirrored drive (which contains identical data) to assume all data handling. When a new replacement drive is later installed, it also rebuilds data to the new drive from the mirrored drive to restore fault tolerance.

GETTING STARTED

This section is designed to get you started for installation.



WARNING: Before installing the driver into an existing system, backup any necessary data. Failure to follow this accepted PC practice could result in data loss.

Installing the Hard Drives



WARNING: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on your FastTrak100-Lite, do NOT connect the hard drive to the IDE RAID connectors. You MUST install the Windows NT4 or 2000 driver software first to this drive while it is still attached to your existing hard drive controller.

Hard drives must be Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE and/or Fast ATA-2 compatible to operate with the IDE RAID features. For optimal performance, install all **identical** drives of the same model and capacity. The drives' **matched performance** allows the array to function better as a single drive.

1. It is recommended by using identical drive as part of an array. If striping for performance, use two new drives. If mirroring for protection, you can use two new drives OR use an existing drive and a new drive (the new drive must be the same size or larger than the existing drive).
2. Configure the jumpers of the hard drive you're preparing to connect to the IDE RAID connectors by using the correct "Master / Slave" or

“Cable-Select” settings in the positions described in the table below.

NOTE: *Sometimes the Master drive with no slave attached is called “Single.” The master slave setting differentiates two drives chained on the same connector.*



Jumper Settings		
# of Drives	IDE Channel 1	IDE Channel 2
1	M	----
2	M	M
3	M & S	M
4	M & S	M & S

M = Master, S = Slave

3. Install the hard drives into the hard drive bays of your system, including the power cables.
4. Connect one Ultra ATA cable to each hard disk. The colored edge of the cable(s) indicates pin 1, and the blue cable connector must be attached to the IDE RAID connector.



NOTE: You must use an 80-wire, 40-pin cable when connecting an Ultra ATA/100 hard drive to the IDE RAID connector.

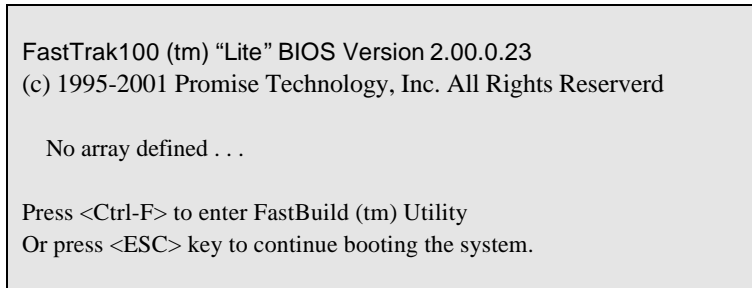
Creating Your Disk Array

You will now use the FastBuild BIOS utility to create your array using the attached drives. There are three different scenarios in creating this array. You can create an array for performance, you can create a Security array using new hard drives (recommended), or you can create a Security array using an existing hard drive and a new hard drive.



WARNING: *If creating a Security array using an existing hard drive, backup any necessary data. Failure to follow this accepted PC practice could result in data loss.*

1. Boot your system. If this is the first time you have booted with the IDE RAID connectors and drives installed, the Promise onboard BIOS will display the following screen.



2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu
3. Press "1" to display the Auto Setup Menu below. This is the fastest and easiest method to creating your first array.

```
FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc.
[Auto Setup Options Menu]

Optimize Array for: Performance
Typical Application usage: A/V Editing

[ Auto Setup Configuration ]

Mode.....Stripe
Drives used in Array .....2
Array Disk Capacity ..... 16126

[ Keys Available ]

[↑] Up [↓] Down [←, →, Space] Change Option [ESC] Exit [Ctrl-Y] Save
```



Creating an Array for Performance

NOTE: IDE RAID allows users to create striped arrays with 1, 2 drives.

To create an array for best performance, follow these steps:

1. Using the Spacebar, choose "Performance" under the **Optimize Array for** section.
2. Select how you will use your PC most under the **Typical Application usage** section The choices are A/V Editing, Server, and Desktop (the default).
3. Press <Ctrl-Y> keys to Save and create the array.
4. Reboot your system.
5. Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.
6. Proceed to Installing Drivers section of the manual.

Creating a Security Array with New Drives



NOTE: IDE RAID permit only two drives to be used for a single Mirrored array in Auto Setup.

To create an array for data protection using new hard drives, follow these steps:

1. Using the Spacebar, choose "Security" under the **Optimize Array for** section.
2. Press <Ctrl-Y> keys to Save your selection.
3. The window below will appear.

Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only

4. Press "N" for the Create Only option.
5. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

Array has been created.
<Press Any Key to Reboot>

6. Proceed with normal FDISK and format procedures as if you had just installed a new hard drive.
7. Once the arrayed drives have been formatted, proceed to the **Installing Driver** chapter to install your operating system and/or IDE RAID driver.



Creating a Security Array with an Existing Data Drive

NOTE: IDE RAID permits only two drives to be used for a single Mirrored array in Auto Setup.

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You would use this method if you wish to use a drive that already contains data and/or is the bootable system drive in your system. You will need another drive of identical or larger storage capacity.

WARNING: Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.



WARNING: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on your FastTrak100-Lite, do NOT connect the hard drive to the IDE RAID connectors yet. You MUST install the Windows NT4 or 2000 driver software first to this drive while it is still attached to your existing hard drive controller. For all other Operating Systems, proceed here.

Follow these steps:

1. Using the Spacebar, choose "Security" under the **Optimize Array for** section.
2. Press <Ctrl-Y> keys to Save your selection. The window below will appear.

Do you want the disk image to be duplicated to another? (Yes/No) Y - Create and Duplicate N - Create Only

3. Press "Y" for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

Source Disk		
Channel:ID	Drive Model	Capacity (MB)
Target Disk		
Channel:ID	Drive Model	Capacity (MB)
[Please Select A Source Disk]		
Channel:ID	Drive Model	Capacity (MB)

```
1 :Master QUANTUMCR8.4A    8063
2 :Master QUANTUMCR8.4A    8063

[↑] Up [↓] [ESC] Exit [Ctrl-Y] Save
```

4. Use the arrow keys to choose which drive contains the existing data to be copied.
5. Press [Ctrl-Y] keys to Save selection and start duplication. The following progress screen will appear.

```
Start to duplicate the image . . .
Do you want to continue? (Yes/No)
Y - Continue N - Abort
```

6. Select "Y" to continue. If you choose "N" , you will be returned to step 1.
7. Once complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system

```
Array has been created.
<Press Any Key to Reboot>
```

8. Proceed to the Installing Driver chapter to install the IDE RAID driver and/or operating system.

USING FASTBUILD™ CONFIGURATION UTILITY

The FastBuild™ Configuration Utility offers several menu choices to create and manage the drive array on the IDE RAID connectors. For purposes of this manual, it is assumed you have already created an array in the previous chapter and now wish to make a change to the array or view other options.

Viewing IDE RAID BIOS Screen

When you boot your system with the IDE RAID connectors and drives installed, the Promise onboard BIOS will detect the drives attached and show the following screen.

```
FastTrak (tm) BIOS Version 1.32 (Build xx)
(c) 1995-2001 Promise Technology, Inc. All Rights Reserved.

Scanning IDE drives . . . . .
```

If an array exists already, the BIOS will display the following screen showing the BIOS version and status of the array.

```
FastTrak (tm) BIOS Version 1.32 (Build xxxx)
(c) 1995-2001 Promise Technology, Inc. All Rights Reserved.

  ID  MODE   SIZE   TRACK-MAPPING  STATUS
  1 *  2+0 Stripe  16126M 611/128/32      Functional

Press <Ctrl-F> to enter FastBuild (tm) Utility....
```


The array status consists of three possible conditions: *Functional*, *Critical*, *Offline*.

Functional - The array is operational.

Critical - A mirrored array contains a drive that has failed or disconnected. The remaining drive member in the array is functional. However, the array has temporarily lost its ability to provide fault tolerance. The user should identify the failed drive through the FastBuild™ Setup utility, and then replace the problem drive.

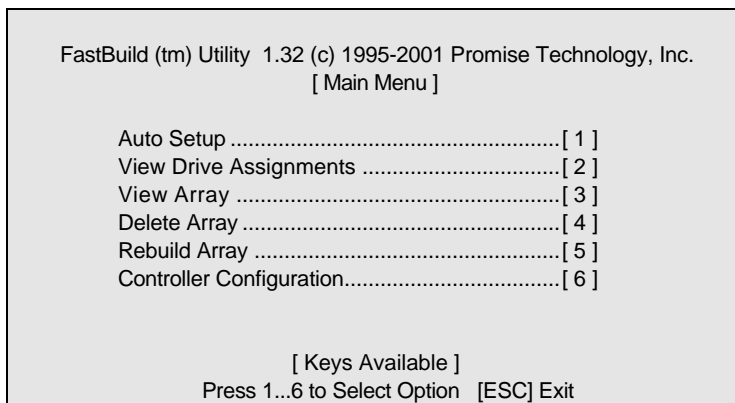
Offline - A striped array has 1 drive that has failed or been disconnected. When the array condition is “offline,” the user must replace the failed drive(s), then restore data from a backup source.

Navigating the FastBuild™ Setup Menu

When using the menus, these are some of the basic navigation tips:
Arrow keys highlights through choices; [Space] bar key allows to cycle through options;
[Enter] key selects an option; [ESC] key is used to abort or exit the current menu.

Using the Main Menu

This is the first option screen when entering the FastBuild™ Setup.





To create a new array automatically, follow the steps under “Creating Arrays Automatically”. Promise recommends this option for most users.

To view drives assigned to arrays, see “Viewing Drive Assignments”.

To delete an array (but not delete the data contained on the array), select “Deleting An Array”.

To rebuild a mirrored array, see “Rebuilding an Array”.

To view controller settings, see “Viewing Controller Configuration”.

NOTE: After configuring an array using FastBuild, you *should* FDISK and format the arrayed drive(s) if you are using new, blank drives. Depending on the type of array you are using.

Creating Arrays Automatically

The Auto Setup <1> selection from the Main Menu can intuitively help create your disk array. It will assign all available drives appropriate for the disk array you are creating. After making all selections, use Ctrl-Y to Save selections. FastBuild will automatically build the array.

```
FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc.
[Auto Setup Options Menu]

Optimize Array for: Performance
Typical Application usage: AV Editing

[ Auto Setup Configuration ]

Mode.....Stripe
Drives used in Array .....2
Array Disk Capacity ..... 16126

[ Keys Available ]

[↑] Up [↓] Down [←, →, Space] Change Option [ESC] Exit [Ctrl-Y] Save
```



Optimize Array For

Select whether you want Performance (RAID 0), Security (RAID 1) under the “Optimize Array for” setting.



Performance (RAID 0 Striping)

Supports the maximum performance. The storage capacity equals the number of drives times the capacity of the smallest drive in the disk array.

NOTE: IDE RAID permits striped arrays using 1, 2 drive attached in Auto Setup mode.

Security (RAID 1 Mirroring)



Creates a mirrored (or fault tolerant) array for data security.

NOTE: Under the Security setting, IDE RAID permits two drives to be used for a single Mirrored array only.

Defining Typical Application Usage

Allows the user to choose the type of PC usage that will be performed in order to optimize how IDE RAID handles data blocks to enhance performance. Your choice will determine the block size used. You may choose from: A/V Editing (for audio/video applications, or any similar application that requires large file transfers), Server (for numerous small file transfers), or Desktop (a combination of large and small file sizes).



NOTE: If you wish to customize the settings of individual disk arrays (such as block size), you must manually create disk

arrays with the Define Array <3> option from the Main Menu.

Viewing Drive Assignments

The View Drive Assignments <2> option in the Main Menu displays whether drives are assigned to a disk arrays or are unassigned.



FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc. [View Drive Assignments]				
Channel:ID	Drive Model	Capacity(MB)	Assignment	Mode
1 : Master	QUANTUMCR8.4A	8063	Array 1	U5
1 : Slave	QUANTUMCR8.4A	8063	Free	U5
2 : Master	QUANTUMCR8.4A	8063	Array 1	U5
[Keys Available]				
[↑] Up [↓] Down [ESC] Exit Mode (U=UDMA, P=PIO, D=DMA)				

Manually Creating an Array

The Define Array <3> option from the Main Menu allows users to begin the process of manually defining the drive elements and RAID levels for one or multiple disk arrays attached to IDE RIAD connectors. Users will commonly create one or two drive arrays with FastTrak100-Lite, though the card will support a maximum of four arrays¹.

NOTE: For most installations, Promise recommends the <1> Auto Setup for easy disk array creation.

FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc.
--

¹ A user may use a single drive in either striping mode with IDE RAID function. In this rare scenario, the card will create an individual array ID but will offer conventional controller performance, depending on the drive type. At a later time, a second drive can be added to the array and the array re-created to support RAID 1 mirroring.

[Define Array Menu]				
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2	16126	Functional
Array 2	---	---	---	---
Array 3	---	---	---	---
Array 4	---	---	---	---

[Keys Available]

Note: * — Bootable Array

[↑] Up [↓] Down [ESC] Exit [Enter] Select [Space] Change Boot Drive

1. To manually create an array from the Define Array Menu, use the arrow keys to highlight the array number you wish to define, and press [Enter] to select.
2. The Define Array Definition Menu will next appear that allows drive assignments to the disk array.

Selecting Array Type

1. Under the Definition section of this menu, highlight the Array # for which you want to assign a RAID level.
2. Use the [Space] key to cycle through three array types: Performance (RAID 0 Striping), Security (RAID 1 Mirroring).

```
FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc.
[ Define Array Definition Menu ]

Array No  RAID Mode  Total Drv  Capacity(MB)  Status
Array 1    Stripe      2          16126
Functional

Stripe Block: 64 KB
[ Drive Assignments ]

Channel:ID  Drive Model  Capacity (MB)
1 : Master  QUANTUMCR8.4A  8063
1 : Slave   QUANTUMCR8.4A  8063
2 : Master  QUANTUMCR8.4A  8063

[ Keys Available ]

[↑] Up [↓] Down [ESC] Exit [Space] Select [Ctrl-Y] Save
```

Creating a Mirrored Array Using New Drives

As described in the Drive Assignments Option section above, if you selected a mirroring array and wish to use two new assigned drives, follow the directions here.

1. After assigning new drives to a Mirroring array and saving the information with <Ctrl-Y>, the window below will appear.

```
Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only
```

2. Press "N" for the Create Only option.
3. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

Array has been created.
<Press Any Key to Reboot>



Adding Fault Tolerance to an Existing Drive

IDE RAID features will create a mirrored array using an existing system drive with data. You must assign the existing drive and another drive of same or larger capacity to the Mirroring array. The BIOS will send the existing data to the new blank drive.



WARNING: Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.

WARNING: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on your IDE RAID connectors, do NOT connect the hard drive to the IDE RAID connectors yet. You MUST install the Windows NT4 or 2000 driver software first to this drive while it is still attached to your existing hard drive controller. For all other Operating Systems, proceed here.

1. After assigning the drives to a Mirroring array, press <Ctrl-Y> keys to Save your selection. The window below will appear.

Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only

2. Press "Y" for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

Source Disk		
Channel:ID	Drive Model	Capacity (MB)
Target Disk		
Channel:ID	Drive Model	Capacity (MB)
[Please Select A Source Disk]		
Channel:ID	Drive Model	Capacity (MB)
1 :Master	QUANTUMCR8.4A	8063
2 :Master	QUANTUMCR8.4A	8063
[↑] Up [↓] [ESC] Exit [Ctrl-Y] Save		




- Use the arrow keys to choose which drive contains the existing data to be copied.

WARNING: All target drive data will be erased. Make sure you choose the correct drive.

- Press [Ctrl-Y] keys to Save selection and start duplication. The following confirmation screen will appear.

Start to duplicate the image . . . Do you want to continue? (Yes/No) Y – Continue N - Abort

- Select “Y” to continue. If you choose “N” , you will be returned to step 1.
- Once “Y” is selected, the following progress screen will appear. The process will take a few minutes.

Please Wait While Duplicating The Image
 0%
Complete

- Once mirroring is complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system



Array has been created.
<Press Any Key to Reboot>

Making an IDE RAID Disk Array Bootable

WARNING: In order for you to boot from an array on the IDE RAID connectors, your PC or server must be configured in the CMOS Setup to use the IDE RAID as a bootable device (versus the onboard controller or another add-in card). This option is not available if the IDE RAID is being used as a secondary controller.

- Once you have returned to the Define Array Menu window (below), you will see the array(s) you have created. You now may use the menu to select which previously-defined array will be used as the bootable array.

FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc.
[Define Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
* Array 1	Stripe	2	13044	Functional

Note: * — Bootable Array

[↑] Up [↓] Down [ESC] Exit [Enter] Select [Space] Change Boot Drive

- Highlight the array which you want to boot from using the [↑] Up [↓] Down keys.
- Press the [Space] bar key.
- An * asterisk will appear next to the array number indicating it as bootable. The system will now recognize this array as the first array seen

5. The system will then use this bootable array as the (fixed) boot C: drive.



NOTE: *The bootable array must contain your configured operating system.*

How IDE RAID Orders Arrays

During startup, the disk arrays on the IDE RAID are recognized in this order:

- 1) The array set to bootable in the FastBuild™ Setup.
- 2) The Array number (i.e. Array 0, Array 1...). This would be involved in determining which drive letters will be assigned to each disk array.

How IDE RAID Saves Array Information

All disk array data is saved into the reserved sector on each array member. Promise suggests that users record their disk array information for future reference.

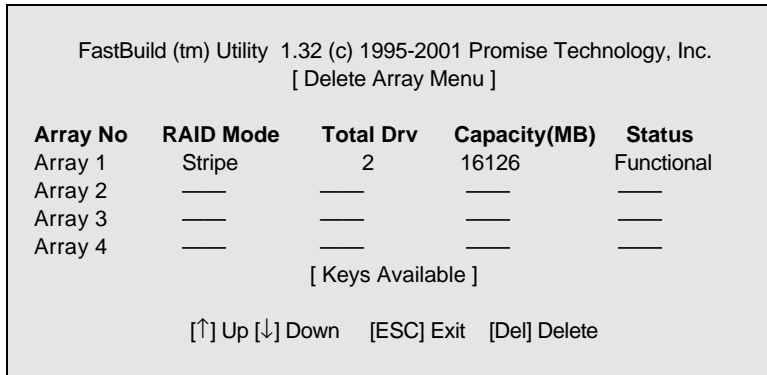
Another feature of the IDE RAID disk array system is to recognize drive members even if drives are moved between different IDE RAID connectors. Since each drive's array data identifies itself to the array, it is possible to move or swap drives without modifying the array setup. This is valuable when adding drives, or during a rebuild.

Deleting an Array

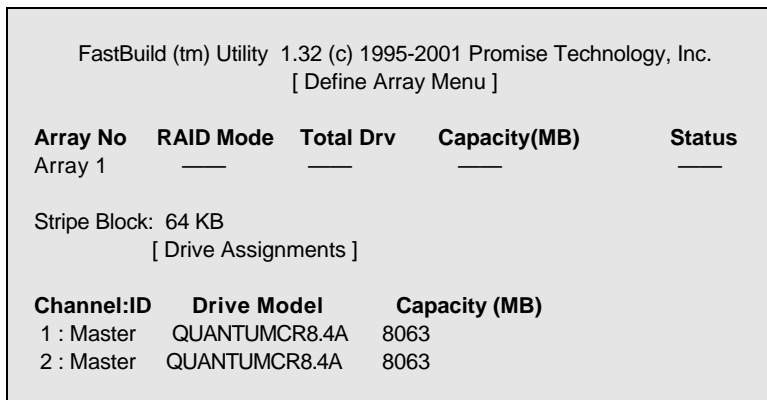
The Delete Array <4> Menu option allows for deletion of disk array assignments. This is not the same as deleting data from the drives themselves. If you delete an array by accident (and before it has been used again), the array can normally be recovered by defining the array identically as the deleted array.



WARNING: *Deleting an existing disk array could result in its data loss. Make sure to record all array information including the array type, the disk members, and stripe block size in case you wish to undo a deletion.*



1. To delete an array, highlight the Array you wish to delete and press the [Del] key.
2. The View Array Definition menu will appear (see below) showing which drives are assigned to this array.



3. Confirm yes to the following warning message with the <Ctrl-Y> key to continue array deletion:

Are you sure you want to delete this array?
Press Ctrl-Y to Delete, others to Abort

4. After deleting the array, you should create a new array using Auto Setup.

Rebuilding a Mirrored Array

The Rebuild Array <5> Menu option is necessary to recover from an error in a mirrored disk array. You will receive an error message when booting your system from the IDE RAID BIOS.



NOTE: Drives *MUST* be replaced if they contain any physical errors.

Follow these steps BEFORE using the Rebuild Array menu option:

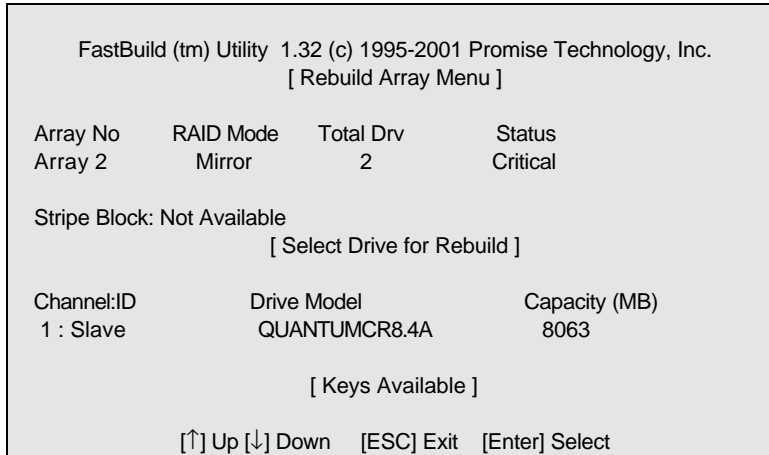
1. On bootup, the IDE RAID Startup BIOS will display an error message identifying which drive has failed.
2. Press <Ctrl-F> keys to enter FastBuild Main Menu.
3. Select submenu Define Array <3>.
4. Select the failed array and identify the Channel and ID of the failed drive.
5. Power off and physically remove the failed drive.
6. Replace the drive with an identical model.
7. Reboot the system and enter the FastBuild Main Menu.
8. Select the <5> Rebuild Array option. The following screen will appear.

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Mirror	2	16126	Critical
Array 2	---	---	---	---
Array 3	---	---	---	---
Array 4	---	---	---	---

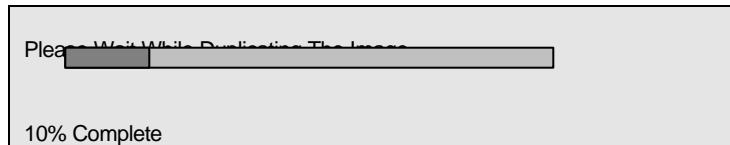
[Keys Available]

[↑] Up [↓] Down [ESC] Exit [Enter] Select

9. Highlight the array whose Status is "Critical".
10. Press [Enter]. The following screen will then appear.



11. Under [Select Drive for Rebuild], highlight the replacement drive.
12. Press [Enter] and confirm that the data will be copied on to the selected drive. All data on the replacement drive will be written over with mirrored information from the array drive. A progress bar will appear as below.



13. Once the rebuild process is complete, the user will be asked to reboot the system.

Viewing Controller Settings

The Controller Configuration <6> menu selection allows you to enable or disable the IDE RAID BIOS from halting (the default) if it detects an error on boot up. You may also view the system resources (Interrupt and I/O port address) of IDE RAID's data channels.

```
FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc.
[ Adapter Configuration - Options ]

Halt On Error: Enable

[ System Resources Configuration ]

Channel 1 (IDE1)  Interrupt : A    I/O Port : FFF0
Channel 2 (IDE2)  Interrupt : A    I/O Port : FFA8

[ Keys Available ]

[←, →, Space] Change Option [ESC] Exit
```

Halting IDE RAID BIOS on Bootup Errors

The [Adapter Configuration – Options] section allows you to enable or disable IDE RAID to Halt operation at the BIOS startup screen should an error be detected. This is the only option that can be changed on this screen.

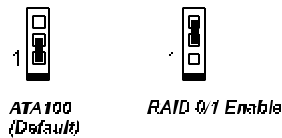
Viewing IDE RAID System Resources

The [System Resources Configuration] section of this submenu displays the PCI slot interrupt and port address used by the IDE RAID. The resources used are determined by the mainboard PCI PnP BIOS for the PCI slot in which the IDE RAID resides.

In the rare case that there is a resource conflict, refer to the Mainboard BIOS documentation on changes on resources allocated to the IDE RAID PCI slot.

Installing Drivers

First of all, the board offers a jumper to decide that if the hard drives which are linked to IDE RAID connectors to have IDE RAID functions or regular ATA100 ones (without IDE RAID functions). If it of the former case, please select the RAID option at very first step. If of the latter case, set the jumper at the ATA100 option.



This section details the IDE RAID driver installation when used with various operating systems. The software includes the driver necessary to identify IDE RAID to the operating system.

For IDE RAID Devices

Windows 2000 (During a fresh Win2K installation)

Follow the standard procedures for setting up Win2K installation.

1. During the first part of the setup procedure, copy all the drivers from the CD PRO (CDROM:\RAID\Promise\Raid) and installation file must be located on the same directory of the install floppy diskette.
2. Win2K will prompt you to press F6 to specify an additional device. Press F6, and let Windows continue on with setup. It will continue to scroll through various device listings for several minutes, then prompt you to press the "S" key to Add a device "Win2000 Promise FastTrak100 (tm) Lite Controller".
3. Press S, and insert the Promise driver diskette. Press Enter when prompted and allow Win2K to install the Promise drivers.

4. Win2K will continue and complete the installation procedure.

Windows 2000 (already installed on IDE/SCSI HDD)

If the controller is not detected automatically, follow the instructions as prompted by the system to install the Promise driver.

1. Windows 2000 must be installed on the system prior to installing the driver.
2. Press "Start" button then Move to "Settings" and select "Control Panel".
3. Double click on "System" icon.
4. Click on the "Hardware" button and Click on the "Device Manager" button.
5. Double click the "RAID Controller" node.
6. Select "Reinstall Driver..." button to Update driver and Click Next.
7. Select "Search for a suitable driver..." and Click Next.
8. Select "Specify a location" and press Next.
9. Follow the instruction to insert your CD PRO to install the driver. Locate File <CD-ROM:\Raid\Promise\Raid\Win2000> and Click OK.
10. Press Next and Yes Completing the Upgrade Device Driver Wizard. Then Click on the "Finish" button and Restart the system.

Windows 9x

1. Press "Start" button.
2. Move to "Settings" and select "Control Panel".
3. Double click on "System" icon and Select "Device Manager" button.
4. Double click the "PCI RAID Controller" node.
5. Select "Reinstall Driver" button to Update driver and Click Next.
6. Select "Search for a better driver..." and Click Next.
7. Select "Specify a location:"
8. Follow the instruction to insert your CD PRO to install the driver. Browse for Folder <CD-ROM:\Raid\Promise\Raid\Win9x-ME> and Click OK.
9. Click Next Completing the Update Device Driver Wizard. Then Click on the "Finish" button and Restart the system.

Windows ME

1. Press "Start" button.
2. Move to "Settings" and select "Control Panel".
3. Double click on "System" icon and Select "Device Manager" button.
4. Double click the "PCI RAID Controller" node.
5. Select "Driver" button to Update driver.
6. Select "Specify the location of the driver" and Click Next.
7. Select "Search for a better driver...".
8. Select "Specify a loction:"
9. Follow the instruction to insert your CD PRO to install the driver. Browse for Folder <CD-ROM:\Raid\Promise\Raid\Win9x-ME> and Click OK.

10. Click Next Completing the Update Device Driver Wizard; then Click on the "Finish" button and Restart the system.

Windows NT (During a fresh WinNT installation)

Follow the standard procedures for setting up WinNT installation.

1. During the first part of the setup procedure, copy all the drivers from the CD PRO (CDROM:\RAID\Promise\Raid) and installation file must be located on the same directory of the install floppy diskette.
2. WinNT will prompt you to press F6 to specify an additional device. Press F6, and let Windows continue on with setup. It will continue to scroll through various device listings for several minutes, then prompt you to press the "S" key to Add a device "WinNT Promise FastTrak100 (tm) Lite Controller".
3. Press "S", and insert the Promise driver diskette. Press Enter then prompted and allow WinNT to install the Promise drivers.
4. WinNT will continue and complete the installation procedure.

Windows NT (already installed on IDE/SCSI HDD)

If the controller is not detected automatically, follow the instructions as prompted by the system to install the Promise driver.

1. Open My Computer.
2. Open Control Panel.
3. Double click SCSI Adapters icon.
4. Click Drivers button.
5. Click Add...
6. Click Have Disk...
7. Insert the CD PRO containing Promise WinNT 4.0 device driver into CDROM, and Browse "CDROM:\RAID\Promise\Raid\NT4", then click OK.
8. Select "WinNT Promise FastTrak100(tm) Lite Controller", then click OK.
10. When asked to restart your computer, click Yes.

Windows XP (During a fresh WinXP installation)

Follow the standard procedures for setting up WinXP installation.

1. During the first part of the setup procedure, copy all the drivers from the CD PRO (CDROM:\RAID\Promise\Raid) and installation file must be located on the same directory of the install floppy diskette.
2. WinXP will prompt you to press F6 to specify an additional device. Press F6, and let Windows continue on with setup. It will continue to scroll through various device listings for several minutes, then prompt you to press the "S" key to Add a device "WinXP Promise FastTrak100 (tm) Lite Controller".
3. Press S, and insert the Promise driver diskette. Press Enter when prompted and allow WinXP to install the Promise drivers.
4. WinXP will continue and complete the installation procedure.

Windows XP (already installed on IDE/SCSI HDD)

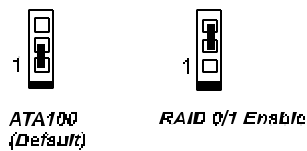
If the controller is not detected automatically, follow the instructions as prompted by the system to install the Promise driver.

1. Windows XP must be installed on the system prior to installing the driver.
2. Press "Start" button then Move to "Settings" and select "Control Panel".
3. Double click on "System" icon.
4. Click on the "Hardware" button and Click on the "Device Manager" button.
5. Double click the "RAID Controller" node.
6. Select "Reinstall Driver..." button to Update driver and Click Next.
7. Select "Install from a list or specific location..." and Click Next.
8. Select "Search for the best driver in these location:".

9. Follow the instruction to insert your CD PRO to install the driver. Browse Locate File <CD-ROM:\Raid\Promise\Raid\WinXP> and Click Next.
11. Press "Continue Anyway" Completing the Upgrade Device Driver Wizard; then Click on the "Finish" button and Restart the system.

For IDE ATA100 Devices

First of all, the board offers a jumper to decide that if the hard drives which are linked to IDE RAID connectors to have IDE RAID functions or regular ATA100 ones (without IDE RAID functions). Please set the jumper at the ATA100 option.



This section details the IDE ATA100 driver installation when used with various operating systems.

Windows 2000 (During a fresh Win2K installation)

Follow the standard procedures for setting up Win2K installation.

1. During the first part of the setup procedure, copy all the drivers from the CD PRO (CDROM:\RAID\Promise\ATA100) and installation file must be located on the same directory of the install floppy diskette.
2. Win2K will prompt you to press F6 to specify an additional device. Press F6, and let Windows continue on with setup. It will continue to scroll through various device listings for several minutes, then prompt you to press the "S" key to Add a device "Win2000 Promise ULTRA100 (tm) Controller".

3. Press S, and insert the Promise driver diskette. Press Enter when prompted and allow Win2K to install the Promise drivers.
4. Win2K will continue and complete the installation procedure.

Windows 2000 (already installed on IDE/SCSI HDD)

If the controller is not detected automatically, follow the instructions as prompted by the system to install the Promise driver.

1. Windows 2000 must be installed on the system prior to installing the driver.
2. Press "Start" button then Move to "Settings" and select "Control Panel".
3. Double click on "System" icon.
4. Click on the "Hardware" button and Click on the "Device Manager" button.
5. Double click the "Mass Storage Controller" node.
6. Select "Reinstall Driver..." button to Update driver and Click Next.
7. Select "Search for a suitable driver..." and Click Next.
8. Select "Specify a location" and press Next.
9. Follow the instruction to insert your CD PRO to install the driver. Browse Locate File <CD-ROM:\Raid\Promise\ATA100\Win2000> and Click OK.
10. Press Next and Yes Completing the Upgrade Device Driver Wizard; then Click on the "Finish" button and Restart the system.

Windows 9x

1. Press "Start" button.
2. Move to "Settings" and select "Control Panel".
3. Double click on "System" icon and Select "Device Manager" button.
4. Double click the "PCI Mass Storage Controller" node.
5. Select "Reinstall Driver" button to Update driver and Click Next.
6. Select "Search for a better driver..." and Click Next.

7. Select "Specify a location:"
8. Follow the instruction to insert your CD PRO to install the driver. Browse for Folder <CD-ROM:\Raid\Promise\ATA100\Win9x-ME> and Click OK.
9. Click Next Completing the Update Device Driver Wizard; then click on the "Finish" button and Restart the system.

Windows ME

1. Press "Start" button.
2. Move to "Settings" and select "Control Panel".
3. Double click on "System" icon and Select "Device Manager" button.
4. Double click the "PCI Mass Storage Controller" node.
5. Select "Reinstall Driver" button to Update driver.
6. Select "Specify the location of the driver" and Click Next.
7. Select "Search for a better driver..." and click "Specify a location:"
8. Follow the instruction to insert your CD PRO to install the driver. Browse for Folder <CD-ROM:\Raid\Promise\ATA100\Win9x-ME> and Click OK.
9. Click Next Completing the Update Device Driver Wizard; then Click on the "Finish" button and Restart the system.

Windows NT (During a fresh Windows NT installation)

Follow the standard procedures for setting up WinNT installation.

1. During the first part of the setup procedure, copy all the drivers from the CD PRO (CDROM:\RAID\Promise\ATA100) and installation file must be located on the same directory of the install floppy diskette.
2. WinNT will prompt you to press F6 to specify an additional device. Press F6, and let Windows continue on with setup. It will continue to scroll through various device listings for several minutes, then prompt you to press the "S" key to Add a device "WinNT Promise ULTRA100 (tm) Controller".
3. Press "S", and insert the Promise driver diskette. Press Enter when prompted and allow WinNT to install the Promise drivers.
4. WinNT will continue and complete the installation procedure.

Windows NT (already installed on IDE/SCSI HDD)

If the controller is not detected automatically, follow the instructions as prompted by the system to install the Promise driver.

1. Select Control Panel.
2. Double click SCSI Adapters icon.
3. Click Drivers button.
4. Click Add...
5. Click Have Disk...
6. Insert the CD PRO containing Promise WinNT 4.0 device driver into CDROM, and Browse "CDROM:\RAID\Promise\ATA100\NT4", then click OK.
7. Select "WinNT Promise Ultra100(tm) IDE Controller", then click OK.
8. When asked to restart your computer, click Yes.

Windows XP (During a fresh installation)

Follow the standard procedures for setting up WinXP installation.

1. During the first part of the setup procedure, copy all the drivers from the CD PRO (CDROM:\RAID\Promise\ATA100) and installation file must be located on the same directory of the install floppy diskette.
2. WinXP will prompt you to press F6 to specify an additional device. Press F6, and let Windows continue on with setup. It will continue to scroll through various device listings for several minutes, then prompt you to press the "S" key to Add a device "WinXP Promise ULTRA100 (tm) Controller".
3. Press S, and insert the Promise driver diskette. Press Enter when prompted and allow WinXP to install the Promise drivers.
4. WinXP will continue and complete the installation procedure.

Windows XP (already installed on IDE/SCSI HDD)

If the controller is not detected automatically, follow the instructions as prompted by the system to install the Promise driver.

1. Windows XP must be installed on the system prior to installing the driver.
2. Press "Start" button then Move to "Settings" and select "Control Panel".
3. Double click on "System" icon.
4. Click on the "Hardware" button and Click on the "Device Manager" button.
5. Double click the "SCSI and RAID controllers".
6. Double Click "Promise Technology Inc. Ultra IDE Controller" node.
7. Select "Driver" button to Update driver.
8. Select "Install from a list or specific location..." and Click Next.

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9. Select "Don't search. I will choose the driver to install" and press Next.

10. Click on "Have Disk..."

11. Follow the instruction to insert your CD PRO to install the driver. Browse Locate File <CD-ROM:\Raid\Promise\ATA100\WinXP> and Click OK.

12. Press Next and "Continue Anyway" Completing the Upgrade Device Driver Wizard; then Click on the "Finish" button and Restart the system.