Web Browser-based Configuration

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 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.

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

To ensure proper communications between the RAID subsystem and Web browser-based RAID management, Please connect the 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

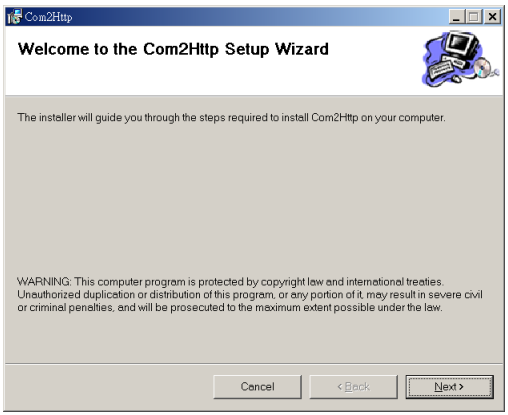
1.2 Start-up Web Browser-based RAID Management for Local Administration

We now offers an alternative means of communication for the 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.

1.2.1 For Windows

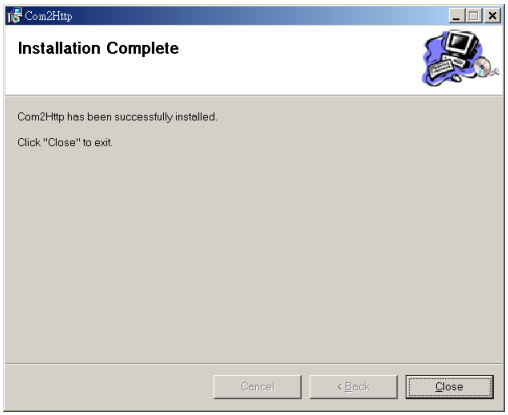
Screen in this section are taken from a Windows/XP installation. If you are running other Windows, your installing screen may look different, but the http proxy server installation is essentially the same.

1. You may download the proxy software from Proware's web site. The address is "http://www.proware.com.tw/support/software.htm".
2. Unzip HttpProxy_Windows.zip and run the setup.exe file to complete Http Proxy Server software installation.
3. Click on the Setup file then the Welcome screen appears.

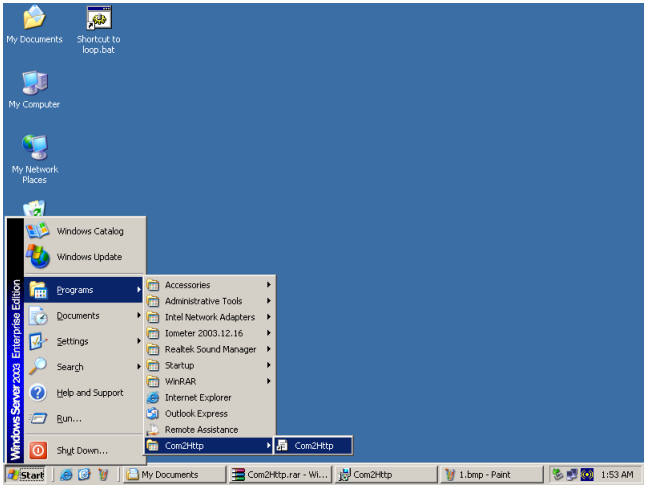


Follow the on-screen prompts to complete Http Proxy Server software installation. A program bar appears that measures the progress of the Archttp setup. When this screen complete, you have completed the Http Proxy Server software setup.

4. After a successful installation, the Setup Complete dialog box of the installation program is displayed. Click the close button to exit the setup wizard.



5. Click on the **Start** Button in the Windows 2000/XP/2003 task bar and then click **Program**, select the **Com2Http** and run "***Com2Http***". Then the Http Proxy Server dialog box appears. If user doesn't want to launch the web browser, goes to step 9.



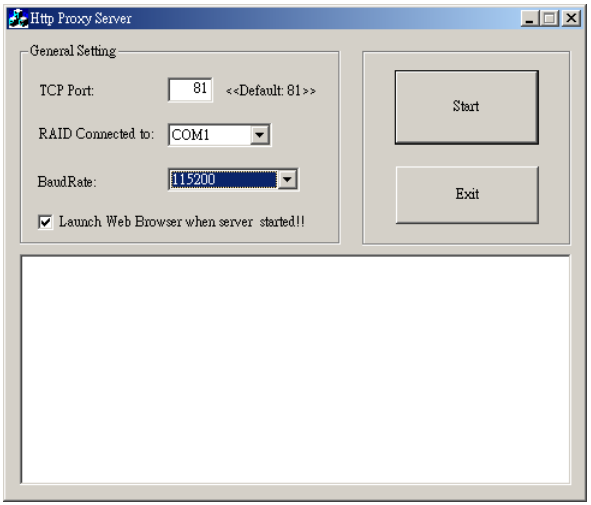
The Parameters for the General Setting:

(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}

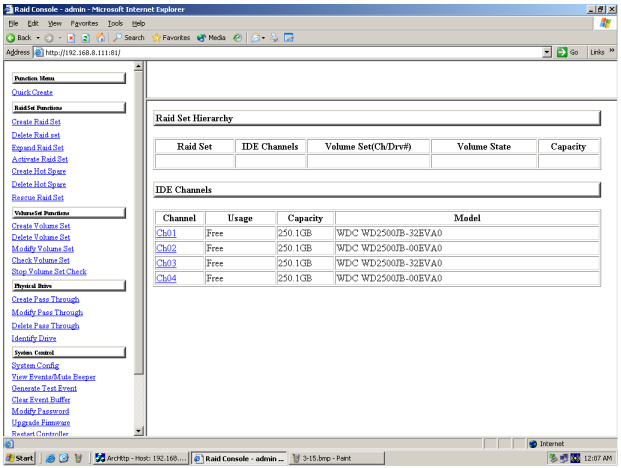
NOTE: RAID subsystem controller default setting baud rate is 115200.



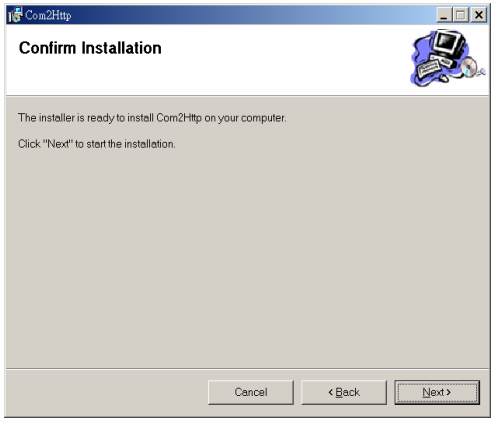
6. To start the Http Proxy Server web-browser management, click the **Start** Button.

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 “00000000”. After completing entering user name and password, press **Enter** to start-up the 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 Http 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.

1.2.2 For Linux

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

1. You may download the proxy software from Proware's web site. The address is "http://www.proware.com.tw/support/software.htm".

2. Unzip HttpProxy_Linux.zip.

3. 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 Http 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.

3. 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 "00000000".

Main Menu

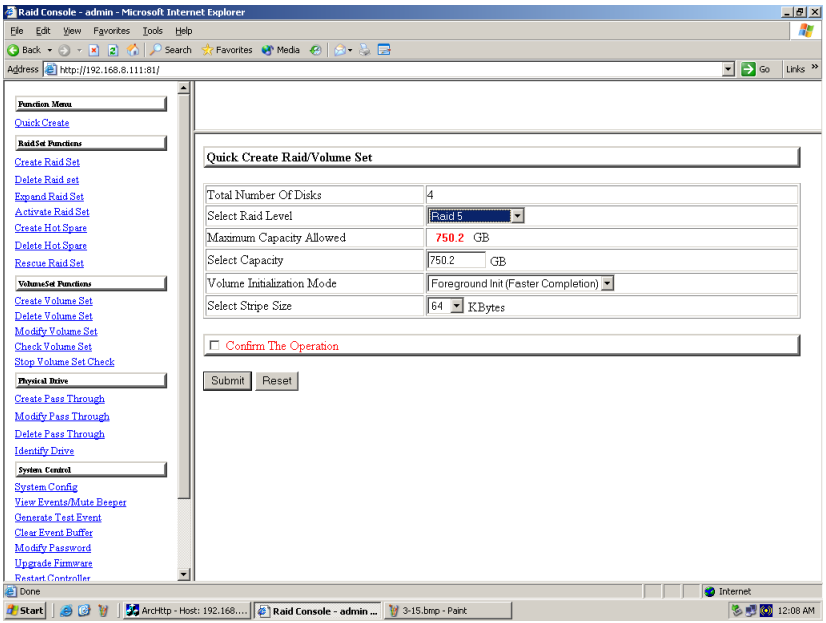
The main menu shows all function that enables the customer to execute actions by clicking on the appropriate link.

Individual Category	Description
Quick Create	Create a RAID configuration, which is consist of 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.

Configuration Procedures

Below are a few practical examples of concrete configuration procedures.

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, capacity, Volume Initialization Mode and stripe size . A hot spare option is also created depending upon the existing configuration.

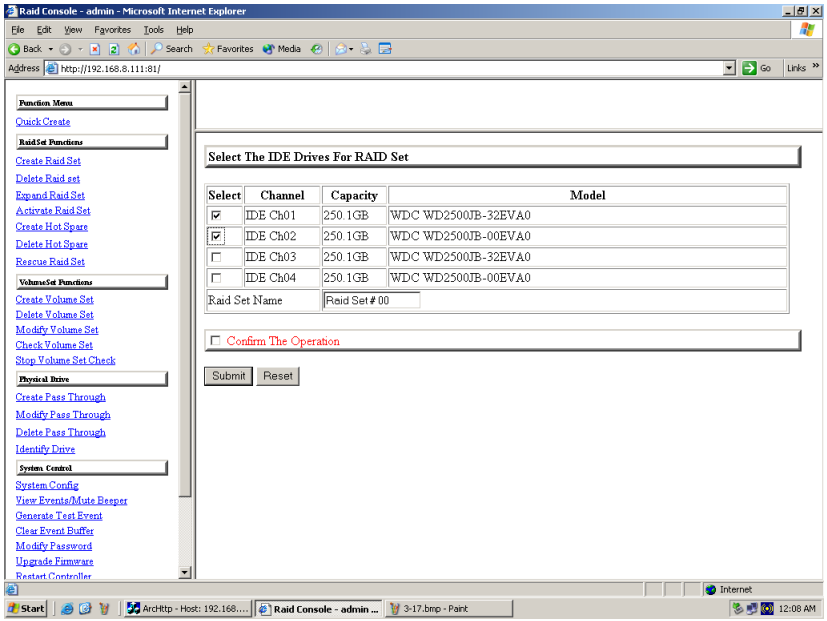
Tick on the **Confirm The Operation** and click on the **Submit** button in the Quick Create screen, the raid set and volume set will start to initialize.

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.

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.

4.1 Create Raid Set



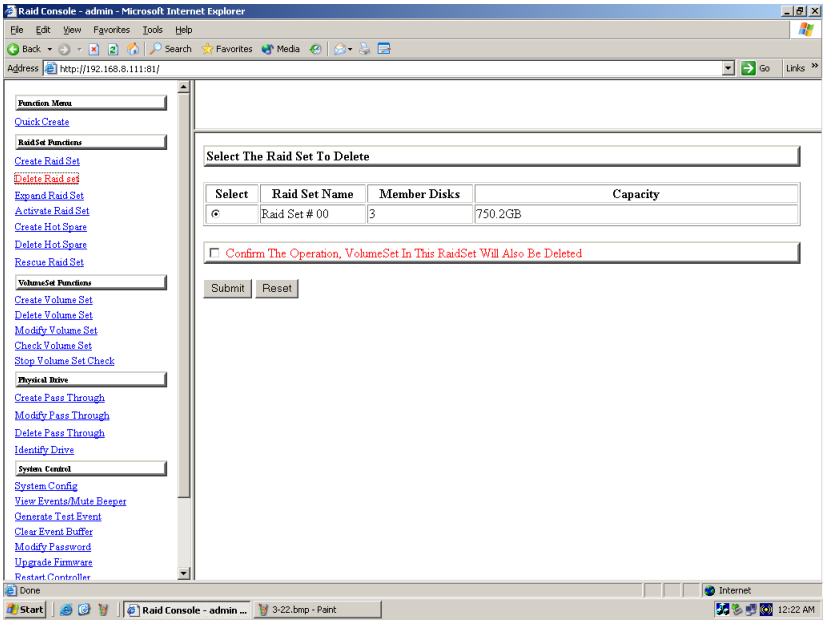
To create a raid set, click on the **Create Raid Set** link. A "*Select The IDE Drive For RAID Set"* screen is displayed showing the IDE drive connected to the current controller. Click on the selected physical drives with the current raid set. Enter 1 to 15 alphanumeric characters to define a unique 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.

4.2 Delete Raid Set

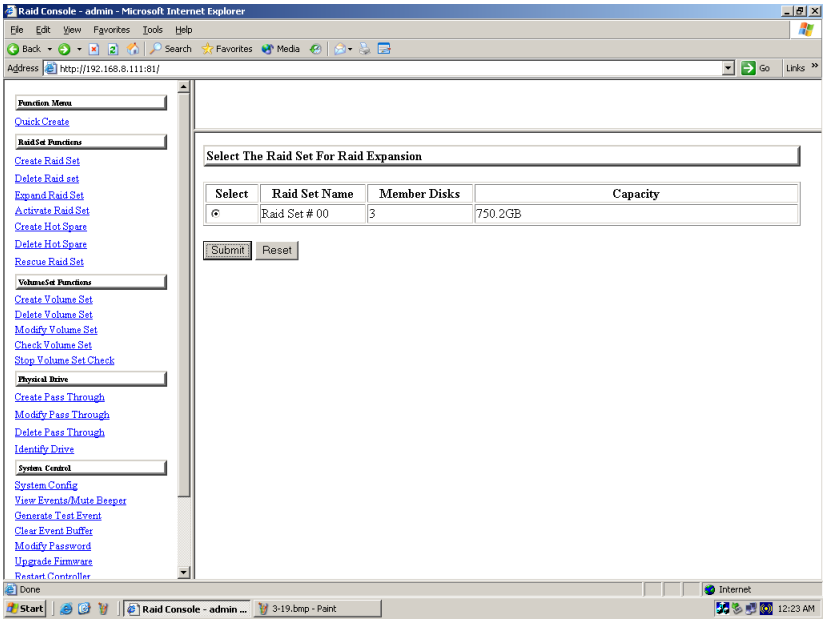
To delete a raid set, click on the **Delete Raid Set** link**.** A "*Select The RAID SET To Delete" screen* is displayed showing all raid set existing in the current controller. Click the raid set number you which to delete in the select column to delete screen.

Tick on the **Confirm The Operation** and click on the **Submit** button in the screen to delete it.



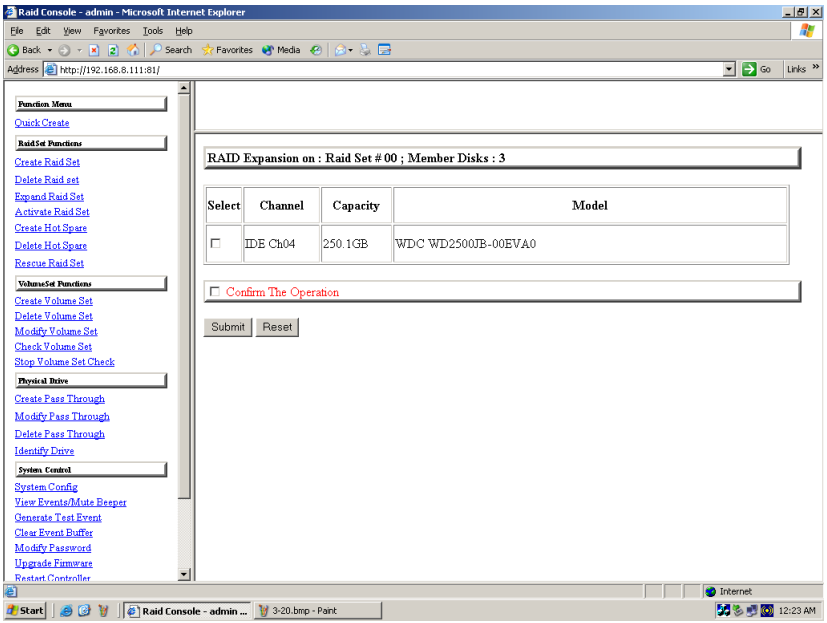
4.3 Expand Raid Set

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.



Note:

1. Once the Expand Raid Set process has started, user cannot stop it. The process must be completed.

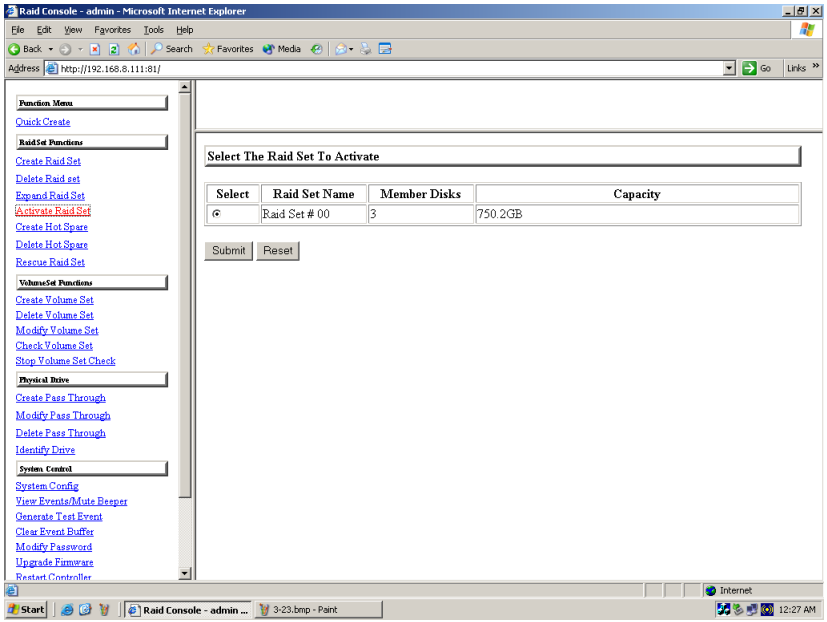
2. If a disk drive fails during raid set expansion and a hot spare is available, an auto rebuild operation will occur after the raid set expansion completes.

Migrating occurs when a disk is added to a raid set. Migration status is displayed in the raid status area of the Raid Set information when a disk is added to a raid set. Migrating status is also displayed in the associated volume status area of the volume set Information when a disk is added to a raid set.

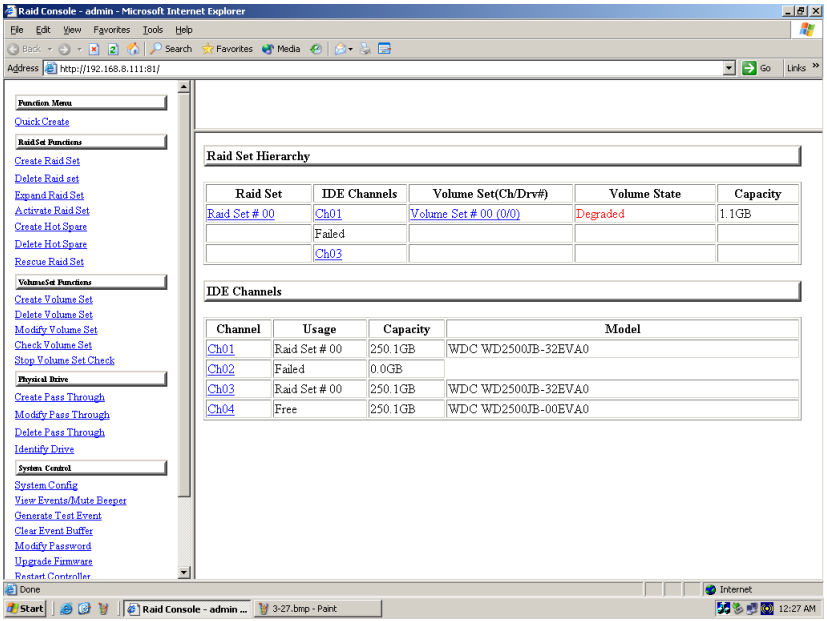
4.4 Activate Incomplete Raid Set

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.



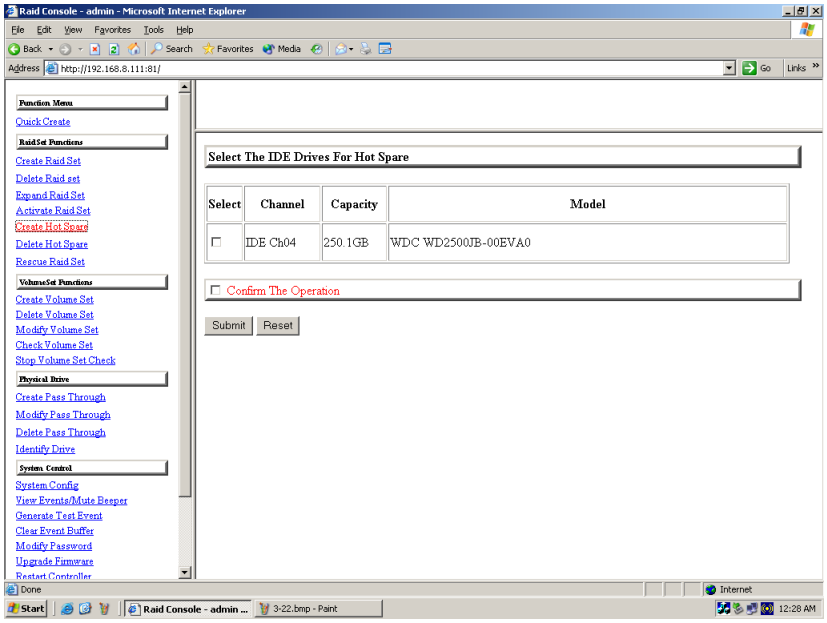
Click on the **Submit** button in the screen to activate the raid set that has removed one of disk drive in the power off state. The RAID subsystem will continue to work in degraded mode.



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.



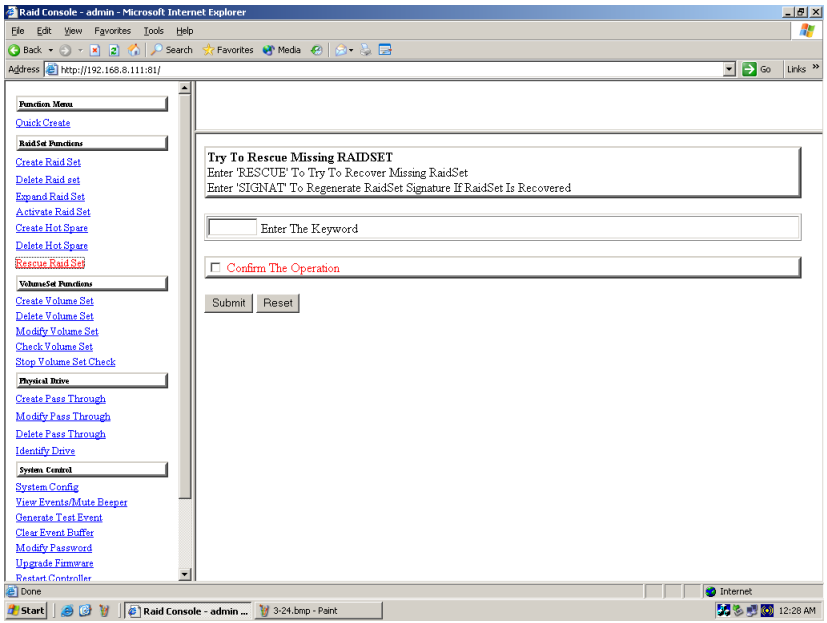
4.6 Delete Hot Spare

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.

4.7 Rescue Raid Set

If you try to Rescue Missing RAID Set, please contact our engineer for assistance.



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.

5.1 Create Volume Set

The following is the volume set features:

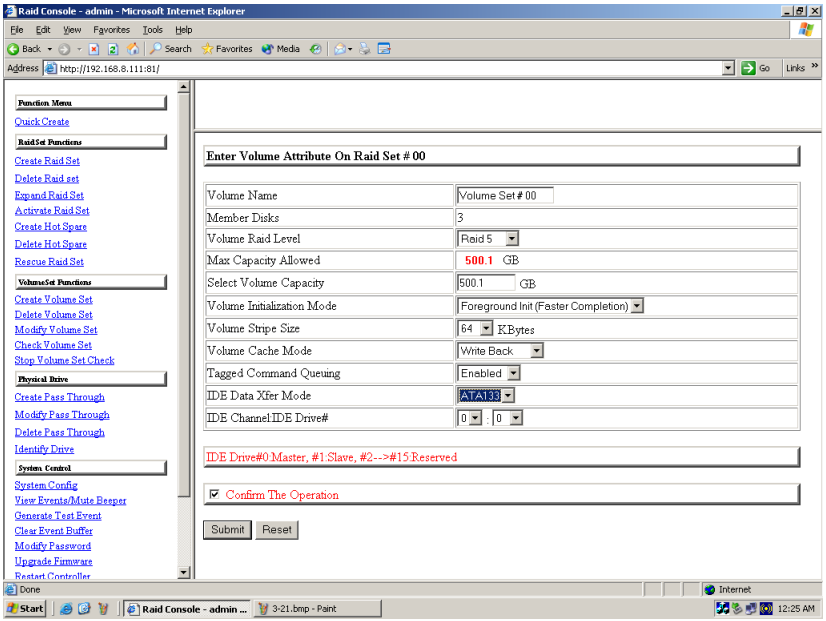
1.Volume sets of different RAID levels may coexist on the same raid set.

2.Up to 16 volume sets in a raid set can be created by the RAID subsystem controller. (PATA support Master/Slave volume set, SATA supports Master volume set)

3. The maximum addressable size of a single volume set is 2 TB.

To create volume set from raid set system, move the cursor bar to the main menu and click on the **Create Volume Set** link. The **Select The Raid Set To Create On It** screen will show all raid set number. **Tick** on a raid set number that you want to create and then **click** on the Submit button.

The new create volume set allows user to select the Volume name, capacity, RAID level, strip size, Cache mode, tag queuing IDE Data Xfer Mode and IDE channel/IDE Drive.



Volume Name:

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

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.

Capacity:

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

Initialization Mode:

Set the Initialization Mode for the Volume Set. Foreground mode is faster completion and background is instant available.

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.

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.

Tag Queuing:

The Enabled option is useful for enhancing overall system performance under multi-tasking operating systems. The Command Tag (Drive Channel) function controls the SCSI command tag queuing support for each drive channel. This function should normally remain enabled. Disable this function only when using older SCSI drives that do not support command tag queuing

IDE Xfer Mode

The RAID subsystem supports ATA133, ATA100, ATA66, and ATA33 Mode.

IDE Channel

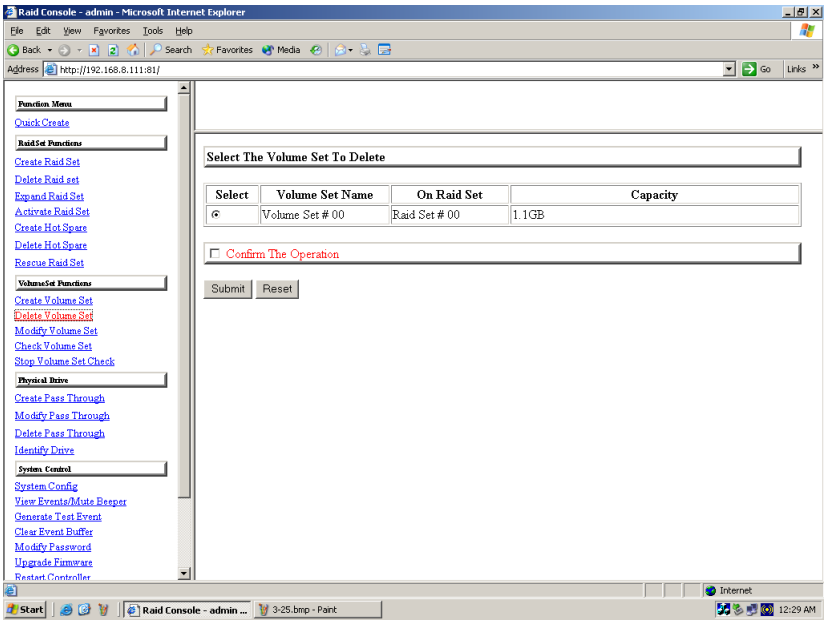
Choose the IDE Channel. A Select IDE Channel dialog box appears, the Channel I will share volume set with Channel 0, it only show Channel 0 in the dialog box.

Drive Select

The RAID subsystem supports 2 volumes (Master/Slave).

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 Volume 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.



5.3 Modify Volume Set

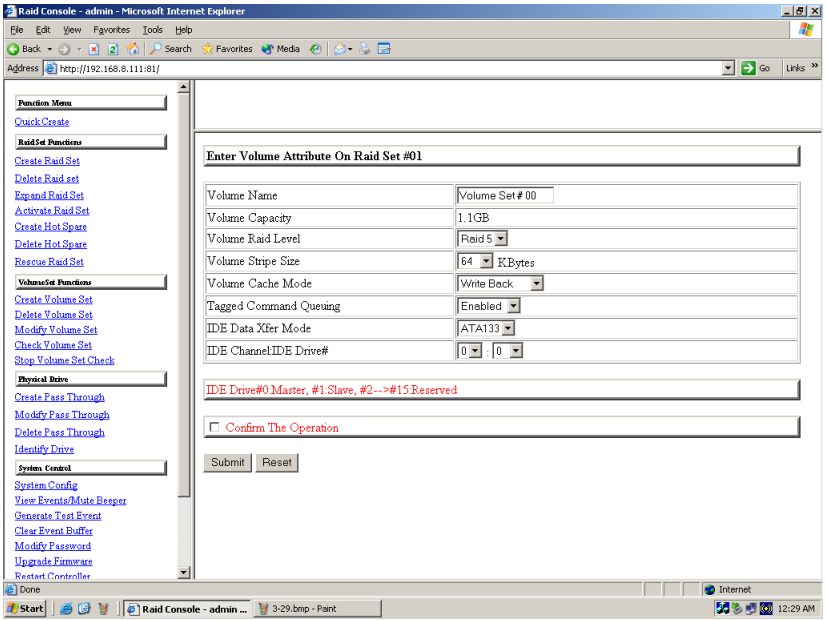
To modify a volume set from a raid set:

(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.

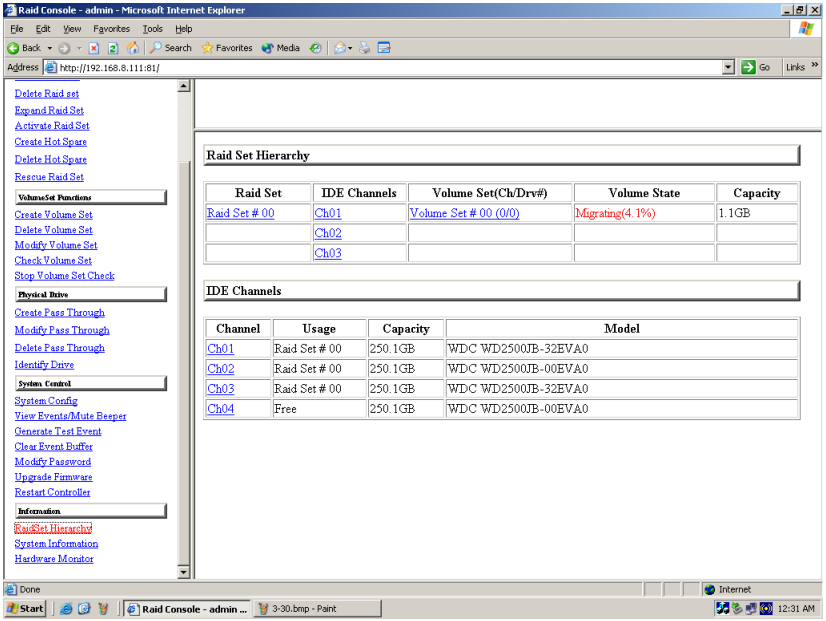
The following screen appears.

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.



5.4 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.



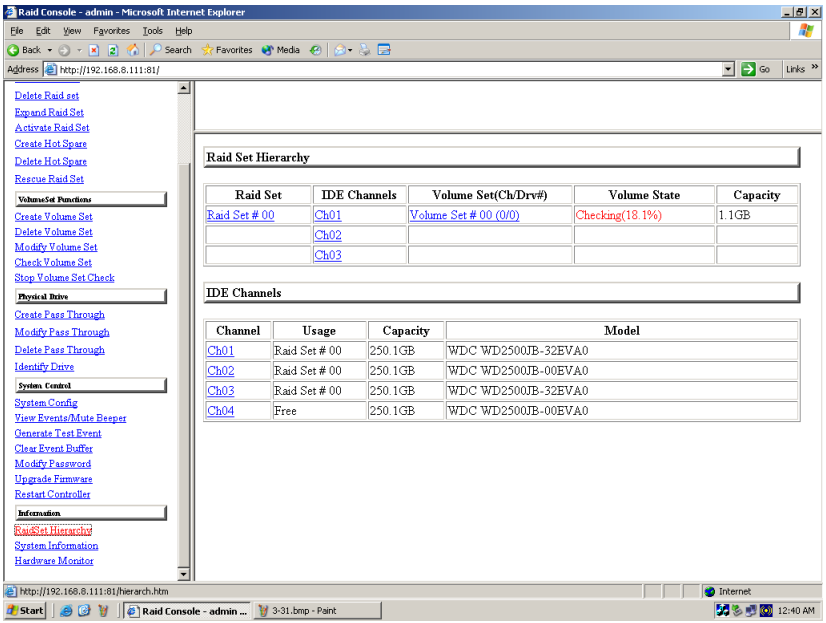
5.5 Check Volume Set

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.



5.6 Stop VolumeSet Check

Use this option to stop the Check Volume Set function.

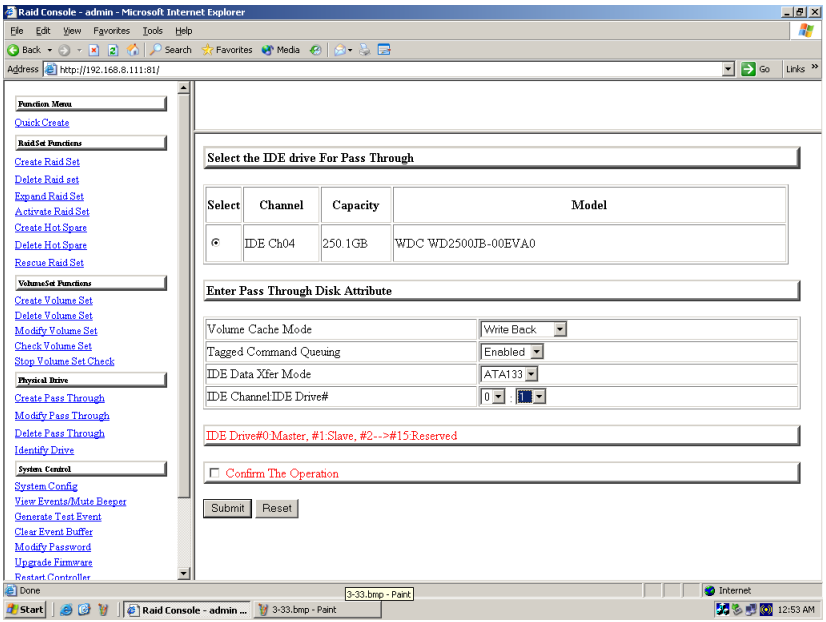
6 Physical Drive

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

6.1 Create Pass-Through Disk

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 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.

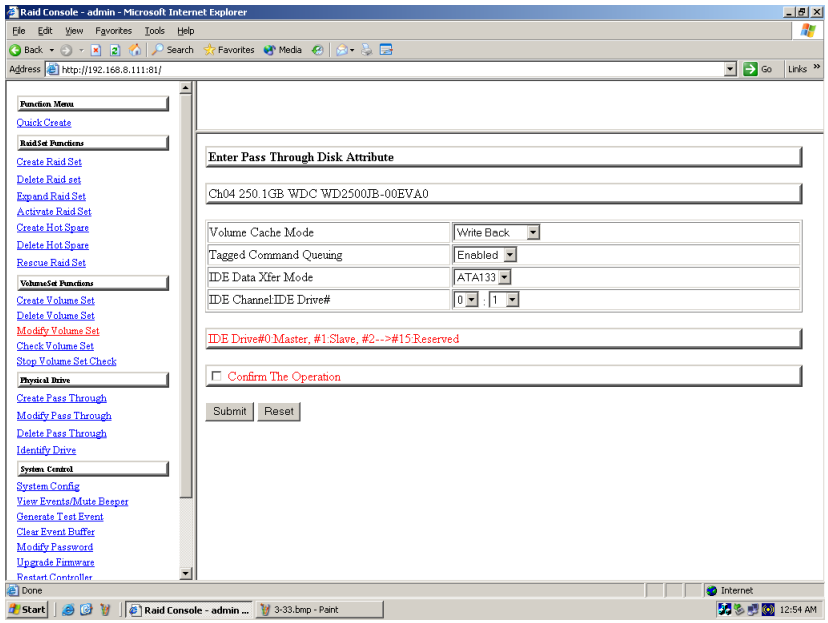


6.2 *Modify Pass-Through Disk*

Use this option to modify the Pass-Through Disk Attribute. User can modify the cache mode, Tagged Command Queuing, IDE Data Xfer Mode and IDE channel/IDE Drive 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.



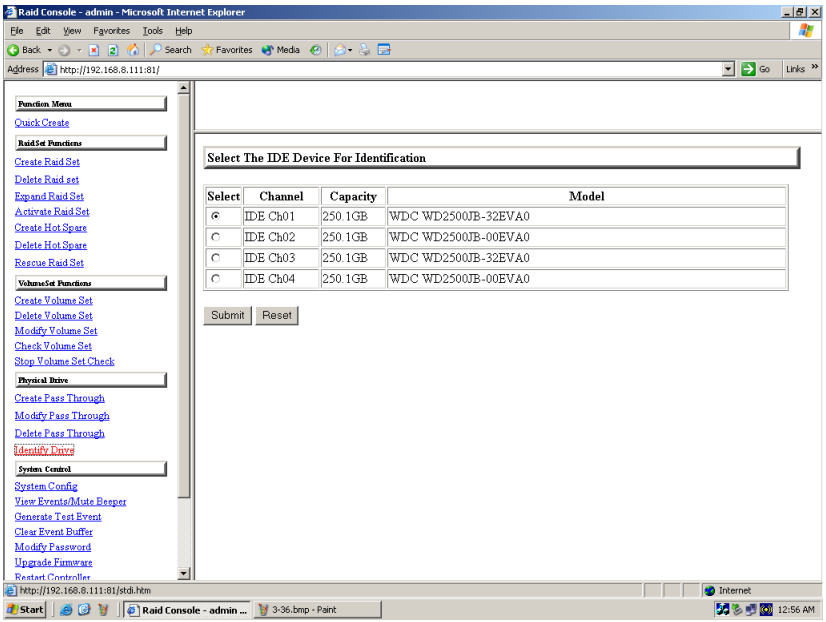
6.3 Delete Pass-Through Disk

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.

6.4 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.

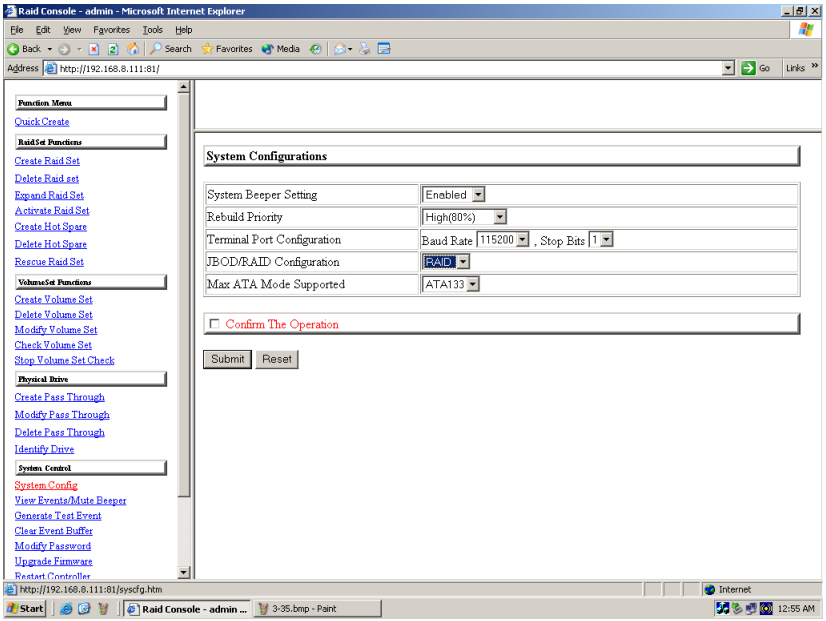
To identify the selected drive from the drives pool, move the mouse cursor bar to click on **Identify Selected Drive** link. The Select The IDE Device For identification screen appears tick on the IDE device from the drives pool and Flash method. After completing the selection, click on the **Submit** button to identify selected drive.



7 System Configuration

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. Select the desired function.



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 (ultraLow, Low, Medium, 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.

JBOD/RAID Configuration

The RAID subsystem supports JBOD and RAID configuration.

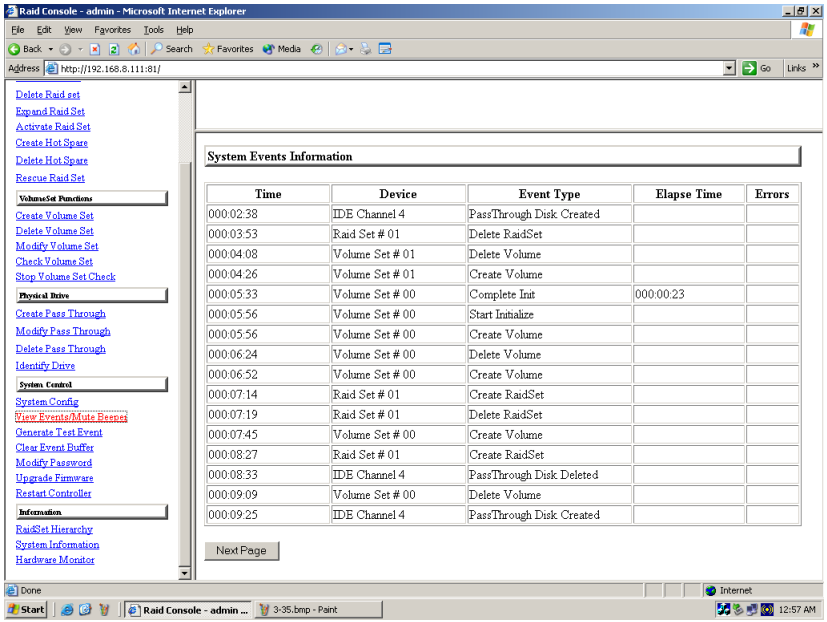
Maximum ATA Mode Supported:

Within the subsystem, the host IDE channels act as a target and 4 Ultra ATA bus are connected to the drive. The 4 Ultra ATA drive channel can support up to ATA133, which runs up to 133MB/s.

7.2 View Events

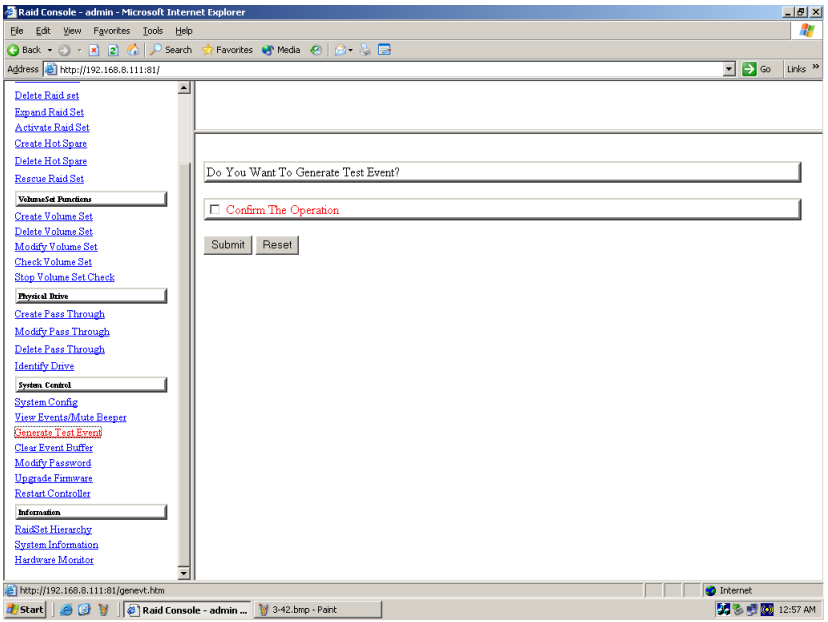
To view the RAID subsystem controller's information, move the mouse cursor to the main menu and click on the **System Information** link. The Raid Subsystem events Information screen appears.

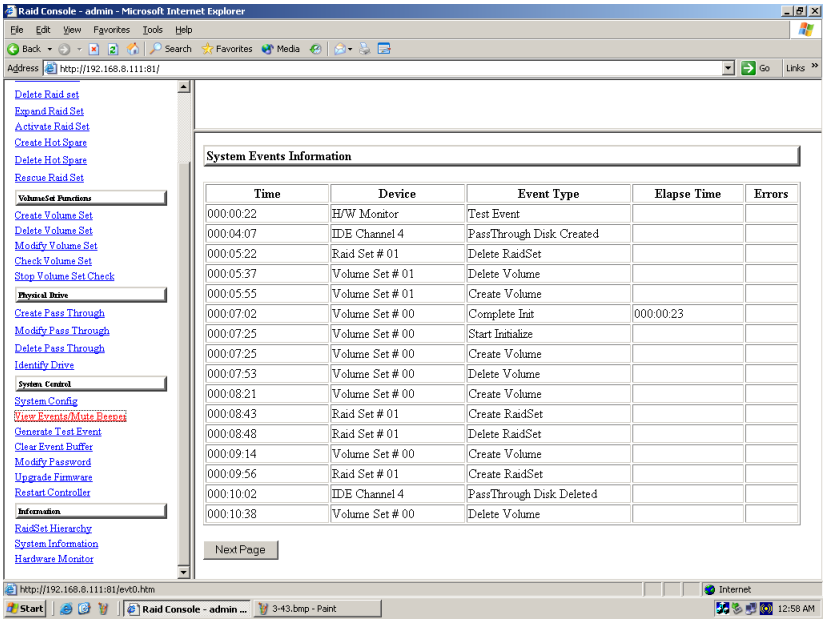
Choose this option to view the system events information: Timer, Device, Event type, Elapse Time and Errors. The RAID system does not built the real time clock. The Time information is the relative time from the RAID subsystem power on.



7.3 Generate Test Events

If you want to generate test events, move the cursor bar to the main menu and click on he **Generate Test Events**. Tick on the **Confirm The Operation**, and click on the **Submit** button in the screen to create the hot spares. Then click on the **View Events/Mute Beeper** to view the test event.





7.4 Clear Events Buffer

Use this feature to clear the entire events buffer information.

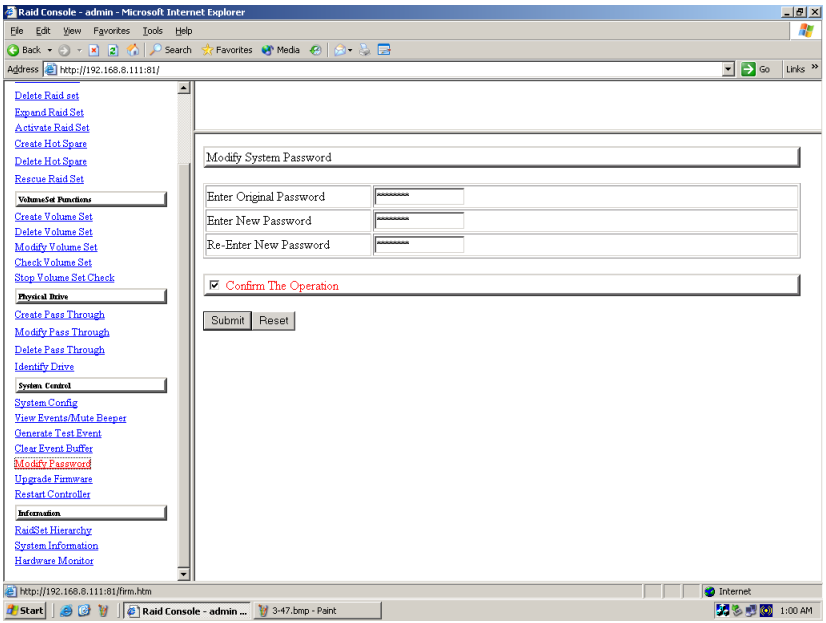
7.5 Modify Password

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 internal 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.



7.6 Upgrade Firmware

Please reference the chapter 4 for more information.

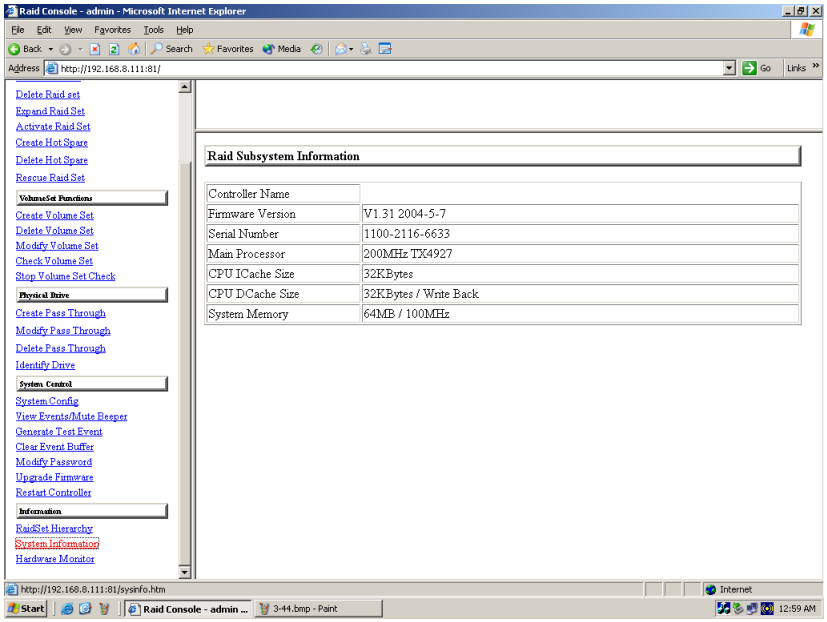
8 Information Menu

8.1 RaidSet Hierarchy

Use this feature to view the internal raid subsystem current raid set, current volume set and physical disk configuration.

8.2 System Information

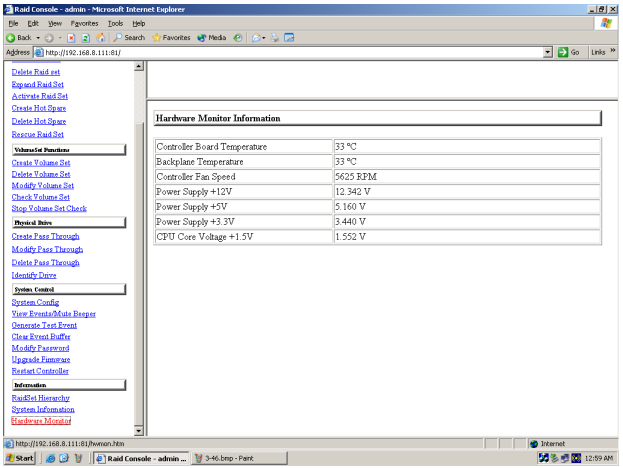
To view the RAID subsystem controller's information, move the mouse cursor to the main menu and click on the **System Information** link. The Raid Subsystem Information screen appears.



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.

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 RAID subsystem. All items are also unchangeable. The warning messages will indicate through the LCD, LED and alarm buzzer.

Item	Warning Condition
Controller Board Temperature	**> 60 Celsius**
Backplane Temperature	**> 55 Celsius**
Controller Fan Speed	**< 2600 RPM**
Power Supply +12V	**< 10.8V or > 13.2V**
Power Supply +5V	**< 4.5V or > 5.5V**
Power Supply +3.3V	**< 2.97V or > 3.63V**
CPU Core Voltage +1.5V	**< 1.35V or > 1.65V**

9 Creating a New RAID or Reconfiguring an Existing RAID

You can configure raid sets and volume sets using **Quick Create** or **Raid Set Functions/Volume Set Functions** configuration method. Each configuration method requires a different level of user input. The general flow of operations for raid set and volume set configuration is:

Step	Action
1	Designate hot spares/pass-through (optional).
2	Choose a configuration method.
3	Create raid set using the available physical drives.
4	Define volume set using the space in the raid set.
5	Initialize the volume set and use volume set in the HOST OS.

10 Upgrading Firmware

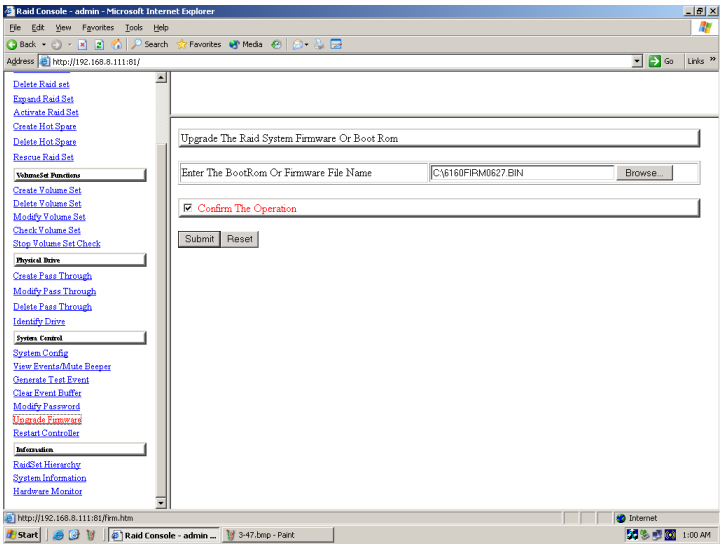
Get the new version firmware for your RAID subsystem controller.

1. To upgrade the RAID subsystem firmware, move the cursor to **Upgrade Firmware** link. The **Upgrade The Raid System Firmware** screen appears.

2. Click Browse. Look in the location where the Firmware upgrade software is located. Select the File name:

"6160FIRM.BIN" and click open.

3. Click the **Confirm The Operation** and press the **Submit** button.



4. The Web Browser begins to download the firmware binary to the controller and start to update the flash ROM.

5. After the firmware upgrade is complete, a bar indicator will show " Firmware Has Been Updated Successfully"