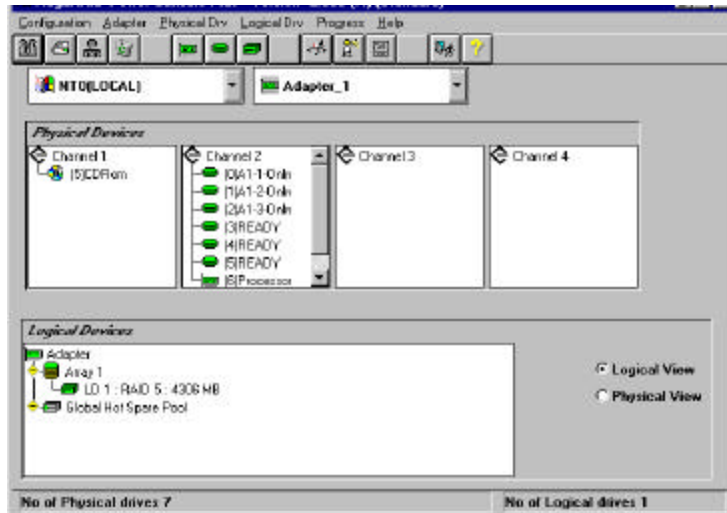


6 Running Power Console Plus

The current version of Power Console Plus is 2.xx. Double-click on the Power Console Plus icon in the MegaRAID program group on the Windows screen:



Power Console Plus Screen Layout Windows user interface conventions are used. Click on an object with the left mouse button to select or deselect the object. The screen elements are:

Element	Description
Menu Bar	Select options from the Configuration, Adapter, Physical Drive, Logical Drive, Progress, or Help menus.
Toolbar	Click on a toolbar icon to select an option. See page 121 for additional information about toolbar icons.
Adapter Views	In the right-hand box, choose the adapter to be configured. Choose Logical View or Physical View.
Physical Devices	The Physical Devices windows display the physical devices attached to the SCSI channels.
Logical Devices	The rightmost window displays the logical devices for each adapter and hot spare.
Bottom	Displays the number of physical drives and logical drives for the selected array.

User Interface Restrictions

You cannot choose a different server or adapter if an operation such as a rebuild, Performance Monitor display, or drive reconstruction is in progress.

Power Console Plus Restrictions When selecting a new server in Full Access mode, you must enter the password for the new server. You cannot access the new server if it is already being managed by a system in Full Access mode or if Power Console Plus or MegaRAID Manager is already running.

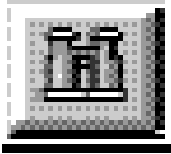
You cannot change from View Only mode to Full Access mode. You must exit Power Console Plus and then run Power Console Plus again. Choose the server, then choose Full Access mode and enter the password when prompted.

Important

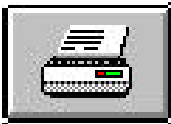
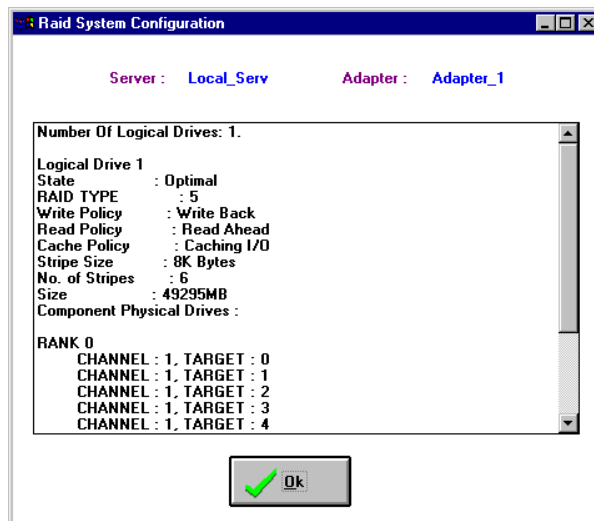
The screen graphics in this chapter show Power Console Plus screens with four SCSI channels. Various MegaRAID models support one, two, three, or four SCSI channels. The screen pictures in this manual show four SCSI channels, since this is the most comprehensive configuration. Your MegaRAID model may not support four SCSI channels. See the *MegaRAID Hardware Guide* for your model for additional information.

Power Console Plus Toolbox Icons

Power Console Plus includes several toolbar icons at the top of the screen. These icons provide easy access to Power Console Plus features. The icons are described below.



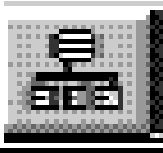
The Display Configuration icon is shown to the left. Click on this icon to display the current RAID system configuration, as shown on the sample screen below:



The print icon is shown to the left. Click on this icon to print the current configuration.

Cont'd

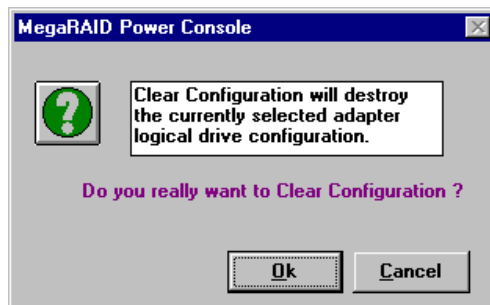
Power Console Plus Icons, Continued



The Wizard configuration icon is shown to the left. Click on this icon to configure the SCSI devices attached to the MegaRAID adapter.



The Clear Configuration icon is shown to the left. Click on this icon to clear the RAID configuration on the currently selected controller. A confirmation screen will appear:



Click on OK in the confirmation screen to reset the configuration.

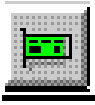
Warning

Choosing Clear Configuration will clear all channels on the MegaRAID adapter.

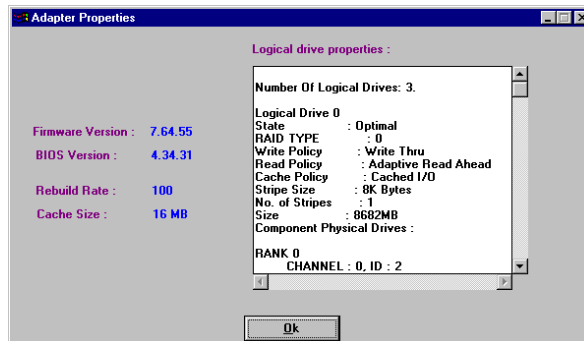
Clear Configuration will reset the entire MegaRAID adapter. If the operating system is located on a drive attached to the MegaRAID adapter, the system will lock up.

Cont'd

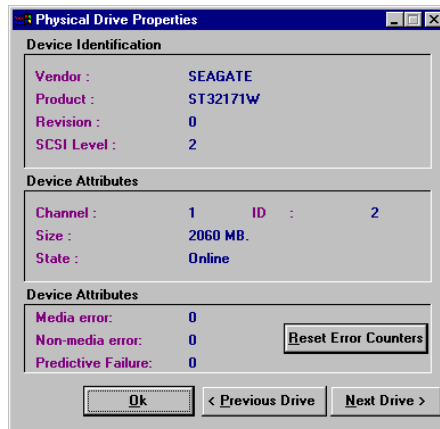
Power Console Plus Icons, Continued



The Adapter Properties icon is shown to the left. Click on this icon to display the properties of the selected adapter, as shown on the sample screen below:

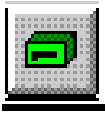


The Physical Drive Properties icon is to the left. Click here to display the properties of the selected physical drive, as shown on the sample Drive Properties screen below:

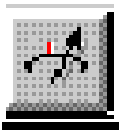


Cont'd

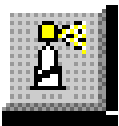
Power Console Plus Icons, Continued



The Logical Drive Properties icon is shown to the left. Click on this icon to display the properties of the selected logical drive, as shown on the sample screen below:



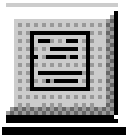
The rebuild rate icon is shown to the left. Click on this icon to set the RAID rebuild drive and reconstruction rate.



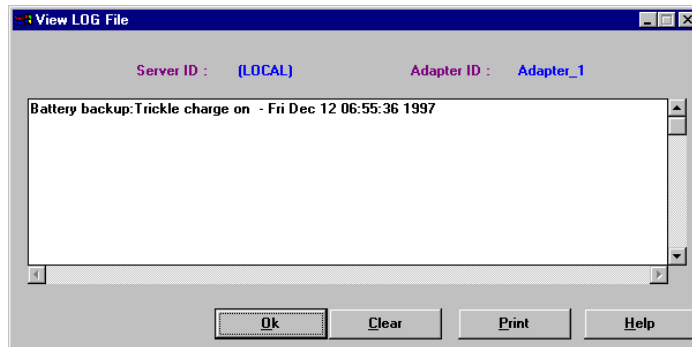
The rescan icon is shown to the left. When you click on this icon, the currently selected MegaRAID controller scans its SCSI channels again to make sure that all drive configuration information is current.

Cont'd

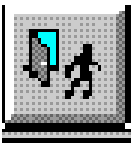
Power Console Plus Icons, Continued



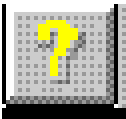
The display log icon is shown to the left. Click here to display a list of MegaRAID activities, as shown on the sample screen below:



Note: When running under Windows NT, Power Console Plus logs all messages to RAID.LOG. RAID.LOG is created in the same directory where Power Console Plus runs. Power Console Plus does not log anything to the Windows NT event log.



The Exit icon is shown to the left. Click on this icon to quit Power Console Plus.



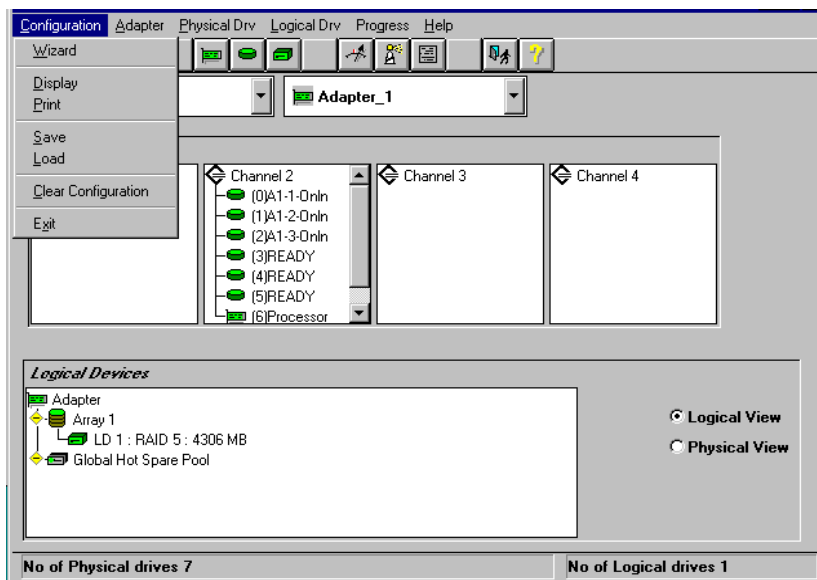
The Help icon is shown to the left. Click on this icon to display information about Power Console Plus.

Power Console Plus Menus

Main Menu Options The Power Console Plus menus are:

Option	Description
Configuration	Choose this option to select the Power Console Plus Wizard to configure the RAID system.
Adapter	Choose this option for adapter-related functions. You can configure logical drives, enable the speaker, toggle object identification, turn the performance monitor on or off, and display the toolbar by selecting an item from this menu.
Physical Drv	Choose this option to rebuild, format, and display the properties of the physical drives.
Logical Drv	Choose this option to create, delete, initialize, display the properties of, and check parity of logical drives.
Progress	Choose this option to view the progress of a disk rebuild, diagnostic, initialization, parity check, reconstruction or to view the performance monitor.
Help	Choose this to display information on Power Console Plus.

Configuration Menu

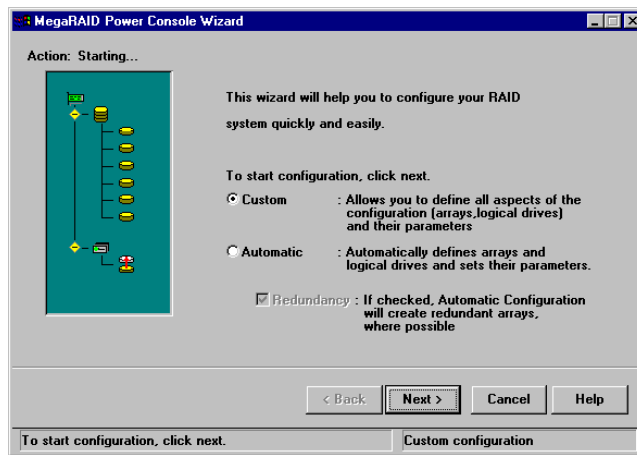


Cont'd

Configuration Menu, Continued

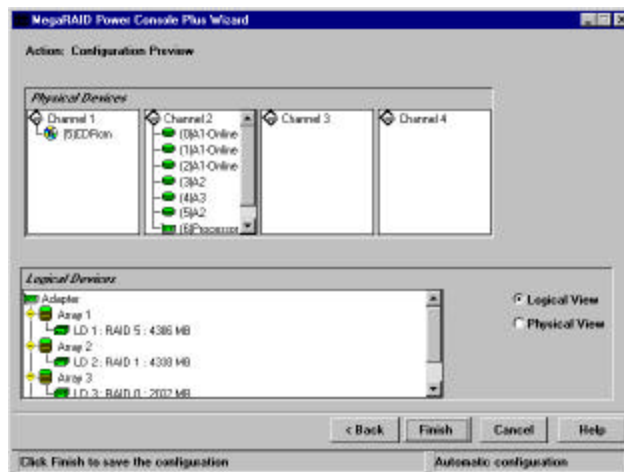
Wizard

Choose Wizard to configure arrays of physical drives and the logical drives. The following appears:



Choose Custom or Automatic array configuration.

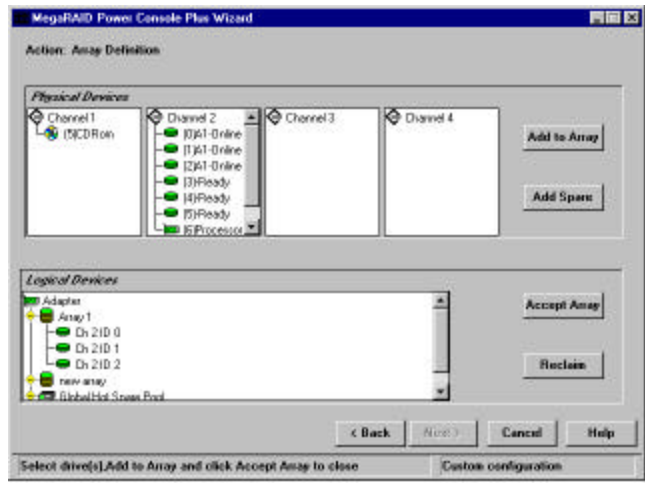
Automatic Configuration If you choose Automatic, the Wizard examines the system and automatically configures an optimal RAID system. Select Automatic and click on <Next>. A screen such as the following displays:



Cont'd

Configuration Menu, Continued

Custom Configuration If you choose Custom, you can determine the configuration. Select Custom, and click <Next>. A screen such as the following screen displays:



Click on Add in Array to add additional drives to the configuring array. You cannot add a drive to an existing array while running the Configuration Wizard.

Click on Add Spare to add Hot Spare drives.

Click on Accept Array if you approve of the suggested configuration.

Click on Reclaim to clear the last configured array.

Click on Next to accept the proposed configuration. Follow the instructions on the screen to complete the RAID configuration process.

Display Choose this option to display the current RAID system configuration.

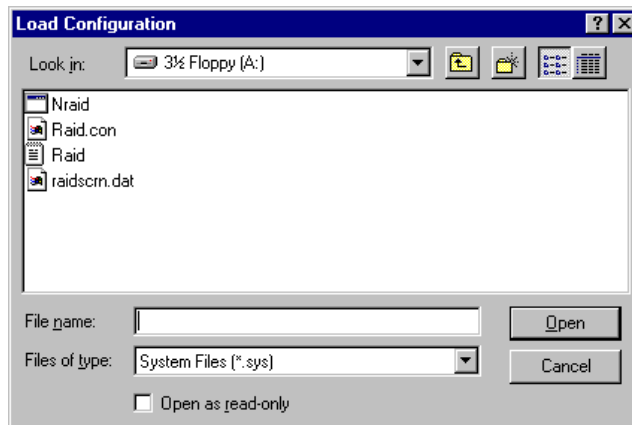
Print Choose this option to print the current RAID system configuration.

Cont'd

Configuration Menu, Continued

Save Choose this option to save the current RAID configuration to a hard disk drive or floppy drive.

Load Choose this option to load a previously saved RAID configuration. The following screen appears. Select the correct directory path and type the configuration filename.



Clear Configuration Choose this option to erase the current RAID configuration. After choosing this option, you must configure a new RAID array. A warning message appears when you select this option:

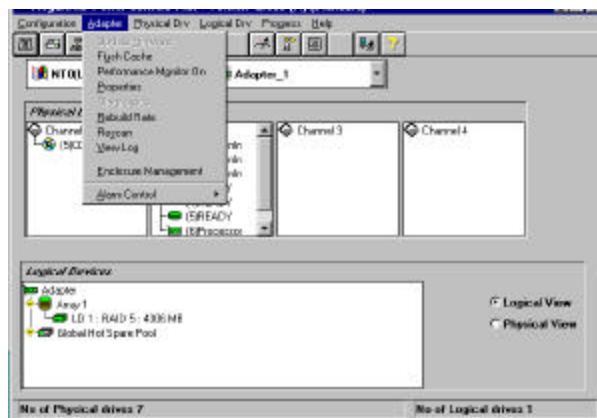
Clear configuration will destroy the currently selected adapter logical drive configuration.

Click on OK to continue.

Exit Choose this option to quit Power Console Plus.

Adapter Menu

The Power Console Plus Adapter menu is shown below:



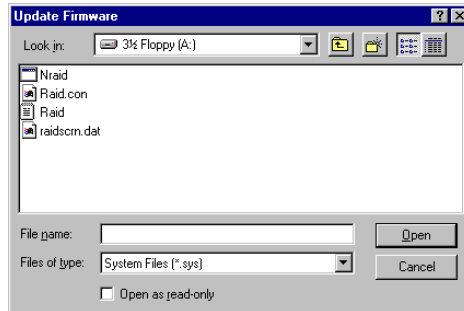
Adapter Options The options on the Adapter menu are described below.

Option	Description
Update Firmware	Choose this option to download a new version of the MegaRAID firmware. This option may not be available.
Flush Cache	Select this option to force the MegaRAID controller to send the contents of cache memory to the logical drives.
Performance Monitor On/Off	Select this option to display a graphical representation of the performance of a logical drive. You can select a bar graph or a line graph. This option can only turn this feature on or off.
Properties	Select this option to display the adapter properties, including the firmware and BIOS versions, the rebuild rate, cache memory size, and SCSI specification type.
Diagnostics	<i>This option is not yet available.</i>
Rebuild Rate	Choose this option to change the rate at which drives are rebuilt. See page 132 for additional information about rebuilds.
Rescan	Select this option to scan the SCSI channels again.
View Log	Select this option to display a MegaRAID event log.
Enclosure Management	Select this option to manage the drives in each physical RAID drive cabinet. A picture of a RAID enclosure is displayed. The actual real-time state of each RAID channel is displayed. You can monitor the addition and removal of devices in the enclosure online.
Alarm Control	Select this option to enable or disable the system alarm when a drive failure occurs.

Cont'd

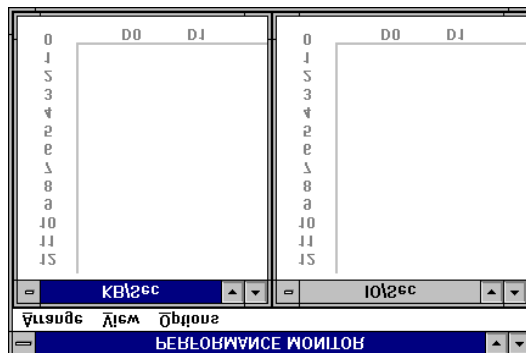
Adapter Menu, Continued

Update Firmware Choose this option to update the MegaRAID firmware. The following screen appears. Type the name of the firmware file and select the correct directory path. *This option has not been implemented yet.*



Flush Cache If the MegaRAID system must be powered down rapidly, you must flush the contents of the cache memory to preserve data integrity.

Performance Monitor Select Performance Monitor On from the Adapter menu to display a graphic representation of drive performance. Select Performance Monitor Off to turn off this utility. sample Performance Monitor screen follows. You can choose logical drives, the type of graph, and the screen arrangement from the Performance Monitor menus.

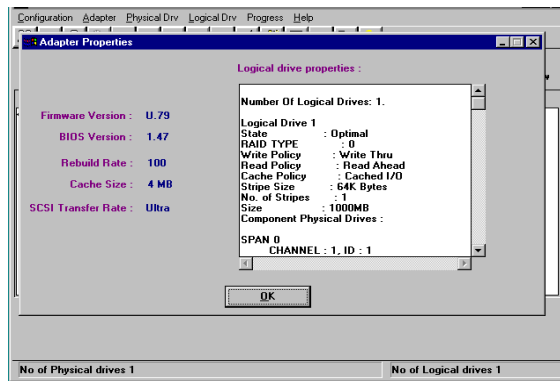


Cont'd

Adapter Menu, Continued

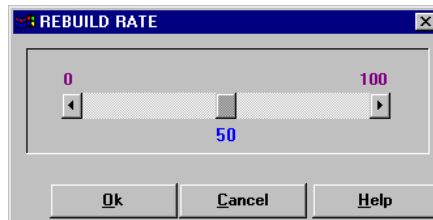
Properties

Select this option to display the adapter properties. A screen like the following appears:



Rebuild Rate

Choose Rebuild Rate to select the amount of system resources to be devoted to rebuilding failed disk drives. The higher the percentage of system resources devoted to drive rebuilds, the lower the percentage of system resources devoted to RAID operations and the more degraded the system will become. The following screen appears. Click on the slider to select the percentage of system resources to devote to the disk rebuild.



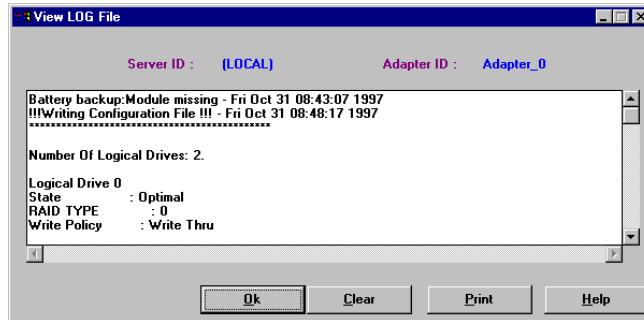
The higher the percentage, the more computing power is devoted to the rebuild. Choose a low percentage to minimize system performance problems.

Cont'd

Adapter Menu, Continued

Rescan Choose this option to scan all SCSI channels again to update the status of all attached SCSI devices.

View Log Select this option to display the MegaRAID event log. A screen such as the following appears:






Enclosure Management Displays the status of the RAID drive enclosures. Three icons for each drive enclosure appear. Click on an icon to display the cooling fan, power supply, or temperature for each drive enclosure.



Cont'd

Adapter Menu, Continued

Enclosure Management Icons The status of the power supply, fans, and temperature for SAF-TE compliant subsystems appears when you click on one of the icons:

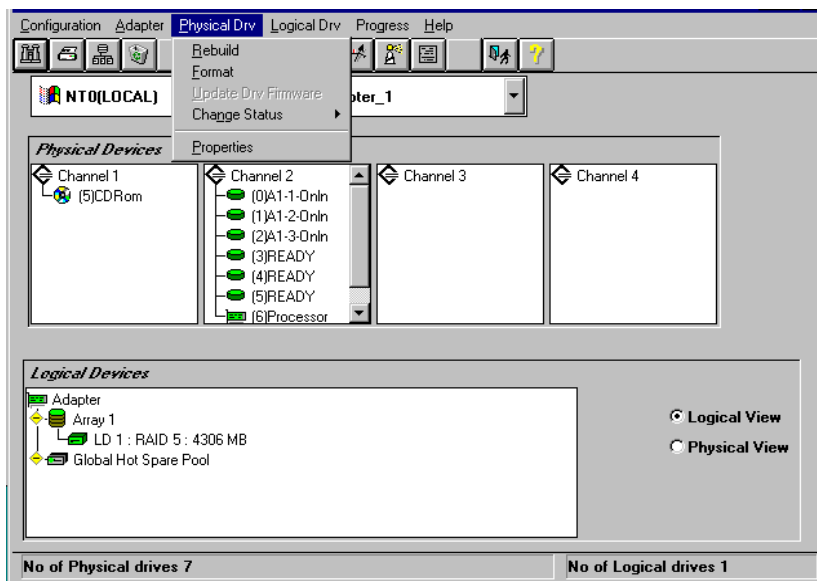
Icon	Description
	Displays the current status of the power supply in the enclosure for the selected subsystem.
	Displays the current status of the cooling fans in the enclosure for the selected subsystem.
	Displays the current temperature of the enclosure for the selected subsystem.

Alarm Control The alarm generates a beeping sound when one or more disks fail. The sound continues until *Silence Alarm* is selected. After a rebuild finishes, a beep signals that the rebuild is done. Choose *Silence Alarm* at this time to silence the alarm. The alarm settings are:

Setting	Description
Enable / Disable Alarm	Enables the alarm. If Disable Alarm appears, the alarm is enabled. If Enable Alarm appears, the alarm is disabled. When Enable Alarm is set, a beeping sound occurs even when all logical drives are online and there are no failed disks after a hot spare rebuild completes. Use the Silence Alarm function to stop the alarm. The normal setting should be Enable Alarm.
Silence Alarm	Stops the alarm if it is currently beeping. If the alarm is not beeping, it has no effect. There is no normal setting. It acts as a temporary switch.

Physical Drive Menu

The Power Console Plus Physical Drive menu is:



Rebuild

Choose the Rebuild option to rebuild one or more failed disk drives. Follow the instructions on the screen. Select *Abort Rebuild* to stop the rebuild process at any time. The drive will revert to its original status before the rebuild began.

A RAID 1, 3, or 5 configuration has built-in redundancy. If a drive in a RAID group fails, the RAID subsystem continues to work but no additional redundancy is provided. Another drive failure will bring the system down. But the failed drive can be replaced and added into the RAID system by rebuilding the drive. Select Rebuild to perform this function. The rebuild process can take place while the RAID system is still running, although performance may be slightly affected.

Cont'd

Physical Drive Menu, Continued

Format Choose this option to low-level format one or more physical drives. A physical drive can be formatted if it is not part of a configuration and is in a Failed or Ready state. Since most SCSI drives are factory formatted, you should format a drive only if the drive:

- was not low-level formatted at the factory, or
- has an excessive number of media errors.

Do not use Format to erase information or partitions on a SCSI drive. That information is erased when you initialize the logical drive(s).

Update Drv Firmware This option has not been implemented yet.

Change Status Choose this option after you have selected a physical drive. The following options appear:

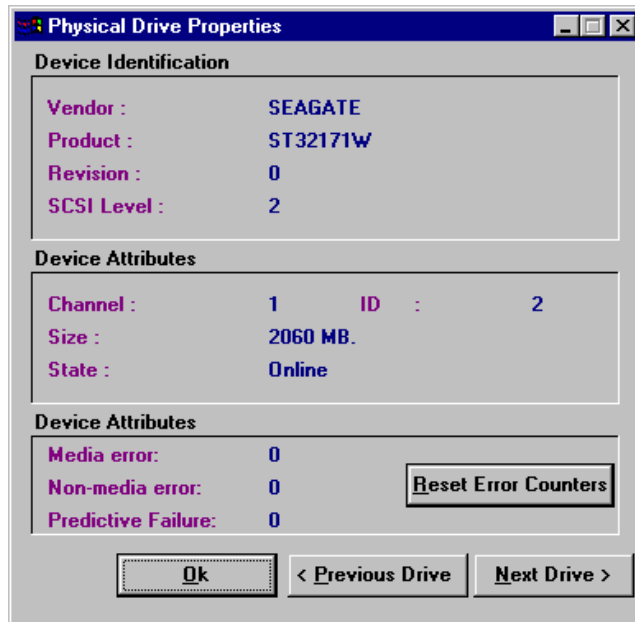
Option	Description
Make Online	Choose this option to bring the selected physical drive online.
Fail Drive	Choose this option to take the selected physical drive offline.
Spin Up	Choose this option to allow a period of time for the selected physical drive to reach operational speed. This usually takes a few seconds.
Spin Down	Choose this option to allow a period of time for the selected physical drive to stop spinning before taking the drive offline. This usually takes a few seconds.
Make Hot Spare	Choose this option to designate the selected drive as a hot spare. Hot spares are automatically brought online to replace failed disk drives. Hot spares are physical drives that are powered up along with the RAID drives and usually are placed in a standby state. Hot spares can be used for RAID levels 1, 3 and 5. Click on the drive icon of the drive to be made the hot spare. <i>The drive to be made a hot spare must have the same or greater capacity than the other drives in the RAID array.</i>

Cont'd

Physical Drive Menu, Continued

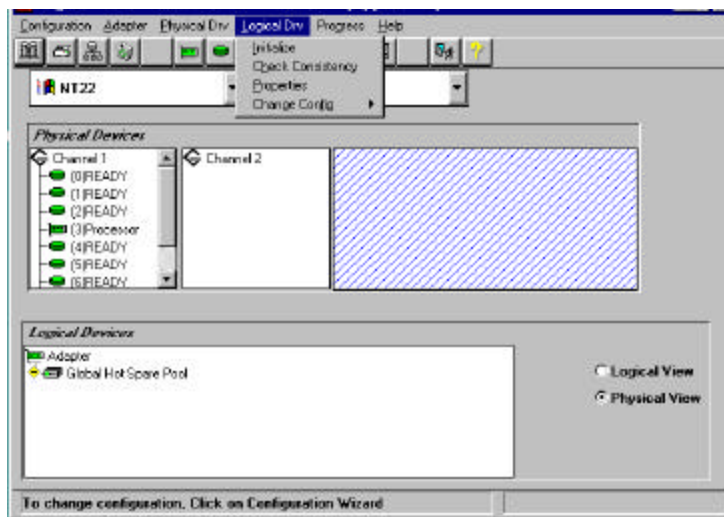
Properties

Choose this option to display the properties of the selected physical drive. A screen such as the following appears:



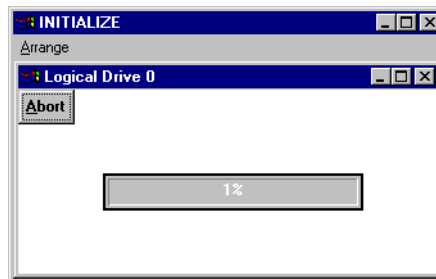
Logical Drive Menu

The Power Console Plus Logical Drive Menu is shown below:



Initialize

Choose this option to initialize the selected logical drive or drives. A screen such as the following appears to show progress. Initialization may take a long time.



Warning

Power Console Plus allows you to initialize a drive at any time. Make sure that the drive being initialized does not have live data. All data will be lost.

Cont'd

Logical Drive Menu, Continued

Check Consistency Choose this option to verify the redundancy data in logical drives that use RAID levels 1, 3, or 5.

Select the drives to be checked and choose Check Consistency from the Logical Drive menu. You are prompted to run parity checking. The following appears:

Parity Checking Selected Device(s)?

Click on OK to perform parity checking.

If a discrepancy is found, it is automatically corrected, *assuming that the data is correct*. However, if the failure is a read error on a data drive, the bad data block is reassigned with the generated data.

Properties

Choose Properties to display the properties of the selected logical drive. A screen such as the following appears. Each logical drive can be displayed by selecting the Previous or Next buttons.



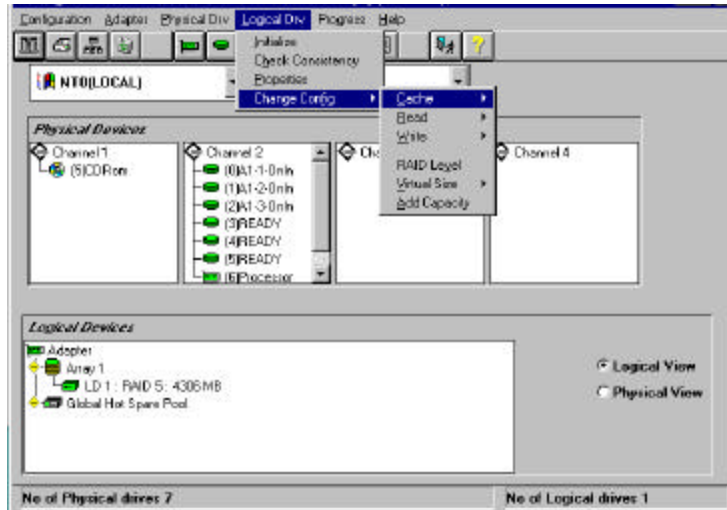
Cont'd

Logical Drive Menu, Continued

Change Config The following appears when you select Change Config. You can change Cache Policy, change Read Policy, change Write Policy, change the RAID level, select a Virtual Size, and Add Capacity via this menu.



Note: The Enable Virtual Sizing feature will not take effect until the next reboot.



Change Cache Policy Click on Cache to change the cache memory policy. You can choose Direct or Cached.

Change Read Policy Click on Read to change the Cache Read Policy. You can choose Normal, Read Ahead, or Adaptive Read Ahead.

Read Policy	Description
Normal	The MegaRAID controller does not use read-ahead for the selected logical drive.
Read Ahead	The MegaRAID controller uses read-ahead for the selected logical drive. This is the default setting.
Adaptive Read Ahead	The MegaRAID controller begins using read-ahead if the two most recent disk accesses occurred in sequential sectors. If all read requests are random, the algorithm reverts to Normal. However, all requests are still evaluated for possible sequential operation.

Cont'd

Logical Drive Menu, Continued

Change Write Policy Click on Write to change the Cache Write Policy. The settings are:

Setting	Description
Write Back	The MegaRAID controller sends a data transfer completion signal to the host when the controller cache has received all the data in a transaction.
Write Thru	The MegaRAID controller sends a data transfer completion signal to the host when the disk array has received all the data in a transaction. This is the default setting. Write-through caching has a data security advantage over write-back caching. Write-back caching has a performance advantage over write-through caching. <i>If running Windows NT, you should not use write-back for any logical drive that is to be used as a Novell NetWare volume.</i>

Virtual Sizing Click on this option to enable or disable the Virtual Sizing Option. *See Chapter 9 for more information about virtual sizing.*

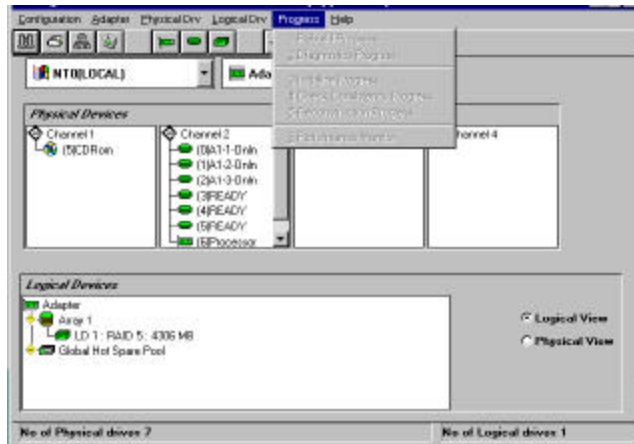
Add Capacity Click on this option to add additional drive(s) to the specified logical drive. First click on the drive icon for each physical drive to be added. Then click on the icon for the logical drive to be added to. Then select Add Capacity from the Logical Drive menu. Click on OK when prompted to confirm the new logical drive configuration. You can also select a new RAID level for the selected logical drive when the Select RAID Level prompt appears. You can select any RAID level that is not grayed out. Click on OK to complete the operation. *See Chapter 9 for more information about online capacity expansion.*

Important

*The physical drive must be in the READY state before it can be added to a logical drive.
No operation can be started while a drive is being reconstructed.*

Progress Menu

The Power Console Plus Progress menu is shown below. The features on this menu are available only when a rebuild, initialization, diagnostics test, check consistency, or drive reconstruction are in progress.



Options

The Progress menu options are:

Option	Description
Rebuild Progress	Choose this option when a drive rebuild is in progress to display an indicator of how far the rebuild has progressed.
Diagnostics Progress	Choose this option when a diagnostics test in progress to display an indicator of how far the test has progressed.
Initialize Progress	Choose this option when a drive initialization is in progress to display an indicator of how far the initialization process has progressed.
Check Consistency Progress	Choose this option when a check consistency routine is in progress to display an indicator of how far the routine has progressed.
Reconstruction Progress	Choose this option when a drive reconstruction is in progress to display an indicator of how far the reconstruction has progressed.
Performance Monitor	Choose this option to display the performance monitor screen.

Securing Power Console Plus under Windows NT

To secure Power Console Plus utility while running in Windows NT:

Step	Action
1	Log in as the Administrator.
2	Run File Manager.
3	Select the path containing the Power Console Plus executable.
4	Pull down the Security menu in File Manager and choose PERMISSIONS.
5	When the permission dialog box appears, assign the LIST permission to all Groups except Administrator, Backup Operators, System, and Creator Owner.
6	In the Permission dialog box, select Replace Permissions On Subdirectories to apply the permissions that you are setting here to the subdirectories as well.
7	After you have set Permissions, choose OK and exit file manager. Now log in as a guest and make sure the permission changes have been saved.

If you follow these instructions, only those who are part of the selected groups can delete, copy, move, or execute any Power Console Plus file.
