

# **Ultra DMA/ATA100 IDE RAID controller**

*User's Manual*

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# GETTING STARTED

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This section is designed to get you started for using of your *Promise 265R IDE Raid* function.

**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 *Promise 265R Raid* connectors, do NOT connect the hard drive to the *Promise 265R 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.

Hard drives must be Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE and/ or Fast ATA-2 compatible to operate with the *Promise 265R Raid* controller. 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. Promise recommends using identical drive as part of a Promise 265R Raid 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 *Promise 265R Raid* connectors 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	Raid 1	Raid 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. Attach one Ultra ATA cable to each hard drive. Then attach one cable to each of the IDE connectors on the *Promise 265R Raid* connectors. The colored edge of the cable(s) indicates pin 1, and the blue cable connector must be attached to the *Promise 265R Raid* connectors.

**NOTE:** You must use an 80-wire, 40-pin cable when connecting an Ultra ATA/100 hard drive to the *Promise 265R Raid* connectors.

## Checking CMOS Settings

No changes are necessary in the Mainboard CMOS Setup for resources or drive types. Since *Promise 265R Raid* is a PCI Plug-n-Play (PnP) device, the Interrupt and Port address resources are automatically assigned by the Mainboard's PCI PnP BIOS.

The *Promise 265R Raid* system resources including port address, interrupt, and BIOS address are **automatically** determined by the system PnP BIOS. To customize IRQ settings, enter the Mainboard BIOS's Advanced PCI setup and follow the manufacturer's procedures. When the system is limited by IRQ resources, the *Promise 265R Raid* controller can be set for the same IRQ as other PCI cards that support PCI interrupt sharing.

For the *Promise 265R Raid* to be the bootable IDE controller, place the SCSI as the first choice in searching for a bootable device.

---

## 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 *Promise 265R Raid* controller and drives installed, the Promise onboard BIOS will display the following screen.

FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx)  
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

No array defined . . .

Press < Ctrl-F > to enter FastBuild (tm) Utility  
Or press < ESC > key to continue booting the system.

2. Press < **Ctrl-F** > keys to display the FastBuild (tm) Utility Main Menu

# BIOS SETTING

---

## Using FastBuild(tm) Configuration Utility

The FastBuild™ Configuration Utility offers several menu choices to create and manage the drive array on the *Promise 265R Raid* controller.

### Viewing Promise 265R Raid controller BIOS Screen

When you boot your system with the *Promise 265R Raid* controller and drives installed, the Promise onboard BIOS will detect the drives attached and show the following screen.

FastTrak100-Lite (tm) BIOS Version 1.xx (Build xx)  
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

Scanning IDE drives . . . . .

If an array exists already, the BIOS will display the following screen showing the *Promise 265R Raid* controller BIOS version and status of the array.

FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx)  
(c) 1995-2000 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(tm) 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.

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.	
[ Main Menu ]	
Auto Setup..... [ 1 ]	
View Drive Assignments..... [ 2 ]	
View Array..... [ 3 ]	
Delete Array..... [ 4 ]	
Rebuild Array..... [ 5 ]	
Controller Configuration..... [ 6 ]	
[ Keys Available ]	
Press 1..6 to Select Option	[ESC] Exit

To create a new array automatically, follow the steps under “**Creating Arrays Automatically**” on page 8. Promise recommends this option for most users.

To view drives assigned to arrays, see “**Viewing Drive Assignments**” on page 10.

To delete an array (but not delete the data contained on the array), select “**Deleting An Array**” on page 18.

To rebuild a mirrored array, see “**Rebuilding an Array**” on page 20.

To view controller settings, see “**Viewing Controller Configuration**” on page 22.

**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 1.31 (C) 1996-2000 Promise Technology, Inc.	
[ Auto Setup Options Menu ]	
Optimize Array for:	Performance
Typical Application to use:	DESKTOP
[ Array Setup Configuration ]	
Mode.....	Stripe
Spare Drive.....	8
Drive(s) Used in Array.....	2
Array Disk Capacity (size in MB).....	12395
[ 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:** *Promise 265R Raid* controller 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, *Promise 265R Raid* controller 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 *Promise 265R Raid* controller 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.

Under the “**Assignment**” column, drives are labeled with their assigned disk array or shown as “**Free**” if unassigned. Such “**Free**” drives can be used for a future array or used as a spare drive when a drive fails in a mirrored array. Unassigned drives are not accessible by the OS. The menu also displays the data transfer mode that relates to speed used by each drive (U5 refers to 100MB/sec transfers, U4 refers to 66MB/sec transfers, etc...)

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.				
[ View Drives Assignments ]				
Channel : ID	Drive Model	Capacity (MB)	Assignment	Mode
1 : Mas	QUANTUMR8.4A	8063	Array 1	U5
2 : Mas	QUANTUMR8.4A	8063	Free	U5
3 : Sla	QUANTUMR8.4A	8063	Array 1	U5
[ Keys Available ]				
[ ↑ ] Up	[ ↓ ] Down	[ ESC ] Exit	Mode ( P = PIO, D = DMA, U = UDMA )	

---

## Manually Creating an Array

The **View 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 *Promise 265R Raid* controller. Users will commonly create one or two drive arrays with *Promise 265R Raid* controller, though the controller will support a maximum of four arrays<sup>1</sup>.

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

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.				
[ View 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 View Array Menu, use the arrow keys to highlight the array number you wish to define, and press **[Enter]** to select.
2. The View Array Definition Menu will next appear that allows drive assignments to the disk array (see next page).

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<sup>1</sup> A user may use a single drive in either striping or spanning mode with *Promise 265R Raid* controller. 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.

---

## 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), or **Capacity** (Spanning). See page 8 about RAID levels.

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.				
[ View Array Definition Menu ]				
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2	16126	Functional
Stripe Block: 64 KB				
[ Drives Assignments ]				
Channel : ID	Drive Model	Capacity (MB)	Assignment	
1 : Mas	QUANTUMR8.4A	8063	Y	
2 : Mas	QUANTUMR8.4A	8063	N	
3 : Sla	QUANTUMR8.4A	8063	Y	
Any Key to Continue . . . . .				

## Selecting Stripe Block

For RAID 0 Striped arrays only, you may manually select the "stripe block size." Use the Spacebar to scroll through choices progressing as follows (1, 2, 4, 8, 16 . . . 1024).

The size selected affects how *Promise 265R Raid* controller sends and retrieves data blocks from the drives. You will need to perform your own testing to determine how the data block size is affecting your particular use of the array. In general, a larger block size is better when handling large data transfers (such as in A/V editing or graphics) while a smaller block size is better when handling e-mail and other common server data. The default is 64K.

---

### Assigning Drive(s) to Array

1. Under the [ **Drive Assignments** ] section, highlight a drive using the [ **↑** ] Up [ **↓** ] Down keys.
2. With the [ **Space** ] bar key, change the Assignable option to "Y" to add the drive to the disk array.
3. Press < **Ctrl-Y** > to save the disk array information. Depending on the array type selected, the following scenarios will take place:
  - a) If choosing a Striping, Spanning, or Mirroring array, the initial Define Array Menu screen will appear with the arrays defined. From there you may **ESC** to exit and return to the Main Menu of FastBuild.
  - b) If you selected a Mirroring array for two drives, there is an additional window that appears as described in order to create the array. To do this you will use either two brand new drives, or one drive that contains existing data that you wish to mirror.

### 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

*Promise 265R Raid* controller 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 *Promise 265R Raid* controller, do NOT connect the hard drive to the *Promise 265R Raid* controller yet. You MUST install the Windows NT4 or 2000 driver software first (see page 23) 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.

---

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.		
[ 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 : Mas	QUANTUMR8.4A	8063
2 : Mas	QUANTUMR8.4A	8063
[ Keys Available ]		
[ ↑ ] Up	[ ↓ ] Down	[ ESC ] Exit [ Enter ] Select


- 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  
 10%  
 Complete



7. 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 a Promise 265R Raid Disk Array Bootable

**WARNING:** In order for you to boot from an array on the *Promise 265R Raid* controller, your PC or server must be configured in the CMOS Setup to use the *Promise 265R Raid* controller as a bootable device (versus the onboard controller or another add-in card). This option is not available if the *Promise 265R Raid* controller is being used as a secondary controller.

1. 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 1.31 (C) 1996-2000 Promise Technology, Inc.					
[ View Array Menu ]					
	Array No	RAID Mode	Total Drv	Capacity(MB)	Status
*	Array 1	Stripe	2	13044	Functional
	Array 2	----	----	----	----
	Array 3	---	---	---	---
	Array 4	----	----	----	----

[ Keys Available ]					
Note:	* -- Bootable Array				
[ ↑ ] Up	[ ↓ ] Down	[ ESC ] Exit	[ Enter ] Select	[ Space ] Change Boot Drive	

2. Highlight the array which you want to boot from using the [ ↑ ] Up [ ↓ ] Down keys.

- 
3. Press the **[Space]** bar key.
  4. 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.

### **Creating a “Hot” Spare Drive for Mirrored Arrays**

For automatic rebuilds of a mirrored array, attach an extra “spare” drive to the *Promise 265R Raid* connector. Drives that are not assigned to an array and are the same size or larger than the original will be used for the automatic rebuild. This is performed in the background under all supported operating systems, except DOS. At a later time, the system can be turned off and the failed drive can be physically removed.

### **How Promise 265R Raid controller Orders Arrays**

During startup, the disk arrays on the *Promise 265R Raid* controller are recognized in this order: 1) The array set to bootable in the FastBuild™ Setup, and 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 Promise 265R Raid controller 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 *Promise 265R Raid* disk array system is to recognize drive members even if drives are moved between different *Promise 265R 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.

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.				
[ Delete 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 ]				
[ ↑ ] Up	[ ↓ ] Down	[ ESC ] Exit	[ Del ] Delete	

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.

<b>FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.</b>				
<b>[ View Array Definition Menu ]</b>				
<b>Array No</b>	<b>RAID Mode</b>	<b>Total Drv</b>	<b>Capacity(MB)</b>	<b>Status</b>
<b>Array 1</b>	<b>----</b>	<b>----</b>	<b>----</b>	<b>----</b>
<b>Stripe Block: 64 KB</b>				
<b>[ Drives Assignments ]</b>				
<b>Channel : ID</b>	<b>Drive Model</b>	<b>Capacity (MB)</b>	<b>Assignment</b>	
<b>1 : Mas</b>	<b>QUANTUMR8.4A</b>	<b>8063</b>	<b>Y</b>	
<b>2 : Mas</b>	<b>QUANTUMR8.4A</b>	<b>8063</b>	<b>Y</b>	
<b>Any Key to Continue . . . . .</b>				

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

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

4. After deleting the array, you should create a new array using Auto Setup or the Define Array menu from the FastBuild Main Menu.

---

## 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 FastTrak 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 *Promise 265R Raid* controller 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.

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.				
[ Rebuild Array Menu ]				
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1		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 (see next page).

---

FastBuild (tm) Utility 1.31 (C) 1996-2000 Promise Technology, Inc.			
[ Rebuild Array Menu ]			
Array No	RAID Mode	Total Drv	Status
Array 2	Mirror	2	Critical
Stripe Block: Not Available			
[ Select Drive for Rebuild ]			
Channel : ID	Drive Model	Capacity (MB)	
1 : Sla	QUANTUMR8.4A	8063	
[ Keys Available ]			
[ ↑ ] Up	[ ↓ ] Down	[ ESC ] Exit	[ Enter ] Select

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.

Please Wait While Duplicating The Image	
<div><div></div></div>	10%
Complete	

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 *Promise 265R Raid* controller 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 FastTrak's data channels.

FastBuild (tm) Utility 1.31 (C) 1996-2000 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 Promise 265R Raid controller BIOS On Bootup Errors

The **[Adapter Configuration - Options]** section allows you to enable or disable *Promise 265R Raid* controller 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 Promise 265R Raid controller System Resources

The **[System Resources Configuration]** section of this submenu displays the PCI slot interrupt and port address used by the *Promise 265R Raid* controller. In the rare case that there is a resource conflict, refer to the Mainboard BIOS documentation on changes on resources allocated to the *Promise 265R Raid* controller.

# INSTALLING DRIVERS

---

This section details the *Promise 265R Raid* controller driver installation when used with various operating systems. The software includes the driver necessary to identify *Promise 265R Raid* controller to the operating system.

- ✦ For Windows 2000, see below.
- ✦ For Windows 95/98, see page 25.
- ✦ For Windows NT4.x, see page 28.

## Windows 2000

### Installing Driver During New Windows 2000 Installation

1. Copy Windows 2000 drivers from system CD (Copy D:\Raid\Win2000 A:\, if D: is your CD-ROM drive) into an empty floppy diskette.
2. **Floppy Install:** Boot the computer with the Windows 2000 installation diskettes.
3. **Floppyless Install:** Boot from floppy and type **"WINNT"**. After files have been copied, the system will reboot. On the reboot, press **< F6 >** after the message **"Setup is inspecting your computer's hardware configuration..."** appears.
4. **CD-ROM Install:** Boot from the CD-ROM. Press **< F6 >** after the message **"Press F6 if you need to install third party SCSI or RAID driver"** appears.
5. When the **"Windows 2000 Setup"** window is generated, press **"S"** to Specify an Additional Device(s)
6. Press **"O"** to select **"Other"** and press the **"Enter"** key.
7. Insert the Windows 2000 driver diskette (create in step 1) into drive A: and press **"Enter"** key.
8. Choose **"Win2000 Promise FastTrak100-Lite Controller"** from the list that appears on screen, then press the **"Enter"** key.
9. The Windows 2000 Setup screen will appear again saying **"Setup will load support for the following mass storage devices:"** The list will include **"Win2000 Promise FastTrak100-Lite controller"**..
10. **NOTE:** If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.
11. From the Windows 2000 Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows 2000 installation.



---

## Installing Driver in Existing Windows 2000 System

**WARNING:** If you will be moving the boot drive containing the existing Windows 2000 operating system to a mirrored RAID 1 array on the *Promise 265R Raid* controller, the Promise driver **MUST** be loaded to the hard drive while it is still attached to your existing hard drive controller. Do not attach this drive or any other hard drive to the *Promise 265R Raid* controller before completing this step.

After installing the *Promise 265R Raid* controller driver and rebooting your system, Windows 2000 setup will show a **"New Hardware Found"** dialog box. Under Windows 2000, the **"PCI RAID Controller"** will be displayed.

1. In the dialog box, choose **"Driver from disk provided by hardware manufacturer"** button.
2. In the A: drive, insert the Windows 2000 driver diskette (created in step 1).
3. Type **"A:\"** in the text box. Press **"Enter"**.
4. Choose **"Win2000 Promise FastTrak100-Lite Controller"** from the list that appears on screen, then press the **"Enter"** key.
5. The Windows 2000 Setup screen will appear again saying **"Setup will load support for the following mass storage devices - Win2000 Promise FastTrak100-Lite controller"**. The *Promise 265R Raid* controller driver will now be copied on to the system and entered into the Windows 2000 driver database.
6. When the **"System Settings Change"** dialog box appears, remove the floppy diskette and click on **"Yes"** to restart the system. Windows 2000 will then restart for the driver installation to take effect.
7. Power off your system, then attach your hard drives to the *Promise 265R Raid* controller.

## Confirming Windows 2000 Installation

1. From Windows 2000, open the Control Panel from **"My Computer"** followed by the System icon.
2. Choose the **"Hardware"** tab, then click the **"Device Manager"** tab.
3. Click the **"+"** in front of **"SCSI & RAID Controllers hardware type."** The driver **"Win2000 Promise FastTrak/FastTrak100-Lite Controller"** should appear.

---

## Windows 95/98

### Installing Drivers During Windows 95/98 Installation

The following three sections detail the installation of the *Promise 265R Raid* controller drivers while installing Windows 95/98. If you're installing the *Promise 265R Raid* controller drivers on a system with Windows 95/98 already installed, see "**Installing Drivers with Existing Windows 95/98**" on page 26.

### Windows 98

1. Configuring the hard drive(s), partition and format your hard drive(s), if necessary.
2. Install Windows 98 normally.
3. After installation, go the "**Start**" menu and choose "**Settings**."
4. From the "**Settings**" menu, choose "**Control Panel**."
5. In the "**Control Panel**" window, double-click on the "**System**" icon.
6. In the "**System**" window, choose the "**Device Manager**" tab.
7. In the hierarchical display under "**Other Devices**" is a listing for "**PCI RAID Controller**." Choose it and then press the "**Properties**" button.
8. Choose the "**Driver**" tab in the "**Properties**" window, choose "**Update Driver**," and then press "**Next**."
9. Choose "**Search for a better driver than the one your device is using now (recommended)**," then press "**Next**."
10. Choose "**Specify Location**," and then type "**D:\Raid\WIN9X-ME (If D: is your CD-ROM drive**" in the text box.
11. Insert the System CD into the D: driver.
12. Press the "**Next**" button. A message informing you that Windows 98 has found "**Win95-98 Promise FastTrak100-Lite(tm) Controller**" should appear.
13. Press "**Next**," then "**Finish**," then "**Yes**" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

### Windows 95

1. Configuring the hard drives, partition and format your hard drive(s), if necessary.
2. Install Windows 95 normally.

- 
3. After installation, go to the **"Start"** menu and choose **"Settings."**
  4. From the **"Settings"** menu, choose **"Control Panel."**
  5. In the **"Control Panel"** window, double-click on the **"System"** icon.
  6. In the **"System"** window, choose the **"Device Manager"** tab.
  7. In the hierarchical display under **"Other Devices"** is a listing for **"PCI Mass Storage Controller."** Choose it and then press the **"Properties"** button.
  8. Choose the **"Driver"** tab in the **"Properties"** window, and then press the **"Update Driver"** button.
  9. When asked if you want Windows to search for the driver, choose **"Yes (recommended)."**
  10. Insert the System CD diskette into the CD-ROM drive, then press **"Next."**
  11. When Windows informs you that it was unable to find the drivers, press **"Other Locations..."**
  12. In the **"Select Other Location"** dialog box, type **"D:\Raid\WIN9X-ME"**.
  13. Press the **"Next"** button. A message informing you that Windows 95 has found **"Win95-98 Promise FastTrak100-Lite(tm) Controller"** should appear.
  14. Press **"Finish."** (If Windows can't find the **"FastTrak100-Lite.MPD"** file, type **"D:\Raid\WIN9X-ME"** in the **"Copy files from:"** text box).
  15. Choose **"Yes"** when asked if you wish to restart the system, and remove the diskette.

### **Installing Drivers with Existing Windows 95/98**

The following three sections detail the installation of *Promise 265R Raid* controller drivers on a system that has Windows 95/98 already installed. If you're installing the *Promise 265R Raid* controller drivers on a system during a Windows 95/98 installation, see **"Installing Drivers During Windows 95/98 Installation"** on page 25.

### **Windows 98**

1. After configuring the hard drives, power up the system and boot Windows.
2. The **"Add New Hardware Wizard"** will appear, informing you that it has found a **"PCI RAID Controller."**

- 
3. Check the **"Search for the best driver for your device"** box and click the Next button.
  4. Check the **"Specify a Location"** box and click Next button.
  5. Type **"D:\Raid\WIN9X-ME"** in the text box that appears.
  6. Insert the System CD diskette in drive D: (If D: is your CD-ROM drive).
  7. Click on **"Next."** The Add New Hardware wizard will say it has found **"Win95-98 Promise FastTrak100-Lite controller"**.
  8. Click on **"Next,"** and then on **"Finish."**
  9. Choose **"Yes"** when asked if you want to restart your computer. Be sure to eject the diskette from drive D:.

### **Windows 95**

1. After configuring the hard drives, power up the system and boot Windows.
2. The **"Update Device Drive Wizard"** will appear, informing you that it has found a **"PCI Mass Storage Controller."**
3. Insert the System CD diskette in drive A:.
4. Type **"D:\Raid\WIN9X-ME"** in the text box, then click on **"Next."** Windows will inform you that it has found the **"Win95-98 Promise FastTrak100-Lite controller"**.
5. Click on **"Finish,"** and when prompted to insert the **"FastTrak100-Lite Driver"** diskette, click on **"OK."**
6. If a message informing you that the file **"FastTrak100-Lite.MPD"** cannot be found, go to the **"Copy files from:"** text box and type: **"D:Raid\WIN9X-ME"**.
7. Choose **"Yes"** when asked whether you want to start your computer. Be sure to remove the diskette from drive A

### **Confirming Driver Installation in Windows 98/95**

To confirm that the driver has been properly loaded in Win 95/98, perform the following steps:

1. Choose **"Settings"** from the **"Start"** menu.
2. Choose **"Control Panel,"** and then double-click on the **"System"** icon.
3. Choose the **"Device Manager"** tab, and then click the **"+"** in front of **"SCSI & RAID controllers."** **"Win95-98 Promise FastTrak100-Lite controller"** should appear

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## Windows NT4

### Installing Drivers During Windows NT 4.0 Installation

1. Copy Windows NT drivers from system CD (Copy D:\Raid\NT4 A:\, if D: is your CD-ROM drive) into an empty floppy diskette.
2. Start the system installation by booting from the Windows NT disk:
  - a) **Floppy install:** boot the system with the Windows NT installation diskettes.
  - b) **Floppyless install:** boot from floppy and type **"WINNT /B"**.  
After files have been copied, the system will reboot. On the reboot, press the **"F6"** key when the message **"Setup is inspecting your computer's hardware configuration..."** appears.
  - c) **CD-ROM disk install:** boot from the CD-ROM disk and press the **"F6"** key when the message **"Setup is inspecting your computer's hardware configuration..."** appears.
3. When the **"Windows NT Setup"** window is generated, press **"S"** to Specify an Additional Device(s).
4. Press **"O"** to select **"Other"** and press the **"Enter"** key.
5. Insert the Win NT driver diskette (created in step 1) into drive A: and press the **"Enter"** key.
6. Choose **"Win NT Promise FastTrak100-Lite (tm) Controller"** from the list that appears on screen, then press the **"Enter"** key.
7. The Windows NT Setup screen will appear again saying **"Setup will load support for the following mass storage devices:"** The list will include **"Win NT Promise FastTrak100-Lite (tm) controller"**.

**NOTE:** If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 8.

8. From the Windows NT Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows NT installation.
9. After a successful installation, the **"SCSI Adapter Setup"** box will show that the **"Win NT Promise FastTrak100-Lite (tm) Controller"** driver has been installed.

---

## Installing Driver with Existing Windows NT 4.0

**WARNING:** If you plan to move your boot drive to a mirrored RAID1 FastTrak array, hard drives should NOT be connected to the *Promise 265R Raid* controller before performing the following procedure. The *Promise 265R Raid* controller drivers must be loaded on the system hard drive (running under the existing hard drive controller) before any hard drives are connected to the *Promise 265R Raid* controller.

1. Choose **"Settings"** from the **"Start"** menu.
2. Choose **"Control Panel"** from the **"Settings"** menu.
3. Double-click on the **"SCSI Adapters"** icon, which generates the **"SCSI Adapters"** dialog box.
4. Choose **"Drivers,"** and then press **"Add."**
5. In the **"Install Drivers"** dialog box, press **"Have Disk..."**
6. When the **"Install From Disk"** appears, insert the WinNT driver diskette (created in step 1) in drive A:.
7. Type **"A:\"** in the text box window, then choose **"OK."**
8. When the **"Install Driver"** dialog box appears, select **"Win NT Promise FastTrak100-Lite Controller"** and then press **"OK."**
9. When the **"Select SCSI Adapter Option"** dialog box appears, press **"Install."**
10. After a successful installation, the **"SCSI Adapter Setup"** box will show that the **"Win NT Promise FastTrak100-Lite Controller"** has been installed.
11. Power off your system.
12. If moving the boot drive to the *Promise 265R Raid* controller, now attach the hard drives otherwise reboot.

## Removing the Driver from Windows NT 4.x

1. In **"Start"** Button choose **"Control Panel"** in **"Setup"** group.
2. In **"Control Panel,"** select **"SCSI Adapter,"** next choose **"Drivers"** label
3. Choose **"Remove"** button.
4. After successful removing, the **"SCSI Adapter Setup"** box will show that **"Win NT FastTrak100-Lite RAID Controller"** has been removed.

# UTILITY

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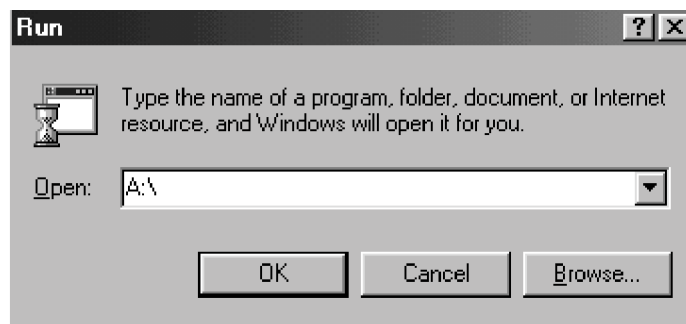
## Using The FastCheck(tm) Monitoring Utility

You can monitor the operating status of all arrays and drives configured on the *Promise 265R Raid* controller using the supplied FastCheck monitoring utility for Windows-based operating systems. FastCheck generates visual and audible messages alerting you of possible problems with the disk array or controller.

FastCheck visually identifies the physical location of attached drives on the *Promise 265R Raid* controller by IDE channel (1 or 2) and setting (Master/Slave/Cable-Select). It also displays which drives are included as part of individual arrays. Administrators can customize FastCheck to maintain operating logs and event notification, set Password access to the utility, and schedule maintenance on Mirrored (RAID 1) array.

## Installing FastCheck

1. From the Start Button on the Windows Taskbar, choose Run.
2. Insert Promise FastCheck Utility Diskette.
3. In the Run dialog box, type in "A:\\" and click OK.



4. Follow the directions from the setup program.
5. During installation, click YES when prompted to run the utility on every startup. If NO is selected, FastCheck will not initialize during startup. You may manually execute the utility via the Start button.

**NOTE:** Promise recommends to have FastCheck load during Startup. This insures you that it will be ready to post alerts on errors.

---

## Running FastCheck

As described in the Installation section, the default option for FastCheck is to load during startup of Win95/98/NT/2000. It appears minimized on the taskbar under Win 95/98/NT4/2000/Millennium (see below).



To start FastCheck, double-click on the FastCheck icon on the taskbar (above) or you may also use the Taskbar Start/Promise/FastTrak/FastCheck menus shown below.



## Closing FastCheck

Once FastCheck is opened (either automatically on startup or manually), the monitoring utility remains running in the background even if the user "closes" the FastCheck window.

**To completely shut down FastCheck, perform the following steps.**

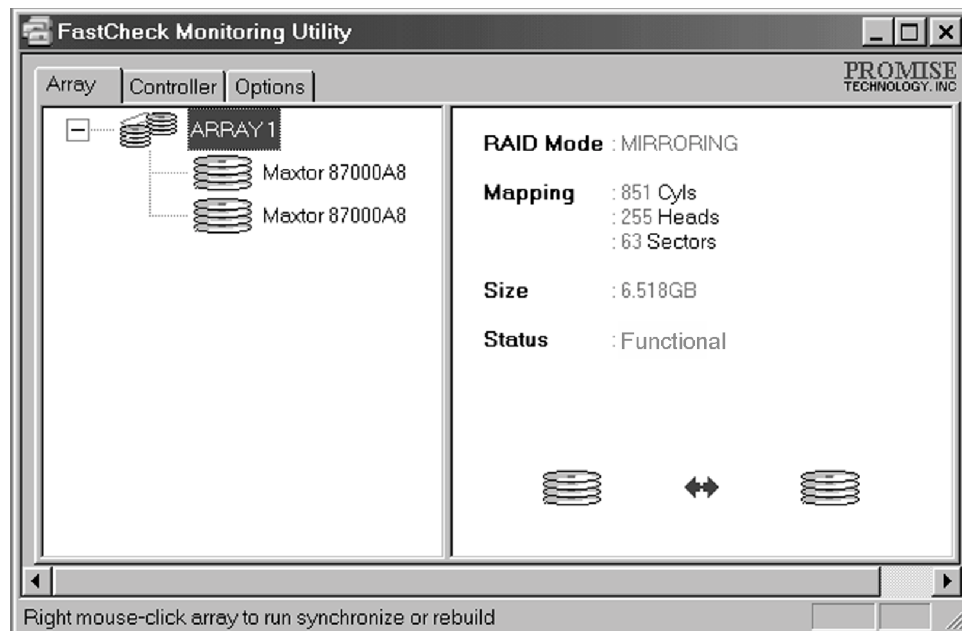
1. Right-click the FastCheck icon on the Taskbar.
2. Select Exit from the pop-up window.
3. FastCheck will no longer be running and will no longer be monitoring the array.



---

## Using FastCheck Array Window

Once FastCheck is selected, the FastCheck Monitoring Utility window will appear. The main pane has three information window tabs: Array, Controller, and Options. The user can switch screens by clicking on the tab. The Array Window is the active screen by default as shown below:



The Array Window (see above) displays information about the arrays configured on your *Promise 265R Raid* controller through the FastBuild BIOS. From this window, you can also perform data Synchronization of mirrored arrays, or Rebuild data from one drive to a replacement drive within a mirrored array.

While the Array Window does not allow you to change the array configurations directly, it clearly identifies which drives are associated with each array shown in the left pane.

### Viewing Array Information

By left-clicking on the Array #, the right pane shows the following information categories for that array:

#### **RAID mode**

(Striping, Mirroring, Mirroring & Striping, Spanning)

---

### **Mapping**

(Similar to physical drive specifications) describing # of cylinders, heads, and sectors of the array's "**virtual**" drive as seen by the system

### **Size**

Storage capacity of the array

### **Status**

(Functional, Critical, Offline)

#### **Functional**

Means the array is providing full functionality

#### **Critical**

Used only in reference to a Mirroring array (RAID 1). A problem has been detected in one of the drives of the array and the drive has been taken "**offline**." However, a "**critical**" array will continue to save and retrieve data from the remaining working drive(s).

Promise recom mends replacing the failed drive as soon as possible since a "**Critical**" array offers no data redundancy.

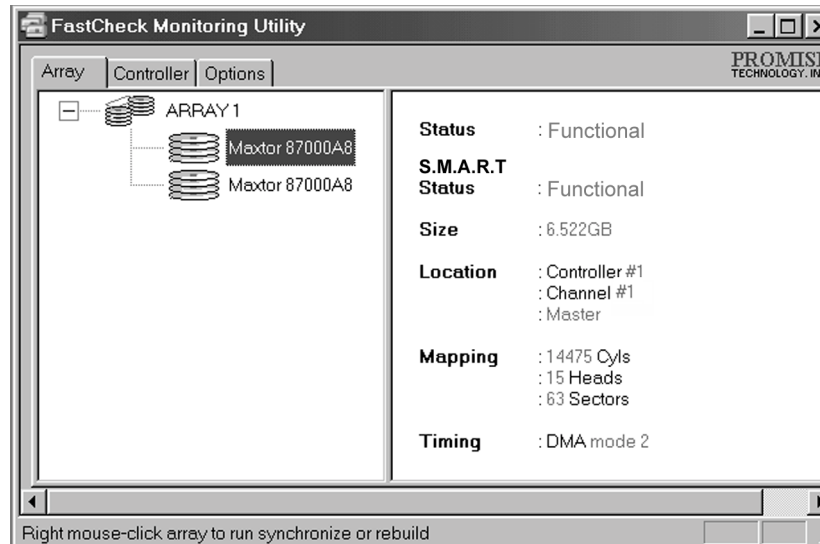
#### **Offline**

This would appear most commonly within a RAID 0 or Spanning array. The "**Offline**" results from a drive having ailed which has taken the entire array "**offline**." In this case, you have likely lost data. Fix/ replace the drive that has failed, then restore data from a backup source.

---

## Viewing Arrayed Drive Information

By left-clicking on a drive member of an array in the left pane, the right pane shows the following information categories for that drive:



### Status

(Also shown under the Array Window) can be Functional, Critical, or Offline. The meanings are shown below.

#### Functional

Means the drive is working normally

#### Critical

A problem has been detected in the drive and the drive taken offline as part of a mirroring array. Mirrored arrays will continue to function without the drive. Fix/replace the drive that has failed, then restore data from a backup source.

#### Offline

Drives that are NOT identified as "**bad**" may be taken offline if part of a Striping or Spanning array containing a "**bad**" drive. These drives do NOT need to be replaced, however.

### S.M.A.R.T. Status

Indicates whether attached hard drive implements Self-Monitoring Analysis & Reporting Technology to predict drive failure

### Size

Indicates capacity of individual drive

---

### Location

Shows physical location of drive. Indicates on which IDE channel (1 or 2), and whether drive is Master or Slave on cable. This allows user to identify drives for removal/replacement.

### Mapping

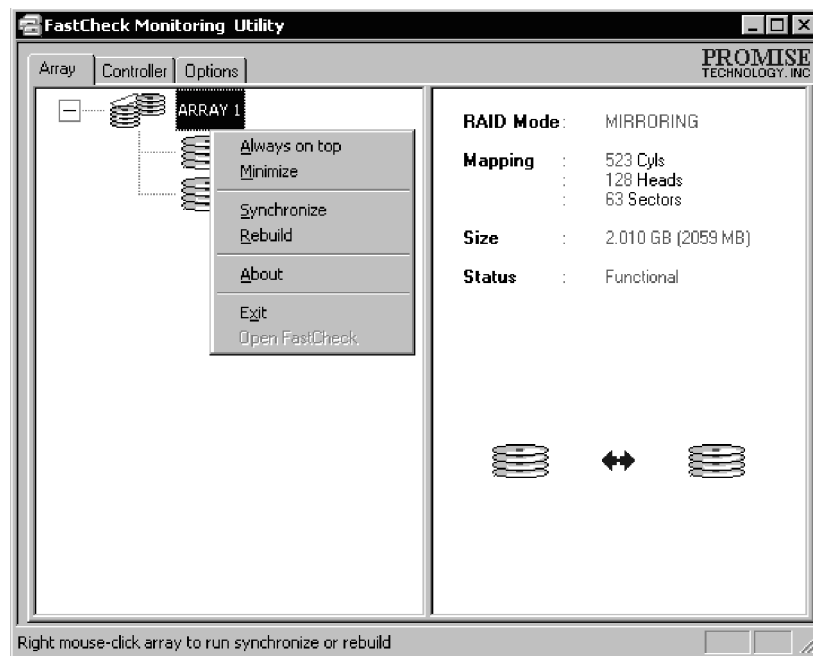
Indicates physical parameters of drive (cylinders, heads, sectors)

### Timing

Shows selection of drive timing (directly related to burst speed) based on type of drive and cable used.

## Using Array Pull-down Menu

At the bottom of the Array window, it indicates to right-click on an Array to perform synchronization or rebuild operations. Right-clicking displays the following pull-down menu:



From this menu, users may choose to have the Window Always **Appear** on Top of applications, **Minimize**, **Synchronize** mirrored drives, **Rebuild** a mirrored array, use **About** to check FastCheck version #, or **Exit** the onscreen window.

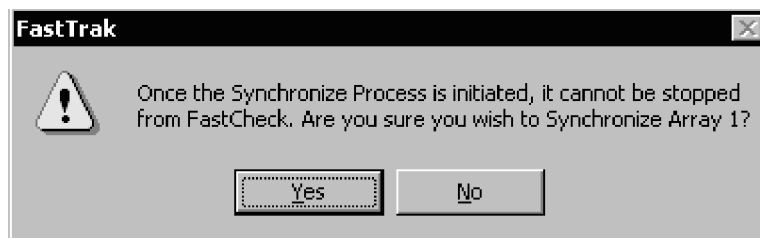
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## Synchronizing An Array

Synchronization is a periodic maintenance procedure for Mirroring (RAID 1) arrays to maintain data consistency on all mirrored drives. In operation, array synchronization compares data on the mirrored drives for any differences. If there are differences detected, data from the primary drive(s) is automatically copied to the secondary drive(s). This assures that all mirrored drives will contain the exact information.

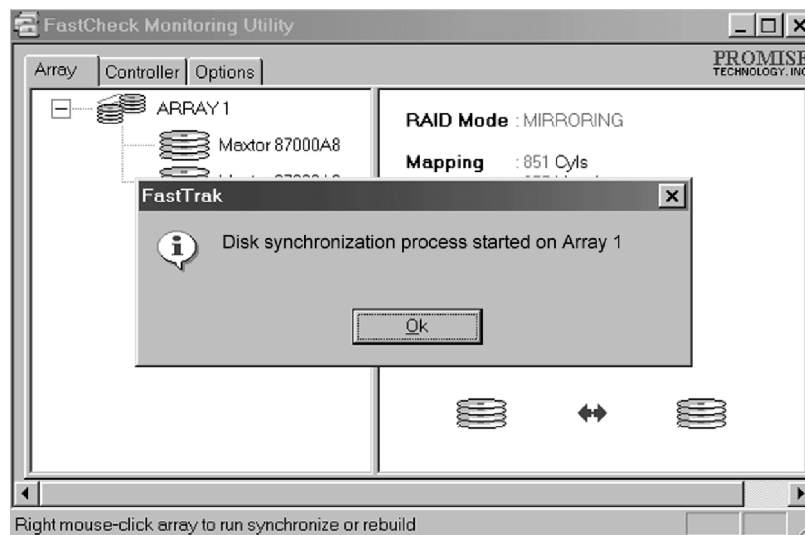
**NOTE:** You may instead choose to schedule array synchronization automatically under the Options Tab view versus manually initiating synchronization.

1. To synchronize, choose the Array Tab View (see figure on previous page).
2. Right-click on the array you wish to synchronize and choose “Synchronize” from the context menu.
3. Click “Yes” to initiate Synchronization (see below) when the Confirmation window appears. To cancel this option, click the No button.



**WARNING:** Once initiated, synchronization can NOT be halted in order to prevent data errors.

- 
4. Once Synchronization is confirmed, the following information screen appears. Click OK button or close the window to proceed.



**NOTE:** During Array Synchronization, users may continue to access the working array and perform normal PC functions. However, system performance will be slightly degraded and the process will take longer.

5. A progress bar will appear at the bottom of the FastCheck Monitoring window showing synchronization in progress and the percentage that has been completed.



### Rebuilding An Array

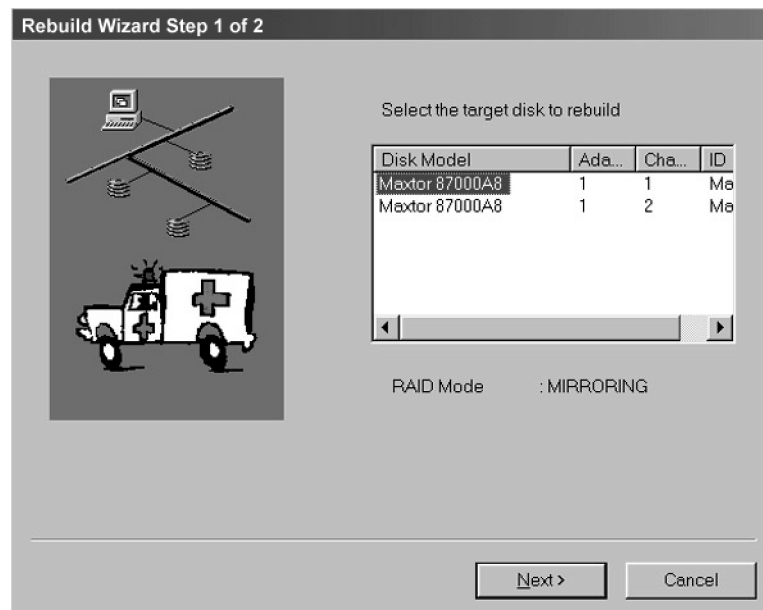
This command effectively copies or overwrites data from an existing data drive in the array on to a blank drive. The operation will be typically used when a failed drive has been replaced with a new drive as part of a mirrored array.

1. To perform a Rebuild, choose the Array Tab View.
2. Right click the array number and choose Rebuild from the context menu.
3. Once Rebuild is selected, you will be asked to **"Initialize Rebuild process on Array #"** by clicking OK.

---

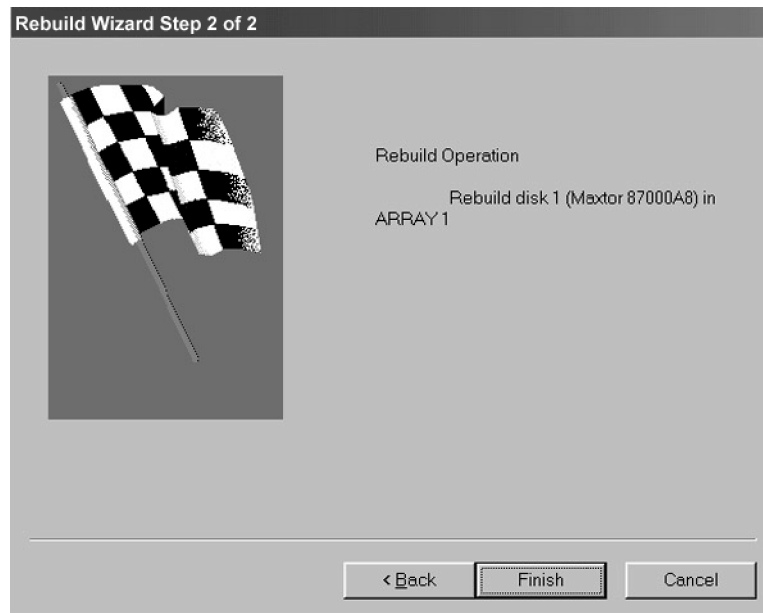
## Using Rebuild Wizard

1. Initiating rebuild array will open the Rebuild Wizard Step 1 screen shown below.
2. Select the Target drive which will receive data. Make sure you select the blank new or replacement drive. The unselected drive will contain “**good**” data. It will be the remaining working drive of an array, or a system drive containing existing data that you wish to mirror.

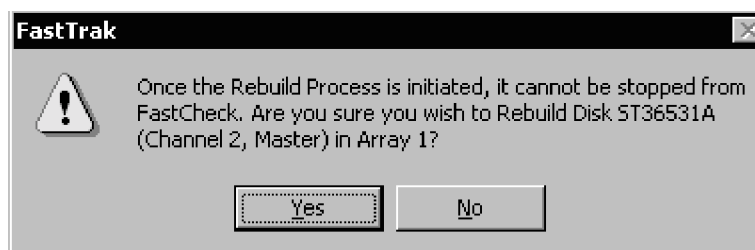


**WARNING:** Make absolutely sure and double-check which drive is which. If data exists on the target drive, it will be over-written.

- 
- Click the Next button to proceed to Rebuild Wizard Step 2 or Cancel button to stop.



- Rebuild Wizard Step 2 confirms the Target or **"Rebuild"** disk by Array # and drive ID.
- Click Finish button to initiate physical Rebuild, Back button to review Step 2, or Cancel button to Stop. A final confirmation window appears as below:



- Click **"Yes"** to initiate Rebuild. To cancel this option, click the No button.

**WARNING:** Once initiated, Array Rebuild can NOT be halted in order to prevent data errors.



---

**NOTE:** During Array Rebuild, users may continue to access the array and perform normal PC functions however the array will NOT provide data redundancy until Rebuild is completed. If you choose to continue using the PC during rebuild, system performance will be slightly degraded and the process will take longer.

7. Once Array Rebuild has begun, users are returned to the FastCheck Monitoring window. A progress bar showing the rebuild progress in percentage will appear at the bottom of the FastCheck Monitoring window.

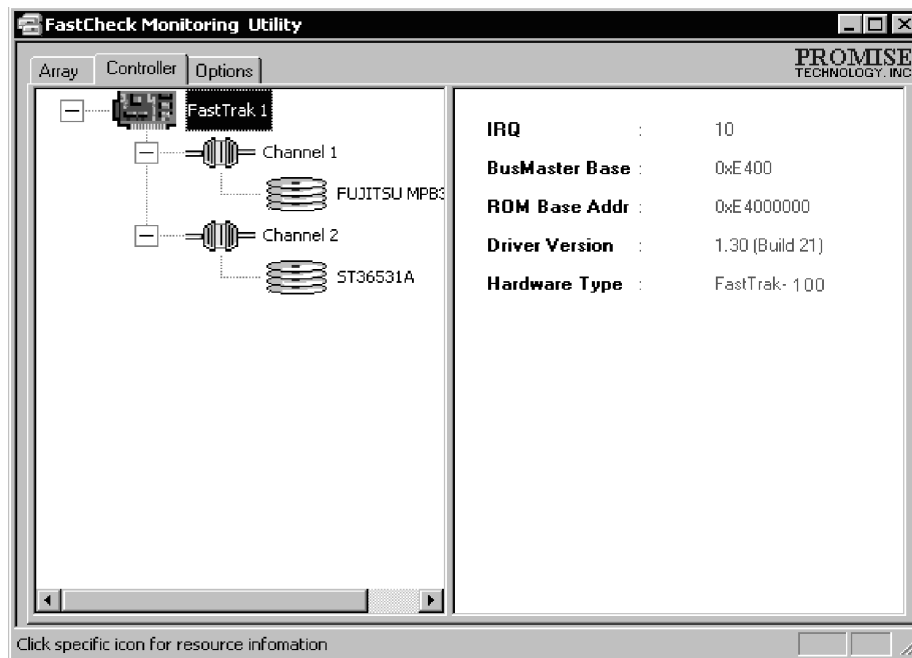


**NOTE:** When a “**spare**” unassigned drive is present on the *Promise 265R Raid* controller, a rebuild will automatically be performed from the remaining working drive.

---

## Using Controller Window

Clicking on the Controller tab, will reveal the Controller Window. This displays physical information about the location of *Promise 265R Raid* controller, data channels on the card, and the attached drives.



## Viewing Controller Card Information

By left-clicking on the FastTrak controller icon, the right pane shows the following information categories for that array:

### IRQ

Identifies interrupt request assigned to PCI slot

### Bus Master Base

Shows base address in hex numbering for board's bus master Input/Output function

### ROM Base Address

Shows base address in hex numbering for FastTrak's Flash ROM chip

### Driver Version

Identifies which version of the Promise FastTrak100-Lite driver you have installed.

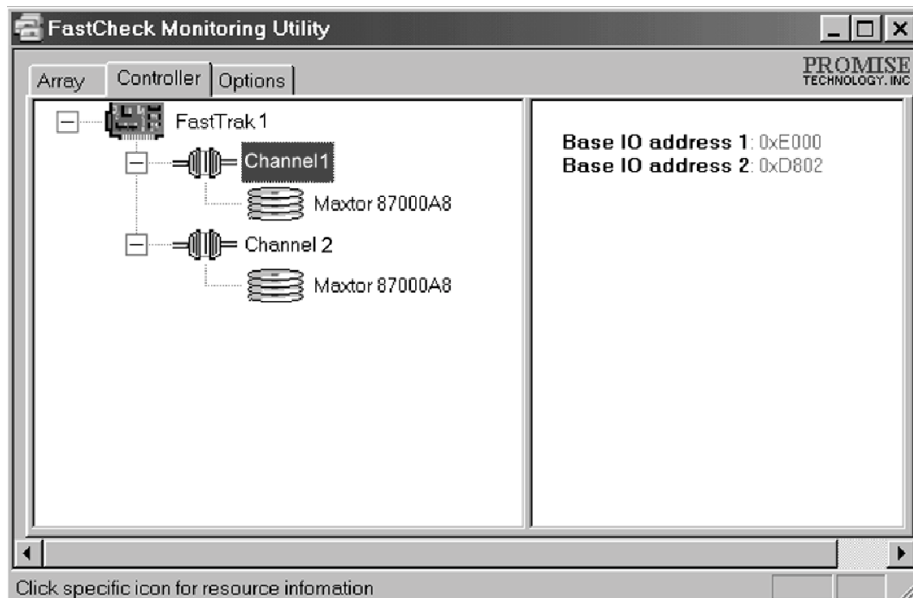
### Hardware Type

Identifies which FastTrak product is installed.

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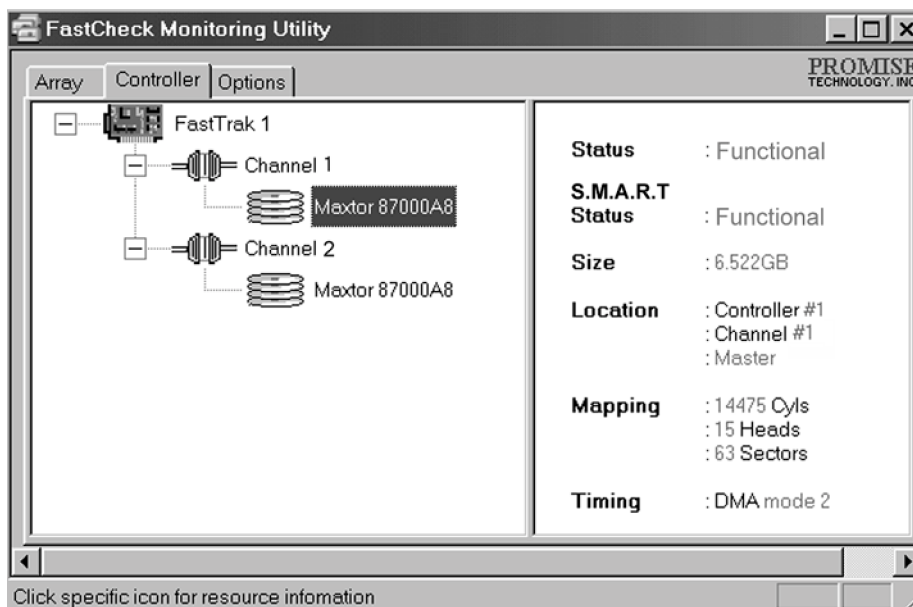
## Viewing IDE Channel Information

Left-clicking on a given Channel icon or # in the left pane, will show the Base IO addresses of the channel in the right pane (used for troubleshooting).



## Viewing Drive Information

Left-clicking on a given Drive icon or ID in the left pane, will show similar information categories as the Array Window Drive Information in the right pane.



---

## **Status**

(Also shown under the Array Window) can be Functional, Critical, or Offline. The meanings are shown below.

### **Functional**

Means the drive is working normally

### **Critical**

A problem has been detected in the drive and the drive taken offline as part of a mirroring array. Mirrored arrays will continue to function without the drive. Fix/replace the drive that has failed, then restore data from a backup source.

### **Offline**

Drives that are NOT identified as “**bad**” may be taken offline if part of a Striping or Spanning array containing a “**bad**” drive. These drives do NOT need to be replaced, however.

## **S.M.A.R.T. Status**

Indicates whether attached hard drive implements Self-Monitoring Analysis & Reporting Technology to predict drive failure

### **Size**

Indicates capacity of individual drive

### **Location**

Shows physical location of drive. Indicates on which IDE channel (1 or 2), and whether drive is Master or Slave on cable. This allows user to identify drives for removal/replacement.

### **Mapping**

Indicates physical parameters of drive (cylinders, heads, sectors)

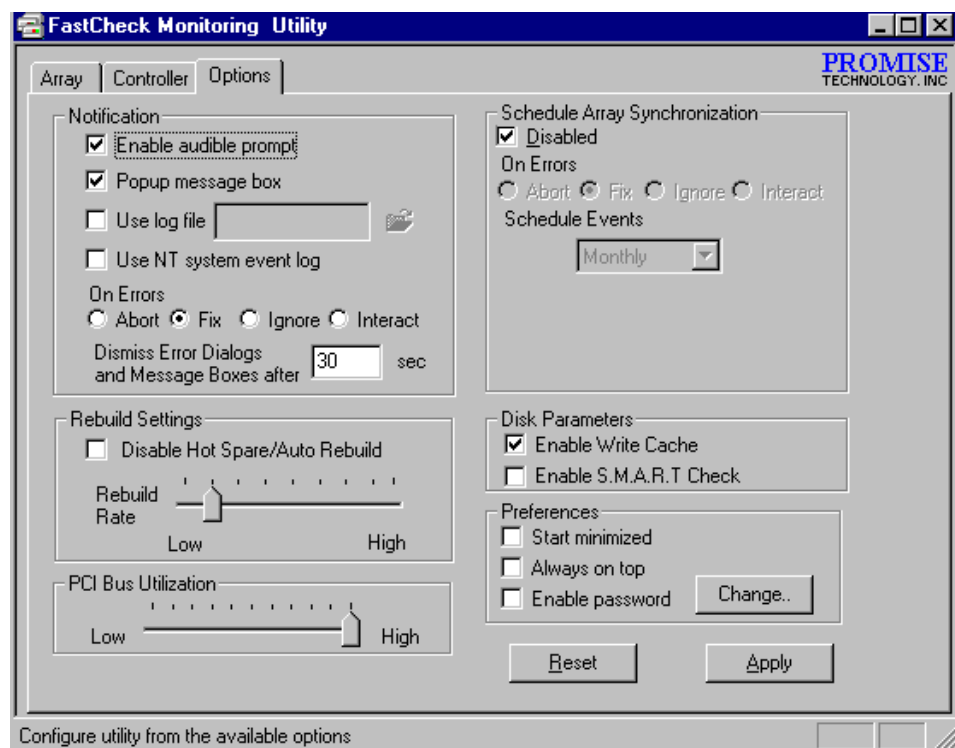
### **Timing**

Shows selection of drive timing (directly related to burst speed) based on type of drive and cable used.

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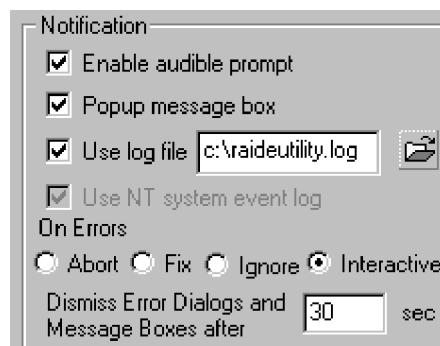
## Using Options Window

Clicking on the Options tab reveals the Options Window. Array administrators can customize the FastCheck Monitoring Utility in four major areas: Notification, Array Synchronization Scheduling, setting Password, Desktop Appearance. Most options relate to Mirroring arrays (RAID 1).



## Selecting Notification Options

This section of the Options windows allows users to select how they are notified of a system event. A System Event includes driver-initiated Rebuilds (automatic rebuild using a “hot” spare standby drive), user-initiated manual Rebuilds or manual Synchronization, and Error-Handling reporting for these processes.



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### **Enable audible prompt**

Checkbox turns on/off an audible alarm of an event (typically a drive failure, or completion of rebuild or synchronization).

### **Popup message box**

Checkbox turns on/off the appearance of an event message box that would typically indicates a drive failure, or completion of rebuild or synchronization.

### **Use log file**

Checkbox allows writing operating event logs of the array activity (alerts and status reports) to a given file name and directory. If a file name is used but the path left blank, the default directory is the same as the FastCheck Utility (typically C:\Program Files\Promise\FastTrak100-Lite).

### **Use NT system event log**

Checkbox is greyed out under Windows 95/98/2000/Millennium automatically. Under Windows NT4, it permits user to write array logging to NT's own event log.

1. To view FastCheck events under Windows NT, go to Start/Programs/Administrative Tools/Event Viewer.
2. In the Event Viewer, choose "**Log**" from the menu bar, then check "**Application.**" Any events generated by FastCheck will appear under the Source column as "**FastCheck.**"

### **On Errors**

Section offers four radio button choices for the user to select what procedure they would like to perform if an Error is detected during automatic/manual Rebuilds or manual Synchronization. There are three types of errors that *Promise 265R Raid* controller detects — a data mismatch between the primary and secondary drive, a physical media error on source or target drive, or a total disk failure. The options for handling Errors are as follows:

#### **Abort**

Stops any Synchronization or Rebuild process if an error is encountered.

#### **Fix**

In most cases, *Promise 265R Raid* controller automatically can correct errors. The method of correction varies depending on the type of error.

---

### Ignore

*Promise 265R Raid* controller will log the event error and continue the rebuild or synchronization process. Use this setting if you want to detect the presence of errors, but do not want to fix these errors at the time. The user may then decide what to do about the error(s) detected.

**WARNING:** This may result in mismatched drives under RAID 1.

### Interactive

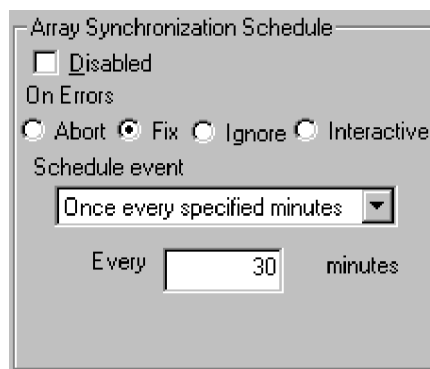
By checking this option, a selection window will appear each time an error is detected asking the user whether they want to Abort, Fix, or Ignore the error (see Troubleshooting section).

### Dismiss Error Dialogs

Designates the length of time (in seconds) that a Message box or Error Dialog box appears on screen.

## Scheduling Array Synchronization

This section of the Options Window allows a user to schedule when and how often *Promise 265R Raid* controller will perform synchronization maintenance of a mirrored array.



### Disable

Checkbox is checked (the default) to turn off automated scheduling of synchronization. When unchecked, the Scheduling section will be highlighted (see above).

---

## On Errors

Section offers four radio button choices for the user to select what procedure they would like to perform if an Error is detected during a scheduled Synchronization. There are three types of errors that Promise 265R Raid controller detects —data mismatch between the primary and secondary drive, a physical media error on source or target drive, or a total disk failure. The options for handling Errors are as follows:

### **Abort**

Stops the Synchronization process if an error is encountered.

### **Fix**

In most cases, Promise 265R Raid controller automatically can correct errors. The method of correction varies depending on the type of error (see Appendix under Error Correction Methodology).

### **Ignore**

*Promise 265R Raid* controller will log the event error and continue the synchronization process. (Warning: this may result in mismatched drives under RAID 1). Use this setting if you want to detect the presence of errors, but do not want to fix these errors at the time. The user may then decide what to do about the error(s) detected.

### **Interactive**

By checking this option, a selection window will appear each time an error is detected asking the user whether they want to Abort, Fix, or Ignore the error (see Troubleshooting for more details).

### **Schedule event**

Drop down box allows scheduling synchronization by minute, by hour, by day, by week, or by month. If enabled, the default is By Month. This allows synchronization to take place during an off-hour when the system is either not in use or not at peak demand.

### **Start time**

Designates hr/min/ am/pm

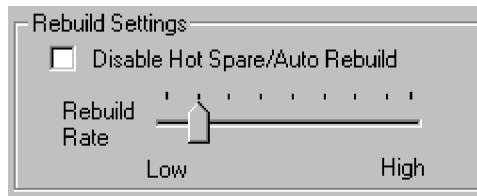
### **On the**

Designates day of week or by ordinal (1st, 2nd, 3rd....) selection.



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## Setting Rebuild Options



### Disable Hot Spare/Auto Rebuild

Checkbox turns off the use of a **“hot”** spare drive and automatic rebuilding of a mirrored array. The default is unchecked (or enable Hot Spare/Auto Rebuild).

### Rebuild Rate

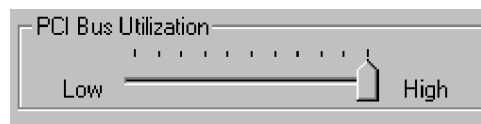
Assigns the amount of importance that *Promise 265R* Raid controller gives to mirroring data from one drive to another in the background. A **“high”** setting assigns most of *Promise 265R* Raid controller’s resources to the rebuild process at the expense of responding to ongoing read/write data requests by the operating system. A **“low”** setting gives priority to ongoing read/write data requests by the operating system at the expense of the rebuild process and will typically result in longer rebuild times. The setting shown above is the default.

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## Setting PCI Bus Utilization Option

**NOTE:** In most cases, a user does not need to change this setting since *Promise 265R Raid* controller's data handling rarely conflicts with an other PCI device. However, certain brands of video capture cards can produce a “**glitch**” on play back of A/V files that may require adjusting the default setting devices (see Tips for Audio/Video Editing for more information).

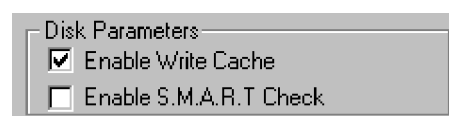
This section of the Options Window allows a user to change how much time the *Promise 265R Raid* controller holds on to the PCI bus to transfer data.



The default setting of “**High**” on the slider bar means *Promise 265R Raid* controller holds on to the PCI bus longer for data transfers to occur. A setting of “**Less**” reduces the time which *Promise 265R Raid* controller occupies on the PCI bus and frees that time for use by other PCI devices.

Once a bus setting has been selected, click the Apply button on the Options window to implement changes immediately.

## Setting Disk Param(eters) Option



### Enable Write Cache

Checkbox allows user to enable/disable write cache for hard drives that include this performance feature. FastCheck automatically recognizes such drives and enables the feature as the default setting. For drives that do not use write caching, this option is automatically greyed out.

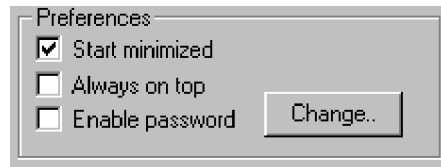
### Enable S.M.A.R.T. Check

Checkbox tells FastCheck to regularly monitor each drive to assure that drive failure prediction is functioning. The default is unchecked, meaning FastCheck will not monitor this function.

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## Setting Screen Preferences

This section controls how the FastCheck utility screen is displayed and sets the security password to protect the administrative settings.



### Start Minimized

Checkbox allows user to have FastCheck appear on the toolbar only on startup. Click on the icon to see the FastCheck utility screen.

### Always on Top

Checkbox tells the Utility to appear above all programs until closed or minimized manually.

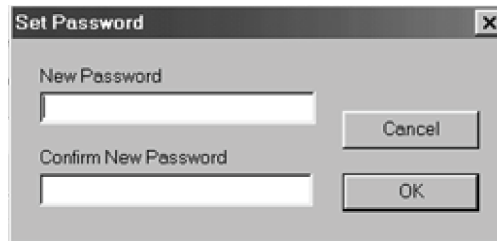
### Enable Password

Checkbox in the Preferences section turns on/off use of a Password every time the FastCheck Monitoring Utility icon is selected or the program is run from the Start menu. Disabling use of a current password requires password entry (see Creating Password on next page).

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## Creating Password

1. To create a password, check the Enable Password checkbox in the Preferences section. The **"Set Password"** window will appear.



2. Type the password you want to use. Press the Tab key or click to retype the same password in the **"Confirm New Password"** section. Click the OK button.

**NOTE:** Remember to record the password you use in a secure place in case you forget it.

3. A confirmation screen will appear saying that **"Password Checking is Enabled"**. Click the OK button.
4. Once the password feature is enabled, the following menu will appear before the FastCheck window can be opened. is enabled, the following menu will appear on each use of FastCheck.



## Changing Password

1. Input the original password you first created to gain access to FastCheck.
2. Click on Options tab, then click on the Change button in the Password section. The Set Password screen will appear (see figure in step 3 above).
3. Type the password you want to use. Press the Tab key or click to retype the same password in the **"Confirm New Password"** section.
4. Click OK button.

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### **Disabling Password**

1. Input the original password you first created to gain access to FastCheck.
2. Click on Options tab
3. Uncheck the **"Enable Password"** checkbox. Click Apply button on Options window