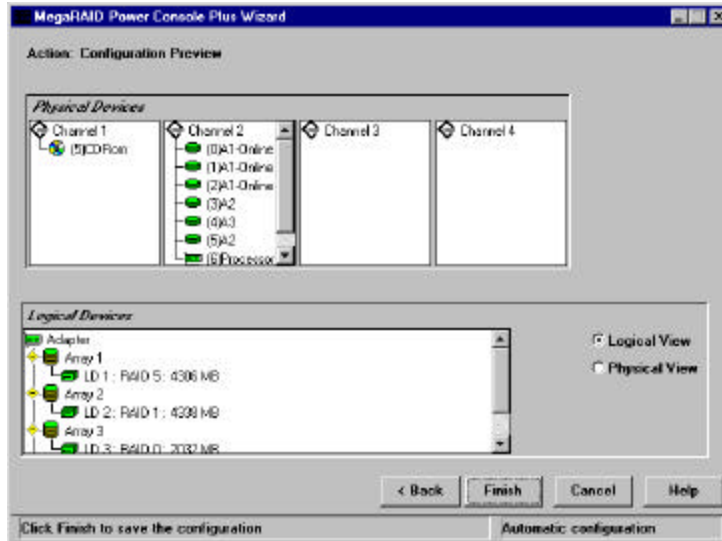


7 Configuring Arrays and Logical Drives

Step 1 Start Power Console Plus

Double-click on the Power Console Plus icon or click on the Start button, select the Program group and choose Power Console Plus from the MegaRAID group. The Power Console Plus screen appears:



Drive States The state of each physical drive is shown to the right of the SCSI ID or array. The drive states are:

Drive State	Code	Description
Online	ONLIN	The drive is online, is part of a configured logical drive, and is functioning normally.
Ready	READY	The drive is functioning normally but is not part of a configured logical drive and is not a hot spare.
Hot Spare	HOTSP	The drive is powered up and is ready to use. It is available as a spare drive in case an online drive fails.
Failed	FAILED	The drive is out of service because it failed.
Rebuilding	REBUILD	The drive is being rebuilt with data from a failed drive.

Cont'd

Step 1 Run Power Console Plus, Continued

Power Console Plus Logical Devices The Logical Device window on the right displays the current adapter and the global hot spare pool for this adapter. All configured arrays, logical drives, and hot spares can be displayed here.

Click on Logical View to display the configured logical drives. Click on Physical View to display the configured physical drives.

Displaying Adapter Properties Click on the Adapter menu, then click on Properties to display the adapter properties.

Displaying Physical Drive Properties Double-click on the icon that represents the physical drive to display the properties of the selected physical drive.

Displaying Logical Drive Properties Double-click on the icon that represents the logical drive to display the properties of the selected logical drive.

Step 2 Choose an Adapter

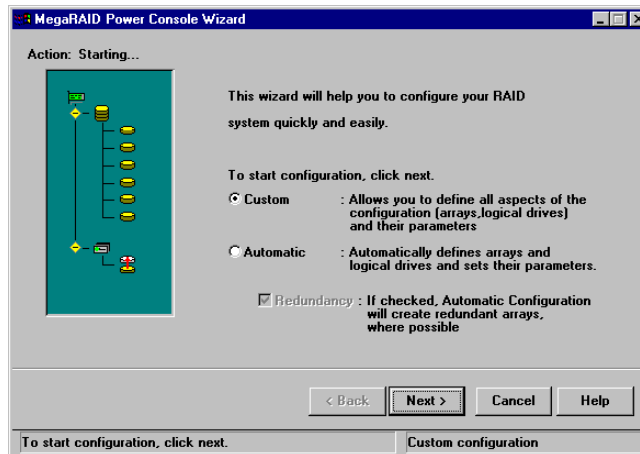
Choose the adapter to be configured. If the current adapter is not the adapter to be configured, click on the Adapter box and select the correct adapter.

Warning

If running Windows NT, the adapter order can be reversed. For example, if you have two MegaRAID adapters installed in the host system, adapter 1 becomes adapter 2 and adapter 2 becomes adapter 1. This is critical if the operating system is on a drive attached to one of the MegaRAID adapters.

Step 3 Run the Wizard

If the RAID system is already up and running and you would like to reconfigure the adapter, choose Rescan from the Adapter menu to make sure that Power Console Plus recognizes all physical drives. Choose Wizard from the Configuration menu. The Wizard screen appears as follows. Choose Custom or Automatic. Click on the Next button.



Types of Configuration You can choose either Custom or Automatic configuration.

Type	Description
Custom	You define the arrays and logical drives, and set parameters. Select this option if you have specific requirements for the RAID system.
Automatic	Power Console Plus Wizard automatically defines arrays and logical drives, and automatically sets all parameters. Click on the Redundancy box to instruct the Wizard to automatically configure redundant arrays when possible. Select this option to configure an optimal RAID system.

Cont'd

Step 3 Run the Wizard, Continued

Automatic Configuration If you chose automatic configuration, the proposed RAID configuration is displayed. The drive SCSI ID follows the drive icons. The current adapter with all arrays, logical drives, and hot spares is shown in the Logical Devices window. Each logical drive has a label (such as LD1), the RAID level, and the drive capacity. Spanned arrays have hyphenated array numbers (for example: LD1-1). Click on Finish to complete the configuration process. You can click on Back if you want to change anything.

Undoing the Array Click on Reclaim to undo the array. It may be easier to click on Cancel and begin the configuration process again. An array can be reclaimed only if no logical drives are defined in the array. Undo the logical drive on the Logical Drive Definition screen, click on Back to display the Array Definition screen, select the array to be reclaimed, and click on Reclaim.

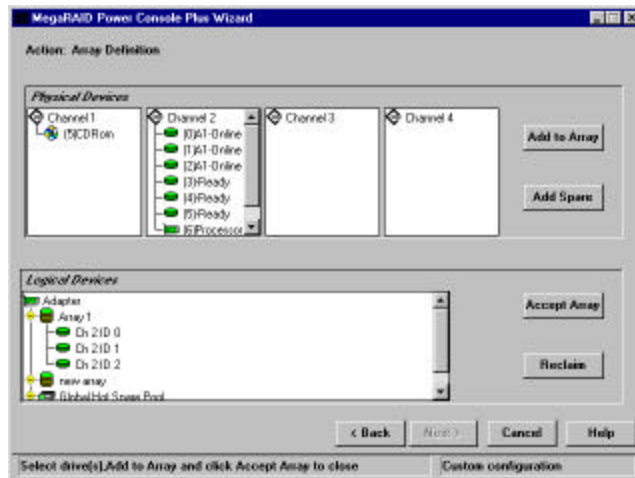
Displaying Logical Drive Properties To display the logical drive properties, double-click on the logical drive icon.

Displaying Physical Drive Properties To display the physical drive properties, double-click on the drive icon.

Cont'd

Step 3 Run the Wizard, Continued

Custom Configuration If you choose Custom Configuration, the Array Definition Screen appears, as shown below:



The new array is displayed in the Logical Devices window. The drive SCSI ID follows the drive icons. The current adapter with all arrays, logical drives, and hot spares is shown in the Logical Devices window. Each logical drive has a label (such as LD 0), the RAID level, and the drive capacity. Spanned arrays have hyphenated array numbers (for example: LD0-1).

Displaying Logical Drive Properties To display the logical drive properties, double-click on the logical drive icon.

Adding Physical Drives to a New Array You can assign physical drives to the new array by selecting any combination of physical drives in the Ready status and clicking on the Add to Array button.

Cont'd

Step 3 Run the Wizard, Continued

Custom Configuration, cont'd

Displaying Physical Drive Properties To display the physical drive properties, double-click on the drive icon.

Adding a Physical Drive to an Existing Array *You cannot add a physical drive to an array while running the Configuration Wizard.*

However, you can add a physical drive to an array from the Power Console Plus main screen by clicking on a physical drive icon (the drive must be in the Ready state), holding down the left mouse button, dragging the drive icon to the icon that represents an array, and then releasing the mouse button. Logical View must be selected before you can do this. *See Chapter 6 for more information.*

Removing a Physical Drive from an Array You can selectively remove hard drives from an existing array only on the main menu. Right click on the drive you want to remove and select Remove. You may have to change the RAID level to remove the hard drive.

While running the Configuration Wizard, you can remove a physical drive from an array by changing the array configuration, selecting the array, and then clicking on the Reclaim button.

However, if the array has not yet been configured, you can click on the drive icon in the new array and then click on Reclaim. This only works if the new array has not been accepted.

You cannot reclaim an array if a logical drive has already been defined in the array.

Assigning Hot Spares Select the icon for any physical drive in the Ready state and click on Add Spare to add this drive to the Global Hot Spare Pool. Click on the Next button when done.

Adding Physical Drives Choose the icons for any physical drives in the Ready state and click on Add to Array to assign physical drives to the new array.

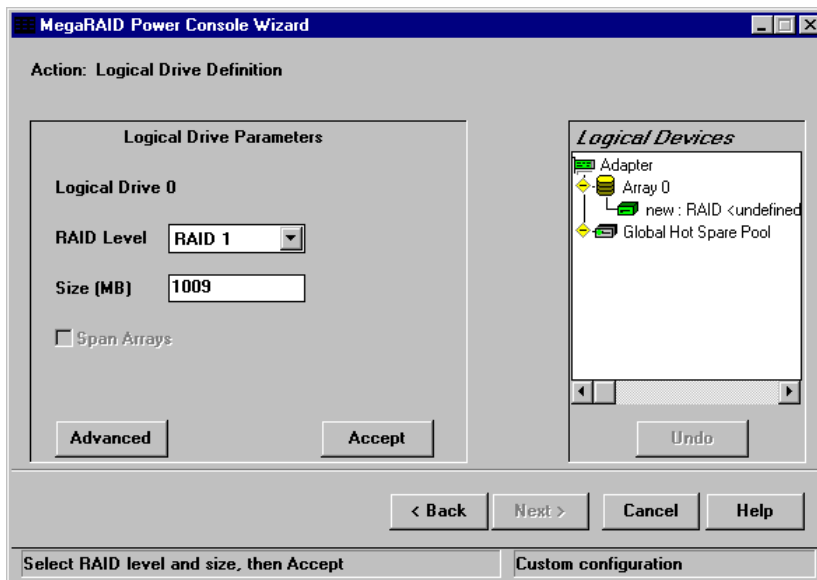
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Step 3 Run the Wizard, Continued

Custom Configuration, Cont'd

Finishing Click on the Accept Array button when the configuration is complete. A new array screen appears. Assign physical drives as discussed above. When finished, click on the Next button.

Defining Logical Drives The Logical Drive Parameter screen appears next, as shown below:



This screen displays the logical drive(s) to be defined. You can specify the RAID level and size. You can also span arrays and set advanced parameters.


In the Logical Drive window, all arrays on the current adapter and the global hot spare pool are displayed. The logical drives are labeled as New or LD1, LD2, LD3, LD4, LD5, LD6, LD7, or LD8.

Define Logical Drives Define all logical drives to be configured in the new array. Do not create drives that span the current array and another array. Make sure the Span Array box is not checked.

Cont'd

Step 3 Run the Wizard, Continued

Custom Configuration Defining Logical Drives, Cont'd

Step	Action
1	Specify the RAID level by clicking on the RAID arrow on the Logical Drive Definition screen and selecting a RAID level. The Wizard will not let you configure an invalid RAID level. See the MegaRAID hardware guide for your board for information about the requirements for each RAID level.
2	Set the size either by accepting the default or by clicking in the Size box and typing a smaller size. If you specify a smaller size, there will be room in the array for additional logical drives. <i>Creating multiple logical drives in the same array disables FlexRAID, so you cannot change RAID levels or add capacity. Do not mixing redundant and non-redundant logical drives in the same array.</i>
3	Click on the Advanced button to set the stripe size, read policy, write policy, virtual sizing, and cache policy. Click on the respective arrows to display the choices for each parameter. When finished, click on the OK button.  Note: If you use Power Console Plus to configure an array on a NetWare server, you cannot use Writeback as the write policy.
4	Click on Accept when the logical drive parameters are set.
5	The next logical drive appears. If space is still available in the current array, the new logical drive will appear in the array. Define any additional logical drives in the current array that will not be spanned. The Wizard will continue to create logical drives for the same array until there is no more space available in the array or until there are 40 logical drives in the array (if you have a controller that supports 40 logical drives: Enterprise 1600, Elite 1600, or Express 500.) Continue to define logical drives as described above.
Spanning Click on the Span Arrays box to create a logical drive that spans across all defined arrays depending on the firmware's span depth. An array that encompasses both spanned arrays (labeled something like A1-1) appears in the Logical Devices window. The capacity in the Size box increases to reflect the spanned arrays.	
Undoing an Array When you are running the Configuration Wizard, you can always remove the last logical drive that was created by clicking on the Undo button. You cannot undo an array after you have finished running the Configuration Wizard.	
6	When all logical drives are defined for the selected adapter, click on Next.
7	The Preview Configuration screen appears. All arrays, logical drives, and hot spares are shown for the current adapter in the Logical Devices window. All physical drives with their SCSI ID, Ready, or Spare status are shown in the Physical Devices window. Click on Finish to accept the configuration as displayed. Click on Back to return to the Logical Drive Definition screen to redefine logical drive parameters.
8	After you click on Finish, a dialog box prompts you to initialize. This option is recommended.
9	Add newly configured logical drives to the NT Disk Administrator.

Step 4 Save Configuration and Initialize

Save Configuration Click on OK when prompted to save the configuration. The configuration is saved to NVRAM and to the array.

Save to Binary File The configuration parameters have been saved to NVRAM, but it is also a good idea to save the configuration to a binary file. Choose Save from the Power Console Plus Configuration menu. Type a filename and directory path for the Save file. The file extension should be .CFG. Click on the Read Only checkbox to make the binary file read-only. Click on OK when prompted to save the file.

Print the Configuration Print the configuration by choosing Print from the Power Console Plus Configuration menu. Keep a copy of the configuration for your records. This is important if you ever need to call American Megatrends technical support or replace a failed adapter.

Cont'd

Step 4 Save Configuration and Initialize, Continued

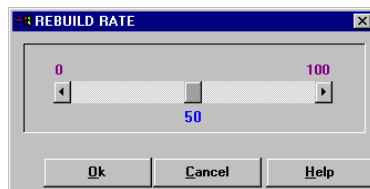
Initialize Logical Drives Select the correct adapter from the Adapter box. Select the logical drives to be initialized. Choose Initialize from the Logical Drive menu.

The Initialize screen has a separate window for each logical drive. There is a bar graph that displays the progress of the initialization for each logical drive.

Click on Abort if you must stop the initialization.

Repeat this process for each adapter in the system.

Check Rebuild Rate Choose the correct adapter from the Adapter box. Choose Rebuild Rate from the Adapter menu. You can change the rate by clicking on the slider and moving it right or left.



If there is more than one adapter in the system, click on each adapter and check the rebuild rate.

The rebuild rate is not affected when you clear the configuration.

Exit Power Console Plus Choose Exit from the Configuration menu to quit Power Console Plus.
