

3 WebBIOS Configuration Utility

MegaRAID WebBIOS allows you to configure and manage RAID arrays on a remote computer using the Internet. To use WebBIOS, you need a host computer and a remote server. Both systems must have Internet access. MegaRAID WebBIOS must be embedded in the MegaRAID firmware in the MegaRAID controller on both the host computer and the remote server.

Features

The MegaRAID WebBIOS Configuration Utility configures disk arrays and logical drives. Because the utility resides in the MegaRAID BIOS, its operation is independent of the operating systems on your computer. The WebBIOS utility can be used to:

- display adapter properties
- scan devices
- display SCSI channel properties
- define logical drives
- initialize logical drives
- check data for consistency
- configure physical arrays
- select adapters
- display the physical properties

You can use the Configuration Wizard to guide you through the steps required for configuration of the logical drives and physical arrays.

Installing WebBIOS on the Host Computer

To install WebBIOS on the host computer, you must flash the utility onto the adapter's BIOS. Perform the following procedure to flash the BIOS.

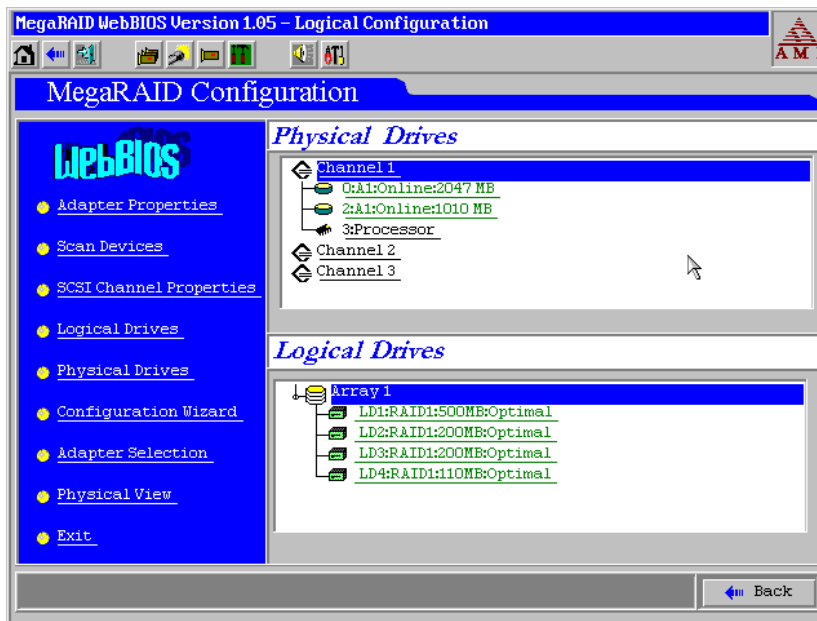
Step	Action
1	Boot the computer to the DOS prompt.
2	Put the disk with the WebBIOS firmware in the floppy disk drive.
3	Type "mflash" at the DOS prompt and press <Enter>.
4	Follow the instructions on the screen. You are asked to confirm that you want to flash the BIOS and whether you want to flash all the adapters.
5	Press Alt+Ctrl+Del to reboot your computer. When your computer boots, you can start the WebBIOS utility.

Starting the MegaRAID WebBIOS Utility on the Host Computer

When the host computer boots, hold the <Ctrl> key and press the <H> key when the following appears:










Copyright© AMERICAN MEGATRENDS, INC.
Press <Ctrl><M> to Run Configuration Utility
Or press <Ctrl><H> for WebBIOS

Main Screen When you press <Ctrl> <H> on the host computer, the following displays, as shown below. The main screen displays a menu of items that you can select to display information and make changes to the RAID arrays on the remote server. The screen also displays the current configuration of the physical and logical drives. From this screen, you can configure and manage the RAID arrays on the remote server.



WebBIOS Toolbar Icons

The following icons appear on the toolbar:

Icon	Description
	Go to Home Page. Click on this icon to return to the main screen.
	Go to Previous Page. Click on this icon to return to the page you accessed immediately before the current page.
	Exit RAID Configuration Utility. Click on this icon to exit the WebBIOS program.
	Adapter Selection. Click on this icon to display the adapters that you can select.
	Scan for Adapters. Click on this icon to scan for adapters connected to your system.
	Adapter Properties. Click on this icon to display the properties of the adapter, such as the firmware version, BIOS version, RAM size, and initiator ID.
	
	Silence the Alarm. Click on this icon to turn off the sound on the alarm.
	Go to Ctr-M. Click on this icon to go from the WebBIOS Configuration Utility to the <Ctrl> <M> MegaRAID configuration utility that resides in the MegaRAID firmware.

Adapter Properties

The following screen appears when you select Adapter Properties from the MegaRAID WebBIOS main screen:

MegaRAID WebBIOS Version 1.05 - Adapter Properties

MegaRAID Configuration

Properties		Logical Drives	
Firmware Version	H870	LD1:RAID1:500MB:Optimal	
BIOS Version	1.42	LD2:RAID1:200MB:Optimal	
RAM Size	16 MB	LD3:RAID1:200MB:Optimal	
Initiator ID	7	LD4:RAID1:110MB:Optimal	
Rebuild Rate	100		
Spinup Parameters	2 per sec		
Flex RAID PowerFail	Enabled		
Alarm Control	Enabled		
Adapter BIOS	Enabled	Auto Rebuild	Enabled
Cluster Mode	Disabled	Class Emulation Mode	I2O
Battery Backup	Present	Set Factory Defaults	No

Submit Reset

Home Back

Cont'd

Adapter Properties, Continued

The Adapter Properties menu options are:

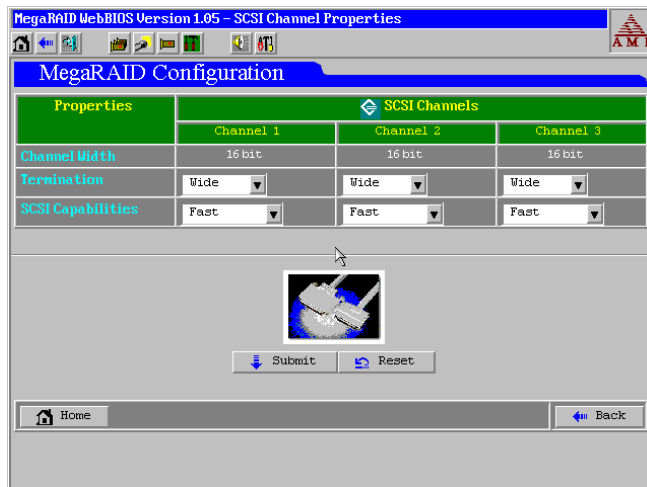
Option	Description
Firmware Version	This item displays the firmware version number.
BIOS Version	This item displays the BIOS version number.
RAM Size	This item displays the size of the random access memory.
Initiator ID	Identifying number for the MegaRAID card. You can change the Initiator ID only when you are in cluster mode. You cannot change the ID while in standard mode. The ID can be a number from 0 to 15. We recommend that you use 6 or 7. When you are in standard mode, the ID is always 7.
Rebuild Rate	Use this option to select the rebuild rate for drives attached to the selected adapter.
Spinup Parameters	Use this option to set the timing for spinning up the hard disk drives in the computer. The options are <i>Automatic</i> , <i>2 per sec</i> , <i>4 per sec</i> , or <i>6 per sec</i> .
Flex RAID PowerFail	Choose this option to enable or disable the FlexRAID PowerFail feature. This option allows drive reconstruction to continue when the system restarts because of a power failure.
Alarm Control	Choose this option to enable, disable, or silence the onboard alarm tone generator.
Adapter BIOS	Choose this option to enable or disable the BIOS on the adapter.
Cluster Mode	Cluster mode allows the controller to operate as part of a cluster. You can enable or disable cluster mode. When you disable cluster mode, the system operates in standard mode. In addition, when you enable cluster mode, the system automatically disables the BIOS.
Battery Backup	Indicates whether the battery backup is present or absent.
Auto Rebuild	Enable this option to automatically rebuild drives when they fail.
Class Emulation Mode	You can select this option to operate in I2O or mass storage mode.
Set Factory Defaults	Enable this option to load the default MegaRAID WebBIOS Configuration Utility settings.

Scan Devices

When you select the Scan Devices option, WebBIOS checks the physical and logical drives to see if there are any changes to the drive status. It displays the results of the scan on the main screen in the physical and logical drives section. For example, if a physical drive has failed, the words “Not Responding” display to the right of the drive name under the Physical Drives heading.

SCSI Channel Properties

A screen such as the following appears when you select SCSI Channel Properties from the MegaRAID WebBIOS main screen:



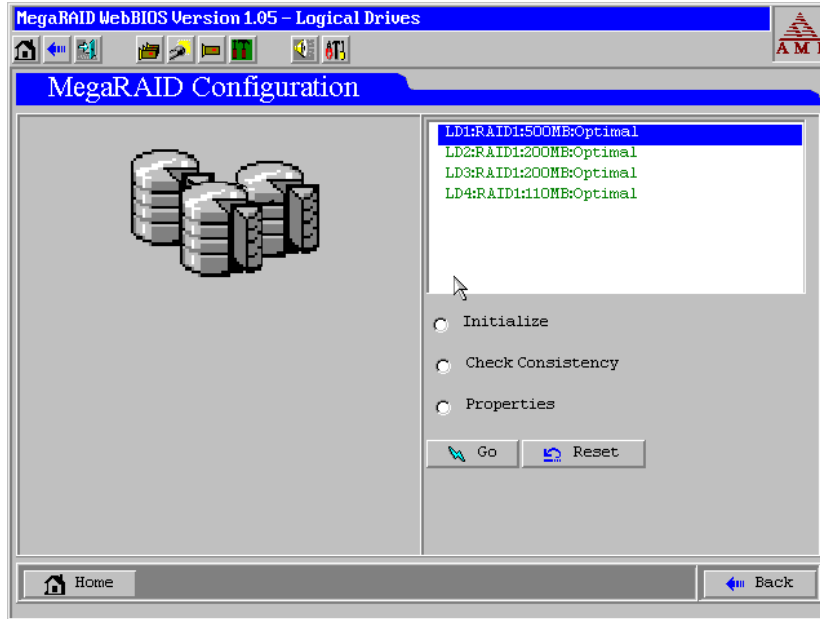
The SCSI channel properties menu options are:

Option	Description
Channel Width	Displays the number of bits that can pass through the channel at one time.
Termination	Use this option to select the type of SCSI termination.
SCSI Capabilities	Use this option to select <i>Fast</i> , <i>Ultra</i> , or <i>Ultra II</i> as the SCSI capability.

Click on the Submit button to save changes to these options. Click on the Reset button to undo any changes and return to the configuration that existed before you made any changes.

Logical Drives

A screen such as the following appears when you select Logical Drives from the main screen or click on the logical drive in the list of logical drives on the main screen:



The upper right section of the screen displays the logical drives that currently exist. Below that section are the options to initialize the logical drives, check consistency, and display the logical drive properties.

Press Go to perform the selected action or Reset to delete any changes.

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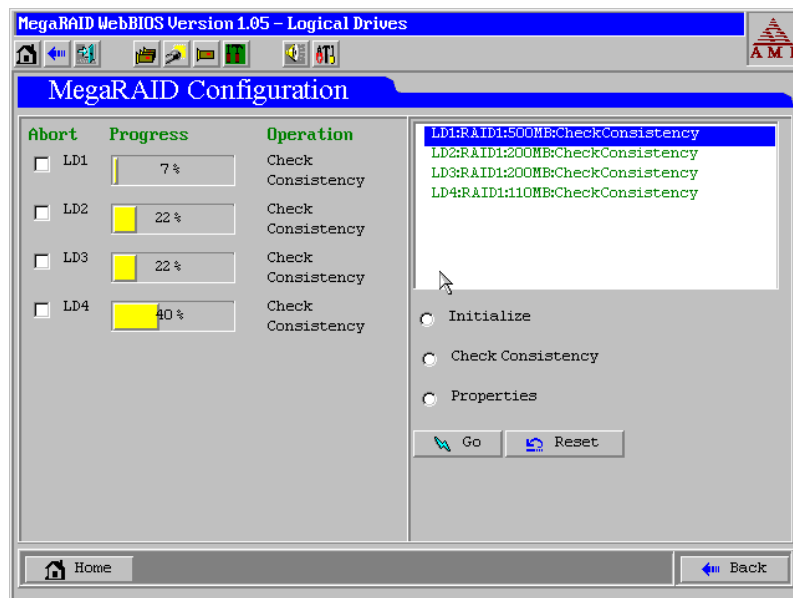
Logical Drives, Continued

Initialize You should initialize each new logical drive that you configure. You can use the Initialize option on the Logical Drives screen to initialize logical drives. Perform the following actions to initialize a logical drive.

Step	Action
1	Select the Logical Drives option from the MegaRAID WebBIOS main screen.
2	On the Logical Drives screen, select the logical drive to be initialized.
3	Click in the box next to Initialize. The progress of the initialization appears as a graph on the screen.
4	When initialization completes, click on the Back button to display the previous menu.

Check Consistency Choose this option to verify the correctness of the redundancy data. This option is available only if RAID level 1, 3, or 5 is selected. MegaRAID automatically converts any differences found in the data.

After you click on Check Consistency and the Go button, a progress chart displays on the left side of the screen to show how much of the consistency check has been completed. There is also an option to abort the check for any or all logical drives. The following screen shows a consistency check in progress:



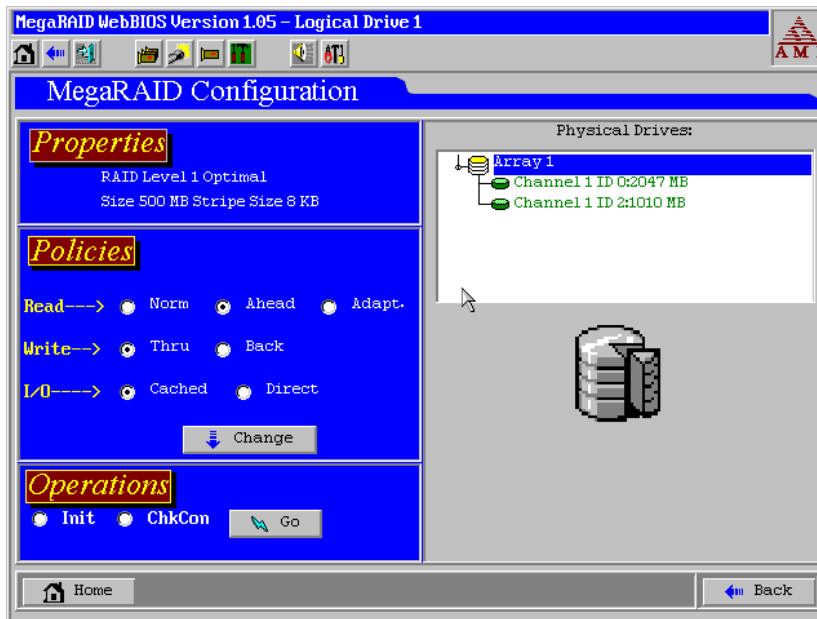
Logical Drives, Continued

Properties

Select this option to:

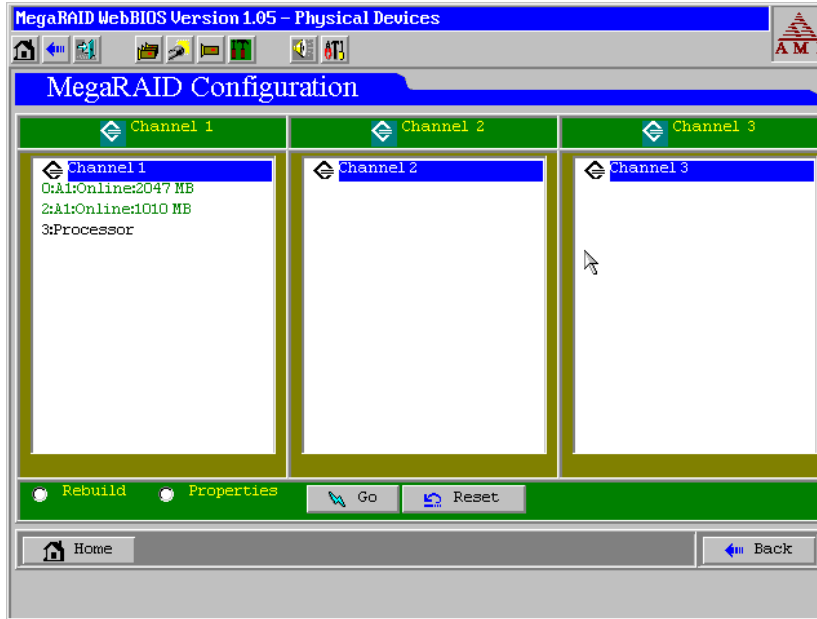
- display the logical drive properties
- display the read, write, and I/O policies,
- change the read, write, and I/O policies
- start initialization
- start a consistency check

The following is an example of the properties screen:



Physical Drives

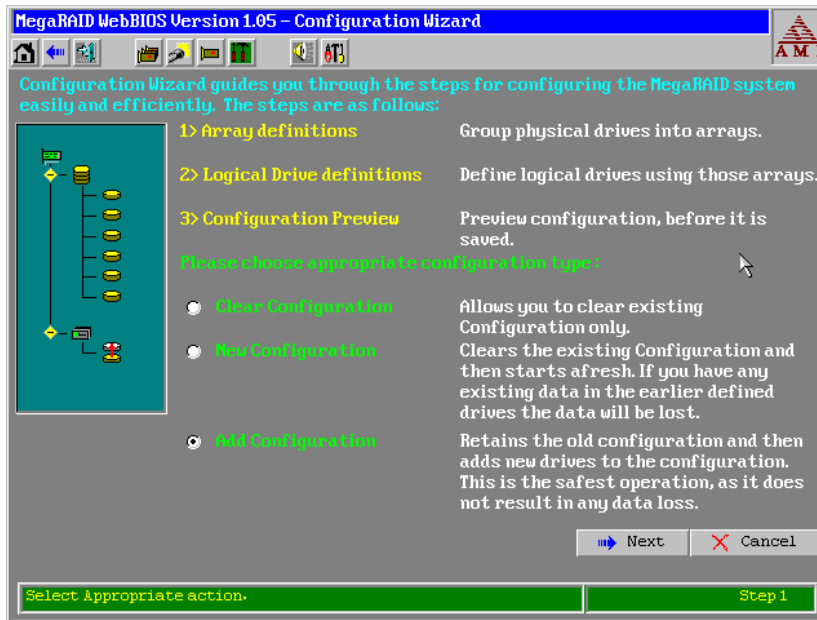
A screen such as the following appears when you select Physical Drives from the main screen or click (double click?) on a physical drive in the list of physical drives on the main screen:



This screen displays the physical drives for each channel. From this screen, you can rebuild the physical arrays or view the properties for the physical drive you select. Select Rebuild or Properties and click on Go to perform these actions. Press Reset to return to the configuration that existed before you made any changes.

Configuration Wizard

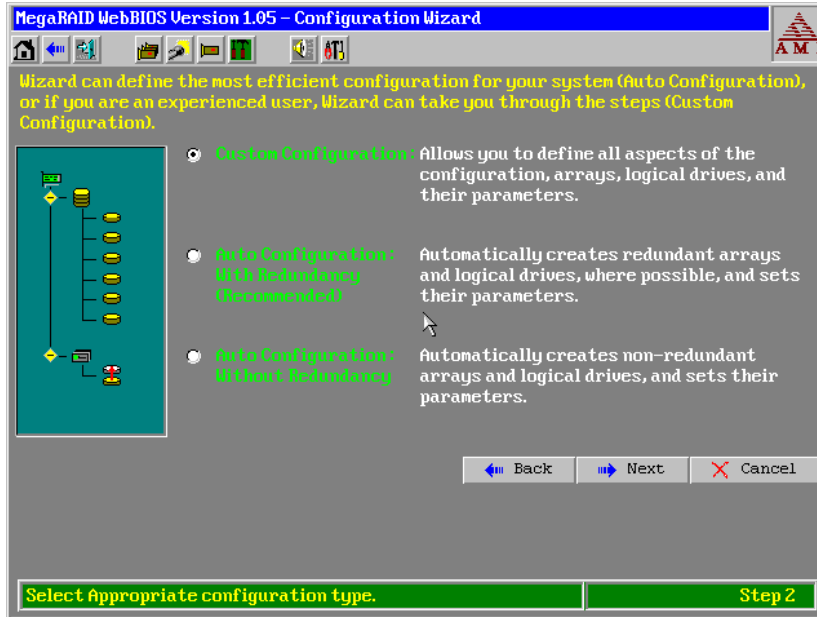
A screen such as the following appears when you select Configuration Wizard on the MegaRAID WebBIOS main screen. Click on Next.



On this screen, you can begin the procedure to clear a configuration, create a new configuration, or add a configuration. After you select one of the options, click on Next to go to step 2.

Configuration Wizard, Continued

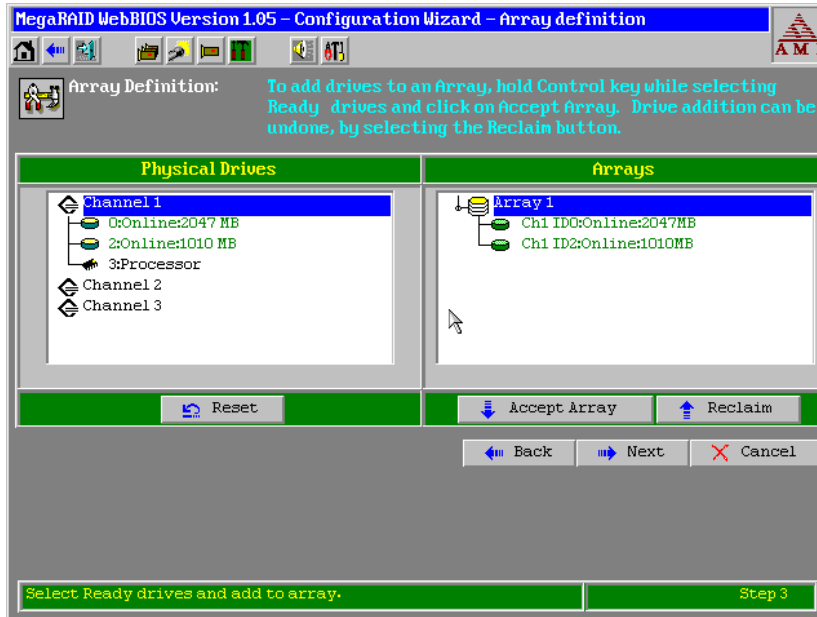
Select **Configuration Step 2** displays on the following screen. On this screen, you can choose custom configuration, auto configuration with redundancy, or auto configuration without redundancy. Auto configuration with redundancy is recommended.



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Configuration Wizard, Continued

Array Definition The array definition screen displays next. To add drives to an array, press the Ctrl key while you select ready drives. Click on Accept Array to add the drives. To undo the changes, press the Reclaim button. Click on Next to go to Step 4. The following is an example of an array being added:



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Configuration Wizard, Continued

Logical Drive Definition The Logical Drive definition screen displays next. Click on a logical drive to display the following screen for that drive. Use this screen to configure the logical drive.

MegaRAID WebBIOS Version 1.05 – Configuration Wizard – Logical Drive def

Logical drive definition Define Logical Drives using the arrays defined in the previous screen.

Logical Drive 1		Configuration
RAID Level	RAID 1	Array 1
Stripe Size	8 KB	
Read Policy	Read Ahead	
Write Policy	Write Thru	
Cache Policy	Cached IO	Without Spanning RAID 0 size = 2020 MB Spanning not possible RAID 1 size = 1010 MB
Span	Disable	
Select Size	MB	

Accept Reset

Back Next Cancel

Choose parameters for new Logical Drive. Step 4

Perform the following steps to configure a logical drive.

Step	Action
1	Select the RAID level. Click on the down arrow in the box to the right of RAID Level to display the possible RAID levels for the logical drive.
2	Select the Stripe Size. Stripe size This parameter specifies the size of the segment written to each disk in a RAID 1, 3, 5, 10, 30 or 50 logical drive. You can set the stripe size to 2 KB, 4 KB, 8 KB, 16 KB, 32 KB, 64 KB, or 128 KB. A larger stripe size produces higher read performance, especially if your computer does mostly sequential reads. However, if your computer does random read requests more often, choose a smaller stripe size. The default is 8 KB.

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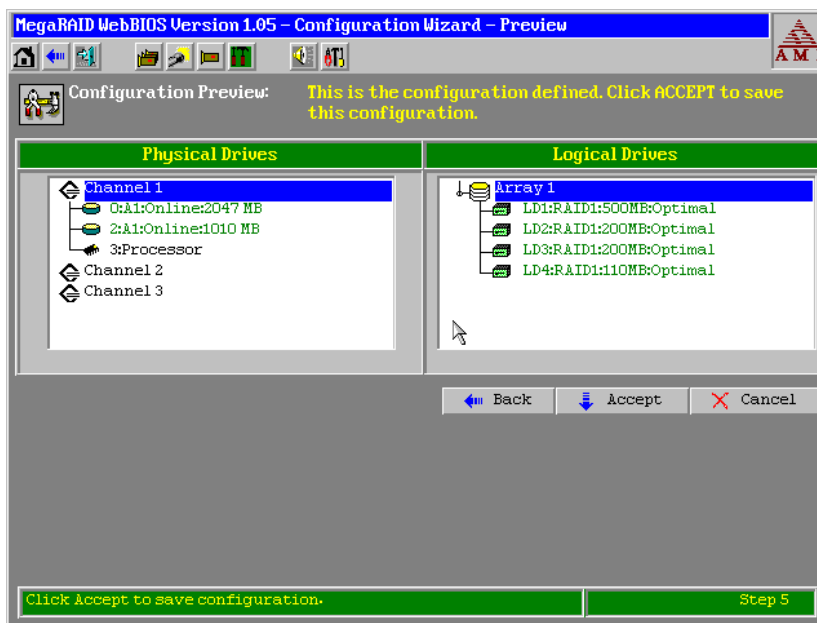
Step	Action
3	<p>Select the Read Policy.</p> <p>Read-Ahead This parameter enables the SCSI read-ahead feature for the logical drive. You can set this parameter to <i>Normal</i>, <i>Read-ahead</i>, or <i>Adaptive</i>.</p> <p><i>Normal</i> specifies that the controller does not use read-ahead for the current logical drive.</p> <p><i>Read-ahead</i> specifies that the controller uses read-ahead for the current logical drive. This is the default setting.</p> <p><i>Adaptive</i> specifies that the 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 <i>Normal</i>, however, all requests are still evaluated for possible sequential operation.</p>
4	<p>Select the Write Policy.</p> <p>Write Policy This parameter specifies the cache write policy. You can set the write policy to write-back or write-through.</p> <p>In <i>Write-back</i> caching, the controller sends a data transfer completion signal to the host when the controller cache has received all the data in a transaction.</p> <p>In <i>Write-through</i> caching, the controller sends a data transfer completion signal to the host when the disk subsystem has received all the data in a transaction. This is the default setting.</p> <p>Write-through caching has a data security advantage over write-back caching, whereas write-back caching has a performance advantage over write-through caching. <i>You should not use write-back for any logical drive to be used as a Novell NetWare volume.</i></p>
5	<p>Select the Cache Policy.</p> <p>Cache Policy This parameter applies to reads on a specific logical drive. It does not affect the Read ahead cache.</p> <p><i>Cached I/O</i> specifies that all reads are buffered in cache memory. This is the default setting.</p> <p><i>Direct I/O</i> specifies that reads are not buffered in cache memory. Direct I/O does not override the cache policy settings. Data is transferred to cache and the host concurrently. If the same data block is read again, it comes from cache memory.</p>

6	<p>Enable or disable the spanning mode for the current logical drive. If enabled, the logical drive can occupy space in more than one array. If disabled, the logical drive can occupy space in only one array.</p> <p>For two arrays to be spannable, they must have the same stripe width (they must contain the same number of physical drives) and must be consecutively numbered. For example, assuming Array 2 contains four disk drives, it can be spanned only with Array 1 and/or Array 3, and only if Arrays 1 and 3 also contain four disk drives. If the two criteria for spanning are met, MegaRAID automatically allows spanning. If the criteria are not met, the <i>Span</i> setting makes no difference for the current logical drive.</p>
7	Select the size of the logical drive in MB.
8	Click on the <i>Accept</i> button to accept the changes or click on the <i>Reset</i> button to delete the changes and return to the previous settings.

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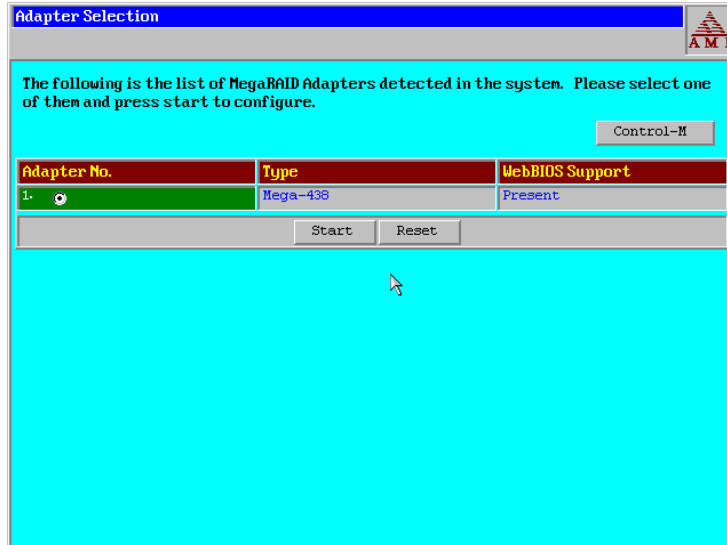
Configuration Wizard, Continued

Configuration Preview Step 5 displays a preview of the configuration that you have created. Click on Accept to save the configuration or Back to return to the previous screens and change the configuration.



Adapter Selection

When you select the Adapter Selection option on the MegaRAID WebBIOS main screen, the following screen displays a list of the MegaRAID adapters in the system. You can select an adapter and begin configuration.



Physical View\Logical View

A screen such as the one below displays when you select Physical View or Logical View from the WebBIOS main screen. The option toggles between Physical View and Logical View. For example, if you select Physical View on the screen below, the option changes to Logical View. If you then select Logical View, the option changes back to Physical View. That way, you can go back and forth between physical and logical views.

