

*Network Attached Storage*

# User's Guide

NetStreamer NAS 2120

**ADVANTECH**

eBusiness Solution

## **Warning**

This is a Class A device. It might cause interference on residential areas.

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1<sup>st</sup> Edition July 2002

Manual Part number 2002212000

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**1**

## About the Product

This manual refers to NAS 2120. NAS 2120 is one product among NetStreamer's series of storage devices, specially designed for file sharing with multi-platform file sharing support capabilities. Data storage in the NAS can be partitioned either as application-based or user-based, with each partition having its own security definitions. Remote access is also supported allowing the administrator to manage remotely. In addition, backup and volume management can be done through a Web browser-based GUI interface.

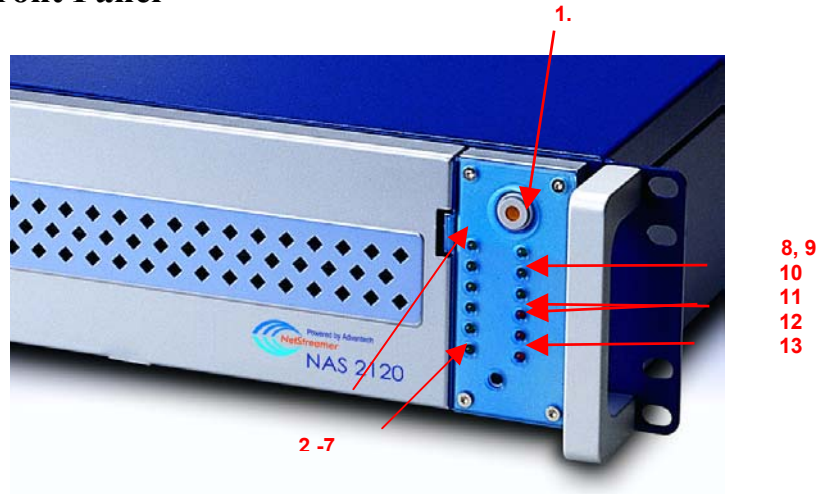
The product should come with the following items:

- One CD (NetStreamer NAS Series Companion CD)
- NAS User's Guide
- Warranty Card
- 2 sets of keys
- Cross-over Ethernet LAN Cable

If one of the items is missing or defective, contact your local vendor immediately for a replacement.

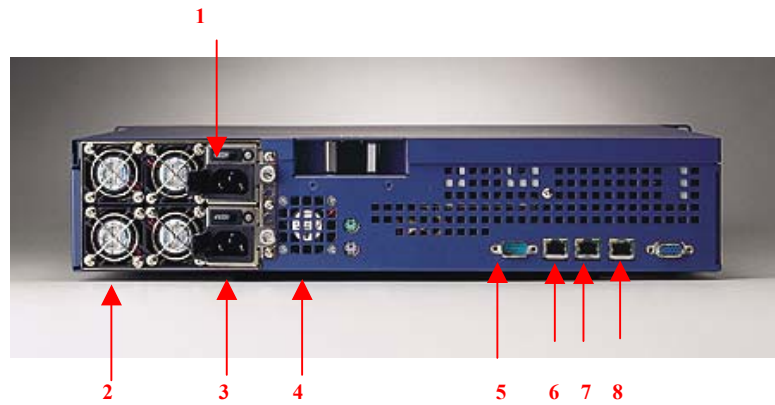
## 1.1 Mechanical Outline

### Front Panel



- |                     |                               |
|---------------------|-------------------------------|
| 1. Power Switch     | 8. Fast Ethernet 1 LED        |
| 2. Hard drive 1 LED | 9. Fast Ethernet 2 LED        |
| 3. Hard drive 2 LED | 10. Gigabit Ethernet LED      |
| 4. Hard drive 3 LED | 11. FAN Alarm LED             |
| 5. Hard drive 4 LED | 12. TEMP Alarm LED            |
| 6. Hard drive 5 LED | 13. Power / voltage Alarm LED |
| 7. Hard drive 6 LED |                               |

## Back Panel



- |                        |                                |
|------------------------|--------------------------------|
| 1. Power On/Off Switch | 5. UPS RS-232 Port             |
| 2. Power Supply        | 6. Gigabit Ethernet1 (GE) Port |
| 3. AC Input            | 7. Fast Ethernet2 (FE2) Port   |
| 4. Fan                 | 8. Fast Ethernet1 (FE1) Port   |

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**Important:** Before powering on the unit, make sure the power voltage from the outlet is the same as the input voltage of the unit .

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## 1.2 Alarm / Warning LED's and Reset Switches

**Power LED:** This LED should be Orange when the unit is powered on. This indicates normal operation.

**Hard Drive Activity LED:** There are six hard drive activity LED's on the unit. Each LED should be lit when the unit is powered on. A blinking LED means read/write operations on the hard drive are taking place.

**Network Status LED:** There are two 10/100 Fast Ethernet LED's, and one Gigabit Ethernet LED. A blinking LED indicates transmit/receive network operation is in action.

**TEMP Alarm LED:** This LED turns RED when the unit's inside temperature exceeds the standard operating temperature of 50°C (122°F). An audible alarm will also be initiated. The LED will remain RED and audible alarm will be on until the operating temperature goes down below 50°C (122°F).

**FAN Alarm LED:** This LED turns RED if one of the cooling fans inside the unit spins abnormally or doesn't spin at all. An audible alarm will also be initiated. The LED will remain RED and audible alarm will be on until the cooling fans work normally.

**Power/Voltage Alarm LED:** This LED turns RED if irregular voltage on the onboard components is detected. It also turns RED if one of the power supply modules of the redundant power supply becomes defective. At the same time, an audible alarm will also



be initiated. The LED's and alarm stay at this state until the voltage and/or power supply module is fixed.

**ALARM RESET Switch:** Press this switch to turn off the audible alarm when a fault is detected in the system. This switch is located in the front panel. The LED indicators will remain RED until the desired conditions are met.

## 1.3 Hard Drive Installation

Hard drives contain sensitive electronic components. When installing the hard drives, special attention must be taken to avoid system failures. Static electricity can damage system components. Before handling the hard drives, wear anti-static devices. Without wearing anti-static devices, another option is to regularly touch any metal surface (or the NAS metal surface) to discharge static electricity. Make sure that connectors are connected correctly.

**After installing the hard drives into the drive carriages, follow the suggestions below:**

1. Before powering up the NAS, make sure NAS is installed completely. It is recommended that all six drives are installed during first time installation.
2. Identify and check that the LED's are showing the correct status.
3. Check cabling connections. Cables should be wired correctly. This should be the first thing to verify if a problem is encountered. .
4. When unplugging the hard drive, it is highly recommended to have the system powered down. Never unplug the hard drive when the unit is powered on. Before unplugging any drive, power off the system. Wait for about 10 seconds for before

pulling it out. This will ensure data integrity and prevent hard drive failures.

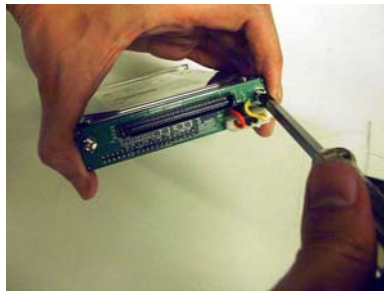
5. The drive carriage IDs and the IDs on the front panel of the NAS must be identical. The drives' positions should not be interchanged after the RAID is created. Otherwise, the RAID will be destroyed and data will be lost.
6. Currently, Western Digital IDE Hard drives are not supported by the NAS. The location of the IDE connectors is different with most IDE drives on the market.

### Installing the Hard Drive to the Drive Carriage

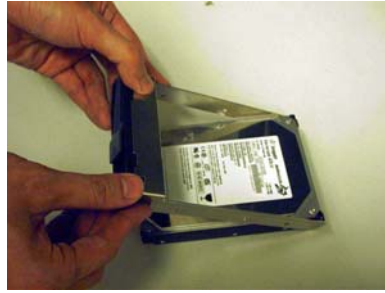
1. NAS supports 40-pin IDE hard drives.
2. The drive carriage can be separated into 3 different items: IDE converter board, carriage frame and drive rails.



3. Connect the IDE converter board (40-pin) to the IDE hard drive by securing the 2 screws at the back of the drive. Plug in the 4-pin power connector to the IDE hard drive.



4. Place the carriage frame around the IDE hard drive, aligning the screw holes between the hard drive and the carriage frame.



5. Secure both drive rails to the sides of the hard drive. Fasten the screws.



6. Complete the installation by tightening the screws into place.



7. Install the IDE HDD into the NAS.



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**Note:** The NAS front panel cover is opened by a set of keys. Turn the key to the left and pull down to open the panel.

---

1. On the front panel of the drive carriage, determine the corresponding Drive IDs (1~6).
2. When installing the drive carriages into their drive slots, make sure the drive ID of the carriage being installed matches with the drive ID of the front panel.
3. Verify and make sure all drive carriages are inserted properly and firmly into the drive slots.

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**Important:** After the RAID has been built, changing the drive IDs will damage the RAID and will cause data loss.

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# 2

## Installing the NAS

Before installing the NAS, check proper voltage of the electrical outlet. Make sure the voltage from the electrical outlet matches the input voltage of the unit. Take note of the following items listed below:

- Network connection: It is recommended for first time installation to use the first Ethernet port FE1 (Fast Ethernet1) as the startup connection. To use the other ports, use the Web-based management tool afterwards to configure. This can be done using the Web browser.
- TCP/IP Network
- CAT 5 network cable with RJ45 connectors --- 10BaseT, 100BaseTX or 1000BaseT
- Web-Enabled (have a Web browser) workstation with a CD-ROM drive installed

## 2.1 Basic Installation

NAS needs two basic connections: Network connection and power connection.

1. Connect RJ-45 unshielded twisted pair network cables from the NAS FE1 (Fast Ethernet1), FE2 (Fast Ethernet2) and GE (Gigabit Ethernet) ports to a hub or switch.
2. Connect the power cord to the back of the unit. Plug in the power cord to the electrical outlet. Make sure it is plugged in to the correct electrical voltage.
3. Power on the unit.
4. Wait for about five minutes for the system to initialize. After a series of beep sound is heard, the system is ready and will be available on the network.

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**Note:** It will take a while (depending on the capacity) for the system to initialize if the system was shutdown improperly previously.

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## 2.2 NAS Assistant Software

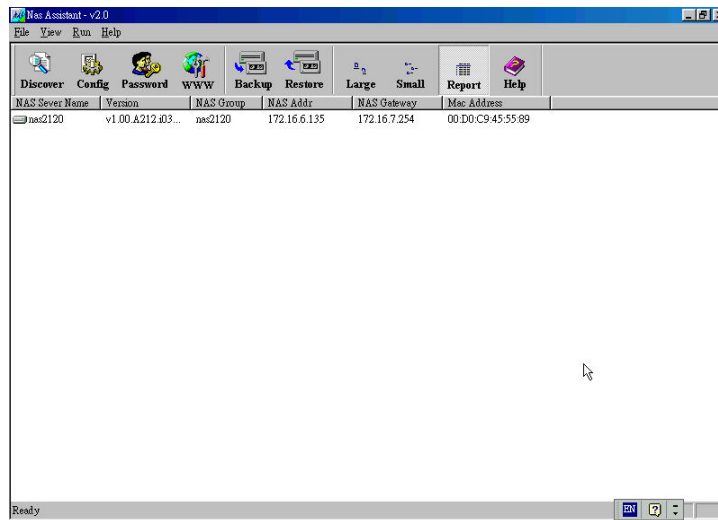
The NAS Assistant is a software utility for managing the NAS unit. It is the simplest and easiest tool for configuring, managing and troubleshooting the NAS. This will be the most frequently used tool for administering the unit.

The NAS Assistant can provide most of the information of all NAS systems in the network. After running the NAS Assistant for the first time, it will automatically search for all NAS systems in the network. Information of the NAS systems will be displayed including the NAS server name, firmware version, IP address, NAS Group, Gateway and the MAC address of each NAS system on the network.

### **NAS Assistant installation procedure:**

1. The NAS assistant software utility works with Microsoft Windows operating systems (98/ME/NT/2000) and needs a Web browser (preferably with MSIE 5.5 or above) for access to the system unit. The software utility should be installed in a workstation that is connected to the network and meets the software requirements.
2. Put the Companion CD into the CD-ROM drive. With auto-play enabled, the NAS Companion Screen should automatically display, Please click the "NAS Assistant" to start the installation process.

3. The NAS Assistant can also be manually installed if auto-play is not enabled. On the Companion CD, locate and click on the *NAS Assistant.exe*. This will install the software utility.
4. The NAS Assistant will automatically search and display all of the NAS systems on the network. Their status will be displayed. After displaying the status, it is ready to configure the NAS.
5. By default, the NAS will search for a DHCP server in the network and obtain an IP address from the DHCP server. To assign a Static IP to the NAS, assign a name to the NAS (i.e., NAS01). Double click on the NAS (i.e., NAS01) or select NAS then click on [Config] button. This will open a window for setting up the IP address to the NAS.



## NAS Assistant Buttons



### **Discover** Discover NAS systems

Click on this button to have NAS Assistant search for NAS systems on the network. A detailed list of the systems will be displayed.



### **Config** Configure IP address

Click on this button to configure the IP address of the NAS. If an IP address of 10.10.10.10 is displayed on the list, a Static IP can be manually assigned, or it can be set to Auto IP. Auto IP mode enables the unit to obtain IP address automatically from the DHCP server.

1. Click the NAS system from the list.
2. Click on the [Config] button to open the NAS configuration window. Basic information can be changed like the NAS Name, Group Name, NAS IP, Netmask and Gateway.
3. To complete the configuration, click on OK. A password will be asked for verification.

## NAS Assistant Buttons



### **Discover** Discover NAS systems

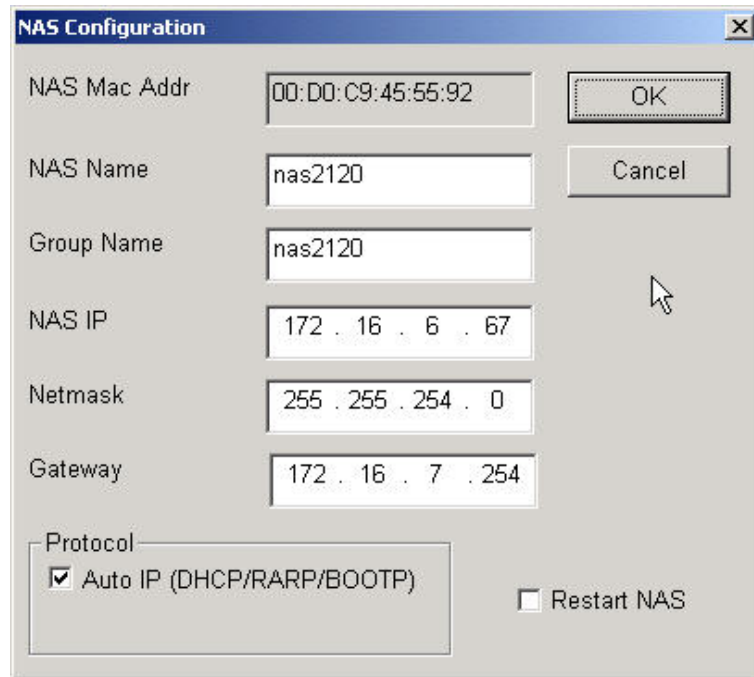
Click on this button to have NAS Assistant search for NAS systems on the network. A detailed list of the systems will be displayed.



### **Config** Configure IP address

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3. To complete the configuration, click on OK. A password will be asked for verification.



**NAS Configuration**

NAS Mac Addr: 00:D0:C9:45:55:92

NAS Name: nas2120

Group Name: nas2120

NAS IP: 172 . 16 . 6 . 67

Netmask: 255 . 255 . 254 . 0

Gateway: 172 . 16 . 7 . 254

Protocol:

Auto IP (DHCP/RARP/BOOTP)

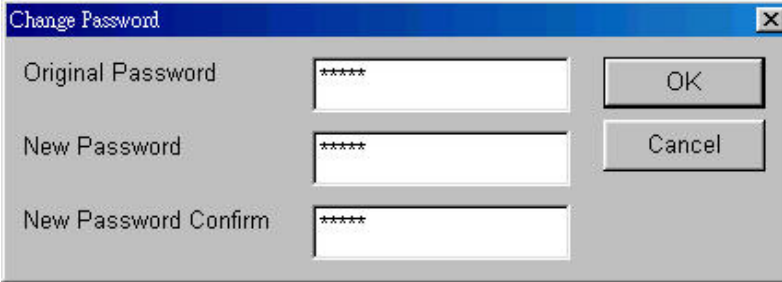
Restart NAS



### **Password Setting**

Click on this button to set the password of the administrator.

1. Click the NAS system from the list.
2. Click on the [Password] button to open the Change Password dialog box. After setting the password, remember the password or write it down in a secure place.



A dialog box titled "Change Password" with a close button (X) in the top right corner. It contains three text input fields, each with "\*\*\*\*\*" as a placeholder. The labels are "Original Password", "New Password", and "New Password Confirm". To the right of the fields are two buttons: "OK" and "Cancel".



### **Web browser-based management**

Click on this button to manage the NAS. Clicking this button will open the Web browser.

1. Click the NAS system from the list.
2. Click on the [WWW] button to open the Web browser. Enter the administrator username and password. Proceed with the configuration changes



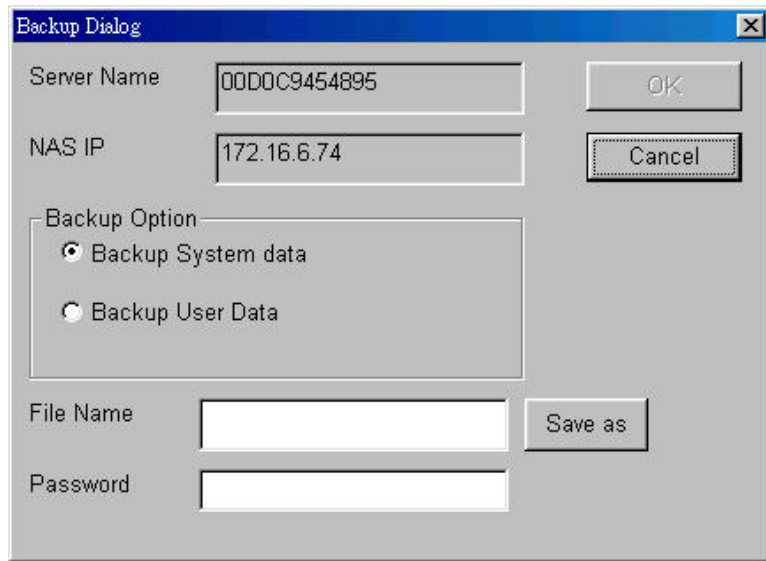
### **Backup**

Click on this button to backup data. NAS Assistant supports client side backup of the NAS. The Backup Dialog box will open.

NAS Assistant can backup two types of data:

- System Data: This includes NAS system language, and default settings information.

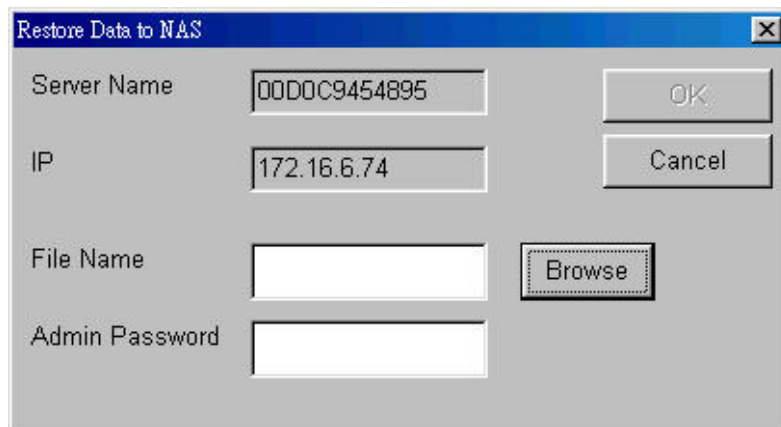
- User Data: This includes the users' shared folders and files, users' accounts, groups and information.



1. Click the NAS system to be backed up.
2. Click on the [Backup] button to open the Backup Dialog box. Select and click on [Backup System Data] or [Backup User Data].
3. Enter the filename to be used for saving the backup file on the File Name box. Click "Save As" to specify the path of the backup file. The administrator password must be entered on the Password box for the backup file to be saved.
4. Click on [OK] to start the backup job.



Click on this button to restore data. The Restore Data to NAS dialog box will open. Once a backup file has been created using the backup tool, it can be restored. Using the restore tool, the data that were backed up can be reverted back to its original state.



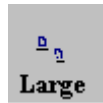
1. Click the NAS system from the list.
2. Click on the [Restore] button to open the Restore Data to NAS dialog box. To start restoring the backup data file, click on Browse, select the path and filename to be restored.
3. Enter the administrator password in the Admin Password box. Click on [OK] to complete the operation.



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**Important:**

1. If changes were made to the NAS system after the backup process, another backup needs to be done to have a current backup.
  2. Before restoring data, make sure the NAS system has enough storage space. Otherwise, the restore process will fail.
- 

**Large Icons**

Click on this button to display large icons view.

**Small Icons**

Click on this button to display small icons view.

**Report**

Click on this button to show detailed list of information about the NAS system. Information includes Server Name, firmware version, IP address, Gateway, MAC address and others.

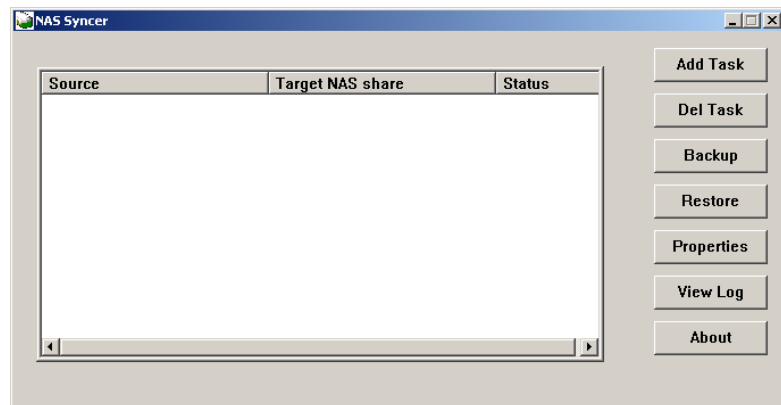
## 2.3 Installing NAS Syncer

NAS Syncer is a backup utility provided by NAS. It is installed on a client machine allowing clients to backup the data from their machines to the NAS. It can also backup shared network folders and their subsequent subdirectories to the NAS.

1. With auto-run set to enable, insert the Companion CD into the CD-ROM drive. Select Install NAS Syncer and it will automatically install the utility.
2. To install manually (i.e., auto-run is disabled), locate and click on the “NasSync.exe” file. The install program will open allowing the installation to continue.
3. When NAS Syncer is installed, the following will be displayed.

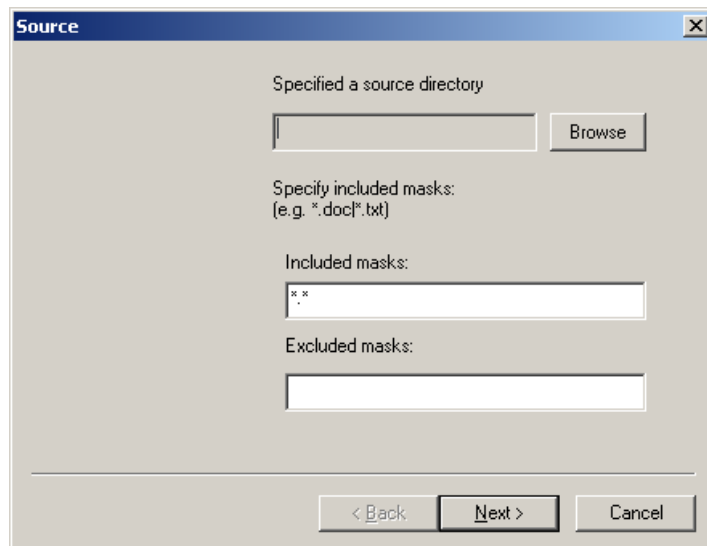
## Add Task

Click on this button to add backup jobs.

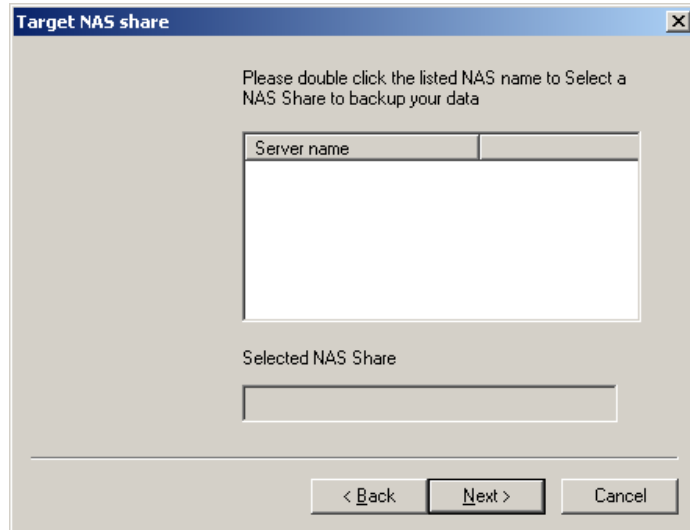


Browse to and select a source folder to backup. A source folder can be a folder on the local machine or a shared network folder.

You can use wildcards to include or exclude the choice of filenames to display.



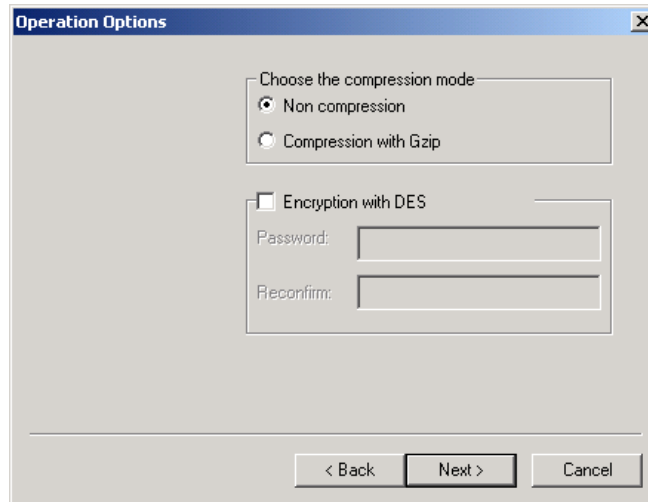
After selecting the folders to be backed up, the next step is to select the NAS system on the network where the backup will be stored. Select and click on the NAS system. A dialog box will open showing the destination NAS system and the folders available.



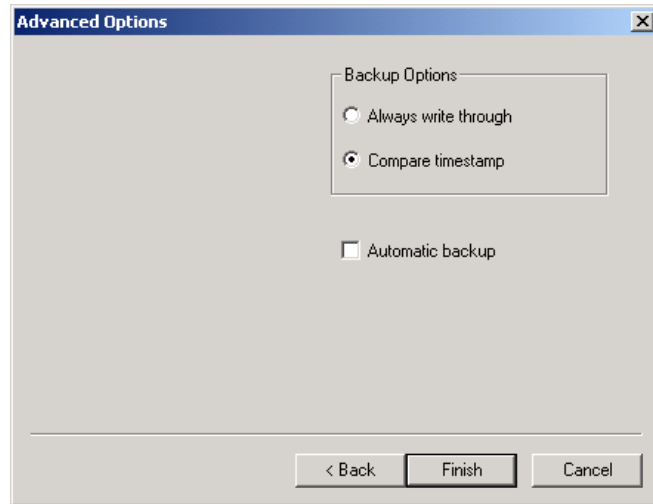
Select and click on the destination folder.



Several options for the backup process are available. Gzip compression can be used to compress the data during backup. Password protection can also be selected as an encryption method to protect the backup file.



Select Write immediately or compare the date/time stamp. To backup automatically, select the Backup automatically checkbox.



### **Delete Task**

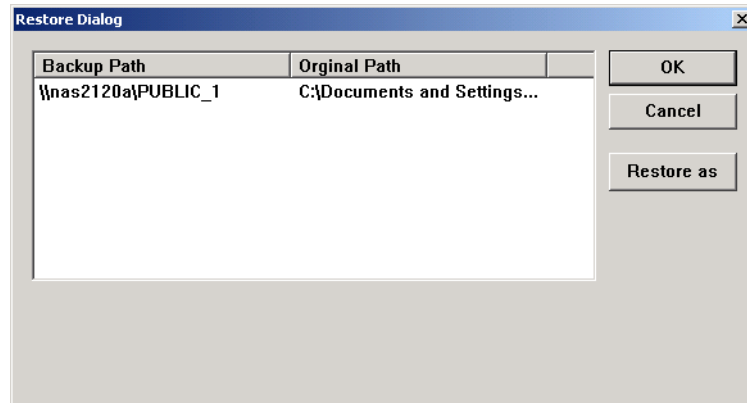
Click on this button to remove any tasks that are not needed.

### **Backup**

Click on this button to start the backup process.

### Restore

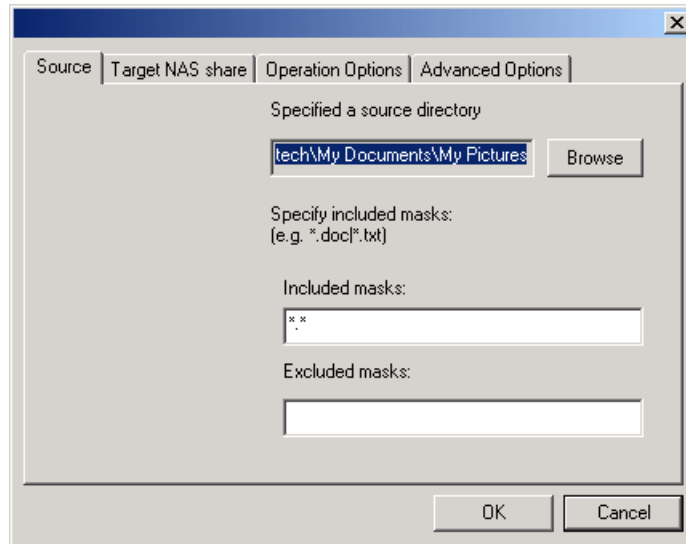
Click on this button to restore data. It will open the Restore Dialog box. To select other directories, click on “Restore To” button, locate and specify by clicking the directory, then click on OK to start the restore process.



### Properties

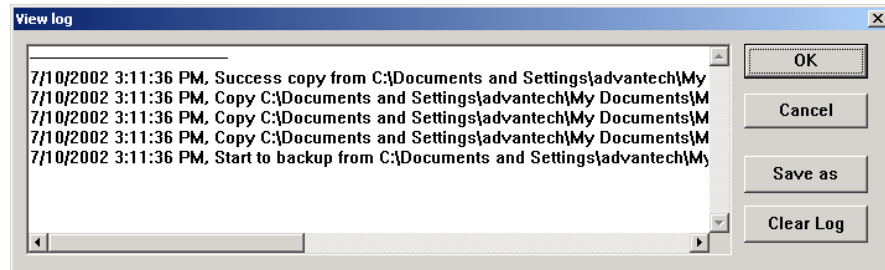
Click on this button to view details about the task. Changes can be made here.





### View Log

Click on this button to view the backup log. The log can be saved to a specified filename if desired.



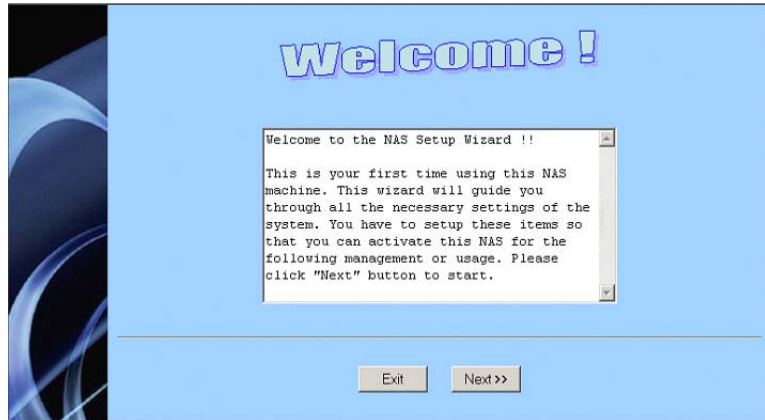
## 2.4 NAS Web Browser Setup Wizard

The NAS has a user-friendly and easy to use “Setup Wizard” for the management tool interface. The wizard guides you through the entry and settings of the system and network configuration.

When the first time the NAS system is installed, use the NAS Assistant to configure NAS IP address, after IP configuration complete, Open Web browser, enter this IP address at the address toolbar. This will initiate the “Setup Wizard”. The “Setup Wizard” will provide step-by-step guide and prompt for the basic information of the NAS system.

## Setup Wizard – Welcome Page

Setup Wizard starts with the Welcome Page. Click on Next to continue.



## Setup Wizard – Administrator Password Setting

Enter the administrator password and click Next to continue.



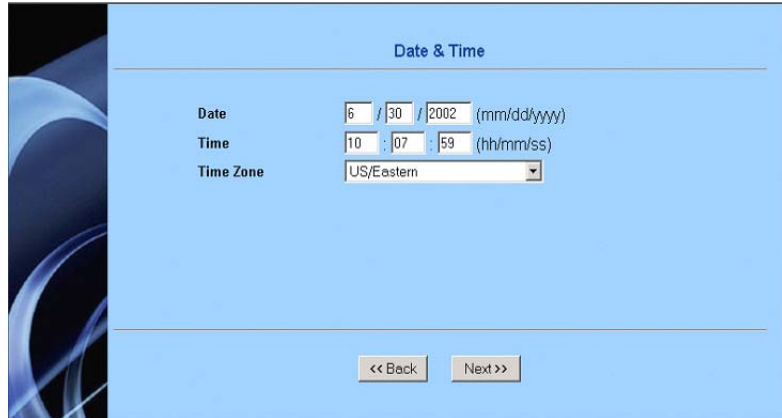
The screenshot shows a web-based setup wizard window titled "Administrator Password". The window has a light blue background and a dark blue sidebar on the left. The main content area contains the following fields and labels:

- Account:** A text input field containing the text "admin".
- Current Password:** A password input field filled with asterisks, with a small red asterisk to its right.
- New Password:** An empty password input field.
- Confirm Password:** An empty password input field.

At the bottom of the form, there are two buttons: "<< Back" and "Next >>".

### Setup Wizard – Date and Time Setting

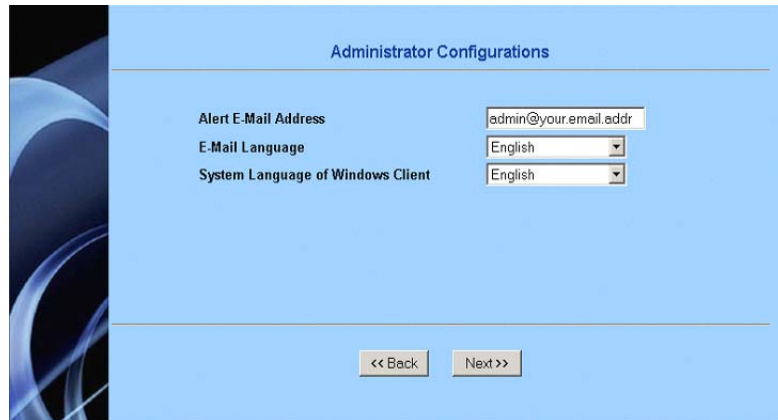
Enter the current date, time and region. Click on Next to continue.



The screenshot shows a 'Date & Time' configuration window with a light blue background. On the left, there is a vertical decorative graphic with blue and white curved lines. The main area contains three rows of input fields: 'Date' with three boxes containing '6', '30', and '2002' followed by '(mm/dd/yyyy)'; 'Time' with three boxes containing '10', '07', and '59' followed by '(hh/mm/ss)'; and 'Time Zone' with a dropdown menu showing 'US/Eastern'. At the bottom, there are two buttons: '<< Back' and 'Next >>'.

### Setup Wizard – Administrator Setup

Enter the administrator's email address and language setting. Click Next to continue. (The language setting is the language used on the email client).



Administrator Configurations

Alert E-Mail Address

E-Mail Language

System Language of Windows Client

<< Back    Next >>

### Setup Wizard – IP Setup

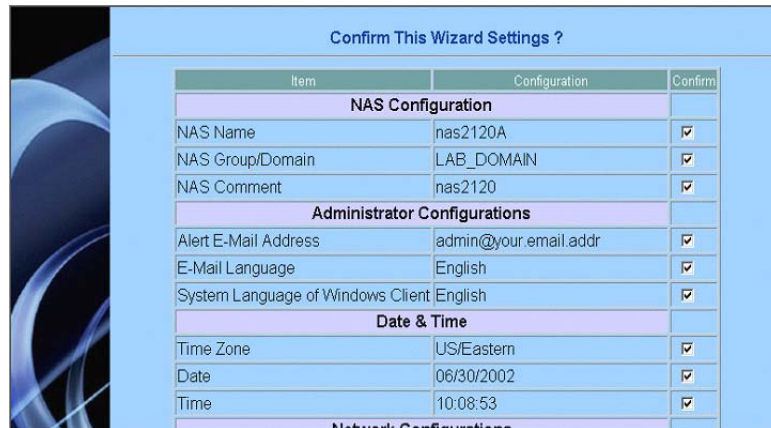
The Network Settings will be setup in this section. Dynamic IP or Static IP Settings are available options. Select which option best fits your network configuration. Click on Next to continue.

The screenshot shows the 'IP Configuration' section of a setup wizard. It features two radio buttons for selecting the IP configuration method: 'Obtain an IP automatically [DHCP/BOOTP/RARP]' and 'Specify IP Addresses'. The 'Specify IP Addresses' option is selected. Below this, there are two network interface sections, 'Network FE 1' and 'Network FE 2'. Each section has a checked checkbox, a 'Current' status, and a 'New' status. For 'Network FE 1', the 'Current' status is selected, and the IP address is pre-filled as '172.16.6.188'. The 'Netmask' is '255.255.254.0' and the 'Gateway' is '172.16.7.254'. For 'Network FE 2', the 'New' status is selected, and the IP, Netmask, and Gateway fields are empty.

Network	Current	New
Network FE 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IP	172.16.6.188	<input type="text"/>
Netmask	255.255.254.0	<input type="text"/>
Gateway	172.16.7.254	<input type="text"/>
Network FE 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IP		<input type="text"/>
Netmask		<input type="text"/>
Gateway		<input type="text"/>

### Setup Wizard – Setup Confirmation

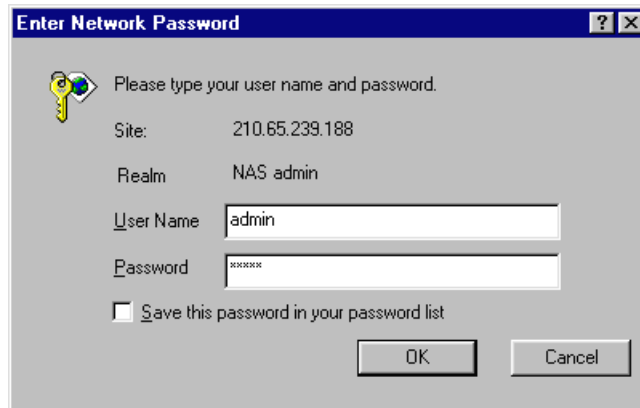
In this part, the settings can be confirmed and applied. If changes need to be made, click on Back. If all settings are confirmed and acceptable, make a check on all the check boxes on the right side, and click on Apply to continue.





### Setup Wizard – Setup Complete

After finishing the steps above, the setup needs to be completed. The last step will prompt for the administrator password. Enter the password and click OK. Setup is now complete.



Enter Network Password

Please type your user name and password.

Site: 210.65.239.188

Realm: NAS admin

User Name: admin

Password: \*\*\*\*\*

Save this password in your password list

OK Cancel



# 3

## NAS Web Administration UI

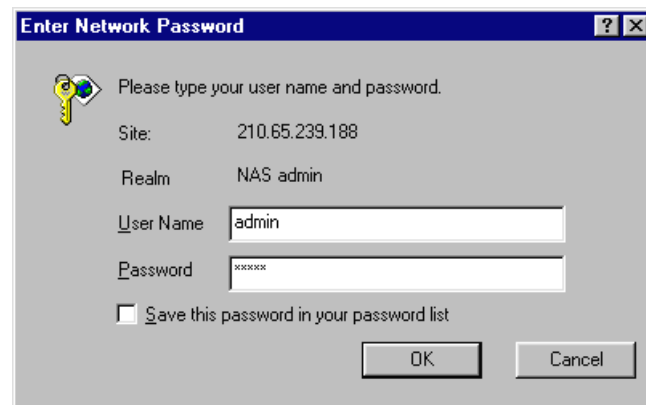
After using Setup Wizard for the first time configuration, the system is ready. Future configuration changes can be made through any Web browser (i.e. Microsoft Internet Explorer, Netscape Navigator). Administration of the NAS can be done through Web browser.

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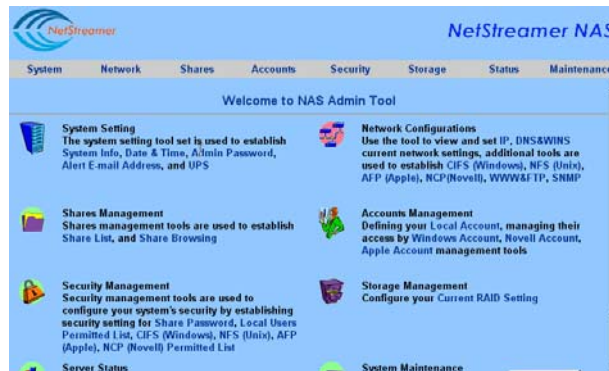
**Note:** Use MSIE 5.5 or later. For Netscape Navigator users, recommended is v.6.0 and above.

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1. Start the Web browser.
2. On the address toolbar of the Web browser, enter the IP address that was assigned to the NAS system.
3. When the Web browser connects successfully to the NAS system, it will prompt for a username and password.

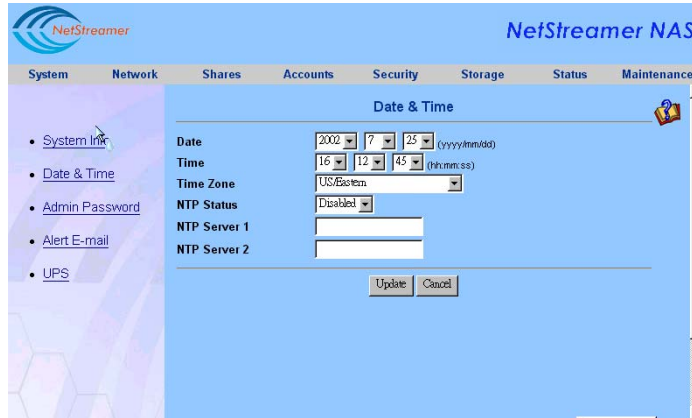


4. The default username will be admin. Enter the admin password. The Welcome to NAS Admin Tool page will open. From this screen, the administrator can control the system settings, system security and network settings (includes Windows, UNIX, Novell and Apple Macintosh networks), hard drive settings and other information



## 3.1 System Setup

### Date and Time Setting



The screenshot shows the NetStreamer NAS web interface. The top navigation bar includes System, Network, Shares, Accounts, Security, Storage, Status, and Maintenance. The left sidebar lists System Link, Date & Time, Admin Password, Alert E-mail, and UPS. The main content area is titled "Date & Time" and contains the following fields:

Date	2002	7	25	(yyyy/mm/dd)
Time	16	12	45	(hh:mm:ss)
Time Zone	US/Eastern			
NTP Status	Disabled			
NTP Server 1				
NTP Server 2				

At the bottom of the form are "Update" and "Cancel" buttons.

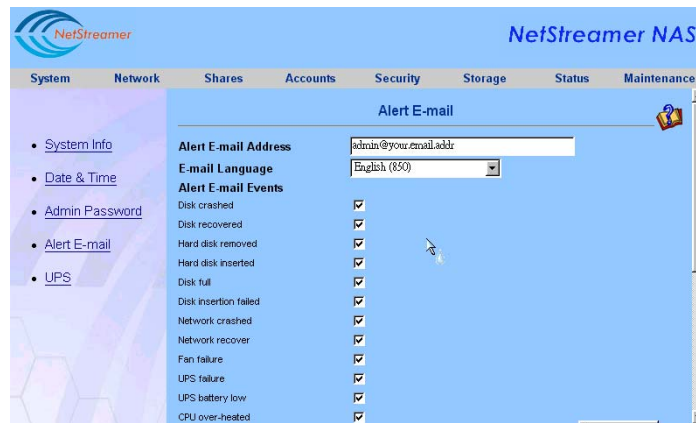
For time setting, the 24-hour time format is used. Set the local date, time and time zone that best suites you.

NTP Protocol can be enabled by setting the NTP Status. This is used to synchronize the system time with NTP server on the network.

## Admin Password

The admin password can be changed on this page. The password is case-sensitive, maximum of 14 characters, should not include special characters such as `~!@#$%^&*<>/ : '"()+|\|?='[]`. Enter the current password and new password. Reenter the new password to confirm. Click Update to set the new password.

## Email Alert



The screenshot displays the 'Alert E-mail' configuration page in the NetStreamer NAS web interface. The page is titled 'Alert E-mail' and features a navigation menu at the top with tabs for System, Network, Shares, Accounts, Security, Storage, Status, and Maintenance. On the left, a sidebar lists navigation options: System Info, Date & Time, Admin Password, Alert E-mail (selected), and UPS. The main content area contains the following configuration options:

- Alert E-mail Address:** A text input field containing 'admin@your.email.addr'.
- E-mail Language:** A dropdown menu set to 'English (850)'.
- Alert E-mail Events:** A list of system events, each with a checked checkbox indicating that alerts are enabled for these events:
  - Disk crashed
  - Disk recovered
  - Hard disk removed
  - Hard disk inserted
  - Disk full
  - Disk insertion failed
  - Network crashed
  - Network recover
  - Fan failure
  - UPS failure
  - UPS battery low
  - CPU over-heated

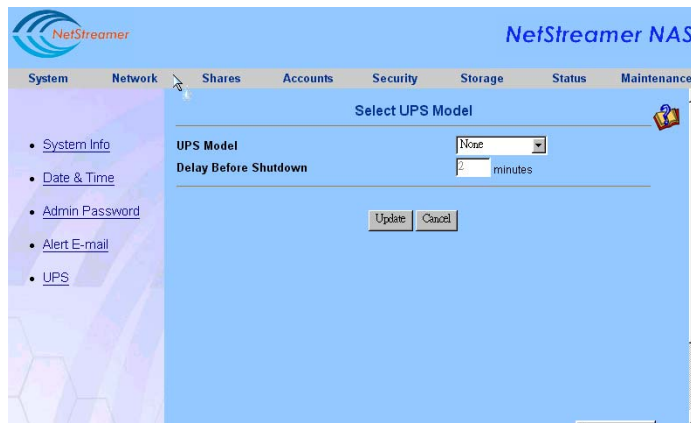
NAS can alert the administrator when some critical system events occur. It can be setup such that an email will be sent to the administrator. On this page, enter the email address of the administrator. When one of the selected events listed happens, an email including the description of the event will be sent to the administrator. Action can then be taken immediately to avoid system failure.

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**Note:** For the email alert notification to take effect, the DNS and email address settings must be set properly.

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## UPS Setting

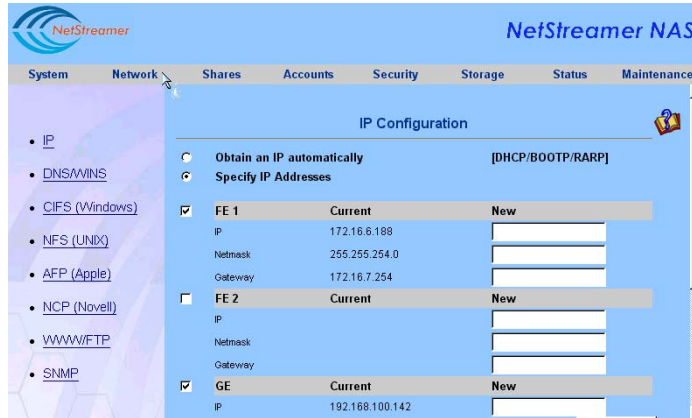


The NAS supports the APC Smart UPS through the RS-232 interface. During a power failure, this function allows additional time for the system to shutdown properly. It can be set to shutdown automatically after a specified number of minutes. The main purpose is to protect the data on the NAS.



## 3.2 Network Setup

### IP Configuration



If a DHCP server is installed on the network, the option “Obtain an IP Automatically” can be selected. Without the DHCP server, select “Specify IP Addresses” and manually enter the IP addresses on the “New” field box.

The NAS has two Fast Ethernet ports and one Gigabit Ethernet port.

The two Fast Ethernet ports can be setup for “Load Balancing”, also known as “Trunking” or “Teaming”. This can be done in the Advanced Configuration setting. This allows both network ports to act as one, doubling their performance, and sharing one IP address among the two network ports.

If the two Fast Ethernet ports are set to Fail-over, the performance of both network ports will be that of a single network port. However, when one of the ports goes down, the other one takes over. This is the concept of fail-over.

If the network domain resides on two or more subnets, the administrator has the option to assign different IP addresses to the different network ports. This will result in “Load Balancing” while the network ports can effectively service clients on different subnets.

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**Note:**

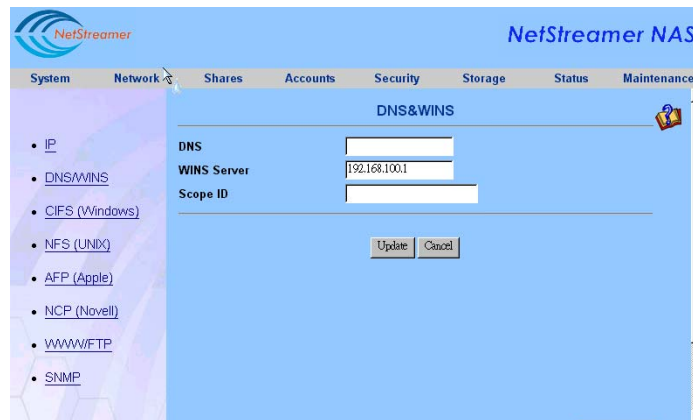
1. The Gigabit Ethernet Port of the NAS can be set to a different subnet with the two Fast Ethernet ports. However, it cannot be set for Load Balance/Fail-over, since it is designed to be independent with the two Fast Ethernet ports.
2. If the setting is set to Obtain an IP automatically from the DHCP server, make sure there is a DHCP server on the same subnet of the network.
3. With “Load Balancing” on the NAS, a matching switch with “Load Balancing” function is not needed. The NAS Load Balancing uses software emulation to perform this function.
4. Trunking – FEC/LA/802.3ad is based on Cisco’s

“Fast Ethernet Channel” protocol. A matching switch that supports this protocol is needed to fully utilize this function.

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## DNS and WINS



If there is a DNS (Domain Name Service) or WINS (Windows Internet Naming Service) server on the network, enter their respective IP addresses into the field boxes.

A Scope ID can also be entered. The Scope ID is the ID for NetBIOS TCP/IP. Click "Update" to complete the settings.

## Windows Network Neighborhood SMB/CIFS Setting

The screenshot shows the NetStreamer NAS configuration interface. The main title is "NetStreamer NAS". Below the title is a navigation menu with tabs: System, Network, Shares, Accounts, Security, Storage, Status, and Maintenance. The "Network" tab is selected. On the left side, there is a sidebar with a list of network protocols: IP, DNS/WINS, CIFS (Windows), NFS (UNIX), AFP (Apple), NCP (Novell), and WWW/FTP. The "CIFS (Windows)" option is selected. The main content area is titled "Windows Network Neighborhood (SMB/CIFS)". It contains several configuration fields:
 

- Status: Enabled (dropdown menu)
- Security Level: Share Level (dropdown menu)
- Server Name: nas2120A (text input)
- Server Group/Domain: LAB\_DOMAIN (text input)
- Server Comment: nas2120 (text input)
- PDC Server Name: LAB\_PDC (text input)
- Code Page: English (850) (dropdown menu)

 At the bottom right of the configuration area, there are two buttons: "Update" and "Cancel".

On this page, the NAS can be setup to be shared among Windows clients. If the NAS is to be shared, on the Status field, select “Enabled”. Set the desired Security Level.

### Share Level -

The access rights for the files on the system are based on each individual Share. Every share can be set to have Read-only or Read/Write access.

### User Level –

The access rights for the files on the system are based on each individual user. The definitions are listed below:

- 1) By PDC only: If the network has a PDC installed. The client's access rights are based on the PDC.
- 2) By PDC then Local Account: During login, verify the

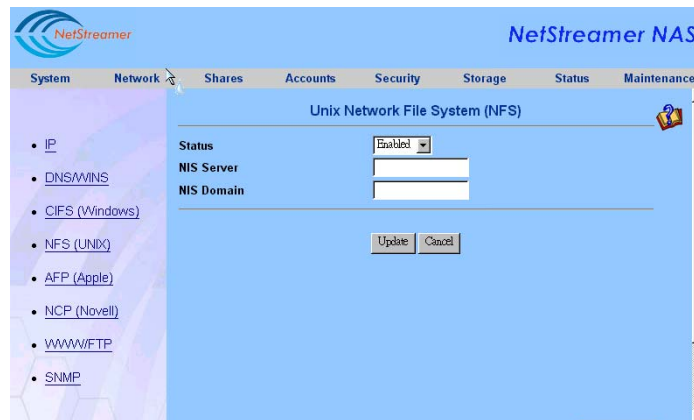
account from the PDC. If verification fails, use the local NAS user accounts.

- 3) By Local Account then PDC: During login, attempt to use local NAS user account. If attempt fails, login using PDC user account.
- 4) By Local Account only: Use local NAS user account for login.

If it is part of a workgroup, writing to a workgroup/domain will depend on the approval of the workgroup.

If it is decided that the NAS should join a domain, on the Server Group/Domain setting, specify the domain name. This will allow the NAS system to join the Windows domain.

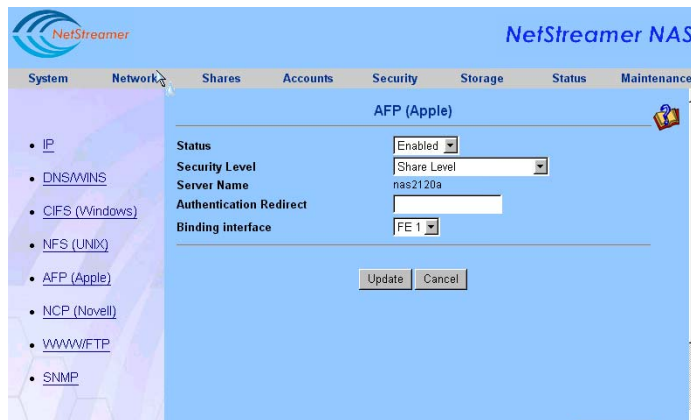
## Unix Network File System (NFS)



On this page, the NAS system can be setup to be shared among Unix clients. Set the status to Enabled to set sharing among Unix clients.

If an NIS (Network Information Service) server is available, enter the NIS server IP address and NIS domain.

## AFP (Apple)



On this page, the NAS system can be setup to be shared among Apple Macintosh clients. Set the status to Enabled to set sharing among MAC clients

Select “Share Level” or “Users on an AFP machine”.  
For “Users on an AFP machine” setting, on the “Authentication Redirect”, enter the IP address of the Apple server.

Select Binding interface for which LAN port will provide AFP service



## NCP (Novell)



On this page, the NAS system can be setup to be shared among Novell Netware clients. Set Status to “Enabled” and determine the Security Level to be applied for your environment.

### Share Level -

The access rights for the files on the system are based on each individual Share. Every share can be set to have Read-only or Read/Write access.

### User Level –

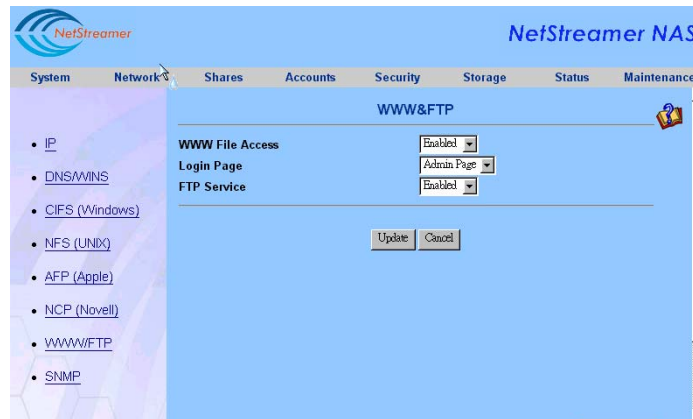
The access rights for the files on the system are based on each individual user.

1. By Bindery Server only : If the network has a Bindery Server installed. The client’s access rights will be based on the Bindery.

2. By Bindery Server then Local Account : During login, verify the account from the Bindery Server. If verification fails, use the local NAS user accounts.
3. By Local Account then Bindery Server : During login, attempt to use local NAS user account. If attempt fails, login using Bindery Server user account.
4. By Local Account only: Use local NAS user account to login.

If Bindery Server is selected, enter the server name and administrator password.

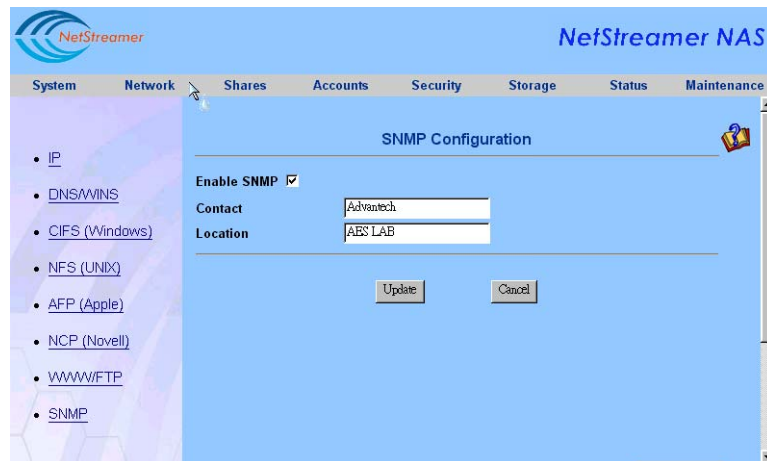
### WWW & FTP



Set WWW File Access to “Enabled” to allow the Web browser for accessing the files on the NAS.

On the “Login Page”, the following can be selected: Setup Wizard, Admin Page, or Share Page. To use FTP service, set FTP service to “Enabled”.

### SNMP Configuration



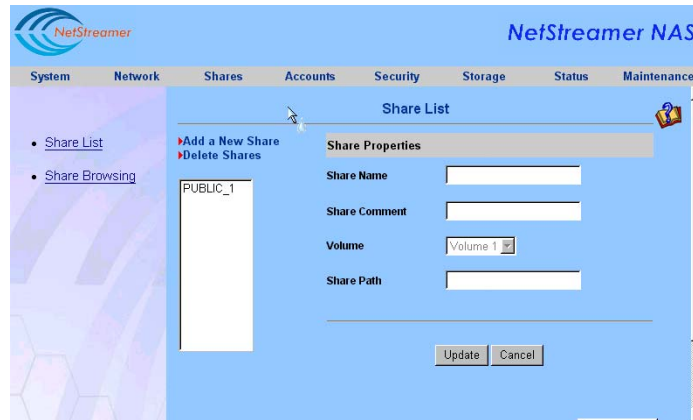
The screenshot shows the NetStreamer NAS web interface. The top navigation bar includes System, Network, Shares, Accounts, Security, Storage, Status, and Maintenance. The left sidebar lists various services: IP, DNS/WINS, CIFS (Windows), NFS (UNIX), AFP (Apple), NCP (Novell), WWW/FTP, and SNMP. The main content area is titled "SNMP Configuration" and contains the following fields and controls:

- Enable SNMP**: A checked checkbox.
- Contact**: A text input field containing "Adventech".
- Location**: A text input field containing "ABS LAB".
- Update** and **Cancel**: Two buttons at the bottom of the configuration area.

On this page, the NAS system can be setup to be SNMP enabled. To enable SNMP service, click on the “Enable SNMP” check box. On the “Contact” field box, enter the administrator name. On the “Location” field box, enter the location of the NAS system. Click on “Update” to apply the changes.

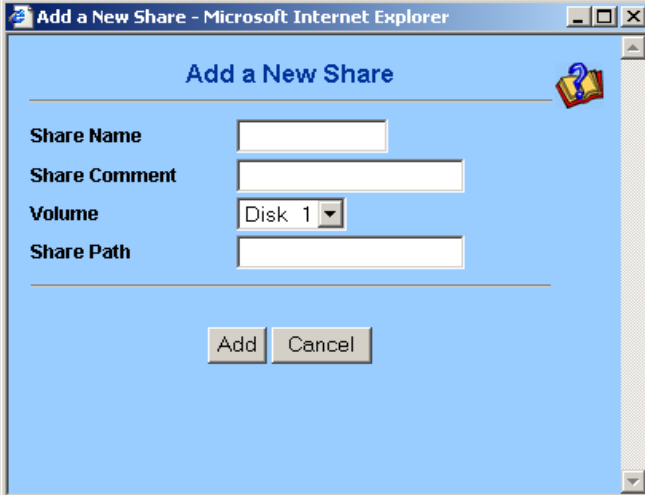
## 3.3 Share Management

### Share List



On this page, a listing of the shares is displayed. Shares can also be added or deleted.

To add a new share, click on Add a New Share. The Add a New Share dialog box opens. Enter the Share Name, Share Comment, and Share Path. Click “Add”.

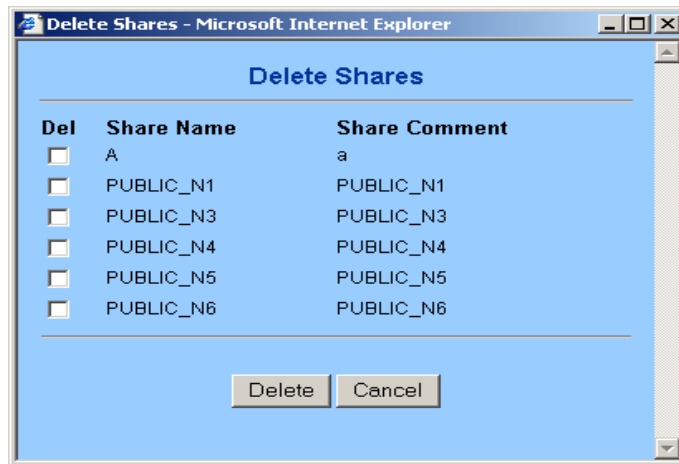


The screenshot shows a web-based form titled "Add a New Share" within a Microsoft Internet Explorer window. The form is set against a light blue background. It includes the following fields and controls:

- Share Name:** A text input field.
- Share Comment:** A text input field.
- Volume:** A dropdown menu currently displaying "Disk 1".
- Share Path:** A text input field.
- Buttons:** "Add" and "Cancel" buttons located at the bottom center of the form.

If this system has more than one volume, select the volume name in the “Volume” field box.

To delete the Shares, select Delete Shares. The Delete Shares dialog box appears. Select the check box of the share to be deleted. Click “Delete” to complete the operation.



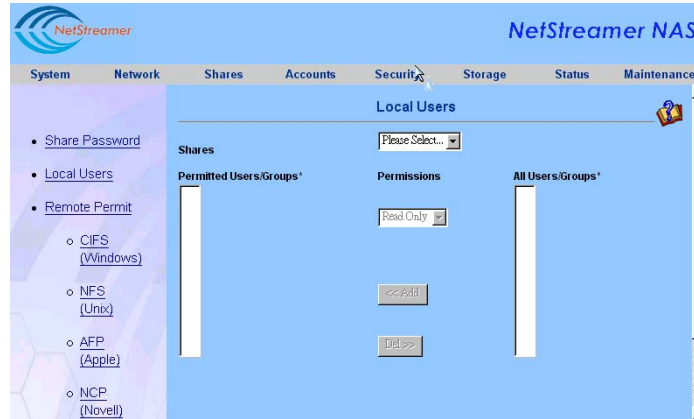
### Share Browsing



On this page, the folders that are shared are listed. The shares and the files stored on these shares can be browsed.

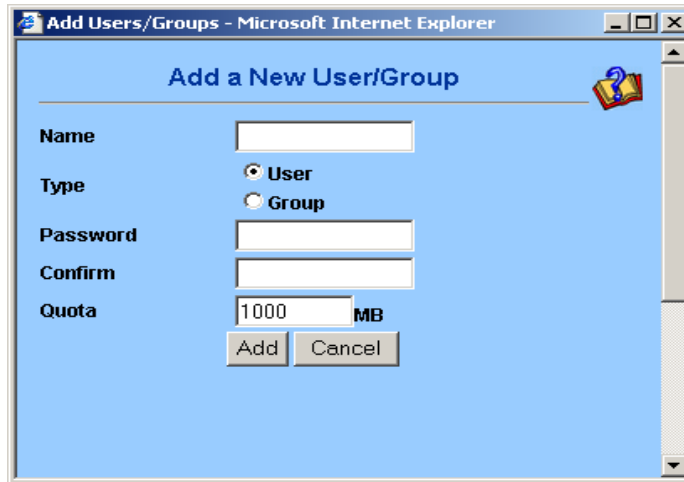
## 3.4 Account Management

### Local Users/Groups



On this page, users and groups can be added and deleted. Additionally, changing users' password, adding users to groups and editing users/groups can be done on this page.

## Add User/Group



The screenshot shows a web browser window titled "Add Users/Groups - Microsoft Internet Explorer". The main content area has a blue background and is titled "Add a New User/Group". There is a help icon (question mark in a book) in the top right corner. The form contains the following fields and controls:

- Name:** An empty text input field.
- Type:** Two radio buttons, "User" (selected) and "Group".
- Password:** An empty text input field.
- Confirm:** An empty text input field.
- Quota:** A text input field containing "1000" followed by a "MB" label.
- Buttons:** "Add" and "Cancel" buttons at the bottom.

On this dialog box, a new user/group account will be created on the local system and it will not influence the account settings of the remote server.

### Use PDC to add Users/Groups

If a Windows PDC server is available on the network and the security setting on the Windows SMB/CIFS page is set to User Level, the PDC accounts/groups can be added to the local accounts of the NAS system, as well as the password, then configure the user disk quota and the group relationships.

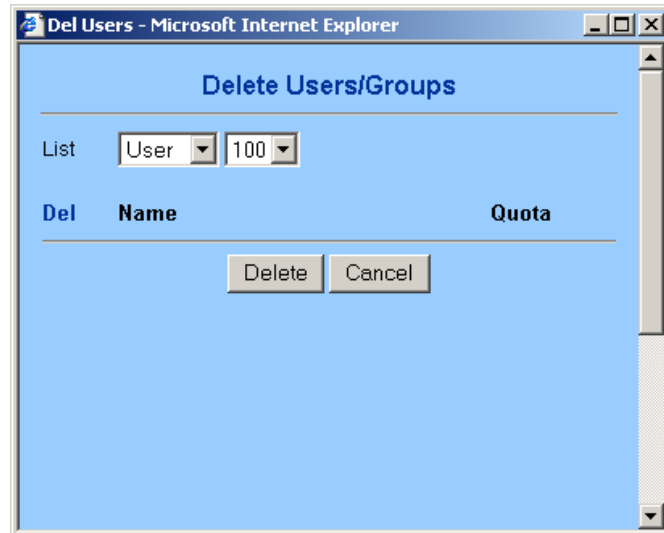
### Use Bindery to add Users/Groups

If a Bindery server is available on the network and the security setting on the Novell NCP page is set to User



Level, the Bindery accounts/groups can be added to the local accounts of the NAS system, then configure the user disk quota and group relationships.

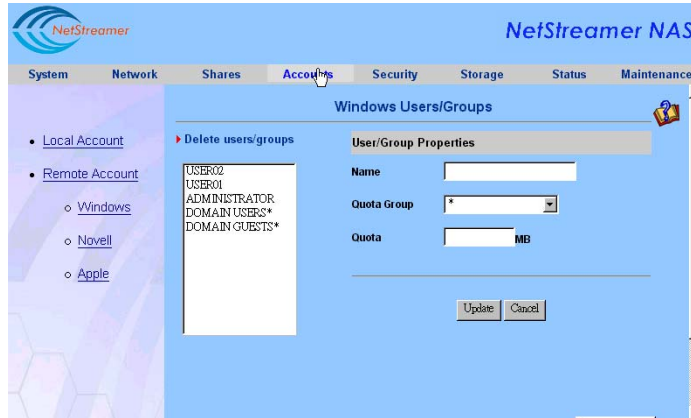
### Delete Users



Check the **User Name** or the **Group Name**. Click "Delete" to complete the operation.

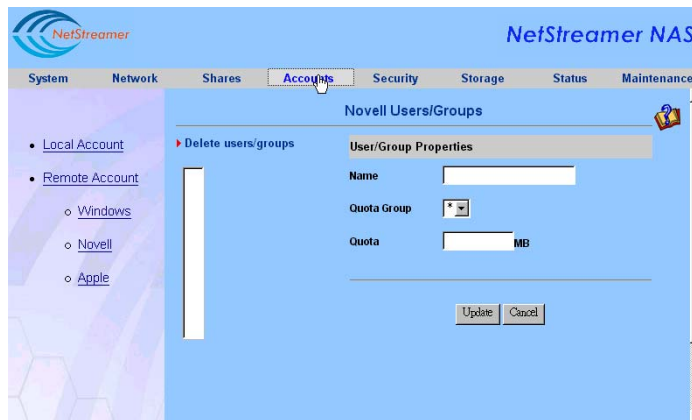
## 3.5 Remote Account

### Windows Users/Groups



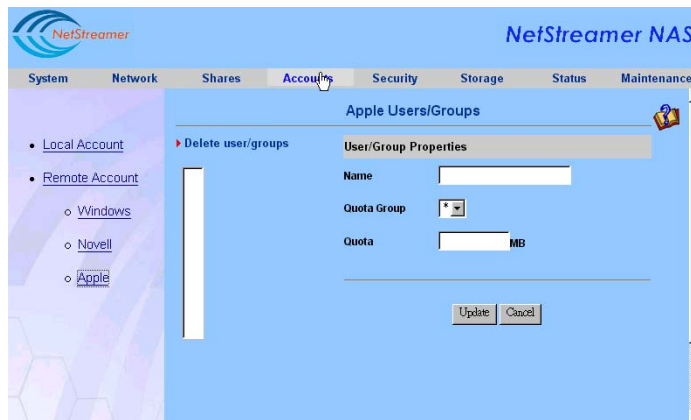
On the list, choose the user/group on the PDC that will be authorized to set the disk quota on the local system.

## Novell Users/Groups



On the list, choose the user/group on the Bindery server that will be authorized to set the disk quota on the local system.

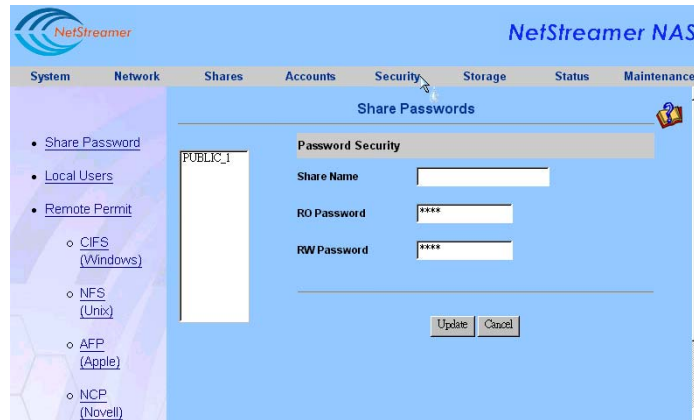
## Apple Users/Groups



On the list, choose the user/group on the AFP server that will be authorized to set the disk quota on the local system.

## 3.6 Security Management

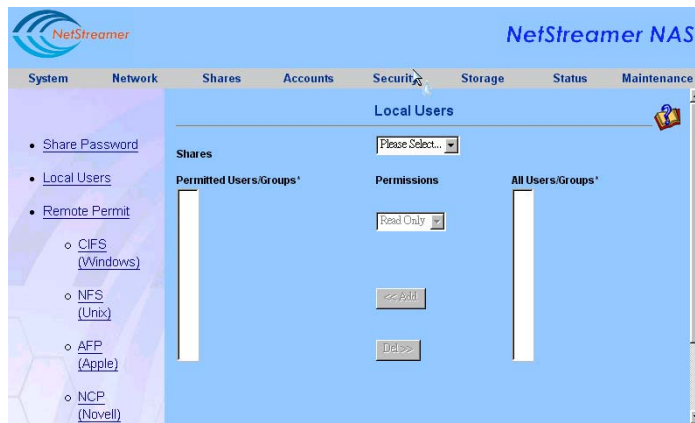
### Share Passwords



Select the share name on the left side, and the Read-only and Read-Write passwords can be set.

The password can be up to 14 characters, but not including special characters: "-!@#\$\$%^&\*<>/ : '() + \ | ? = ' [ ]".

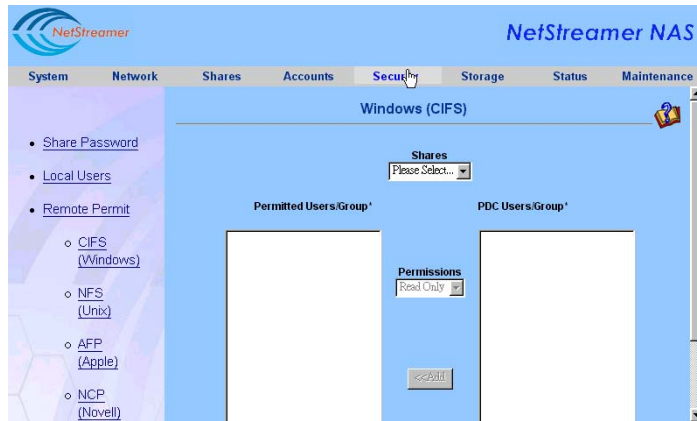
## Local Users



## Remote Permit

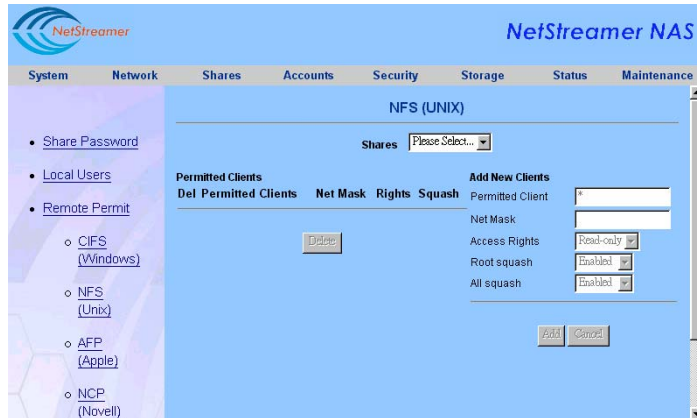
### CIFS (Windows)

Choose a Share from the Shares column. From “PDC Users/Groups” select a user/group that needs to be changed. Click “Add” to allow permissions to the user/group. Select the type of permission to be granted by selecting the user/group and modifying its access authority as “Read Only”, “Read Write” or “Deny”. The default permission is “Read-only”.



**Note:** Any name which is followed with a mark \* indicates a group.

### NFS (Unix)



### Example for NIS Server Permit Shares:

1. Select a Share in this page (ex. NAS1).
2. “Permitted clients”: The default mark "\*" indicates all

the clients (based on the “Network Mask”); or enter a permitted IP address or user.

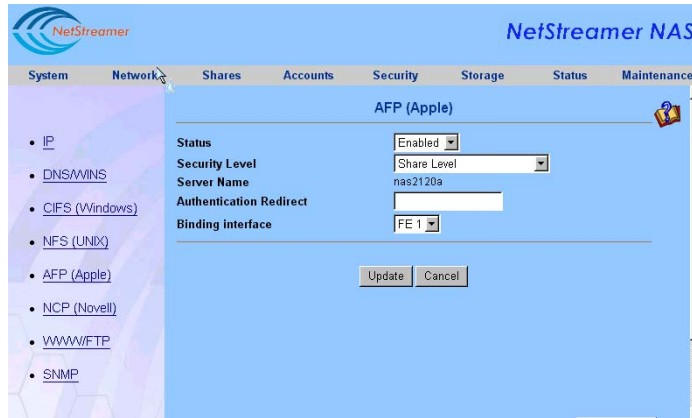
3. “Network mask”: The IP address can be entered according to the Network environment (i.e. 255.255.255.0 or any 24 bytes); if nothing is entered, it indicates all.
4. “Access Rights”: Available options are “Read-only” or “Read-Write”.
5. “Root squash”: “Enabled means the client manager cannot execute the “Management ” in NAS and modify any share attribute. “Disabled” means the clients can use the “chmod” command to modify the rwx (read, execute and write) settings (the default NAS number is 755, as for the rest, the setting is as follows --> all users: 0111, group: 0101, the others: 0101).
6. “All squash”: “Enabled” means all the clients have the same rights to execute NAS operation. “Disabled” means all the users have the right to change their own rights

To let UNIX and Linux clients completely manage the users, groups and the authority, disable the “Root squash” and “All squash” options so that the UNIX and Linux clients can set up and control all the Read-Write and Log in / Log out functions which are from NFS to NAS.



- 7 The “mount ” command can be used to define the mappings of UNIX / Linux clients’ drive. (Ex: mount -t nfs [nas ip]:[share name] [mounting point])

### AFP (Apple)



#### Example for AFP machine user:

1. Make some configuration changes on the AFP page. The security level must be set as “User for AFP machine”. Enter the Apple Server name or IP address in “Authentication redirection” field box.
2. Determine the “File share” from the “Control Panel” of the Apple Server.
3. Choose “add users/groups” and enter a new user account (i.e. NAS1).
4. Select a Share on this page and define the permissions and disk partition for this new user (NAS1). Select the

user name (NAS1) from “All Users/ Groups” and add it to “Permitted User / Group”.

5. A dialog box will prompt for a selection of all the permit shares. Any share that is selected will appear on the Mac desktop and become a general folder.
6. Adding user / group \*  
When adding any user or group, make sure this user or group exists in the AFP authentication system which have been set.

## NCP (Novell)

The screenshot shows the NetStreamer NAS configuration page for NCP (Novell). The page has a blue header with the NetStreamer logo and 'NefStreamer NAS'. Below the header is a navigation menu with tabs: System, Network, Shares, Accounts, Security, Storage, Status, and Maintenance. The 'Network' tab is selected. On the left, there is a sidebar with a list of network services: IP, DNS/WINS, CIFS (Windows), NFS (UNIX), AFP (Apple), NCP (Novell), WWW/FTP, and SNMP. The 'NCP (Novell)' service is selected. The main content area is titled 'NCP (Novell)' and contains the following configuration fields:

- Status: Enabled (dropdown)
- Security Level: Share Level (dropdown)
- Server Name: NCP00D0C9634625 (text input)
- Bindery Server: (text input)
- Admin Account (for group support): admin (text input)
- Admin Password (for group support): (password input)
- Binding interface: FE 1 (dropdown)

At the bottom of the configuration area, there are two buttons: 'Update' and 'Cancel'.

### Select a Share from the Shares List

Choose a user/group from “Bindery Server Users/Groups”. Click “Add” to make it a member of the Permitted Users/Groups. Change its permissions to “Read-only”, “Read- Write” or “Deny”. The default permissions for a new user or group is “Read-only”.

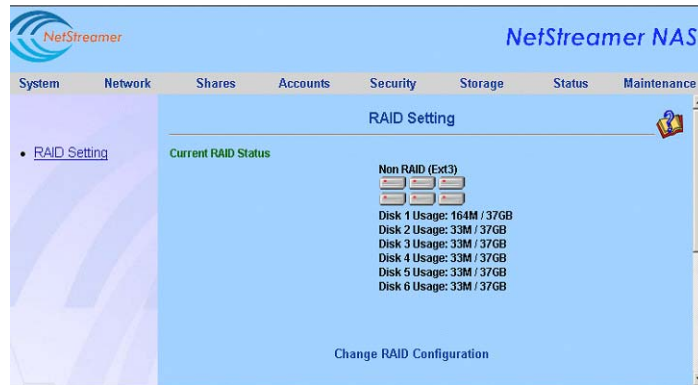
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**Note:** With authentication from the Remote Server to NAS, the system will automatically list the user “ADMIN” and the group “EVERYONE\*” in the permit user or group, but the permissions of “Read-only” or “Read Write” will not be allowed. The administrator has to modify the permissions manually. Also any name followed with the mark “\*” means a group.

---

## 3.7 Storage Management

### RAID configuration



It is recommended to populate six hard drives when setting RAID for the first time. This ensures future storage space and makes sure data security is stable.

The hard drives can be allocated as follows:

RAID Level	Volume Arrangement
Non-RAID	6 volumes
RAID 0	1 volumes over 6 drives
RAID 1	3 volumes over 6 drives
RAID 5	1 volume over 6 drives
RAID 5 with 1 Spare	1 volume over 5 drives; with 1 hot-spare drive

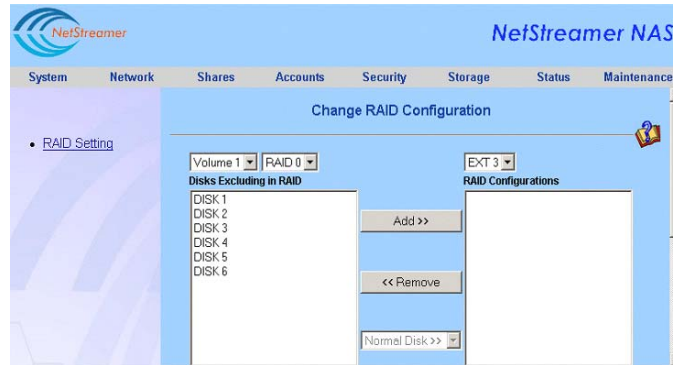
For file system, the following can be set:

**Journaling FS (ext3):** System boot-up is quicker with this

file system when the system is abnormally shutdown.

**Regular file system (ext2):** System boot-up is slower with this file system when the system is abnormally shutdown.

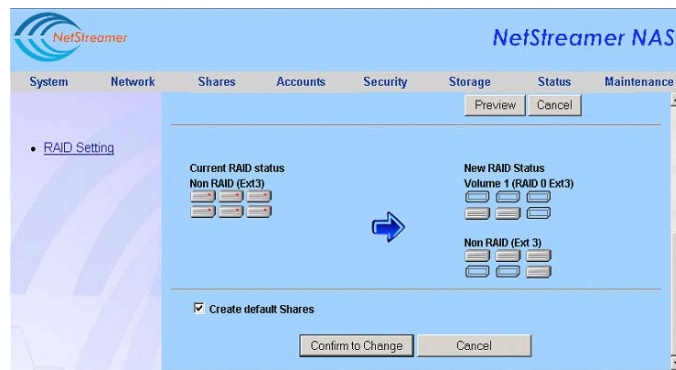
### Change RAID configuration



NAS provides the flexibility in volume and disk management. For example: 2 hard drives can be defined as RAID 1 for mission critical data while the remaining 4 hard drives can be configured as RAID 5.

Moreover, one or more drives can be specified as a spare drive. If this setting doesn't correspond to the RAID rules, the system will have a warning and ask for configuration changes.

You can view the modified RAID status by selecting the "Preview" option. You can also choose to let the system to "Create Default Shares". After confirming your modification, click "Confirm to Change".



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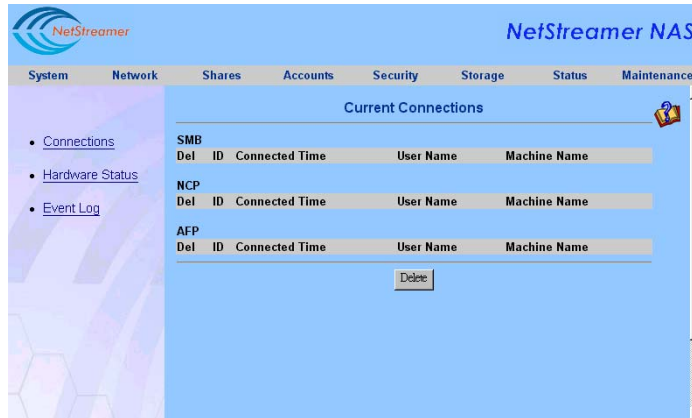
**Note:** Any changes to the RAID configuration will result in unrecoverable data loss.

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## 3.8 Server Status

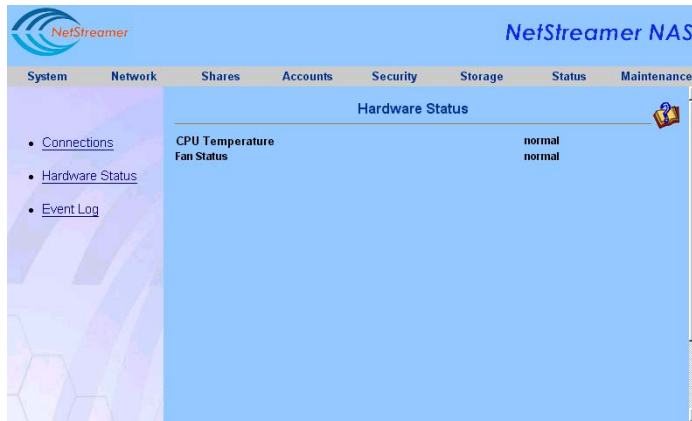
### Connections

This page shows the list of users who are connected to the system.



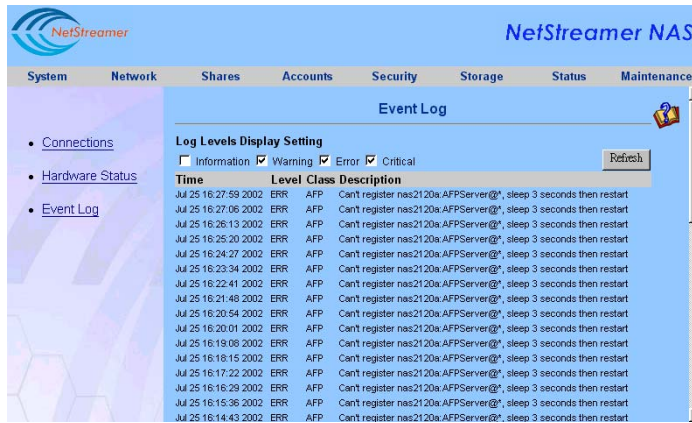
### Hardware Status

This page displays the status of the hardware at this moment. This includes CPU temperature and Fan Status.



## Event Log

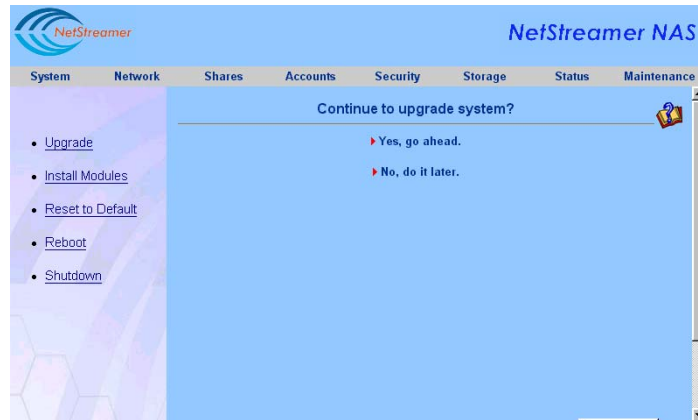
Display the event log of NAS





## 3.9 System Maintenance

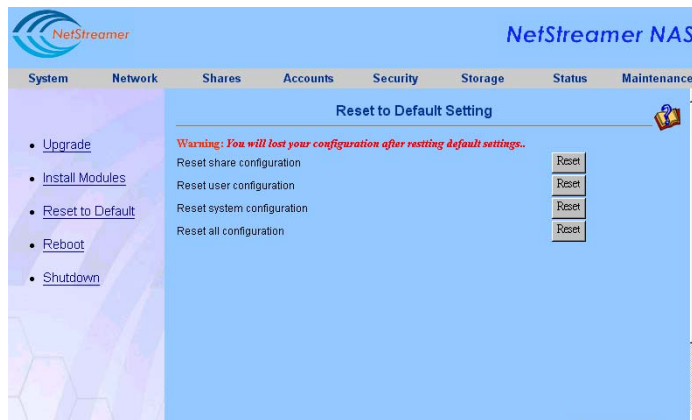
### Upgrade



Upgrading the firmware can be accomplished through this page. Obtain the latest firmware from the manufacturer. Follow the steps below to upgrade your system

1. Click the “Yes, go ahead”.
2. Click “Browse” and select the path and system update file.
3. Click “Yes” to update the firmware. After the file update, the system will reboot automatically.

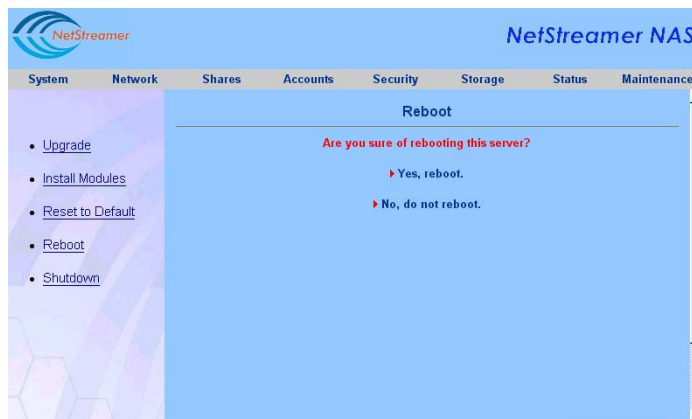
## Reset to Default



On this page, the configuration settings can be reset back to the default settings.

## Reboot

Click on “Yes, reboot”, NAS will reboot automatically.



## Shutdown



On this page, you can shutdown the NAS. Auto Shutdown condition can also be set.

## 3.10 Troubleshooting

If the NAS Assistant fails to get an IP address for the NAS, use a cross-over network cable. The IP address can be set as either dynamic or static. Follow the steps below:

1. Install the NAS Assistant software on the workstation.
2. Unplug the network cable from RJ45 jack. Use a cross-over network cable and connect the workstation to the NAS directly.
3. Use the NAS Assistant. You can now find the IP address of NAS, which is set as the default numbers (FE1: 10.10.10.10, FE2: 10.10.10.11, GE: 10.10.10.12).
4. Set the subnet IP address of the workstation's network card on the same subnet segment (i.e., 10.10.10.0x where x can be any digit after 0, but not including 10). Set the subnet mask as 255.255.255.0 and reboot the computer (For Windows 2000, it is not necessary to reboot).
5. Open NAS Assistant again. It will find the present IP address of NAS. Click the "Config" button to reset the IP as Auto IP (DHCP) or manually enter an IP address.
6. Plug back the straight-through network cable to NAS and workstation. Reboot the NAS

# Appendix A Specifications

## Software specification

Network Transport Protocols	<ul style="list-style-type: none"> <li>● TCP/IP</li> <li>● IPX</li> <li>● NetBIOS</li> <li>● AppleTalk</li> </ul>
Network File Protocols	<ul style="list-style-type: none"> <li>● Microsoft Networks (CIFS/SMB)</li> <li>● Unix (NFS)</li> <li>● Apple (AFP)</li> <li>● Novell (NCP)</li> <li>● WWW (HTTP 1.0)</li> <li>● File Transport Protocol (FTP)</li> </ul>
File System	<ul style="list-style-type: none"> <li>● Journaling file system (ext3)</li> <li>● Regular file system (ext2)</li> </ul>
Network Security	<ul style="list-style-type: none"> <li>● Microsoft Windows Domain (DC)</li> <li>● Novell Netware Server (Bindery)</li> <li>● Apple (AFP)</li> <li>● Unix (NIS)</li> <li>● Local account list</li> <li>● Share level Security</li> </ul>
Client Platform	<ul style="list-style-type: none"> <li>● Microsoft Windows 95/98/NT 4.0/2000/ME/XP</li> <li>● Novell Netware clients</li> <li>● Microsoft Netware clients</li> <li>● Apple Macintosh System 7.5.5, 7.6, OS 8.x, 9.x, X</li> <li>● Solaris 7, 8</li> <li>● AIX 4.3.3</li> <li>● SCO UnixWare 7.1.1</li> <li>● Red Hat Linux 6.x, 7.x</li> </ul>
IP Address Assignment	<ul style="list-style-type: none"> <li>● Support DHCP/BOOTP/RARP or fixed IP</li> </ul>
RAID File System	<ul style="list-style-type: none"> <li>● RAID 0 (disk striping)</li> <li>● RAID 1 (disk mirroring)</li> <li>● RAID 5 (disk striping with parity)</li> </ul>

## Specifications

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System Monitoring Management	<ul style="list-style-type: none"> <li>• Web-Based Administration</li> <li>• SNMP MIB II (Read only)</li> <li>• Email alert notification</li> <li>• Front Panel LED's (Temp, Fans, Voltage)</li> </ul>
Setup and Configuration	<ul style="list-style-type: none"> <li>• Web-based system management user interface</li> <li>• Supports English, Traditional Chinese and Simplified Chinese</li> </ul>

### Hardware Specifications

CPU	<ul style="list-style-type: none"> <li>• Intel® Pentium® III Processor up to 1GHz;</li> <li>• Intel® Celeron® Processor up to 1GHz (Coppermine) (Optional)</li> </ul>
Chipset	<ul style="list-style-type: none"> <li>• Serverworks Serverset 30LE chipset, 133 MHz FSB; 66MHz/64-bit PCI performance</li> </ul>
Memory	<ul style="list-style-type: none"> <li>• Four DIMM SDRAM Registered SDRAM with ECC; up to 4 GB (Optional)</li> </ul>
Drive Bays	<ul style="list-style-type: none"> <li>• 6 Ultra-DMA 100 IDE Hard Drive Bays (Optional)</li> </ul>
Network Connection	<ul style="list-style-type: none"> <li>• Single Auto-sensing 10/100/1000 Base-T Ethernet port</li> <li>• Dual Auto-sensing 10/100 Base-T Ethernet port with Fail-over and Load Balancing</li> </ul>
System Specification	<ul style="list-style-type: none"> <li>• Case model: 2U, 19" Rack Mount</li> <li>• Control buttons : Power on, Buzzer Off</li> <li>• Indicator LED's: Front Panel - Power LED, HDD Activity x 6, Temp/Fan/Voltage alarm LED</li> </ul>
Power Supply Specification	<ul style="list-style-type: none"> <li>• 300W Redundant or Single ATX Power Supply</li> <li>• Input: AC 90 ~ 264 V full range @47 ~ 63 Hz</li> </ul>
Physical Specification	<ul style="list-style-type: none"> <li>• Size: 482 x 88 x 517 mm (W x H x D)</li> <li>• Weight: 18 kg (w/o HDD)</li> </ul>
Environment Specification	<ul style="list-style-type: none"> <li>• Temperature: 0 ~ 40°C (operating) -20 ~ 60°C (storage)</li> <li>• Humidity: 5 ~ 95% @ 40°C</li> </ul>

## Appendix B Important Notes

1. Please read the security instruction carefully.
2. Keep this installation guide for the reference.
3. Before cleaning the device, unplug the power cord from the outlet. Do not use liquid or spray cleaning materials. Use a wet piece of cloth for cleaning.
4. Keep the device near the power outlet for convenience.
5. Keep the device away from moisture and humidity.
6. When installing, put the device on a stable platform. Falling or dropping the unit may cause damage.
7. The openings around the device are designed for ventilation and they protect the device from overheating. Do not seal or cover these openings.
8. Make sure the power voltage value is correct before connecting your device to the outlet.
9. Arrange carefully the power cords to avoid being stepped on. Don't put stuffs on the power cords.
10. Pay attention to all the warnings and notices.
11. If you won't use the device for a long period of time, unplug the power from the power supply to avoid damage from

transient current.

12. Avoid spilling liquids to protect from fire or the electric shock.
13. Please keep the device closed. For security reasons, have only authorized technicians to disassemble the device.
14. If any of the following case happens to you, please contact customer service to check the device:
  - a. Power cord or outlet damaged
  - b. Liquid sinks into the device
  - c. Device has been wet
  - d. Device does not function properly, or the function does not correspond according to the installation guide
  - e. Device fell and is damaged
  - f. Device has an obvious crack
  - g. Don't place this device on uncontrollable environment. If the room temperature is below  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) or higher than  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ ), it is possible to damage the unit.

According to IEC 704-1 1982, the Voice Pressure level of the operator position is nearly the same or lower than 70dB(A).

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**Disclaimer of Warranties:** This instruction is based on IEC 704-1.  
We won't take any responsibility for its assurance.

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