6. Web Browser-based Configuration

The External RAID Subsystem web browser-based configuration utility is firmware-based and uses to configure RAID sets and volume sets. Use this utility to:

· Create RAID set,
. Expand RAID set,
· Define volume set,
· Add physical drive,
· Modify volume set,
· Modify RAID level/stripe size,
· Define pass-through disk drives,
. Modify system function,
· Update firmware, and
· Designate drives as hot spares,

6.1 Web browser-based RAID management via HTTP Proxy (Using the controller's serial port)

If you need to boot the operating system from a RAID system, you must first create a RAID volume by using front panel touch-control keypad, Bootable CD VT-100 utility at X86-based system or VT-100 terminal.
Configuration of the external RAID subsystem web browser-based RAID management is an HTTP –based application, which utilizes the browser installed on your operating system. Web browser-based RAID management can be used to create and modify RAID set, volume set, and monitor RAID subsystem status.

6.1.1 Web browser-based RS-232C setting value requirement

To ensure proper communications between the external RAID subsystem and Web browser-based RAID management, Please connect the external RAID subsystem RS-232 serial port, to any COM port on a host computer and configure the HTTP Proxy settings to the values shown below:

Terminal requirement	
Connection	Null-modem cable
Baud Rate	115,200
Data bits	8

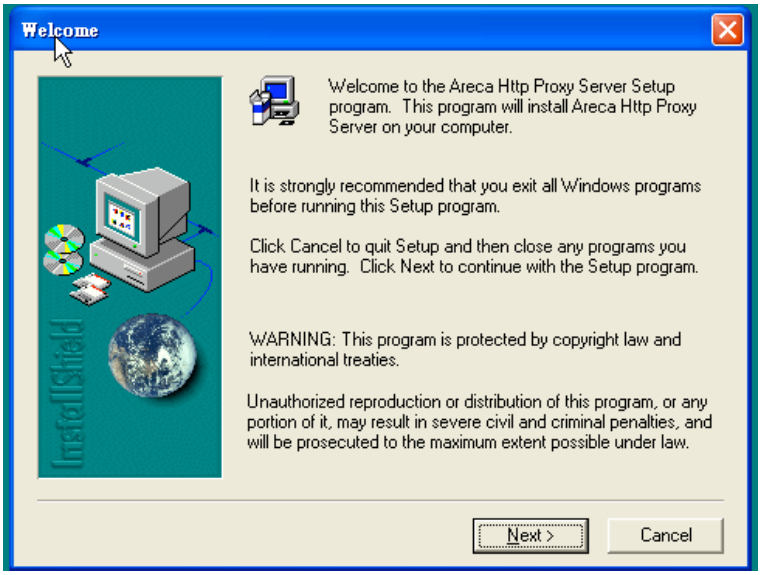
6.1.2 Start-up Web Browser-based RAID Management for Local Administration

Areca now offers an alternative means of communication for the external RAID Subsystem - Web Browser-based RAID Management program. User can access the built-in configuration without needing VT-100 terminal or system starting up running the Hyper Terminal. The Web Browser-based RAID Management program is an HTML-based application, which utilizes the browser installed on your server system.

6.1.2.1 For Windows

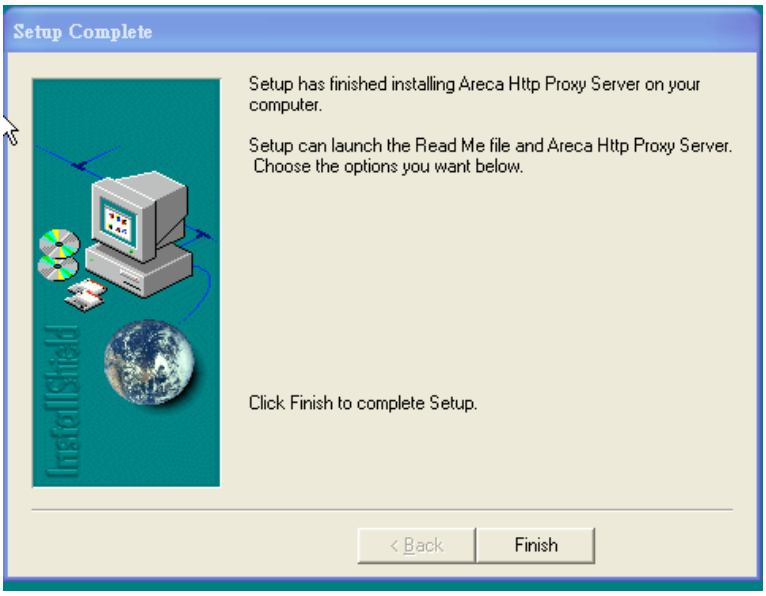
Screen in this section are taken from a Windows/XP installation. If you are running other Windows, your installing screen may look different, but the areca http proxy server installation is essentially the same.

1. Request link for Downloading RAID installer application.
2. Run the **setup.exe** file.
3. Click on the Setup file then the Welcome screen appears.

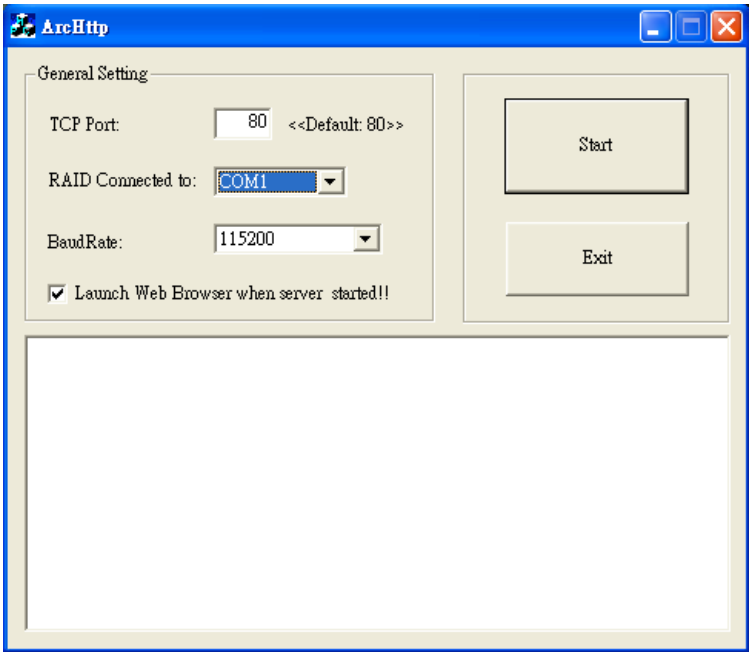


Follow the on-screen prompts to complete Http Proxy Server software installation.
A program bar appears that measures the progress of the Archttp setup. When this screen complete, you have completed the Http Proxy Server software setup.

4. After a successful installation, the Setup Complete dialog box of the installation program is displayed. Click the Finish button to complete the installation.



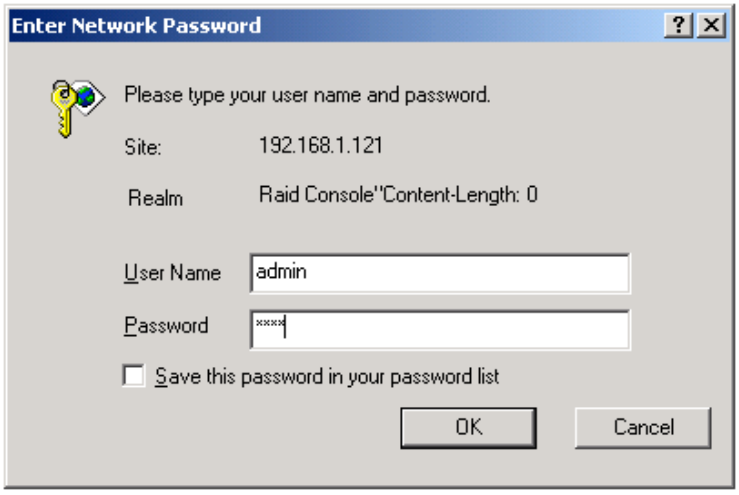
5. Click on the **Start** Button in the Windows 2000/XP task bar and then click **Program**, select the **Areca** and run "***Areca Http Proxy Server***". The Archttp dialog box appears. If user doesn't want to launch the web browser, goes to step 9.



The Parameters for the General Setting:
(1). TCP Port value = 1 ~ 65535.
(2). RAID Connected to value = 1 ~ 10 where 1 for COM1, 2 for COM2 and so on...
(3). BaudRate value = {2400, 4800, 9600, 19200, 38400, 57600, 115200}

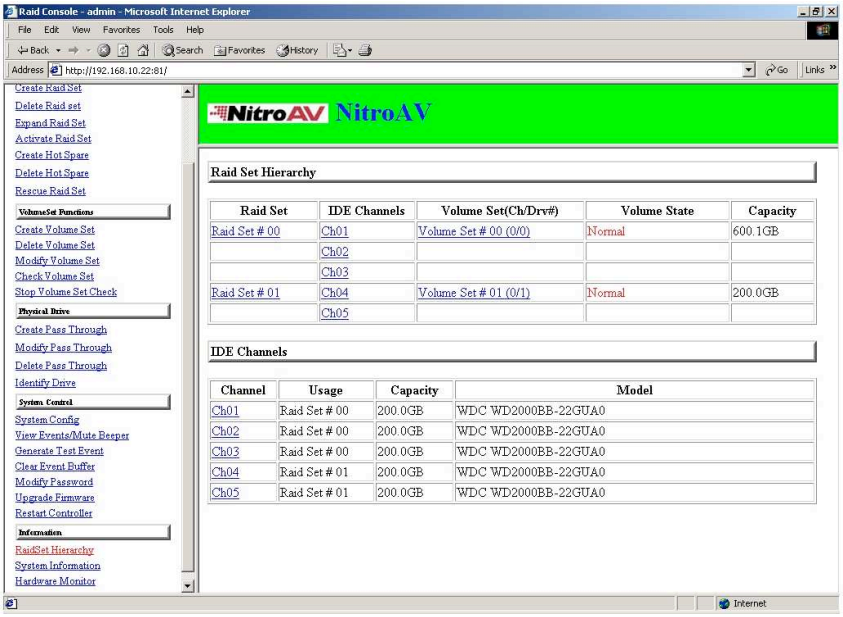
NOTE: RAID subsystem controller default setting baud rate is 115200.

6. To start the ArcHttp Proxy Server web-browser management, click the **Start** Button

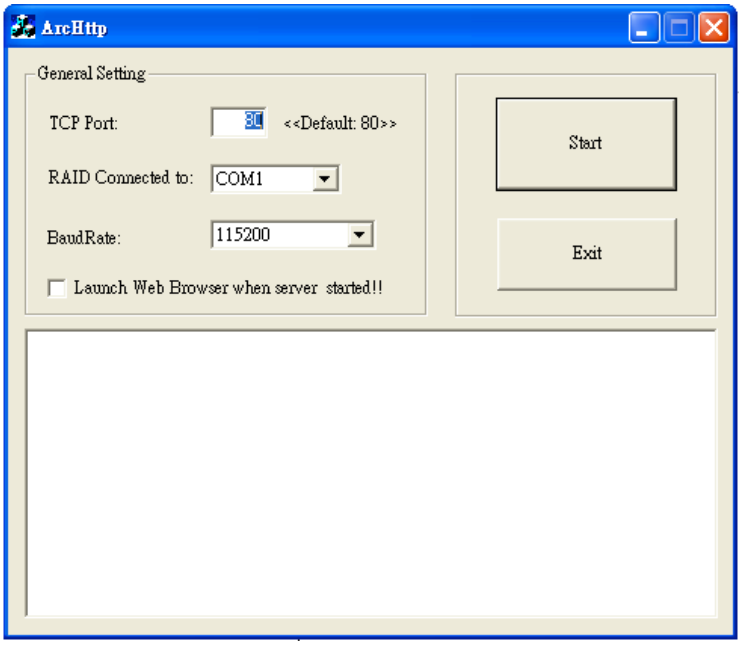


The Enter Network Password dialog screen appears, type the User Name and Password. The RAID subsystem controller default User Name is “admin” and the Password is “0000”. After completing entering user name and password, press **Enter** to start-up the Areca Http Proxy Server.

7. The Storage Console current configuration screen displays the current configuration of your RAID subsystem.



8. If you don't default start-up the web browser, clear "the Launch Web Browser when server started!!" setting. To start the ArcHttp Proxy Server web-browser management, click the **Start** button.



9. User may execute the *Http Proxy Server* by entering http://[IP Address] in your web browser.

6.1.2.2 For Linux

The following is the Linux installation procedure in the local server.

1. Request Download link for the RAID subsystem.
2. Usage: ArcHttp TCP_PORT COM_PORT BAUDRATE

Parameters: TCP_PORT value = 1 ~ 65535
COM_PORT value = 1 ~ 10 where 1 for COM1, 2 for COM2 and so on...
BAUDRATE value = {2400, 4800, 9600, 19200, 38400, 57600, 115200}

For Example:

Start the ArcHttp Proxy Server for TCP_PORT = 6666, COM_PORT = 1 and BAUDRATE = 115200, user can type "ArcHttp 6666 1 115200" on command line and enter to execute it.

2. Execute the *Http Proxy Server* by entering http:///[IP Address] in the Netscape browser provided with Linux. Note that Linux prompts you to login to the machine with an ID of root. The RAID subsystem controller default User Name (ID) is "admin" and the Password is "0000"
3.

6.1.3 Start-up Web Browser-based RAID Management for Remote Administration

1. Microsoft Windows System

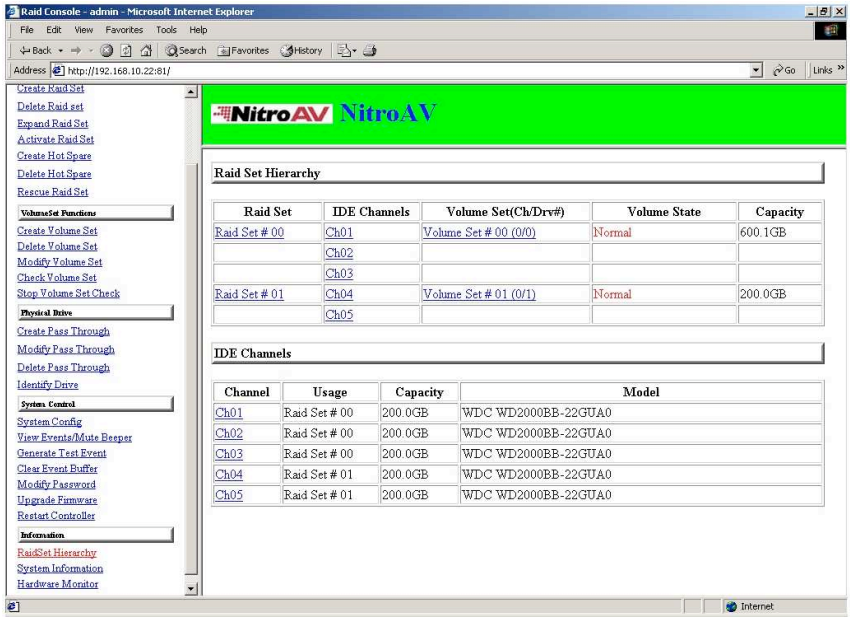
To configure external RAID subsystem on a remote machine, you need to know its IP Address. You must first start up your local *Http Proxy Server*. (Please reference this chapter section 6.1.2.1). Launch your *Http Proxy Server* by entering http://[IP Address] in the remote web browser.
Note that you must be logged in as administrator with local admin rights on the remote machine to remotely configure it. The RAID subsystem controller default User Name is "admin" and the Password is "0000".

2. Linux System

To configure external RAID subsystem on a remote machine, you need to know its IP Address. You must first start up your local *Areca Http Proxy Server*. (Please reference this chapter section 6.1.2.2). Launch your *Areca Http Proxy Server* by entering http://[IP Address] in the remote web browser.
Note that you must be logged in as administrator with local admin rights on the remote machine to remotely configure it. The RAID subsystem controller default User Name is "admin" and the Password is "0000"

6.2 Configuring RAID Sets and Volume Sets

The *Http Proxy Server* current configuration screen displays the current configuration of your RAID subsystem. It displays the RAID Set List, Volume Set List and Physical Disk List. The RAID set information, volume set information and drive information can also be viewed by clicking on the RAIDSet Hierarchy screen. The current configuration can also be viewed by clicking on RAIDSet Hierarchy in the menu.



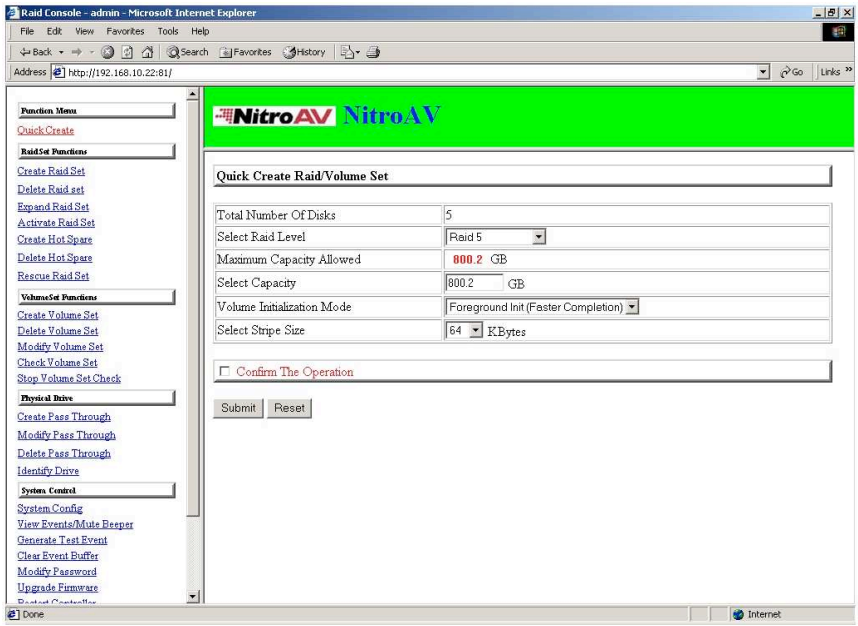
To display RAID set information, move the mouse cursor to the desired RAID set number, then click it. The RAID set Information will show in the screen.
To display volume set information, move the mouse cursor to the desired Volume Set number, then click it. The volume set Information will show in the screen.
To display drive information, move the mouse cursor to the desired physical drive number, then click it. The drive Information will show in the screen.

6.2.1 Main Menu

The Main Menu shows all function that enables the customer to execute actions by clicking on the appropriate link.

Individual Category	Description
Quick Create	Create a default configuration, which is based on the number of physical disk installed; it can modify the volume set Capacity, RAID Level, and Stripe Size.
RAID Set Functions	Create a customized RAID set
Volume Set Functions	Create customized volume sets and modify the existed volume sets parameter.
Physical Drive	Create pass through disks and modify the existed pass through drives parameter. It also provides the function to identify the respect disk drive.
System Control	Setting the RAID system configurations
Information	View the controller and hardware monitor information. The RAID Set Hierarchy can also view through the RAIDSet Hierarchy item.

6.3 Quick Create

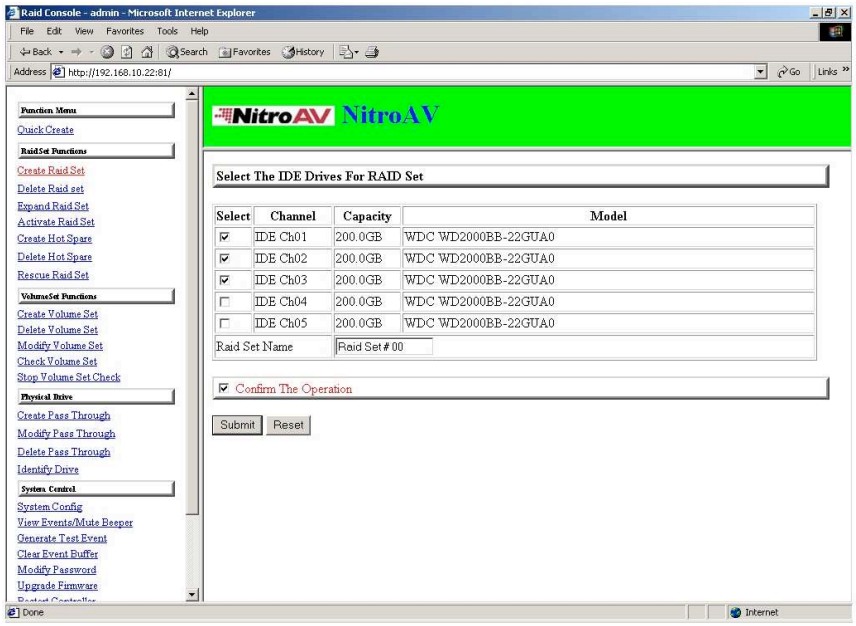


The number of physical drives in the RAID subsystem determines the RAID levels that can be implemented with the RAID set. You can create a RAID set associated with exactly one volume set. The user can change the RAID level, stripe size, and capacity. A hot spare option is also created depending upon the existing configuration.
Tick on the **Confirm The Operation** and click on the **Submit** button in the Quick Create screen, the RAID set and volume set will start to initialize.
Note: In Quick Create your volume set is automatically configured based on the number of disks in your system. Use the RAID Set Function and Volume Set Function if you prefer to customize your system.

6.4 RAID Set Functions

Use the RAID Set Function and Volume Set Function if you prefer to customize your system. User manual configuration can full control of the RAID set setting, but it will take longer to complete than the Quick Volume/RAID Setup configuration. Select the RAID Set Function to manually configure the RAID set for the first time or deletes existing RAID set and reconfigures the RAID set. A RAID set is a group of disks containing one or more volume sets.

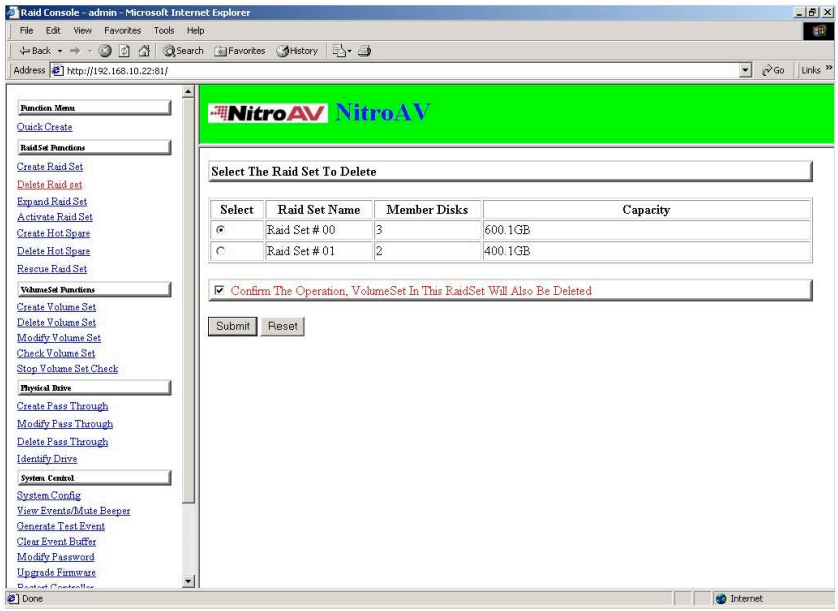
6.4.1 Create RAID Set



To create a RAID set, click on the **Delete RAID Set** link. A "*Select The IDE Drive For RAID Set"* screen is displayed showing the IDE drive connected to the current controller. Click on the selected physical drives with the current RAID set. Enter 1 to 15 alphanumeric characters to define a unique identifier for a RAID set. The default RAID set name will always appear as RAID Set. #.
Tick on the **Confirm The Operation** and click on the **Submit** button in the screen, the RAID set will start to initialize.

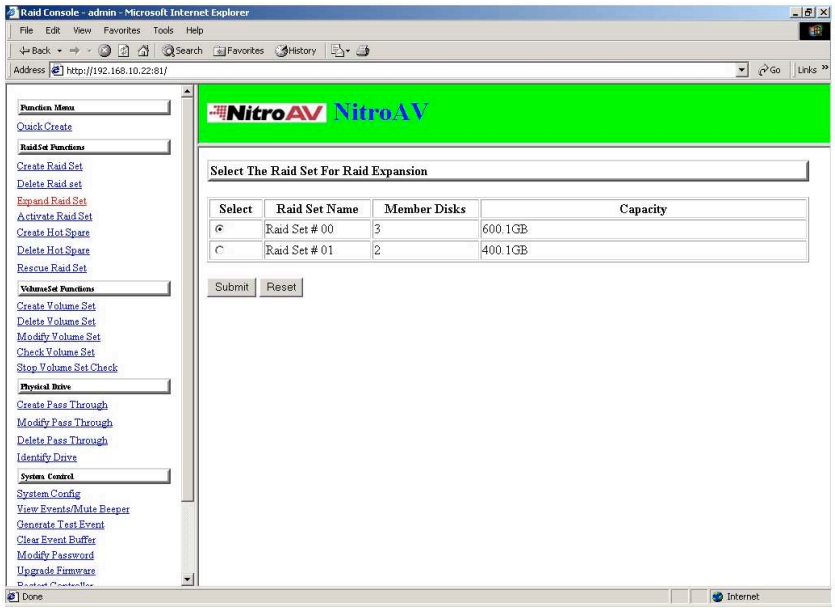
6.4.2 Delete RAID Set

To delete a RAID set, click on the **Create RAID Set** link**.** A "*Select The RAID SET To Delete" screen* is displayed showing all RAID set existing in the current controller. Click the RAID set number you which to delete in the select column to delete screen.
Tick on the **Confirm The Operation** and click on the **Submit** button in the screen to delete it.



6.4.3 Expand RAID Set

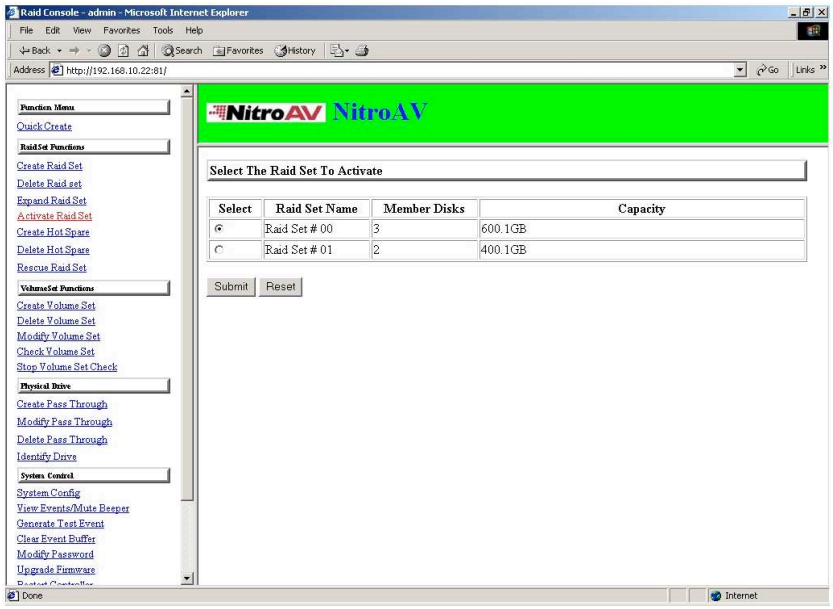
Use this option to expand a RAID set, when a disk is added to your system. This function is active when at least one drive is available.



To expand a RAID set, click on the **Expand RAID Set** link. Select the target RAID set, which you want to expand it.
Tick on the available disk and **Confirm The Operation**, and then click on the **Submit** button in the screen to add disks to the RAID set.

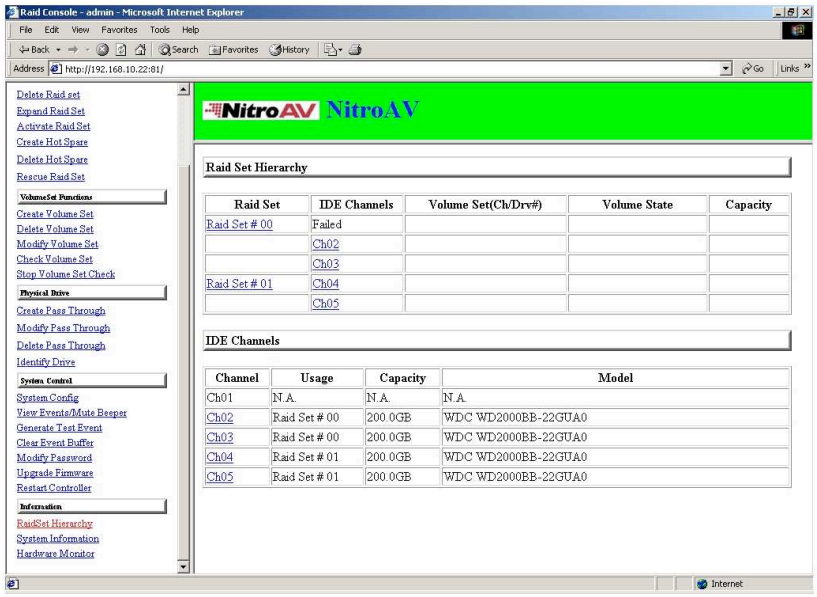
6.4.4 Activate Incomplete RAID Set

When one of the disk drive is removed in power off state, the RAID set state will change to Incomplete State. If user wants to continue to work, when the RAID subsystem is power on. User can use the Activate RAID Set option to active the RAID set. After user complete the function, the RAID State will change to Degraded Mode.
To activate the incomplete the RAID set, click on the **Activate RAID Set** link**.** A "*Select The RAID SET To Activate" screen* is displayed showing all RAID set existing in the current controller. Click the RAID set number you which to activate in the select column.

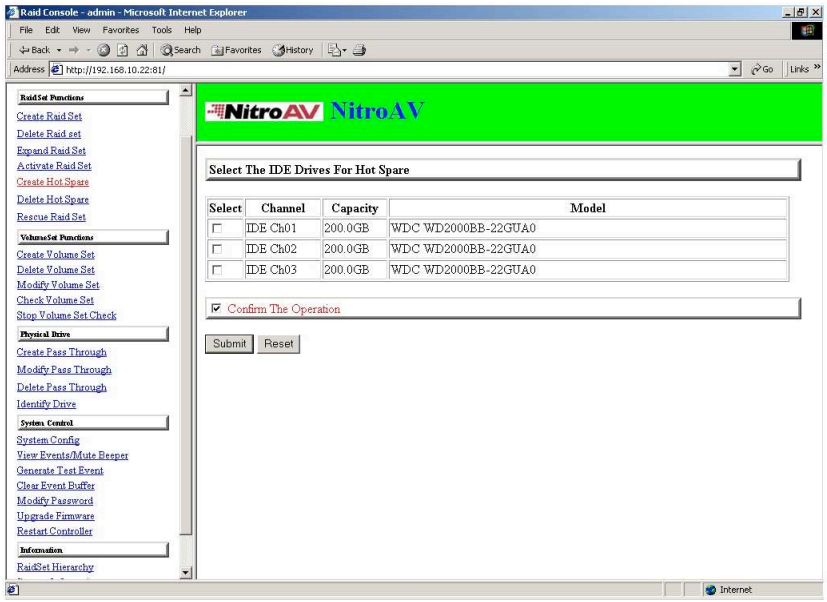


Click on the **Submit** button in the screen to activate the RAID set that has removed one of disk drive in the power off state.

The RAID subsystem will continue to work in degraded mode.



6.4.5 Create Hot Spare



When you choose the **Create Hot Spare** option in the RAID Set Function, all unused physical devices connected to the current controller appear: Select the target disk by clicking on the appropriate check box. Tick on the **Confirm The Operation**, and click on the **Submit** button in the screen to create the hot spares.
The create Hot Spare option gives you the ability to define a global hot spare.

6.4.6 Delete Hot Spare

Select the target Hot Spare disk to delete by clicking on the appropriate check box.
Tick on the **Confirm The Operation**, and click on the **Submit** button in the screen to delete the hot spares.

6.5 Volume Set Function

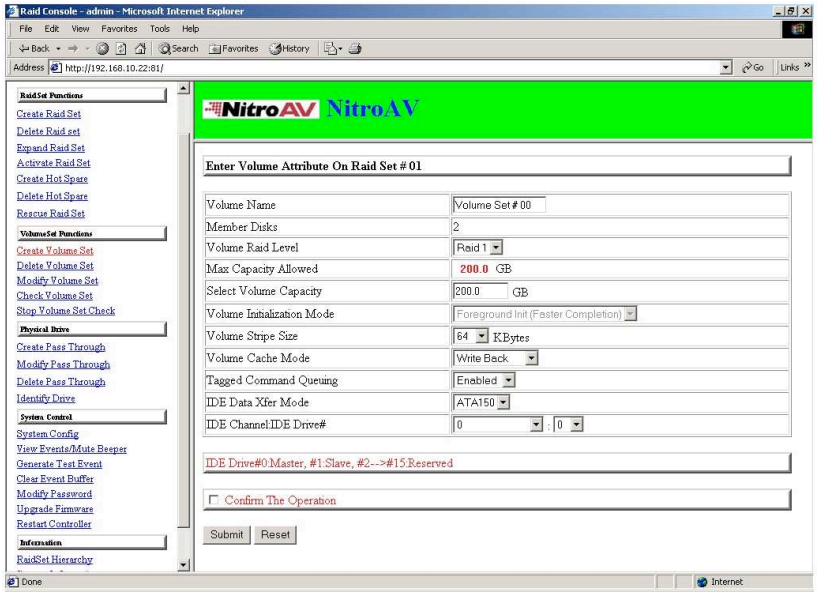
A volume set is seen by the host system as a single logical device. It is organized in a RAID level with one or more physical disks. RAID level refers to the level of data performance and protection of a volume set. A volume set capacity can consume all or a portion of the disk capacity available in a RAID set. Multiple volume sets can exist on a group of disks in a RAID set. Additional volume sets created in a specified RAID set will reside on all the physical disks in the RAID set. Thus each volume set on the RAID set will have its data spread evenly across all the disks in the RAID set.
Create Volume Set

6.5.1.1 For Vanguard V (FireWire800)

The following is the volume set features for the Vanguard V (FireWire800)

1. Volume sets of different RAID levels may coexist on the same RAID set.
2. Up to 3 volume sets in a RAID set can be created by the RAID subsystem controller.(Firewire support Master/Slave volume set, SATA supports Master volume set)

3.The maximum addressable size of a single volume set is 2 TB.
The new create volume set allows user to select the Volume name, capacity, RAID level, strip size, Cache mode, tag queuing and IDE Data Xfer Mode and IDE Channel/IDE Drive# ID.



Volume Name:
The default volume name will always appear as Volume Set. #. You can rename the volume set name providing it does not exceed the 15 characters limit.

Capacity:
The maximum volume size is default in the first setting. Enter the appropriate volume size to fit your application.

RAID Level:
Set the RAID level for the Volume Set. Highlight *RAID Level* and press **Enter**.
The available RAID levels for the current Volume Set are displayed. Select a RAID level and press **Enter** to confirm.

Strip Size:
This parameter sets the size of the stripe written to each disk in a RAID 0, 1, 0+1, or 5 logical drive. You can set the stripe size to 4 KB, 8 KB, 16 KB, 32 KB, 64 KB, or 128 KB. (Do not use if your not sure – Leave at default settings)
A larger stripe size produces better-read performance, especially if your computer does mostly sequential reads. However, if you are sure that your computer does random reads more often, select a small stripe size
Note: RAID level 3 can't modify strip size.

Cache Mode:
The RAID subsystem supports Write-Through Cache and Write-Back Cache.

IDE Data Xfer Mode:
The Vanguard V (FireWire) IDE controller supports ATA/150, ATA/133, ATA/100, ATA/66, and ATA/33 Mode.

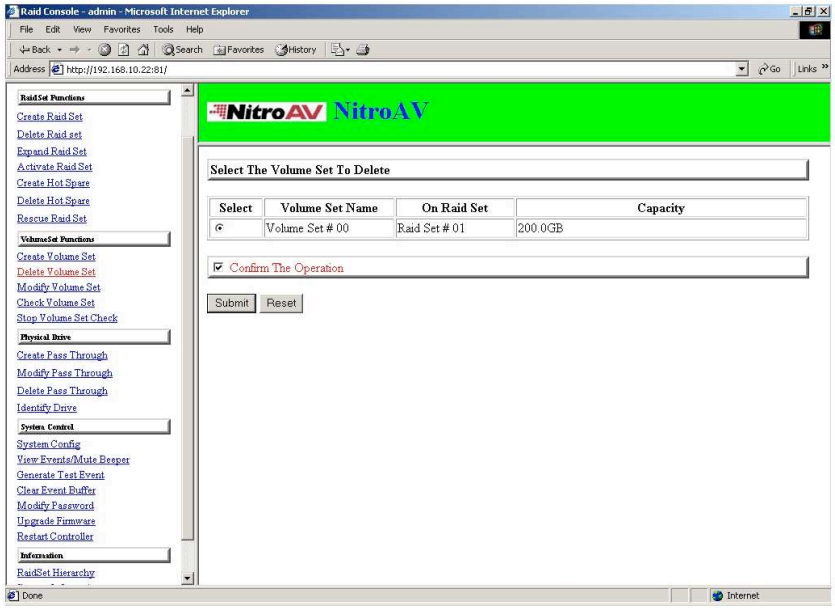
IDE Channel/IDE Drive#:

The SR6500-WB can support Firewire and Serial ATA. Multiple channels can be applied to the external RAID subsystem if user selects the **Independent** option in the **Host Interface Mode** at System Configuration.
Single channel can be applied to the external RAID subsystem if user selects the **Share Volume** option in the **Host Interface Mode** at System Configuration.

IDE Drive# function is as following
Host Channel setting at Independent-Firewire and SATA host channel can concurrently access different volume sets. The Firewire(Channel 0) can support Master and Slave volume set. The SATA (Channel 1) can support one master volume set. The Max volume set can be accessed by Vanguard V (FireWire) is 3.
Host Channel setting at Share Volume-The Vanguard V (FireWire) can support Firewire channeland Serial ATA accesses same volume set. But user can only connect one channel at one time. If user connects the FireWire (Host Channel 0), the RAID subsystem supports 2 volumes (Master/Slave). If user connects the SATA, the RAID subsystem supports 1 volume (Master) (Host Channel 0). Both Firewire and SATA connection are setting as Channel 0.

6.5.2 Delete Volume Set

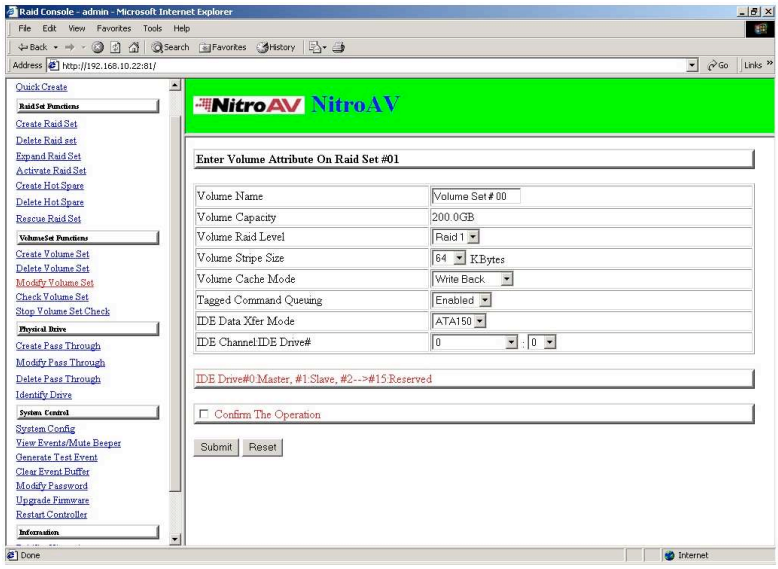
To delete Volume from RAID set system function, move the cursor bar to the main menu and click on the **Delete Volume Set** link. The **Select The RAID Set To Delete** screen will show all RAID set number. **Tick** on a RAID set number and the Confirm The Operation and then **click** on the Submit button to show all volume set item in the selected RAID set. **Tick** on a volume set number and the Confirm The Operation and then **click** on the **Submit** button to delete the volume set.



6.5.3 Modify Volume Set

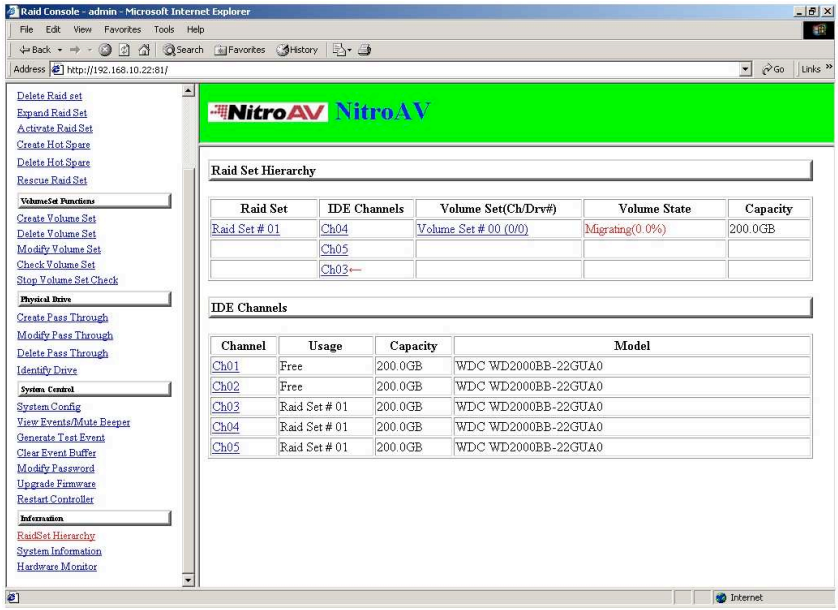
To modify a volume set from a RAID set:
(1). Click on the **Modify Volume Set** link.
(2). Tick on the volume set from the list that you wish to modify. Click on the **Submit** button.
The following screen appears.
Use this option to modify volume set configuration. To modify volume set attribute values from RAID set system function, move the cursor bar to the volume set attribute menu and click on it. The modify value screen appears. Move the cursor bar to an attribute item, and then click on the attribute to modify the value. After you complete the modification, tick on the **Confirm The Operation** and click on the **Submit** button to complete the action. User can modify all values except the capacity.

6.5.3.1 For Vanguard V (FireWire800/1394b).



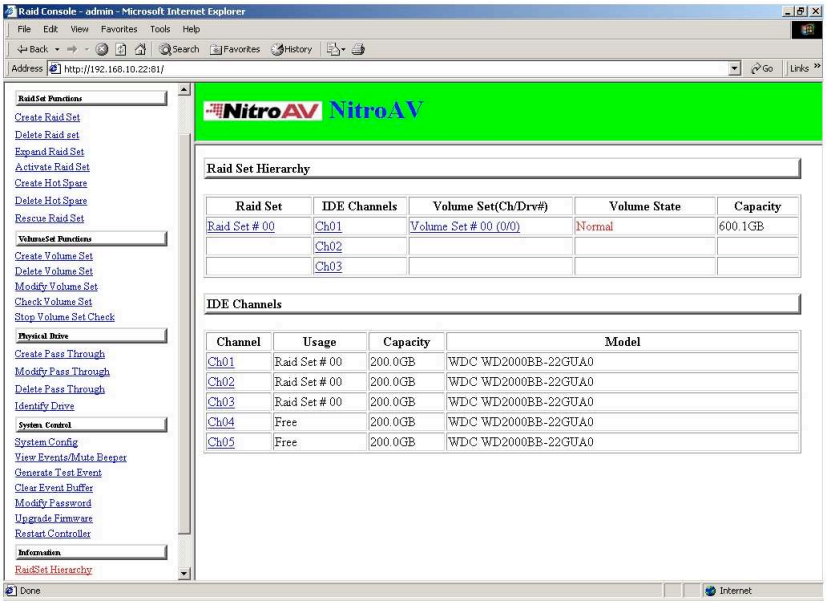
6.5.3.2 Volume Set Migration

Migrating occurs when a volume set is migrating from one RAID level to another, a volume set strip size changes, or when a disk is added to a RAID set. Migration status is displayed in the volume status area of the RAIDSet Hierarchy screen when one RAID level to another, a Volume set strip size changes or when a disk is added to a RAID set.



6.5.4 Check Volume Set

To check a volume set from a RAID set:
(1). Click on the **Check Volume Set** link.
(2). **Tick** on the volume set from the list that you wish to check. Tick on Confirm The Operation and click on the **Submit** button.
Use this option to verify the correctness pf the redundant data in a volume set. For example, in a system with dedicated parity, volume set check means computing the parity of the data disk drives and comparing the results to the contents of the dedicated parity disk drive. The checking percentage can also be viewed by clicking on RAIDSet Hierarchy in the main menu.



6.5.5 Stop VolumeSet Check

Use this option to stop the Check Volume Set function.

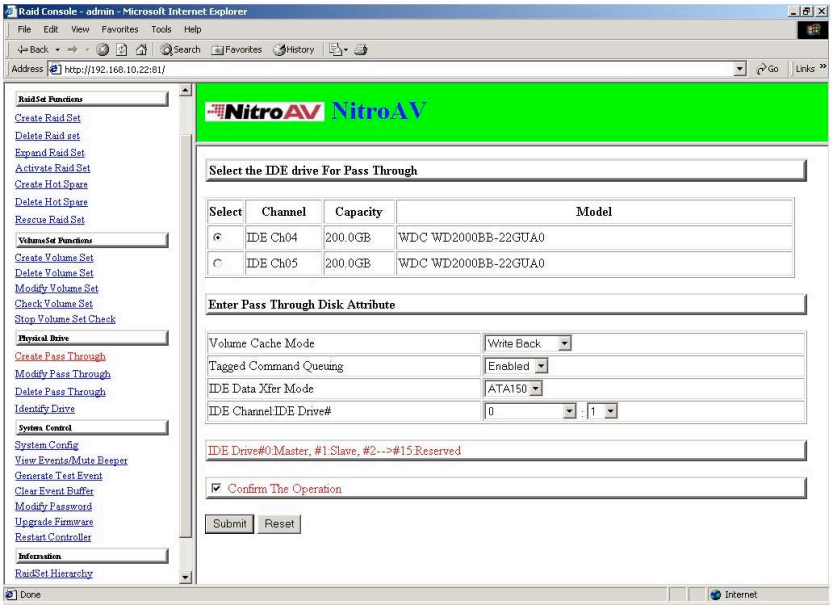
6.6 Physical Drive

Choose this option from the Main Menu to select a physical disk and to perform the operations listed below.

6.6.1 Create Pass-Through Disk

6.6.1.1 For Vanguard V (FireWire800)

To create pass-through disk, move the mouse cursor to the main menu and click on the **Create Pass-Through** link. The relative setting function screen appears.



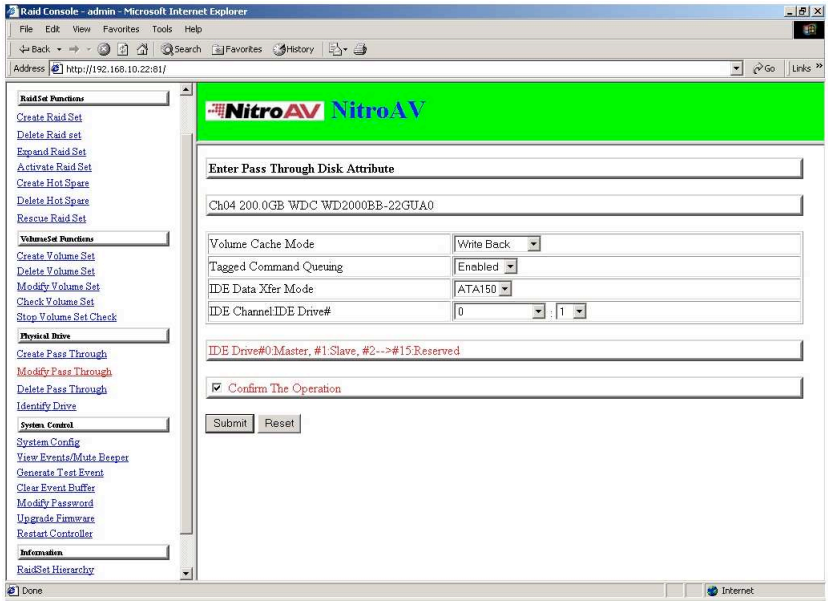
Disk is no controlled by the external RAID subsystem firmware and thus cannot be a part of a volume set. The disk is

available to the operating system as an individual disk. It is typically used on a system where the operating system is on a disk not controlled by the RAID firmware. User can also select the cache mode, Tagged Command Queuing, IDE Data Xfer Mode and IDE Channel/IDE Drive# for this volume.

6.6.2 Modify Pass-Through Disk

Use this option to modify the Pass-Through Disk Attribute. User can modify the cache mode, Tagged Command Queuing, Max SCSI speed and SCSI channel/ID/LUN on an existed pass through disk.
To modify the pass-through drive attribute from the pass-through drive pool, move the mouse cursor bar to click on **Modify Pass-Through** link. The Select The Pass Through Disk For Modification screen appears tick on the Pass-Through Disk from the pass-through drive pool and click on the **Submit** button to select drive.
The Enter Pass-Through Disk Attribute screen appears, modify the drive attribute values, as you want.

6.6.2.1 For Vanguard V (FireWire800/1394b)



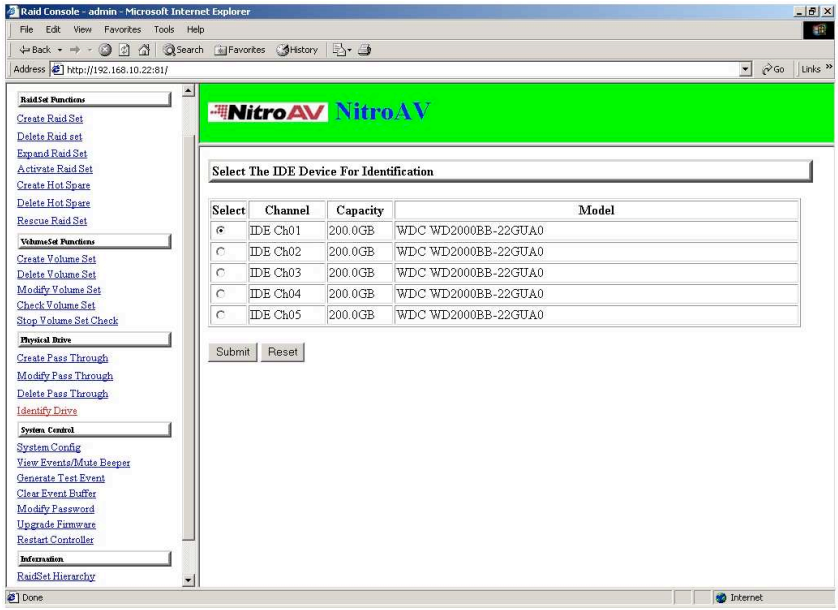
After you complete the selection, tick on the **Confirm The Operation** and click on the **Submit** button to complete the selection action.

6.6.3 Delete Pass-Through Disk

To delete pass-through drive from the pass-through drive pool, move the mouse cursor bar to the main menus and click on **Delete Pass Through** link. After you complete the selection, tick on the **Confirm The Operation** and click on the **Submit** button to complete the delete action.

6.6.4 Identify Selected Drive

To prevent removing the wrong drive, the selected disk LED will light for physically locating the selected disk when the *Identify Selected Drive* is selected.
To identify the selected drive from the drives pool, move the mouse cursor bar to click on **Identify Selected Drive** link. The Select The IDE Device For identification screen appears tick on the IDE device from the drives pool and Flash method. After completing the selection, click on the **Submit** button to identify selected drive.



6.7 System Configuration

6.7.1 System Configuration

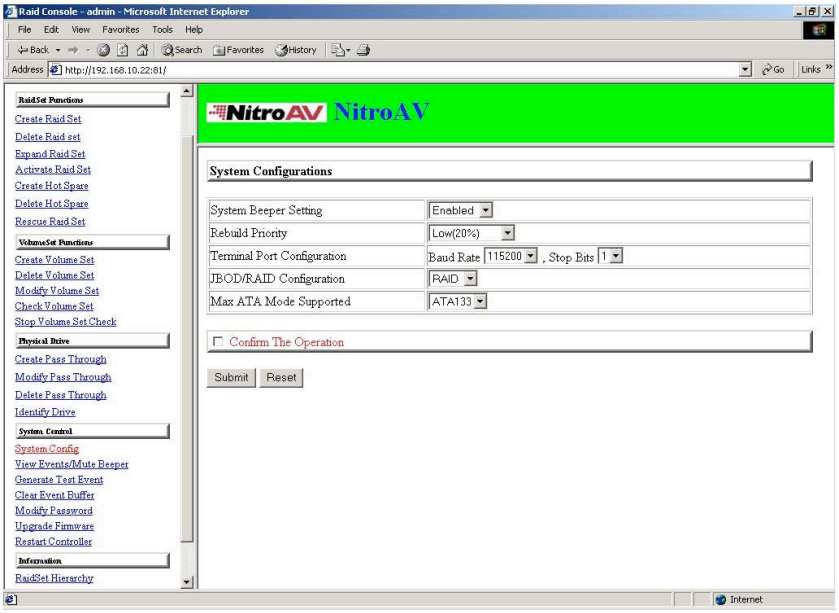
To set the RAID system function, move the cursor bar to the main menu and click on he **RAID System Function** link. The RAID System Function menu will show all items. Move the cursor bar to an item, then press **Enter** key to select the desired function.

6.7.1.1 For Vanguard V (FireWire800/1394b)

System Beeper Setting:
The Alert Beeper function item is used to Disabled or Enable the RAID subsystem controller alarm tone generator.

RAID Rebuild Priority:
The RAID Rebuild Priority is a relative indication of how much time the controller devotes to a rebuild operation. The RAID subsystem allows user to choose the rebuild priority (Low, Normal, High) to balance volume set access and rebuild tasks appropriately. For high array performance, specify a Low value.

Terminal Port Configuration:
Speed setting values are 1200, 2400, 4800, 9600, 19200,38400, 57600, and 115200.
Stop Bits values are 1 bit and 2 bits.
Note: Parity value is fixed at None.
Data Bits value is fixed at 8 bits.



Host Interface Mode:

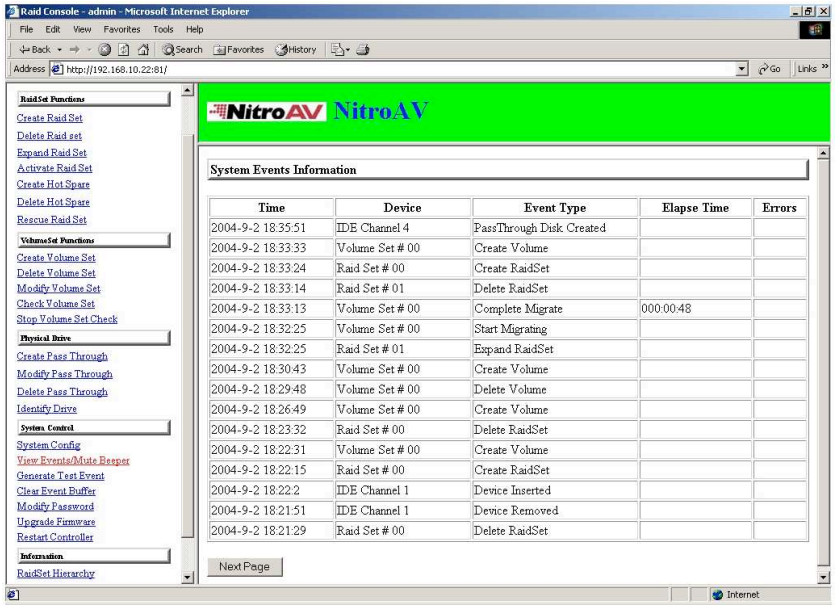
This function can only active at no volume set defined in any RAID set.
Independent-Firewire and SATA host channel can concurrently access different volume sets. The Firewire can support Master and Slave volume set. The SATA can support one master volume set. The Max volume set can be accessed by SR6500-WB is 3.
Share Volume-The Vanguard V (FireWire800) can support Firewire and Serial ATA accesses same volume set. But user can only connect one channel at one time. If user connects the Firewire(Host Channel 0), the RAID subsystem supports 2 volumes (Master/Slave). If user connects the SATA, the RAID subsystem supports 1 volume (Master) (Host Channel 0).

Maximum ATA Mode Supported:

Within the subsystem, the host IDE channels act as a target and 5 Ultra ATA bus are connected to the drive. The 5 Ultra ATA drive channel can support up to ATA133, which runs up to 133MB/s.

6.7.2 View Events

To view the RAID subsystem controller's information, move the mouse cursor to the main menu and click on the **System Information** link. The RAID Subsystem events Information screen appears.
Choose this option to view the system events information: Timer, Device, Event type, Elapse Time and Errors. The RAID system does not built the real time clock. The Time information is the relative time from the RAID subsystem power on.

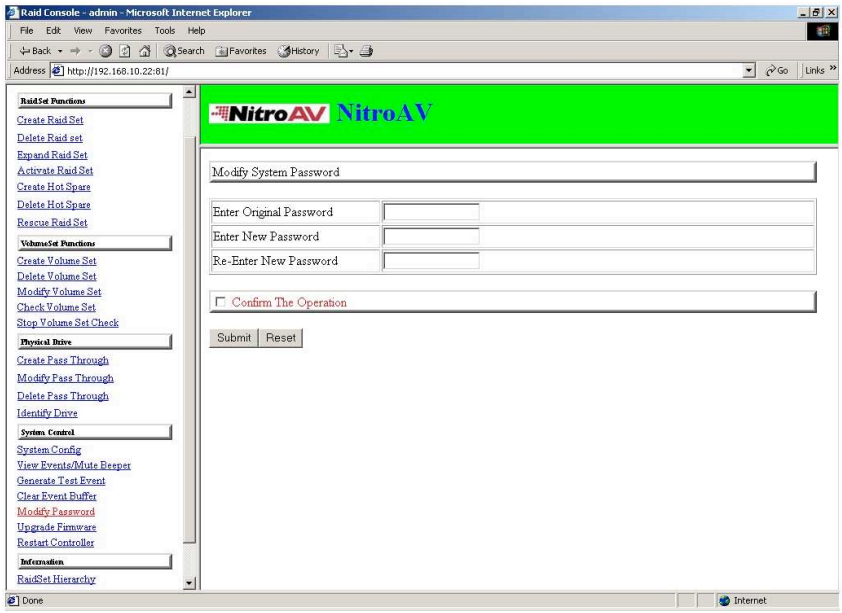


6.7.3 Clear Events Buffer

Use this feature to clear the entire events buffer information.

6.7.4 Modify Password

To set or change the RAID subsystem password, move the mouse cursor to **RAID System Function** screen, and click on the **Change Password** link. The Modify System Password screen appears.
The password option allows user to set or clear the RAID subsystem's password protection feature. Once the password has been set, the user can only monitor and configure the RAID subsystem by providing the correct password.
The password is used to protect the external RAID subsystem from unauthorized entry. The controller will check the password only when entering the Main menu from the initial screen. The RAID subsystem will automatically go back to the initial screen when it does not receive any command in ten seconds.
To disable the password, press **Enter** key only in both the **Enter New Password** and **Re-Enter New Password** column. Once the user confirms the operation and clicks the **Submit** button. The existing password will be cleared. No password checking will occur when entering the main menu from the starting screen.



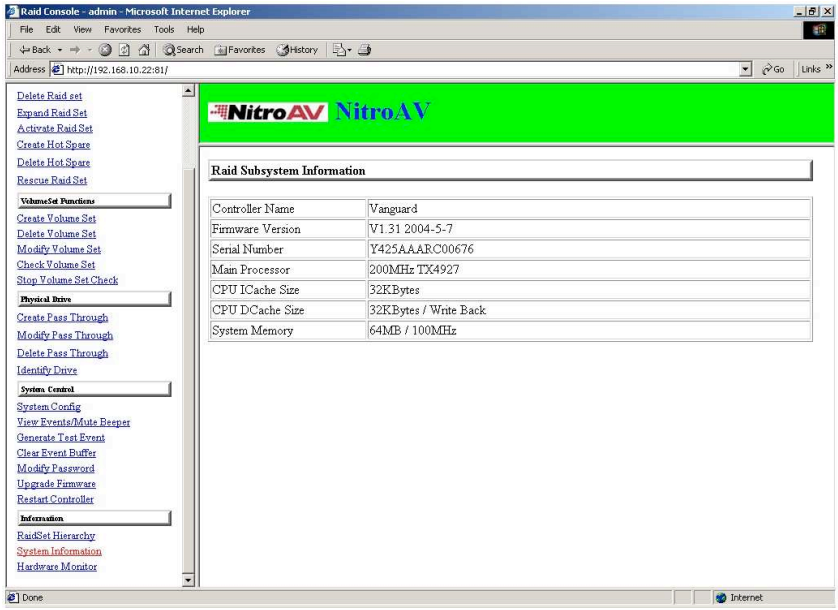
6.8 Information Menu

6.8.1 RAIDSet Hierarchy

Use this feature to view the external RAID subsystem current RAID set, current volume set and physical disk configuration. Please reference the this chapter “Configuring RAID Sets and Volume Sets”

6.8.2 System Information

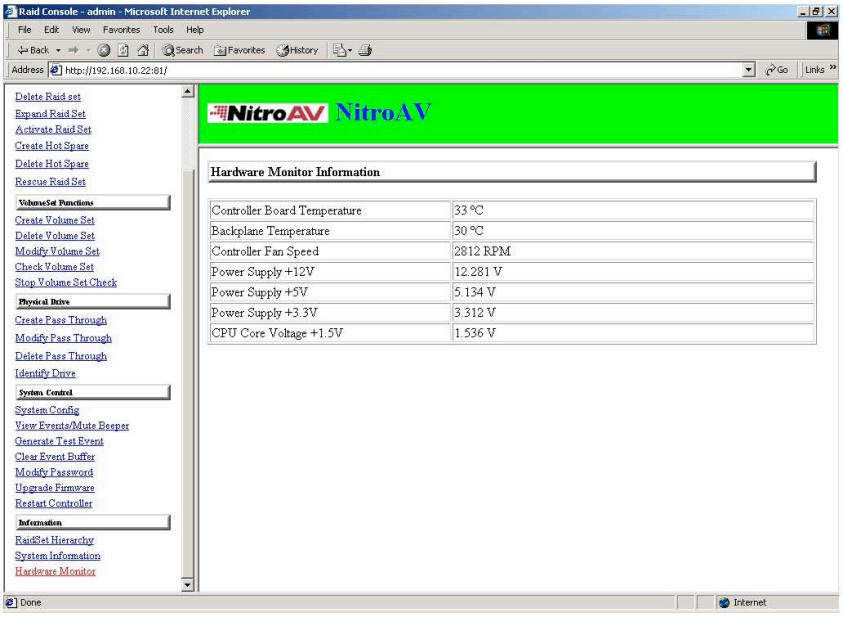
To view the RAID subsystem controller’s information, move the mouse cursor to the main menu and click on the **System Information** link. The RAID Subsystem Information screen appears.



Use this feature to view the RAID subsystem controller’s information. The controller name, firmware version, serial number, main processor, CPU data/Instruction cache size and system memory size/speed appear in this screen.

6.8.3 Hardware Monitor

To view the RAID subsystem controller’s hardware monitor information, move the mouse cursor to the main menu and click the **Hardware Monitor** link. The Hardware Information screen appears.



The Hardware Monitor Information provides the temperature, fan speed (chassis fan) and voltage of the external RAID subsystem. All items are also unchangeable. The warning messages will indicate through the LCM, LED and alarm buzzer.

Item	Warning Condition
Controller Board Temperature	**> 60 Celsius**
Backplane Temperature	**> 60 Celsius**
Controller Fan Speed	**< 1900 RPM**
Power Supply +12V	**< 10.5V or > 13.5V**
Power Supply +5V	**< 4.7V or > 5.3V**
Power Supply +3.3V	**< 3.0V or > 3.6V**
CPU Core Voltage +1.5V	**< 1.35V or > 1.65V**