XL-NAS-500SA
NAS System

Installation and Configuration Manual

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Preface

About this manual

This manual provides information regarding the quick installation and hardware features of the NAS system. This document also describes how to use the storage management software. Information contained in the manual has been reviewed for accuracy, but not for product warranty because of the various environment/OS/settings. Information and specifications will be changed without further notice.

This manual uses section numbering for every topics being discussed for easy and convenient way of finding information in accordance with the user's needs. The following icons are being used for some details and information to be considered in going through with this manual:

NOTES:
These are notes that contain useful information and tips that the user must give attention to in going through with the subsystem operation.

IMPORTANT!
These are the important information that the user must remember.

WARNING!
These are the warnings that the user must follow to avoid unnecessary errors and bodily injury during hardware and software operation of the subsystem.

CAUTION:
These are the cautions that user must be aware to prevent damage to the equipment and its components.

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Changes

The material in this document is for information only and is subject to change without notice.

NOTE: Some screen shots may differ from actual NAS system model.

Before You Begin

Before going through with this manual, you should read and focus to the following safety guidelines. Notes about the subsystem product packaging and delivery are also included.

Safety Guidelines

To provide reasonable protection against any harm on the part of the user and to obtain maximum performance, user is advised to be aware of the following safety guidelines particularly in handling hardware components:

Upon receiving of the product:

- **Place the product in its proper location.**
- **To avoid unnecessary dropping out, make sure that somebody is around for immediate assistance.**
- **It should be handled with care to avoid dropping that may cause damage to the product. Always use the correct lifting procedures.**

Upon installing of the product:

- **Ambient temperature is very important for the installation site. It must not exceed 30°C. Due to seasonal climate changes; regulate the installation site temperature making it not to exceed the allowed ambient temperature.**
- **Before plugging-in any power cords, cables and connectors, make sure that the power switches are turned off. Disconnect first any power connection if the power supply module is being removed from the enclosure.**
- **Outlets must be accessible to the equipment.**
- **All external connections should be made using shielded cables and as much as possible should not be performed by bare hand. Using anti-static hand gloves is recommended.**
- **In installing components, secure all the mounting screws and locks. Make sure that all screws are fully tightened. Follow correctly all the listed procedures in this manual for reliable performance.**

Packaging, Shipment and Delivery

- **Before removing the subsystem from the shipping carton, you should visually inspect the physical condition of the shipping carton.**
- **Unpack the subsystem and verify that the contents of the shipping carton are all there and in good condition.**
- **Exterior damage to the shipping carton may indicate that the contents of the carton are damaged.**
- **If any damage is found, do not remove the components; contact the dealer where you purchased the subsystem for further instructions.**

Chapter 1 Introduction

The NAS System

Storage networks become more and more complex. If you need to easily expand storage capacity while providing uninterrupted high-performance data access across your LAN, you may want to consider a NAS (Network Attached Storage) appliance. When budgets are tight and a quick fix is required, a NAS appliance is a low-cost, efficient solution to dodge that network-to-storage logjam. That's why more and more users select NAS architecture as their storage networking.

The NAS system is a reliable, cost-effective way to add storage to the network. It comes with 5 drive trays accommodating 3.5" SATA II drives while SCA-II single connector architecture enables true hot swap capability. Built-in Intel Celeron 1.6GHz CPU (or above), up to 2GB DDR2-667MHz SDRAM and two Gigabit Ethernet ports offers high performance NAS platform. With Linux-based embedded OS design, it can boot without HDD, FDD or CD-ROM to guarantee reliability and quick boot. The NAS system is managed and configured by Flex/Ruby browser-based software, and some features include pre-configure disk capacity, users setting, volume management, quick installation on popular network platform, and multi-protocol support. It is equipped with software RAID to offer fault tolerant data protection. It offers full featured data protection supporting RAID levels 0, 1, 5, 6, 10, Linear.

System reliability is ensured by an environmental monitoring unit, which tracks the enclosure temperature as well as individual disk temperatures. If any irregularity in the system occurs, the monitoring unit alerts the administrator.

1.1 Key Features

- **Supports up to five hot-swappable SATA II hard drives**
- **Equipped with software RAID function and supports RAID levels 0, 1, 5, 6, 10, Linear**
- **Linux-based embedded OS design**
- **Provides file access services to multiple users over the LAN, the intranet and / or the internet**
- **Multi-protocol support (TCP/IP, DHCP, AppleTalk, Mac Zone, SMB, NFS, CIFS, AFP over TCP/IP, HTTP)**

1.2 Technical Specifications

Hardware Platform ƒ Intel Celeron 1.6G CPU (or above) ƒ Cache memory: 1GB ~ 2GB DDR2-667MHz ƒ Supports 5 SATA II hard drives ƒ Two Gigabit Ethernet port ƒ Environmental monitoring unit ƒ 270W power supply with PFC	**Macintosh Support** ƒ AFP over AppleTalk ƒ AFP over TCP/IP ƒ Mac Zone ƒ iTunes service
Storage ƒ Equipped with software RAID function to offer fault tolerant data protection ƒ Supports RAID levels 0, 1, 5, 6, 10, Linear ƒ Volume Management ƒ Disk usage statistics ƒ Hot spare capability	**Connectivity** ƒ SMB over TCP / IP ƒ NFS over UDP / IP ƒ CIFS over TCP / IP ƒ NAT ƒ DHCP ƒ FTP ƒ Internet Server ƒ Unit acts as a DHCP server ƒ Unit act as a master browser ƒ Share level security ƒ User ID security for NFS
General ƒ Supports Volume as iSCSI Target ƒ File Server Independent ƒ Peer-to-peer operation ƒ Localized language support ƒ With Quick Setup function ƒ Supports trunking / load balance / fail over / LACP(802.3ad) ƒ Support UPS monitoring	**System Management** ƒ Automatic IP address configuration ƒ Self-contained unit; no extras needed ƒ Management through Web browser ƒ Flash upgradeable unit ƒ Supports Microsoft ADS/PDC and Unix NIS accounts import ƒ Fail-free online firmware upgrade ƒ Unicode support

Chapter 2 Installation

2.1 Packaging, Shipment and Delivery

- ™ **Before removing the system from the shipping carton, you should visually inspect the physical condition of the shipping carton.**
- ™ **Unpack the system and verify that the contents of the shipping carton are all there and in good condition.**
- ™ **Exterior damage to the shipping carton may indicate that the contents of the carton are damaged.**
- ™ **If any damage is found, do not remove the components; contact the dealer where you purchased the system for further instructions.**

2.2 Unpacking the NAS System

The package contains the following items:

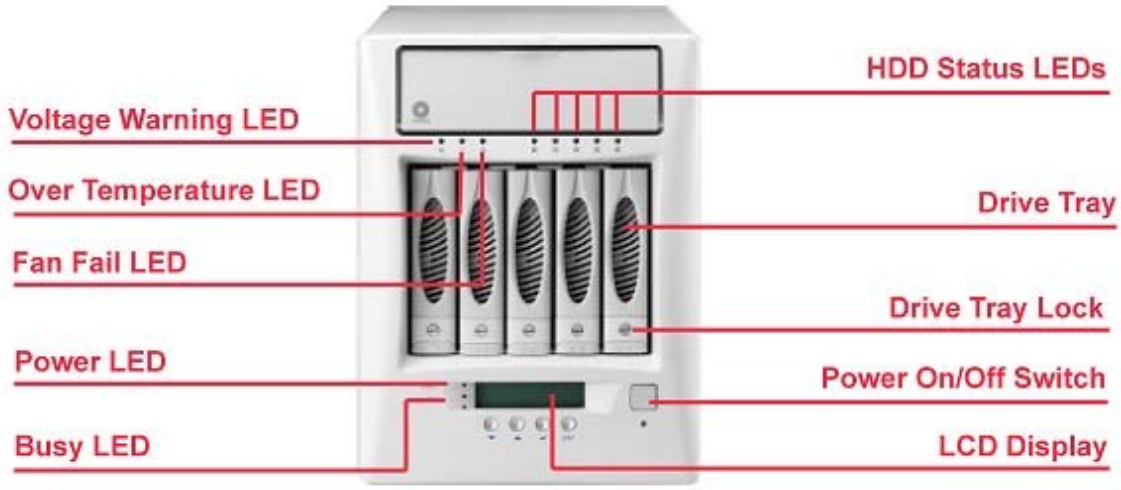
- **System unit**
- **One power cord**
- **Two Ethernet LAN cables**
- **Installation Reference Guide**

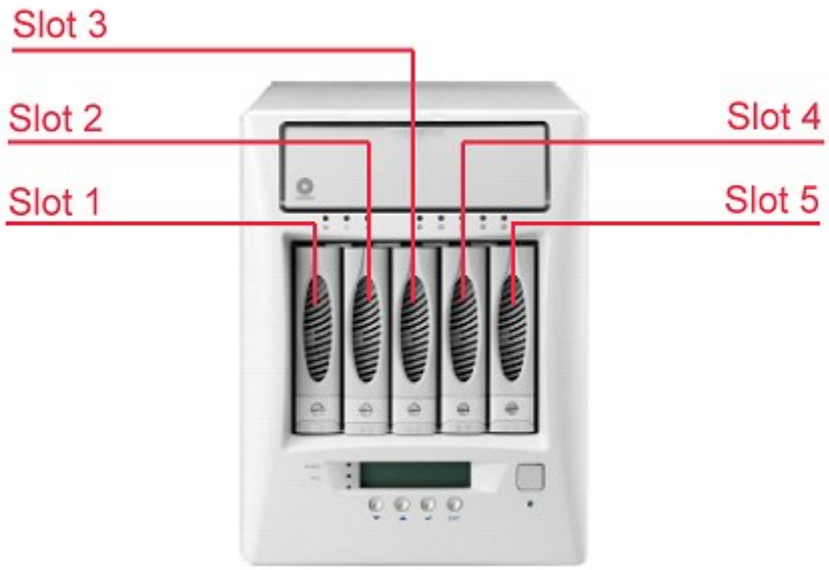
If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

2.3 Identifying Parts of the NAS System

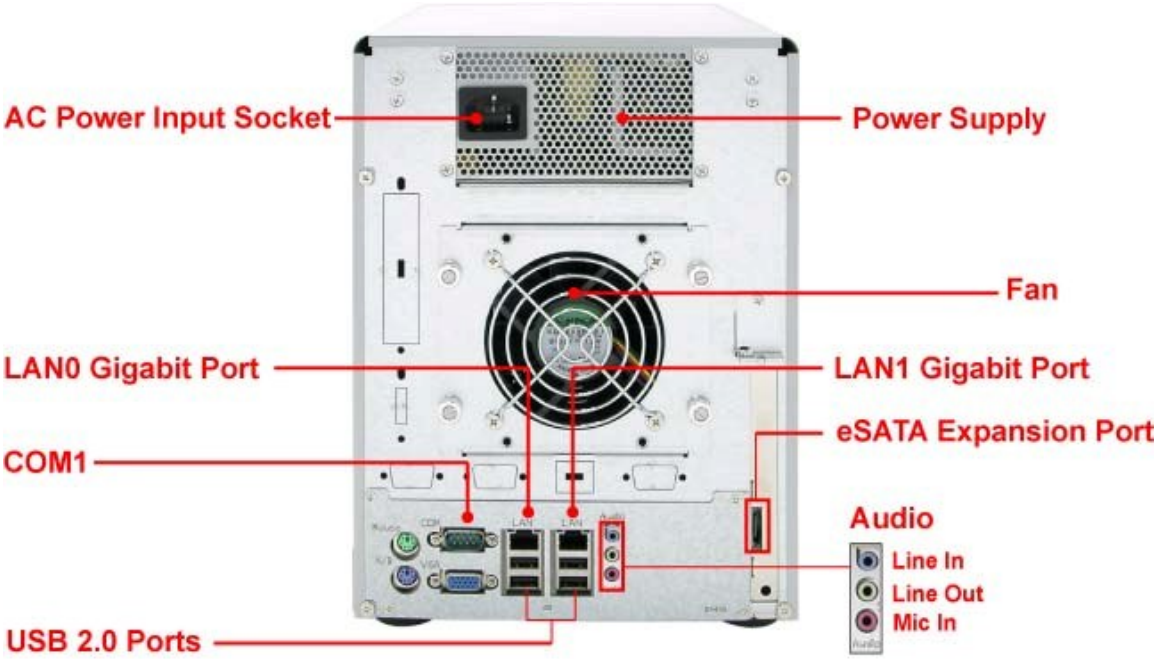
The illustrations below identify the various parts of the NAS system.

2.3.1 Front View

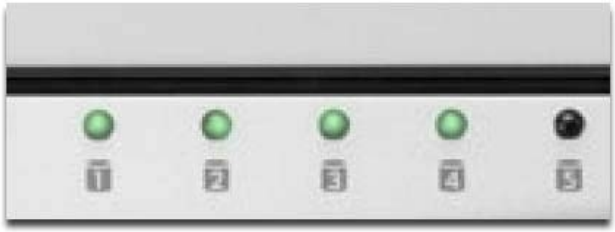




2.3.2 Rear View

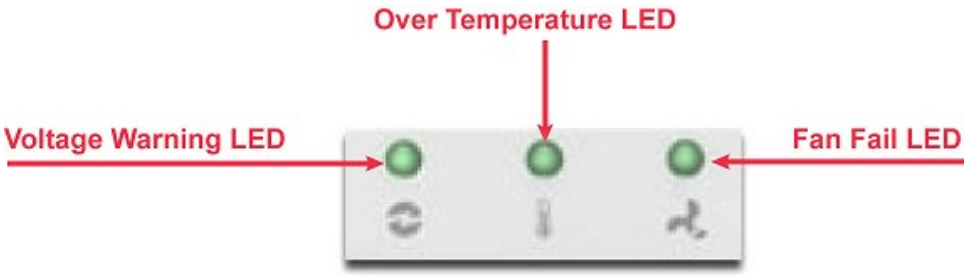


2.3.3 HDD Status LEDs



Green LED indicates power is on and the hard disk drive status is good for this slot. Blinking Orange and Green LED indicates the hard disk drive is in rebuilding state.

2.3.4 Environmental Status LEDs

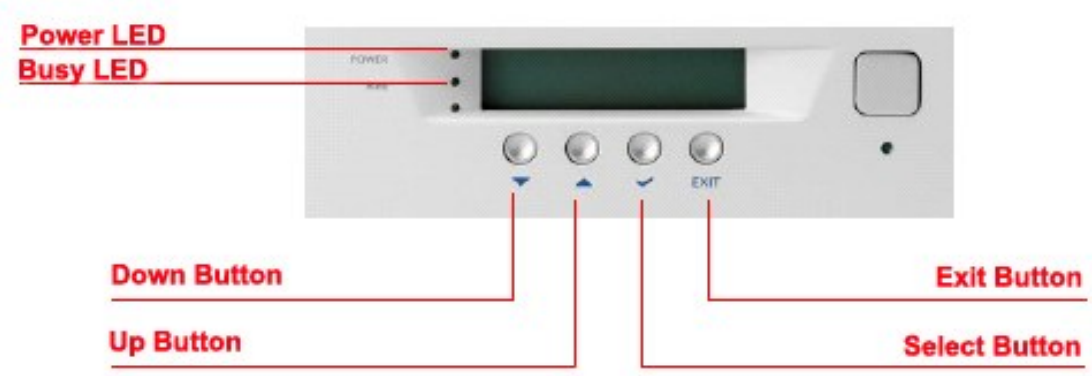


Parts	Function
Voltage Warning LED	An alarm will sound warning of a voltage abnormality and this LED will turn red.
Fan Fail LED	When fan fails, this LED will turn red and an alarm will sound.
Over Temperature LED	If temperature irregularities in the system occurs (HDD slot temperature over 55°C), this LED will turn RED and alarm will sound.

2.3.5 Lock Indicator

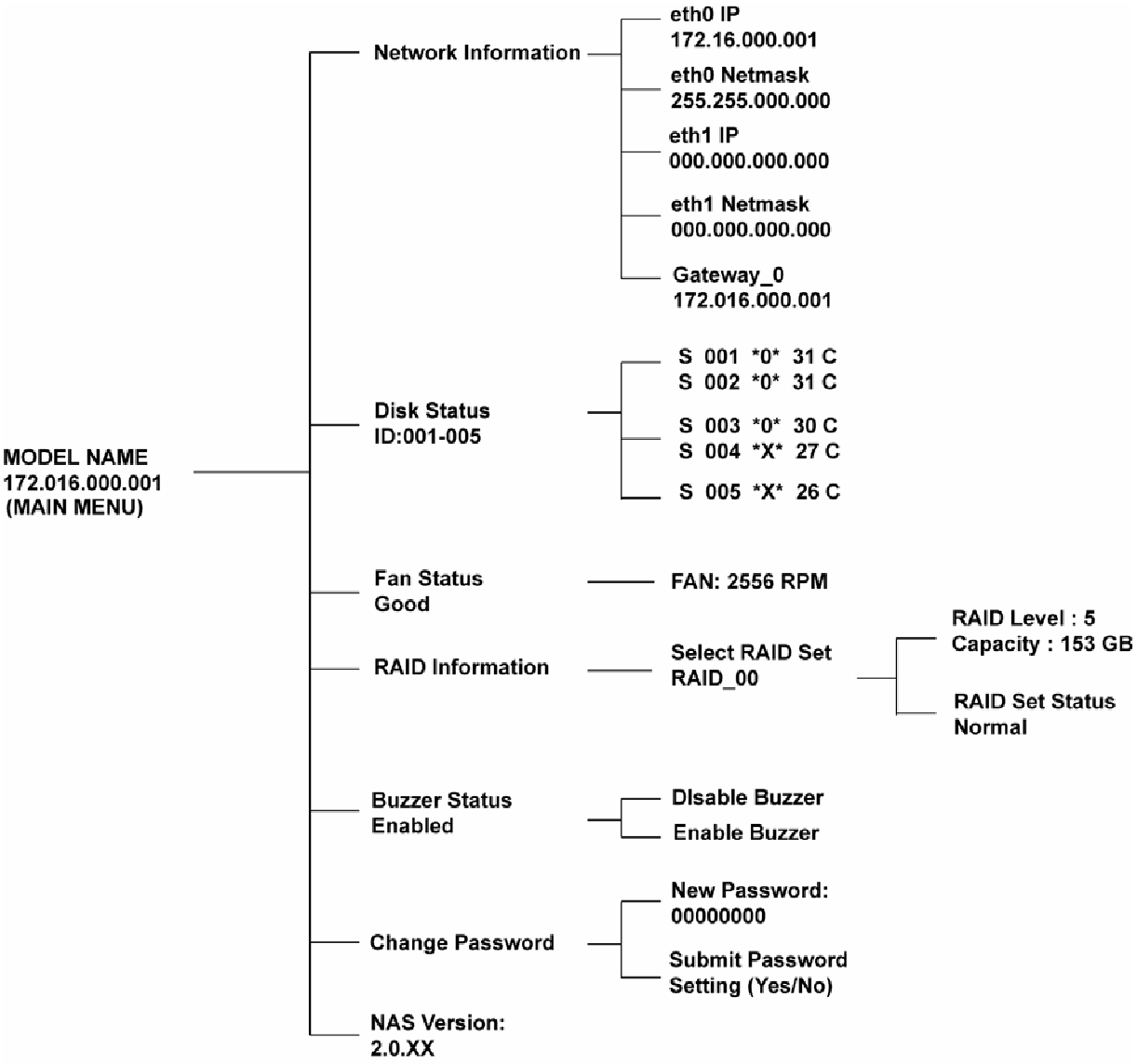
Every Drive Carrier is lockable and is fitted with a lock indicator to indicate whether or not the carrier is locked into the chassis. Each carrier is also fitted with an ergonomic handle for easy carrier removal.

2.3.6 Front Panel



PARTS	FUNCTION
Power LED	Green LED indicates power is on.
Busy LED	Orange blinking indicates system is busy or data is being accessed.
Up and Down Arrow buttons ▲▼	Use the Up or Down arrow keys to go through the information on the LCD screen. This is also used to move between each menu when you configure the subsystem.
Select button ✔	This is used to enter the option you have selected.
Exit button EXIT	Press this button to return to the previous menu.

2.3.7 LCD Menu Diagram



Disk Status Information:

S 001 - means slot number 1
***O* - means disk drive in slot is Online or detected**
***X* - means no disk drive in slot or disk drive not detected**

2.4 Getting Started with the NAS System

2.4.1 NAS Hardware Setup

1. **Attach network cable to LAN0 Ethernet port. Connect the other end of network cable to your network hub or switch. You may also connect the other Ethernet ports if needed.**
2. **Plug in the power cord into the AC Power Input Socket located at the rear of the subsystem.**
3. **To turn on the NAS, press the Power On/Off Switch.**
4. **The Power LED on the front panel will turn green.**

2.4.2 Installing Hard Drives

This section describes the location of the hard drives in the NAS system and gives instructions on installing a hard drive. The system supports hot-swapping allowing you to install or replace a hard drive while the system is running.

a. Make sure the lock indicator is in unlocked position. To pull out a disk tray, press the Lock Indicator Button. Pull the handle outwards to remove the disk tray from the enclosure.

b. Place the hard drive in the disk tray.

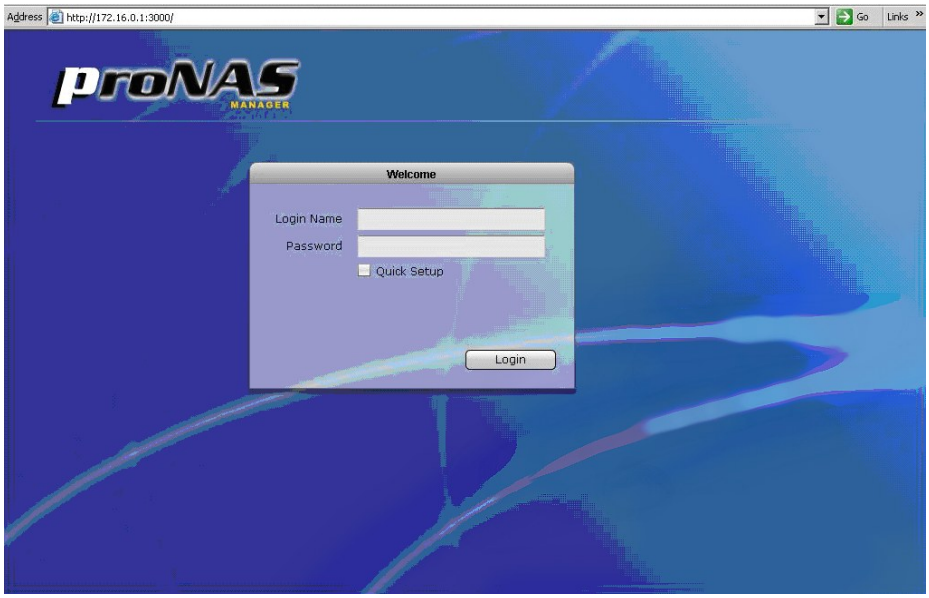
c. Make sure the holes of the disk tray align with the holes of the hard drive. Install the mounting screws on the bottom part to secure the drive in the disk tray.

d. Slide the tray into a slot and push the Lock Indicator Button.

e. Press the handle until you hear the latch click into place. The HDD status LED will turn green if subsystem is on.

2.4.3 Connecting to NAS Management GUI

1. **Setup network setting of your host system (computer that will be used to manage the NAS) to enable connection to NAS default IP 172.16.0.1. Refer to Table below.**
2. **Open web browser and type in the address bar http://172.16.0.1:3000.**
3. **The proNAS Login Page will be displayed.**



4. **Enter the Login Name account and Password. Refer to the default settings in the table below.**

Entity	Default Value
LAN0 (eth0) IP address	172.16.0.1
TCP port	3000
Net Mask	255.255.0.0
Hostname	NAS
Login Name	admin
Password	00000000

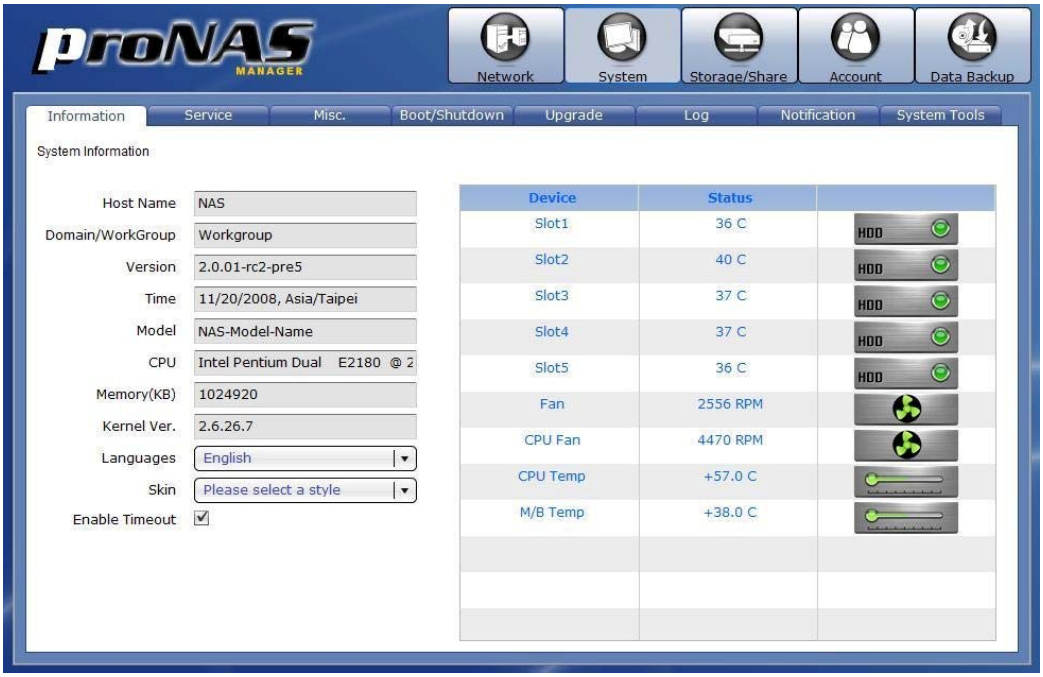
NAS Default Settings

NOTE: To use the Quick Setup function, check the "Quick Setup" box in the login page. Refer to the Quick Setup information in the next section.

5. **A message will be displayed.**

6. **The proNAS Manager GUI will be displayed.**

NOTE: Enable Timeout is enabled by default. When there is no activity in the proNAS Manager GUI, admin will be automatically logged out after 15 minutes. To disable timeout, remove check mark in Enable Timeout.



2.4.4 Quick Setup

The Quick Setup provides quick and easy setup of the basic NAS configuration.

The Quick Setup options are listed below:

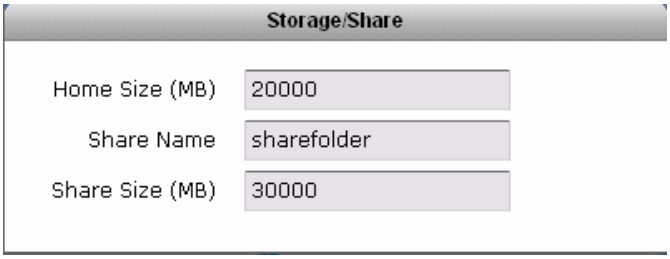
1. **RAID**
   This is used for selecting the Storage Mode (RAID Level).
2. **Storage / Share**
   This shows the default Home share capacity which can be changed. It also shows default share named "share" which can be renamed and whose size can be changed.
3. **Network Adapter**
   This is for configuring the primary Ethernet interface LAN0 (eth0) network settings. After changing the settings, admin need to login using the new IP address.
4. **Service**
   This is for enabling the basic Services provided by proNAS. Windows (Samba) service is enabled by default.

The Quick Setup Steps:

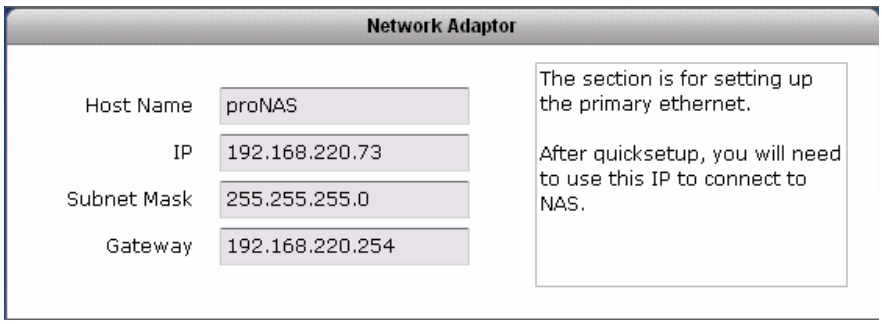
1. **Configure the software RAID by selecting the Storage Mode.**

   The Storage Mode options are:
   (a) Max. Capacity (RAID0)
   (b) Clone Data (RAID1)
   (c) Max. Security (RAID5)

2. **Configure the Storage/Share.**
   a. **Change the "home" size default capacity if needed.**
   b. **Rename the default share if necessary.**
      NOTE: The share folder name does not allow space in-between characters.
   c. **Change the size of the default share if needed.**



3. **Configure the Network Adaptor settings.**
   a. **Enter the new NAS Host Name in the Host Name box.**
   b. **Enter the new IP address.**
   c. **Edit the Subnet Mask and Gateway.**



The configuration options in Network Adaptor:

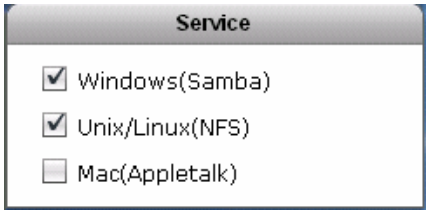
- **Host Name**
  The Host Name is the NetBIOS name of NAS system. This name should be unique.

- **IP**
  This is the IP address of primary Ethernet port LAN0 (eth0) used for NAS management or share folder access. If not set, it will use the default IP 172.16.0.1.

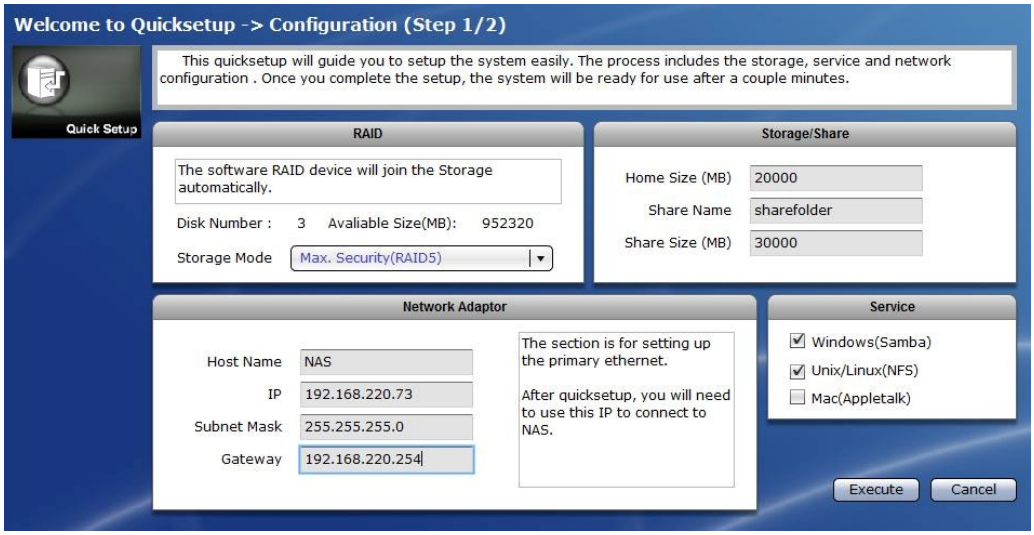
- **Subnet Mask**
  The Subnet Mask used. If not set, it will use the default Subnet Mask 255.255.0.0.

- **Gateway**
  The Gateway used. If not set, it will use the default Gateway 172.16.0.1.

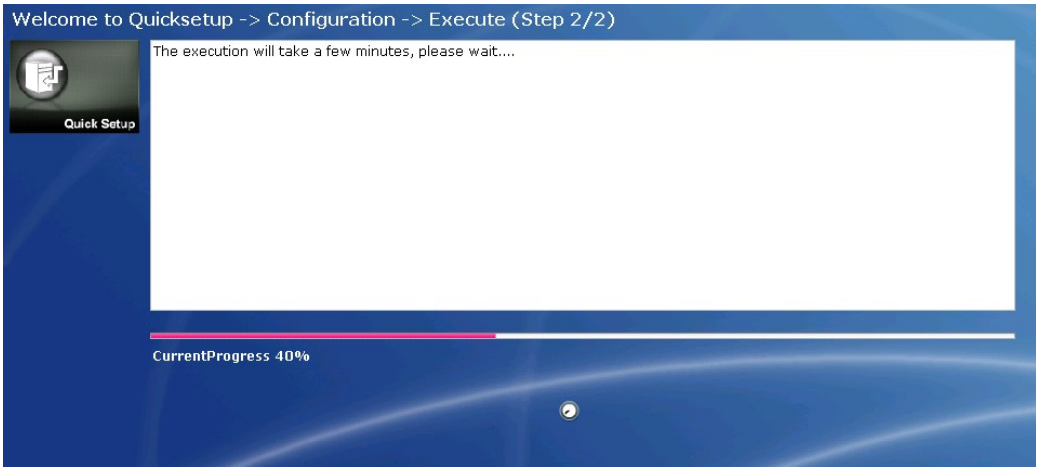
4. **Configure the Service options.**
   a. **Enable the Services provided by proNAS as needed.**



5. **Click the "Execute" button.**

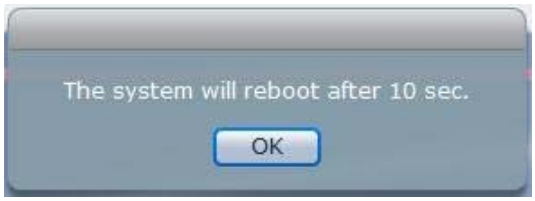


6. **The configurations will be set.**



7. **A warning message will be displayed. Select "Yes" to reboot the NAS and free some memory used by the system.**

8. **A message will be displayed. Click “OK”.**



9. **The NAS will restart. If IP address was changed in Network Adapter settings, re-login to proNAS administration page using the new IP address.**

2.5 Overview of the NAS Setup Phases

The Setup Phases include configuring proNAS components with proNAS Manager. The basic steps are:

- **Create RAID Disk from Hard Disk Drives**
- **Join RAID Disk to Volume Group's Storage Pool**
- **Setup the Network Environment**
- **Enable Services for Windows clients, Linux/UNIX clients, and MAC clients**
- **Create and Setup Logical Volume and Share Folder.**
- **Create Accounts or Groups or Join ADS/NIS Domain and assign Share Folder Permission**

Chapter 3 proNAS Manager

There are five management functions used to configure or manage the NAS.

- **Network**
- **System**
- **Storage/Share**
- **Account**
- **Data Backup**

3.1 Storage/Share

3.1.1 RAID

Click the Storage/Share icon then select RAID tab. The RAID Configuration and Disk Information window will be displayed.

RAID Configuration Screen:

Name – The RAID disk name. This defaults to "RAID_00" if this is the first RAID disk created.

LEVEL – The RAID level used by the RAID disk.

Disk Used – The hard disk drives (slots) joined to the RAID disk.

Total Size (GB) – The capacity size of the RAID disk.

Status – The current status of the RAID disk. Status can be active, degraded, rebuilding, or failed.

RAID Configuration Options:

Create New RAID – Use to create a RAID disk using the hard disk drives.
Edit RAID – Used to edit an existing RAID disk.

Disk Information Screen:

Slot – The hard disk drive slot number.
Disk – The hard disk drive device name. The first disk drive is named "/dev/sda".
Size (GB) – The capacity size of the hard disk drive.
Model – The hard disk drive model name.
Status – The current status of the hard disk drive. Status can be "RAID_MEMBER", "UN_USED", or "SPARE".

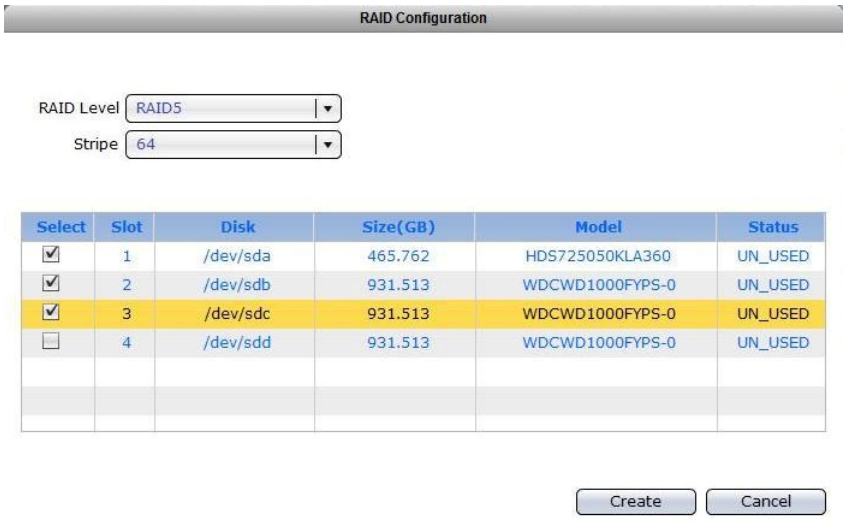
Disk Information Options:

Set Spare – Used to set a selected hard disk drive as a Spare Disk.
Delete Spare – Used to remove a Spare Disk setting on a hard disk drive.

3.1.1.1 Create New RAID and Join Disk to Storage Pool

Steps to Create a New RAID and Join Disk to Storage Pool:

1. **Click "Create New RAID".**
2. **Set the RAID Level and Stripe size, and select the hard disk drives to be included in the RAID disk.**

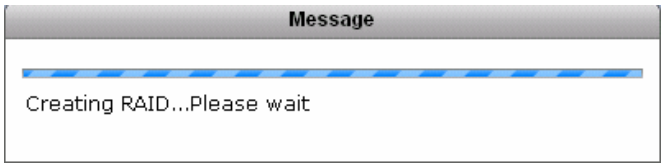


RAID Configuration Options:

RAID Level – Select the RAID Level you want for the RAID configuration. Available options, depending on number of disk drives, are: JBOD, 0, 1, 5, 6, and 10.
Stripe Size – Set the size of the stripe (block size or chunk size) written to each disk drive. Default is 64KB. Other options are: 128KB, 256KB, 512KB and 1024KB.

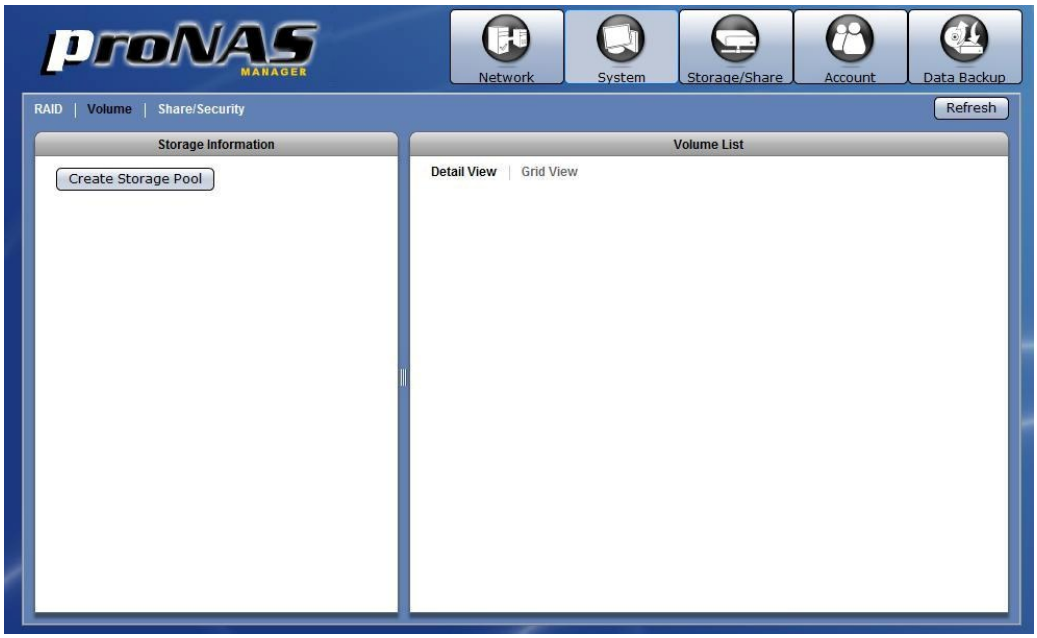
NOTE: A large stripe size produces better read performance if the NAS does mostly sequential reads. If the NAS will do mostly random reads, small stripe size is recommended.

3. **A message will be displayed.**

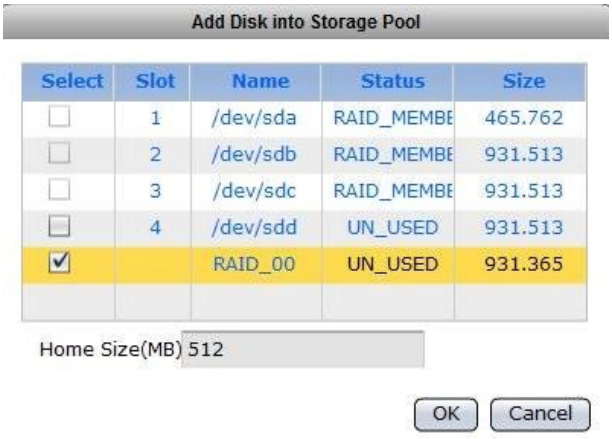


4. **The RAID disk will be initialized. Verify in the Status information the current initialization process.**

5. **While the RAID disk in initializing, the status will show active and the Disk Information will show "UN_USED". The RAID disk can be joined to NASVG in Volume tab using "Create Storage Pool" button. Click "Create Storage Pool".**



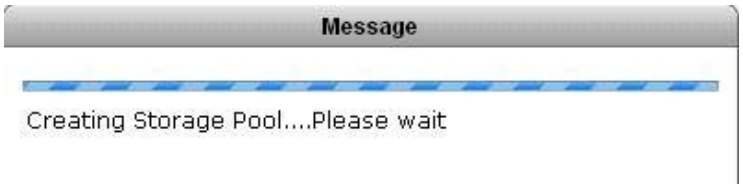
6. **Select the disk (must be RAID disk) that will be added to storage pool. Click "OK" when done.**



NOTE: NASVG, which is a Volume Group that holds the NAS configurations, will be created when at least one disk (RAID disk) is joined to Storage Pool. At the same time, the default Home volume is also created. The Home volume holds the individual share folders of all user accounts. The default Home volume size is 512MB. If necessary, change the Home size to a larger size.

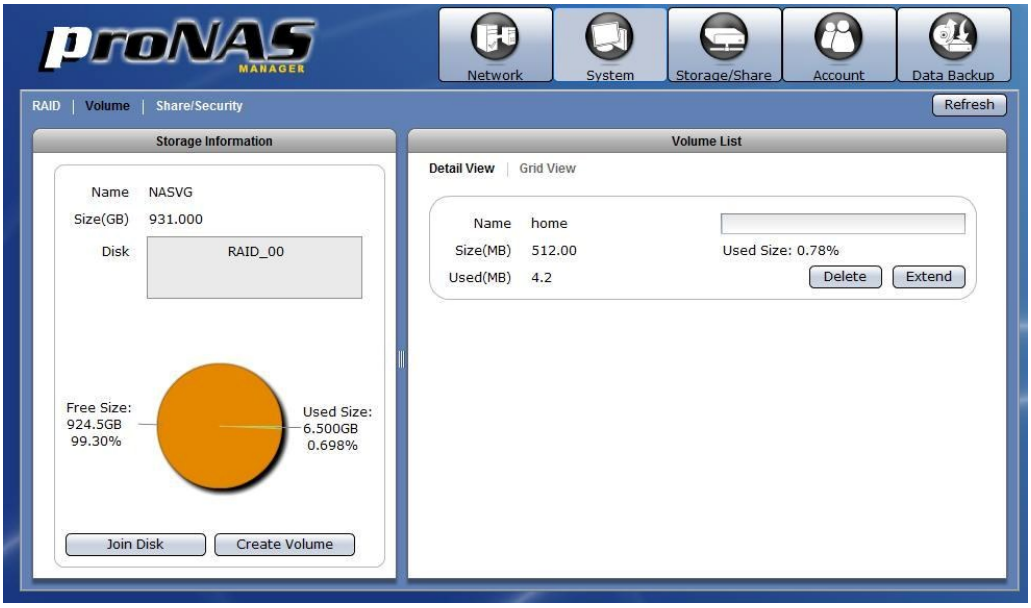
7. **A warning message will be displayed. Select "Yes" to proceed.**

8. **A message will be displayed.**



9. **When warning message is displayed, select "Yes" to free some memory used by the system. The NAS system will reboot.**

10. **Re-login to the system then select Storage/Share. The NASVG and the default Home volume are created.**



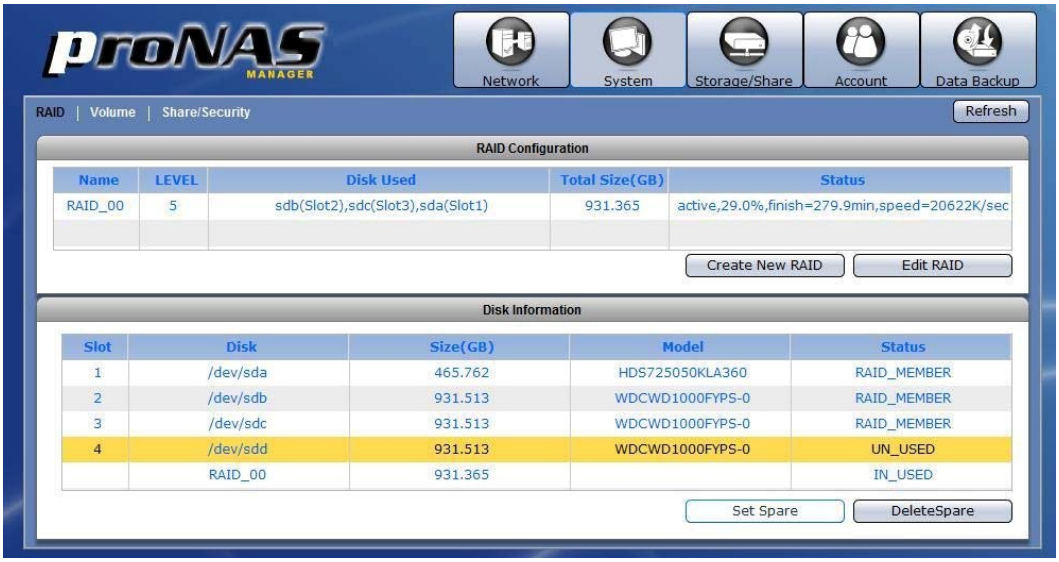
NOTE: After NASVG is initialized, the Storage Information screen will show a pie chart with amount of Free Size and Used Size. Volumes can be created from the NASVG.

11. **After the RAID disk is joined to NASVG, the RAID status in Disk Information will show "IN_USED".**

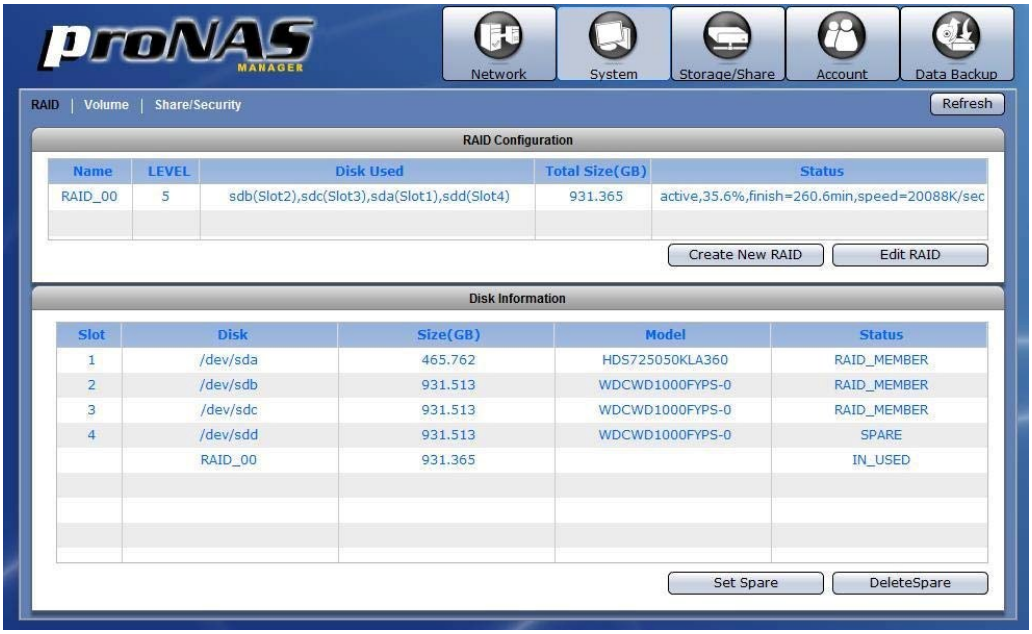
3.1.1.2 Set a Spare Disk

Steps to Set a Spare Disk:

1. **Select the hard disk drive to be made a spare disk and click “Set Spare”.**

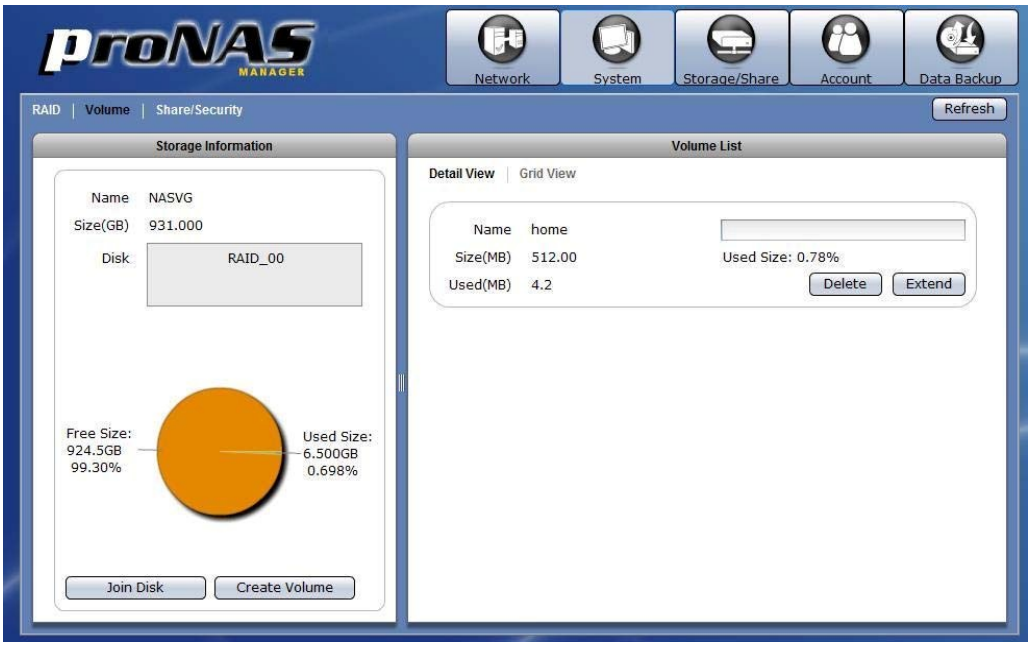


2. **The selected hard disk drive will become a Spare Disk. The Status in Disk Information will show “SPARE”.**



3.1.2 Volume

Click the Volume tab. The Volume Configuration screen will be displayed.



Storage Information Screen:

Name – The NAS Volume Group default name "NASVG".
Size (GB) – The total capacity of the NASVG
Disk – The list of RAID disk(s) joined to the NASVG.

Storage Information Options:

Join Disk – Used to join a RAID disk to the NASVG.
Create Volume – Used to create a new Volume. A Volume is storage space which is shared by several Share Folders (several Share Folders can be created under a single Volume).

Volume List Screen:

There are two types of view provided to display the Volume information: Detail View and Grid View.
Detail View: has Delete, Extend, and iSCSI buttons
Name – The Volume name.
Size (MB) – The total Volume capacity in MB.
Used (MB) – The Volume used capacity in MB.
Used Size – The Volume used capacity as a percentage of the total Volume capacity.
Grid View: displays Volume List in table format
Name – The Volume name.
Size (MB) – The total Volume capacity in MB.
Used Size (MB) – The Volume used capacity in MB.

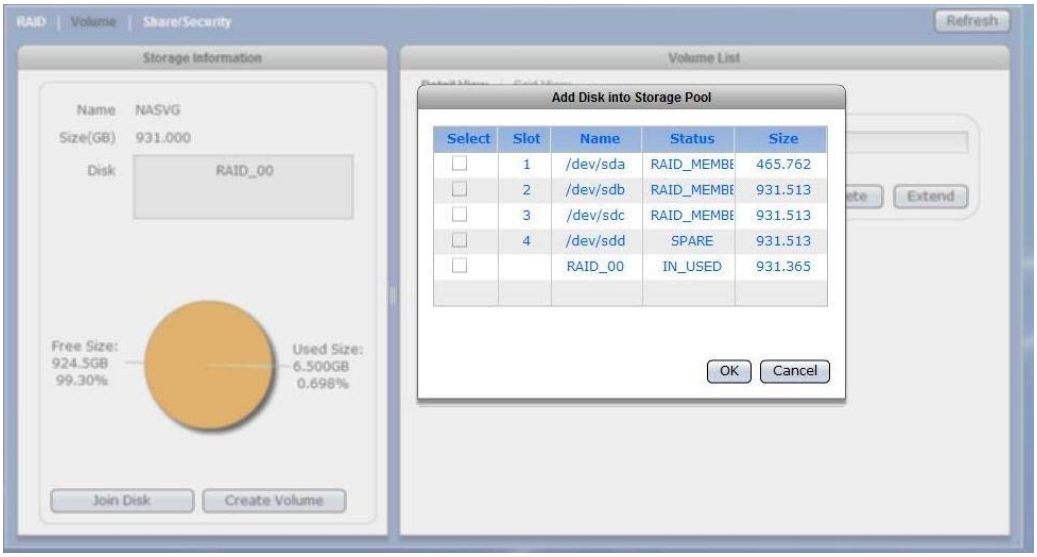
Volume List Options:

Delete – Used to erase the Volume.
Extend – Used to extend the total Volume capacity.
iSCSI – Used to setup the Volume as iSCSI target.

3.1.2.1 Join a Disk to Storage Pool

Steps to Join a Disk to Storage Pool:

1. **Click "Join Disk".**
2. **A dialog box will be displayed. Select a RAID disk to be joined to the Storage Pool of NASVG. Click "OK" when done.**



3. **The RAID disk will be joined to the NASVG.**

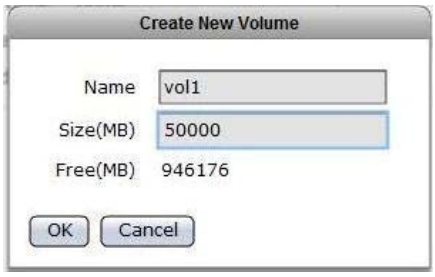
NOTE: An un-used physical disk drive can be used to join to the Storage Pool of NASVG but it is not recommended because the physical disk drive does not have RAID Level nor provide data redundancy. Select only a RAID disk to add into the Storage Pool for better data security.

3.1.2.2 Create a Volume

Steps to Create a Volume:

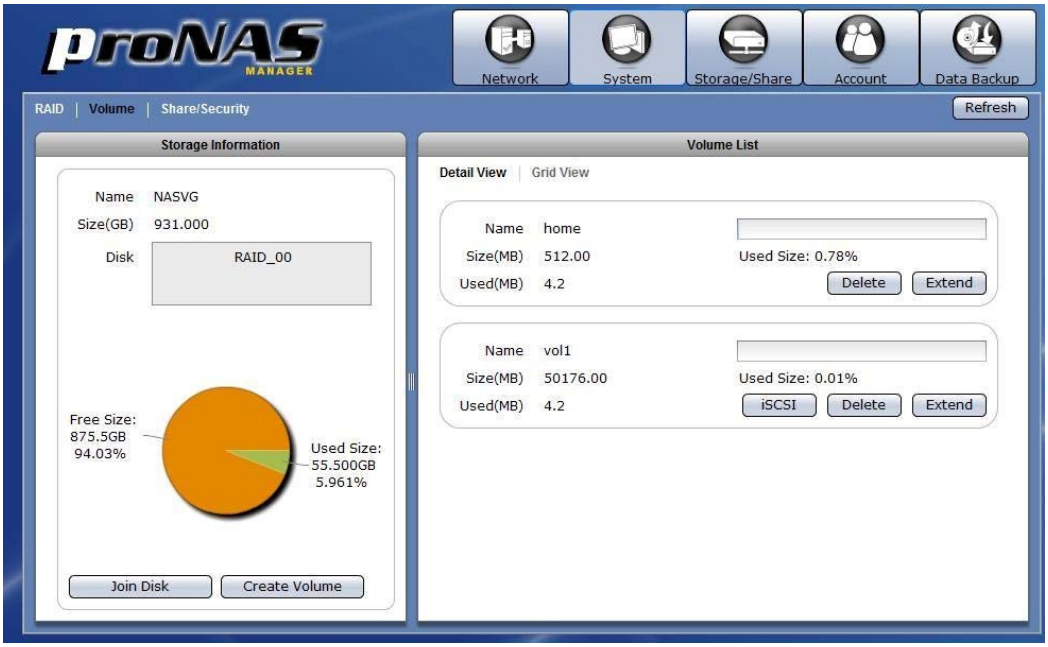
1. **Click "Create Volume".**
2. **In the Create New Volume dialog box, enter the Volume Name and Size in MB. The Free NASVG capacity will show the available capacity that can be used. Click "OK" when done.**

NOTE: The volume name does not allow space in-between characters.



3. **A message will be displayed.**

4. **The new Volume will be created.**



3.1.2.3 Delete a Volume

Steps to Delete a Volume:

WARNING! Be careful when using this function. Make sure the data in the volume and all its share folders are no longer needed or a backup has been made before deleting the volume.

1. **Click the "Delete" button of the Volume to be deleted.**
2. **A warning message will be displayed. Click "Yes" to proceed with deletion.**

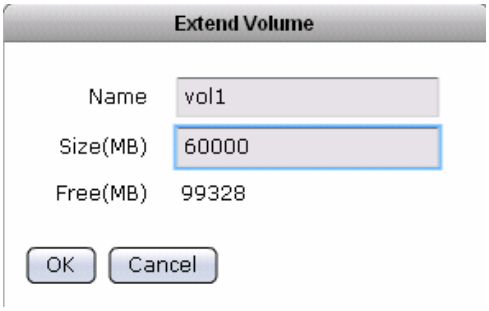
3. **A message window will be displayed.**

4. **The Volume will be deleted.**

3.1.2.4 Extend a Volume Capacity

Steps to Extend a Volume:

1. **Click the "Extend" button of the Volume to be extended.**
2. **A dialog box will be displayed. Enter the additional capacity that will be added to the Volume in the "Size(MB)" box. Click "OK" when done.**



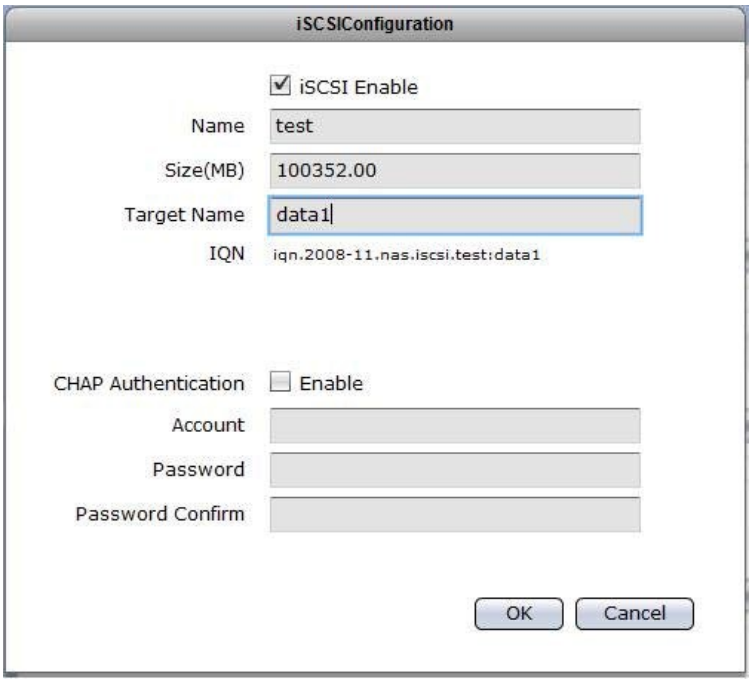
3. **A message will be displayed.**

4. **The total Volume capacity will be increased.**

3.1.2.5 Setup Volume as iSCSI Target

Steps to Setup Volume as iSCSI Target:

1. **Click the "iSCSI" button of the Volume to be setup.**
2. **A dialog box will be displayed. Tick the "iSCSI Enable" option to enable iSCSI function. Enter the Target name. To enable authentication, tick the "Enable" box in Authentication then enter an Account name. Enter the password in Password box and Password Confirm box. Click "OK" when done.**



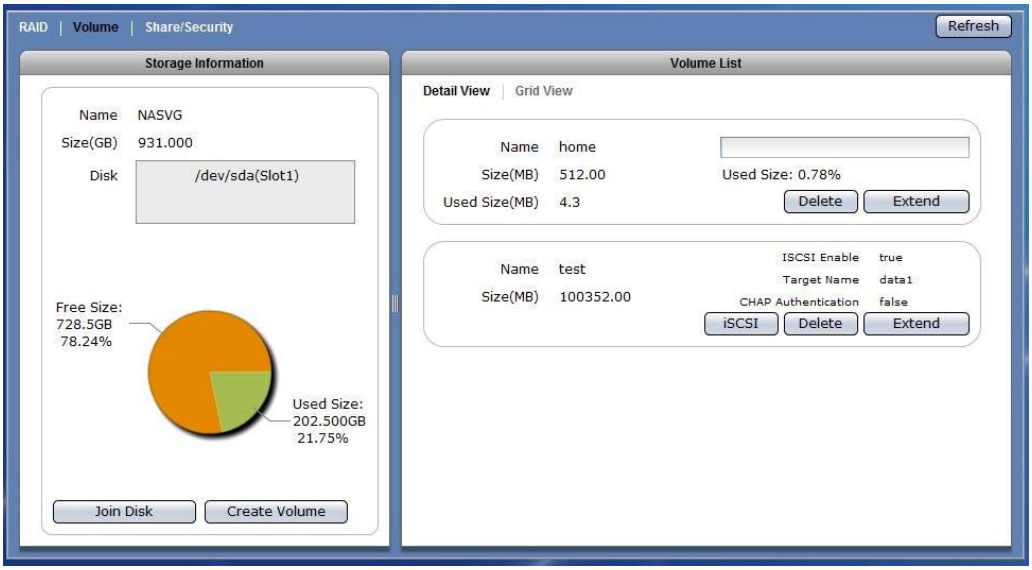
NOTE: When Authentication is used, the same Account and Password must also be used in iSCSI initiator to successfully connect to the NAS iSCSI device. Password length must be 12 to 16 characters.

3. **A warning message will be displayed. Select “Yes” to proceed.**

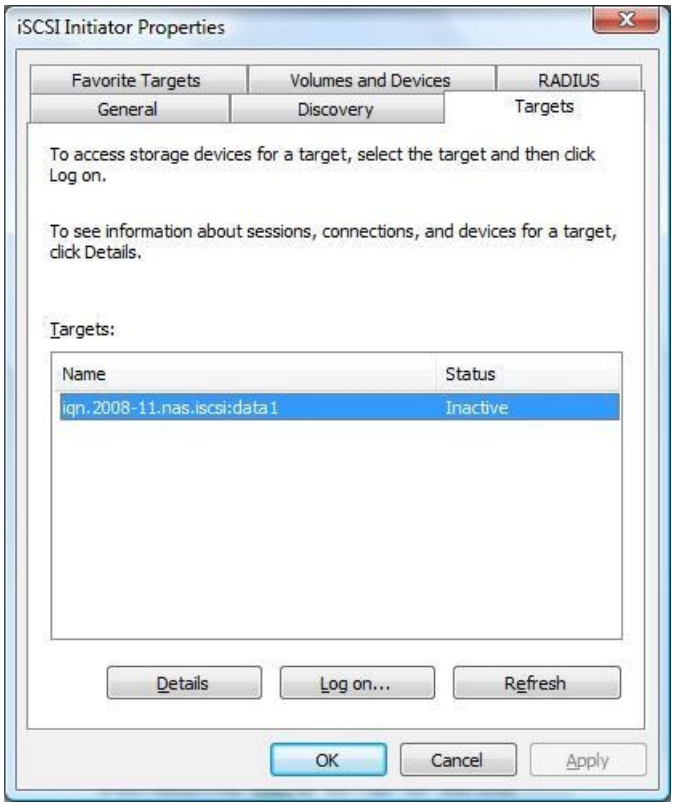
4. **Another warning message will be displayed. Select “Yes” to proceed.**

5. **A message will be displayed.**

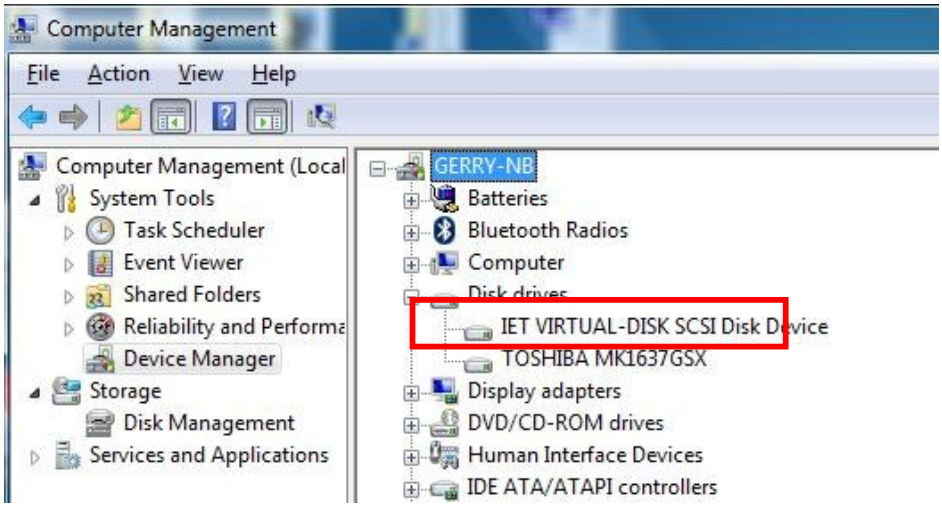
6. **The Volume iSCSI function is ready.**



7. **Connect to iSCSI Target Volume from host computer with iSCSI Initiator. Log on to target device. Use the account and password if set in iSCSI Configuration.**



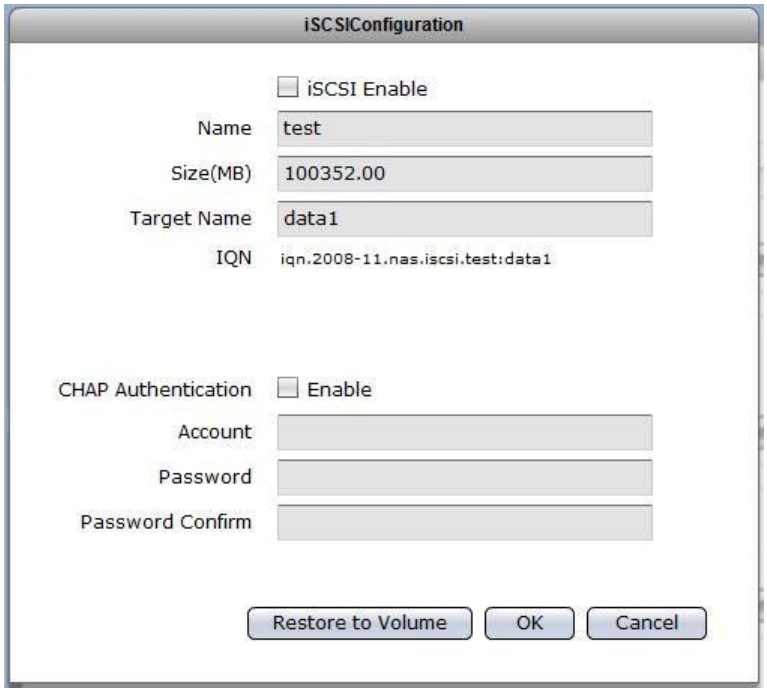
8. **After successful connection, the iSCSI device will be shown in Disk Drives list.**



3.1.2.6 Disable iSCSI Configuration in a Volume

Steps to Disable the iSCSI Configuration in a Volume:

1. **Select the Volume with iSCSI Configuration and click the "iSCSI" button. Remove the check mark on the "iSCSI Enable" box. Click "OK" when done.**



2. **A warning message will be displayed. Select "Yes" to proceed.**

3. **A message will be displayed.**

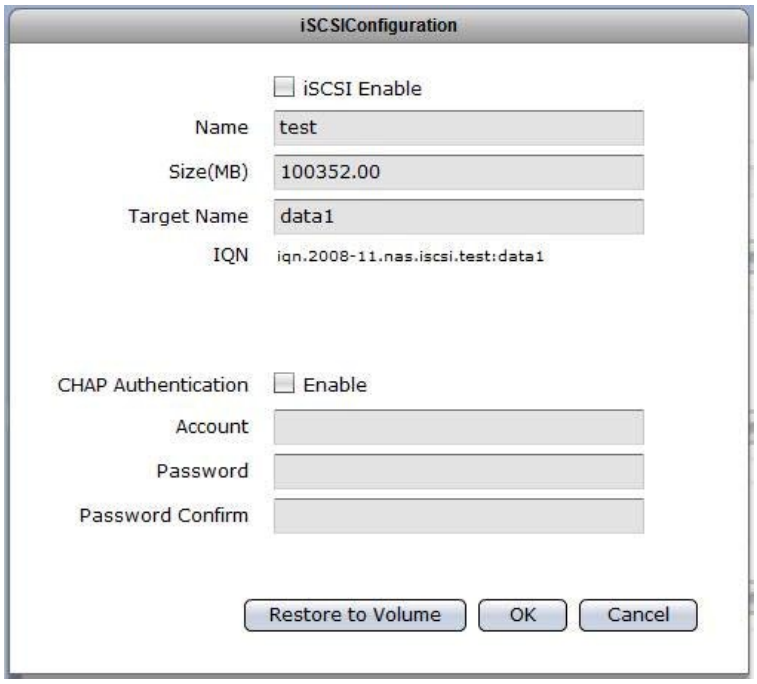
4. **The iSCSI function of the Volume will be disabled.**

3.1.2.7 Remove iSCSI Configuration and Restore to NAS Volume

Steps to Remove iSCSI Configuration and Restore to NAS Volume:

WARNING: When iSCSI Configuration is removed and volume is restored as basic NAS volume, all the data in the volume previously configured as iSCSI Target are deleted.

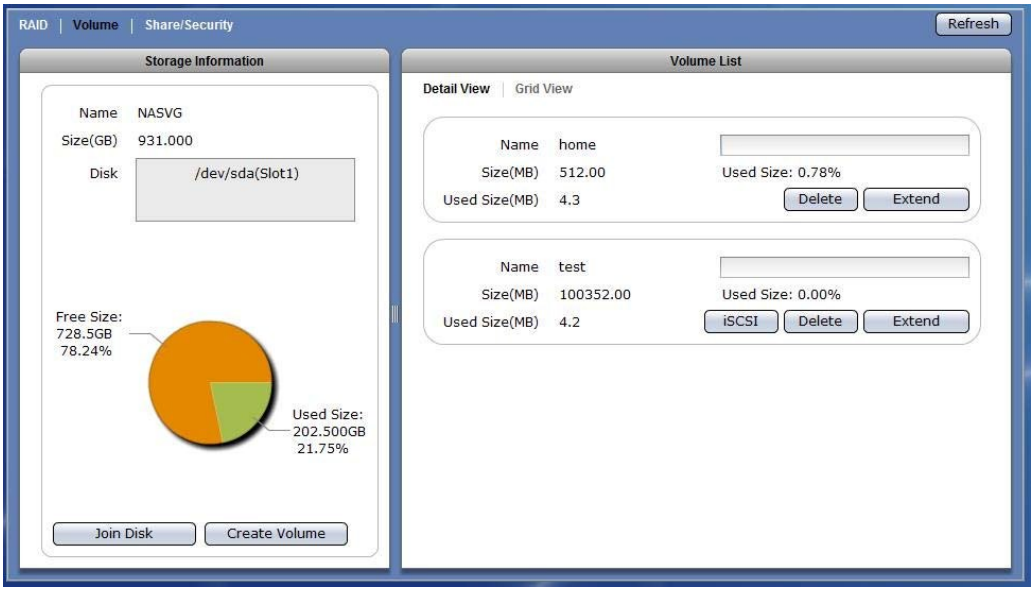
1. **Select the Volume with iSCSI Configuration and click the "iSCSI" button. Click the "Restore to Volume" button.**



2. **A warning message will be displayed.**

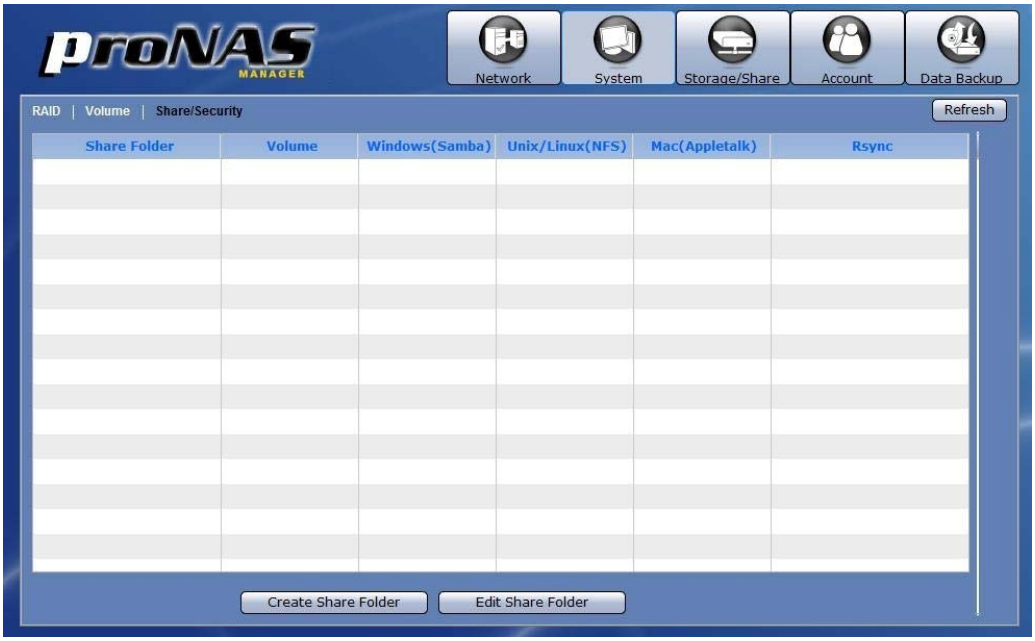
3. **A message will be displayed.**

4. **The iSCSI Configuration will be removed and the volume is restored as basic NAS volume.**



3.1.3 Share/Security

Click the Share/Security tab. The Share and Security Configuration window will be displayed.



Share/Security Information Screen:

Share Folder – Displays the share folder name.
Volume – Shows the volume name where the share was created.
Windows (Samba) – Shows the status if Samba / CIFS protocol is enabled (Yes) or not (No) in the share folder.
UNIX/Linux (NFS) – Shows the status if NFS protocol is enabled (Yes) or not (No) in the share folder.
Mac (AppleTalk) – Shows the status if AppleTalk protocol is enabled (Yes) or not (No) in the share folder.
Rsync – Shows the status if Rsync is enabled (Yes) or not (No) in the share folder.

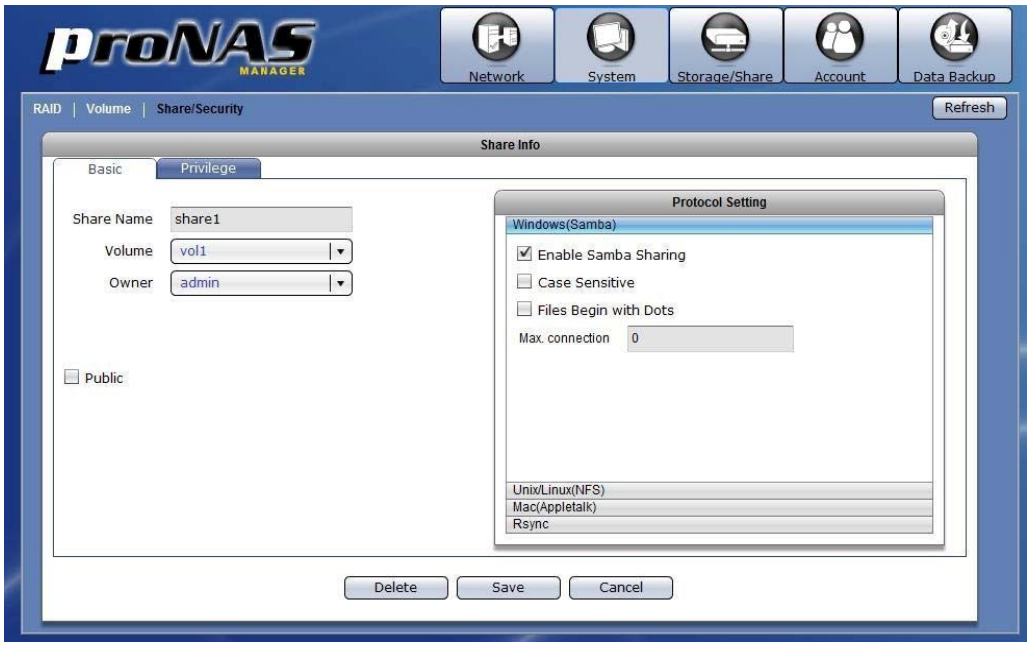
Share/Security Options:

Create Share Folder – Used to create a new share folder.
Edit Share Folder – Used to edit settings of an existing share folder.
Refresh – Used to update the information displayed in the screen.

3.1.3.1 Create New Share Folder

Steps to Create New Share Folder:

1. **Click "Create Share Folder".**
2. **The Share Folder Basic Configuration screen will be displayed. Configure the necessary options.**



Share Configuration Options:

Share Name – Enter the share folder name.

NOTE: The share folder name does not allow space in-between characters.

Volume – Select the Volume where the share folder will be created.

Owner – Set the owner of the share folder. By default, admin owns all share folders.

Public – When enabled (checked), the share folder is accessible to all users.

3. **In the Protocol Setting window, setup the Windows (Samba) protocol options.**

Windows (Samba) Configuration Options:

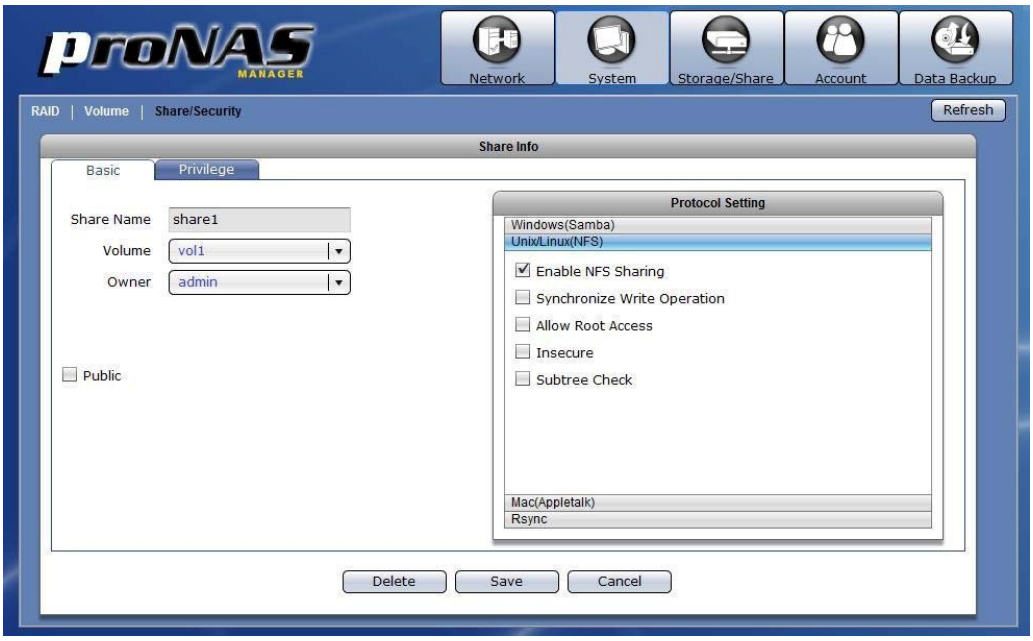
Enable Samba Sharing – Used to enable Samba protocol. When checked, the share folder can be accessed via Samba protocol.

Case Sensitive – This controls whether filenames are case sensitive or not. Default is disabled.

Files Begin with Dots – This controls whether files that begin with a dot will become hidden files. Default is disabled.

Max connection - This option limits the number of simultaneous connections at a certain time. A value of zero (default) means an unlimited number of connections will be possible in this share.

4. **Select "Unix/Linux(NFS)" option in Protocol Setting window. The NFS protocol configuration screen is displayed. If share will be accessed by UNIX/Linux clients, setup the necessary options.**



Unix/Linux (NFS) Configuration Options:

Enable NFS Sharing – Used to enable or disable NFS protocol. When enabled (checked), the share folder can be accessed via NFS protocol.

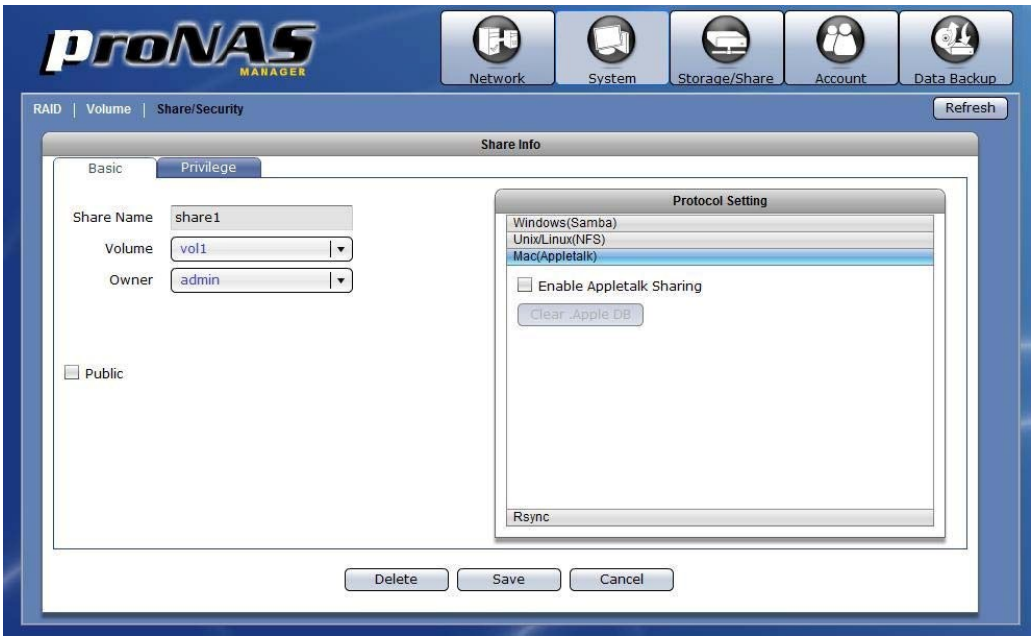
Synchronize Write Operation - Use this option to enable or disable write caching.

Allow Root Access – Use this option to allow or disallow access by root super-user account.

Insecure - This option provides higher security. If this option is enabled, only the ports under 1024 are allowed access to the share folder.

Subtree Check - Use this option to enable or disable subtree checking. A subtree check happens if a subdirectory of a filesystem is exported but the whole filesystem isn't, then whenever a NFS request arrives the server must check not only that the accessed file is in the appropriate filesystem (which is easy) but also that it is in the exported tree (which is harder).

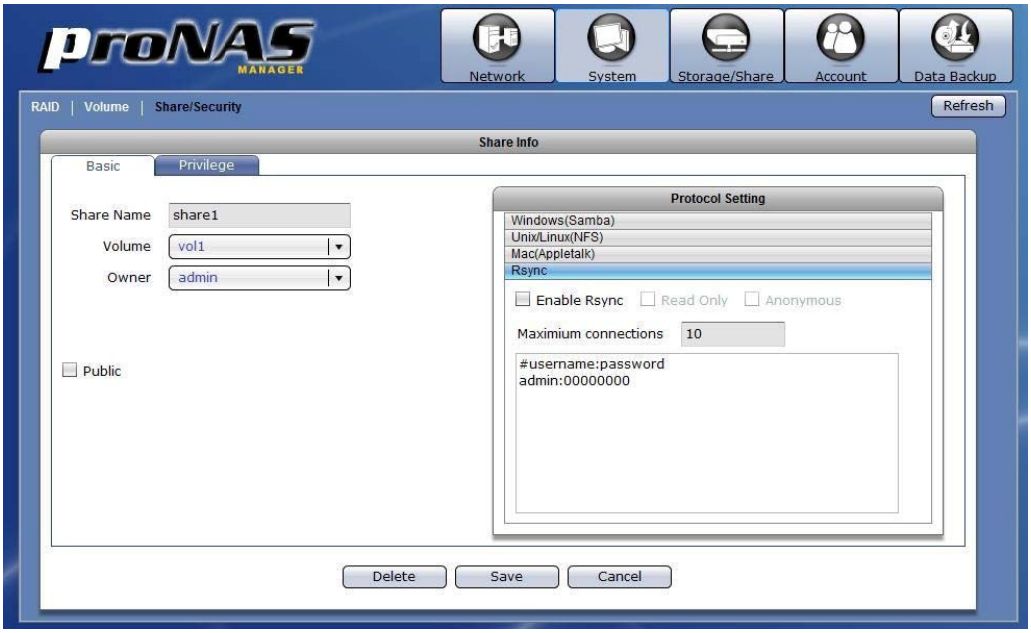
5. **Select "Mac(Appletalk)" option in Protocol Setting window. The AppleTalk protocol configuration screen is displayed. If share will be accessed by Mac clients, setup the necessary options.**



Mac (AppleTalk) Configuration Options:

Enable AppleTalk Sharing – Used to enable or disable AppleTalk protocol. When enabled, the share folder can be accessed via AppleTalk protocol.

6. **Select "Rsync" option in Protocol Setting window. The Rsync configuration screen is displayed. If share will be used for Rsync, setup the necessary options.**



Rsync Configuration Options:

Enable Rsync – Used to enable or disable Rsync Server function on this share folder. When enabled (checked), an Rsync client can connect to this share folder and upload or download files via Rsync.

Read Only - When checked, all files within this share will be read only to any Rsync client.

Anonymous – When checked, anonymous connections will be accepted.

Maximum connections - This specifies the maximum number of Rsync client that can connect to this share at a certain time.

#username:password – Use this option to edit Rsync account and password list. These accounts are the accounts that will be supplied by the Rsync client when connecting to this server.

7. Click "Save" when done. Then Share Folder will be created.

3.1.3.2 Assign Permission to Share

Steps to Assign User or Group Account Permission to the Share Folder:

NOTE: User or Group Accounts must have been created or NAS must have been joined to Windows AD or NIS domain.

1. **Select (highlight) the share folder then click "Edit Share Folder", or double-click the share folder name.**

2. **Select the Privilege tab. In the Account option, select the user accounts that will be given access permission to the share folder, then click ">>".The accounts will appear on the right screen. Set the Write and Quota(MB) options as needed.**

NOTE: Use the "<<" to remove an account from share folder privilege. Select the account then click "<<". The account will be removed from the right column.

Account Privilege Options:

Write – By default, this option is checked and the account is given Read and Write permission to the share folder. To assign Read-Only permission, remove the check mark.

Quota(MB) – This option is used to assign user account quota to the share folder. Default is zero and no quota.

3. **Click the Group option. Select the groups that will be given access permission to the share folder, then click ">>".The groups will appear on the right screen. Set the Write and Quota(MB) options as needed.**

NOTE: Use the "<<" to remove a group from share folder privilege. Select the group then click "<<". The group will be removed from the right column.

Group Privilege Options:

Write – By default, this option is checked and the group is given Read and Write permission to the share folder. To assign Read-Only permission, remove the check mark.

4. **Click the IP option. Set up the IP address or addresses that will be allowed connections to the share folder, then click ">>".The IP address will appear on the right screen.**

NOTE: This option allows setting certain range of hosts to have an access to the NAS. By default, NAS will accept connections from any host (*.*.*.*). To allow connections only from certain IP address, remove *.*.*.* then add the IP address/range. For example, add 192.168.100.*. This will only allow connections from your private network 192.168.100 and all other connection will be refused.

Note: To remove an IP address from share folder privilege, select the IP address then click "<<".

IP Privilege Setup Options:

Read – This option allows Read access from the specified IP address or address range.

Write –This option allows Write access from the specified IP address or address range.

IP Privilege Edit Option:

Write – By default, this option is checked and the IP address or range of IP address is given Read and Write permission to the share folder. To assign Read-Only permission, remove the check mark.

5. **Click "Save" when done. The permissions will be set in the share folder.**

3.1.3.3 Edit Share Folder

Steps to Edit Share Folder:

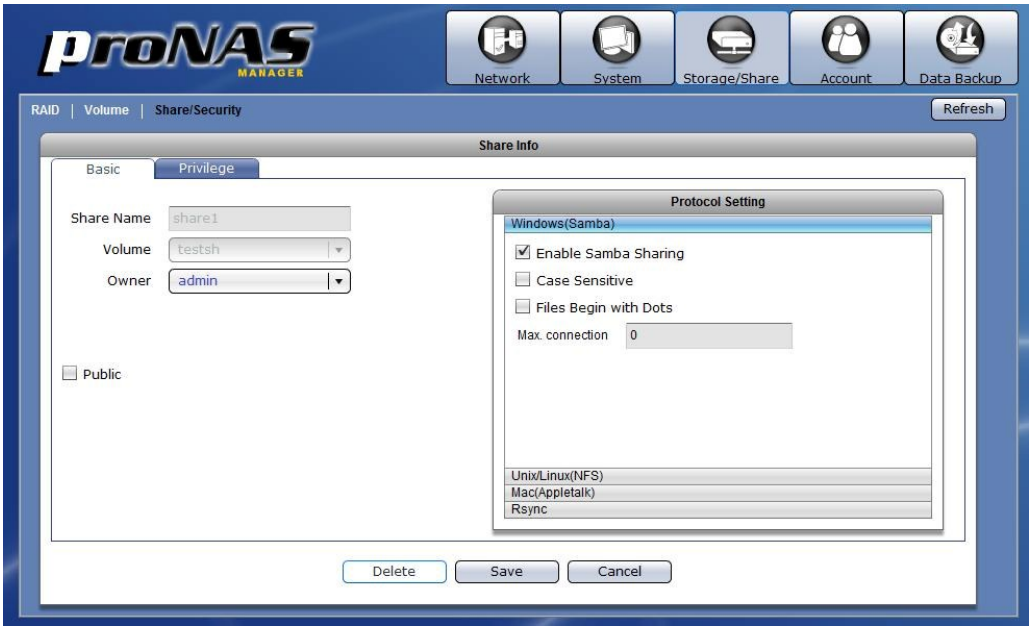
1. **Select the share folder name then click "Edit Share Folder".**
2. **Change the necessary options. Click "Save" when done.**

NOTE: The Share Name cannot be modified.

3.1.3.4 Delete Share Folder

Steps to Delete Share Folder:

1. **Select the share folder name then click “Edit Share Folder”.**



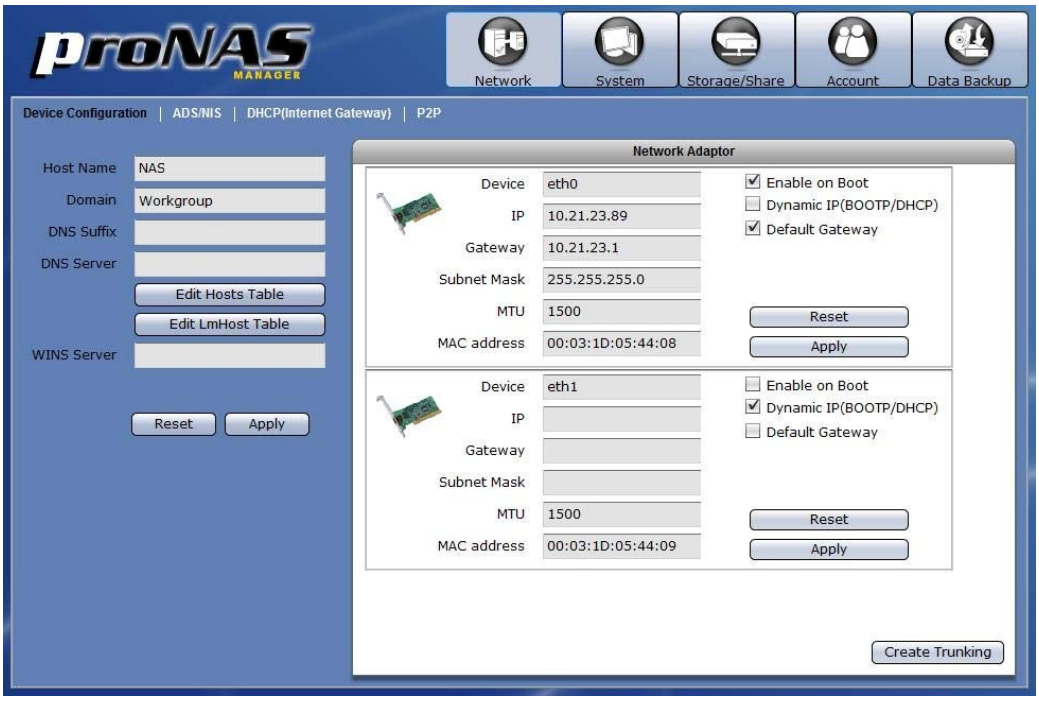
2. **Click “Delete”. A warning message will be displayed. Select “Yes” to proceed. The share folder will be deleted.**

WARNING! Be careful when using the “Delete” button. Make sure your data in the share is no longer needed or a backup has been made before deleting the share folder.

3.2 Network

3.2.1 Device Configuration

Click the Network icon to display the Network Device Configuration screen.



Device Configuration Options:

Host Name – The NetBIOS name of NAS. It should be unique.

Domain – Enter the Windows domain name or workgroup name. For example: MYDOMAIN. Default is "Workgroup".

DNS Suffix – The DNS suffix is the name appended to server name to complete the server's FQDN. For example: MYDOMAIN.LOCAL

DNS Server – Enter the DNS Server IP address. DNS server is responsible for mapping the machine name and IP address.

WINS Server – Enter the WINS Server IP address. WINS Server is responsible for the setting NetBIOS name resolution.

Edit Hosts Table - Use this button to edit machine name and IP address mapping in the Hosts table. This is optional.

Edit LmHost Table - Use this button to define the resolution of NetBIOS in the Lmhosts table. This is optional.

Reset – Use this button to undo or clear any changes made.

Apply – Use this button to save the changes made.

Network Adaptor Configuration Options:

Device – Shows the network device name. eth0 is the device name for LAN0 gigabit port.

IP - Shows the current IP address of the network device. Configure the IP address as necessary.

Gateway – Show the current IP address of the Gateway. To edit, enter the Gateway IP address.

Subnet Mask - Shows the current subnet mask setting. To edit, type in the new subnet mask number.

MTU - The MTU size (Maximum Transmission Unit) in bytes. To modify the MTU size for this interface, enter the new MTU size.

MAC address – Shows the MAC address of network device.

Enable on Boot - If enabled, this adapter will be active when proNAS starts up.

Dynamic IP (BOOTP/DHCP) - If checked, this specifies that this network device will dynamically obtain an IP address from a Dynamic Host Configuration Protocol (DHCP) server or from a Bootstrap Protocol (BOOTP) server.

Default Gateway - If checked, the default gateway will be enabled in this adapter. A default gateway is a local IP router that is used to forward packets to destination beyond the local network. Only one default gateway can be enabled in a certain time.

Reset – Use this button to undo or clear any changes made.

Apply – Use this button to save the changes made.

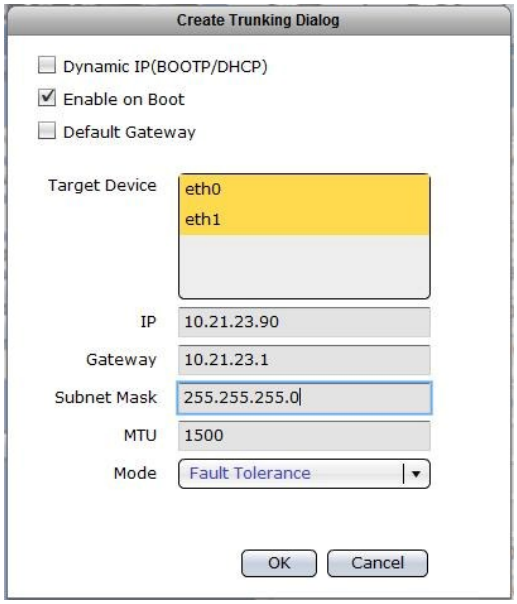
Create Trunking – Use this button to configure network trunking.

3.2.1.1 Configure Network Trunking

Steps to Configure Trunking Function:

NOTE: It is necessary that the network switch supports the type of trunking mode that will be used. Otherwise, the network connections may become unstable.

1. **In Network Æ Device Configuration screen, click "Create Trunking".**
2. **The Create Trunking Dialog window will be displayed. Configure the necessary options.**



Create Trunking Configuration Options:

Target Device – Shows the network device names that can be included in Trunking. To select, press the "Ctrl" key and at the same time click the network device names.

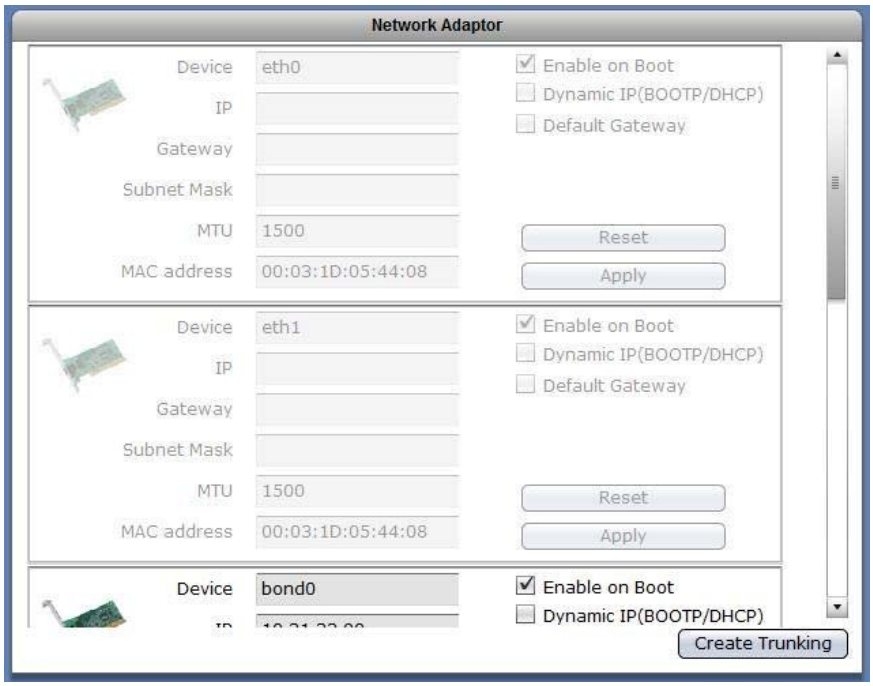
Mode – Select the Trunking Mode that will be used.

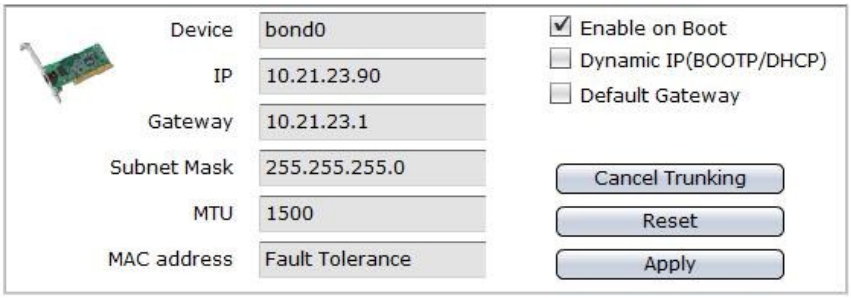
Trunking Mode Options:

- **Fault Tolerance – Active-Backup policy: If the active Ethernet port fails, the standby Ethernet port will become active. This enhances the availability of access to the NAS.**
- **Load Balance / Fault Tolerance - XOR policy: Transmit based on source MAC address XOR with destination MAC address. This selects the same slave for each destination MAC address. This mode provides load balance and fault tolerance.**
- **Dynamic Link Aggregation - 802.3ad policy: Combines multiple physical network links into a single logical link for increased performance. Transmits and receives on all slaves in the active aggregator. Pre-requisite: the network switch must support IEEE 802.3ad.**
- **Load Balance - ALB (Adaptive Load Balancing) policy: The receive load balancing is achieved by ARP negotiation and does not require special switch support.**

3. **Click “OK” when done. A warning message will be displayed. Click “Yes” to proceed.**

4. **The Trunking function is configured. The member network devices will be shown as deactivated and cannot be configured. A new network device name “bond0”, which is the Trunking device, will be shown.**

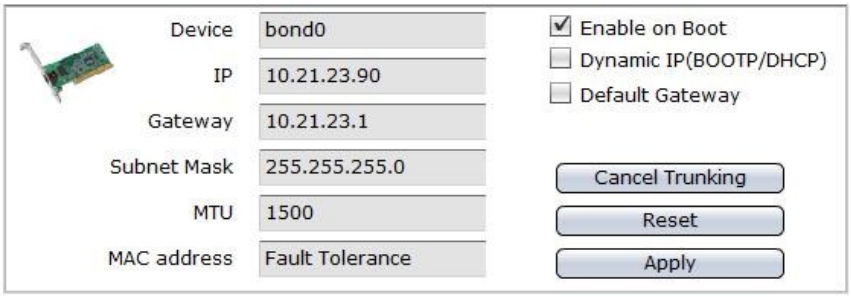




3.2.1.2 Cancel Network Trunking

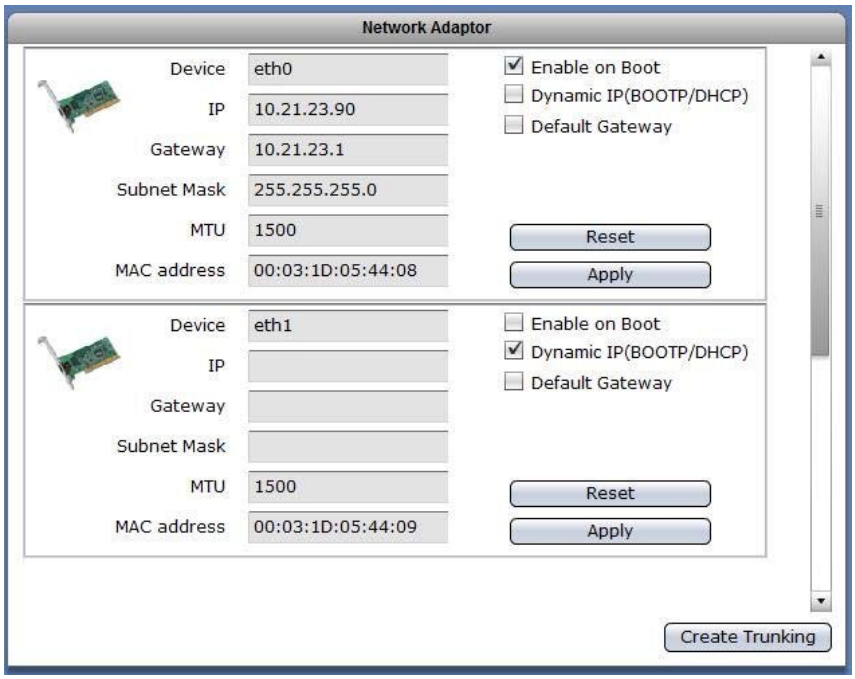
Steps to Cancel Trunking Function:

1. **Find the device name "bond0" then click "Cancel Trunking".**



2. **A warning message will be displayed. Click "Yes" to proceed.**

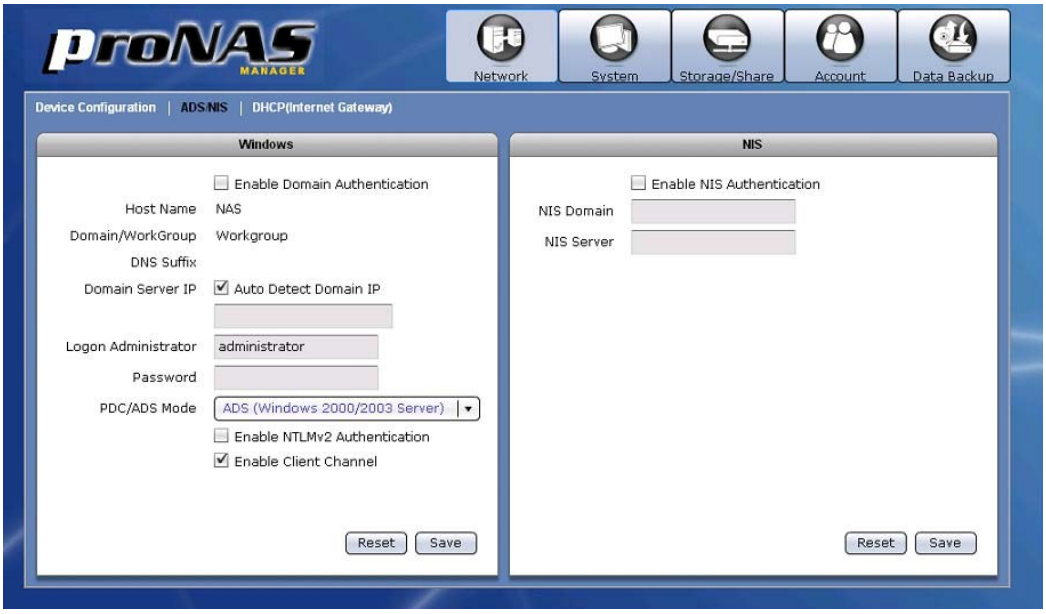
3. **The Trunking function will be cancelled. The network device eth0 will be automatically configured and get the IP address previously assigned to the Trunking device.**



3.2.2 ADS/NIS

Windows ADS/PDC or NIS domain accounts can be imported and integrated into the NAS.

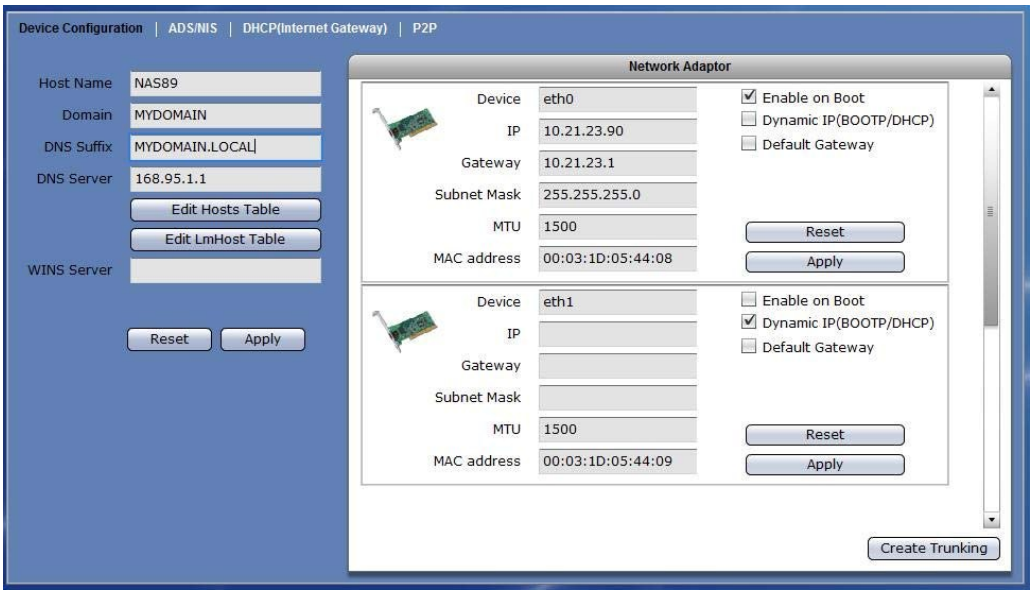
NOTE: Some network settings required in configuring the Windows Domain Authentication option must have been configured in Network Î Device Configuration, such as Domain/Workgroup name, DNS Suffix, and DNS Server.



3.2.2.1 Join NAS to Windows AD Domain

Steps to Join NAS in the Windows AD Domain:

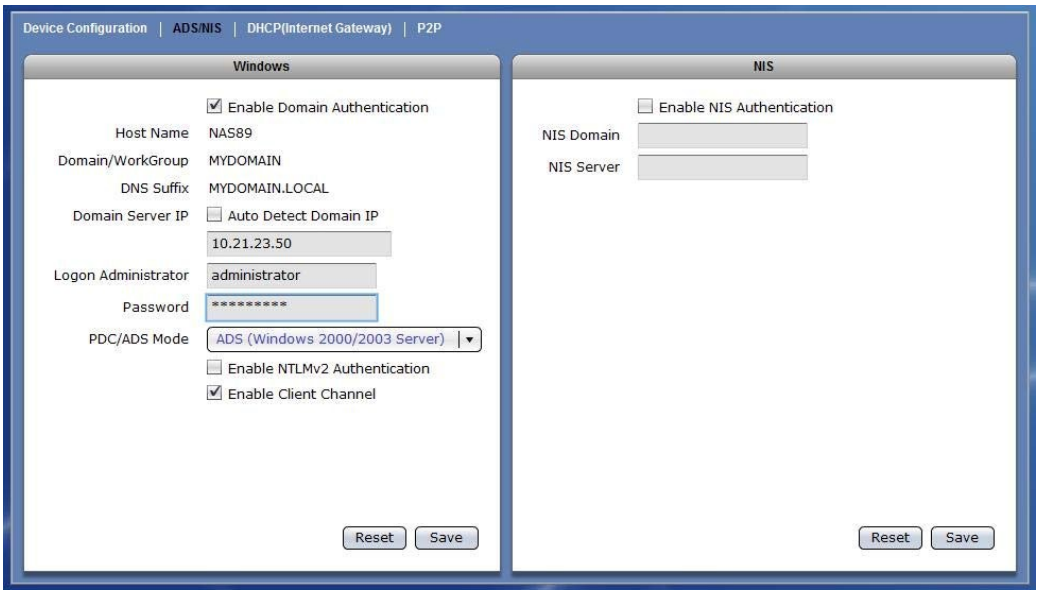
1. **Select Network Æ Device Configuration. Enter the Domain Name and DNS Suffix. A DNS Server IP can also be entered if necessary. Refer to Section 3.2.1 for the Device Configuration options.**



2. **A warning message will be displayed. Select "Yes" to apply new settings.**

3. **Select Network Æ ADS/NIS tab.**

4. **In Windows screen, check the "Enable Domain Authentication" option. Configure the necessary options.**
   a. **If Domain Server IP is automatically detected, the Domain Server IP will be displayed. If you want to join NAS to a specific Domain Server IP, remove the check mark in "Auto Detect Domain IP" and manually enter the Domain Server IP address.**
   b. **Enter the Domain Administrator account.**
   c. **Enter the Domain Administrator's password.**
   d. **Select the PDC/ADS mode.**



Windows Domain Authentication Options:

Enable Domain Authentication – Use this option to enable or disable Windows Domain Authentication.

Host Name – Indicates the NetBIOS name of NAS as configured in Network Æ Device Configuration tab.

Domain / Workgroup – Shows the domain/workgroup name as configured in Network Æ Device Configuration tab.

DNS Suffix – Shows the DNS Suffix as configured in Network Æ Device Configuration tab.

Domain Server IP – Shows the IP address of the domain server which is automatically detected when "Auto Detect Domain IP" option is enabled. If "Auto Detect Domain IP" option is disabled, manually type the domain server IP address.

Logon Administrator – Enter the administrator's logon account in the domain server.

Password – Enter the password of administrator's logon account in the domain server.

PDC / ADS Mode – Select the mode type of the domain server. This can be "ADS Windows 2000/2003 Server)" or "PDC (Windows NT Server)".

Enable NTLMv2 Authentication – This parameter determines whether or not smbclient will attempt to authenticate itself using the NTLMv2 encrypted password. If enabled, NAS will only sent NTLMv2 and LMv2 responses. NTLMv2 authentication protocol is available only on WindowsNT4 with SP4 and Windows 2000 or later. Default is disabled.

Enable Client Channel - This controls whether the client offers or even demands the use of the netlogon schannel. Default is auto, means it offers the schannel but does not enforce it.

Reset – Use this button to undo or clear any changes made.

Save – Use this button to save the changes made.

5. Click "Save" when done.

NOTE: When NAS is successfully joined to the Windows domain, the domain user accounts will appear in Account list.
NOTE: The NAS cannot be joined to the Windows domain if NASVG does not exist (NASVG is not yet initialized).

3.2.2.2 Join NAS to NIS Domain

Steps to Join NAS in the NIS Domain:

1. Select Network Æ ADS/NIS tab.
2. In NIS screen, check the "Enable NIS Authentication" option. Configure the necessary options.
   a. Enter the NIS Domain name.
   b. Enter the NIS Server IP address.
3. Click "Save" when done.

NIS Authentication Options:

Enable NIS Authentication – Use this option to enable or disable NIS Domain Authentication.

NIS Domain – Enter the NIS domain name.

NIS Server – Enter the IP Address of NIS server.

Reset – Use this button to undo or clear any changes made.

Save – Use this button to save the changes made.

NOTE: When NAS is successfully joined to the NIS domain, the domain user accounts will appear in Account list.
NOTE: The NAS cannot be joined to the NIS domain if NASVG does not exist (NASVG is not yet initialized).

3.2.3 DHCP (Internet Gateway)

NAS provides Internet gateway function for administrator to easily enable and disable the Internet access for users. This function integrates with DHCP service, routing and NAT.

DHCP (Internet Gateway) Options:

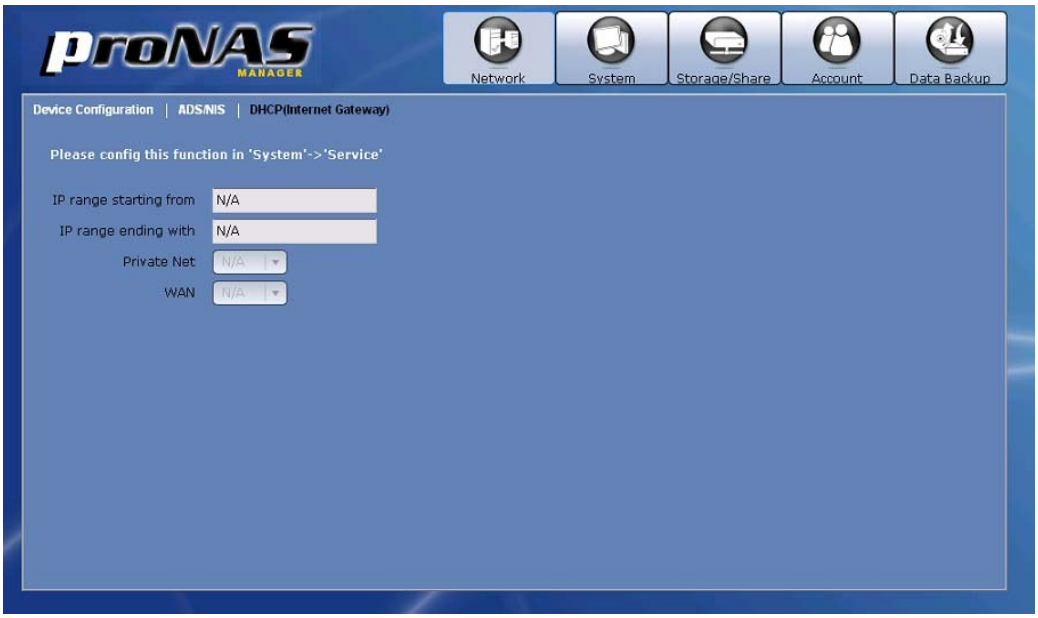
IP range starting from – Means the starting address of range of private IP addresses for DHCP.

IP range ending with – Means the ending address of range of private IP address for DHCP.

Private Net – The network device connected to the private network.

WAN – The network device connected to the Internet / WAN.

NOTE: This function must be configured in System Î Service tab. Select DHCP service.



3.2.4 P2P

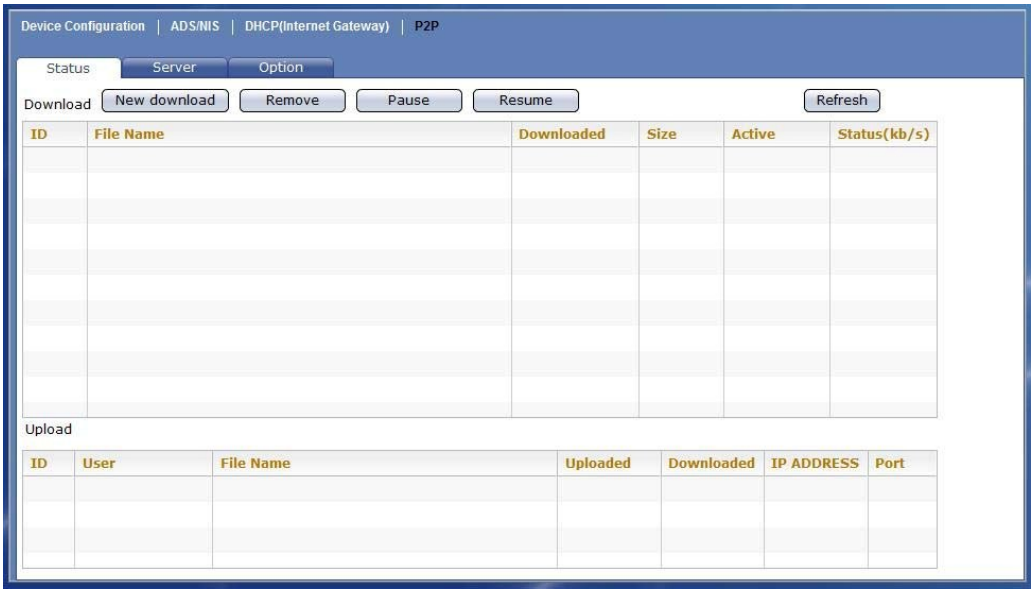
The NAS system supports P2P (peer-to-peer) file sharing protocol.

NOTE: Enable the P2P Service (System Î Service). Also setup the P2P Service 'Download file location' (System Î P2P Î Edit Î Quick Setup). Refer to Section 3.3.2 Service.

NOTE: DNS settings must be configured first before starting P2P service.

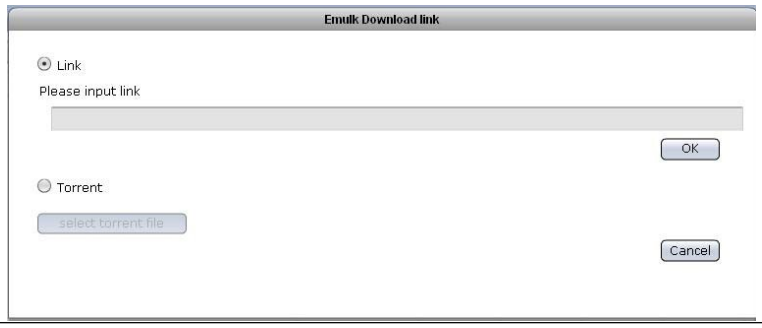
3.2.4.1 Status

This screen will show current download or upload connections.



Options:

New download – Use this button to add download item. Then select either download link or torrent file.



Remove – Use this button to remove a selected download item.
Pause – Use this to pause the downloading of selected item.
Resume – Use this to resume downloading of selected item.
Refresh – use this to refresh current download status.

3.2.4.2 Server

This screen allows connection to and disconnection from server.

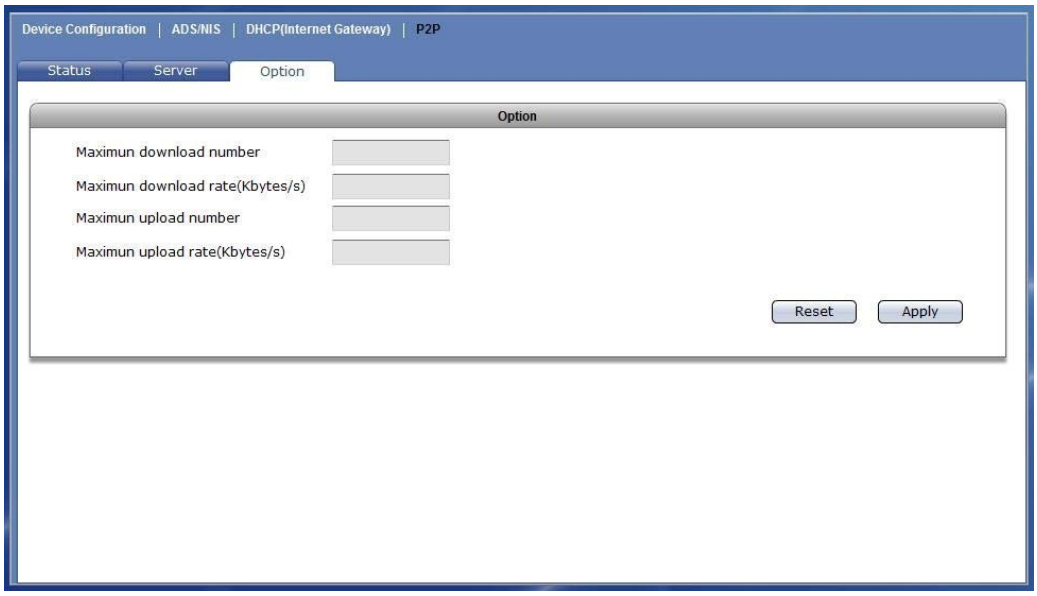
ID	Name	IP ADDRESS	Port	Total Users	Total Files	Status
1	Sharing Kingdom 2	89.248.172.50	4500	63552	10186603	IP blocked
2	TVU DonkeyServer No1 - Now On New Hardware	89.248.174.84	6543	145537	12865502	Connected
3	Sharing Kingdom 3	89.248.172.86	4500	76279	11289366	IP blocked
4	eDonkeyServer No1	77.247.178.244	4242	643283	93346168	Connected
5	Sharing Kingdom 1	89.248.172.54	4500	58944	10166785	IP blocked
6	!! Saugstube !!	81.171.125.8	4242	40921	4123419	N/A
7	Sharing Kingdom 4	89.248.172.90	4500	55711	8955159	IP blocked
8	no1.eserver.emule.org.cn	222.73.207.86	8080	69954	219940	IP blocked
9	eDonkeyServer No2	77.247.178.245	4242	283823	44038604	Connected
10	--- DonkeyServer NoX ---	91.121.1.37	4242	9447	3739197	IP blocked
11	www.UseNeXT.to	87.230.83.44	4661	185854	3067843	Connected
12	PEERATES.NET	88.191.81.111	1111	48484	9404	N/A
13	??P2P???	61.174.18.254	8080	324046	11385116	N/A
14	# eMule Serverlist Nr.3 # Russian	92.241.164.21	4242	25090	4700308	N/A
15	# eMule Serverlist Nr.1 #	81.171.35.10	4242	52348	7579383	N/A

Options:

Connect – Use this button to connect to a selected server.
Disconnect – Use this button to disconnect to a selected server.
Refresh – Use this to refresh current connection status.

3.2.4.3 Options

Use this screen to configure download options.



Options:

Maximum download number – Use this option to set the maximum number of download connections.

Maximum download rate – Use this option to set the maximum download transfer rate.

Maximum upload number – Use this option to set the maximum number of upload connections.

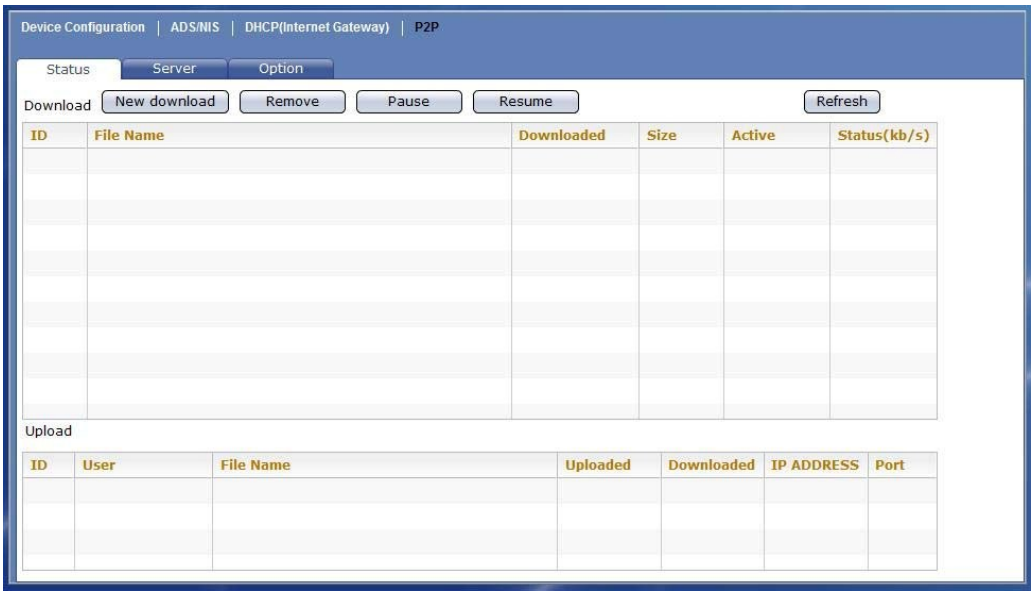
Maximum upload rate – Use this option to set the maximum upload transfer rate.

Reset – Use this button undo any changes made and load previously saved setting.

Apply – Use this button to save changes made.

3.2.4.4 Example of Download from Link and Torrent

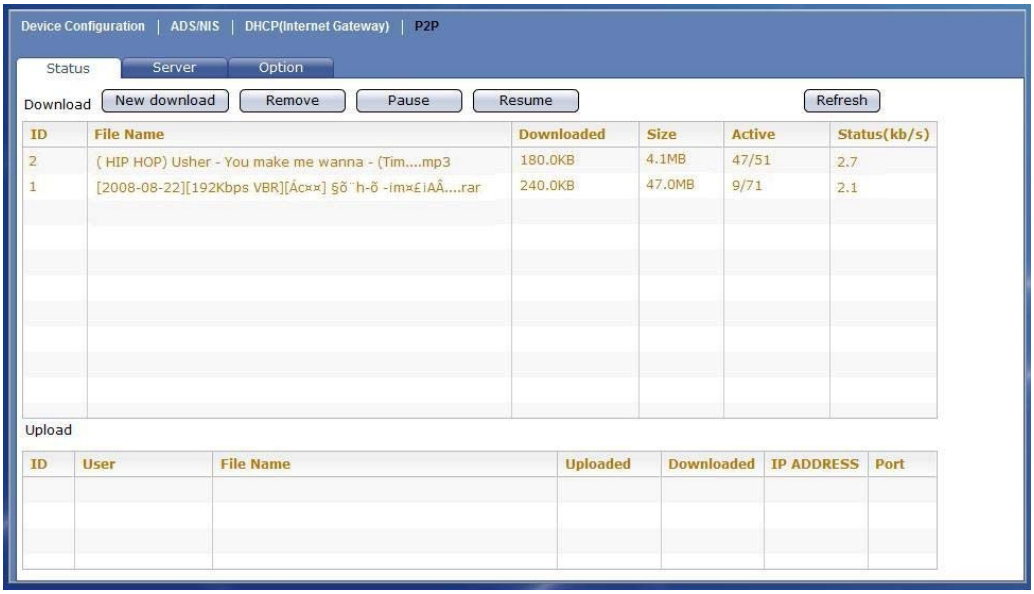
1. **Click “New download”.**



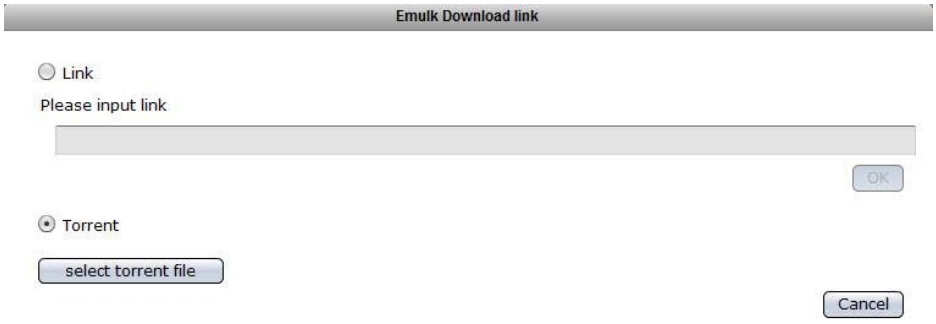
2. **To download using link, enter the download link or paste the link in the box provided. Click “OK”.**

3. **To download from another link, enter the link or paste the link in the box then click "OK".**

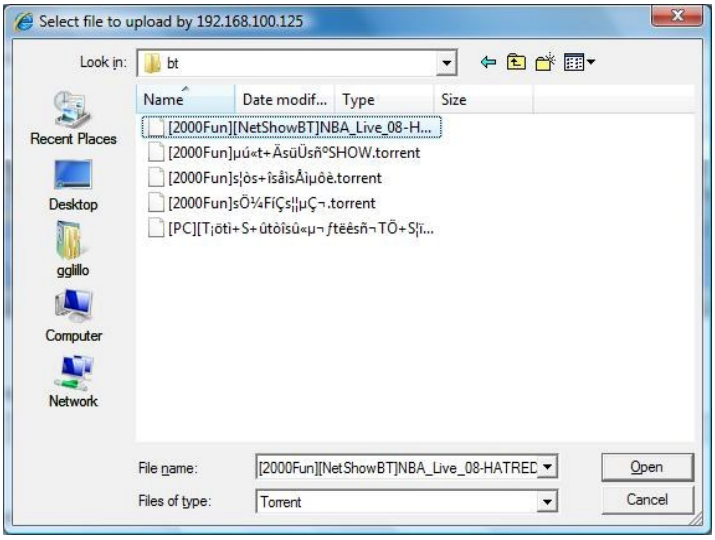
4. **Two items will be displayed under Download.**



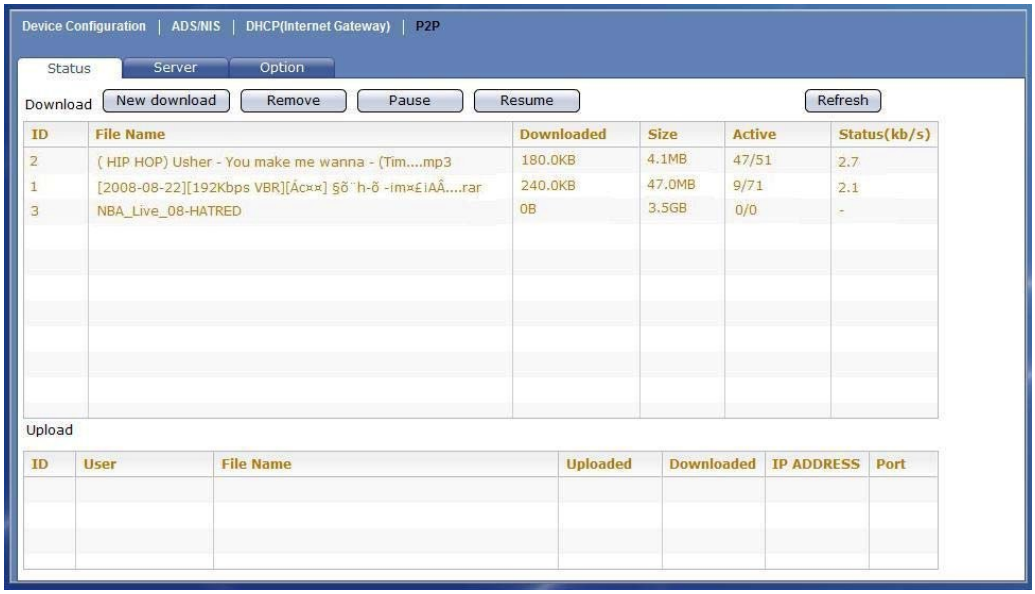
5. **To download using torrent, click "New download" then select "Torrent" option. Click "select torrent file".**



6. **Select the torrent file. Click “Open”.**



7. **The download item will be added in the Download list.**



8. **To remove an item, select the item and click “Remove”.**

9. **To pause downloading, select an item and click “Pause”.**

10. **To resume downloading, select a paused item then click “Resume”.**

3.3 System

The System function is used to configure different NAS system settings and services, such as: Service configurations, Date and Time Zone setting, Serial Port setting, NAS Firmware Upgrade, Reboot and Shutdown functions, Log Information, Event Notification via email, and various System Tools.

3.3.1 System Information

The System Information screen shows the following:

Host Name – Indicates the NetBIOS name of NAS as configured in Network Æ Device Configuration.
Domain / Workgroup – Shows the domain/workgroup name as configured in Network Æ Device Configuration.
Version – Shows the NAS firmware version.
Time – Shows the NAS system time and time zone.
Model – Shows the NAS system model.
CPU - Shows the NAS system processor type.
Memory (KB) – Shows the amount of NAS system memory (RAM) in KB.
Kernel Ver. – Shows the NAS kernel version.
Languages – Shows the language options available. Currently, only English and Chinese are supported.
Skin – Shows the color schemes available as skin color. Current options are: Black, Blue (default), and Green.
Enable Timeout – This is enabled by default. When there is no activity in the proNAS Manager GUI, admin will be automatically logged out after 15 minutes. To disable timeout, remove check mark in Enable Timeout.

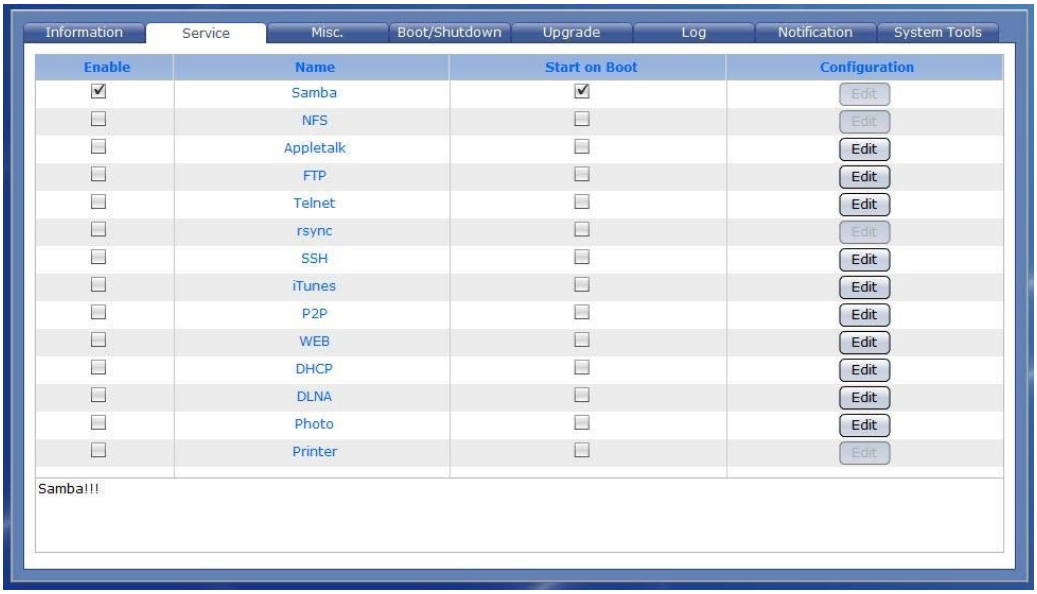
Device – Shows the device information such as Slot number, system fan, CPU fan, CPU temperature, and motherboard temperature.

Status – Shows the current status of each device, such as slot temperature, system fan and CPU fan speed in RPM, and CPU and motherboard temperature reading.

The System Information screen also shows the number of disk drives detected by the NAS system.

3.3.2 Service

The administrator can manage and enable/disable the various NAS system services. At the same time, some service can be configured in the Service tab.



Service Name:

Samba – Provides CIFS file sharing. MS Windows users need this service to access the NAS share folders.

NFS - Provides NFS file sharing. UNIX/Linux users need this to access the NAS share folders.

AppleTalk - Provides AppleTalk sharing, Mac OS users need this to access the NAS share folders.

FTP – Provides users with access to NAS using FTP.

Telnet – Provides users with access to NAS using Telnet.

Rsync - Provides Rsync Server process to which Rsync client connects. SSH – Provides remote management connection with more secure level. iTunes – Provides iTunes service to clients by setting a share folder as iTunes library.

P2P – Provides service for P2P (peer-to-peer) file sharing protocol.

WEB – Provides Web service with SSL option.

DHCP – Provides DHCP and Internet Gateway service to client computers in the network. A range of private IP address can access the internet or WAN.

DLNA – Provides DLNA service to DLNA-capable clients such as Sony PS3. When share folder is set as DLNA library, the share folder is accessible from the DLNA client.
Note: Currently only MPEG and AVI files and VOD services are supported.

Photo – Provides service for photo/image archive/album/gallery.

Printer – NAS supports HP Deskjet F4280 printer. Enable this service. Connect USB cable from printer to USB port of NAS.

Service Options:

Enable – Allows you to enable/disable the selected service.
NOTE: You cannot enable a selected service if VG does not exist (NASVG is not yet initialized).

Name – Shows the service name.

Start on Boot – Allows the service to auto-start when the NAS starts.

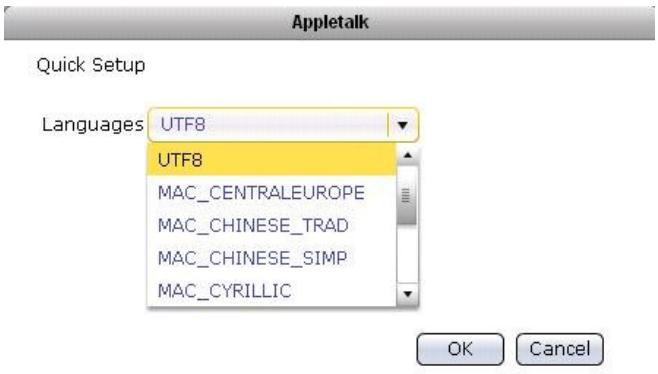
Configuration – This contains basic configuration options which can be set by clicking the "Edit" button.

Edit – Click this button to configure the service.

Configuration:

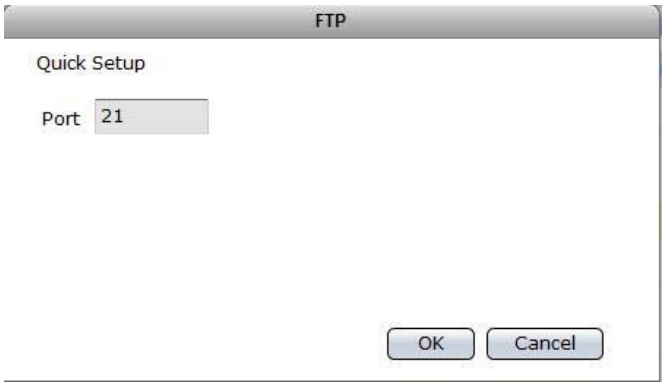
AppleTalk Option:

Languages – Select the AppleTalk Language option.



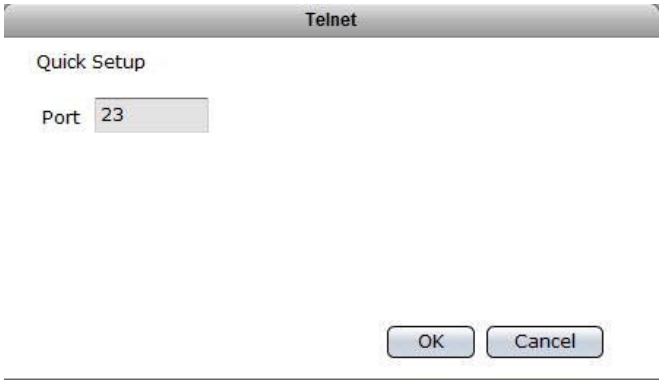
FTP Option:

Port – Use this option to set the FTP port number. Default FTP port used by the NAS is 21.



Telnet Option:

Port – Use this option to set the Telnet port number. Default Telnet port used by the NAS is 23.



SSH Option:

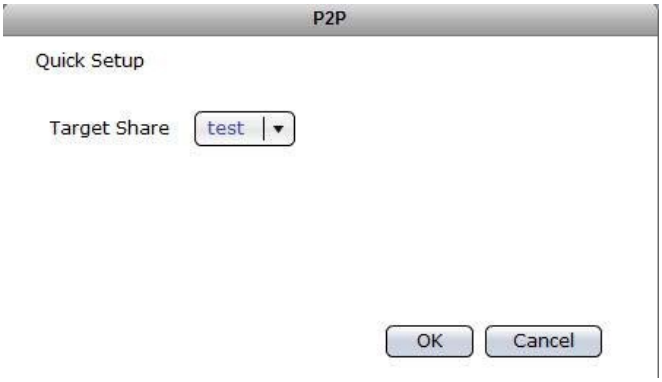
Enable sftp – Use this option to enable or disable SFTP in SSH. SFTP (Secure FTP) provides secure file transfer.

iTunes Option:

Set Share as iTunes Library – Select the share folder name that will be used as iTunes library from the list.

P2P Option:

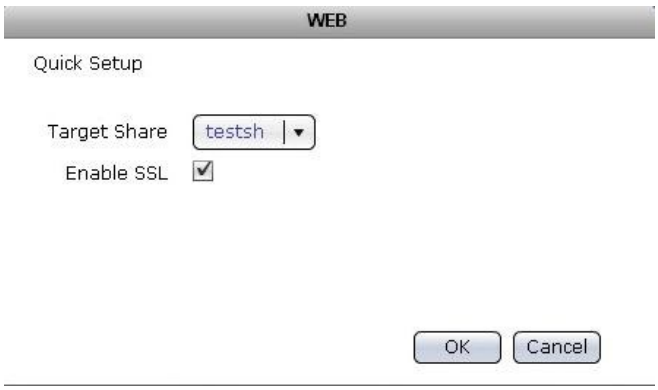
Target Share – Select the share folder name that will be used as download location.



WEB Options:

Target Share – Select the share folder name that will be used as target location.

Enable SSL – Tick the box to enable SSL option.



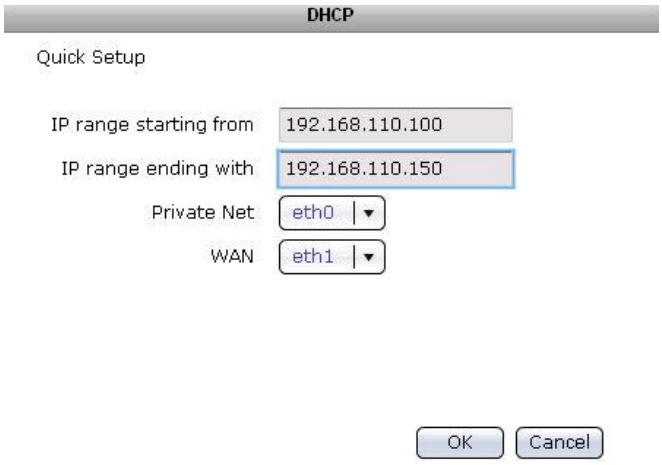
DHCP Options:

IP range starting from – Means the starting address of range of private IP addresses for DHCP.

IP range ending with – Means the ending address of range of private IP addresses for DHCP.

Private Net – The network device connected to the private network. For example: eth0

WAN – The network device connected to the Internet / WAN. For example: eth1



DLNA Options:

Target Share – Select the share folder where DLNA service will be enabled.

Please select LAN device – Select the network device for use with DLNA service.

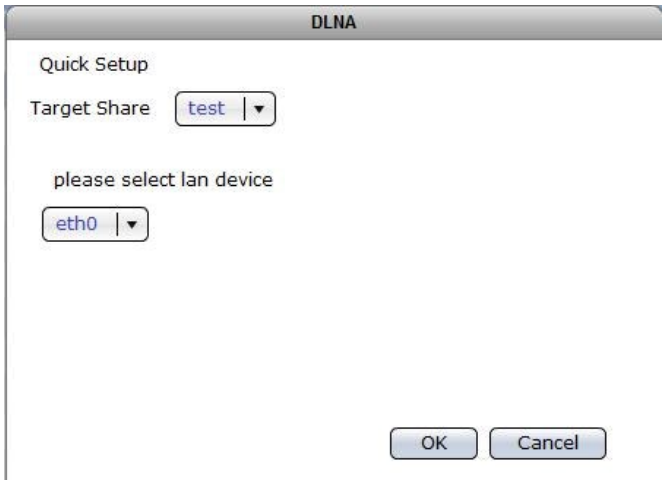
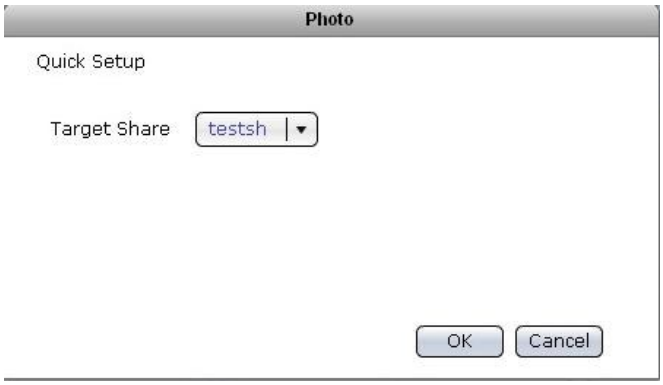


Photo Options:

Target Share – Select the share folder that will be used as target location of photo/images.

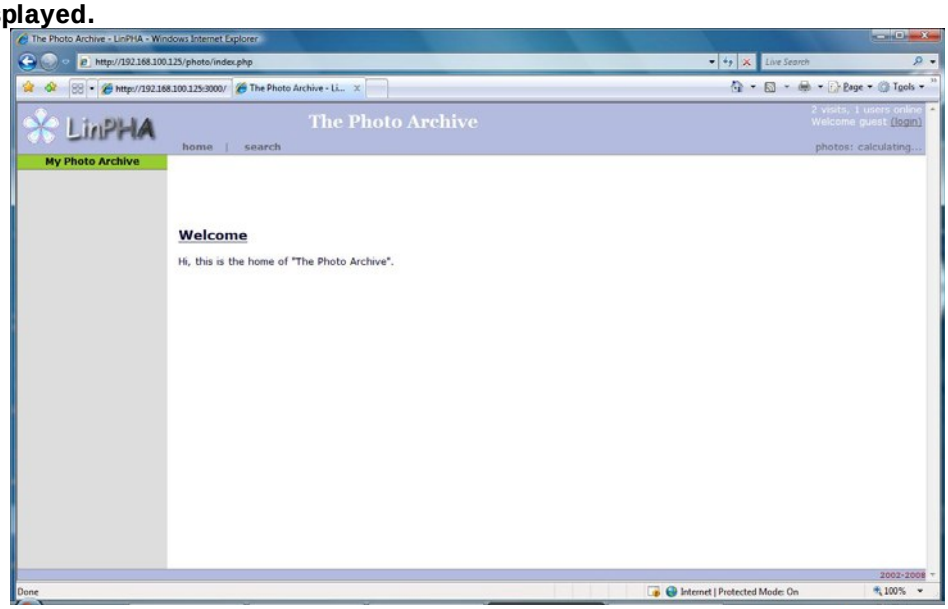


3.3.2.1 Photo

To use the Photo service:

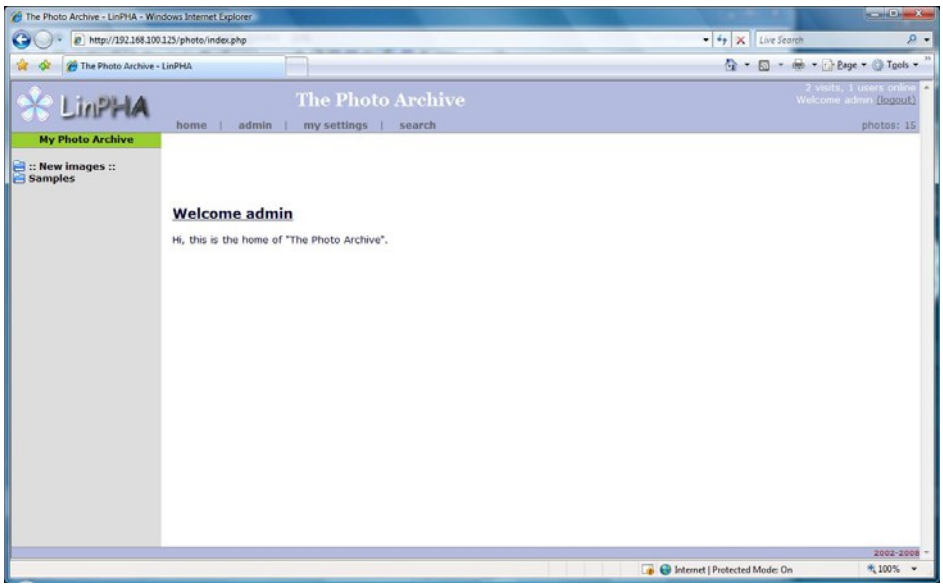
1. **Enable the Photo Service, if not yet enabled, by selecting Photo service in System Æ Service tab. Click "Edit" and select the target share. Enable the Photo service by selecting the "Enable" check box on the left of the service name.**

2. **Open web browser and type http://xxx.xxx.xxx.xxx/photo/ where xxx.xxx.xxx.xxx is the NAS IP address. The LinPHA Photo Archive page will be displayed.**

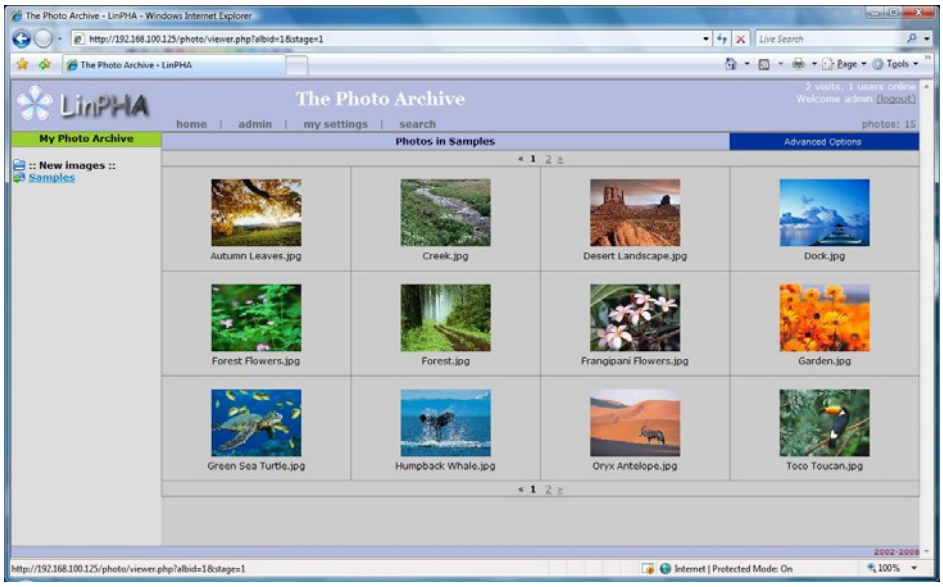


3. **Click the "login" link in the upper right side then login as admin and enter admin's password.**

4. **The Photo Archive home page will be displayed.**

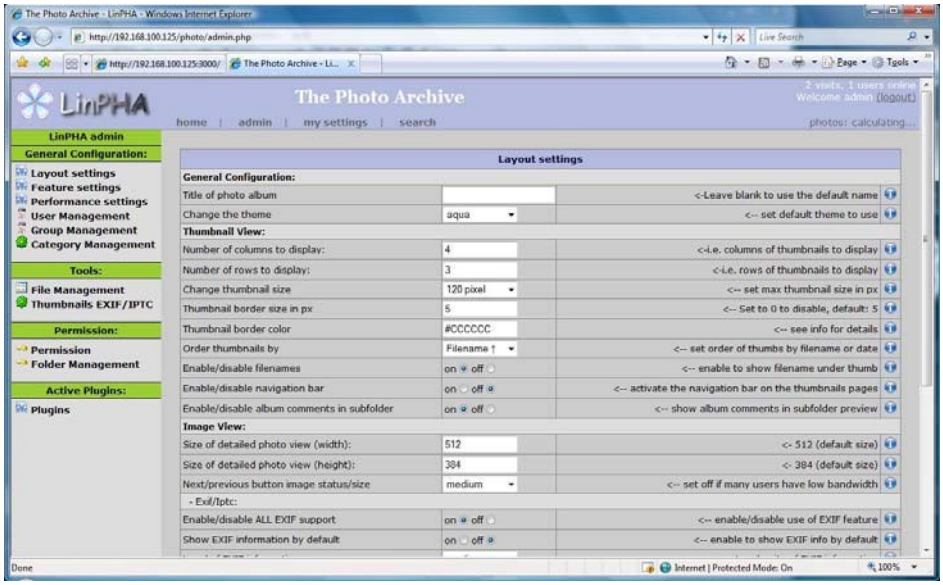


5. **To view photos and images, select the folder links under "My Photo Archive".**

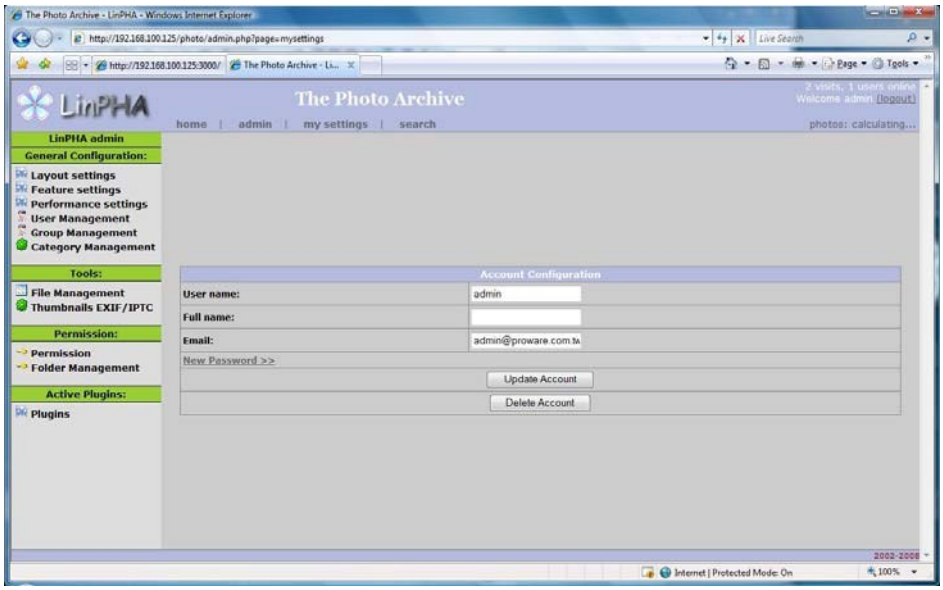


NOTE: The picture files must be saved in the NAS share designated as target location of Photo service and must be inside a subfolder. For example: share1\Photo\Samples, where share1 is the share name, Photo is the folder created by Photo service, and Samples is the subfolder containing photos or images.

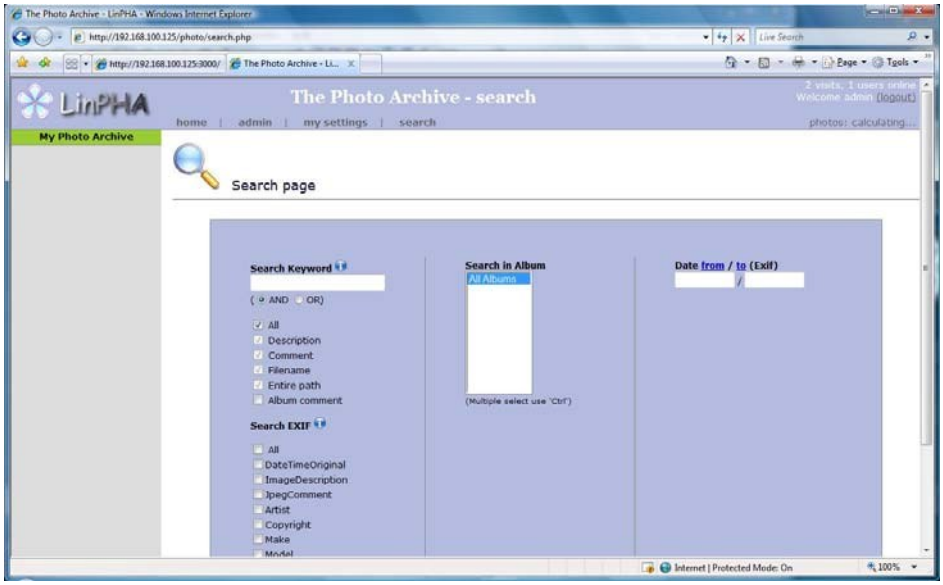
6. **Select the “admin” tab to configure settings and options.**



7. **Select “my settings” to configure account details.**



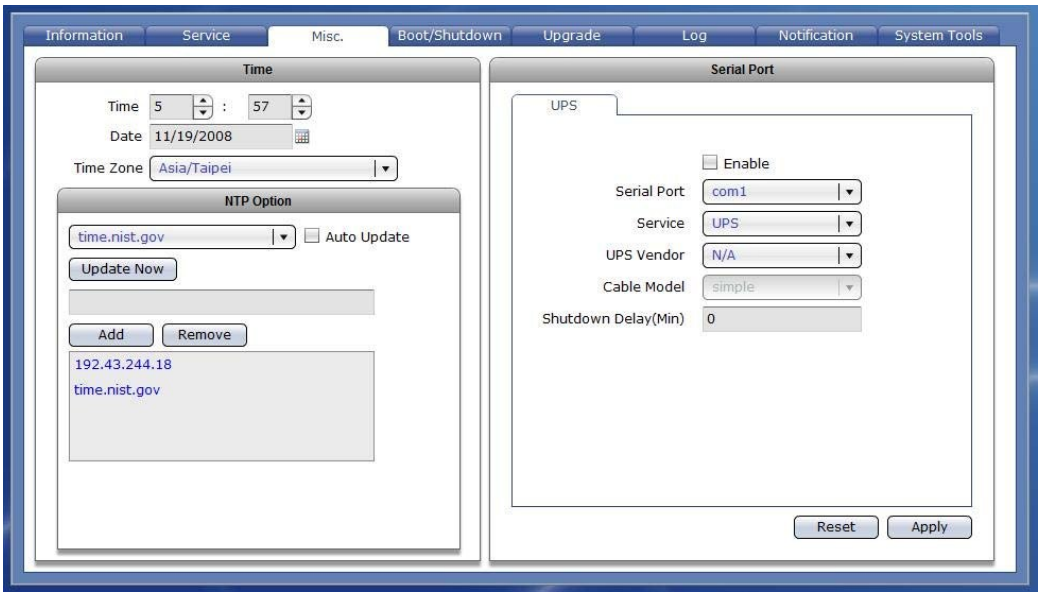
8. **Select “search” tab for search options.**



9. **Click the “logout” link to logout.**

3.3.3 Miscellaneous (Time and Serial Port)

The system time, date, time zone, NTP option, and Serial ports can be configured here.



Time

To set Time, press up/down arrow in the hour and seconds boxes. To set Date, click the calendar icon on the right side and select the preferred date. To set Time Zone, click the down arrow and select the preferred time zone.

NTP Option

To select the NTP server, click the down arrow and select the preferred NTP server.

To immediately synchronize the system time from NTP server, press the "Update Now" button. To enable automatic update of system time from NTP server, check the "Auto Update" option.

Update Now – Use this button to manually update the system time and synchronize from NTP server.
Auto Update – Check this option to enable automatic update of system time from NTP server.
Add – Use this button to add an NTP server. Enter the NTP server IP address in the box provided then click this button.
Remove – Use this button to remove an NTP server. Select the NTP server from the list then click this button.
Reset – Use this button to undo or clear any changes made. (Reset button is located in Serial Port screen)
Apply – Use this button to save the changes made. (Apply button is located in Serial Port screen)

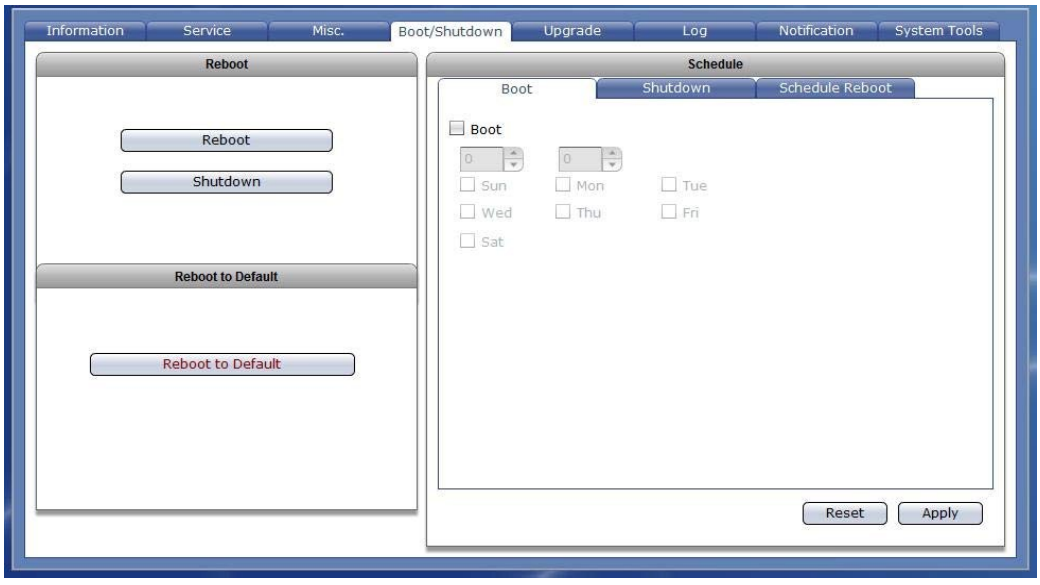
Serial Port

UPS

Enable – Use the option to enable or disable UPS support for serial port.
Serial Port – Use this option to select serial port option (com1 or USB).
Note: In NAS models with com2 serial port, com2 is reserved for SES use.
Service – Use this option to select the type of UPS, whether UPS (smart) or Dumb UPS.
UPS Vendor – Use this option to select the UPS vendor. Currently, only APC and Beam-Tech UPS models are supported.
Cable Model – Use this option to select the UPS cable type. Options are: simple, smart, ether, and usb.
Shutdown Delay (Min) – Use this option to set the delay time in minutes before UPS shutdown.
Reset – Use this button to undo or clear any changes made.
Apply – Use this button to save the changes made.

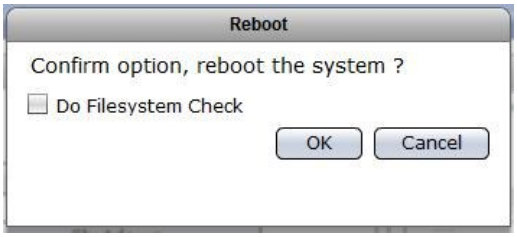
3.3.4 Boot/Shutdown

The NAS can be restarted or shutdown manually or based on schedule.



Reboot:

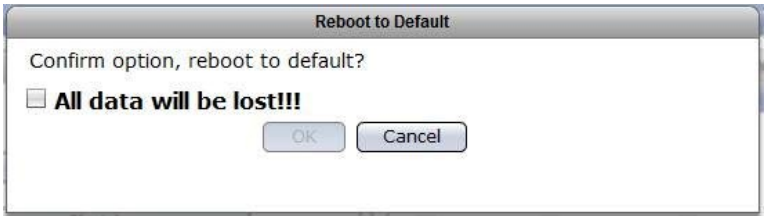
Reboot – Use the button to immediately reboot the NAS. If needed, you can also enable "Do Filesystem Check" option to perform filesystem check after reboot.



Shutdown – Use this button to immediately shutdown the NAS. When a warning message is displayed, select "Yes" to shutdown the system.

Reboot to Default:

Reboot to Default – Use this button to reboot the NAS and restore to default configuration.



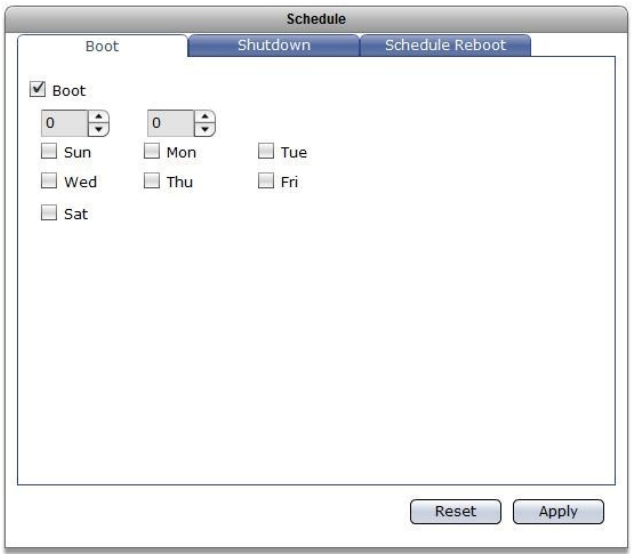
WARNING! Use the "Reboot to Default" function with care. Resetting the NAS to default configuration will delete the current NAS settings and erase all existing data.

Schedule:

Use the options here to boot, shutdown, or reboot the NAS based on schedule.

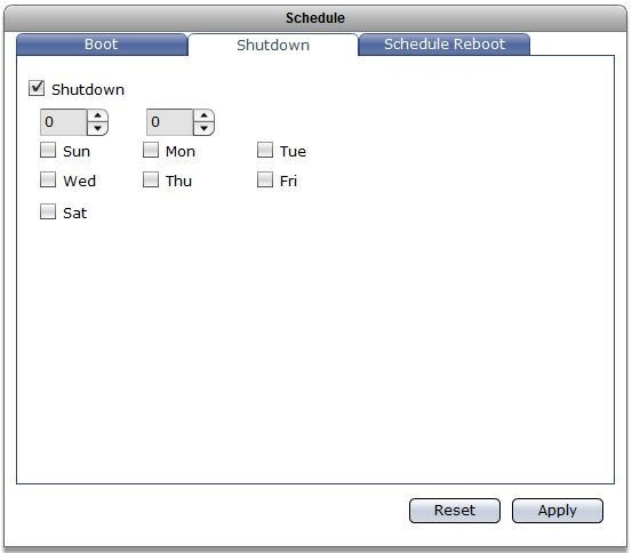
Boot

Boot – Use the button to enable or disable scheduled boot of NAS.
Set the time (hour and minutes) in the up/down arrow boxes.
Select the day or days when the scheduled boot will happen.



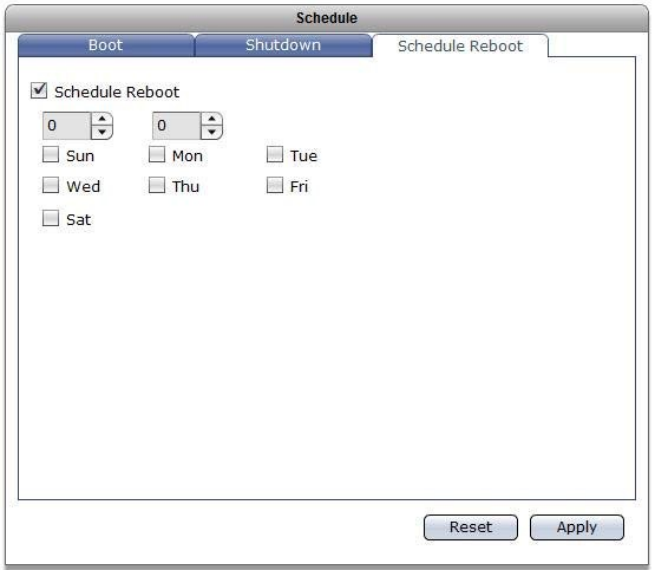
Shutdown

Shutdown – Use the button to enable or disable scheduled shutdown of NAS.
Set the time (hour and minutes) in the up/down arrow boxes.
Select the day or days when the scheduled shutdown will happen.



Schedule Reboot

Schedule Reboot – Use the button to enable or disable scheduled reboot of NAS.
Set the time (hour and minutes) in the up/down arrow boxes.
Select the day or days when the scheduled reboot will happen.



Reset – Use this button to undo or clear any changes made.
Apply – Use this button to save the changes made.

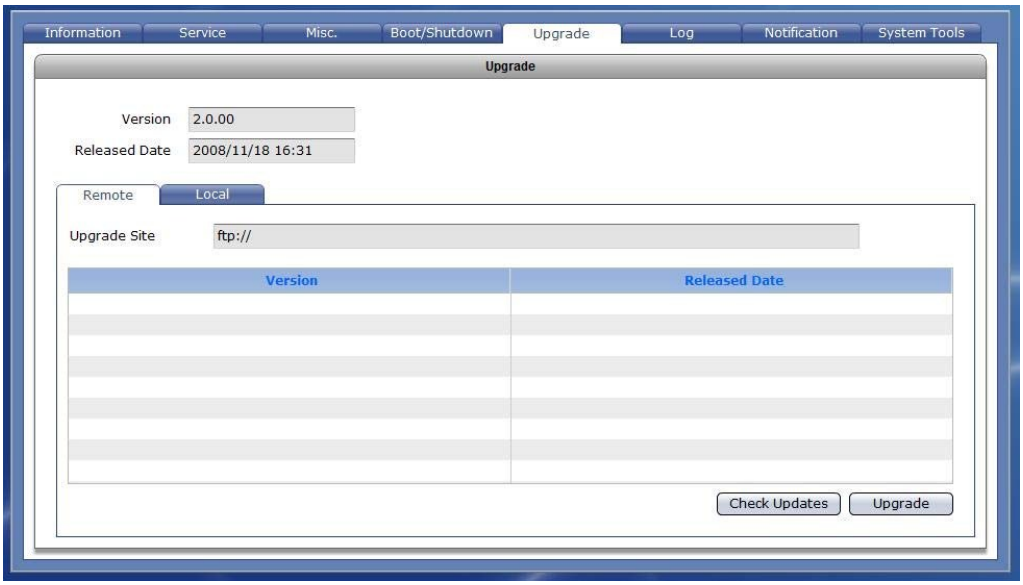
3.3.5 Upgrade

The NAS firmware can be upgraded remotely from FTP server or manually from local directory.

3.3.5.1 Remote Upgrade

Remote

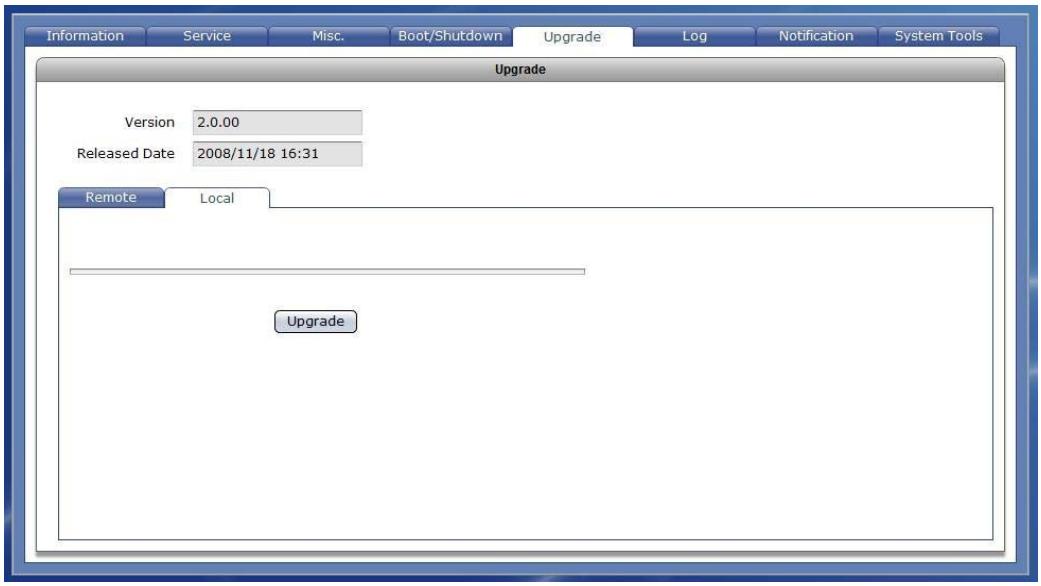
To upgrade remotely, press the "Check Updates" button. The available NAS firmware version will be listed. Select the firmware version then click the "Upgrade" button. The NAS firmware version will be updated. NAS will restart to load the updates.



3.3.5.2 Local Upgrade

Local

To upgrade locally, the NAS firmware must have been downloaded from vendor's FTP site and saved into local directory. Click the "Upgrade" button, select the NAS upgrade file (tar file), and click Open. The NAS firmware version will be updated. NAS will restart to load the updates.



3.3.6 Log

NAS logs can be viewed in this tab.

Log Options:

Date – Shows the date and time when the particular log happened. Use the down arrow to select the day or days that will be used to display the log. Options are: Today, Past 7 Days, Past 14 Days, Past 30 Days, and All.

Type – Shows the type of log. Use the down arrow to select the type of log to display. Options are: All, System, Storage, Share, and Account.

Level – Shows the log level. Use the down arrow to select the level of log to display. Options are: All, DEBUG, INFO, WARN, and ERROR.

Message – Shows information about the log.

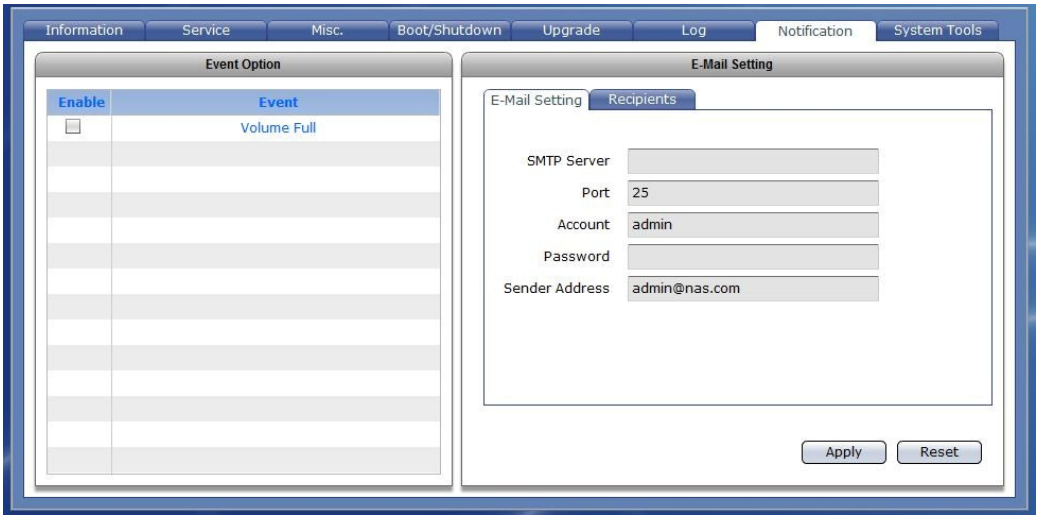
Export – Use this button to save the log file to local directory. The log file must be given ".zip" or ".tar" extension name.

Refresh – Use this button to update the log information displayed.

3.3.7 Notification

3.3.7.1 Event Option

Use this function to enable event notification via email.



Event Option

Enable - Check the event that will be included in list of events that will be monitored. Once the selected event happened, the email recipient(s) will receive a notification mail.

3.3.7.2 Email Setting

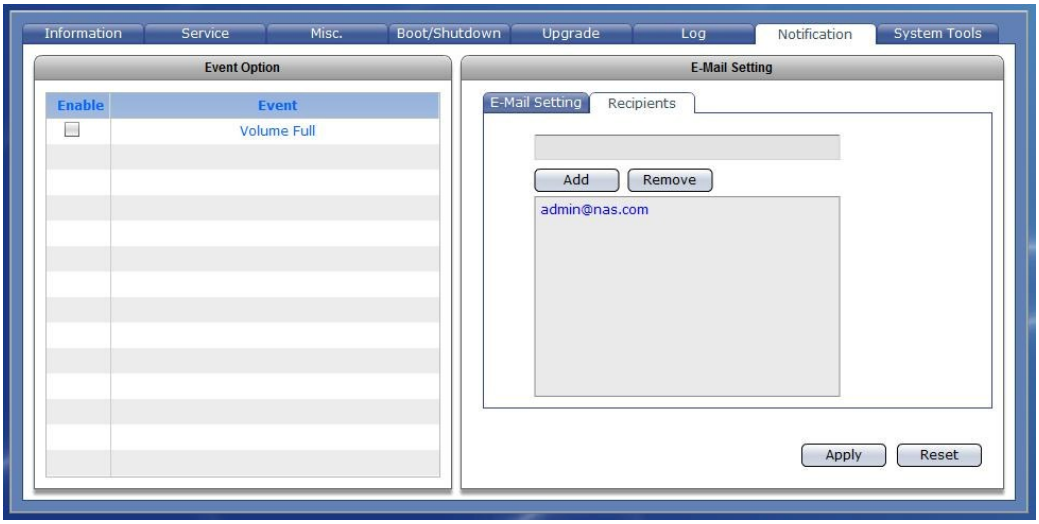
Email Setting Options:

SMTP Server – Use this option to enter the SMTP server IP address.
Port – Use this option to set the SMTP port number. Default is port 25.
Account – Use this option to enter a valid email account in the SMTP server.
Password – Use this option to enter the password of the email account.
Sender Address – Use this option to specify the sender's email address.

Recipients Options:

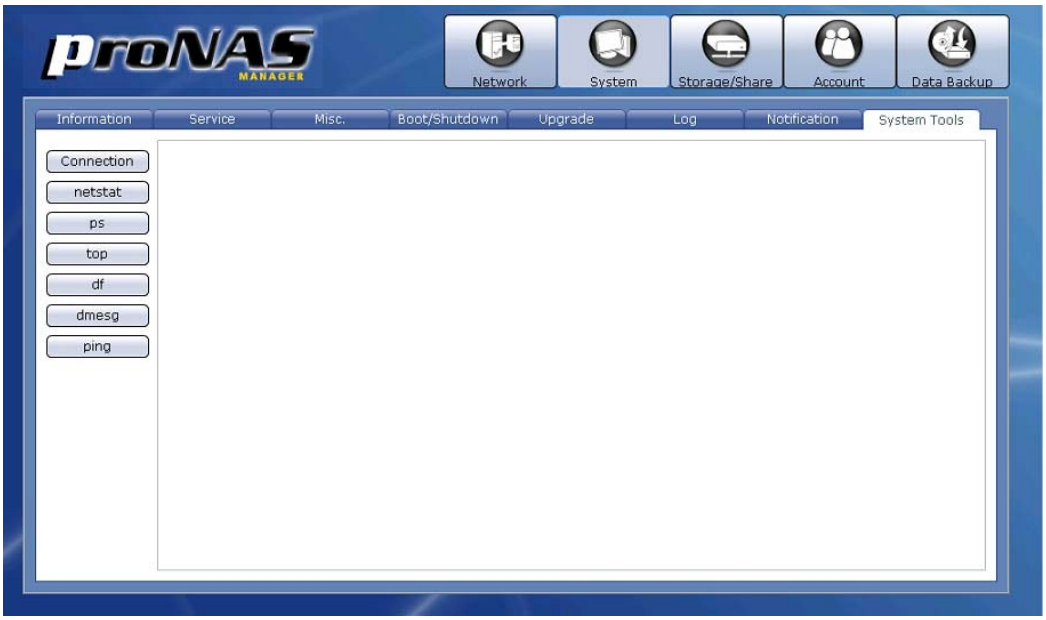
Add – Use this button to add a recipient email address in the list of recipients. Type in the text box the recipient email address.
Remove – Use this button to remove an email address from the list of recipients. Select first the email address then click "Remove".

Apply – Use this button to save the changes made.
Reset – Use this button to undo or clear any changes made.

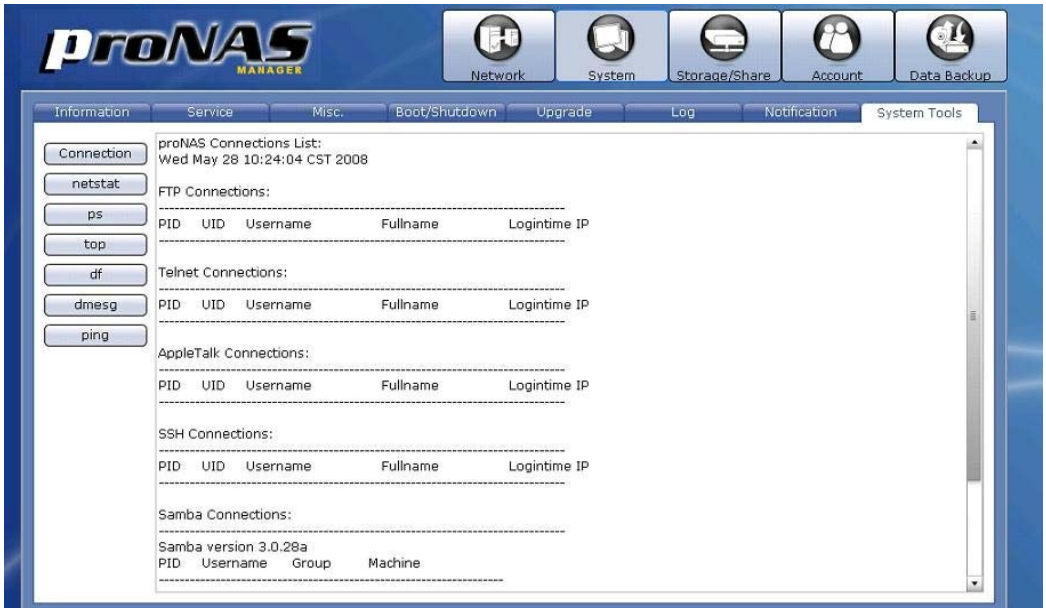


3.3.8 System Tools

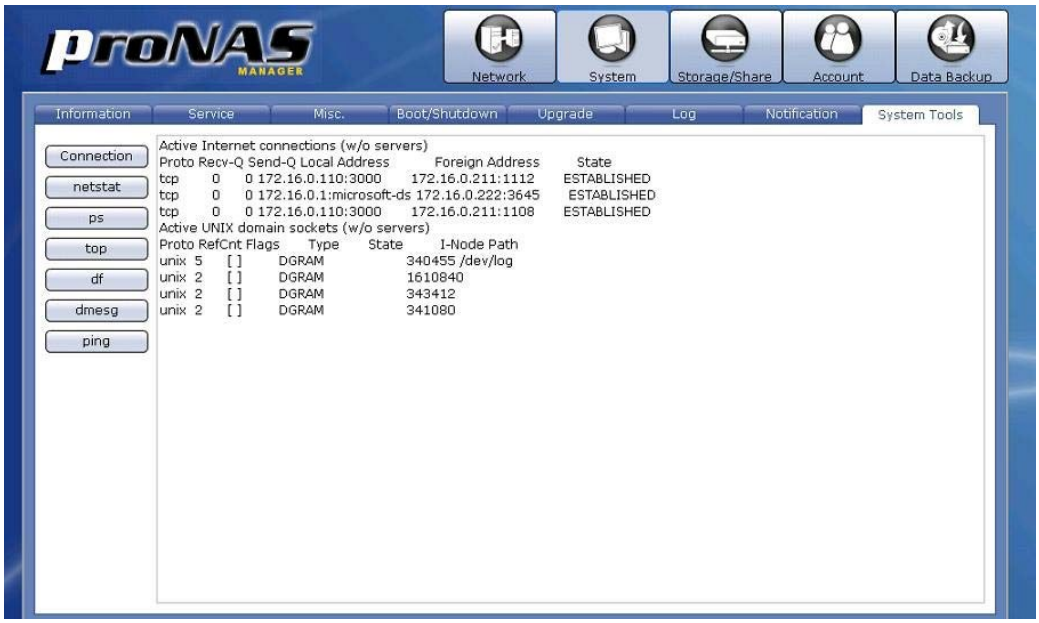
NAS provides various system tools which help the administrator monitor the system.



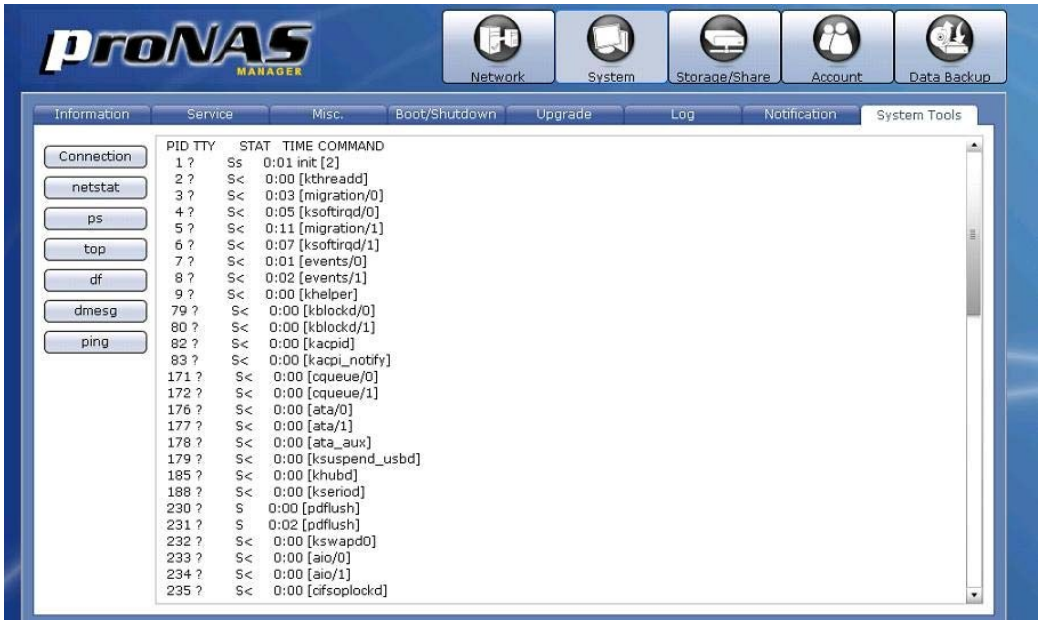
Connection – Use this button to display information about client active connections.



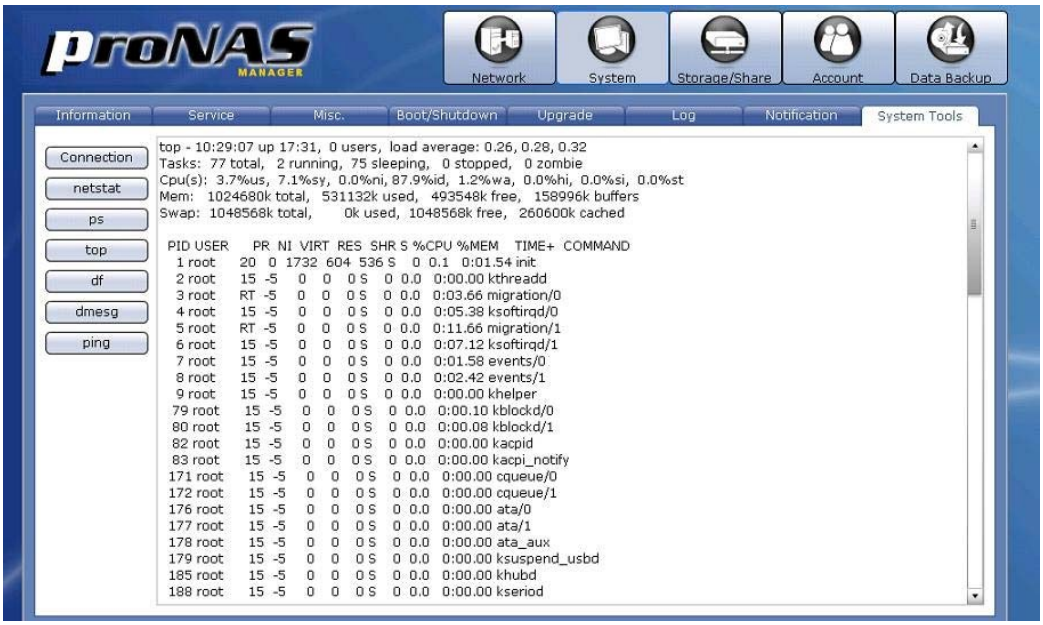
netstat – Use this button to display network connections and statistics information.



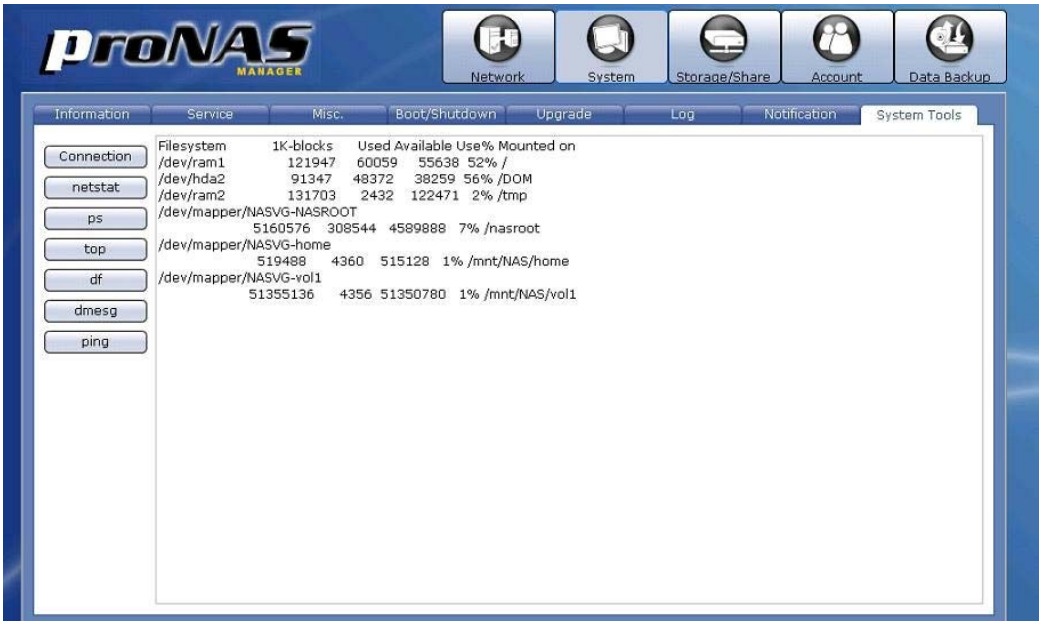
ps – Use this button to display current running processes.



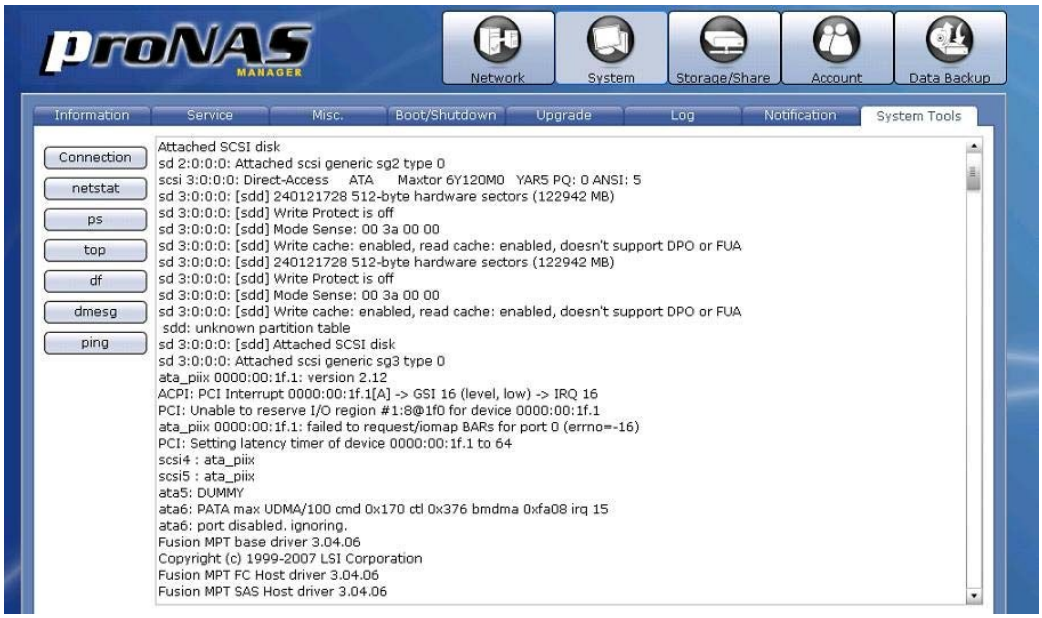
top – Use this button to display current running processes and system usage information.



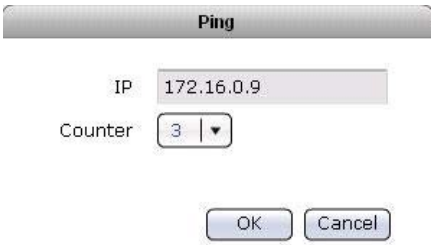
df – Use this button to display disk free information or the amount of available disk space in mounted file systems.



dmesg – Use this button to display NAS boot up messages.



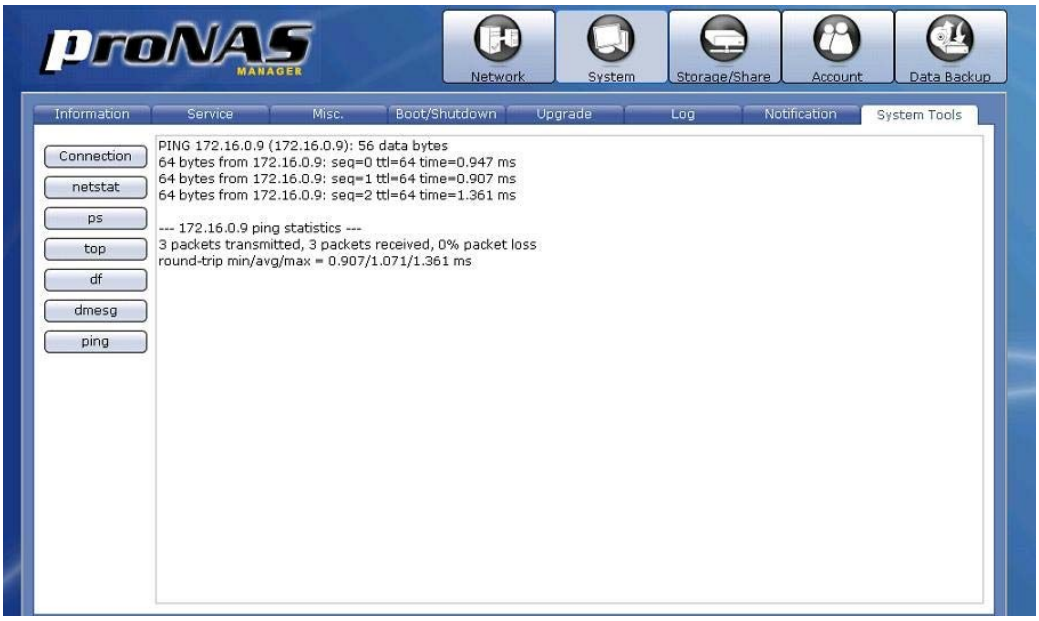
ping – Use this option to test whether a particular host is reachable or to check connectivity to a particular IP address.



Options:

IP - Enter the host IP address

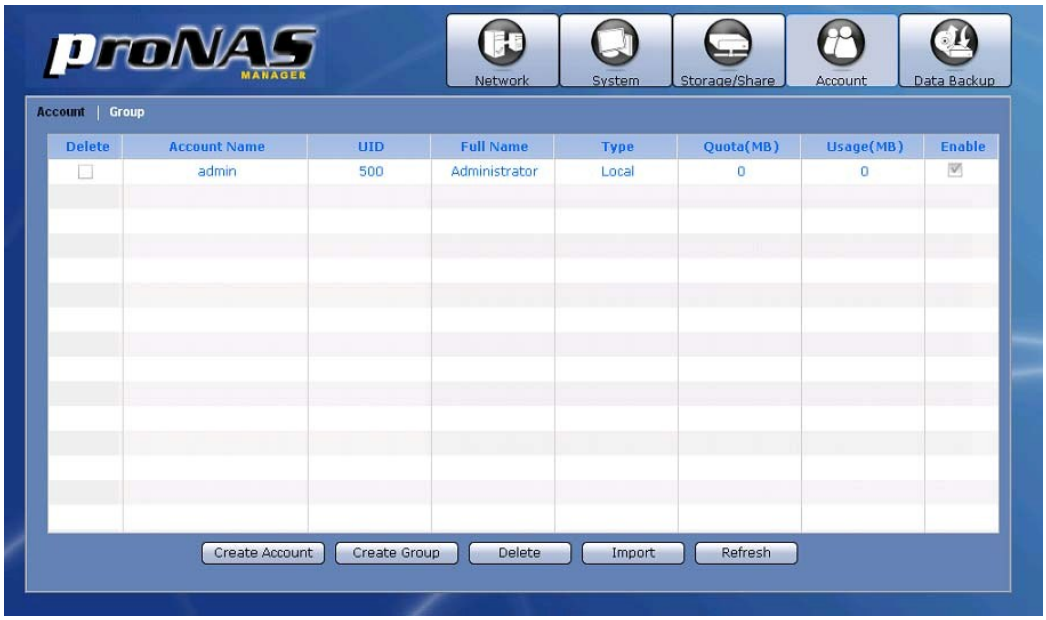
Counter – Enter the number of echo requests to send.



3.4 Account

Using the Account function, the administrator can create and administer local user and group accounts, as well as import large number of accounts.

3.4.1 Account



Account Information and Options:

Delete – Used to option to delete the selected account. After checking this option, click the "Delete" button.
Account Name – Shows the user account name.
UID – Shows the user account ID number.
Full Name – Shows the user account full name.
Type – Shows the type of account, which can be local, Windows or NIS.
Quota (MB) – Shows the quota of user account's home folder.
Usage (MB) – Shows the user account's current usage of home folder.
Enable – Use this option to enable or disable an account. When an account is disabled, the account is prohibited to access the NAS.

Create Account – Use this button to create a user account.
Create Group – Use this button to create a group account.
Delete – Use this button to delete the selected user account or group account.
Import – Use this option to import large number of accounts instead of adding an account one by one. The administrator can type multiple user accounts in the Import Account input box.
Refresh – Use this button to update the information displayed in the Account and Group list.

3.4.1.1 Create Account

Steps to Create Account:

1. **Click "Create Account" button.**
2. **A dialog box will be displayed. Enter the necessary information.**

Create/Edit Account Options:

Name – Used this option to enter the user account name. It should be unique.

NOTE: The account name does not allow space in-between characters. Duplicate account name is also not allowed. Names used by the system, such as root, nobody, mail, adm, etc., are reserved names and cannot be used as account name.

Type – Displays the type. Shows Account for user account.
Full Name – Use this option to enter user account full name.
UID – Use this option to manually assign a UID for the account. Use a valid UID starting from 500. If this option is not set (UID is 0), the system will automatically assign UID starting from 500. Domain accounts will have UID from 10000 to 30000.
Quota (MB) – Use this option to assign quota to the user account's home folder. Default quota is 10 MB.
Password – Enter the user account's password.
Password Confirm – Enter again the user account's password.

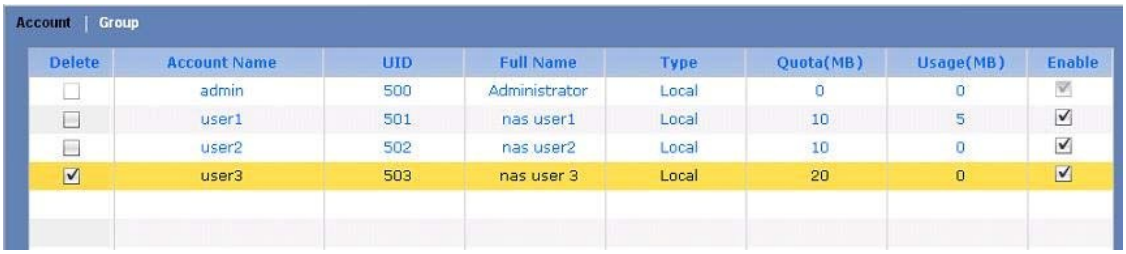
3. **Click "OK" when done. The new user account will added to the Account list.**

NOTE: If you try to create an Account without an existing VG, a warning message will be displayed.

3.4.1.2 Delete Account

Steps to Delete Account:

1. **In the Account list, check the "Delete" option for the account to be deleted.**



2. **Click the "Delete" button.**

3. **A warning message will be displayed. Select "Yes" to proceed. The account will be deleted.**

3.4.1.3 Edit Account

Steps to Edit Account:

1. **Double-click the Account name in the Account List.**
2. **Edit the necessary options.**

NOTE: Only the Full Name, Quota, Password, and Password Confirm can be changed. Account Name cannot be changed.

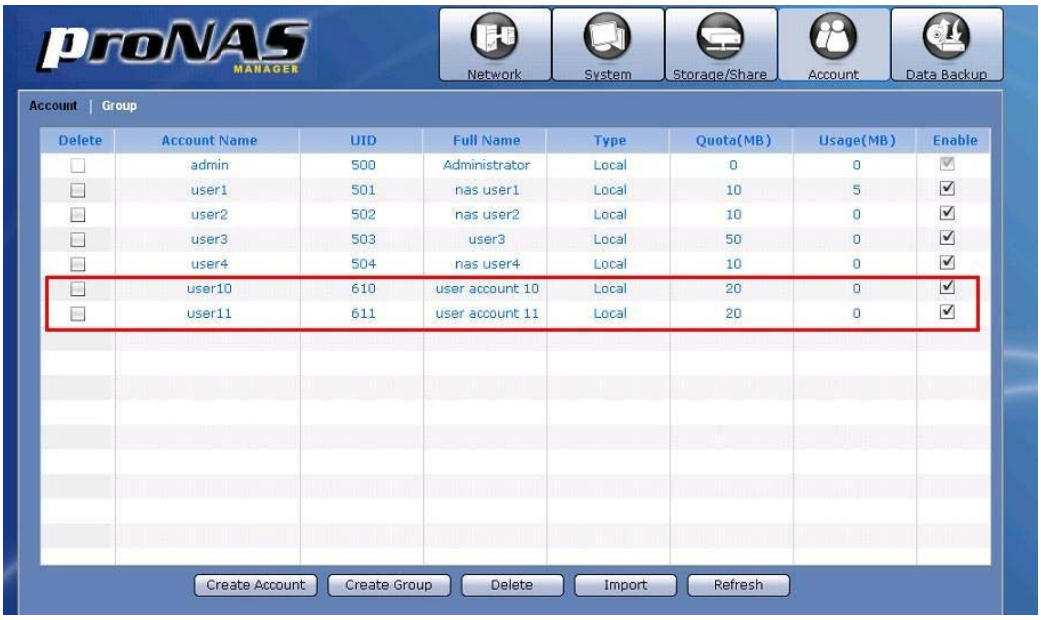
3. **Click "OK" when done. The account will be updated with the changes made.**

3.4.1.4 Import Account

Steps to Import Account:

1. **Click "Import" button.**
2. **An input box will displayed. Type the account information using the following format: UID,Name,Password,FullName,Quota. Click "OK" when done.**

3. **The new accounts will appear in the Account list.**



3.4.2 Group

Group Information and Options:

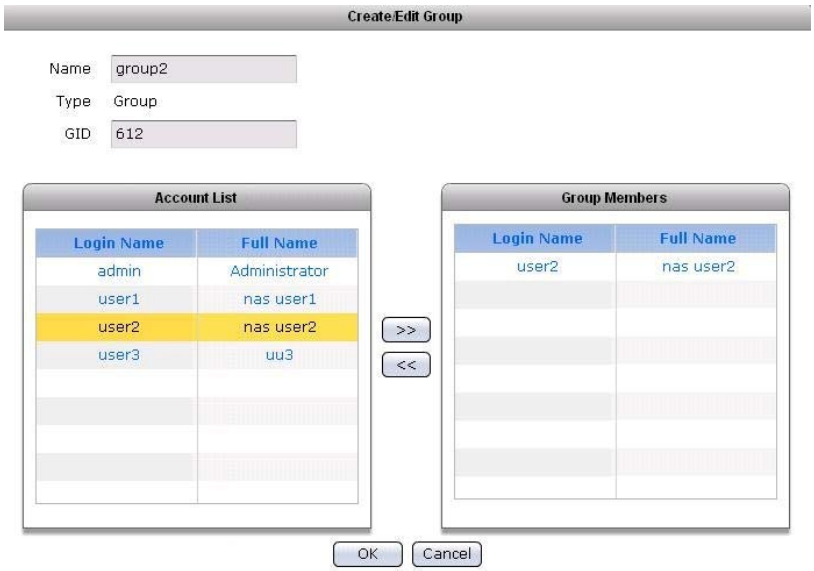
Delete – Used to option to delete the selected group. After checking this option, click the "Delete" button.
Group Name – Shows the group account name.
GID – Shows the group ID number.
Members – Shows the group's user account members.

Create Account – Use this button to create a user account.
Create Group – Use this button to create a group account.
Delete – Use this button to delete the selected user account or group account.
Import – Use this option to import large number of accounts instead of adding an account one by one. The administrator can type multiple user accounts in the Import Account input box.
Refresh – Use this button to update the information displayed in the Account and Group list.

3.4.2.1 Create Group

Steps to Create Group:

1. **Click the "Create Group" button.**
2. **A dialog box will be displayed. Enter the necessary information.**



Create/Edit Group Options:

Name – Used this option to enter the group account name. It should be unique.

NOTE: The group name does not allow space in-between characters. Duplicate group name is not allowed. Names used by the system, such as root, nobody, mail, adm, etc., are reserved names and cannot be used as account name.

Type – Displays the account type; shows Group for group account.

GID - Use this option to manually assign a GID for the group. Use a valid GID starting from 500. If this option is not set (GID is 0), the system will automatically assign GID starting from 500.

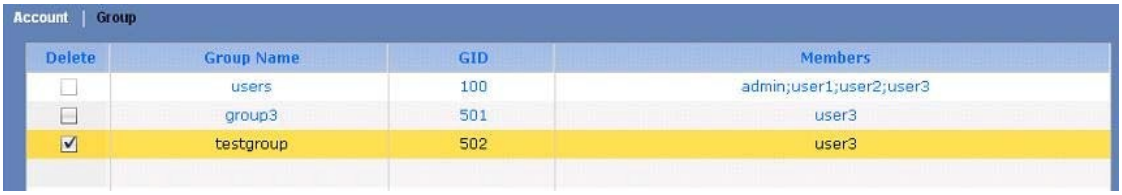
3. **Select the account that will become member of the group from the Account List. Then click the ">>" button. The selected account will be displayed in the Group Members list.**
4. **Click "OK" when done. The group will be created.**

NOTE: If you try to create a Group without an existing VG, a warning message will be displayed.

3.4.2.2 Delete Group

Steps to Delete Group:

1. **In the Group list, check the "Delete" option for the group to be deleted.**



2. **Click the "Delete" button.**

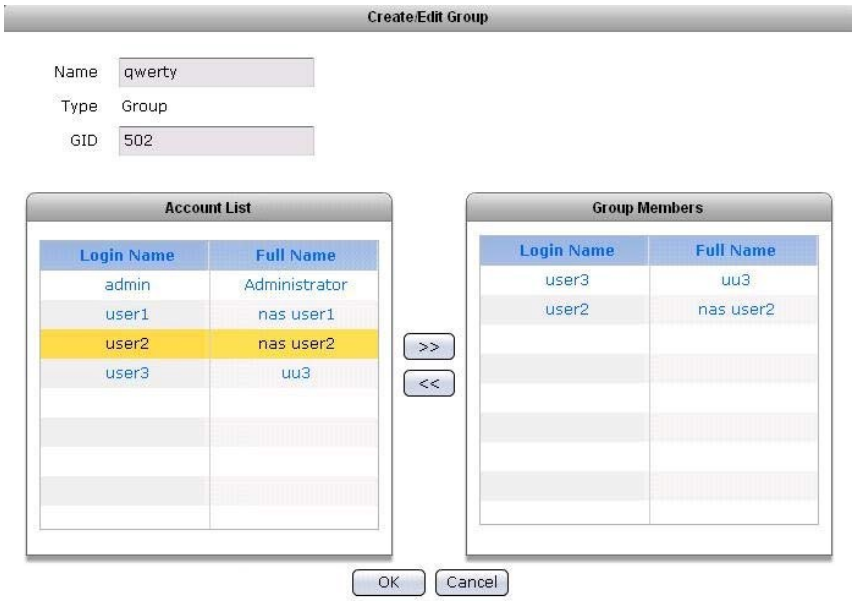
3. **A warning message will be displayed. Select "Yes" to proceed. The group will be deleted.**

3.4.2.3 Edit Group

Steps to Edit Group:

1. **Double-click the Group name in the Group List.**
2. **Edit the necessary options.**

NOTE: Only the Group Name and Group Members can be changed.

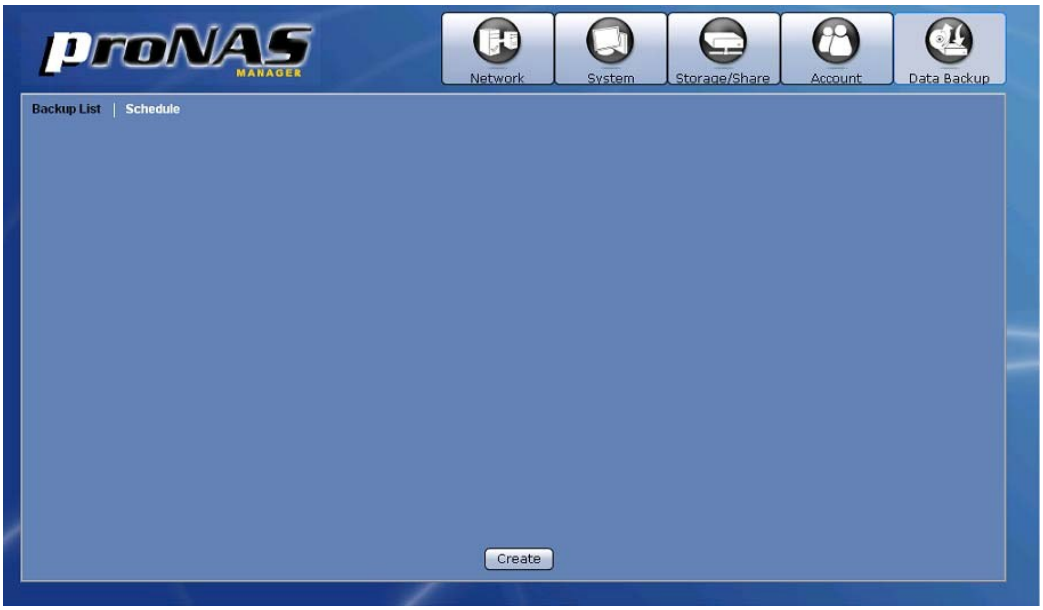


3. **Click "OK" when done. The group will be updated with the changes made.**

3.5 Data Backup

The administrator can backup NAS data to remote destination or to local disk drive.

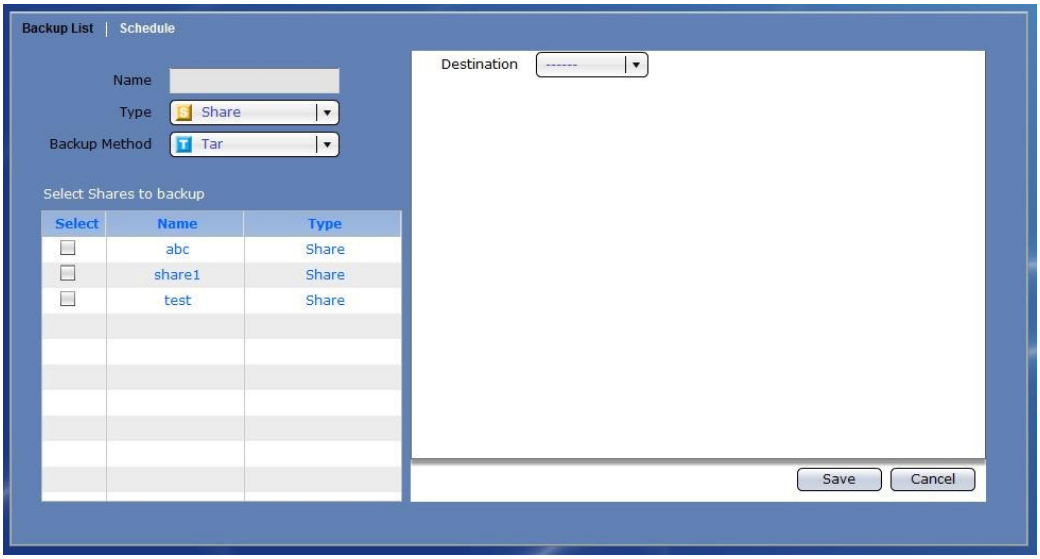
3.5.1 Backup List



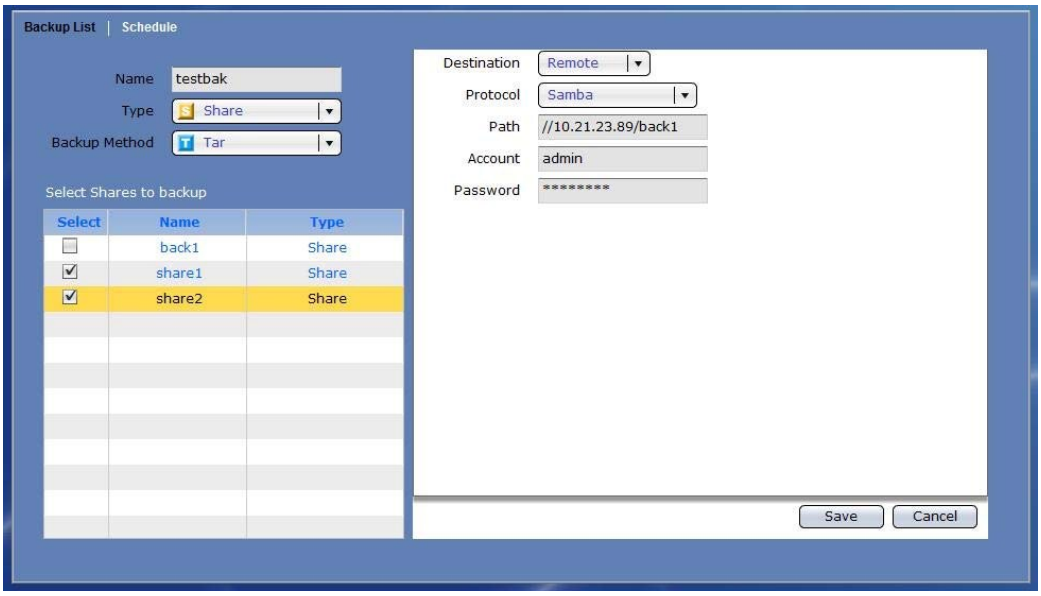
3.5.1.1 Create Backup Plan

Steps to Create a Backup Plan:

1. **Click the "Create" button. The screen below will be shown.**



2. Configure the necessary options.



Create Backup Options:

Name – Used this option to enter the backup name.

NOTE: Duplicate backup name is not allowed.

Type – Select the type of backup source; for example: Share.

Backup Method – Select the backup method that will be used, such as Tar or Rsync.

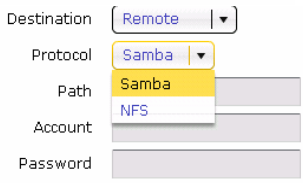
Select Shares to backup – Select from the list the share folders that will be backed up.

Tar Options:

Destination – Select the destination option for the backup. Options can be: Local Disk or Remote. Local Disk is an un-used disk drive. Remote is a remote CIFS/Samba share or NFS file system.

Local Disk:

Remote:



NOTE: When a local disk is selected as backup destination, the disk status in Storage/Share Î RAID screen will be shown as "BACKUP".

Protocol - Select the type of protocol to be used for backup. Options are: Samba and NFS.

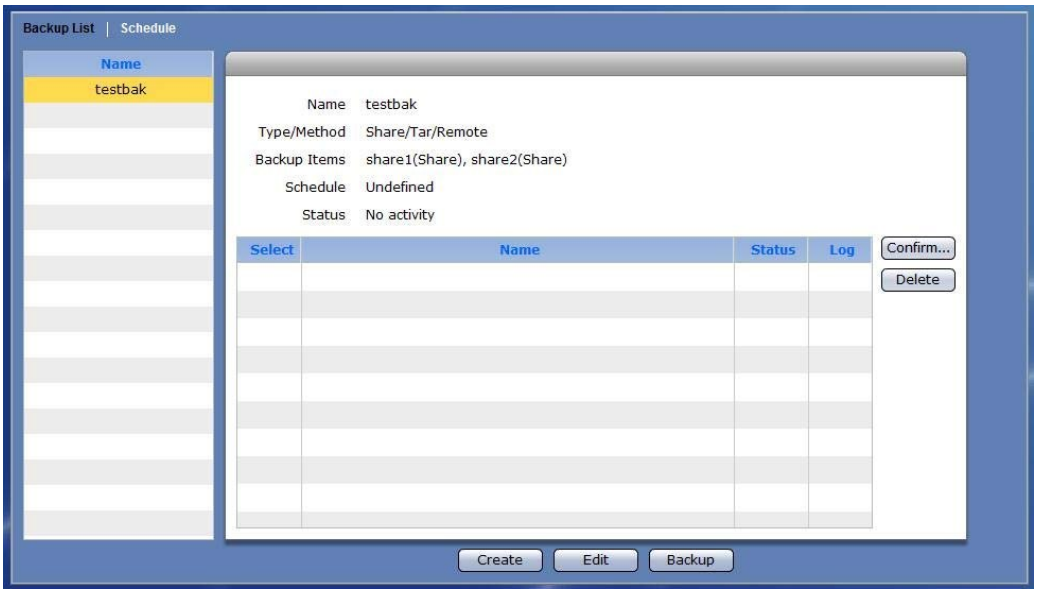
NOTE: For NFS, it will be assumed that the root account will be used. Please verify that root account can access the remote NFS file system.

Path – Type the path for the remote destination.
Format for Samba:
//remote-IP/remote-share
Example:
//172.16.0.211/backupfolder
Format for NFS:
remote-IP:/Path-to-Remote-NFS-file-system
Example:
172.16.0.9/mnt/proNAS/volume/share
Account – Type the account name with access to the remote share.
Password – Type the password for the account with access to the remote share.

Rsync Options (Client Options):
IP – Type here the IP address of the remote Rsync server.
Remote Path – Type here the share name on the remote Rsync server.
Account – Type here the account name that will be required by the Rsync server for authentication.
Password – Type here the password of the account.
Mode – Select the mode of file transfer, whether to upload to Rsync server or to download from Rsync server.
More Options – Specify here the Rsync options to be used. For more information about Rsync options, please visit http://samba.org/ftp/rsync/rsync.html.

Delete – Use this button to delete the current backup plan.
Save – Use this button to apply the changes made.
Cancel – Use this button to undo or clear any changes made.

3. Click the "Save" button. The backup plan will be created and shown in the Backup List.



Backup List Options:

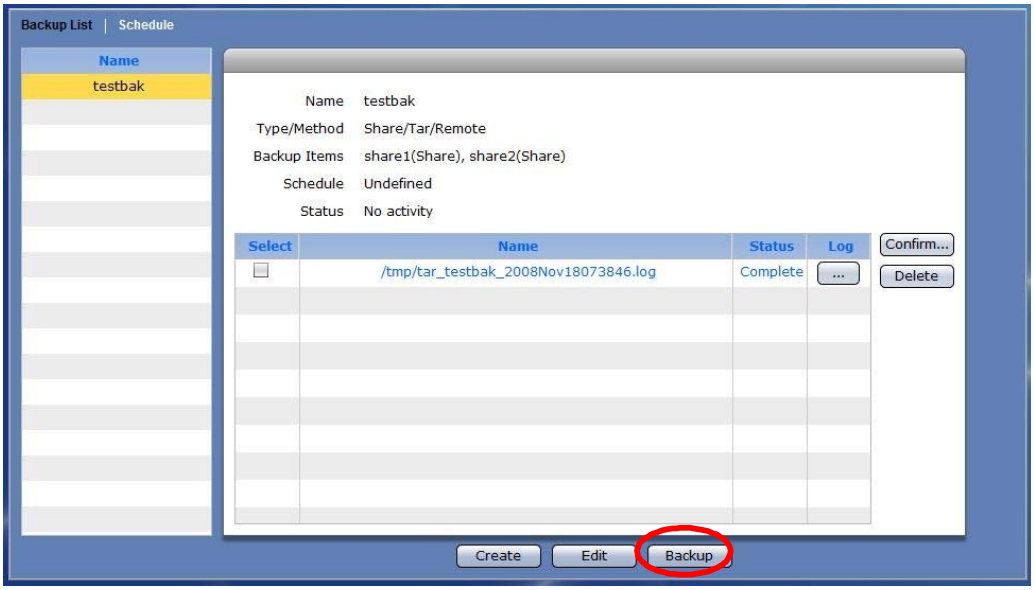
Name – Shows the list of backup plans. When a backup plan is selected, information about the backup plan will be displayed, such as name of backup plan, type/method of backup, backup items, schedule (Enabled or Undefined), and completed backups.
Select – Use this option to select a completed backup then delete or restore the backup.
Name – Show the backup name.
Status – Shows the status of the particular backup. Status can be: Incomplete or Complete.
Log – Use this option to view the detailed information about the completed backup. Click the "..." button.

Confirm... – Use this button to restore a selected backup.
Delete – Use this button to delete the selected backup.
Create – Use this button to create a new backup plan.
Edit – Use this to button edit or delete a selected backup plan.
Backup – Use this button to perform immediate backup.

3.5.1.2 Create Immediate Backup

Steps to Create Immediate Backup:

1. **Select the particular backup plan from the Backup List. Click the "Backup" button.**



2. **A message will be displayed. The backup is completed and a backup name will be added to the log list.**

3.5.1.3 Delete Backup Plan

Steps to Delete a Backup Plan:

1. **Select the particular backup plan from the Backup List.**
2. **Click the "Edit" button.**
3. **Click the "Delete" button.**
4. **A warning message will be displayed. Select "Yes" to delete the backup plan.**

3.5.1.4 Edit Backup Plan

Steps to Edit a Backup Plan:

1. **Select the particular backup plan from the Backup List.**
2. **Click the "Edit" button.**
3. **Change the necessary options. Click "Save" when done.**

NOTE: A backup plan cannot be modified if a backup log exists.

3.5.1.5 Delete a Backup Log

Steps to Delete a Backup Log:

1. **Select (check) the backup log to be deleted from the log List.**
2. **Click the "Delete" button. A warning message will be displayed.**

3. **The backup will be deleted from backup destination and removed from log list.**

3.5.1.6 Restore a Backup

Steps to Restore a Backup:

1. **Select (check) the particular backup from the log List.**
2. **Click the "Confirm..." button. A warning message will be displayed. Select "Yes" to restore backup.**

3. **The original data will be restored.**

3.5.2 Schedule

A backup plan can be run based on schedule. Select the Schedule tab. This will show a graphical view of the scheduled backup tasks.

Each row shows the day of the week. Each column shows the time in very 30 minutes interval.

Schedule Options:

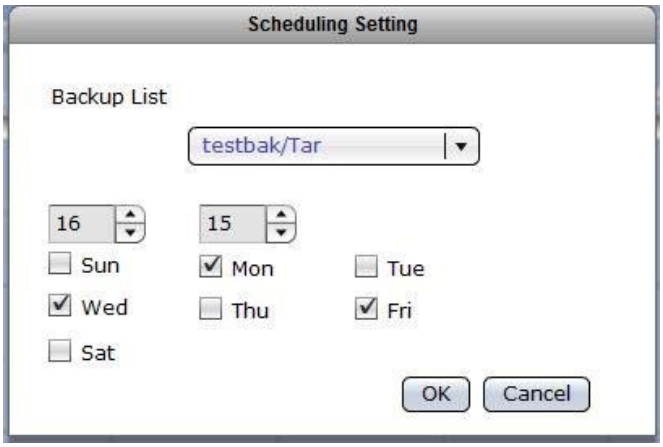
Now – Use this option to display available backup tasks on the current time.
Selected - Use this button to edit a scheduled backup task. Select first the scheduled backup task then click this button.
New – Used this button to create a new scheduled backup task.

NOTE: It is not allowed to have duplicated or overlapping backup time. Only one backup process can be running at a time. A scheduled backup is set to run within 30 minutes time frame. Scheduling another backup within a scheduled time is not allowed.

3.5.2.1 Setup Scheduled Backup Task

Steps to Setup Scheduled Backup:

1. **Select the "Schedule" tab then click the "New" button.**
2. **Edit the options in Schedule Setting.**



Schedule Setting Options:

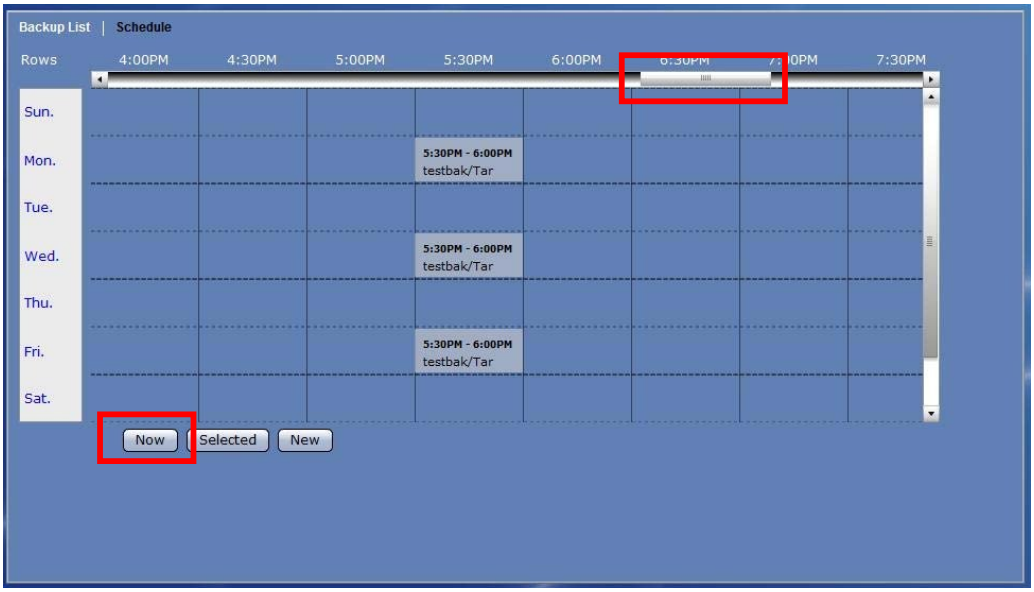
Backup List – Select the backup plan from the list.
Time – Set the hour and minutes when the backup will be run.
Day – Select the day or days when the backup will be run.
OK – Use this button to save the backup settings. The backup schedule will be automatically enabled.
Cancel – Use this button to clear or undo any changes made.

3. **The backup task will appear in the schedule.**

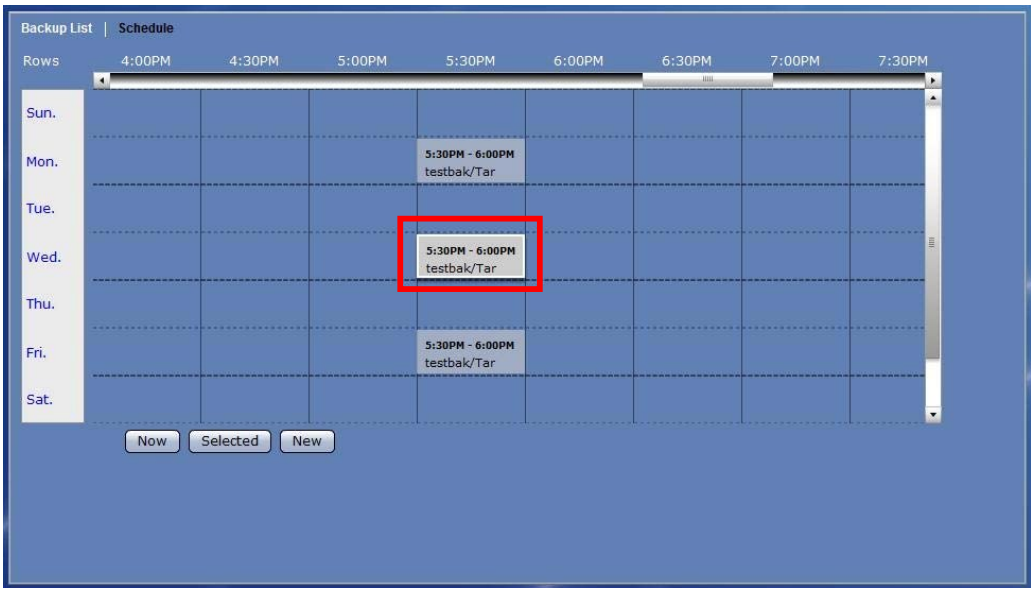
3.5.2.2 Edit Scheduled Backup Task

Steps to Edit Scheduled Backup Task:

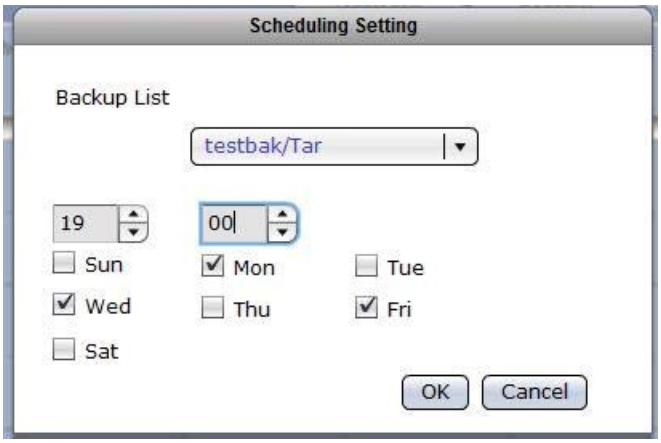
1. **Move the scroll bar then locate the scheduled backup task to be changed, or click "Now" to see current scheduled backup.**



2. **Select the backup task to edit. The backup task will be highlighted.**



3. **Click the "Selected" button. Edit the necessary options.**



NOTE: It is not allowed to have duplicated or overlapping backup time. Only one backup process can be running at a time. A scheduled backup is set to run within 30 minutes time frame. Scheduling another backup within a scheduled time is not allowed.

4. **Click "OK" to save the changes made.**