



# Cloud Storage

NAS Series

Version 5.04

Edition 1

## User's Guide

### Default Login Details

Web Address	nas540 nas520
User Name	admin
Password	1234

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**IMPORTANT!**

**READ CAREFULLY BEFORE USE.**

**KEEP THIS GUIDE FOR FUTURE REFERENCE.**

Screenshots and graphics in this book may differ slightly from your product due to differences in your product firmware or your computer operating system. Every effort has been made to ensure that the information in this manual is accurate.

### **Related Documentation**

- Quick Start Guide

The Quick Start Guide shows how to connect the NAS and get up and running right away.

- Web Configurator Online Help

The embedded Web Help contains descriptions of individual screens and supplementary information.

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# **PART I**

## **User's Guide**

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# Getting to Know Your NAS

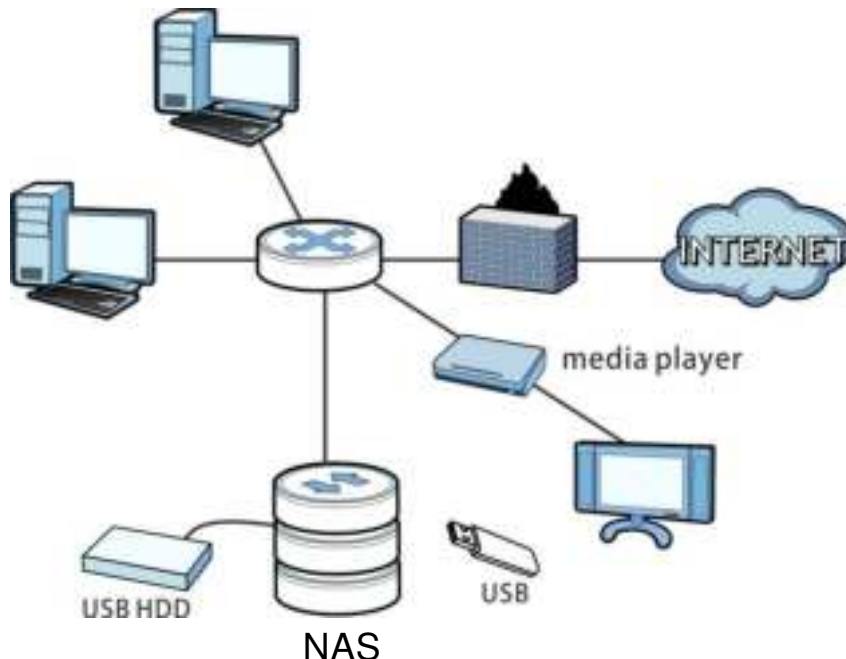
## 1.1 Overview

This chapter covers the main features and applications of the NAS.

Use the NAS to do the following.

- Share files between computers on your network.
- Back up files from your computers to the NAS.
- Use the **COPY/ SYNC** button to copy or synchronize files between the NAS and USB devices like card readers, MP3 players, mass storage devices, and digital cameras without using a computer.
- Have the NAS handle large file downloads.
- Automatically download files from website feeds for convenient viewing.
- Play the NAS's video, music and photo files on your computers using the included media client software.
- Play the NAS's video, music and photo files on hardware-based media players.
- Use the NAS's website to share files with remote users.
- Use iTunes on your computer to play video and music files stored on the NAS.
- Share printers.
- Automatically upload photo and video files to your FTP server, Flickr and YouTube accounts.

**Figure 1** Example of the NAS in a Home Network



Above is the NAS in a home network. Users back up and share data on the NAS. The media player plays the NAS's media files on the TV. A USB hard drive provides extra storage space and files are copied directly from the USB mass storage device to the NAS.

Place the NAS behind a firewall and/or IDP (Intrusion Detection and Prevention) device to protect it from attacks from the Internet.

Refer to the Quick Start Guide for hardware connections and how to install and remove hard drives from the disk trays.

Note: Turn off and disconnect the NAS before you install or remove the internal hard disk or disks.

### 1.1.1 Hard Disks

The NAS has four internal hard disk bays. Install one to four SATA (Serial Advanced Technology Attachment) hard disks. Note that the SATA hard disks are treated as internal or SATA volumes. Any hard disk connected to a USB port is considered an external or USB volume.

### 1.1.2 SD Card

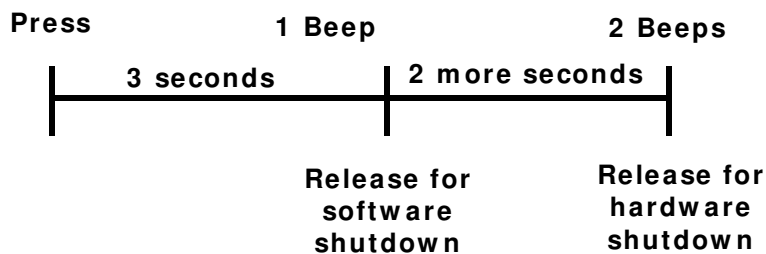
Use up to a 128 GB SDXC card with the front panel SD card slot. The SD card slot works with the **COPY/ SYNC** button (see [Section 1.1.4 on page 16](#) for details).

### 1.1.3 Power Button

Use the power button on the front panel to turn the NAS on or off.

- Press the power button for one second to turn on the NAS.

**Figure 2** Using the Power Button to Turn Off the NAS



- To have the NAS go through its normal software shutdown process and turn itself off, press the power button until you hear one beep (after about three seconds), then release it.
- To perform a hardware shutdown and have the NAS immediately turn itself off without going through the normal shutdown process, press the power button until you hear a second beep (after about five seconds), then release it.

### 1.1.4 COPY/SYNC Button

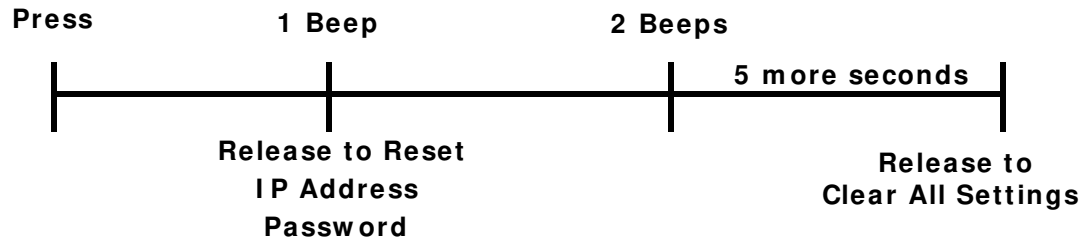
Use the **COPY/ SYNC** button on the front panel to copy or synchronize files between a connected USB or SD device and the NAS. See [Section 10.10 on page 207](#) for more details on how to configure the copy/sync settings.



## 1.1.5 RESET Button

Use the **RESET** button on the rear panel to restore the NAS's default settings.

**Figure 3** The RESET Button



- Press the **RESET** button until you hear one beep (after about two seconds), then release it. You will hear one more beep after you release the button.

This resets the NAS's IP address and password to the default values.

- Press the **RESET** button until you hear two beeps. After the second beep, continue pressing the button for five more seconds, then release it. You will hear three quick beeps after you release the button.

This resets the NAS to the factory default configuration. All settings you have configured on the NAS, including IP address, password, user accounts, groups, and so on will be reset to the factory defaults.

The reset process does NOT affect the volume settings, nor data stored on the NAS.

You should periodically back up your configuration file to your computer (see [Section 19.5 on page 293](#) for details about managing the NAS's configuration file). You could then restore your configuration in the event that you or someone else reset the NAS to the factory defaults.

**Note:** Keep the NAS in a secure location in order to prevent unauthorized reset of the device.

You may need to close and re-open the NAS Starter Utility to discover the NAS. This is because the NAS automatically re-acquires IP address information, so its IP address may change. If no IP address information is assigned, the NAS uses Auto-IP to assign itself an IP address and subnet mask. For example, you could connect the NAS directly to your computer. If the computer is also set to get an IP address automatically, the computer and the NAS will choose addresses for themselves and be able to communicate.



# NAS Starter Utility

Note: Installing this version of the NAS Starter Utility uninstalls previous versions.

## 2.1 Overview

Use the NAS Starter Utility to find and access the NAS and access the files on it.

The NAS Starter Utility supports Windows XP, Windows Vista, Windows 7, and Windows 8. Click **Help** to open a Web Help page about the NAS Starter Utility screens. NAS Starter Utility screens are shown here as they display with the Windows platform.

Note: Refer to the Quick Start Guide for your NAS's hardware connections and the steps for installing the NAS Starter Utility.

## 2.2 Starting the NAS Starter Utility

- The NAS Starter Utility broadcasts a request packet when you first run it. Each NAS has an NAS Starter Utility Agent that always listens and responds to requests from the NAS Starter Utility. The NAS Starter Utility receives the response packet that contains information, such as host name, IP, and so on.
- If you plan to use more than one NAS in your network, configure them with unique server names. This enables you to identify each NAS in the NAS Starter Utility screens.

## 2.3 NAS Seeker Screen

Use this screen to view the NASs in your network. The NAS's **Server Name**. The default is 'NAS' followed by the number of your model ('**NAS540**' for example). See [Section 2.6 on page 23](#) for how to change it to a more recognizable one in your network.

Click the **NAS Starter Utility** icon on your desktop or in the Windows system tray to start the NAS Starter Utility. Alternatively you can click **Start > Programs > ZyXEL > NAS Starter Utility**.

**Figure 4** NAS Starter Utility Desktop Icon



**Figure 5** NAS Starter Utility Windows System Tray Icon



The first time you open the NAS Starter Utility the discovery screen appears as follows.

**Figure 6** NAS Seeker



The following table describes the labels in this screen.

**Table 1** NAS Seeker

LABEL	DESCRIPTION
Connect	Select a NAS and click this to connect to it.
Refresh	Click this to refresh the screen. The NAS Starter Utility does not automatically refresh.
Status	This shows whether the NAS is <b>Online</b> , <b>Unreachable</b> , <b>Configuring</b> , or <b>Config Failed</b> .
Server Name	This is the server name you configured for the NAS. If you have more than one NAS in your network, it is recommended that you give each one a unique name for identification purposes.
IP Address	This is the current IP address of the NAS.

## 2.4 Main NAS Starter Utility Screen

The main NAS Starter Utility screen displays after you select an NAS in the **NAS Seeker** screen.

**Figure 7** NAS Starter Utility Main Screen



The following table describes the labels in this screen.

**Table 2** NAS Starter Utility Main Screen

LABEL	DESCRIPTION
?	Click this to display the utility help.
Configuration	Click this to configure system settings (see <a href="#">Section 2.6 on page 23</a> ).
NAS Seeker	Click this to use the NAS Seeker screen ( <a href="#">Section 2.3 on page 19</a> ) to find and connect to a different NAS on your network.
Server Name	This is the server name you configured for the NAS. If you have more than one NAS in your network, it is recommended that you give each one a unique name for identification purposes.
IP Address	This is the current IP address of the NAS.
MAC Address	This is the NAS's unique physical hardware address (MAC).
Firmware Version	This shows the version of firmware the NAS is currently using.
Status	This shows whether the NAS is <b>Online</b> , <b>Uninitialized</b> , <b>Unreachable</b> , <b>Configuring</b> , or <b>Config Failed</b> .
Run Initialization Wizard	This button displays if the NAS detects that the NAS has not yet configured any of the installed hard disks. Click this button to go to the Web Configurator login screen (see <a href="#">Section 4.2 on page 29</a> ).
Capacity	This shows the NAS's total, in-use, and remaining storage capacity.

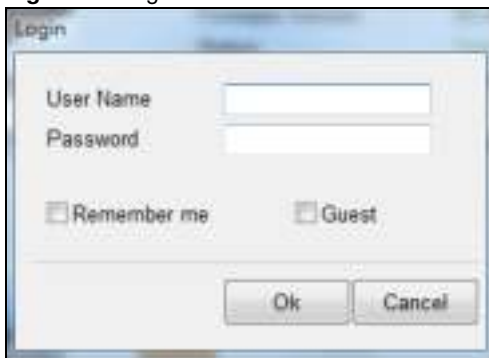
**Table 2** NAS Starter Utility Main Screen

LABEL	DESCRIPTION
DeskTop	Click this button to go to the Web Configurator login screen (see <a href="#">Section 4.2 on page 29</a> ).
Network Drive	Click this to add the NAS as a network drive in your computer's Windows Explorer.
Shared Folder	Click this to log into the NAS's file directory in Windows Explorer.
myZyXELcloud	Click this to go to mycloud.zyxel.com to set up a free DDNS hostname for the NAS so you can connect to it easily from the Internet.

## 2.4.1 Directory of the NAS

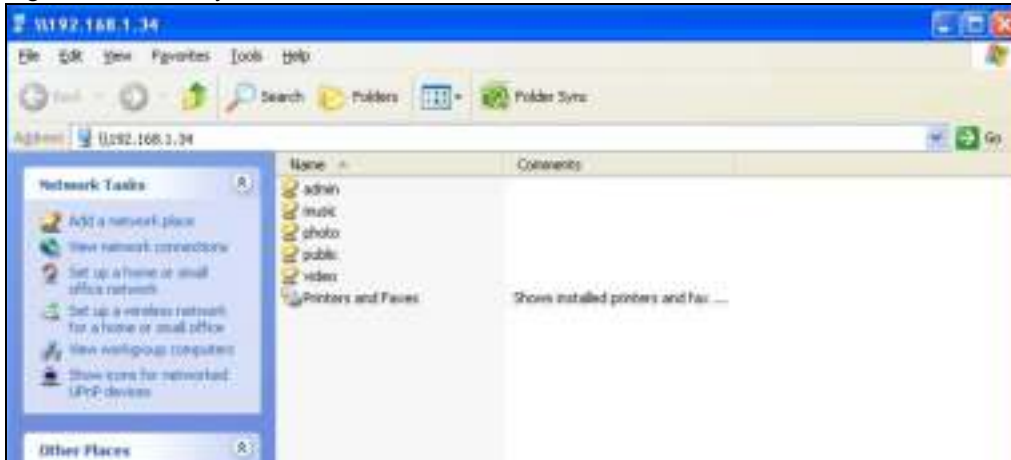
In the main NAS Starter Utility screen click **Shared Folder** to log into the NAS's file directory in Windows Explorer. Enter the administrator user name and password and click **Login**.

**Figure 8** Login



The utility opens the NAS's directory in Windows Explorer.

**Figure 9** Directory



## 2.5 Network Drive

In the main NAS Starter Utility screen click **Network Drive** to add the NAS as a network drive in your computer's Windows Explorer.

Enter your user name and password and click **Login** to be able to add the NAS's shares to which you have access as network drives. Otherwise select **Guest** and click **Login** to be able to add the NAS's public shares as network drives.

**Figure 10** Login



Select a share on the NAS and the drive letter on your computer to which you want to map it. The shares that each user can select to map depends on the user's permissions. For example, if share1 is private to user1, then only user1 is allowed to map share1. The table displays the NAS shares that are already mapped to drive letters on your computer. After you click **Apply** you can see the new drive in Windows Explorer (My Computer) where you can access and use it like your computer's other drives.

**Figure 11** Network Drive



## 2.6 Configure System Settings

Use these screens to be able to change the NAS's server name, time zone, PPPoE, IP address, subnet mask, default gateway, or DNS settings.

Click **Configuration > System Setting** in the main utility screen to display the following screen.

**Figure 12** NAS Starter Utility > Configuration > System Setting



The following table describes the labels in this screen.

**Table 3** NAS Starter Utility > Configuration > System Setting

LABEL	DESCRIPTION
Server Name	Specify a name to uniquely identify the NAS on your network. You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabetic character (a-z) and is case sensitive.
Time Zone	Choose the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).
Enable PPPoE Connection	Click this if your Internet connection requires you to enter a user name and password to connect to the Internet. Enter your user name and password
IP Address	Use these fields to configure the IP address of the LAN interface through which you are connected to the NAS.  When the LAN interfaces are set to stand-alone, this configures the IP address of the LAN interface in the same subnet as your computer. It configures <b>LAN1</b> if both LAN interfaces are in the same subnet as your computer.  If you use the administrator configuration screens to set the LAN interfaces to link aggregation, this configures the IP address that both LAN interfaces share.
Automatically get IP address	Select this if the NAS is automatically assigned an IP address from the ISP or a DHCP server in your network.
Manually assign IP address	Select this if you want to assign the NAS a fixed IP address, subnet mask and default gateway.  Note: Do not configure an IP address that is already in use in your network. This results to a network IP address conflict and makes the NAS inaccessible.



**Table 3** NAS Starter Utility > Configuration > System Setting

LABEL	DESCRIPTION
Use from DHCP server	Domain Name System (DNS) is for mapping a domain name to its corresponding IP address and vice versa. Select this if the NAS is automatically given DNS information from the ISP or a DHCP server in your network.
DNS	Domain Name System (DNS) is for mapping a domain name to its corresponding IP address and vice versa.  Select <b>Use from DHCP server</b> if the NAS is automatically given DNS information from the ISP or a DHCP server in your network.  Select <b>Manually assign DNS server</b> if you were given specific IP address(es) of the DNS server(s). Enter the primary and secondary DNS in the corresponding fields.



## 3.1 zCloud

Install the zCloud app from Google Play or the Apple App store on your Android or iOS device to access the NAS's media files from your mobile device and upload media files from your mobile device to the NAS.

- Browse your media contents from your NAS directly on your Android or iOS device
- View photos stored on your NAS with the app's built-in slideshow
- Play music stored on your NAS
- Watch videos stored on your NAS
- Upload files from your Android device to your NAS
- Upload photos and videos from your iOS device to your NAS
- Browse and manage files stored on the NAS
- Compatibility: Requires Android 4.0.3 or later or iOS 7 or 8.

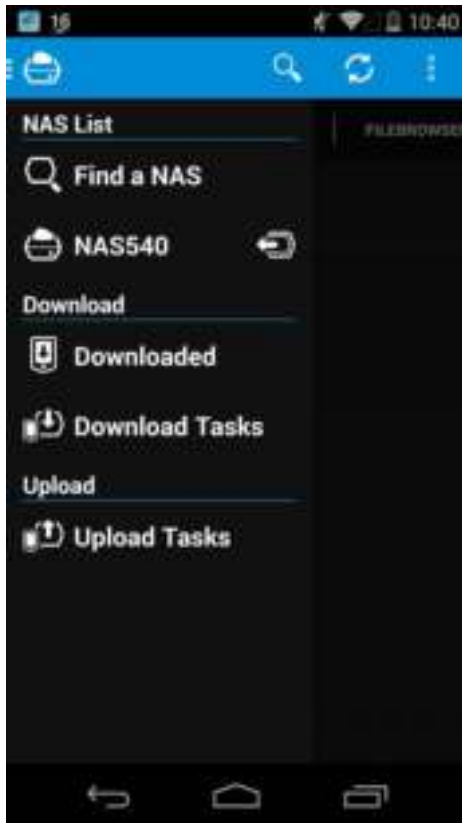
After installing the zCloud app on your device, tap the zCloud icon to open it.

**Figure 13** zCloud Icon



The main menu displays.

**Figure 14** zCloud Android and iOS Main Menus



**Find a NAS** - use your NAS's IP address and your user name and password to connect to it.

**NAS540** - access the NAS's default photo, music, and video shares. You can play, download, upload and manage files.

**Download** - access and manage files downloaded from the NAS to your Android or iOS device and manage download tasks.

**Upload** - view and manage upload tasks.

# Web Configurator Basics

## 4.1 Overview

This chapter describes how to access the NAS web configurator and provides an overview of its screens. The web configurator is an HTML-based management interface that allows easy NAS setup and management using an Internet browser.

Use Internet Explorer 11.0.9, Mozilla Firefox 31.0, Safari 5.1.7, Google Chrome 37.0.2, or later versions of these browsers. The recommended screen resolution is 1440 by 900 pixels or higher.

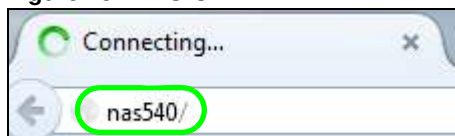
In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2.
- JavaScript (enabled by default).

## 4.2 Accessing the NAS Web Configurator

- 1 Make sure your NAS is properly connected and that your computer is in the same subnet as the NAS (refer to the Quick Start Guide or the appendices).
- 2 Open your browser and type in the server name of the NAS. The default is “nas” followed by the number of your model (“**nas540**” for example). Configure the server name of your NAS using the **Network Configuration** screen ([Section 2.6 on page 23](#)) of the NAS Starter Utility.

Figure 15 NAS URL



- 3 The default username and password are “admin” and “1234” respectively. Enter your username and password. See [Chapter 15 on page 261](#) for how to create other user accounts. If you use the option to stay logged in (assuming you do not log out), make sure you keep your computer secure from unauthorized access. Click the arrow to log in. Logging in with a (non-administrator) user account takes you to the Playzone screens (see [Section 4.5 on page 73](#) for details).

**Figure 16** NAS Login Screen



**Make sure you have a backup of any existing data in the hard disk before installing it in the NAS. Creating a volume formats the hard disk and deletes all data in the process.**

- 4 This screen displays if you have not created a volume yet. Click **Create Volume** to make a volume or click the **x** to close the screen to go to the **Desktop** ([Section 4.3 on page 32](#)).

**Figure 17** Welcome Screen



- 5 Select **Create single volume on RAID** for a simple set up. Go to [Section 4.4.1.1 on page 41](#) for details.  
Select **Create Multiple volumes on disk group** to be able to create more than one storage volume. Go to [Section 4.4.1.3 on page 51](#) for details.

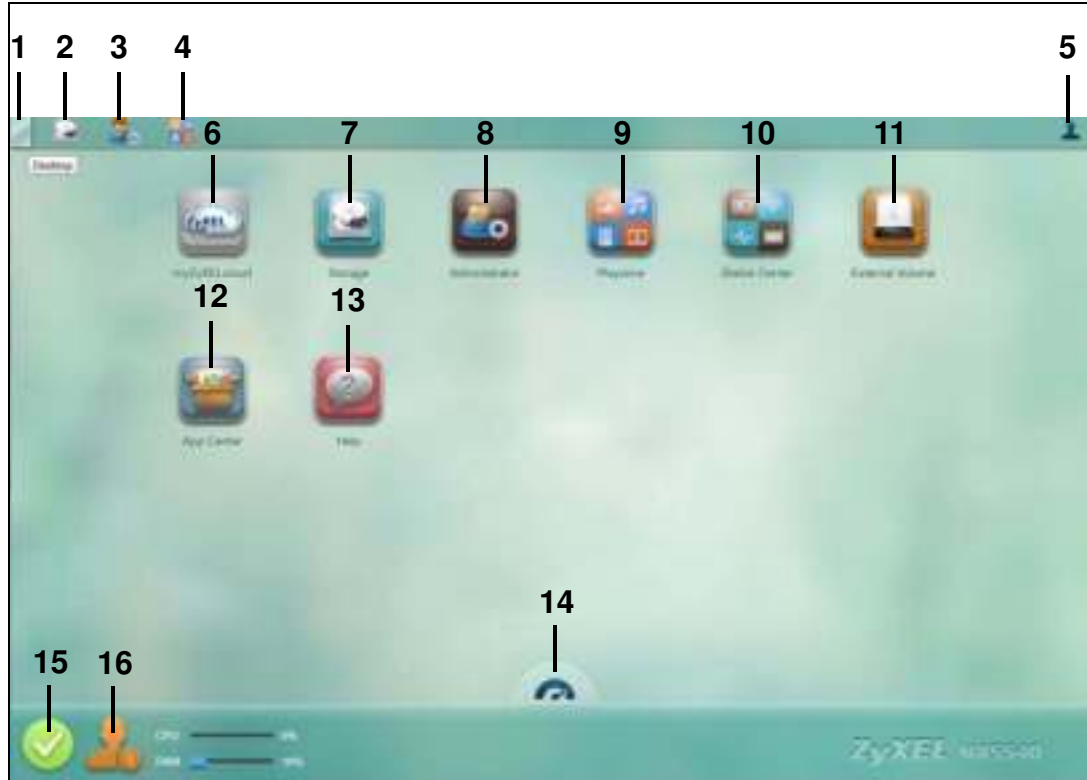
**Figure 18** Welcome Screen



## 4.3 Desktop

The **Desktop** screen displays after you log in.

**Figure 19** Desktop



Note: The Web Configurator session automatically times out if left idle for 15 minutes. Simply log back into the NAS if this happens to you.

- 1 **Desktop** - click this to minimize all windows so you can see the desktop. Click it again to restore the windows to their previous state.
- 2 **Storage** - click this to open the storage configuration screens.
- 3 **Administrator** - click this to open the administrator configuration screens in a new tab.
- 4 **Playzone** - click this to open the Playzone screens in a new tab. Use the Playzone screens to view and play media files in the shares that publish them.
- 5 **User** - click this to display the **Logout** link.
- 6 **myZyXELcloud** - click this to go to [mycloud.zyxel.com](http://mycloud.zyxel.com) to set up a free DDNS hostname for the NAS so you can connect to it easily from the Internet.
- 7 **Storage** - click this to open the storage configuration screens.
- 8 **Administrator** - click this to open the administrator configuration screens in a new tab.



- 9 **Playzone** - click this to use the Playzone media server screens to view and play media files in the shares that publish them.
- 10 **Status Center** - click this to display NAS status information.
- 11 **External Volume** - click this to display the **External Volume** configuration screen in a new tab.
- 12 **App Center** - click this to display the **Package Management** configuration screen in a new tab.
- 13 **Help** - click this to display the NAS's embedded help system screens.
- 14 **Status** - click this to hide or display device status information.
- 15 **Status Center** - click this to display additional NAS status information.
- 16 **Web Sessions** - displays the current number of web sessions. Click this to go to the administrator configuration screens for more details.

### 4.3.1 Status Center

In the **Desktop** screen, click **Status Center** to display this screen of NAS status information.

**Figure 20** Status Center



The following table describes the labels in this screen.

**Table 4** Status Center

LABEL	DESCRIPTION
Refresh	Click the <b>Refresh</b> icon to update this display.
Status	The circular icon displays the health state of the NAS. A green circle with a check mark indicates healthy.

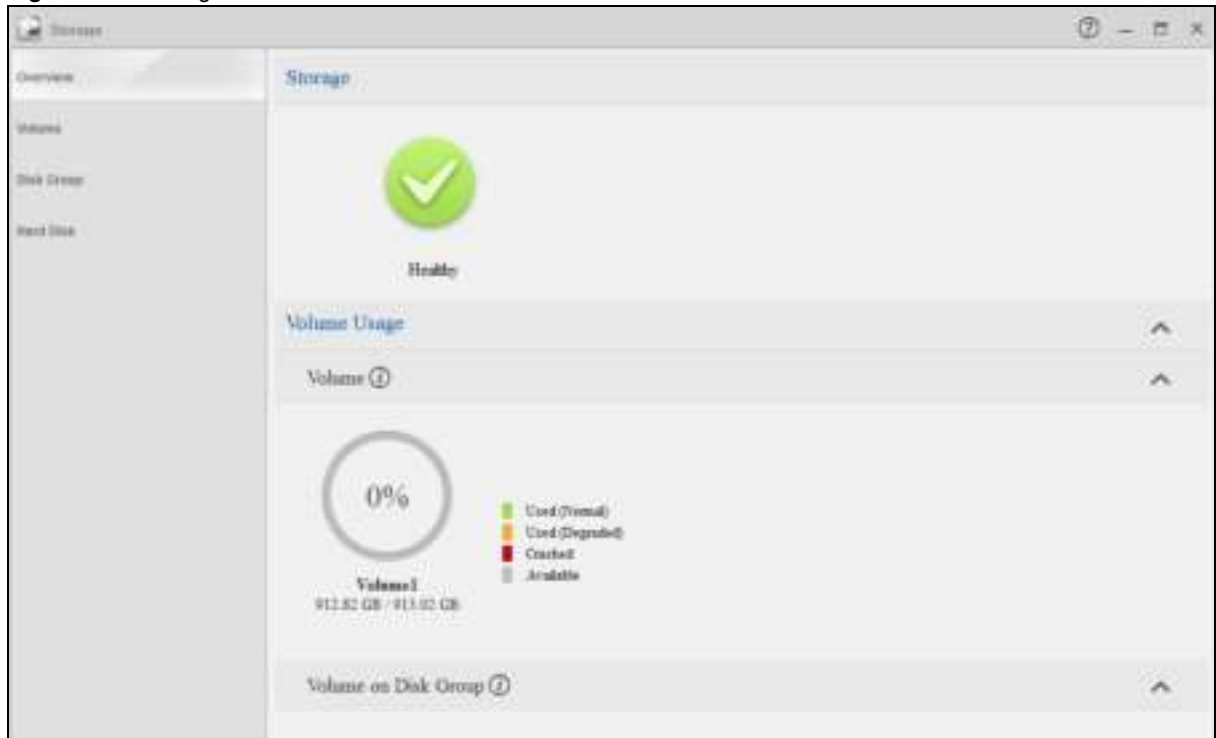
**Table 4** Status Center (continued)

LABEL	DESCRIPTION
Server Name	This displays the name which helps you find the NAS on the network.
Model Name	This displays which model this NAS device is.
Firmware Version	This is the NAS firmware version.
LAN1 MAC Address	This displays the NAS's unique physical hardware address (MAC) for the LAN1 Ethernet port. You need the MAC address to register the product at myZyXEL.com. Customer support may also request it for troubleshooting purposes.
LAN2 MAC Address	This displays the NAS's unique physical hardware address (MAC) for the LAN2 Ethernet port.
CPU	This displays a summary of CPU usage by all current processes.  Note: If too many users are using the NAS then the NAS may appear sluggish.
Memory	This shows how much of the NAS's total memory is being used.
CPU Temperature	This displays the temperature near the NAS's CPU. The NAS generates an emergency log if the temperature goes out of the normal operating range. If the temperature goes even higher, the NAS shuts down automatically to avoid damage from overheating. If the NAS overheats, make sure the fans are working and it is in a well ventilated place.
Fan Speed	This is the RPM (Rotations Per Minute) of the NAS's fans.

## 4.4 Storage

From the **Desktop** screen, click **Storage** to display the **Storage** screens. Use the **Storage** screens to configure disk groups and volumes. The **Storage Overview** screen displays the current storage configuration and volume usage.

**Figure 21** Storage Overview



The following table describes the labels in this screen.

**Table 5** Storage Overview

LABEL	DESCRIPTION
Storage	<p>The circular icon displays the overall health state of the NAS.</p> <p>A green circle with a check mark indicates healthy.</p> <p>An orange circle with an exclamation mark indicates attention. This appears when a volume or disk group is degraded. Click <b>Repair</b> to repair it.</p> <p>An red circle with an exclamation mark indicates danger. This appears when a volume or disk group is crashed. You cannot recover the volume.</p>
Volume Usage	This shows how much of each volume is currently used.

**Table 5** Storage Overview (continued)

LABEL	DESCRIPTION
Volume	<p>This section shows the current storage usage for each volume built directly on top of a RAID. These volumes have higher access performance than volumes on a disk group but are less flexible in regards to size.</p> <p>Details include the currently used percentage of the volume.</p> <p><b>Used (Normal)</b> - green on the circle represents the volume's percentage of used capacity in a healthy state.</p> <p><b>Used (Degraded)</b> - orange on the circle represents the volume's percentage of used capacity in a degraded state. Degraded means one or more disks has failed but you can still replace a faulty disk to recover the volume.</p> <p><b>Crashed</b> - a red exclamation point represents the volume is in a down state. Down means you cannot recover the volume.</p> <p><b>Available</b> - gray on the circle represents the volume's percentage of unused capacity.</p> <p>This section also displays the volume's used capacity, and total capacity available.</p>
Volume on Disk Group	<p>This section shows the current storage usage for each volume built on top of a disk group. You can expand a volume's size after creation if the disk group has unallocated space. You can also expand a disk group by adding hard disks.</p>

## 4.4.1 Storage Volume

A volume is a basic storage space on the NAS. To store data on the NAS, you must create at least one volume. Your NAS supports the following:

- Internal volumes (built on the hard disks installed in the NAS)
- External volumes (built on the external storage devices attached to the NAS)

### Internal Volumes

**Table 6** Internal Volumes

OPTION	DESCRIPTION
Volume	<p>Allocates all the available space to the volume.</p> <p>Provides better performance.</p>
Volume on Disk Group	<p>Allows you to create multiple volumes on a disk group.</p> <p>Allows you to customize the size of a volume.</p>

### RAID Types

The following table describes RAID types.

Note: RAID 5, RAID 6, RAID 10, and the hot spare option apply to 4-bay NAS devices.

**Table 7** RAID Types

RAID TYPE	NO. OF HDD	NO. OF HDD ALLOWED TO FAIL	DESCRIPTION	CAPACITY
Basic	1	0	Use <b>Basic</b> with one disk. It has no fault tolerance.	1 x (HDD size)
JBOD	2-4	0	Use <b>JBOD</b> with two or more disks for maximum capacity. This is just a collection of disks with no fault tolerance.	sum of HDD sizes
RAID 0	2-4	0	Use <b>RAID 0</b> with two or four disks for maximum speed and no fault tolerance.	sum of HDD sizes
RAID 1	2-4	(No. of HDD) - 1	Use <b>RAID 1</b> to create an exact copy of data on one disk to a second disk. Use this with two to four disks to mirror primary data to another disk(s) with high performance.  You can add a hot spare to a 2-disk RAID 1.	Smallest HDD size
RAID 5	3-4	1	Use <b>RAID 5</b> with three or four disks to balance performance and hard disk capacity usage with data protection in case of disk failure.  You can add a hot spare to a 3-disk RAID 5.	(No. of HDD - 1) x (smallest HDD size)
RAID 6	4	2	Use <b>RAID 6</b> with four disks for more data protection in case of disk failure.	(No. of HDD - 2) x (smallest HDD size)
RAID 10	4	1 HDD in each RAID 1 group	Use <b>RAID 10</b> with four disks to get better performance than RAID 6, with slightly less data protection.	(No. of HDD / 2) x (smallest HDD size)

## Repair Volumes or Disk Groups

If a hard disk in a RAID 1 with a hot spare or a RAID 5 with a hot spare fails, the NAS automatically uses the hot spare to re-build the volume or disk group. Later you can replace the failed hard disk and add the new disk as a hot spare.

A hard disk failure in a RAID 1, RAID 5, RAID 6, or RAID 10 degrades the volume or disk group. Replace the failed disk and use the **Storage** screen's **Repair** link to repair the volume.

## Change RAID Type

You can change the following RAID types without losing stored data. This can help you manage your storage capacity as you add more disks.

**Table 8** Internal Volumes

RAID TYPE	WHAT YOU CAN CHANGE IT TO
Basic	RAID 1
RAID 1	RAID 1 with a hot spare or RAID 5
RAID 5	RAID 5 with a hot spare or RAID 6

## Expand Volumes or Disk Groups

As your content grows, you can do the following to expand the storage capacity of a volume or disk group without losing stored data.

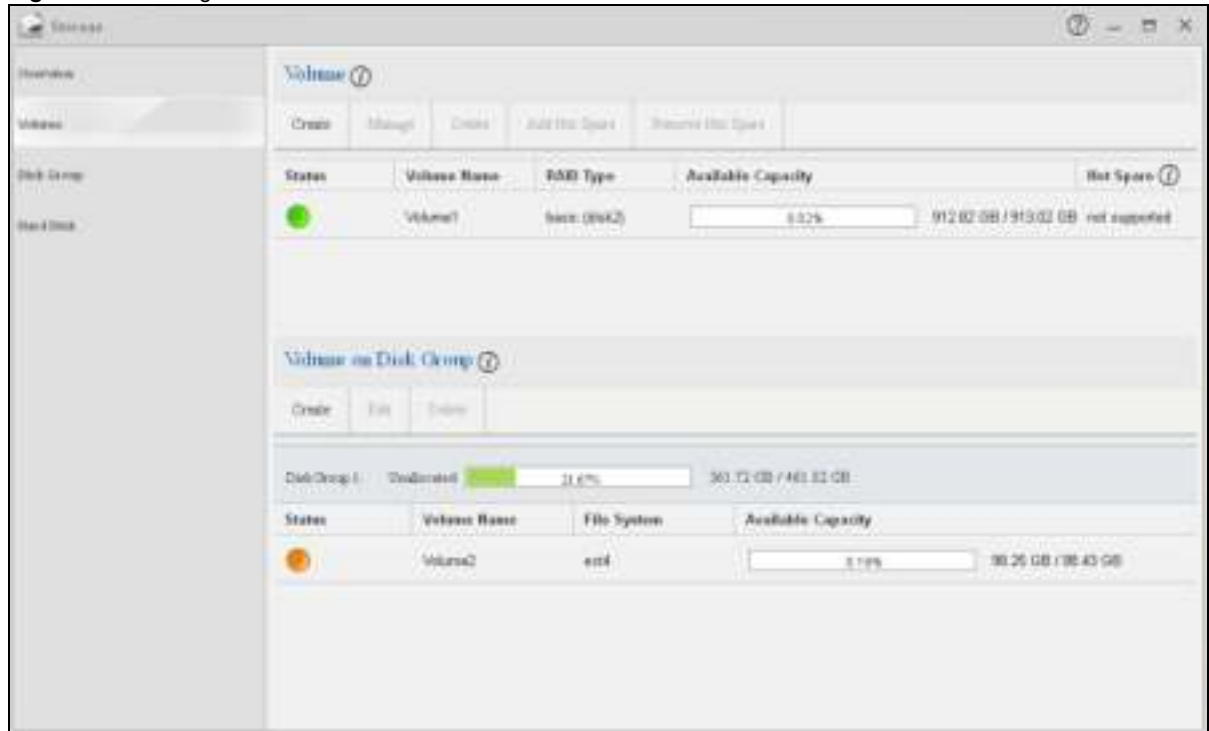
**Table 9** Expand Volumes and Disk Groups

EXPANSION METHOD	DESCRIPTION
Using unallocated disk space	You can add more storage space to a volume if there is still some space unallocated on the same disk group.
Adding disks	You can add one or more disks to a JBOD, RAID 1 or RAID 5.  The hard disk you want to add must have capacity equal to or greater than the smallest disk in the volume or disk group.
Replacing with larger disks	You can replace smaller disks in a RAID 1, RAID 5, or RAID 6 with larger disks.  Replace disks one-by-one.  Replace the smallest disk in the volume or disk group first.  After replacing a disk, you must use the <b>Storage</b> screen's <b>Manage</b> link to repair the volume.  What for the repair process to complete before you replace another disk.

Use the **Volume** screen to configure and manage internal volumes. From the **Storage** screen, click **Volume** to open the screen as shown.



Note: Configure and manage external volumes through the administrator mode. See [Section 4.6 on page 85](#) for more information.

**Figure 22** Storage Volume



The following table describes the labels in this screen.

**Table 10** Storage Volume

LABEL	DESCRIPTION
Volume	Use this section to configure and manage volumes built on hard disks directly.
Create	<p>Click this to format internal hard disks and create a new volume. All data on the disk(s) will be lost.</p> <p>Note: This button is not available while the NAS is creating, deleting, or changing the RAID type of any volume or disk group.</p> <p>A pop-up screen appears if all installed hard disks are used by other volumes or disk groups. You will need to install another hard disk into the NAS if any disk tray is available or remove unnecessary volumes or disk groups to release the storage space. Click <b>OK</b> to close this screen.</p> <p><b>Figure 23</b> No Disk in NAS</p> 
Manage	<p>Select a volume and click <b>Manage</b> to edit, repair or expand the volume.</p> <p>Note: This button is available only when you can repair, expand or change RAID type.</p>
Delete	<p>Select a volume and click <b>Delete</b> to remove it.</p> <p>Note: If you delete a volume, all data in the volume disks is erased.</p>
Add Hot Spare	<p>Select a RAID 1 or RAID 5 volume and click <b>Add Hot Spare</b> to add another disk as a hot-spare (standby) to the RAID array. A pop-up screen displays.</p> <p><b>Figure 24</b> Add Hot Spare</p>  <p>Select a disk from the drop-down list box and then click <b>Apply</b>.</p> <p>See <a href="#">Section 4.4.7 on page 68</a> for more information about RAID.</p> <p>Note: The capacity of the disk you are adding must be equal to or greater than the largest disk in the RAID 1 or RAID 5 array.</p>

**Table 10** Storage Volume (continued)

LABEL	DESCRIPTION
Remove Hot Spare	Select a RAID 1 or RAID 5 volume and click <b>Remove Hot Spare</b> to remove the standby drive from the RAID array.
Status	<p>This field shows whether the volume is normal, degraded, crashed, <b>Creating</b>, <b>Deleting</b>, <b>Expanding</b>, <b>Repairing</b> or <b>Changing</b> the RAID type.</p> <p><b>Normal:</b> A green circle represents a healthy volume.</p> <p><b>Degraded:</b> An orange circle represents a degraded RAID 1 volume.</p> <p><b>Crashed:</b> A red circle represents a down volume.</p> <p>The following status also displays the percentage of an action has been completed.</p> <p><b>Creating:</b> The NAS's percentage progress in creating the volume.</p> <p><b>Deleting:</b> The NAS's percentage progress in deleting the volume.</p> <p><b>Expanding:</b> The NAS's percentage progress in expanding the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Repairing:</b> The NAS's percentage progress in repairing the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Changing:</b> The NAS's percentage progress in changing the volume's RAID type. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p>
Volume Name	This field shows the name of the volume. Click the column's heading cell to display an arrow. Use the arrow to sort the table entries in ascending or descending order.
RAID Type	This field shows what type of disk storage technology ( <b>Basic</b> , a RAID level or <b>JBOD</b> ) a volume uses.
Available Capacity	This field shows the percentage of the volume being used, the percentage that is available, and the total disk size.
Hot Spare	This field shows the name of the standby disk if there is any for a RAID 1 or RAID 5 volume. Otherwise, it shows <b>not supported</b> .
<p>Volume on Disk Group</p> <p>Use this section to configure and manage volumes built on disk groups.</p>	
Create	<p>Click this to format internal hard disks and create a new volume on a disk group. All data on the disks will be lost.</p> <p>Note: This button is unavailable when a volume or disk group is being created, deleted or changing the RAID type.</p>
Edit	Select a volume and click <b>Edit</b> to expand the volume's capacity.
Delete	<p>Select a volume and click <b>Delete</b> to remove it.</p> <p>Note: If you delete a volume, all data in the volume disks is erased.</p> <p>Note: Deleting a volume on a disk group here does not delete the corresponding disk group. To delete a disk group, click <b>Storage &gt; Disk Group</b>.</p>
Disk Group X	This field shows the name of the disk group, the percentage of the disk group size that is available, the disk group size being used, and the total disk group size.



**Table 10** Storage Volume (continued)

LABEL	DESCRIPTION
Status	<p>This field shows whether the volume is normal, degraded, crashed, <b>Creating</b>, <b>Deleting</b>, <b>Expanding</b>, <b>Repairing</b> or <b>Changing</b> the RAID type.</p> <p><b>Normal:</b> A green circle represents a healthy volume.</p> <p><b>Degraded:</b> An orange circle represents a degraded RAID 1 volume.</p> <p><b>Crashed:</b> A red circle represents a down volume.</p> <p>The following status also displays the percentage of an action has been completed.</p> <p><b>Creating:</b> The NAS's percentage progress in creating the volume.</p> <p><b>Deleting:</b> The NAS's percentage progress in deleting the volume.</p> <p><b>Expanding:</b> The NAS's percentage progress in expanding the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Repairing:</b> The NAS's percentage progress in repairing the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Changing:</b> The NAS's percentage progress in changing the volume's RAID type. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p>
Volume Name	This field shows the name of the volume. Click the column's heading cell to display an arrow. Use the arrow to sort the table entries in ascending or descending order.
File System	This field shows what file system the volume uses. At the time of writing, your NAS uses the <b>EXT4 file system for internal volumes</b> .
Available Capacity	This field shows the percentage of the volume being used, the percentage that is available, and the total disk group size.

#### 4.4.1.1 Creating a Volume

Use the **Create Volume** screen to configure a volume directly on a disk/RAID, which has better performance. Click **Create** in the **Volume** section of the **Storage > Volume** screen to open the screen as shown.

Note: Create a volume on a disk group instead if you want to have multiple volumes on a disk. See [Section 4.4.1.3 on page 51](#) for more information.

**Figure 25** Create Volume



The following table describes the labels in this screen.

**Table 11** Create Volume

LABEL	DESCRIPTION
Step 1. Select Disks and RAID Type	
Select disks	This section lists all available hard disks in the table and displays the disk trays where they are currently installed on the graphic at the right.
	Select one or more hard disks where you want to create a volume. Use the check box on the top to select or unselect all entries in this column.
Disk Name	This field shows the name of the hard disk.
Size	This field shows the total disk size.
Model Name	This field shows the model of the hard disk.

**Table 11** Create Volume (continued)

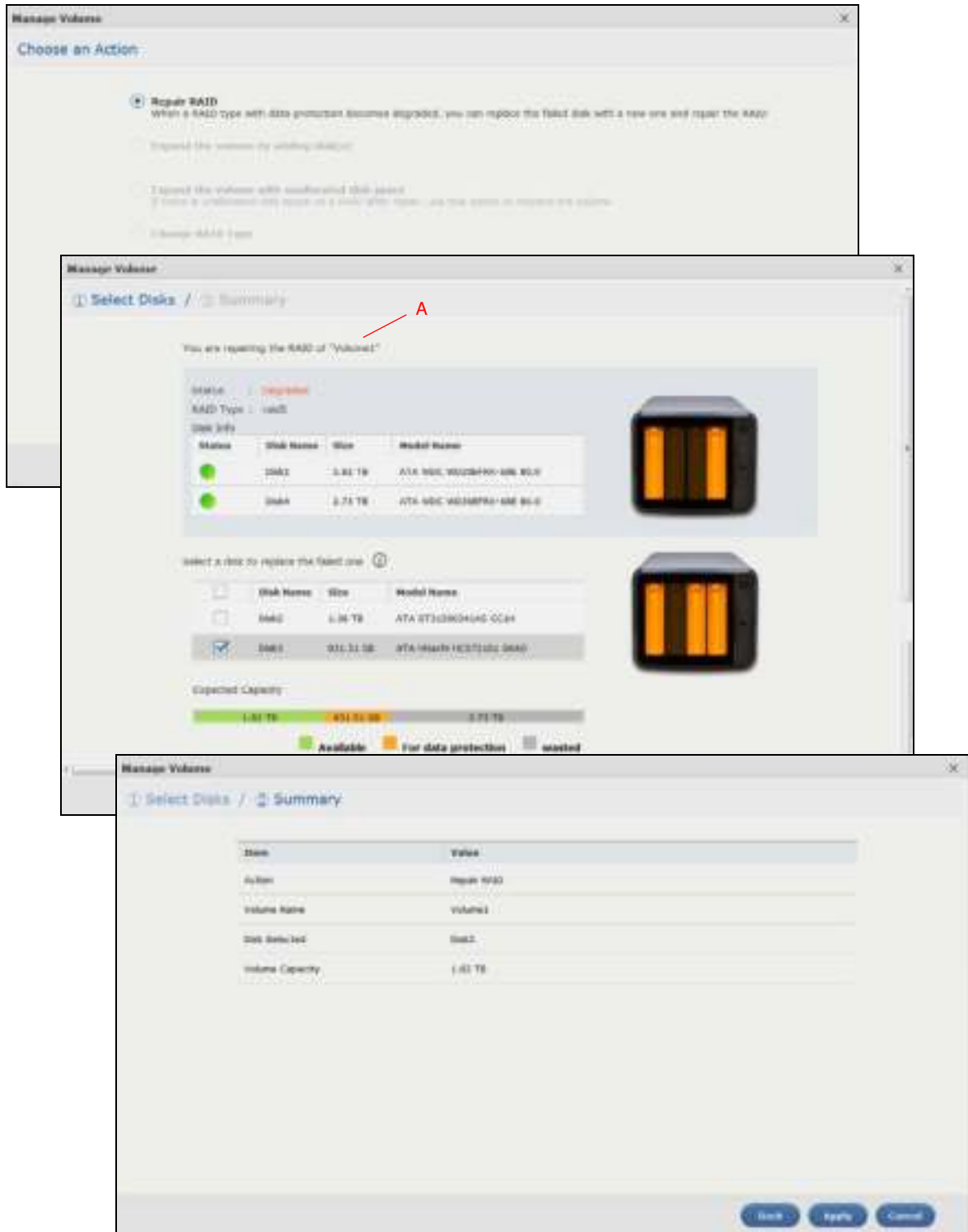
LABEL	DESCRIPTION
Choose a RAID type	<p>Select a RAID type from the drop-down list box. The corresponding space allocations of available size, data protection area, and wasted size display.</p> <p>Use <b>Basic</b> with one disk.</p> <p>Use <b>JBOD</b> with two or more disks for maximum capacity.</p> <p>Use <b>RAID 0</b> with two or four disks for maximum speed.</p> <p>Use <b>RAID 1</b> with two or more disks to mirror primary data to another disk(s) with high performance.</p> <p>Use <b>RAID 5</b> with three or more disks to balance performance, hard disk capacity usage with data protection in case of disk failure.</p> <p>Use <b>RAID 6</b> with four disks for more data protection in case of disk failure.</p> <p>Use <b>RAID 10</b> with four disks to get better performance than RAID 6, with slightly less data protection.</p> <p>See <a href="#">Table 7 on page 37</a> or <a href="#">Section 4.4.7 on page 68</a> for more information.</p> <p>Note: Use the same capacity of hard disks for RAID 1, 5, 6, or 10 to avoid wasting space.</p>
Back	This button is not available at this step.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
Step 2. Summary	
Use this screen to review the settings you configured in the last step.	
Disk Selected	This field displays the hard disks you have selected.
RAID Type	This field displays the type of RAID on which the volume will be built.
Volume Type	This field displays the type of the volume, <b>Single volume on RAID (no disk group)</b> .
Volume Name	This field displays the name of the volume.
Volume Capacity	This field displays the size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

#### 4.4.1.2 Managing a Volume

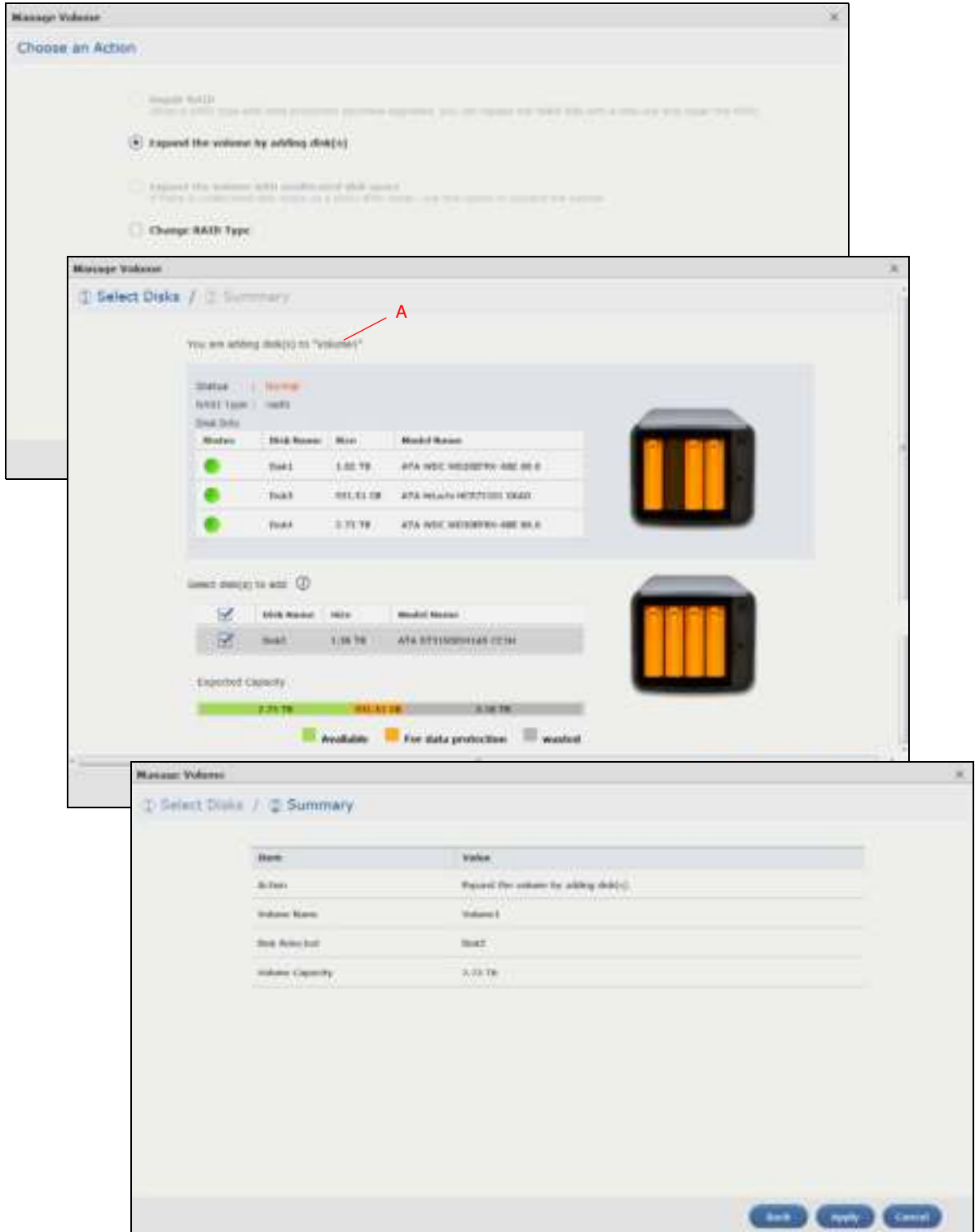
Use the **Manage Volume** screen to repair, expand a volume or change the volume's RAID type. In the **Storage > Volume** screen, select a volume and then click **Manage** in the **Volume** section to open the screen as shown.

The available options vary depending on the conditions it matches. For example, the **Repair RAID** option is available only when a degraded volume is selected.

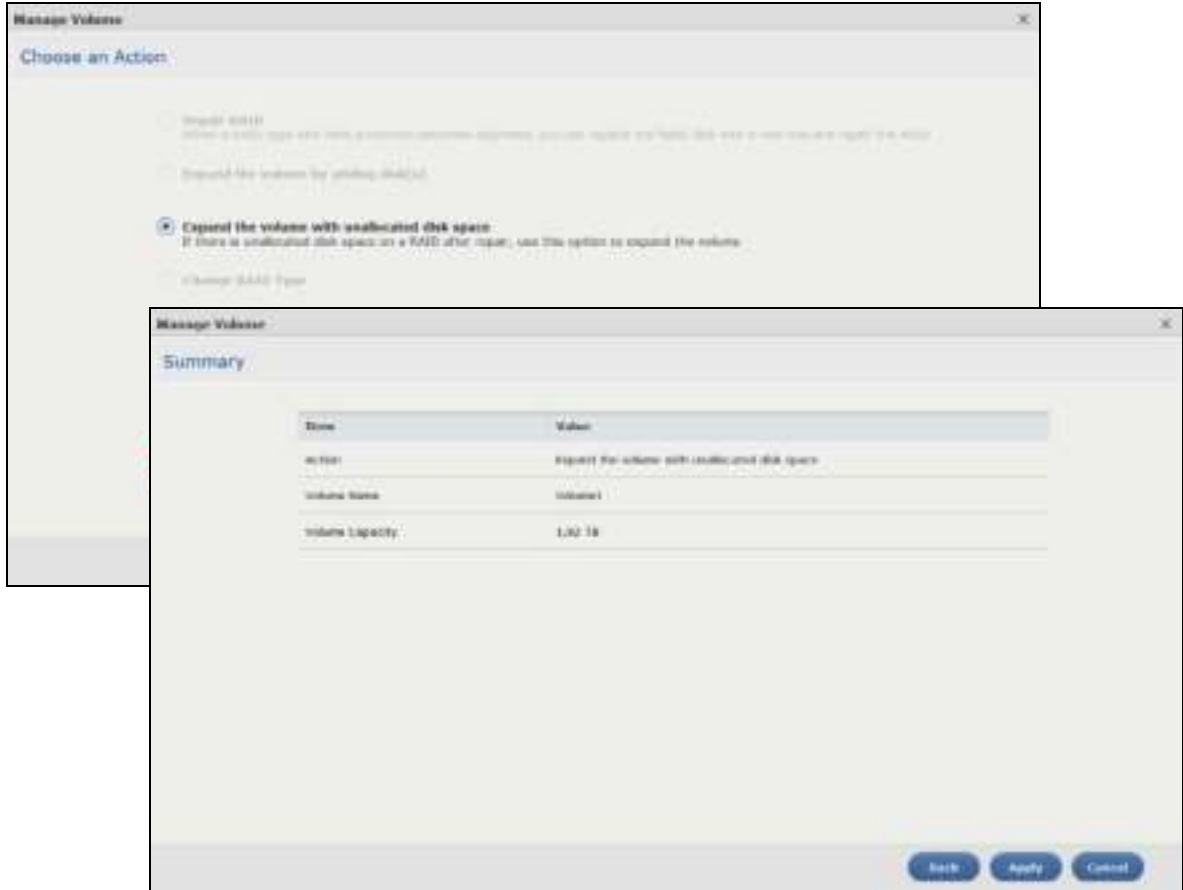
**Figure 26** Manage Volume (Repair RAID)



**Figure 27** Manage Volume (Expand the volume by adding disk(s) )



**Figure 28** Manage Volume (Change RAID Type)



**Figure 29** Manage Volume (Change RAID Type)



The following table describes the labels in this screen.

**Table 12** Manage Volume

LABEL	DESCRIPTION
Repair RAID	Select this to repair a degraded RAID volume.
Expand the volume by adding disk(s)	Select this to add one or more disks to a JBOD, RAID 1 or RAID 5 volume. You can add a disk to increase an array's capacity or to use as a hot-spare (standby). When you add a disk to an existing array, you do not have to re-create shares, access rights and so on as you would if you create a new volume.  Note: This option is available when a disk has not been allocated to any volume or disk group yet.
Expand the volume with unallocated disk space	Select this to add more storage space to a volume if there is still some space unallocated on the same disk group. Select this if the NAS fails to expand a volume by adding disk(s) and the final volume capacity is not as expected. For example, you want to expand a 1 TB RAID 1 volume by adding two more 1 TB disks. The volume size should be 2 TB after expansion, however, you just see 1 TB. Use this option to fix the issue.
Change RAID Type	Select this if you want to change the volume's RAID type from Basic to RAID 1, RAID 1 to RAID 5, or RAID 5 to RAID 6.
The following describes labels on the following screens after you select <b>Repair RAID</b> in this screen.	
Step 1. Select Disks	
A	This shows the name of the volume you have selected.
Status	This field displays the status of the volume.
RAID Type	This field displays the type of RAID on which the volume is built.
Disk Info	
Status	This field displays the status of the disk.
Disk Name	This field displays the name of the disk.
Size	This field displays the total capacity of the disk.
Model Name	This field displays the model of the disk.
Select a disk to replace the failed one	This section lists all available hard disks in the table and displays the corresponding disk tray of the disks you selected on the graphic at the right.
	Select one or more hard disks for increasing the volume's capacity. Use the check box on the top to select or unselect all entries in this column.
Disk Name	This field shows the name of a hard disk.
Size	This field shows the total disk size.
Model Name	This field shows the model of the hard disk.
Expected Capacity	This field shows the corresponding space allocations of available size, data protection area, and wasted size according to your selections on hard disks above.  Note: Use the same capacity of hard disks for RAID 1, 5, 6, or 10 to avoid wasting space.
Back	Click <b>Back</b> to go to the previous step.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
Step 2. Summary	
Use this screen to review the settings you configured in the last step.	
Action	This field displays for what the configuration is.
Volume Name	This field displays the name of the volume.
Disk Selected	This field displays the hard disks you have selected.



**Table 12** Manage Volume (continued)

LABEL	DESCRIPTION
Volume Capacity	This field displays the total available size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
The following describes labels on the following screens after you select <b>Expand the volume by adding disk(s)</b> in this screen.	
Step 1. Select Disks	
A	This shows the name of the volume you have selected.
Status	This field displays the status of the volume.
RAID Type	This field displays the type of RAID on which the volume is built.
Disk Info	
Status	This field displays the status of the disk.
Disk Name	This field displays the name of the disk.
Size	This field displays the total capacity of the disk.
Model Name	This field displays the model of the disk.
Select disk(s) to add	This section lists all available hard disks in the table and displays the corresponding disk tray of the disks you selected on the graphic at the right.
	Select one or more hard disks for increasing the volume's capacity. Use the check box on the top to select or unselect all entries in this column.
Disk Name	This field shows the name of a hard disk.
Size	This field shows the total disk size.
Model Name	This field shows the model of the hard disk.
Expected Capacity	This field shows the corresponding space allocations of available size, data protection area, and wasted size according to your selections on hard disks above.  Note: Use the same capacity of hard disks for RAID 1, 5, 6, or 10 to avoid wasting space.
Back	Click <b>Back</b> to go to the previous step.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
Step 2. Summary	
Use this screen to review the settings you configured in the last step.	
Action	This field displays for what the configuration is.
Volume Name	This field displays the name of the volume.
Disk Selected	This field displays the hard disks you have selected.
Volume Capacity	This field displays the total available size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
The following describes labels on the following screens after you select <b>Expand the volume with unallocated disk space</b> in this screen.	
Summary	
Action	This field displays for what the configuration is.

**Table 12** Manage Volume (continued)

LABEL	DESCRIPTION
Volume Name	This field displays the name of the volume.
Volume Capacity	This field displays the total available size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
The following describes labels on the following screens after you select <b>Change RAID Type</b> in this screen.	
Step 1. Select Disks and RAID Type	
A	This shows the name of the volume you have selected.
Status	This field displays the status of the volume.
RAID Type	This field displays the type of RAID on which the volume is built.
Disk Info	
Status	This field displays the status of the disk.
Disk Name	This field displays the name of the disk.
Size	This field displays the total capacity of the disk.
Model Name	This field displays the model of the disk.
Select disk(s)	This section lists all available hard disks in the table and displays the corresponding disk tray of the disks you selected on the graphic at the right.
	Select one or more hard disks for changing the volume's RAID type. Use the check box on the top to select or unselect all entries in this column.
Disk Name	This field shows the name of a hard disk.
Size	This field shows the total disk size.
Model Name	This field shows the model of the hard disk.
Choose a RAID type	<p>Select a RAID type from the drop-down list box. The corresponding space allocations of available size, data protection area, and wasted size display.</p> <p>Use <b>RAID 1</b> with two or four disks to mirror primary data to another disk(s) with high performance.</p> <p>Use <b>RAID 5</b> with three or more disks to balance performance, hard disk capacity usage with data protection in case of disk failure.</p> <p>Use <b>RAID 6</b> with four disks for more data protection in case of disk failure.</p> <p>See <a href="#">Table 7 on page 37</a> or <a href="#">Section 4.4.7 on page 68</a> for more information.</p> <p><b>Note:</b> Use the same capacity of hard disks for RAID to avoid wasting space.</p>
Back	Click <b>Back</b> to go to the previous step.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
Step 2. Summary	
Use this screen to review the settings you configured in the last step.	
Action	This field displays for what the configuration is.
Volume Name	This field displays the name of the volume.
Disk Selected	This field displays the hard disks you have selected.
RAID Type	This field displays the type of RAID on which the volume will be built.

**Table 12** Manage Volume (continued)

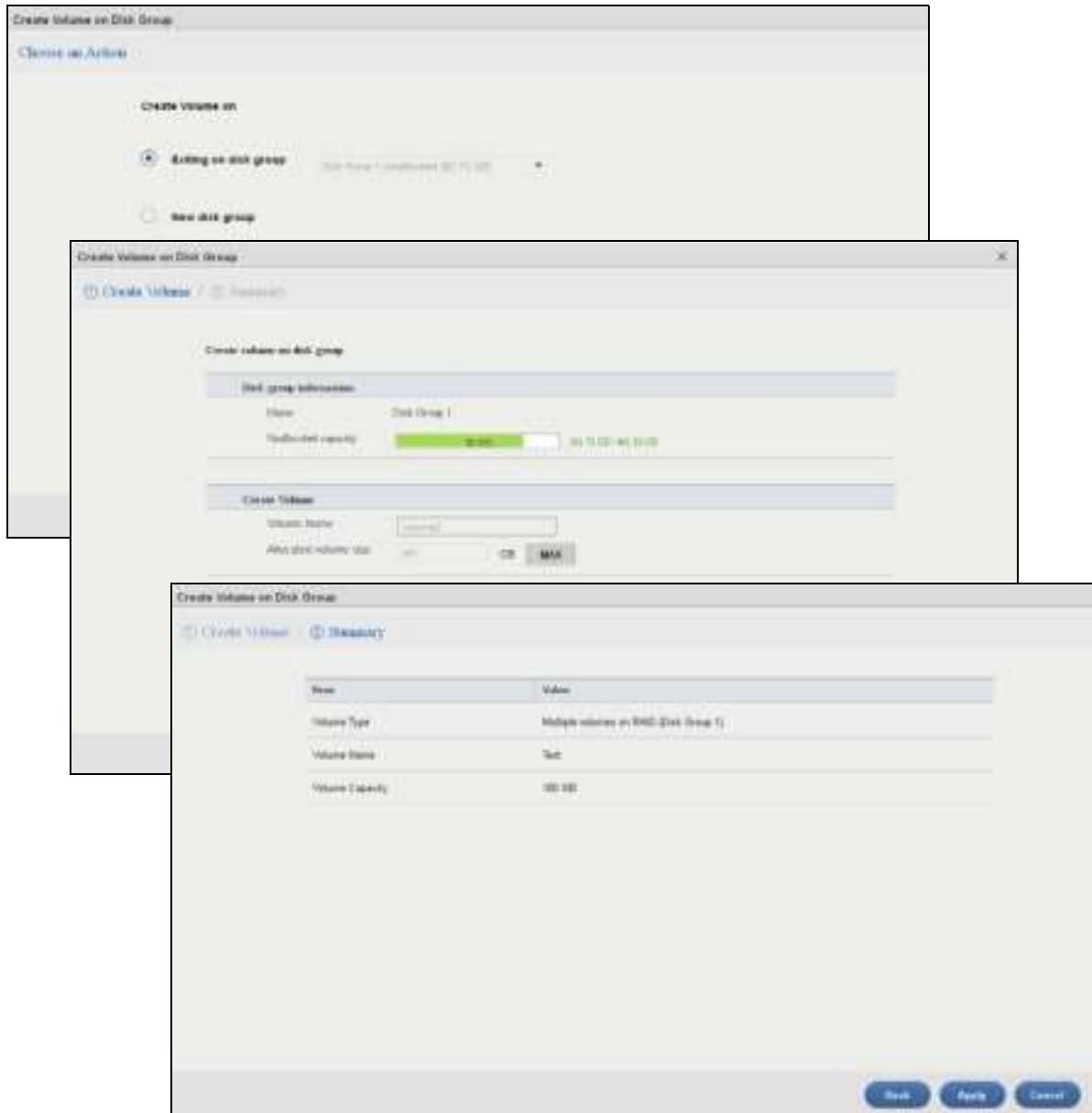
LABEL	DESCRIPTION
Volume Capacity	This field displays the total size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

#### 4.4.1.3 Creating a Volume on Disk Group

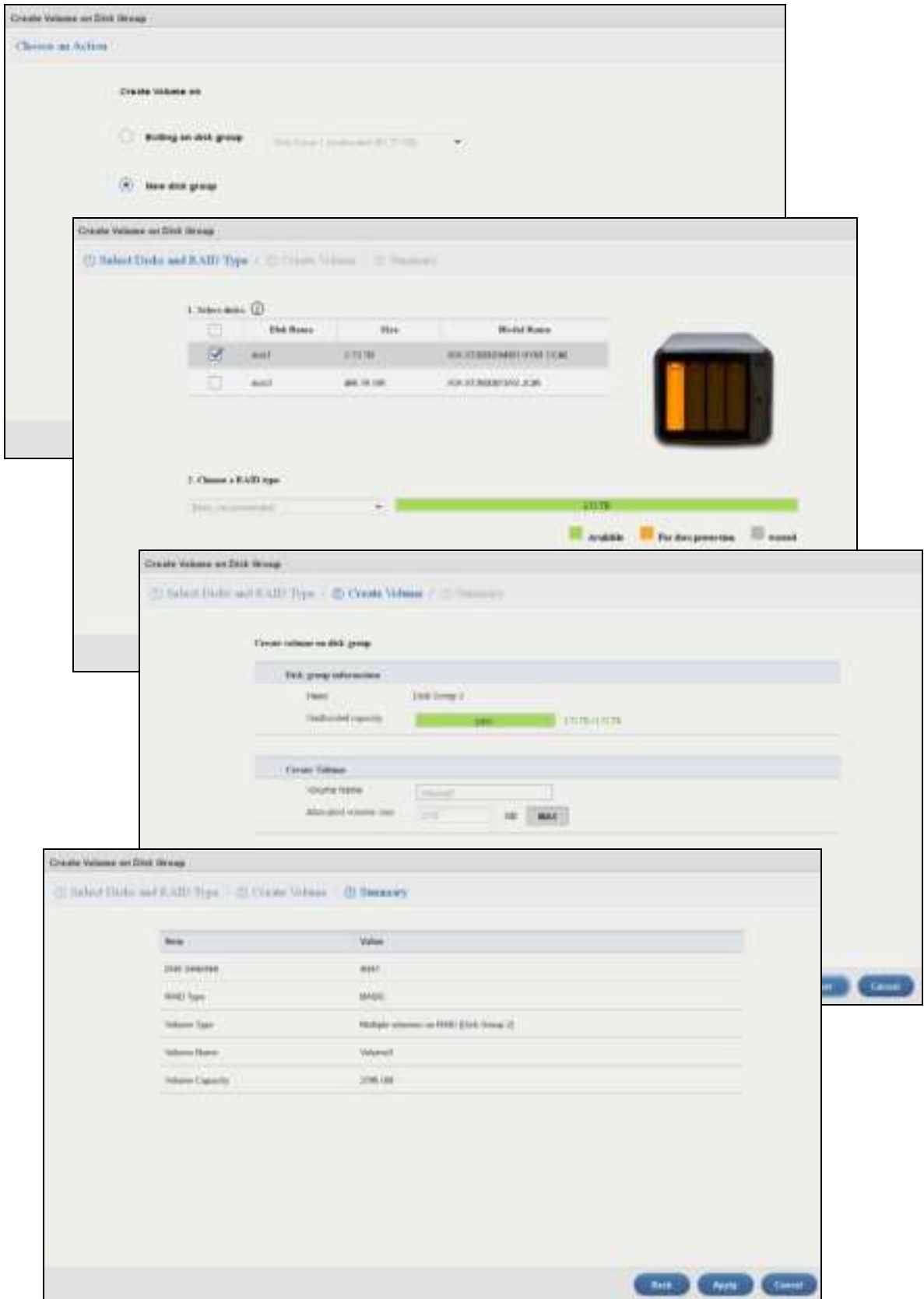
Use the **Create Volume on Disk Group** screen to configure a volume on an existing or new disk group. Click **Create** in the **Volume on Disk Group** section of the **Storage > Volume** screen to open the screen as shown.

Note: It is suggested to create a volume directly on a disk instead of on a disk group if high performance is important to you. See [Section 4.4.1.1 on page 41](#) for more information.

**Figure 30** Create Volume on an Existing Disk Group



**Figure 31** Create Volume on a New Disk Group



The following table describes the labels in this screen.

**Table 13** Create Volume on Disk Group

LABEL	DESCRIPTION
Choose an Action	
Create Volume on	<p>Select <b>Existing on disk group</b> and a disk group from the drop-down list box to create a volume on the disk group. This option is available only when there is an existing disk group available.</p> <p>Select <b>New disk group</b> to create a disk group and then a volume on the disk group.</p>
The following fields describe the labels on the following screens if you select <b>Existing on disk group</b> on the <b>Choose an Action</b> screen.	
Step 1. Create Volume	
Disk group information	
Name	This field displays the name of the disk group.
Unallocated capacity	This field displays the percentage of the available size, the size in use, and total size of the disk group.
Create Volume	
Volume Name	This field displays the default name of the volume. You can also type a new name for the volume.
Allocated Volume Size	This field displays the number of Gigabytes available on the volume by default. You can change the size to allocate to this volume. Click <b>MAX</b> to allocate all available size of the disk group to the volume.
Back	Click <b>Back</b> to go to the previous step.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
Step 2. Summary	
Volume Type	This field displays the type of the volume, <b>Multiple volumes on RAID (Disk Group X)</b> where Disk Group X is the disk group's name.
Volume Name	This field displays the name of the volume.
Volume Capacity	This field displays the size of the volume.
Back	Click <b>Back</b> to go to the previous screen.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
The following fields describe the labels on the following screens after you select <b>New disk group</b> on the <b>Choose an Action</b> screen.	
Step 1. Select Disks and RAID Type	
Select disks	This section lists all available hard disks in the table and displays the disk trays they are currently installed on the graphic at the right.
	Select one or more hard disks where you want to create a volume. Use the check box on the top to select or unselect all entries in this column.
Disk Name	This field shows the name of the hard disk.
Size	This field shows the total disk size.
Model Name	This field shows the model of the hard disk.

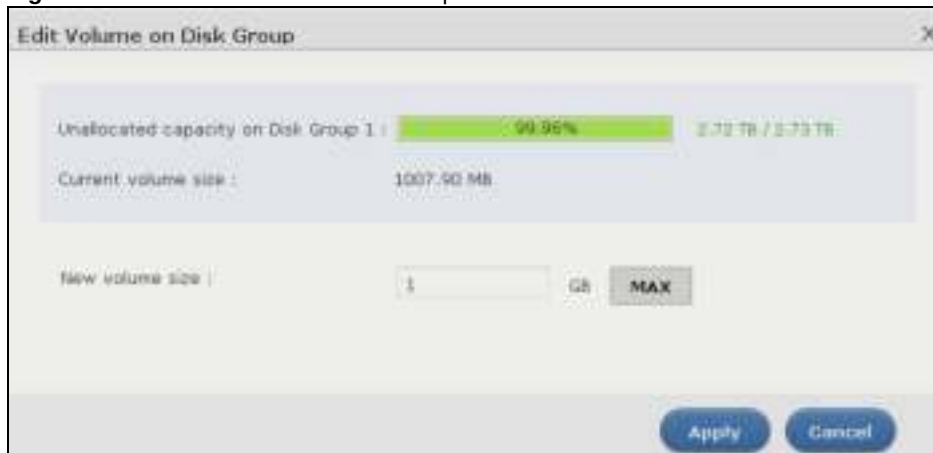
**Table 13** Create Volume on Disk Group (continued)

LABEL	DESCRIPTION
Choose a RAID type	<p>Select a RAID type from the drop-down list box. The corresponding space allocations of available size, data protection area, and wasted size display.</p> <p>Use <b>Basic</b> with one disk.</p> <p>Use <b>JBOD</b> with two or more disks for maximum capacity.</p> <p>Use <b>RAID 0</b> with two or four disks for maximum speed.</p> <p>Use <b>RAID 1</b> with two or more disks to mirror primary data to another disk(s) with high performance.</p> <p>Use <b>RAID 5</b> with three or more disks to balance performance, hard disk capacity usage with data protection in case of disk failure.</p> <p>Use <b>RAID 6</b> with four disks for more data protection in case of disk failure.</p> <p>Use <b>RAID 10</b> with four disks to get better performance than RAID 6, with slightly less data protection.</p> <p>See <a href="#">Table 7 on page 37</a> or <a href="#">Section 4.4.7 on page 68</a> for more information.</p> <p>Note: Use the same capacity of hard disks for RAID 1, 5, 6, or 10 to avoid wasting space.</p>
Back	Click <b>Back</b> to go to the previous screen.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
Step 2. Create Volume	
Disk group information	
Name	This field displays the name of the disk group.
Unallocated capacity	This field displays the percentage of the available size, the size in used, and total size of the disk group.
Create Volume	
Volume Name	This field displays the default name of the volume. You can also type a new name for the volume.
Volume Capacity	This field displays the number of Gigabytes available on the volume by default. You can set the size to allocate for this volume. Click <b>MAX</b> to allocate all available capacity of the disk group to the volume.
Back	Click <b>Back</b> to go to the previous step.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
Step 3. Summary	
Use this screen to review the settings you configured in the last step.	
Disk Selected	This field displays the hard disk(s) on which the RAID array will be built.
RAID Type	This field displays the type of RAID on which the volume will be built.
Volume Type	This field displays the type of the volume, <b>Multiple volumes on RAID (Disk Group X)</b> where Disk Group X is the disk group's name.
Volume Name	This field displays the name of the volume.
Volume Capacity	This field displays the size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

#### 4.4.1.4 Editing a Volume on Disk Group

Use the **Edit Volume on Disk Group** screen to expand a volume's capacity. In the **Storage > Volume** screen, select a volume and then click **Edit** in the **Volume on Disk Group** section to open the screen as shown.

**Figure 32** Edit Volume on Disk Group



The following table describes the labels in this screen.

**Table 14** Edit Volume on Disk Group

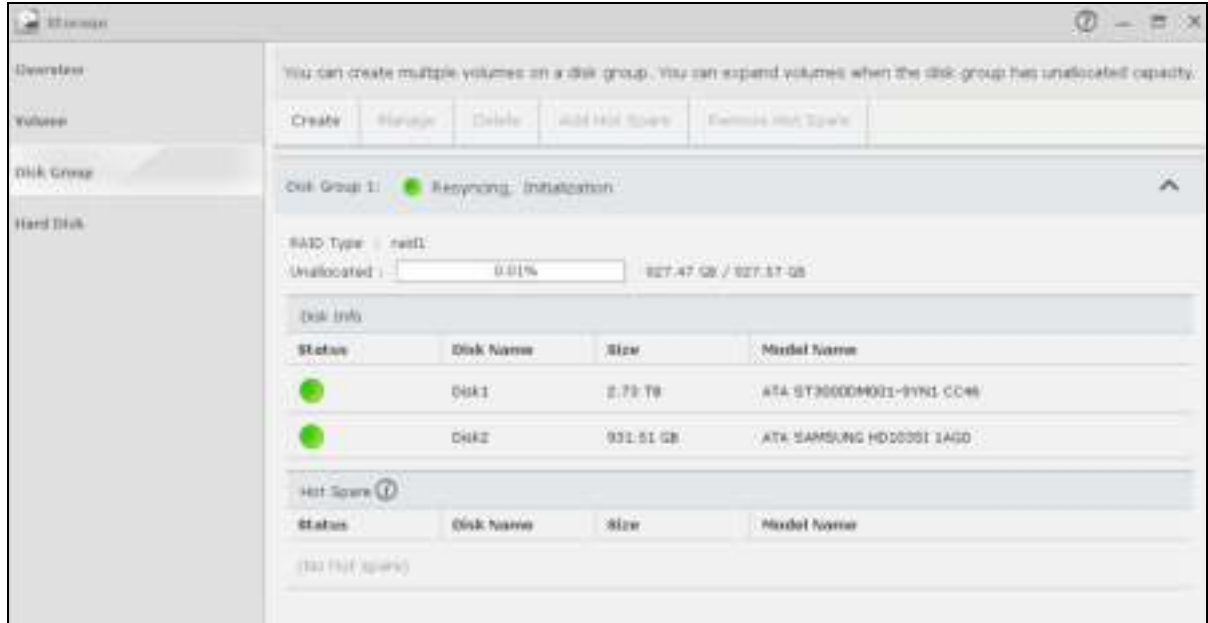
LABEL	DESCRIPTION
Unallocated capacity on Disk Group X	This field displays the the percentage of the disk group size unallocated to other volumes, the size in use, and total size of the disk group.
Current volume size	This field displays the total size of the volume, excluding the file system size.
New volume size	This field displays the smallest size to which you can expand the volume (this includes the volume's current available size, file system size, and a minimum additional capacity for expansion). You can enter a bigger number or click <b>MAX</b> to allocate all the rest of the space in the disk group to the volume.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.



## 4.4.2 Disk Group

Use the **Disk Group** screen to configure and manage disk groups. From the **Storage** screen, click **Disk Group** to open the screen as shown.

**Figure 33** Disk Group



The following table describes the labels in this screen.

**Table 15** Disk Group

LABEL	DESCRIPTION
Create	Click this to format internal hard disks and create a new disk group. All data on the disk(s) will be lost.  Note: This button is not available while the NAS is creating, deleting, or changing the RAID type of any volume or disk group.
Manage	Select a volume and click <b>Manage</b> to edit, repair, or expand the volume.  Note: This button is available only when you can repair, expand or change RAID type.
Delete	Select a disk group and click <b>Delete</b> to remove it.  Note: If you delete a disk group, all data in the disk group is erased.
Add Hot Spare	Select a RAID 1 or RAID 5 disk group and click <b>Add Hot Spare</b> to add another disk as a hot-spare (standby) to the RAID array. See <a href="#">Section 4.4.7 on page 68</a> for more information.  Note: The capacity of the disk you are adding must be equal to or greater than the largest disk in the RAID 1 or RAID 5 array.  Note: You need four hard disks installed to use RAID 5 with hotspare.
Remove Hot Spare	Select a RAID 1 or RAID 5 disk group and click <b>Remove Hot Spare</b> to remove the standby drive from the RAID array.

**Table 15** Disk Group (continued)

LABEL	DESCRIPTION
Disk Group X	<p>This field shows the name of the disk group and whether it is normal, degraded, crashed, <b>Creating</b>, <b>Deleting</b>, <b>Expanding</b>, <b>Repairing</b> or <b>Changing</b> the RAID type.</p> <p><b>Normal:</b> A green circle represents a healthy volume.</p> <p><b>Degraded:</b> An orange circle represents a degraded RAID 1 volume.</p> <p><b>Crashed:</b> A red circle represents a down volume.</p> <p>The following status also displays the percentage of an action has been completed.</p> <p><b>Creating:</b> The NAS's percentage progress in creating the volume.</p> <p><b>Deleting:</b> The NAS's percentage progress in deleting the volume.</p> <p><b>Expanding:</b> The NAS's percentage progress in expanding the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Repairing:</b> The NAS's percentage progress in repairing the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Changing:</b> The NAS's percentage progress in changing the volume's RAID type. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p>
RAID Type	This field shows the type of the RAID over which this disk group is running.
Unallocated	This field shows the percentage of the disk group size that is available, the disk group size being used, and the total disk group size.
Disk Info	
Status	This field shows the status of the disk.
Disk Name	This field shows the name of the disk.
Size	This field shows the total size of the disk.
Model Name	This field shows the model of the disk.
Hot Spare	

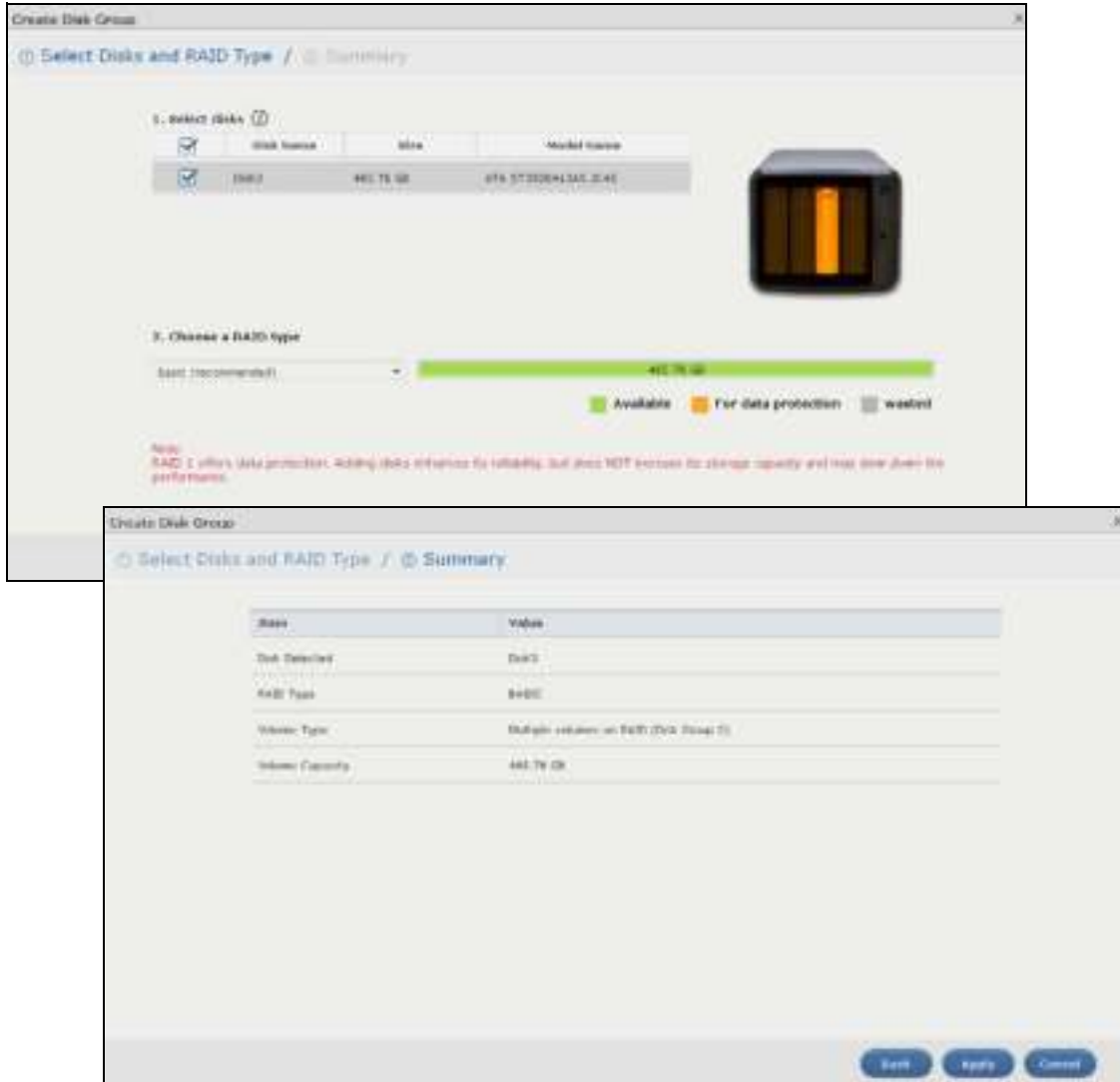
**Table 15** Disk Group (continued)

LABEL	DESCRIPTION
Status	<p>This field shows the status of the hot-spare disk.</p> <p>This field shows the name of the disk group and whether it is normal, degraded, crashed, <b>Creating</b>, <b>Deleting</b>, <b>Expanding</b>, <b>Repairing</b> or <b>Changing</b> the RAID type.</p> <p><b>Normal</b>: A green circle represents a healthy volume.</p> <p><b>Degraded</b>: An orange circle represents a degraded RAID 1 volume.</p> <p><b>Crashed</b>: A red circle represents a down volume.</p> <p>The following status also displays the percentage of an action has been completed.</p> <p><b>Creating</b>: The NAS's percentage progress in creating the volume.</p> <p><b>Deleting</b>: The NAS's percentage progress in deleting the volume.</p> <p><b>Expanding</b>: The NAS's percentage progress in expanding the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Repairing</b>: The NAS's percentage progress in repairing the volume. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p> <p><b>Changing</b>: The NAS's percentage progress in changing the volume's RAID type. For a RAID 1 volume, this also displays the percentage of resynchronizing the NAS has finished and the evaluated remaining time.</p>
Disk Name	This field shows the name of the hot-spare disk.
Size	This field shows the total size of the hot-spare disk.
Model Name	This field shows the model of the hot-spare disk.

### 4.4.3 Creating a Disk Group

Use the **Create Disk Group** screen to create a disk group. From the **Storage > Disk Group** screen, click the **Create** button to open the screen as shown.

**Figure 34** Create Disk Group



The following table describes the labels in this screen.

**Table 16** Create Disk Group

LABEL	DESCRIPTION
Step 1. Select Disks and RAID Type	
Select disks	This section lists all available hard disks in the table and displays the disk trays the hard disks are currently installed in the graphic on the right.
	Select one or more hard disks where you want to create a disk group. Use the check box on the top to select or unselect all entries in this column.
Disk Name	This field shows the name of the hard disk.
Size	This field shows the total disk size.

**Table 16** Create Disk Group (continued)

LABEL	DESCRIPTION
Model Name	This field shows the model of the hard disk.
Choose a RAID type	<p>Select a RAID type from the drop-down list box. The corresponding space allocations of available size, data protection area, and wasted size display.</p> <p>Use <b>Basic</b> with one disk.</p> <p>Use <b>JBOD</b> with two or more disks for maximum capacity.</p> <p>Use <b>RAID 0</b> with two or four disks for maximum speed.</p> <p>Use <b>RAID 1</b> with two or more disks to mirror primary data to another disk(s) with high performance.</p> <p>Use <b>RAID 5</b> with three or more disks to balance performance, hard disk capacity usage with data protection in case of disk failure.</p> <p>Use <b>RAID 6</b> with four disks for more data protection in case of disk failure.</p> <p>Use <b>RAID 10</b> with four disks to get better performance than RAID 6, with slightly less data protection.</p> <p>See <a href="#">Table 7 on page 37</a> or <a href="#">Section 4.4.7 on page 68</a> for more information.</p> <p>Note: Use the same capacity of hard disks for RAID 1, 5, 6, or 10 to avoid wasting space.</p>
Back	Click <b>Back</b> to go to the previous screen.
Next	Click <b>Next</b> to go to the next step.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.
<p>Step 2. Summary</p> <p>Use this screen to review the settings you configured in the last step.</p>	
Disk Selected	This field displays the hard disk(s) on which the RAID array will be built.
RAID Type	This field displays the type of RAID on which the volume will be built.
Volume Type	This field displays the type of the volume, <b>Multiple volumes on RAID (Disk Group X)</b> where Disk Group X is the disk group's name.
Volume Capacity	This field displays the size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

## 4.4.4 Hard Disk

Use the **Hard Disk** screen to view all disk information. From the **Storage** screen, click **Hard Disk** to open the screen as shown.

**Figure 35** Hard Disk



The screenshot shows a web interface for monitoring hard disks. On the left, there is a navigation menu with options like Overview, Volume, Disk Group, and Hard Disk. The main area displays a table with the following data:

Status	Disk Name	Used by	Size	Model Name	Temperature
●	disk1		2.73 TB	ATA ST3000DM001-9YN1 UC48	39°C/102.2°F
●	disk2	Volume1 (basic)	101.51	ATA SAMSUNG HD103SI1A02	32°C/91.4°F
●	disk3		485.76	ATA ST3600413AS UC48	40°C/104°F
●	disk4	Disk Group 1 (raid1)	485.76	ATA ST3600413AS UC48	41°C/105.8°F

The following table describes the labels in this screen.

**Table 17** Hard Disk

LABEL	DESCRIPTION
Status	This field shows the status of an installed hard disk. Normal: A green circle displays. This represents the volume is functioning normally. <b>Crashed:</b> A red circle displays. This represents the volume is down.
Disk Name	This field shows the name of the hard disk.
Used by	This field shows the name of a volume or disk group built on the hard disk if any. This field also displays the RAID type the volume or disk group is using.
Size	This field shows the total size of the hard disk.
Model Name	This field shows the model of the hard disk.
Temperature	This field shows the temperature of the hard disk in degrees celsius (°C) and fahrenheit (°F).

## 4.4.5 S.M.A.R.T

Use the **S.M.A.R.T** screens to view hard disk health indicators. Self Monitoring, Analysis, and Reporting Technology (S.M.A.R.T) detects and reports the reliability of hard disks using standard indicators (called “attributes”), to help you anticipate possible disk failures.

Note: The available S.M.A.R.T information varies from one hard disk vendor to another.

From the **Storage > Hard Disk** screen, select a disk and click **S.M.A.R.T** to open the screen as shown.

**Figure 36** S.M.A.R.T Overview



The following table describes the labels in this screen.

**Table 18** S.M.A.R.T Overview

LABEL	DESCRIPTION
A	This shows the current status of the hard disk (a green circle with a check mark indicates healthy).
B	This shows the overall health of the hard disk based on S.M.A.R.T diagnostics.
C	This shows the temperature of the hard disk in degrees celsius (°C) and fahrenheit (°F).
Performance	This shows your hard disk's performance ( <b>Good</b> or <b>Bad</b> ).
Power_On_Hours	This field shows the number of hours the hard disk has been in power-on state since it was produced.

**Table 18** S.M.A.R.T Overview (continued)

LABEL	DESCRIPTION
Spin_Retry_Count	This field shows the total number of spin start retry attempts. This is the number of attempts to spin up to fully operational speed the hard drive has made when the first attempt did not succeed. An increase in this value is an indicator of hard disk mechanical subsystem problems.
Reallocated_Sector_Ct	This field shows the total number of reallocated sectors on the hard drive. When the hard drive detects a read/write/verification error, it marks the sector as "reallocated" and transfers the data to a specially reserved (spare) area. The process is also known as remapping with "reallocated" sectors known as remaps. The more sectors the hard disk has to reallocate, the slower read and write speeds become.
Command_Timeout	This field shows the temperature of the hard disk in degrees celsius (°C) and fahrenheit (°F).
Model Family	This field shows the model family of the hard disk.
Device Model	This field shows the hard disk model number that uniquely identifies a hard disk.
Serial Number	This field shows this individual hard disk's serial number from the manufacturer.
LU WWN Device Id	This field shows the hard disk's Logical Unit World Wide Name Device Identifier.
Firmware Version	This field shows the version number of the hard disk's internal operating software.
User Capacity	This field shows the hard disk's usable size.
Sector Sizes	This field shows the sector size of the hard disk. A sector is the smallest physical storage unit on a hard disk. Normally it is 512 bytes.
Rotation Rate	This field shows the rotational speed of the hard disk, measured in revolutions per minute (rpm).
ATA Version	This field shows the hard disk's Advanced Technology Attachment version number.
SATA Version	This field shows the hard disk's Serial ATA (SATA) version number.
Local Time	This field shows the local time that the hard disk is using.
SMART support	This field shows whether or not the hard disk is SMART-capable.
SMART support	This field shows whether or not the hard disk has SMART monitoring turned on.
Close	Click this button to close the screen.

#### 4.4.6 SMART Info

Use this screen to display more details information about the volume.



Click **S.M.A.R.T Info** in the **S.M.A.R.T Overview** screen to display the following.

**Figure 37** S.M.A.R.T Info

The screenshot shows a window titled "SMART - Disk3" with a sub-header "S.M.A.R.T Info". Below the header is a table with the following data:

ID	Attribute	Value	Worst	Threshold	Type	Updated	When Failed	Raw Data
1	Raw_Read_Error_Rate	098	098	016	Pre-fail	Always		4
2	Throughput_Perform...	137	137	054	Pre-fail	Offline		79
3	Spin_Up_Time	124	124	024	Pre-fail	Always		623
4	Start_Stop_Count	100	100	000	Old_age	Always		348
5	Reallocated_Sector_Ct	100	100	005	Pre-fail	Always		0
7	Seek Error Rate	100	100	067	Pre-fail	Always		0

The following table describes the labels in this screen.

**Table 19** S.M.A.R.T Info

LABEL	DESCRIPTION
ID	This is the identification number used to tag a hard disk attribute.  This is standard across all S.M.A.R.T-enabled storage devices. However it depends on the storage vendor which attributes it will allow S.M.A.R.T to diagnose.
Attribute	This refers to an attribute of the hard disk that S.M.A.R.T can assess. Attributes describe the hard disk's physical state, performance, wear-and-tear, and so on.
Value	This is a value that corresponds to the <b>Raw Data</b> . Compare this with the <b>Threshold</b> .  S.M.A.R.T compresses the raw value(s) into a digit from 1 to 253, where 1 indicates the worst scenario while 253 indicates the best scenario.  The values 100 or 200 usually represent the mean or normal value.
Worst	This is the lowest value attained by the hard disk since S.M.A.R.T started its assessment of the hard disk.
Threshold	This is the attribute's threshold value. If the attribute's current normalized value is less than or equal to the threshold, the attribute has failed. An attribute value close to or below the threshold indicates the hard drive is no longer reliable.
Type	This shows S.M.A.R.T's assessment of the hard disk.  <b>Old_age</b> indicates end-of-product life from old-age (normal wearing out) if the attribute value is less than or equal to the threshold.  <b>Pre-fail</b> indicate imminent hard drive failure if the attribute value is less than or equal to the threshold.  Note that just because an attribute is of the Pre-fail type does not mean your hard drive is ready to fail. It only means this if the current normalized value of the attribute is less than or equal to the threshold.

**Table 19** S.M.A.R.T Info

LABEL	DESCRIPTION
Updated	This indicates when the hard drive updates the value for this attribute. <ul style="list-style-type: none"> <li>• <b>Always</b> means the hard drive updates this attribute during normal operation and during offline activities.</li> <li>• <b>Offline</b> means the hard drive only updates this attribute when no one is accessing the hard drive.</li> </ul>
When Failed	This column indicates when (if ever) the attribute failed. An attribute has failed if the normalized value is less than or equal to the threshold. <ul style="list-style-type: none"> <li>• -: This displays if the attribute is not failing now and has never failed in the past.</li> <li>• <b>FAILING_NOW</b>: This displays if the attribute's current normalized value is less than or equal to the threshold.</li> <li>• <b>In_the_past</b>: This displays if the attribute's current normalized value is greater than the threshold but the worst recorded value is less than or equal to the threshold.</li> </ul>
Raw Data	This is the attribute's unprocessed raw data. These values show exact amounts of time or numbers of attempts or errors. The meaning to the raw values is specific to the hard drive manufacturer. Table 42 on page 156 has some information about whether a higher or lower individual raw S.M.A.R.T. attribute value is better.
Close	Click this button to close the screen.

#### 4.4.6.1 S.M.A.R.T Attributes

The following table describes some common S.M.A.R.T. attributes. If a higher or lower raw attribute value is better, it is indicated in the **BETTER** column. Since S.M.A.R.T. attributes and their definitions vary by manufacturer, refer to the hard drive manufacturer for details about the attributes your hard drive supports.

**Table 20** S.M.A.R.T. Attributes

ID	ATTRIBUTE NAME	BETTER	DESCRIPTION
01	Read Error Rate	Low	Shows the rate of hardware read errors. If this is not zero, there is a problem with the disk surface or the read/write heads.
02	Throughput Performance	High	This is the hard drive's general (overall) throughput performance. A decreasing value indicates a problem.
03	Spin-Up Time	Low	This is the average number of milliseconds the hard drive took for spindle spin up (from zero RPM to fully operational).
04	Start/Stop Count		The total number of spindle start and stop cycles.
05	Reallocated Sectors Count	Low	Total number of reallocated sectors on the hard drive. When the hard drive detects a read/write/verification error, it marks the sector as "reallocated" and transfers the data to a specially reserved (spare) area. The process is also known as remapping with "reallocated" sectors known as remaps. The more sectors the hard drive has to reallocate, the slower read and write speeds become.
06	Read Channel Margin		This is the margin of a channel when it reads data.
07	Seek Error Rate	Low	This is the rate of the magnetic heads' seek errors. A failure in the mechanical positioning system, such as servo damage or a thermal widening of the disk, results in seek errors. An increasing number of seek errors indicate the condition of the disk surface and the mechanical subsystem are worsening.
08	Seek Time Performance	High	This is an average performance indicator for the seek operations of the magnetic heads. Mechanical subsystem problems cause this value to decrease.

**Table 20** S.M.A.R.T. Attributes (continued)

ID	ATTRIBUTE NAME	BETTER	DESCRIPTION
09	Power-On Hours (POH)	Low	This is how many hours the hard drive has been in a power-on state. The raw value lists the total number of hours (or minutes, or seconds depending on the manufacturer).
10	Spin Retry Count	Low	This is the total number of spin start retry attempts. This is the number of attempts to spin up to fully operational speed the hard drive has made when the first attempt did not succeed. An increase in this value is an indicator of hard disk mechanical subsystem problems.
11	Recalibration Retries	High	This is the number of times recalibration was requested when the first attempt did not succeed. A decrease in this value is an indicator of hard disk mechanical subsystem problems.
12	Device Power Cycle Count		This is the number of times the hard drive has gone through a full power on and power off.
13	Soft Read Error Rate	Low	This is the number of uncorrected read errors the hard drive has reported. If this is not zero, back up your data.
190	Airflow Temperature	Low	This indicates the temperature of the airflow measured by a Western Digital hard drive.
190	Temperature Difference from 100	High	This indicates the value of 100 - the temperature in degrees Celsius. Manufacturers can set a minimum threshold that corresponds to a maximum temperature.
191	G-sense error rate	Low	This is the number of mistakes caused by impact loads.
192	Power-off Retract Count	Low	This is how many times the heads are loaded off the media.
193	Load/Unload Cycle	Low	This is the number of load and unload cycles into head landing zone position.
194	Temperature	Low	This is the hard drive's internal temperature.
195	Hardware ECC Recovered	High	This is the time between ECC (Error Correction Code)-corrected errors.
196	Reallocation Event Count	Low	This is the total number of reallocation (remap) operations. The raw value is the total attempts to move data from reallocated sectors to a spare area. Successful and unsuccessful attempts are both included.
197	Current Pending Sector Count	Low	This is the number of unstable sectors awaiting reallocation. If the sector is later successfully written or read, this value decreases and reallocation is not performed. Only failed write attempts cause a reallocation, not read errors. This can be difficult to test since only direct I/O writes to the disk cause reallocations, not cached writes.
198	Uncorrectable Sector Count	Low	This is the number of errors reading or writing a sector that were not correctable. An increase in this value is an indicator of disk surface defects or mechanical subsystem problems.
199	UltraDMA CRC Error Count	Low	This is the number of data transfer errors through the interface cable according to the ICRC (Interface Cyclic Redundancy Check).
200	Write Error Rate / Multi-Zone Error Rate	Low	This is the total number of errors in writing sectors.
201	Soft Read Error Rate	Low	This is the number of read/write head off-track errors. If the value is not zero, make a backup.
202	Data Address Mark Errors	Low	This is the number of data address mark errors. This could also be a different, manufacturer-specific attribute.
203	Run Out Cancel	Low	This is the number of ECC (Error Correction Code) errors.

**Table 20** S.M.A.R.T. Attributes (continued)

ID	ATTRIBUTE NAME	BETTER	DESCRIPTION
204	Soft ECC Correction	Low	This is the number of errors corrected by software ECC (Error Correction Code).
205	Thermal Asperity Rate (TAR)	Low	This is the number of thermal asperity errors. Thermal asperity is a read signal spike caused by sensor temperature rise due to touching the disk surface or contaminant particles.
206	Flying Height		This is the height of the hard drive's read/write heads above the disk surface.
207	Spin High Current		This is the quantity of high current used to spin up the drive.
208	Spin Buzz		This is the number of buzz routines to spin up the drive. When the arm holding the read/write heads is stuck, the motor driving it tries to oscillate the arm to free it. This causes an audible vibration.
209	Offline Seek Performance		This is the hard drive's seek performance during offline operations. Offline operations are tests the drive does itself as opposed to those that an external diagnostic tool has it do. Seek performance is how quickly the drive moves from track to track.
220	Disk Shift	Low	This is how far the disk has moved relative to the spindle (this kind of shift is usually due to shock).
221	G-Sense Error Rate	Low	This is the number of errors that have resulted from external vibration and shock.
222	Loaded Hours		This is how long the hard drive has operated under data load (this requires movement of the magnetic head armature).
223	Load/Unload Retry Count		This is how many time the magnetic head has changed position.
224	Load Friction	Low	This is resistance caused by friction in mechanical parts during operation.
225	Load/Unload Cycle Count	Low	This is the total number of load cycles.
226	Load 'In'-time		This is the total time that the magnetic heads actuator has had a load (not been in the parking area).
227	Torque Amplification Count	Low	This is the number of attempts to compensate for variations in platter speed.
228	Power-Off Retract Cycle	Low	This is how many times the magnetic armature was automatically retracted because the power was cut.
230	GMR Head Amplitude		This is the amplitude of thrashing (or the distance of repetitive forward and reverse head motion).
231	Temperature	Low	This is the hard drive's temperature.
240	Head Flying Hours		This is the total time that the head has been positioning.
250	Read Error Retry Rate	Low	This is the number of errors in reading from the disk.

## 4.4.7 Technical Reference

This section contains background on JBOD and the RAID levels used on the NAS.

### JBOD

- Minimum number of disks: 1

- Total capacity: Sum of the member disks
- Advantages: Maximum storage capacity, especially for disks of mixed sizes. Flexibility (you can add disks to the JBOD)
- Disadvantages: Not as fast or reliable as RAID.

JBOD allows you to combine multiple physical disk drives into a single virtual one, so they appear as a single large disk. JBOD can be used to turn several different-sized drives into one big drive. For example, JBOD could convert 100 GB, 200 GB, 250 GB, and 500 GB drives into one large logical drive of 1050 GB. Since data isn't striped across disks, if one disk fails, you should just lose the data on that disk (but you may lose data in the whole array depending on the nature of the disk failure). You can add disks to the JBOD array later (using the Add disk to JBOD feature) and even remove them so JBOD offers a lot of flexibility. However JBOD read performance is not as good as RAID as only one disk can be read at a time and they must be read sequentially. The following figure shows three disks in a single JBOD array. Data is not written across disks but written sequentially to each disk until it's full.

**Table 21** JBOD

A1	B1	C1
A2	B2	C2
A3	B3	C3
A4	B4	C4
DISK 1	DISK 2	DISK 3

## RAID 0

RAID 0 spreads data across two or more disks (data striping) with no mirroring nor parity for data redundancy, so if one disk fails the entire array will be lost. The major benefit of RAID 0 is performance. The following figure shows two disks in a single RAID 0 array. Data can be written and read across disks simultaneously for faster performance.

**Table 22** RAID 0

A1	A2
A3	A4
A5	A6
A7	A8
DISK 1	DISK 2

RAID 0 capacity is the size of the sum of the capacities of the disks in the RAID 0. For example, if you have four disks of sizes 1 TB, 2 TB, 3 TB and 2 TB respectively in one RAID 0 array, then the maximum capacity is 8 TB.

Typical applications for RAID 0 are non-critical data (or data that changes infrequently and is backed up regularly) requiring high write speed such as audio, video, graphics, games and so on.

## RAID 1

RAID 1 creates an exact copy (or mirror) of a set of data on another disk. This is useful when data backup is more important than data capacity. The following figure shows two disks in a single RAID 1 array with mirrored data. Data is duplicated across two disks, so if one disk fails, there is still a copy of the data.

**Table 23** RAID 1

A1	A1
A2	A2
A3	A3
A4	A4
DISK 1	DISK 2

As RAID 1 uses mirroring and duplexing, a RAID 1 array needs an even number of disks (two or four for the NAS).

RAID 1 capacity is limited to the size of the smallest disk in the RAID array. For example, if you have two disks of sizes 150 GB and 200 GB respectively in one RAID 1 array, then the maximum capacity is 150 GB and the remaining space (50 GB) is unused.

Typical applications for RAID 1 are those requiring high fault tolerance without need of large amounts of storage capacity or top performance, for example, accounting and financial data, small database systems, and enterprise servers.

## RAID 6

RAID 6 can tolerate two simultaneous drive failures by calculating dual distributed parity data on striped data across disks. Dual parity provides extra data protection, however, it is slower to write than most other RAID levels.

RAID 6 uses parity to store redundant data on space equal to the size of two disks for later data recovery. Therefore, on a RAID 6 array, only 50% of the space is available as usable capacity. If you have four disks of sizes 1TB, 1TB, 2TB, 2TB respectively in one RAID 6 array, then the maximum

capacity of the array is the capacity of the smallest drive (1TB, 1TB, 2TB, 2TB) \* (Number of disks - 2) = 1TB \* (4-2) = 2TB. The remaining space (2 TB) is unused.

**Table 24** RAID 6

RAID 6			
A1	A2	AP	AQ
B1	BP	BQ	B2
CP	CQ	C1	C2
DQ	D1	D2	DP
DISK 1	DISK 2	DISK 3	DISK 4

## RAID 10

RAID 10 (RAID 1+0) is a nested RAID where two RAID 1 arrays are stored on the physical disks with a RAID 0 array on top. It is a stripe of mirrors. RAID 1 provides redundancy while RAID 0 boosts performance. The following figure shows two disks in two RAID 1 arrays. Data is duplicated across two disks, so if one disk fails, there is still a copy of the data. These two arrays are configured as a single RAID 0 array for faster performance.

**Table 25** RAID 10

RAID 0			
RAID 1		RAID 1	
A1	A1	A2	A2
A3	A3	A4	A4
A5	A5	A6	A6
A7	A7	A8	A8
DISK 1	DISK 2	DISK 3	DISK 4

Typical applications for RAID 10 are those requiring both high performance and reliability such as enterprise servers and high-end moderate-sized database systems. RAID 10 is often used in place of RAID 1 or RAID 5 by those requiring higher performance. It may be used instead of RAID 1 for applications requiring more capacity.

## RAID 5

RAID 5 provides the best balance of capacity and performance while providing data redundancy. It provides redundancy by striping data across three disks and keeps the parity information (AP) on the fourth disk (in each stripe). In case of disk failure, data can be recovered from the surviving disks using the parity information. When you replace the failed disk, the reconstructed data is written onto the new disk. Re-synchronize the array to have it return to its original state. The

following example shows data stripped across three disks (A1 to A3 in the first strip for example) with parity information (AP) on the fourth disk.

**Table 26** RAID 5

<b>A1</b>	<b>A2</b>	<b>A3</b>	<b>AP</b>
<b>B1</b>	<b>B2</b>	<b>BP</b>	<b>B3</b>
<b>C1</b>	<b>CP</b>	<b>C2</b>	<b>C3</b>
<b>DP</b>	<b>D1</b>	<b>D2</b>	<b>D3</b>
<b>DISK 1</b>	<b>DISK 2</b>	<b>DISK 3</b>	<b>DISK 4</b>

The capacity of a RAID 5 array is the smallest disk in the RAID set multiplied by one less than the number of disks in the RAID set. For example, if you have four disks of sizes 150 GB, 150 GB, 200 GB and 250 GB respectively in one RAID 5 array, then the maximum capacity is 450 GB (3 \* 150 GB, the smallest disk size) and the remaining space (300 GB) is unused.

Typical applications for RAID 10 are transaction processing, relational database applications, enterprise resource planning and other business systems. For write-intensive applications, RAID 1 or RAID 1+0 are probably better choices, as the performance of RAID 5 will begin to substantially decrease in a write-heavy environment.

## Hot-spare

A RAID 1 or RAID 5 array with a hot-spare operates as a three-disk RAID 1 or RAID 5 array with the fourth disk on standby. The standby disk automatically comes into play if a disk in the array fails. The advantage of a hot-spare is that if a disk fails, then the array resynchronizes automatically with the standby disk and operates at healthy array speed after the resynchronization.

Note: You need four hard disks installed to use RAID 10, RAID 5 or RAID 5 with hot-spare.

## RAID and Data Protection

If a hard disk fails and you're using a RAID 1, RAID 10, or RAID 5 array then your data will still be available (but at degraded speeds until you replace the hard disk that failed and re-synchronize the array). However, RAID cannot protect against file corruption, virus attacks, files incorrectly deleted or modified, or the NAS malfunctioning.



## 4.5 Playzone Screens





Click **Playzone** in the **Desktop** screen to open the Playzone **Home** screen in a new tab.

**Figure 38** Playzone Home


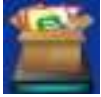


The Playzone **Home** screen displays icons for the various features you can access.

**Table 27** Playzone Home Screen Icons

ICON	DESCRIPTION
	Use the Playzone media server screens to view and play media files in the shares that publish them. Use <b>Music</b> to view and play music files in the shares that publish music.
	Use <b>Photo</b> to view photos in the shares that publish photos.
	Use <b>Video</b> to view and play video files in the shares that publish videos. See <a href="#">Section 10.5 on page 190</a> for how to configure the media server.
	Use <b>File Browser</b> to see files in a tree-folder structure.

**Table 27** Playzone Home Screen Icons (continued)

ICON	DESCRIPTION
	Use <b>Playzone Settings</b> to edit general Playzone screen settings and account passwords.
	Administrators can use <b>Application Zone</b> to manage the NAS's applications. Normal users can go to the management page of installed, non-built-in packages.

Note: Your browser may need Windows Media Player and VLC plugins installed to play music and video files. To get the VLC plugins, you have to download and install VLC (use the .exe file). To install a VLC plugin for Firefox, when you install VLC, you have to select the Mozilla plugin option.

Current VLC plugins may not support srt file format subtitles when playing videos.

Use the icons at the top of most Playzone screens as follows.

**Table 28** Global Playzone Labels and Icons

LABEL/ICON	DESCRIPTION
Help	Click this to open Web Help for the current screen.
Logout	This displays in the Playzone <b>Home</b> screen when logged in as a normal user (non-administrator account). Click this to log out.
Home	Click <b>Home</b> to return to the Playzone <b>Home</b> screen. If you are logged in as an administrator and you are in the Playzone <b>Home</b> screen, click this to return to the <b>Desktop</b> screen.

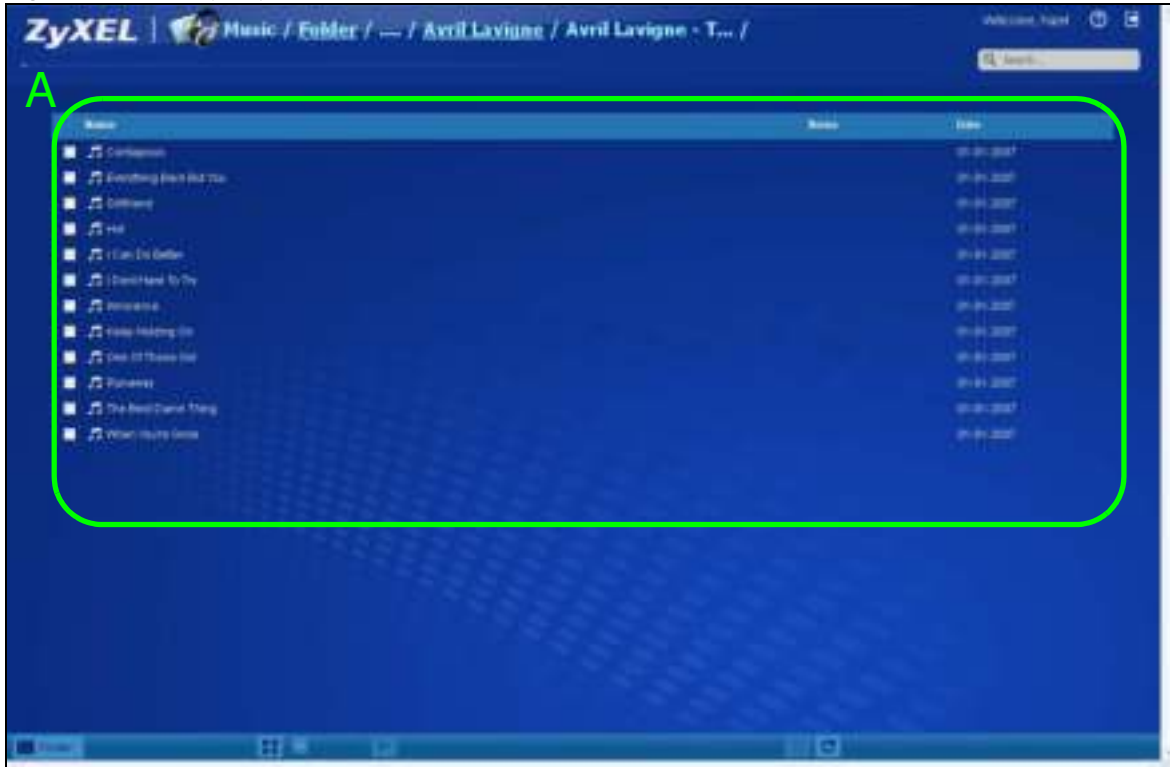
## 4.5.1 Media Server Screens

Use the Playzone media server screens to view published photos and play published music and video files. This following figures shows a folder within the **Music** media server screens with the files as thumbnails and as a list.

**Figure 39** Music (Thumbnail)



**Figure 40** Music (List)



This table describes common labels in the Playzone media server screens. Not every item displays in every screen.

**Table 29** Playzone Media Server Screens

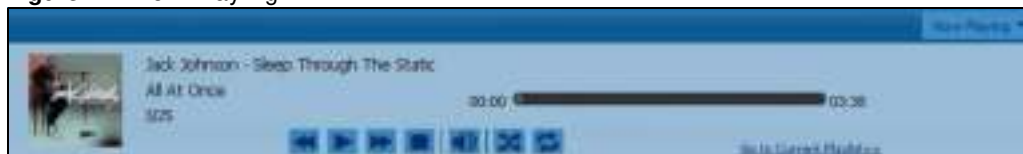
LABEL	DESCRIPTION
ZyXEL	The path of the current view. Click ZyXEL to return to the Playzone <b>Home</b> screen. Click an underlined link to go to that location in the path. <b>Music, Photo, or Video</b> indicates the category of files. <b>Artist, All, Folder, Current Playlist</b> indicates the current view type.
Search	Use this to look for a file by name.
A	View files. Double-click an item to play it. You can also select check boxes for multiple items when you display the files as a list.
B	The current page and total number of pages displays when a category has multiple pages of entries. Click an arrow or type a number to go to another page of entries.
C	Select a view type for displaying folders and files: <b>Artist</b> - Sort music by artist. <b>All</b> - Display all of the category's files. <b>Folder</b> - List the folders containing music files. <b>Current Playlist</b> - Show the playing and queued songs.
Thumbnail	Click this to view the files as thumbnails.
List	Click this to view the files as a list. This also provides
Play	Click this to play the currently selected file. You can also double-click a file to play it.

**Table 29** Playzone Media Server Screens

LABEL	DESCRIPTION
Add to Current Playlist	Click this to add the selected music file to the currently playing playlist.
Refresh	Click this to update the display in the screen.
Now Playing	This link is available when a song is playing. Click it to see details about the song that is currently playing.

## 4.5.2 Now Playing (Music)

A **Now Playing** link displays when a song is playing. Click it to display a panel like the following. This screen displays the name of the current song and its play progress and lets you control the playback.

**Figure 41** Now Playing

## 4.5.3 Exif and Google Maps (Photos)

Double-click a photo file to display it. Thumbnails of all photos in the view display across the bottom of the screen. Click a photo's **EXIF** button to display or hide the photo's Exchangeable image file format (Exif) data.

**Figure 42** Exif Information

If a photo's Exif data includes GPS location data, click the latitude or longitude link to display the location in Google Maps. Click **Clear** to delete the markers of other photos and only display the current photo's marker.

**Figure 43** Google Maps



### 4.5.4 Slideshow (Photos)

In a **Photo** menu click the **SlideShow** button to display the menu's files as a slideshow. Move your cursor over the slideshow's screen to display full screen, previous, pause, and next buttons for controlling the slideshow.

Note: Your browser must have the Flash Player plug-in installed to view slideshows.

**Figure 44** Slideshow



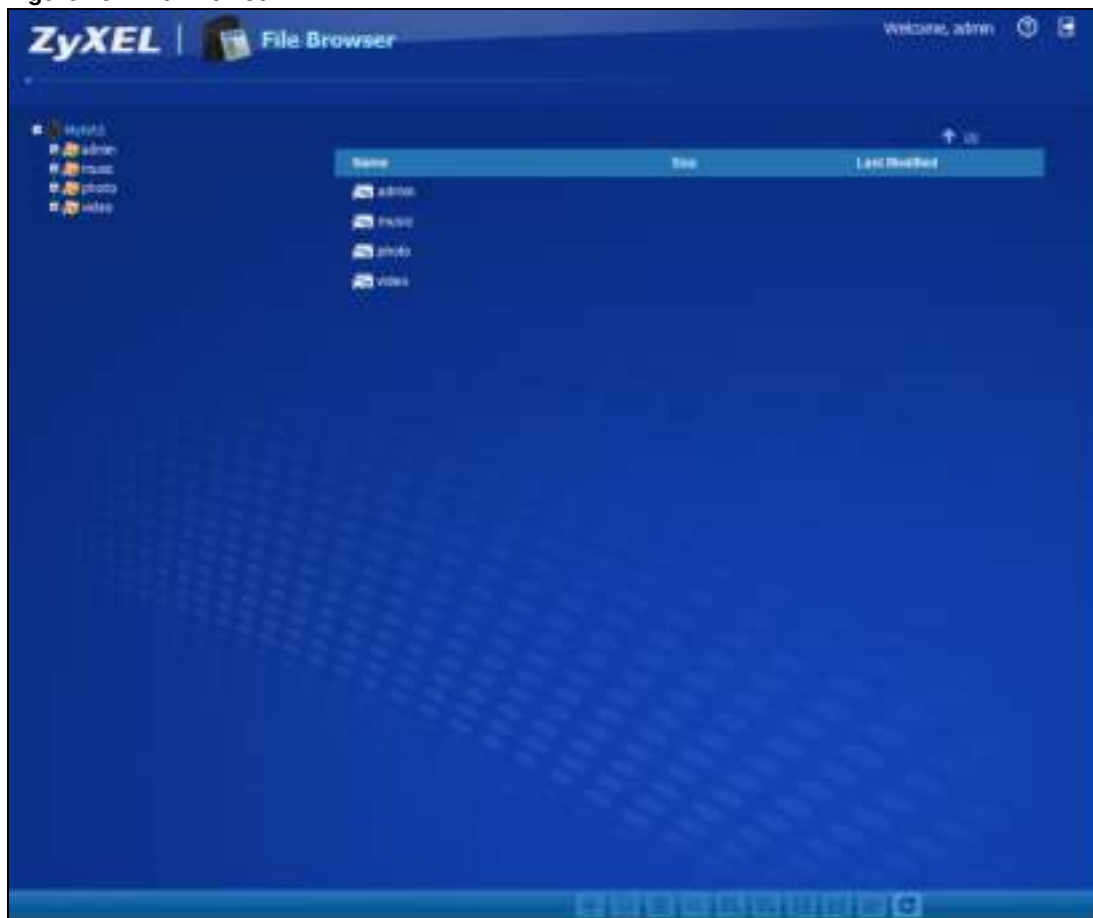


## 4.5.5 File Browser

Click **File Browser** to open the following screen. Use the file browsing screens to play, open, upload, and download files. A share is a set of user access permissions for a specific folder on a volume (gives someone access to a folder). It is equivalent to the Windows concept of a shared folder, but the access rights are independent of the folder (you configure the share and the folder separately). You can map a share to a network drive for easy and familiar file transfer for Windows users.



- A folder icon with a hand indicates a share.
- The administrator owns and manages the public shares.
- Double-click a media file to open it. Double-click other types of files to be able to save them.
- Click to the right of a file or folder name to select it.
- Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
- Drag and drop files to open a screen that lets you choose whether to copy or move them.
- You can upload files of up to 2 GB in size.
- You can download individual files of up to 4 GB in size with Mozilla Firefox and Internet Explorer 7 and later or up to 2 GB in size with Internet Explorer 6.

**Figure 45** File Browser



The following table describes the labels in this screen.

**Table 30** File Browser

LABEL	DESCRIPTION
Up	Click this to go to the next higher layer in the share's folder tree.
Name	This column identifies the names of folders and files in the share. Click a file's file name to open the file or save it to your computer. Click a folder's name to display the folder's contents.
Size	This column displays a file's size in bytes.
Last Modified	This column displays the last time the file or folder was changed (in year-month-day hour:minute:second format).
Create New Folder	<p>Click this to open the following screen where you can create a new folder within the share.</p>  <p>Specify a name to identify the folder. See <a href="#">Section 4.5.6 on page 82</a> for more information on folder names. Click <b>Apply</b> to create a folder or click <b>Cancel</b> to exit this screen.</p>
Configure Share	Select a share and click this link to open a screen where you can see and configure share management details.
Delete	Select a file or folder and click this to delete it from the NAS.
Rename	Select a file or folder and click this to change its name.
Upload	<p>Click this to open the following screen where you can add files to the share.</p>  <p>Use the <b>Browse</b> button to locate your file/s and click <b>Apply</b> to upload the file. Click <b>Cancel</b> to close this screen.</p> <p>Note: Do not refresh the screen while an upload is going on.</p>
Download	<p>Select a file and click this to save the file to your computer.</p> <p>Note: Do not refresh the screen while a download is going on.</p>
Compress	Select files or folders and click this to compress them into a zip file.
Decompress	Select a zipped file and click this to create a folder named after the zip file and save the decompressed files into the folder.



**Table 30** File Browser (continued)

LABEL	DESCRIPTION
Restore	When you are in a recycle bin folder, select a folder or file and click this to restore it.
Refresh	Click this to update the information displayed in the screen.  Note: Do not refresh the screen while an upload or download is in progress.

### 4.5.5.1 Configure Share Screen

In the **File Browser** screen, select a share and click **Configure Share** to open the following screen where you can see and configure share management details.

**Figure 46** File Browser > Configure Share

The following table describes the labels in the this screen.

**Table 31** File Browser > Configure Share

LABEL	DESCRIPTION
Share Name	Configure a name to identify this share. Type a share name from 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing local share. See <a href="#">Section 4.5.6 on page 82</a> for more information on share names. This is not configurable for the NAS's default admin, music, photo, public, and video shares.
Volume	This shows the volume the share is on. It is read-only.
Make this share owned by	Select the administrator or user account that is to own (manage) this share. The share owner controls access rights to the share. This is not configurable for the NAS's default admin and public shares.
Enable This Share	Select this option to allow users to access this share. When this option is not selected, you cannot see and access this share.
Enable Recycle Bin	Select this option to keep deleted items in a recycle bin. When you delete an item, a recycle folder is created within the share, and the deleted item is stored in the recycle bin. Later if you want to retrieve a deleted item, you can select the item from the recycle folder and move/copy the item to another share.
Publish this share to Media Server	Select this option to make the share's files available to media clients. When you publish a share, you can also select whether or not to publish music tracks, photos, and videos.
Publish this share to Web	Select this option to let people use a web browser to access this share's files without logging into the Web Configurator screens.

**Table 31** File Browser > Configure Share (continued)

LABEL	DESCRIPTION
Share Access	<p>Select who can access the files in the share and how much access they are to be given. If you publish the share to the media server or the web, all users will have at least read-only access to the share, regardless of what you configure here.</p> <p>Select <b>Keep it private to owner</b> to allow only the share owner to read files in the share, delete files in the share and save files to the share.</p> <p>Select <b>Make it public</b> to allow anyone (with or without a user account on the NAS) to read files in the share, delete files in the share and save files to the share.</p> <p>Select <b>Advanced</b> to select which individual users can read the share's files, which users can delete the share's files, and which users are blocked from doing either.</p>
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 4.5.6 Share and Folder Names

The name can only contain the following characters:

- Alphanumeric (A-z, 0-9) and Unicode.

The NAS allows FTP access to shares, folders or files with names encoded in the UTF-8 (8-bit UCS/Unicode Transformation Format) format. So your FTP client must support UTF-8 in order to access shares, folders or files on the NAS with Unicode names.

- Spaces
- \_ [underscores]
- . [periods]
- - [dashes]

Other limitations include:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Share names must be unique (they cannot be the same as other share names).
- The NAS creates automatic volume names for external (USB) disk volumes. These are a type of share, so the share name you configure cannot conflict with the external (USB) disk volume names. "ExtVol1" or "ExtVol2" are examples of external (USB) disk volume names.
- Folder names must be unique (they cannot be the same as other folder names).
- The minimum character length of a name is one character, that is a name cannot be blank.
- The maximum character length of share name is 239 characters.
- Unicode is supported for share names, although your FTP client must support UTF-8. Full support should be available in all Windows versions after Windows 2000.

## 4.5.7 Application Zone

Administrators can click **Application Zone** to go to a screen where you can enable or disable various applications for file sharing and downloading. Normal users can go to the management page of installed, non-built-in packages.

**Figure 47** Application Zone



The following table describes the labels in the this screen.

**Table 32** Application Zone

LABEL	DESCRIPTION
Name	This is the name of the application.
Version	This is the version number of the item.
Description	This is a brief description of the application. See <a href="#">Chapter 10 on page 187</a> for more information.
Management Page	Click this link to go the application's management page where you can configure settings for it. See <a href="#">Chapter 10 on page 187</a> for more information.
Enable	Select a disabled application and click this to turn on the application. Some applications are always enabled and cannot be disabled.
Disable	Select an enabled application and click this to turn off the application. Select the Flickr or Youtube Uploadr entry and click this to cancel all uploading. Some applications are always enabled and cannot be disabled.

**Table 32** Application Zone (continued)

LABEL	DESCRIPTION
Pause	Select the Flickr or Youtube Uploadr entry and click this to pause current uploading. <b>Resume</b> will resume current uploading.
Resume	Select the Flickr or Youtube Uploadr entry and click this to resume current uploading.
Refresh	Update the list of applications in the screen.

## 4.5.8 Playzone Settings

Click **Playzone Settings** to open the following screen. Use this screen to change general Play zone screen settings and account passwords.

**Figure 48** Playzone Settings

The following table describes the labels in this screen.

**Table 33** Playzone Settings

LABEL	DESCRIPTION
VLC	This field displays "Installed" if you already have VLC player installed or a link for installing it if you do not already have it installed.
WMP	This field displays "Installed" if you already have Windows Media Player installed or a link for installing it if you do not already have it installed.

**Table 33** Playzone Settings (continued)

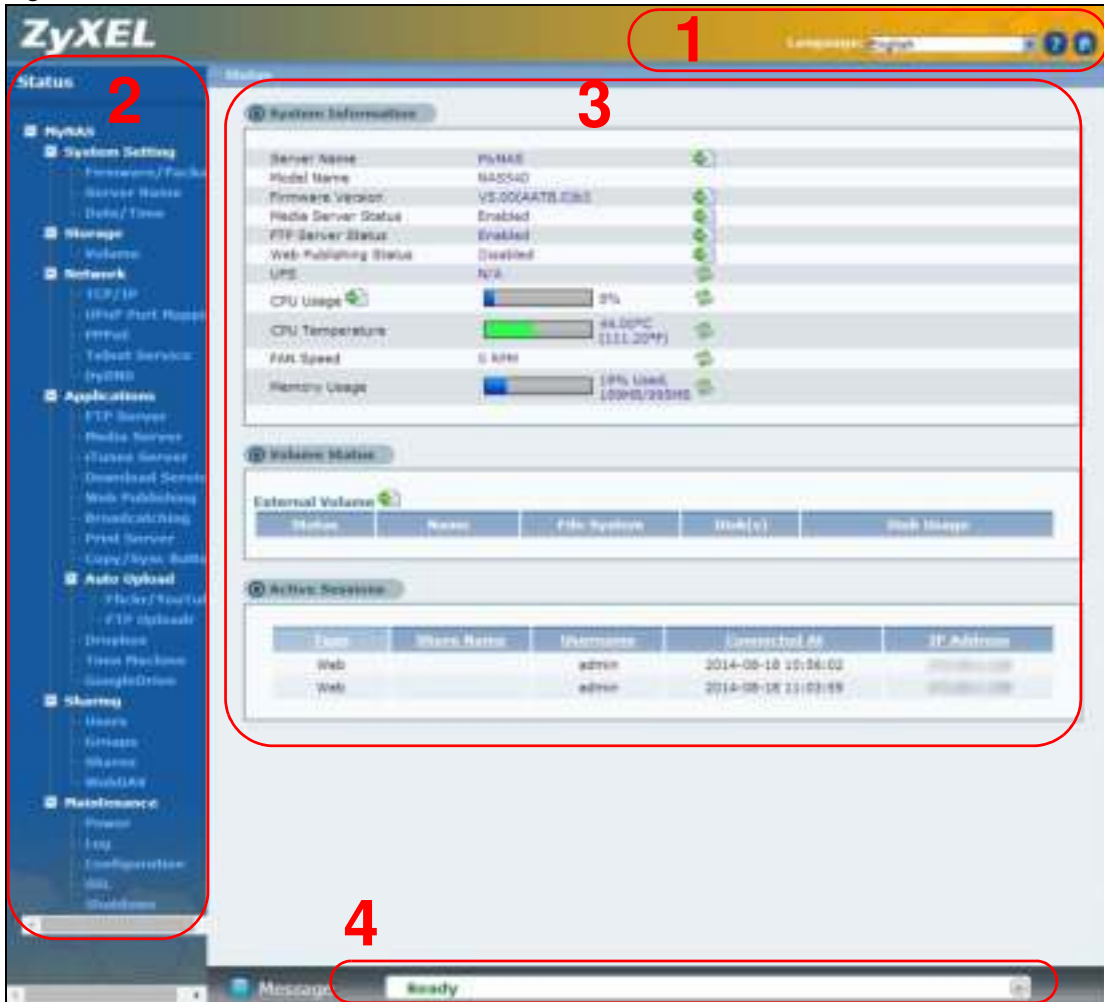
LABEL	DESCRIPTION
Double Click Behavior Setting	<p>Select <b>Replace current playlist and start to play</b> to have double clicking a song cause the NAS to immediately stop any currently playing song and start playing the double-clicked song.</p> <p>Select <b>Append to current playlist</b> to have double clicking a song add a song to the end of the current playlist.</p>
Slide Effect	Enable the Ken Burns effect to have the NAS automatically pan and zoom photos in slideshows. Disable it to display photos in slideshows normally.
Slide Interval	Select how long to display each image in a slideshow before changing to the next.
Video Playback	Select <b>Play Next</b> to play the rest of the video files in a folder. So for example, a folder has video files 1~10 and you play video 3. When video 3 finishes the device continues playing the rest of the videos in the folder (4~10). It does not loop back and play videos 1 and 2.
Account Name	Type the user name of the account for which you want to change the password.
Old Password	Type the user's current password.
New Password	Create a new password for the user. You can type from one to 14 single-byte (no Chinese characters allowed for example) ASCII characters.
Password (Confirm)	You must type the exact same password that you just typed in the above field.
Language	Select the web configurator language from the drop-down list box.
Go to system administration page	This link appears when you are logged in as the administrator. Click it to open the advanced administration screens. See <a href="#">Section 4.6 on page 85</a> for more on the advanced administration screens. The NAS opens the administrator configuration screens in a new browser window if you click <b>Go to system administration page</b> while using the Playzone media server to play music.
Apply	Click this to save your changes.
Reset	Click this to refresh the screen.
Cancel	Click this to exit the screen without saving your changes.

## 4.6 Administration Screens

The **Desktop** screen displays an **Administrator** icon when you log in with an administrator account. Click it to open the administrator configuration screens in a new tab.

The **Status** screen is the first advanced administration screen that displays. See [Chapter 6 on page 155](#) for more information about the **Status** screen.

**Figure 49** Status



### 4.6.1 Global Administration Icons

The icons and language label at the top-right of the screen (1) are visible from most of the administration screens. The following table describes the 'global' icons and labels.

**Table 34** Global Labels and Icons

LABEL/ICON	DESCRIPTION
Language	Select the web configurator language from the drop-down list box.
Help	Click this to open Web Help for the current screen.
Home	Click this to go to the <b>Desktop</b> screen.

## 4.6.2 Navigation Panel

The navigation panel on the left of the Web Configurator screen (2) contains screen links. Click a link to display sub-links. There are no sub-links for the **Status** screen. Certain screens also contain hyper links that allow you to jump to another screen.

The following table describes the navigation panel screens.

**Table 35** Screens Summary

LINK	SCREEN	FUNCTION
Status		This screen shows system information, the status of the volumes, and the users who are currently using the NAS.
System Setting	Firmware/ Packages	Upload/upgrade new firmware to your NAS and add useful applications. The NAS can download multiple packages/files at once and automatically goes through all the installation steps.
	Server Name	Specify the NAS's server name and workgroup name.
	Date / Time	Chose a time zone and/or allow the NAS to synchronize with a time server.
Storage	External Volume	View external volume and disk information and create and edit external (USB) volumes.
Network	TCP/IP	Assign the NAS a dynamic or static IP address and DNS information.
	UPnP Port Mapping	Configure your Internet gateway to allow access from the WAN (Internet) to services on the NAS.
	PPPoE	Configure PPPoE settings for a direct Internet connection.
	Telnet Service	Enable or disable Telnet access.
	DyDNS	Use Dynamic DNS (DDNS) services to use a domain name with a dynamic IP address.
	NFS	Install the NFS package to display this screen where you can configure NFS (Network File System) file-sharing.

**Table 35** Screens Summary (continued)

LINK	SCREEN	FUNCTION
Applications	FTP Server	Enable FTP file transfer to/from the NAS, set the number of FTP connections allowed, an FTP idle timeout, and the character set.
	Media Server	Enable or disable the sharing of media files and select which shares to share.
	iTunes Server	Use the iTunes server to share media files with iTunes users on your network.
	Download Service	Have the NAS handle large file downloads.
	Web Publishing	Let people use a web browser to access files in shares without logging into the Web Configurator.
	Print Server	View and manage the NAS's list of printers and print jobs.
	Copy/Sync Button	Copy or synchronize files between a USB device and the NAS.
	Auto Upload - Flickr/YouTube	Upload files in selected shares to your Flickr and/or YouTube accounts.
	Auto Upload - FTP Uploadr	Upload files in selected shares to FTP servers.
	Dropbox	Use your Dropbox account to easily move files to your NAS and have the NAS download *.torrent files.
	Time Machine	Use Time Machine in OS X to use your NAS as a backup volume.
	Memopal	Back up files from the NAS to your Memopal account.
	GoogleDrive	Use GoogleDrive to synchronize local user folders on the NAS with Google Drive cloud storage accounts.
	Syslog Server	Enable the syslog server and select the categories to include in the log report.
	TFTP Server	Configure the NAS to accept log files from TFTP clients.
pyLoad	Configure the NAS to use pyLoad to manage your downloads, including those from one-click hosting sites.	
Sharing	Users	View, create and edit administrator and user accounts to let people use the NAS.
	Groups	View, create and edit groups. Groups allow you to organize users into specific groups. You can create shares accessible only by the group members.
	Shares	View, create and edit shares. Shares are shared folders to which you can allow specific users read/write access rights.
	WebDAV	Allow remote users to use client programs that support WebDAV to edit and manage files stored on the NAS
Maintenance	Power	Configure power saving settings for the NAS and have the NAS turn itself off and on or reboot according to the schedules you configure.
	Log	View the NAS's logs and configure how you want to receive the log reports.
	Configuration	Back up and/or restore the NAS configuration file.
	SSL	Configure HTTPS and the NAS's SSL certificate.
	Shutdown	Restart the NAS or shut it down.
Protect	Backup	Create and customize backup jobs.
	Restore	Restore previous backups made with the NAS.

### 4.6.3 Main Window

The main window (3) shows the screen you select in the navigation panel. It is discussed in the rest of this document.













## 4.6.4 Status Messages

The **Message** text box at the bottom of the screen (4) displays status messages as you configure the NAS.

## 4.6.5 Common Administrator Screen Icons

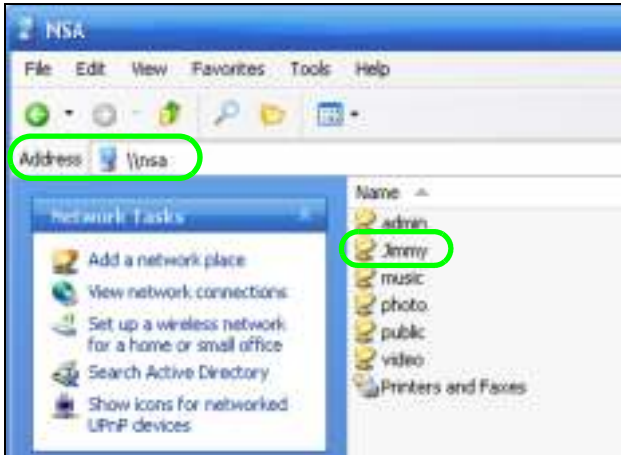
The following table explains some icons that appear in several administrator configuration screens.

**Table 36** Common Administrator Screen Icons

ICON	DESCRIPTION
	<b>Edit</b> Click this to go to a screen where you can change the configuration settings of an entry.
	<b>Delete</b> Click this to delete an entry from the list.
	<b>Edit</b> Click this to jump to related item's configuration screen.
	<b>Refresh</b> Click this to refresh the data for the field or value with which it is associated.
	<b>User</b> See the chapter on user accounts for detailed information on variants of this icon.
	<b>Share</b> See the chapter on shares for detailed information on variants of this icon.
	<b>Healthy</b> This represents a healthy volume.
	<b>Down</b> This represents a down volume.
	<b>Scan Disk</b> Click this to scan a hard disk for file system errors.  Note: It is recommended to scan the volume every three months or 32 reboots.
	<b>Eject</b> Click this before you remove an external hard drive so that you do not lose data that is being transferred to or from that hard drive.

### 4.6.6 Session Example (Windows)

Open Windows Explorer and type two back slashes followed by the NAS name or IP address. Initially you can only read and write to the **Public**, **Video**, **Music**, and **Photo** folders until you create other shares on the NAS. This session is then displayed as shown in the following figure.



## 5.1 Overview

This chapter provides tutorials that show how to use the NAS.

- [Windows 7 Network](#), see page 91
- [Windows 7 Network Map](#), see page 95
- [Playing Media Files in Windows 7](#), see page 97
- [Windows 7 Devices and Printers](#), see page 97
- [File Sharing Tutorials](#), see page 100
- [Download Service Tutorial](#), see page 108
- [Copy and Flickr Auto Upload Tutorial](#), see page 119
- [FTP Uploadr Tutorial](#), see page 120
- [Web Configurator's Security Sessions](#), see page 124
- [Using FTPES to Connect to the NAS](#), see page 135
- [Using a Mac to Access the NAS](#), see page 137
- [How to Use the BackupPlanner](#), see page 139

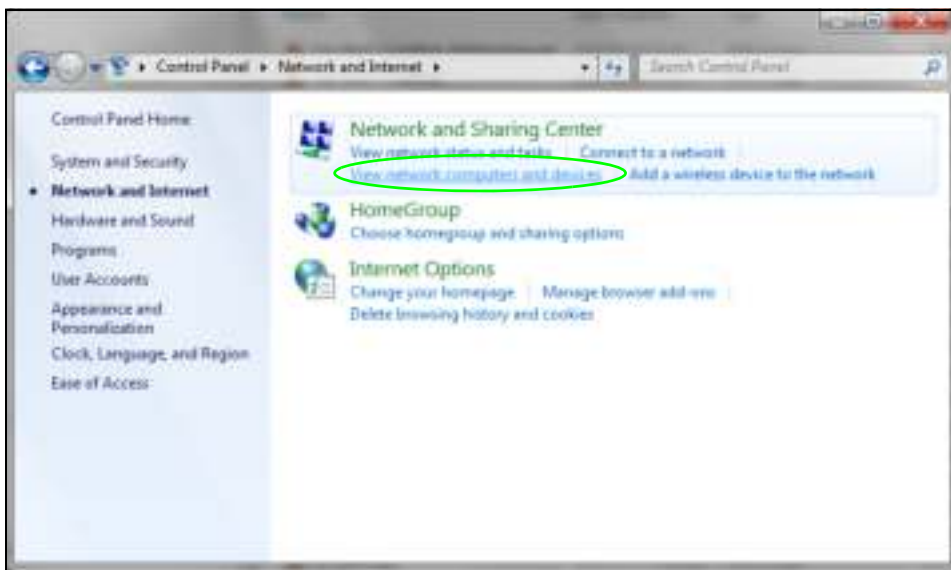
## 5.2 Windows 7 Network

To see your NAS in a Windows 7 home or work network:

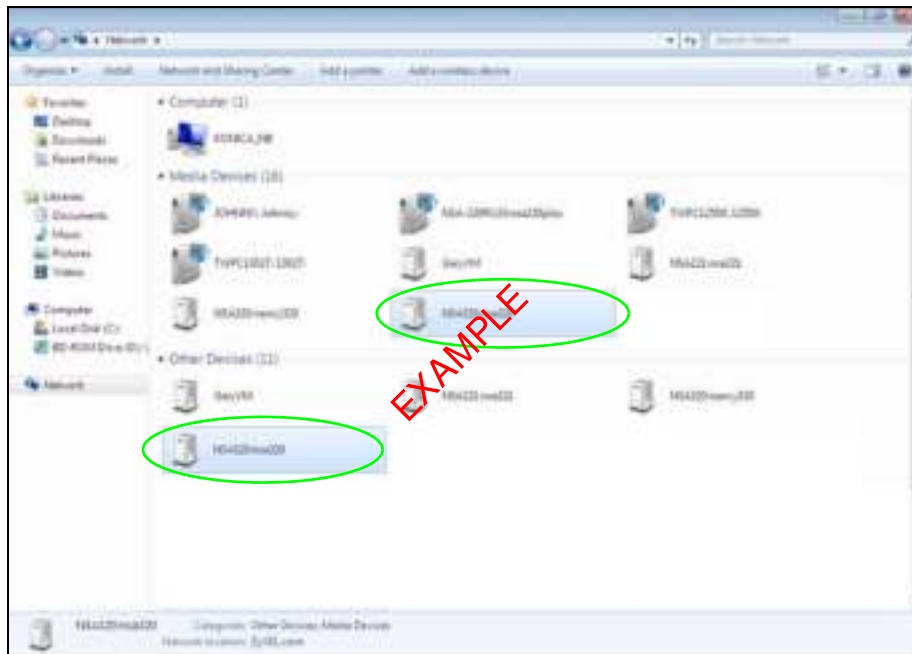
- 1 Click **Start > Control Panel**. Set **View** by to **Category** and click **Network and Internet**.



- 2 Click **View network computers and devices**.



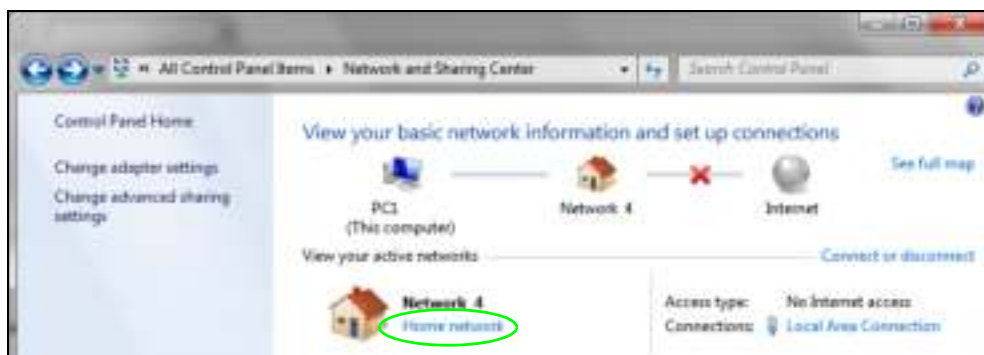
- 3 The NAS icon displays twice because the NAS is both a media server and a storage device. Double-click either NAS icon to open the Web Configurator login screen.



### 5.2.1 If the NAS Icon Does Not Display

The network containing the NAS must be set as a home or work network in order for the NAS icons to display. If the network containing the NAS displays as "Public":

- 1 Click **Network and Sharing Center** and then the network's link (circled in the figure).



- 2 Use the **Set Network Location** screen to set the network's location to home or work.



## 5.2.2 NAS Icon Right-click Options

Right-click the NAS's icon to see these options:



- **Install/ Uninstall:** Click **Install** to add the NAS as a device in your computer. After you install the NAS you can see it in the computer's list of devices (see [Section 5.5 on page 97](#)). Click **Uninstall** to remove the NAS from the list of devices installed in your computer.
- **View device web page** opens the Web Configurator login screen.
- **Open Media Player** opens the computer's default media player.
- **Create shortcut** adds a desktop shortcut to the Web Configurator login screen.

- **Properties** opens a window of NAS details and troubleshooting information.



- **Manufacturer** identifies the company that produced the NAS.
- **Model** identifies the NAS model.
- **Model number** identifies the NAS model number.
- **Device webpage** shows the IP address for accessing the Web Configurator.
- **Serial number** is unavailable because the NAS does not have one.
- **MAC address** is the NAS's unique physical hardware address (MAC). You need the MAC address to register the product at myZyXEL.com. Customer support may also request it for troubleshooting purposes.
- **Unique identifier** is a unique UPnP ID that the NAS generated.
- **IP address** is the NAS's IP address. It is also the IP address for accessing the Web Configurator.

## 5.3 Windows 7 Network Map

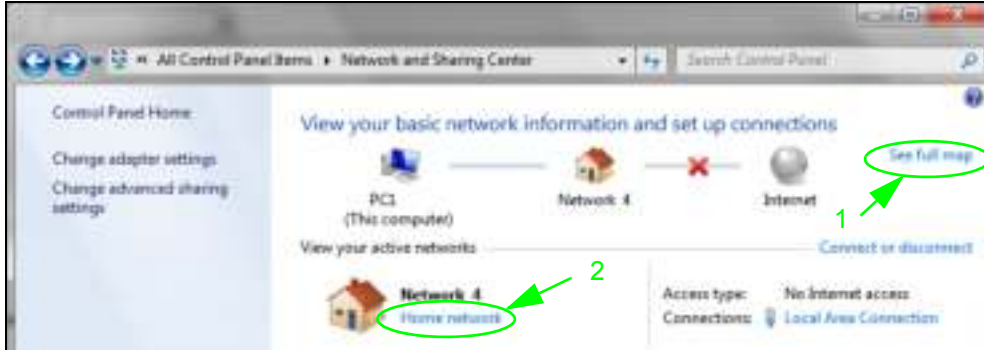
To see your NAS in a Windows 7 home or work network map:

- 1 Click **Start > Control Panel > View network status and tasks** (or **Network and Sharing Center** if you view the Control Panel by icons).

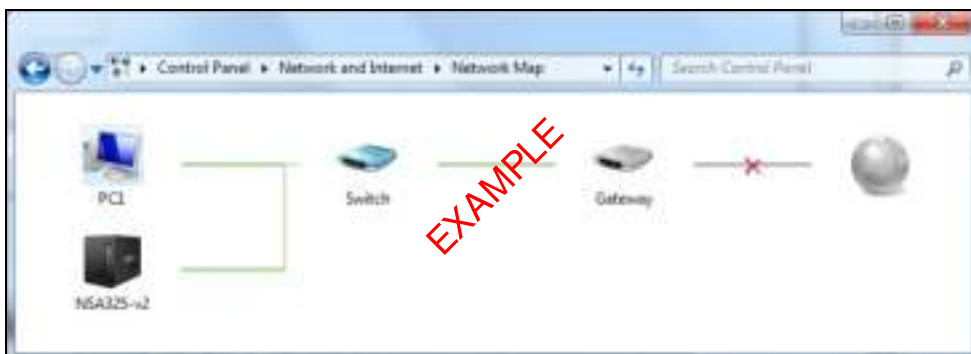


- 2 Click **See full map** (1 in the figure).

The network containing the NAS must be set as a home or work network in order to use the full map feature. If the network containing the NAS displays as "Public", click the network's link (2 in the figure, although it is already set to home here) and use the **Set Network Location** screen to set the network's location to home or work (see [page 94](#)).



- 3 Double-click the NAS's icon to open the Web Configurator login screen. See [Section 5.2.2 on page 94](#) for the NAS icon's right-click options.





## 5.4 Playing Media Files in Windows 7

In Windows 7, the NAS automatically displays as a library in Windows Media Player.

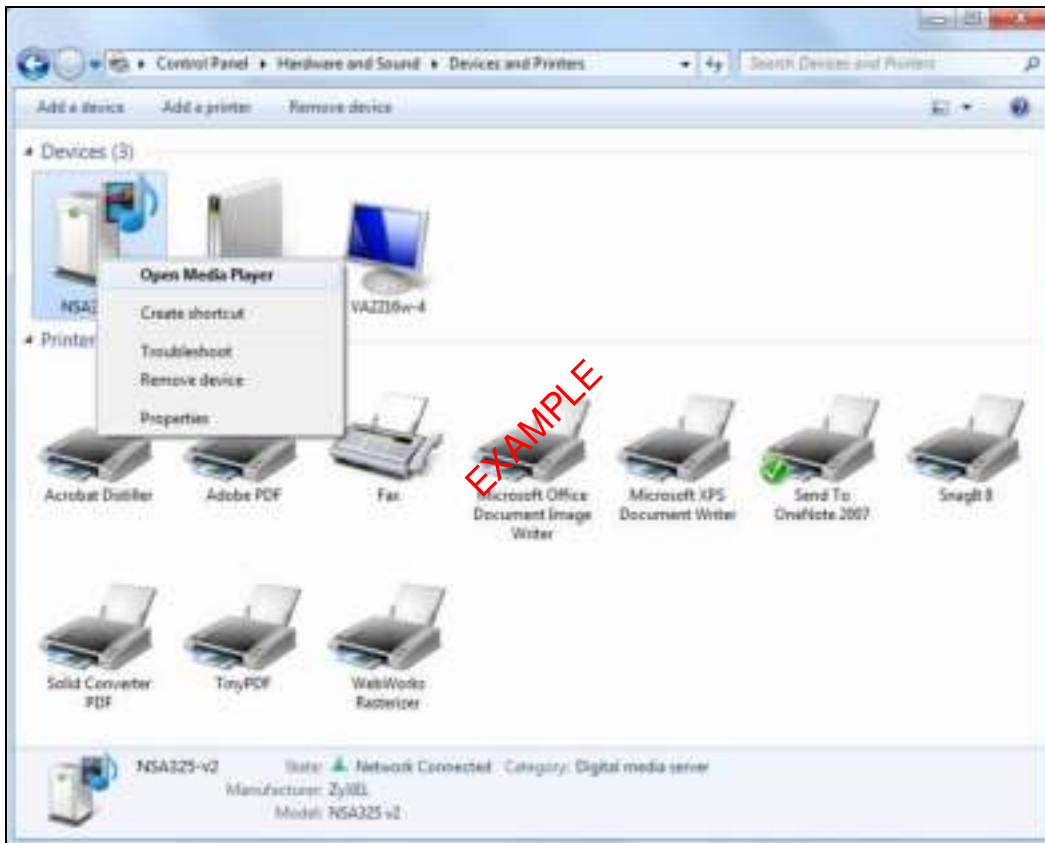
**Figure 50** NAS in Windows Media Player



## 5.5 Windows 7 Devices and Printers

After you use the NAS's network icon's install option you can manage the NAS from the Windows 7 **Devices and Printers** folder.

Click **Start > Control Panel > Hardware and Sound > Devices and Printers**. Select the NAS icon to display information about the NAS. Double-click the NAS icon to open a properties window (see [page 95](#)). Right-click the icon to display these options:



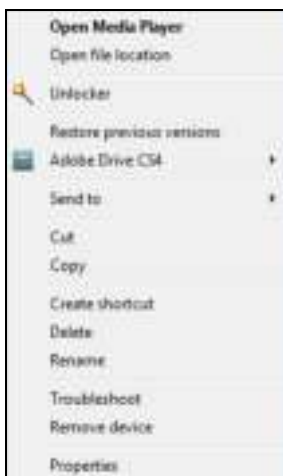
- **Open Media Player** opens the computer's default media player.
- **Create shortcut** has Windows make a desktop shortcut to this screen.
- **Troubleshoot** opens Windows' device troubleshooting wizard.
- **Remove device** removes the NAS from the Windows 7 **Devices and Printers** folder.
- **Properties** opens a window of NAS details and troubleshooting information (see [page 95](#)).

## 5.5.1 Windows 7 Desktop Shortcut

This is the NAS's desktop shortcut. Double-click it to open a properties window (see [page 95](#)).



- 1 Right-click the NAS's desktop shortcut icon to see these options:



- **Open Media Player** opens the computer's default media player.
- **Open file location** takes you to the Windows 7 **Devices and Printers** folder.
- **Download NAS Starter Utility** downloads the NAS's Starter Utility. It lets you find, set up, and manage the NAS as well as copy files to it and access the files on it. See [Chapter 2 on page 19](#) for details.
- **Restore previous versions** is the Windows 7 option for restoring a file or folder. It does not apply to this shortcut.
- **Send** to give you options for copying the shortcut to another location.
- **Cut** removes this shortcut so you can paste it somewhere else.
- **Copy** copies the shortcut so you can paste it somewhere else.

- **Create shortcut** has Windows make a desktop shortcut to this icon.
- **Delete** sends the shortcut to the recycle bin.
- **Rename** lets you change the name of the shortcut.
- **Troubleshoot** opens Windows' device troubleshooting wizard.
- **Remove device** removes the NAS from the Windows 7 **Devices and Printers** folder.
- **Properties** opens a window of details about the shortcut.

## 5.6 File Sharing Tutorials

The following sections cover using the NAS for file sharing. This chapter assumes you have already followed the Quick Start Guide instructions to perform initial setup and configuration (so you have a working volume). See the rest of this User's Guide for details on configuring the NAS's various screens.

### 5.6.1 Creating a User Account

Bob wants to create accounts for his sons Jimmy and Kevin. This is how he would do it.

- 1 Go to the advanced administration screens.
- 2 Click **Sharing > Users** to open the **Users** screen. Then click **Add User**.



- 3 Configure the screen as follows and write down the username and password to give to Jimmy. If the username and password are the same as Jimmy's Windows login, Jimmy will not need to enter a username and password when he logs into his share from his computer. Set the **Account Type** to **User** so Jimmy doesn't get to configure the whole NAS. Click **Apply** to create the account.

The screenshot shows the 'Add User' configuration interface. The 'Username' field is filled with 'Jimmy'. The 'New Password' and 'Password (Confirm)' fields are empty. The 'Account Type' is set to 'User'. The 'Available Group(s)' list contains 'children' and 'family'. The 'Group Membership' list is empty. Buttons for 'Add Selected Group(s)', 'Remove Selected Group(s)', 'Apply', and 'Cancel' are visible.

- 4 The account now displays in the **Users** screen.

User Type	Username
	Bob
	Jimmy
	admin

Now that Bob has created Jimmy's account, he can go through the steps again to create another account for Kevin. After both accounts are created, he can go to [Section 5.6.2 on page 101](#) to create shares for Jimmy and Kevin.

## 5.6.2 Creating a Share

Suppose Bob has already created separate accounts for his sons Jimmy and Kevin. Now Bob wants to create a share for each son. He also wants to make sure that each son can only access his own share (to keep them from deleting each other's files). This is how he would do it.

- 1 In the NAS's administration web configurator screens, click **Shares > Add Share**. Click **Add Share** to create a new share.



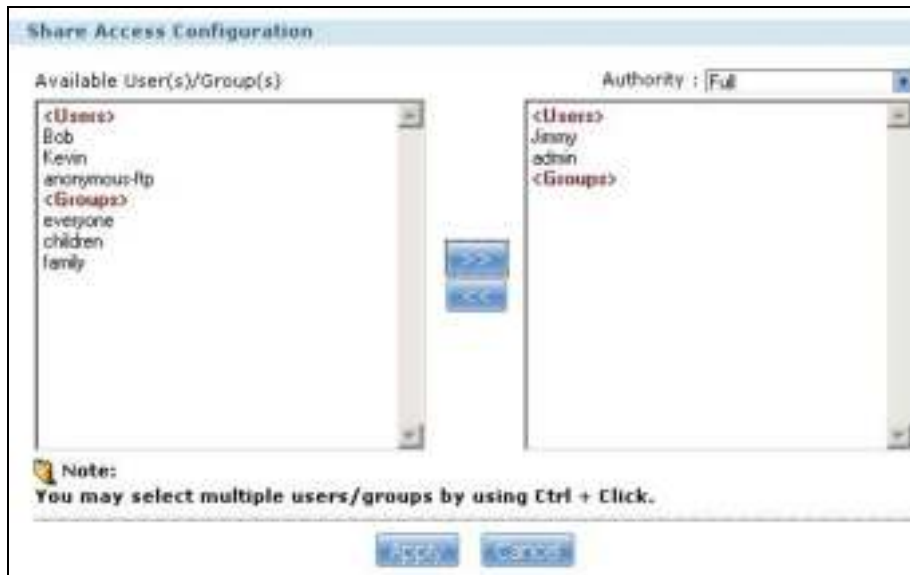
- 2 Specify a name for the share and select which volume it should be on. Configure the screen as follows. Then click **Edit**.

The screenshot shows the 'Add Share' configuration form. The fields are filled with the following values:

- Share Name: jimmy
- Volume: volume [ 183.26 GB ]
- Make this share owned by: admin
- Enable This Share:
- Enable Recycle Bin:
- Publish this share to Media Server:
- Publish this share to Web:
- Share Access: Advanced

The 'Edit' button is circled in green. At the bottom of the form are 'Apply' and 'Cancel' buttons.

- Configure the screen as follows to give Jimmy full access right to the share. Then click **Apply** to create the share.



Now that Bob has created Jimmy's share, he can go through the steps again to create another share for Kevin.

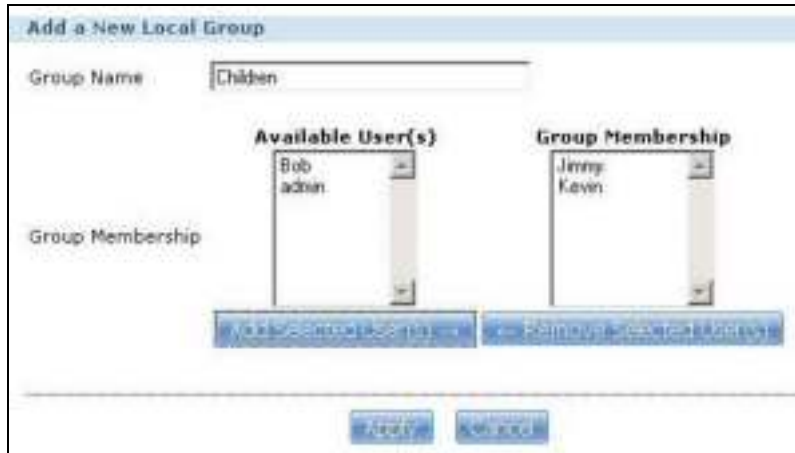
### 5.6.3 Creating a Group

After creating user accounts for Jimmy and Kevin, Bob wants to create a group for his sons and another one for the parents. Bob can assign access rights to his sons' group for certain shares such as a cartoons share and allow only the parents' group to access the scary movie share. This is how he would create the group.

- In the NAS's administration web configurator screen, click **Groups > Add Group**.



- Specify a name for the group. Select the user(s) you want to add to the group from the **Available User(s)** list and click **Add Selected User(s)**. Configure the screen as follows. Then click **Apply** to create the group.

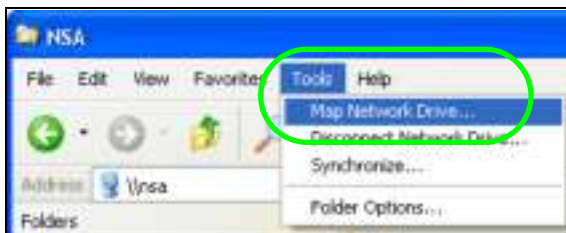


Now that Bob has created a group for Jimmy and Kevin, he can go through the steps again to create another group for the parents. Then he can see the rest of the tutorials for how to use the groups in assigning access rights to shares.

## 5.6.4 Accessing a Share From Windows Explorer

If you map a NAS share (where data is stored) to a Windows network drive, you can use Windows Explorer to transfer files to and from the NAS as if it was another folder on your computer. Here he maps Jimmy's share to Jimmy's computer.

- Start Windows Explorer and go to the NAS's server name. The default is 'nas' followed by the number of your model ('**nas540**' for example).
- Click **Tools > Map Network Drive**.





- 3 Select the network drive that you want to map the NAS to from the **Drive** list box. This example uses I. Then browse to and select the share on the NAS. Click **Finish**.



- 4 Enter the username and password for Jimmy's account and click **OK**. You do not need to do this if the username and password are the same as Jimmy's Windows login.



- After the mapping is done, you can then simply copy and paste or drag and drop files from/to your local computer's drives to or from this network folder. Just like the NAS's share was another folder on your computer.

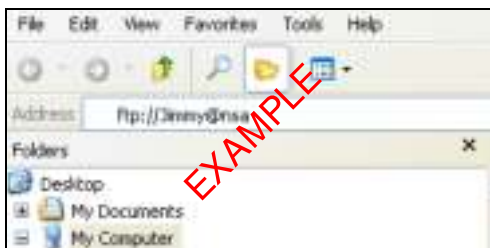


Now that Bob has mapped Jimmy's share to Jimmy's computer, he can go through the steps again to map Kevin's share to Kevin's computer.

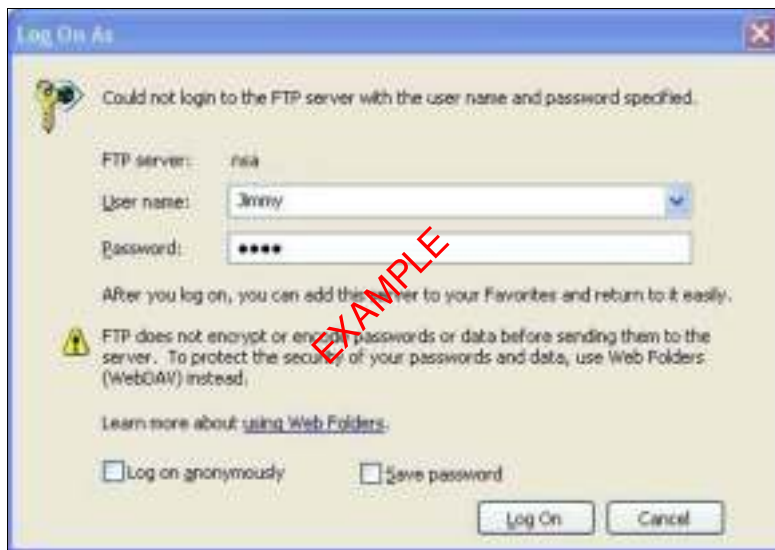
### 5.6.5 Accessing a Share Using FTP

You can also use FTP to access the NAS. Suppose Jimmy is temporarily using a different computer and wants to access his share without mapping it to the computer. This is how he would do it.

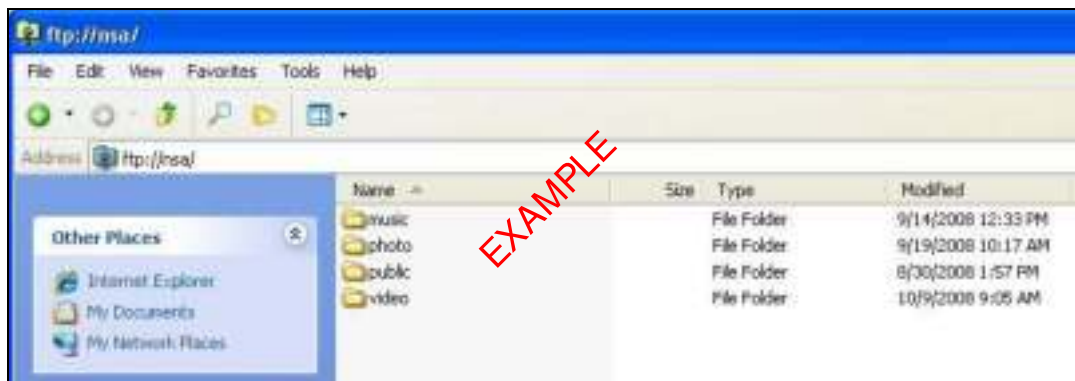
- Open the FTP client (Windows Explorer is used here) and type "ftp://username@server" where "username" is the account's username and "server" is the NAS's IP address or server name.



- 2 Enter your password and click **Login**.



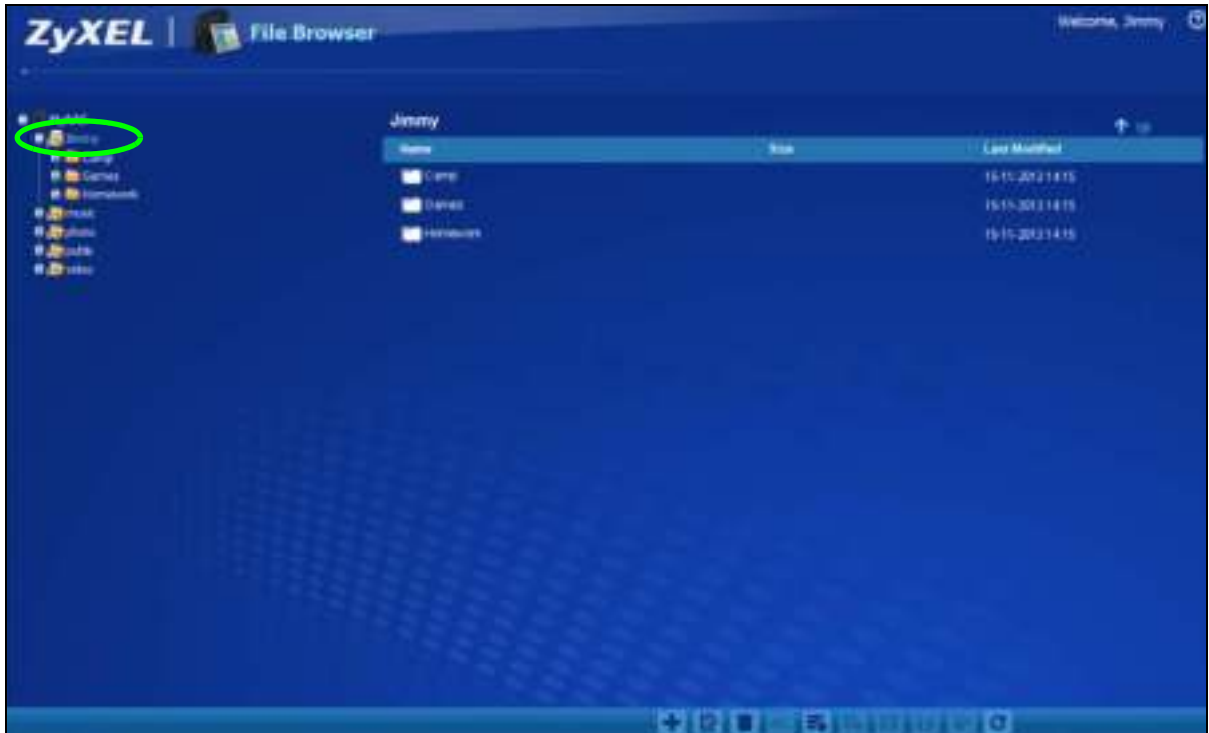
- 3 Now you can access files and copy files from/to your local computer's drives to or from this network folder.



## 5.6.6 Accessing a Share Through the Web Configurator

You can browse and access files through the web configurator.

- 1 Log into the NAS web configurator (see [Section 4.2 on page 29](#)) using the appropriate user name and password (this example uses Jimmy's) and click **File Browser**. Click a share (the Jimmy share in this example) to see the top level of the share's contents.



- 2 Click a folder's file name to browse the folder. You can open files or copy them to your computer. You can also create new folders and upload additional files to the share.
- 3 Click the logout icon when you are done.

## 5.7 Download Service Tutorial

This tutorial covers using the NAS to download a file from the Internet. Use this same procedure for P2P downloads as well as regular HTTP (web) and FTP downloads. See [Section 10.11.2 on page 210](#) for more on the download service.

### 5.7.1 Copying/Pasting a Download Link

- 1 Open your Internet browser (this example uses Internet Explorer).

- Find a download link for the file you want. In this example, www.zyxel.com has a **Server 1** link for downloading a datasheet for ZyXEL's NSA325 v2.



Download Library

Search Results for "Keyword : NSA325 v2"

Displaying documents 1 - 10 of total 12 found.

Search Again

Material Type	Product Model	Version	Release Date	Download
Firmware	NSA325 v2	V4.71(AAL S.0)C0	Sep 10, 2014	Server 1 Server 2
Datasheet	NSA325 v2	2	Aug 14, 2014	Server 1 Server 2
Software	NSA325 v2	2.10_MAC_ENG	Jul 01, 2014	Server 1 Server 2

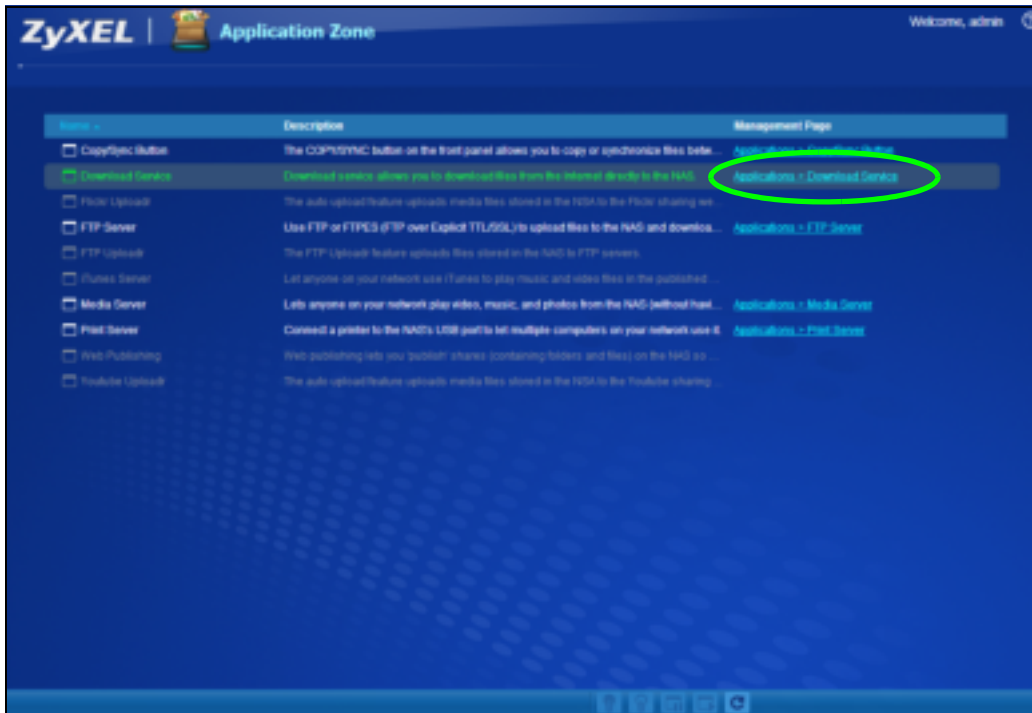
Note: Make sure the link opens either the file you want or a pop-up window about how to handle the file.

Note: It is also OK for the link to open a .torrent file. If you are redirected to a screen that says the download should start in a few seconds, there may be a link to click if the download does not start automatically. See if that link opens the file or the pop-up window.

- Right-click the download link and select **Copy Shortcut** in Internet Explorer (or **Copy Link Location** in Firefox).



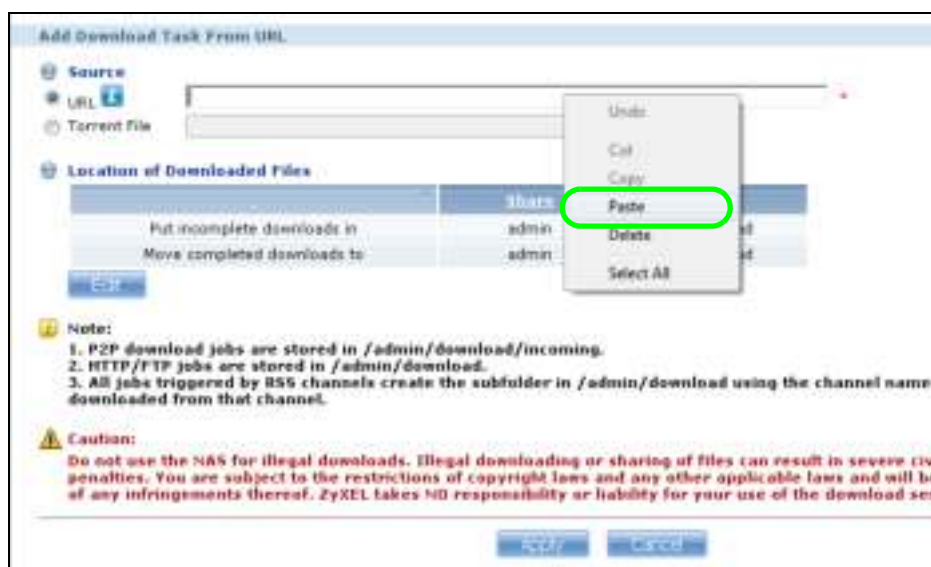
- Log into the NAS web configurator (see [Section 4.2 on page 29](#)) using the administrator account and click **Application Zone** and the **Application Zone > Download Service** link.



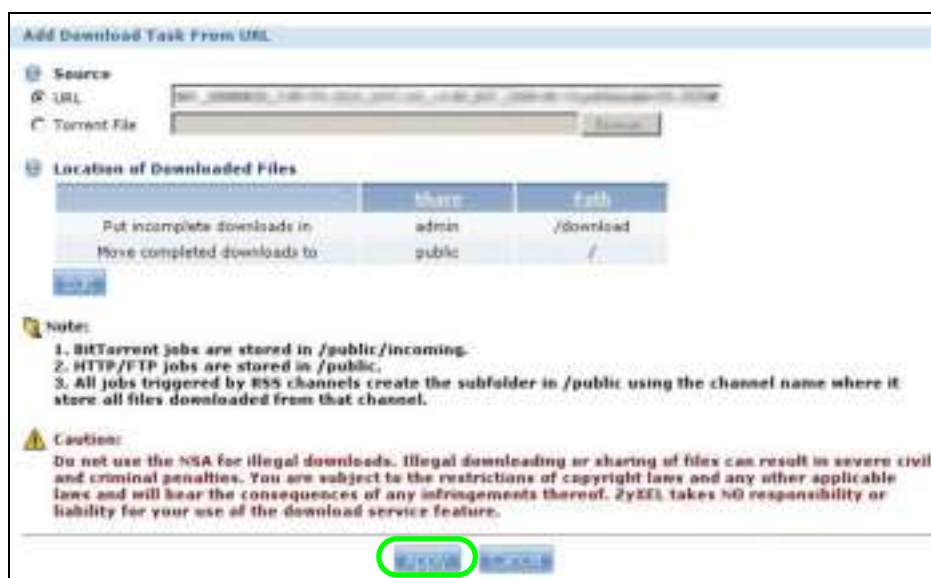
- Click **Add**.



- 6 Right-click the **URL** field and select **Paste**.



- 7 The URL displays in the **URL** field. Click **Apply**.



- 8 After a few moments, the download task appears in the **Download Service** screen's **Active** tab.

The download appears in the **Completed** tab when it is done. By default the NAS stores all downloads in the **admin** share's **download** folder. See [Section 5.6.4 on page 104](#), [Section 5.6.5 on page 106](#), or [Section 5.6.6 on page 107](#) for how to access a share.

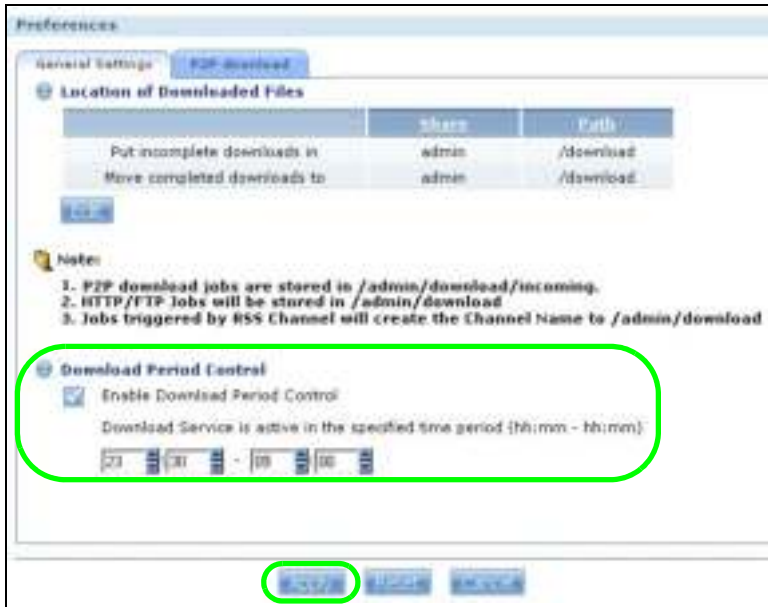
## 5.7.2 Configuring the Download Service Preferences

Once you added a list of download tasks to the NAS (see [Section 5.7.1 on page 108](#)), you can have the NAS download files during a specific time period of the day. You can also configure the P2P download settings to control bandwidth and optimize download efficiency.



Say you have the NAS turned on all the time, but you only want the NAS download files at night. Here is how you use the download period control feature to set the time range.

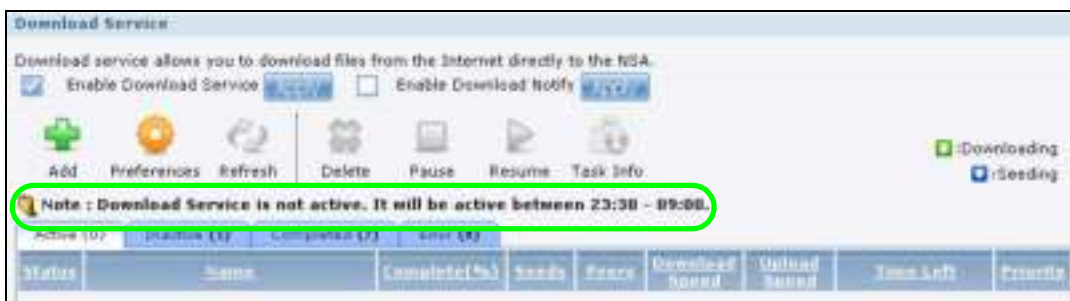
- 1 Click **Applications > Download Service > Preferences** to open the **General Settings** screen.
- 2 Select **Enable Download Period Control** and use the arrows to adjust the time period from 23:30 to 09:00. Click **Apply** to save your changes. The NAS only downloads files within this 9.5-hour period every day.



Note: If you configure the **Power On/ Off Schedule** feature in the **Power Management** screen, make sure your active download period does not conflict with the power-off period.

Note: If power failure occurs during the active download period, the NAS will verify whether the downloaded files were damaged. If a file is corrupted, the NAS will download the file again. If the file is intact but not completely downloaded, the NAS will resume the download task after it restarts.

- 3 When it is not the download time, you see a message in the **Download Service** screen, indicating the active download period.





Click **Applications > Download Service > Preferences > P2P download** to open the following screen. Enter the information below and then click **Apply**.

The screenshot shows the 'P2P download' preferences window. The 'General Settings' tab is active. The settings are as follows:

- Port Number: 8080
- DHT:  Enable  Disable
- Max. Download Rate: 0 KB/s (0=No Limit)
- Max. Upload Rate: 20 KB/s (0=No Limit)
- Maximum Number of Active Torrents: 3
- Maximum Number of Seeding Jobs: 1
- Maximum Number of Active Connections: 100
- Keep Sharing While:
  - Upload/Download Ratio is: 100 % (Enter -1 for unlimited ratio. Enter 0 to ignore ratio.)
  - Or Seeding Time is: 0 minutes (Enter -1 for unlimited seeding time. Enter 0 to ignore seeding time.)
- Email notifications:
  - Send an email notice when download starts:  Enable  Disable
  - Send an email notice when seeding starts:  Enable  Disable
  - Send an email notice when download finishes:  Enable  Disable

Buttons at the bottom: Apply, Cancel, Reset.

Here is a list of P2P download settings you want to configure for your NAS:

- Limit the maximum upload rate to 20 KB/s.  
Enter this value in the **Max. upload rate** field.
- Actively download three torrent files but only upload one at a time.  
Enter 3 in the **Maximum Number of Active Torrents** field and enter 1 in the **Maximum Number of Seeding Jobs** field.
- Keep sharing until the NAS has shared equal or greater amount of the downloaded files.  
Select the check box and enter 100 in the **Upload/ Download Ratio** field.
- Scroll down and click **Edit IP Filter**. Use an online IP filter table from <http://www.bluetack.co.uk/config/level1.gz> for example to protect P2P downloads.  
Enter the URL in the **Update IP Filter from the Internet Every Week** field.

The screenshot shows the 'Edit IP Filter' window. The settings are as follows:

- Enable IP Filter
- Update IP Filter from the Internet Every Week
- URL: <http://www.bluetack.co.uk/config/level1.gz>
- Upload IP Filter Table
- Buttons: Apply, Cancel

Note: Please upload your host, .txt, .dat, .type, .type or .tar.gz files. It will be saved as /admin/download/ipfilter.dat

## 5.7.3 Using Download Service Notification

Use an RSS feed reader on your computer to keep track of files the NAS has downloaded. The following examples show how to subscribe to the NAS's download service notifications. See [Section 10.11.3 on page 211](#) for more on download service notifications.

Some RSS readers may not support the NAS's download service notifications. For example, Google Reader cannot support this feature if the NAS has a private IP address.

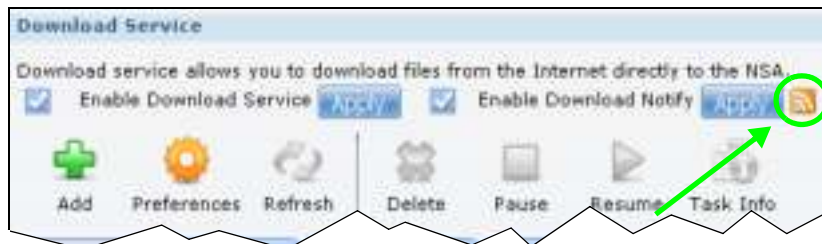
Note: It is recommended to subscribe to the download service notifications using the built-in reader in Internet Explorer 7 or higher, or Firefox.

You have to activate this feature in the **Download Service** screen. Click **Applications > Download Service** to open the following screen. Select **Enable Download Notify** and click **Apply**.

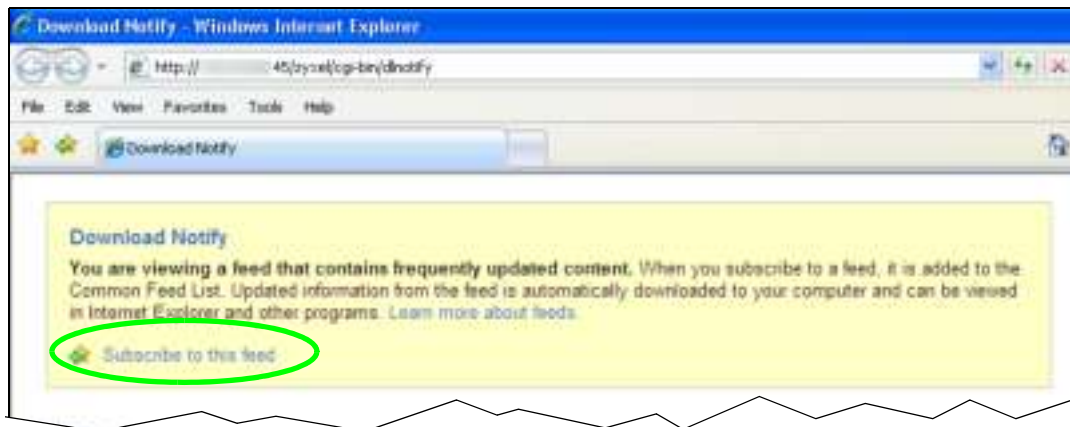


### Internet Explorer 7 Example

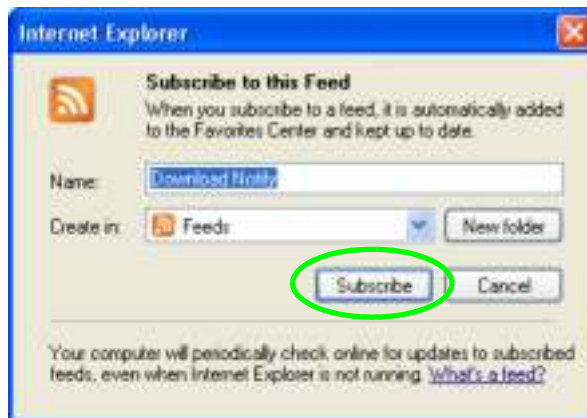
- 1 After you activate download service notification, click the **RSS** feed icon.



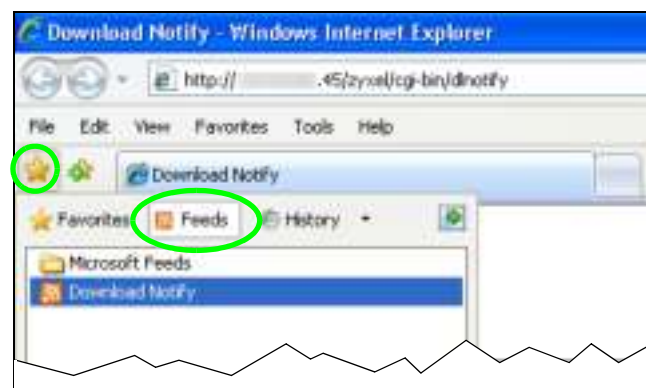
- 2 The following screen displays. Select **Subscribe to this feed**.



- 3 The following screen displays. Click **Subscribe**.

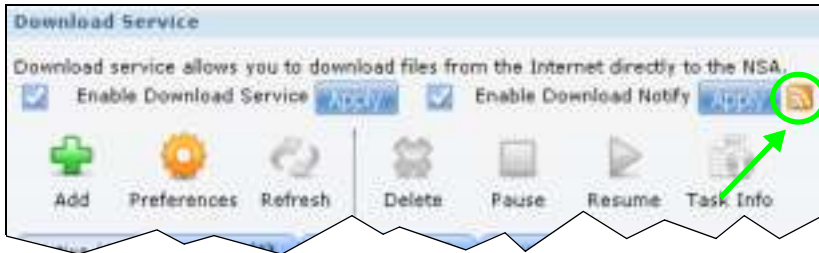


- 4 Click the **Favorite** icon on your browser and select the **Feeds** tab to check the updates of your NAS's download list.

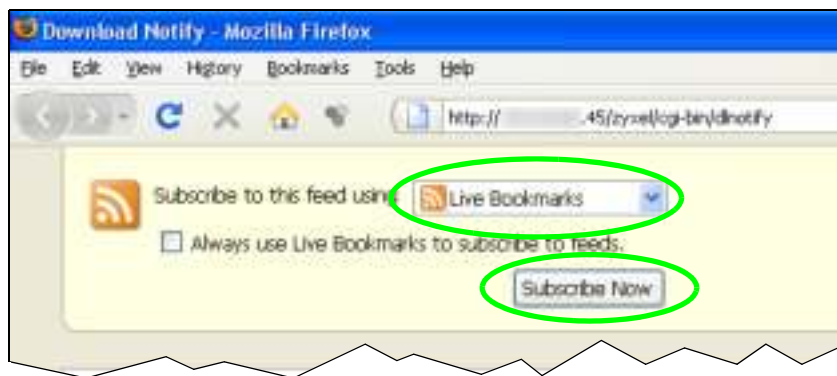


## Firefox Example

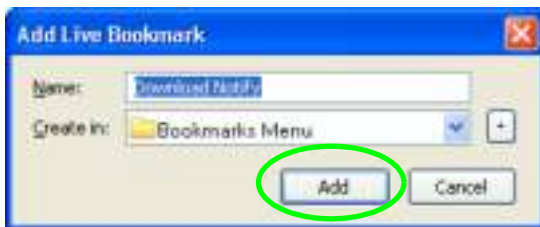
- 1 After you activate download service notification, click the **RSS** feed icon.



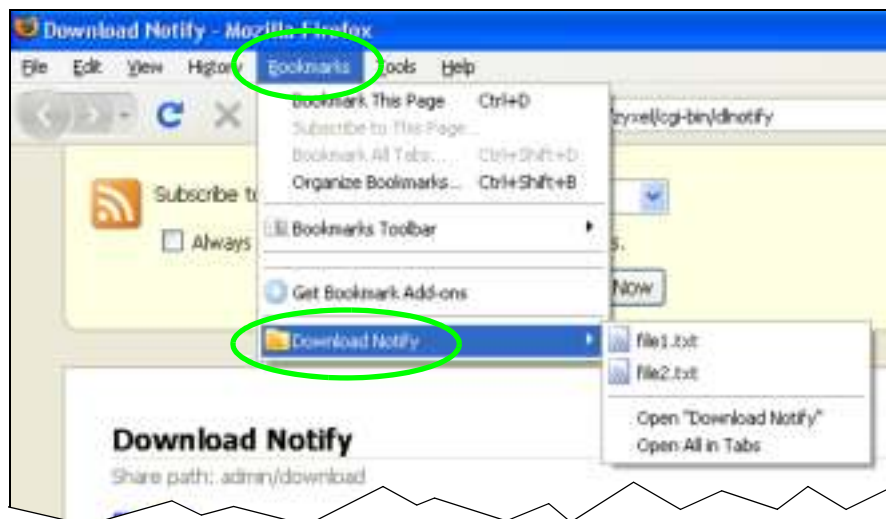
- 2 The following screen displays. Select **Live Bookmarks** from the drop-down list and click **Subscribe Now**.



- 3 The following screen displays. Select **Bookmarks Menu** and click **Add**.



- 4 From the Firefox's **Bookmarks Menu**, select **Download Notify** to check the updates of your NAS's download list.



## 5.8 Printer Server Tutorial

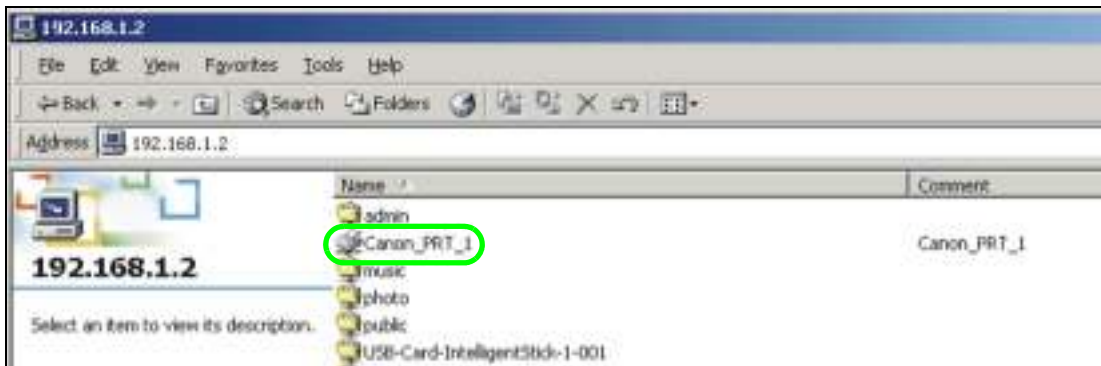
Do the following to have the NAS let computers on your network share a printer. See [www.zyxel.com](http://www.zyxel.com) for a list of compatible printers.

- 1 Make sure the NAS is on and the **SYS** light is on steady (not blinking).
- 2 Use a USB cable to connect the printer's USB port to one of the NAS's USB ports. Make sure the printer is also connected to an appropriate power source.

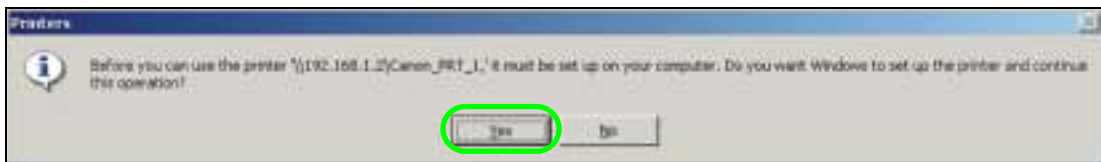


- 3 Turn on the printer.

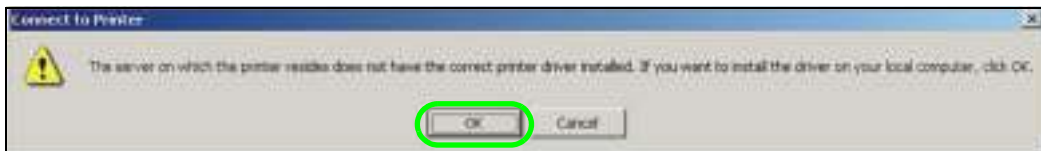
- 4 The NAS detects the printer after a few moments.
- 5 On your computer, open your CIFS file sharing program (Windows Explorer for example) and browse to the NAS. Double-click the printer's icon.



- 6 If you get a warning screen, click the option that lets you continue (**Yes** in this example).



- 7 If your computer does not already have the printer's driver installed, you will need to install it. In this example, click **OK**.

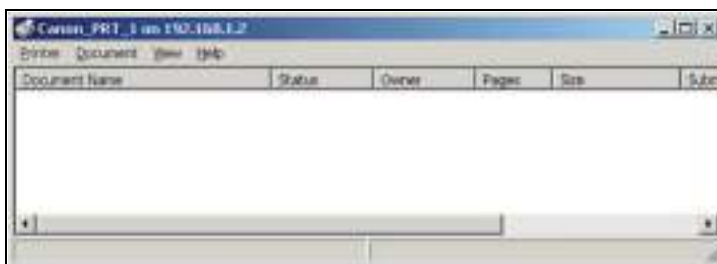


- 8 Use the wizard screens to install the printer driver on the computer. You may need to get the file from the printer's CD or the printer manufacturer's website (the driver is not installed on the NAS).

Note: You must install the printer driver on each computer that will use the printer.



After the driver installation finishes, the computer is ready to use the printer. Select the printer in an application to use it to print. Browse to the NAS using a CIFS program (like Windows Explorer) and double-click the printer's icon to open the printer's queue of print jobs.



Note: Repeat steps 5 to 8 on your other computers so they can also use the printer.

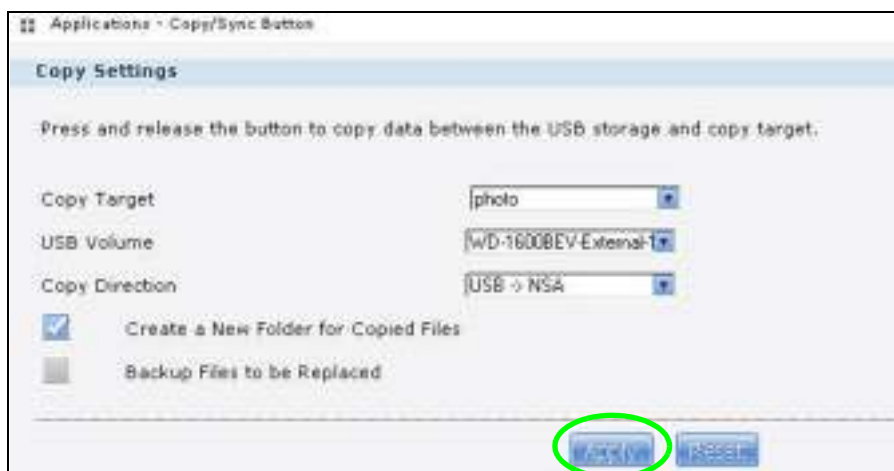
## 5.9 Copy and Flickr Auto Upload Tutorial

Amy received some photos taken during her best friend's wedding and saved the files on a USB disk. She wants to save a copy of the photos in the NAS and upload the photos to her Flickr account.

Amy has to activate the NAS's auto upload feature. See [Section 12.4 on page 239](#) for more details on setting up a Flickr account for auto upload. In this example Amy select the NAS's photo share for auto upload.

This is how Amy would transfer the files from her USB disk to the NAS.

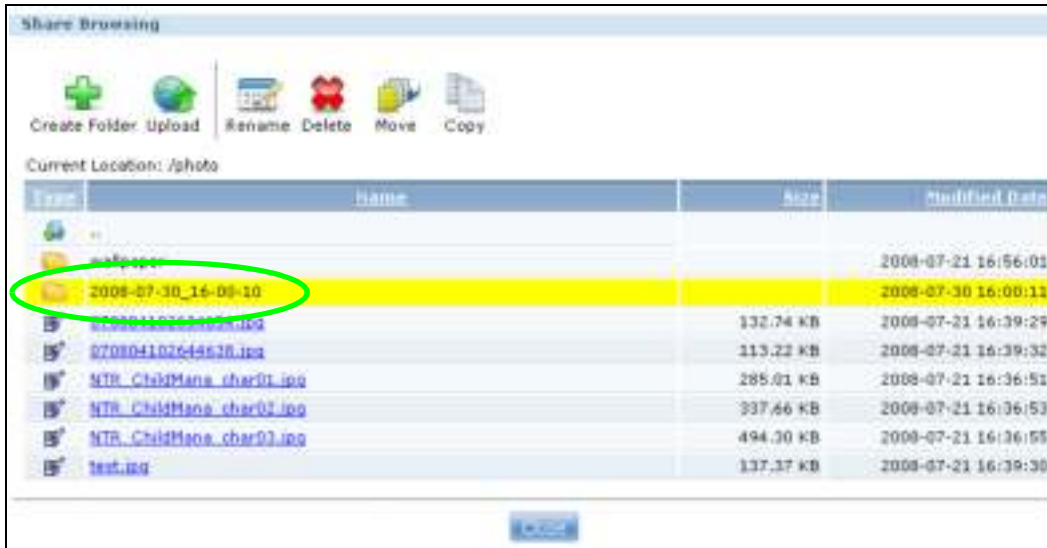
- 1 Click **Applications > Copy/ Sync Button** in the navigation panel to open the screen.
- 2 Configure the copy settings as shown and click **Apply**.



- 3 Press and release the **COPY/ SYNC** button on the NAS's front panel to start copying files.



- The copied files can be found in a new folder in the photo share. The name of this folder is the date (yyyy-mm-dd) and time (hh-mm-ss) when the folder is created.

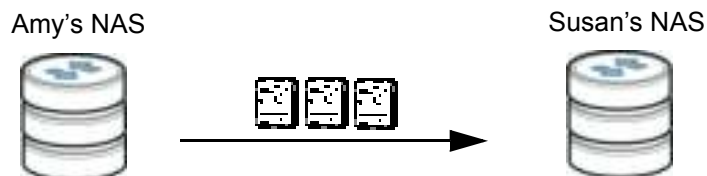


- The NAS also automatically uploads the copied files to Flickr.



## 5.10 FTP Uploadr Tutorial

FTP Uploadr can automatically upload files saved on the NAS to a remote FTP server. Amy wants to share files on her NAS with Susan. They each have an NAS at home, so Susan has to set her NAS as an FTP server for Amy to automatically send files using FTP Uploadr.





To set the NAS as an FTP server, click **Applications > FTP** to open the **FTP** screen. Select **Enable FTP** and click **Apply**.

The screenshot shows the 'FTP' configuration page. At the top left, the 'Enable FTP' checkbox is checked and circled in green. Below it are fields for 'Min. upload time', 'Max. upload', and 'Character set'. There are also checkboxes for 'Enable Anonymous FTP Access' and 'Create local backup for data safety'. A note at the bottom states: 'Note: To configure a share to allow anonymous FTP access go to the configure shares page and modify a share's access rights to allow the user 'Anonymous FTP''. At the bottom right, the 'Apply' button is circled in green.

Susan also has to create a user account and share on her NAS for Amy to upload files. The share is used for files uploaded from Amy's NAS. Amy will then use the following information to configure FTP Uploadr on her NAS.

**Table 37** FTP Uploadr Tutorial: FTP Server Information

FTP Domain Name or IP Address	example2.com
FTP User Name	Amy
FTP Password	xxxxx
Share (Remote Path)	Amy

This is how Amy would set up the NAS's FTP Uploadr.

- 1 Click **Applications > Auto Upload > FTP Uploadr** to open the **FTP Uploadr** screen. Select **Enable FTP Uploadr** and click **Apply** to turn on FTP Uploadr.

The screenshot shows the 'FTP Uploadr' configuration page. At the top left, the 'Enable FTP Uploadr' checkbox is checked and circled in green. To its right is the 'Apply' button, also circled in green. Below these are icons for 'Add Server', 'Preferences', 'Edit Server', 'Delete Selected Server(s)', and 'Server Information'. At the bottom, there is a table with columns: 'Domain Name / IP Address', 'Port Number', 'Remote Path', 'Account Name', and 'Description'.

- 2 Click **Add Server**.

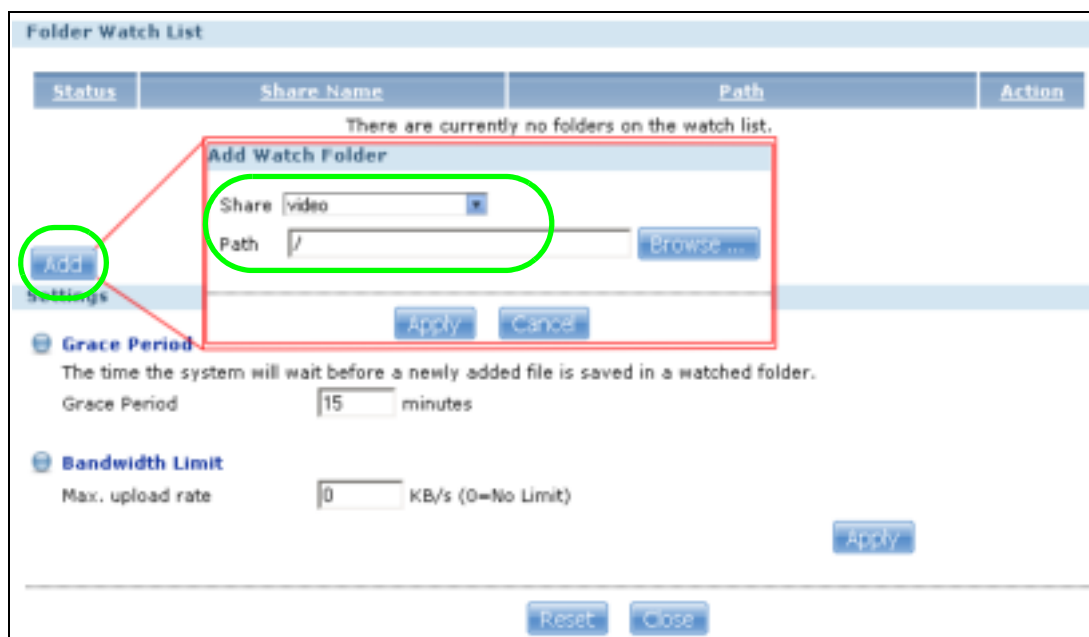


- 3 Enter the information as describe in [Table 37 on page 121](#). Click **Apply** to add the server.

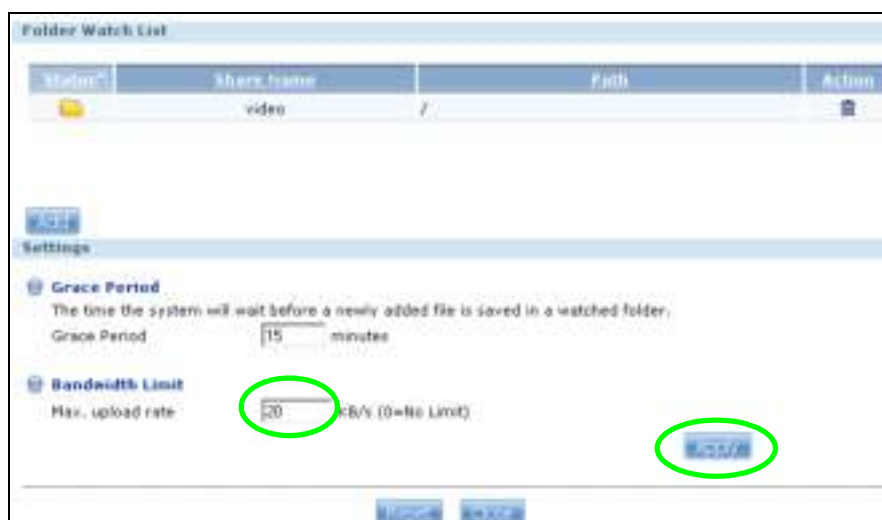
- 4 In the **FTP Uploadr** screen, click **Preferences** to configure the auto upload settings.



- 5 Amy wants to share video files with Susan. In the **Preferences** screen, click the **Add** button and select **video** from the **Shares** drop-down list box, enter a forward slash in the **Path** field and click **Apply** to add the share to the **Folder Watch List**.

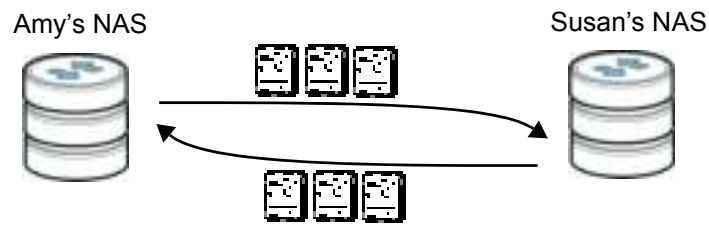


- 6 Amy also set the **Bandwidth Limit** to 20 KB/s so that the upload doesn't slow down her Internet connection.



Now Amy has set up FTP Uploadr to send files to Susan's NAS. Every time Amy adds new files or renames files in the **video** share, these new or modified files will be uploaded automatically to the **Amy** share on Susan's NAS.

Similarly, Susan can go through the steps described above to configure FTP Uploadr on her NAS. Once Susan completes the setup, Amy can also receive files from Susan's NAS.

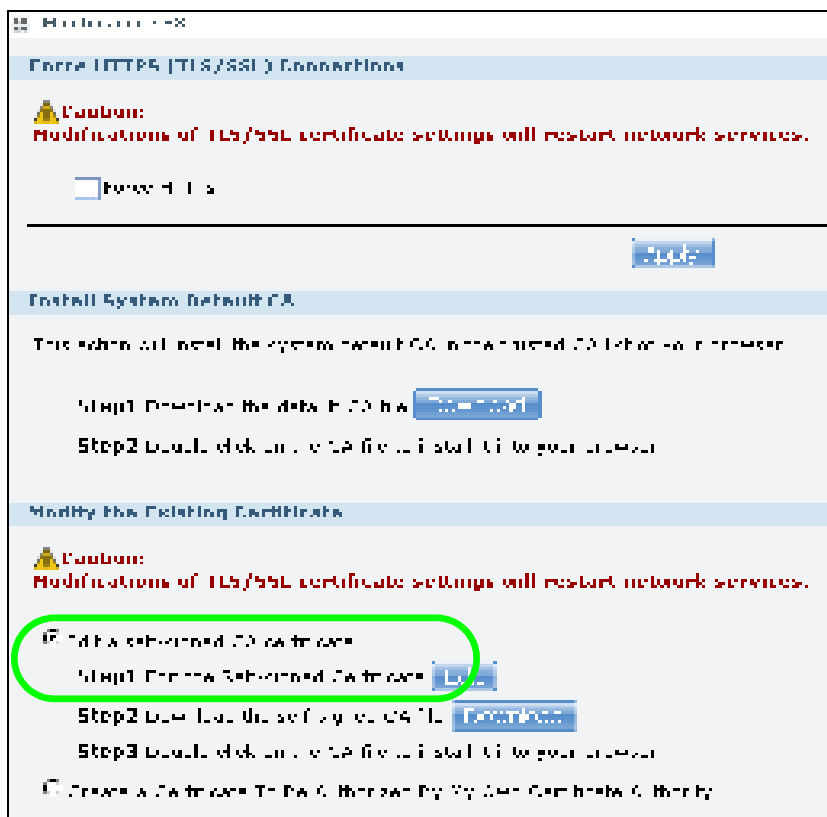


## 5.11 Web Configurator's Security Sessions

These tutorials show you how to configure security for the NAS's Web Configurator sessions. You will customize the NAS's self-signed SSL certificate and distribute it to your users.

### 5.11.1 Customizing the NAS's Certificate

- 1 Click **Maintenance > SSL** and then select **Edit a self-signed CA certificate** and click **Edit**.



- Next, let's modify the certificate by changing the **Common Name** to this NAS's host name of "nsa", the **Organization** to "ZyXEL" and the **Key Length** to **2048**.

**Edit the self signed Certificate**

Common Name:  
 IP Address:   
 Host Domain Name:

Organization (Optional):  (Max length: 64 characters)  
Country (Optional):  (Max length: 2 characters)  
Locality (Optional):  (Max length: 64 characters)

Key Type:   
Key Length: **2048**

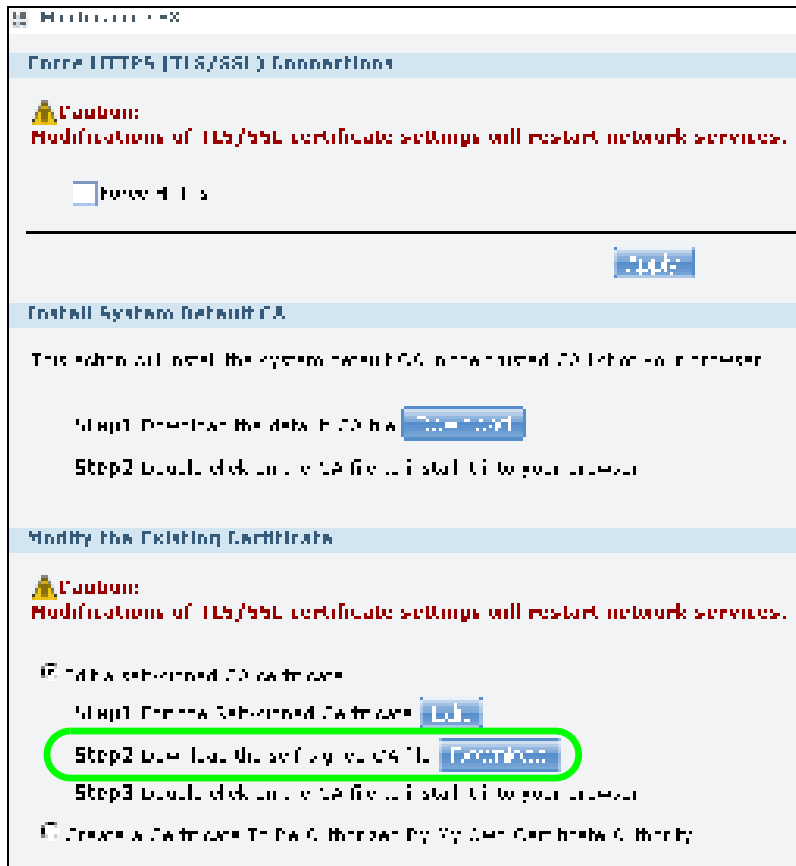
**Note:**  
If you choose a large key length, it may take a while to make the certificate file.

- The NAS restarts its network services and returns you to the login screen.

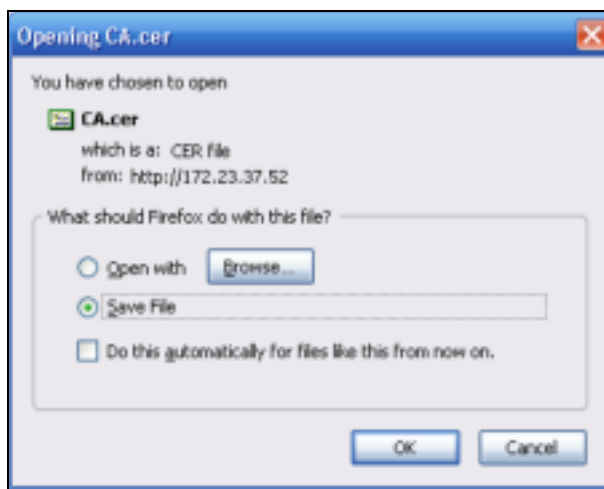


## 5.11.2 Downloading and Installing Customized Certificate

- 1 Log in and return to **Maintenance > SSL**. Under **Modify the Existing Certificate**, click **Download**.



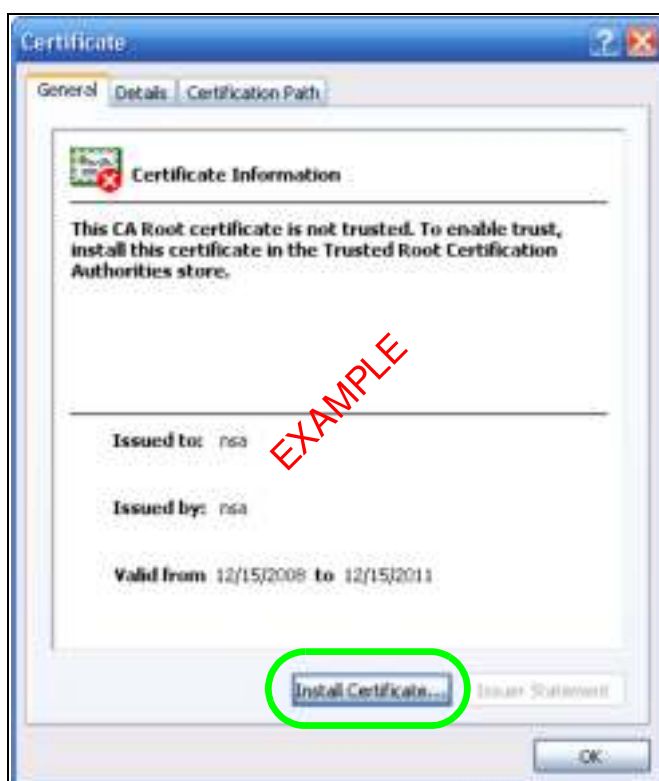
- 2 Save the file to your computer.



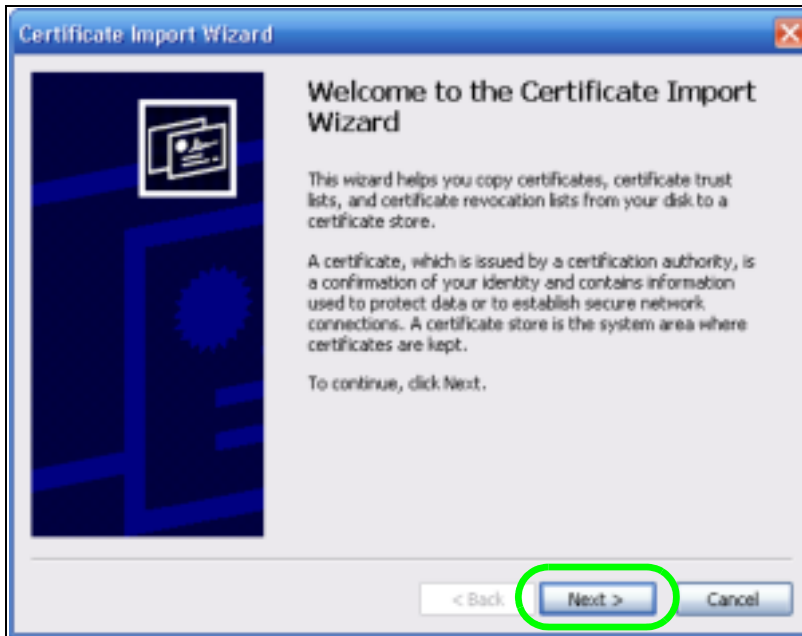
- 3 Find the certificate file on your computer and double-click it.



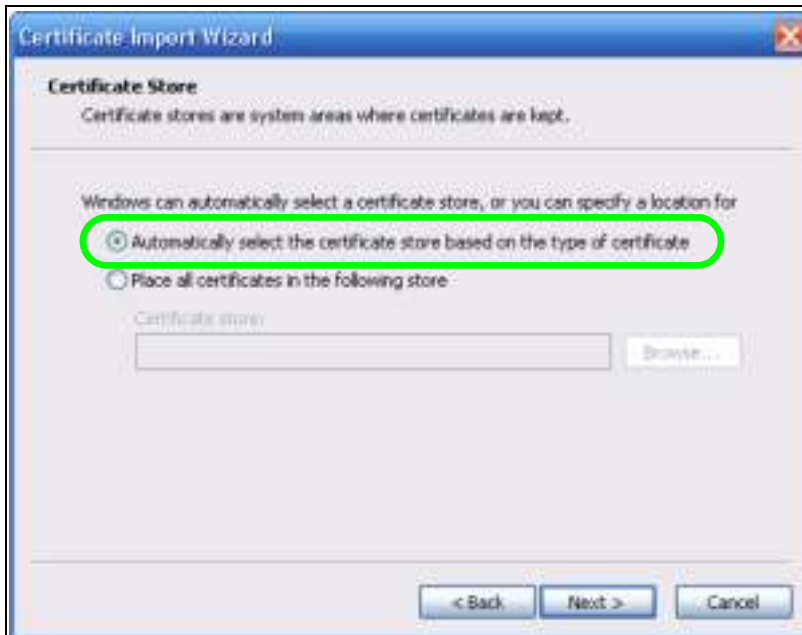
- 4 Install the certificate. The rest of the steps in this section are an example of installing a certificate in Windows. In the **Certificate** dialog box, click **Install Certificate**.



- 5 In the **Certificate Import Wizard**, click **Next**.



- 6 Leave **Automatically** select certificate store based on the type of certificate selected and click **Next**.

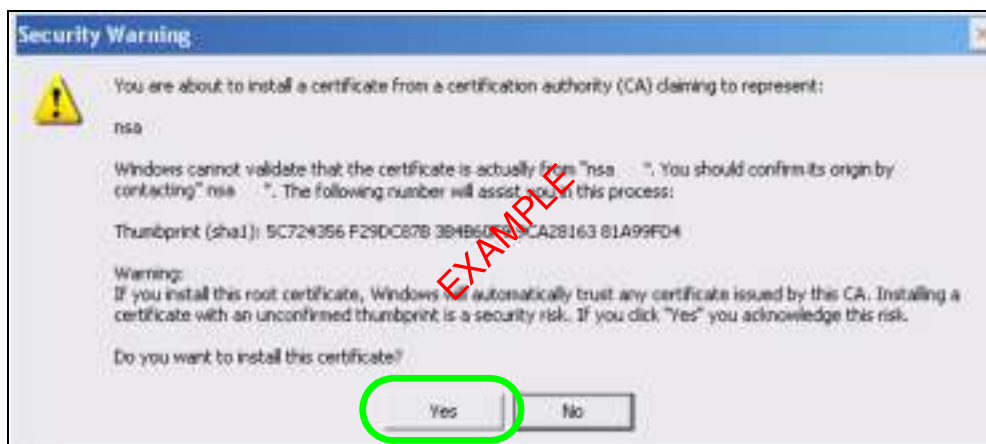




- 7 In the **Completing the Certificate Import Wizard** screen, click **Finish**.



- 8 If you are presented with another **Security Warning**, click **Yes**.



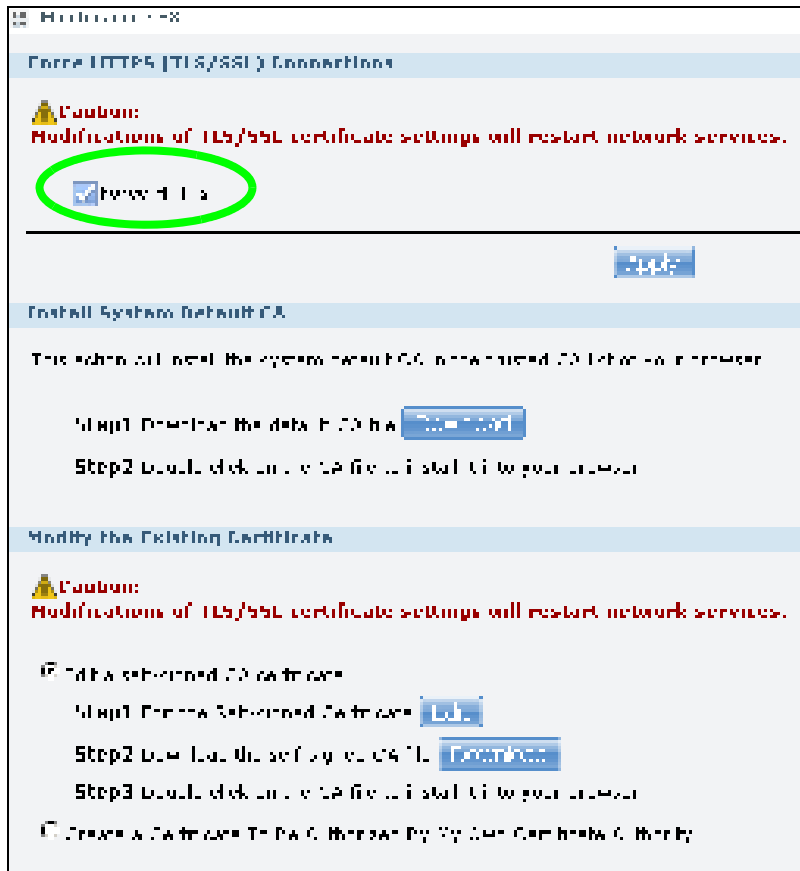
- 9 Finally, click **OK** when presented with the successful certificate installation message.



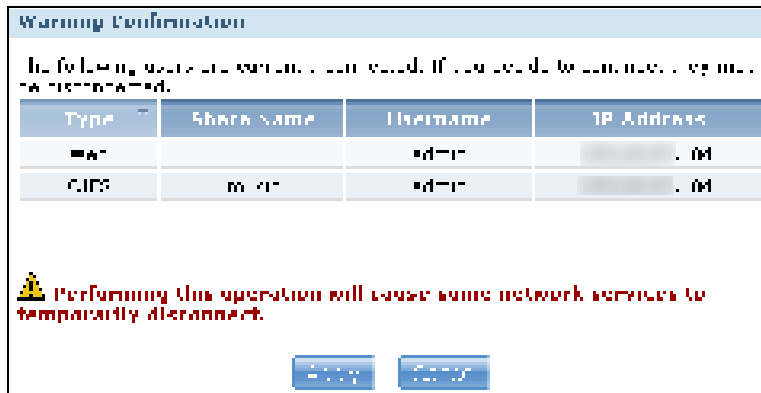
### 5.11.3 Turn on the NAS's Web Security

Now that you have customized the NAS's certificate and installed it in your computer, you can turn on security for your Web Configurator sessions. This example uses Firefox 3.0.

- 1 Close your web browser and open it again to reset its session with the NAS. Log in and click **Maintenance > SSL**. Select **Force HTTPS** and click **Apply**.



- 2 A warning screen pops up if applying your change may disconnect some users. Click **Apply** to continue.



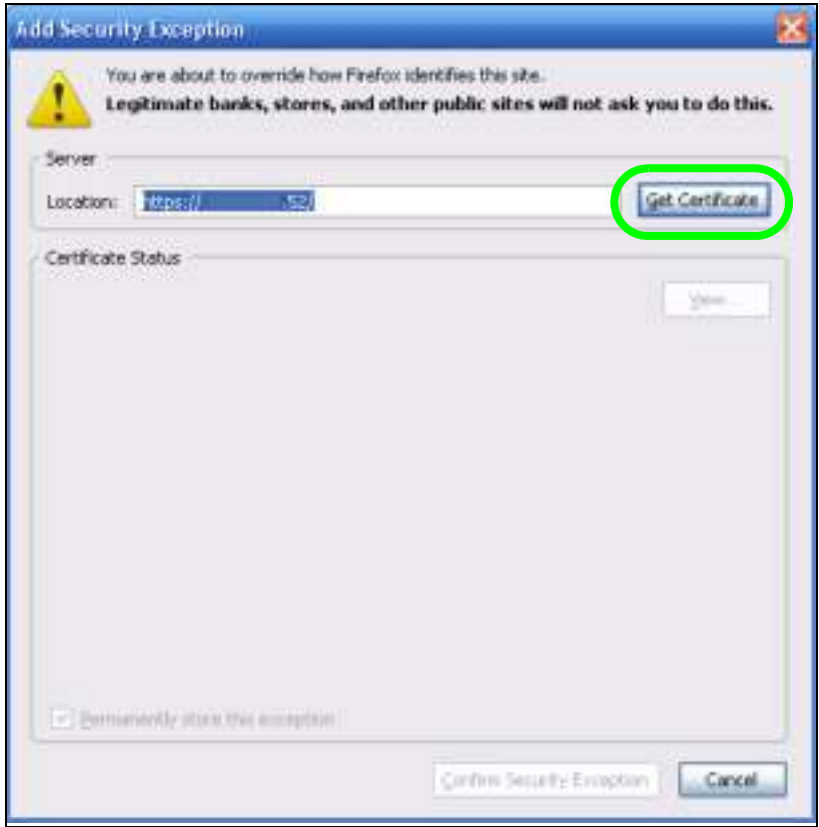
- The NAS logs you out and automatically redirects your formerly non-secure (HTTP) connection to a secure (HTTPS) connection. Your browser may give you a warning about the device's public key certificate. Add an exception to allow your browser to bypass the warning.



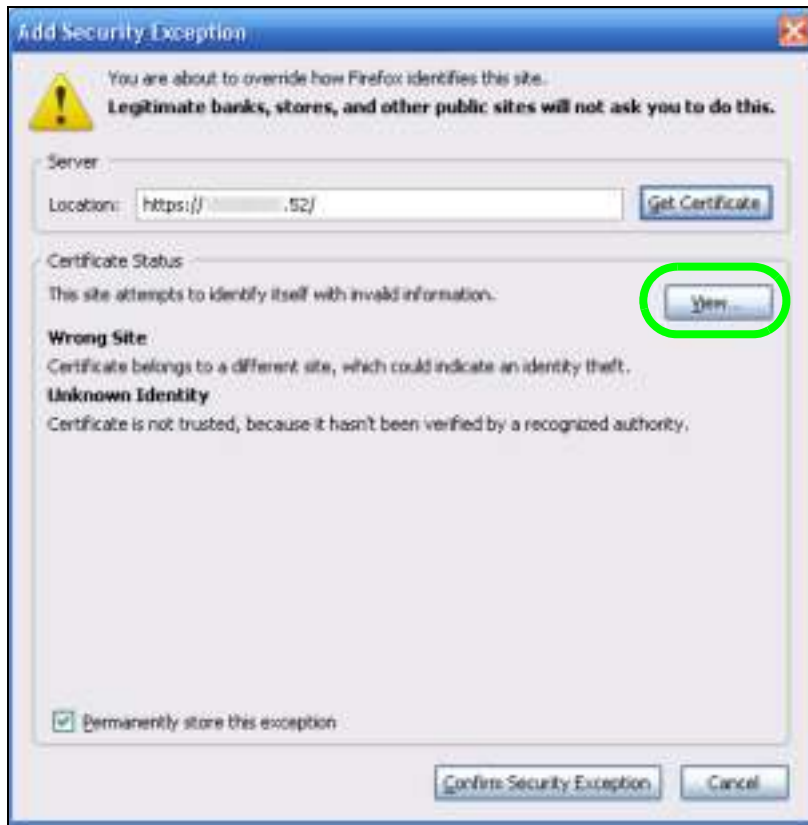
- Click **Add Exception**.



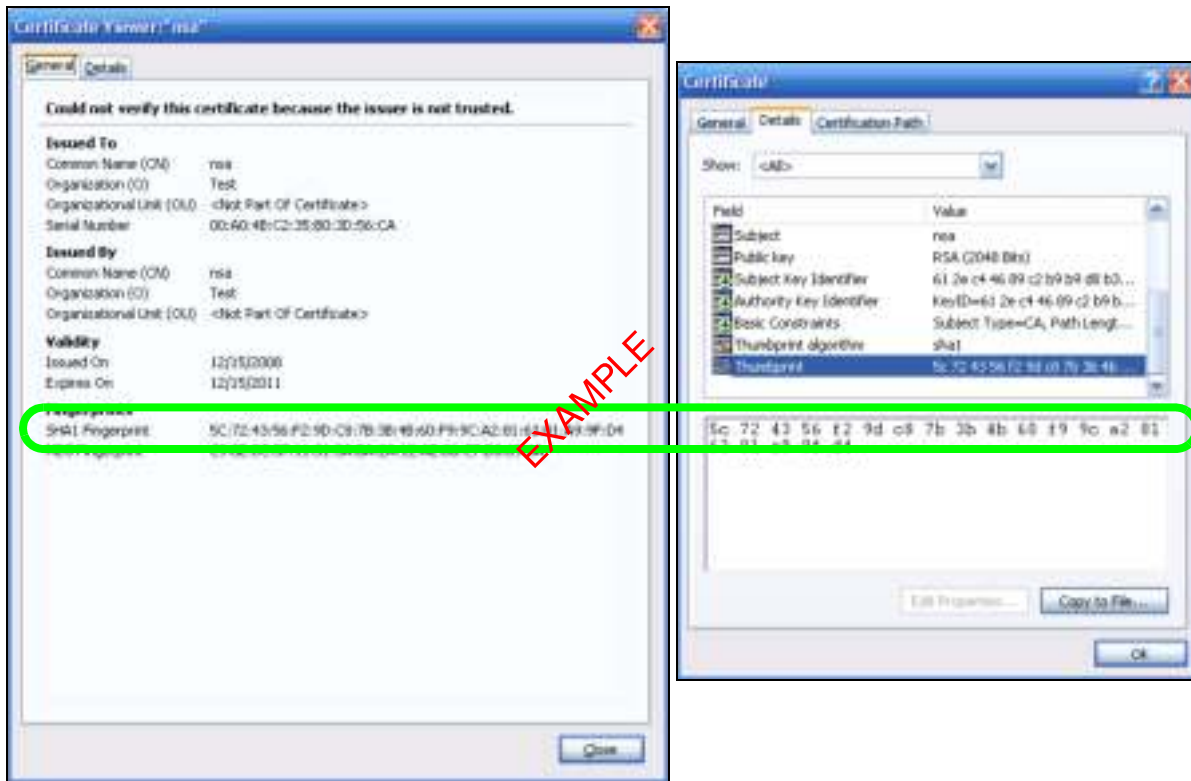
5 Click **Get Certificate**.



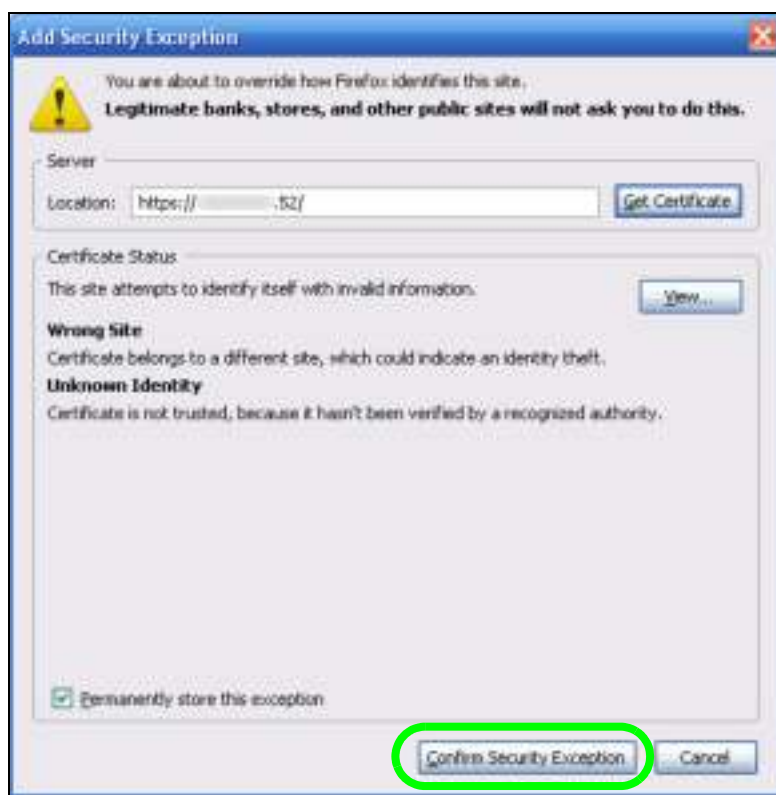
- 6 Before you add an exception, verify that the device to which you are trying to connect is providing the correct certificate. Click **View**.



- The SHA1 fingerprint must match the NAS's certificate you downloaded from the NAS to your computer. (Double-click the NAS's certificate file and then click **Details** and look at the **Thumbprint**). Click **Close**.



- 8 If the certificate fingerprints match, click **Confirm Security Exception**, otherwise click **Cancel**.



- 9 The login screen displays.

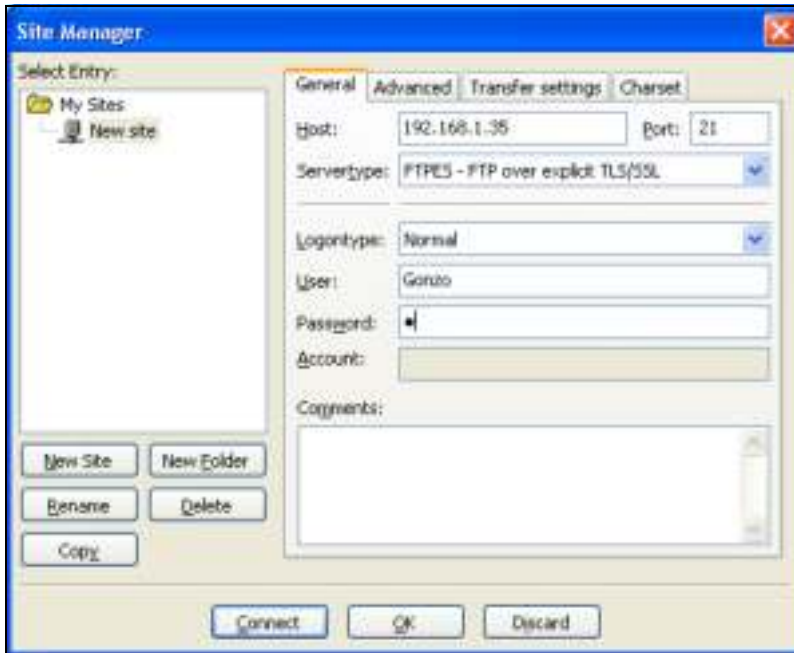


Now, anyone who connects to the NAS's Web Configurator screens will automatically do so by HTTPS. Use a secure method to let your users know the correct fingerprint for the NAS's certificate so they can check it before adding a security exception (as in steps 6 to 7 on pages 133 to 134). See the next section for how to use FTPES with the NAS for secure FTP transfers.

## 5.12 Using FTPES to Connect to the NAS

This section covers how to use FTP over Explicit TLS/SSL with the NAS for secure FTP transfers. Before you go through this section, read [Section 5.11 on page 124](#) to configure HTTPS. This example uses FileZilla.

- 1 Open FileZilla and click **File > Site Manager > New Site**.
  - Configure the **Host** field with the NAS's address.
  - Set the **Servertype** to **FTPES - FTP over explicit TLS/ SSL**.
  - Configure the account name and password.
  - Click **Connect**.



- 2 A security warning screen displays. The SHA1 fingerprint must match the NAS's certificate you downloaded from the NAS to your computer. (Double-click the NAS's certificate file and then click **Details** and look at the **Thumbprint**). If they match, click **OK**.





The shares and folders to which Gonzo has access display. Now you can use FTP to securely transfer files to or from the NAS. Use a secure method to let your users know the correct fingerprint for the NAS's certificate so they can check it before adding a security exception.

## 5.13 Using a Mac to Access the NAS

This tutorial shows you how to find the NAS on Mac OS X 10.5 (Leopard).

You can access the NAS in two ways:

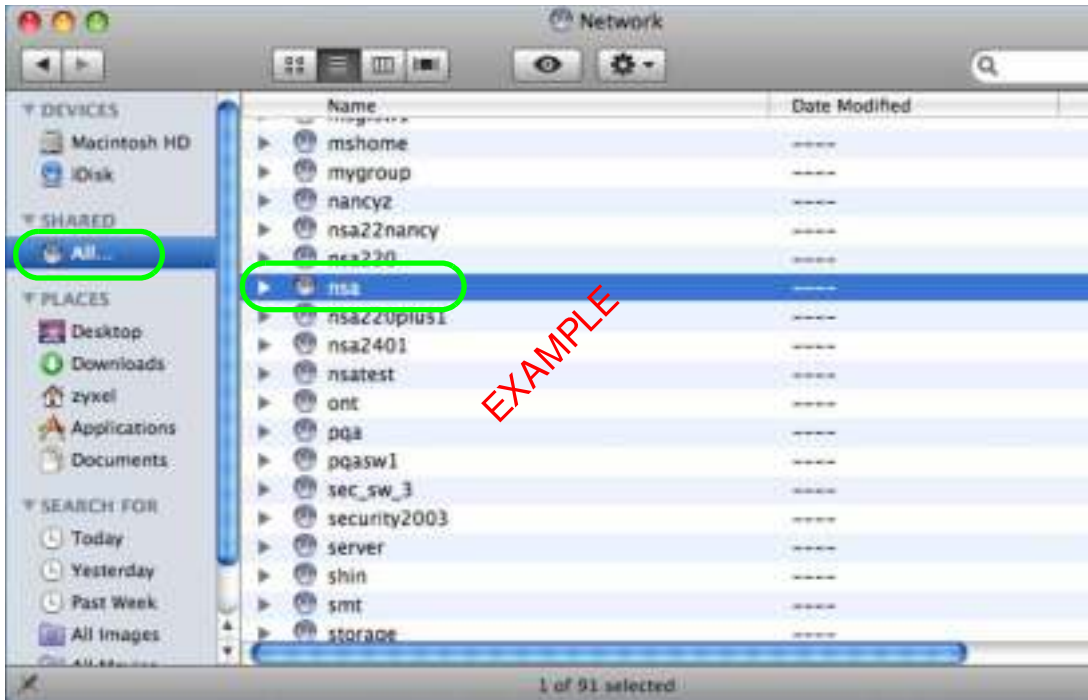
- Use the **Finder** to browse for the NAS, or
- Use the **Finder > Go** option to connect to the NAS.

### 5.13.1 Finder

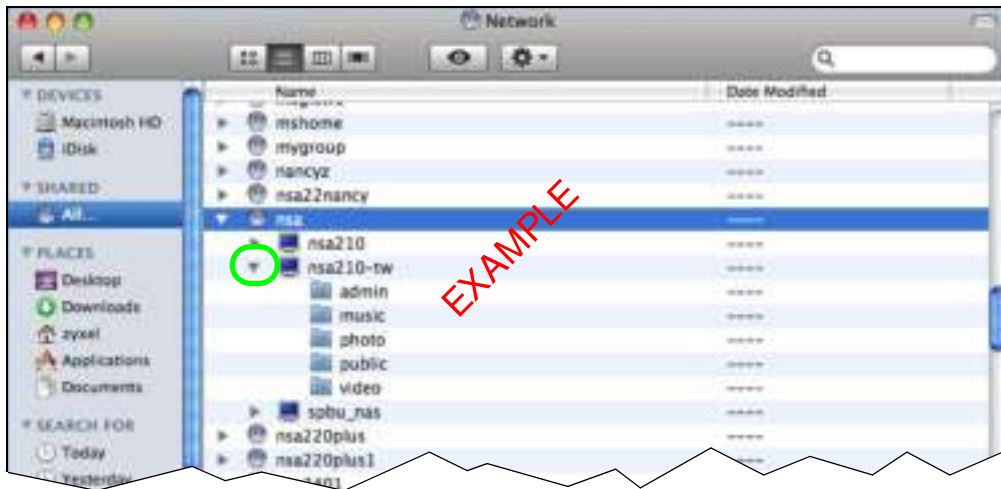
- 1 Open a new **Finder** window.



- 2 Select **All** under the **SHARED** sidebar. Look for the NAS from the **Network** list.

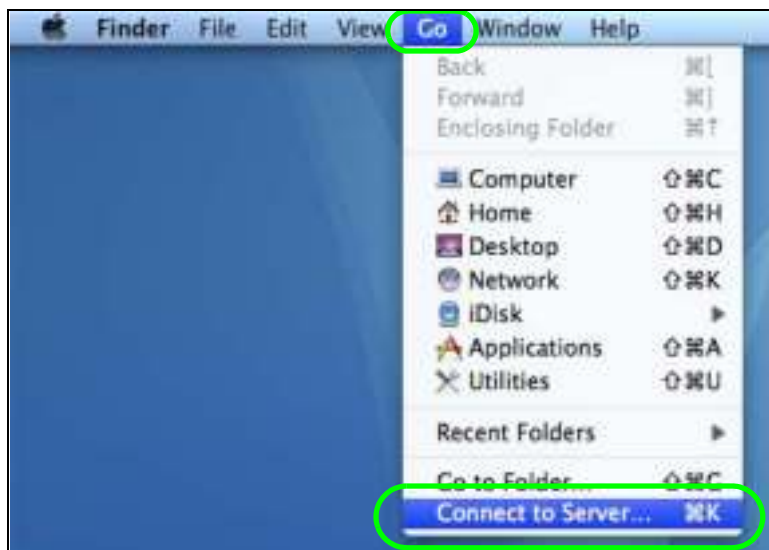


- 3 Expand the NAS to display the shares you may access.



## 5.13.2 Go Menu

- 4 In the **Finder**, click **Go > Connect to Server**.



- 5 When the **Connect to Server** dialog box opens, enter `smb://` and the NAS's IP address in the **Server Address** field. You may also click **Browse** to have the Mac search for the NAS. Click **Connect**.



- 6 Once you establish the connection, you can access the NAS from the **Finder** or directly from the desktop.

## 5.14 How to Use the BackupPlanner

Note: The screens and links in this section appear only after you have installed and enabled BackupPlanner. BackupPlanner is an application that you can install using Package Management (see [Chapter 11 on page 227](#).)

Use the NAS's BackupPlanner to have a backup of your files and folders.

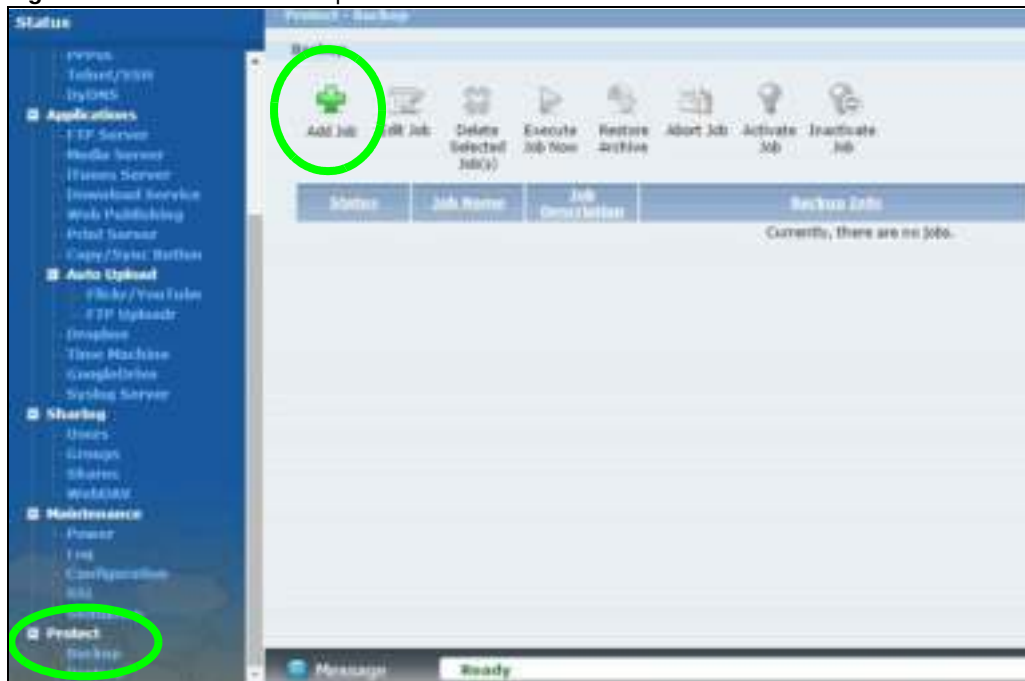
Schedule backups for times when the network is not busy (like at night or on weekends). For example, you might do daily backups of important individual files or folders and a weekly general archive. You can save backups to another location so your files can survive even if the original RAID or NAS fails.

### 5.14.1 Creating an Archive Backup

To backup the NAS every week to a remote NAS:

- 1 Click **Protect > Backup > Add Job**.

**Figure 51** Protect > Backup



- 2 Identify the backup job and select **Archive**.

New files are often added to the shares that you need to back up and existing files are not frequently changed so select **Incremental**. The NAS does a full backup first and later only copies source files that are new and/or modified since the last backup. This example sets the NAS to do another full backup after every four incremental backups.

**Figure 52** Protect > Backup > Add Job: Step 1

Protect > Backup

Add a new backup job

Step 1

1 Job Information

Job Name: Weekly\_backup

Job Description:

2 Backup Type

Archive

Full

Incremental

Perform a full backup job after 4 increments.

Synchronization

Reync

Next

- 3 Select the **volume1** check box to select all the folders and files.  
Select **Remote** and enter the other NAS's address, username, password, and share name.  
If you want to make sure the remote NAS is reachable, click **Test Connection**.

**Figure 53** Protect > Backup > Add Job: Step 2



- 4 In this example, the target NAS is on the LAN so leave the compression off. Security is already configured on the target NAS so you can leave the encryption off, too. Have the NAS keep 3 backups.

**Figure 54** Protect > Backup > Add Job: Step 3

Protect - Backup

**Add a new backup Job**

**Step 3**

**Compression**

Yes

No

**Encryption**

Yes

No

**Purge Policy**

Keep All Old Backup files

Keep Only the last  backup files(1-30)

Keep Backups For  day(s)(1-3650)

Previous Next

- 5 Set the frequency to **Weekly**. Schedule the backup for 5:00 every Saturday morning.

Protect > Backup > Add Job: Step 4

Protect - Backup

**Add a new backup Job**

**Step 4**

**Schedule**

Frequency:

Start Time (hour):

Start Time (min):

Days of the Week:

Sunday  Monday  Tuesday  Wednesday  Thursday  Friday  Saturday

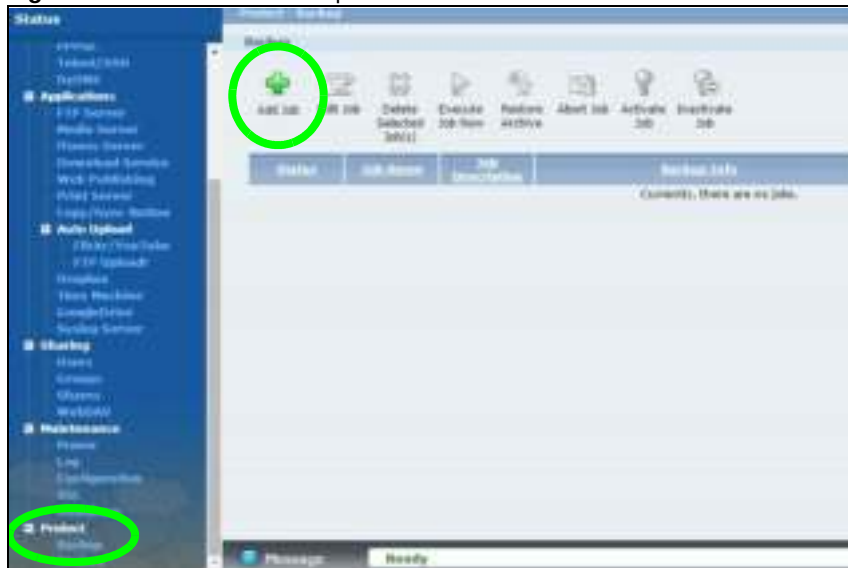
Previous Next

## 5.14.2 Creating a Synchronization Backup

To create a synchronization backup:

- 1 Click **Protect > Backup > Add Job**.

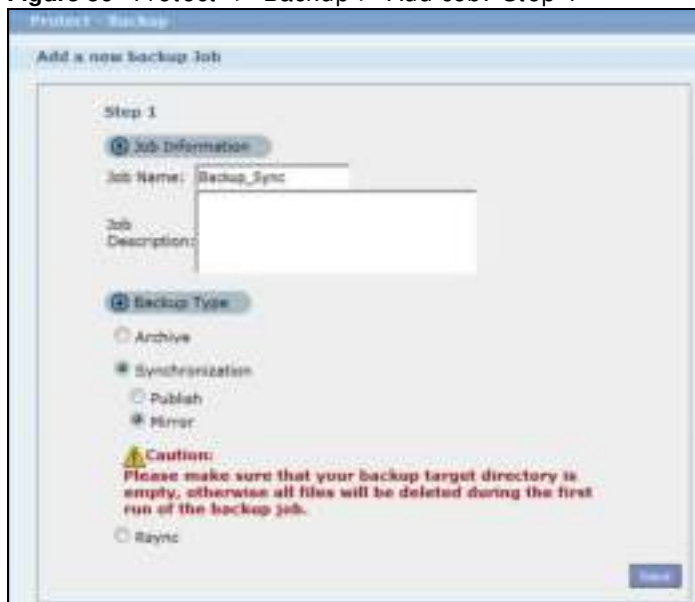
**Figure 55** Protect > Backup



Name the backup job and select **Synchronization**.

You want only your current set of files in the remote NAS's folder, so you select **Mirror** to make the target folder identical to the source folder. The NAS deletes any other files in the target folder.

**Figure 56** Protect > Backup > Add Job: Step 1



- 2 Select the folder that needs to be mirrored (your **Private** folder in this example) and **Remote**.
  - Enter the other NAS's address and administrator password.
  - Click **Show target content** to display the remote NAS's contents.
  - Select the destination on the remote NAS (**Backups** in this example).



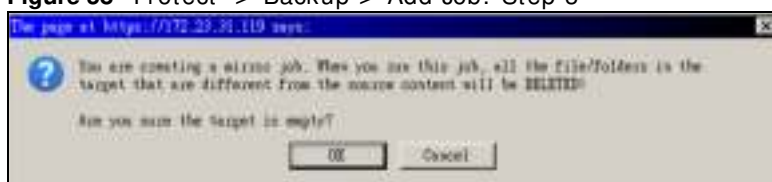
- Click **Next**.

**Figure 57** Protect > Backup > Add Job: Step 2



- 3 Click **OK** in the warning dialog box.

**Figure 58** Protect > Backup > Add Job: Step 3



- 4 For this example, assume the connection to the German branch office is a good one and not many files need to be backed up so leave the compression off.
  - Turn on the encryption to protect these sensitive files during the transfer. The final files stored on the remote NAS will be unencrypted (usable).
  - Restrict the bandwidth usage to 256 KB/s to stop the archives from using all of your network connection's available bandwidth.
  - You don't have to configure a purge policy for a synchronization backup.

- Click **Next**.

**Figure 59** Protect > Backup > Add Job: Step 3

- 5 Schedule the backup to occur every morning at 3:00 and click **Done**.

**Figure 60** Protect > Backup > Add Job: Step 4

You do not need to use a special restore process to use the files a synchronization backup creates. The copy of files that the NAS creates on the other NAS's Backups share can be used directly by anyone with access to that share.

### 5.14.3 Restoring Archived Files by Backup Job

If you have backup jobs for which the NAS has already performed backups, you can restore the files based on the backup job. Do the following:

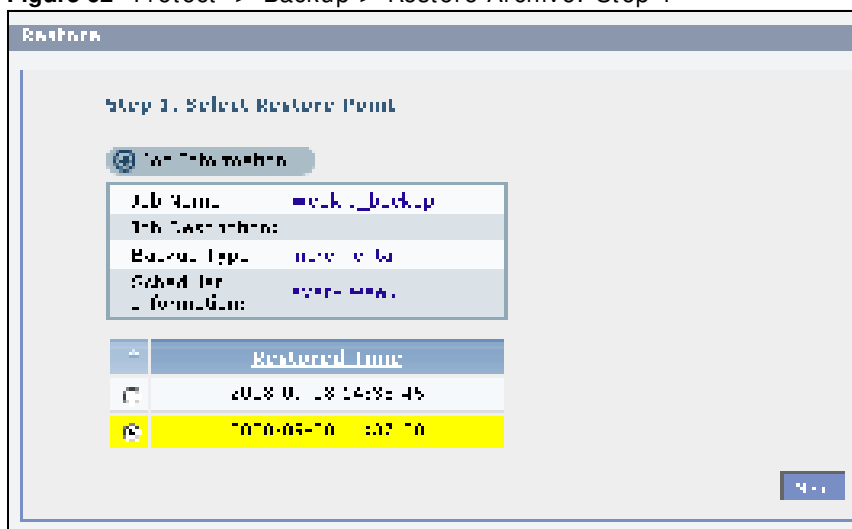
- 1 Click **Protect > Backup** screen, select a backup job and click **Restore Archive**.

**Figure 61** Protect > Backup



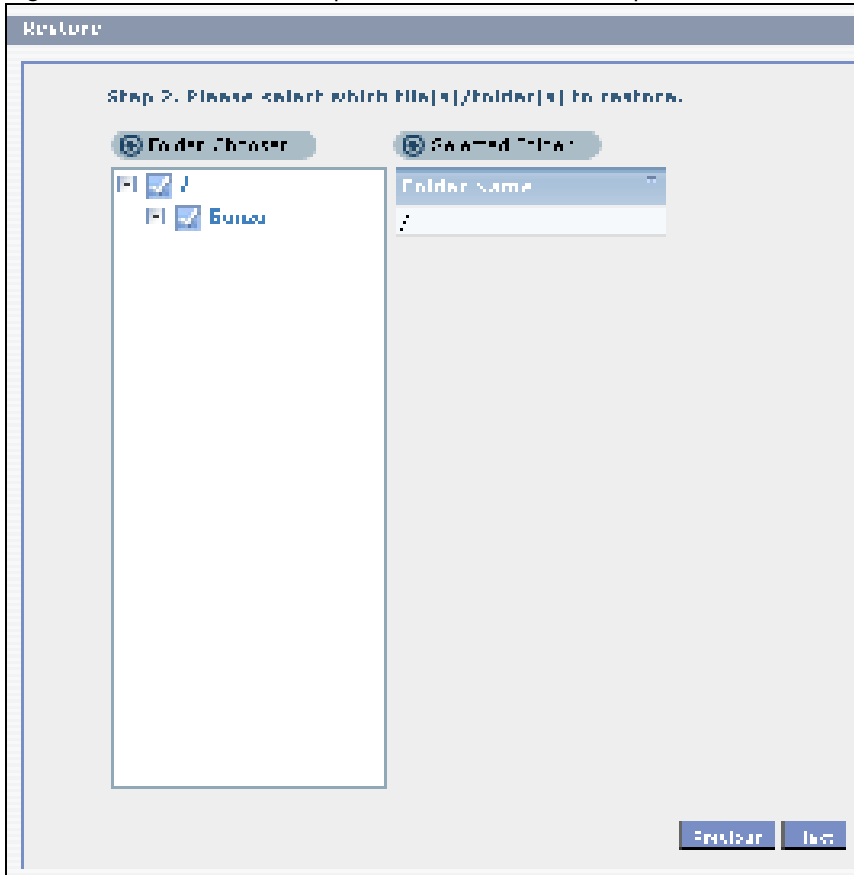
- 2 Select which backup to use and click **Next**.

**Figure 62** Protect > Backup > Restore Archive: Step 1



- 3 Select the files and folders you want to restore and click **Next**.

**Figure 63** Protect > Backup > Restore Archive: Step 2



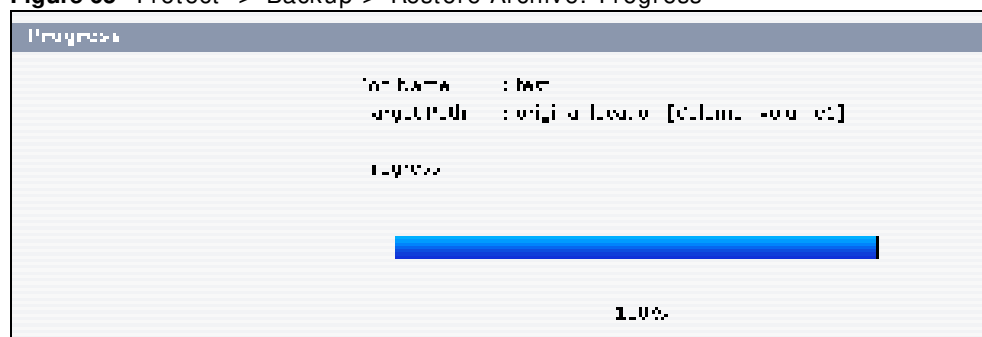
- 4 Select the original location and click **Done**.

**Figure 64** Protect > Backup > Restore Archive: Step 3



- The NAS restores the files into the share. When it finishes you can access the files.

**Figure 65** Protect > Backup > Restore Archive: Progress

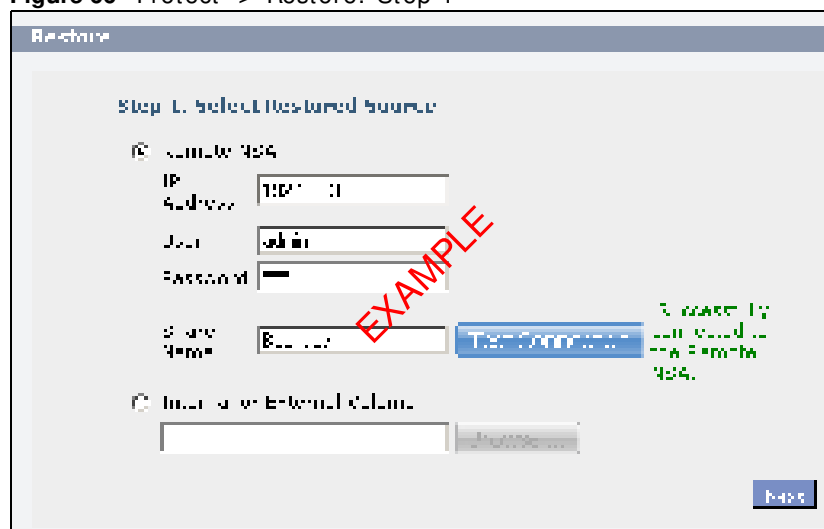


### 5.14.4 Restoring by Backup Files

If you deleted an archive backup job or the NAS or the RAID array containing the backup job failed you cannot restore archived files by the backup job. In this example, the NAS's RAID array failed. You've replaced the hard drives and re-configured the RAID. To restore by backup files:

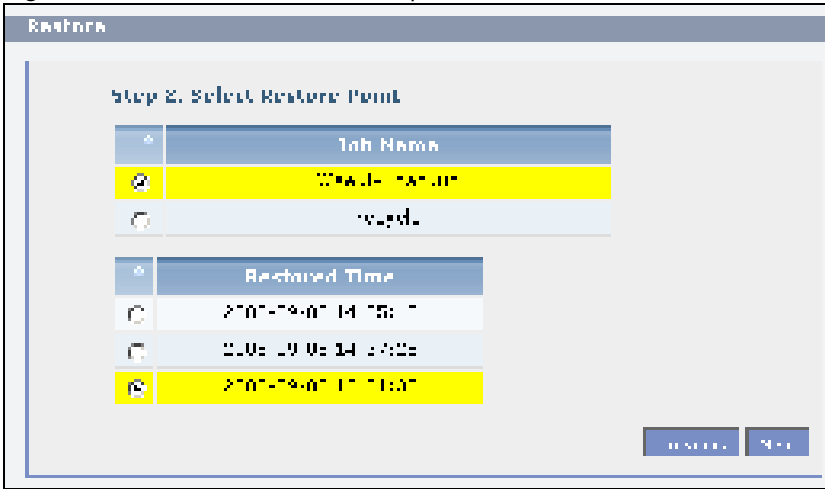
- Click **Protect > Restore**. Specify where the archive files are located. In this example, enter "192.168.3.2" as the IP address, "admin" as the account name, "1234" as the password, and "Backups" as the share name. Click **Test Connection**. Click **Next**.

**Figure 66** Protect > Restore: Step 1



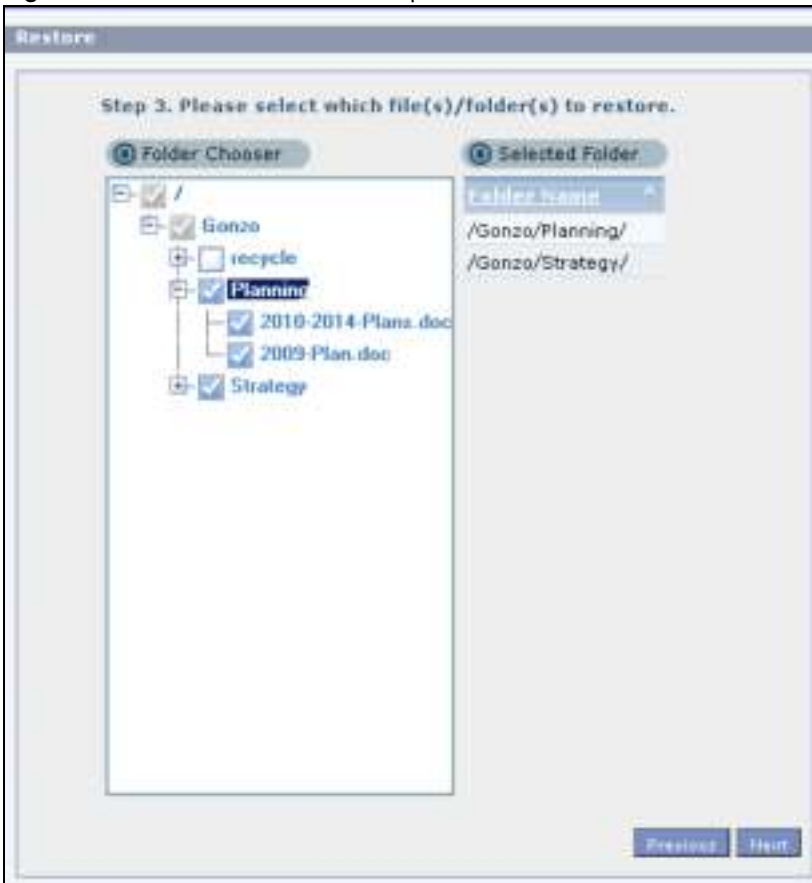
- 2 Select the backup job and backup time and click **Next**.

**Figure 67** Protect > Restore: Step 2



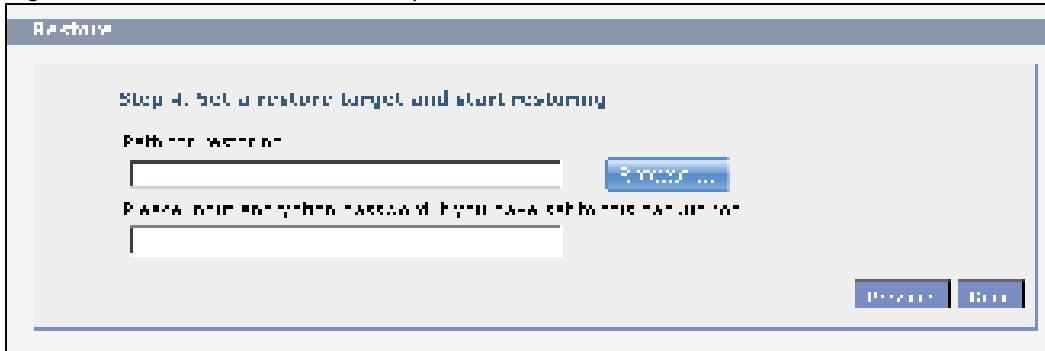
- 3 Select everything in the share except the recycle folder. Click **Next**.

**Figure 68** Protect > Restore: Step 3



- 4 Browse to the folder where you want to put the files. Click **Done**.

**Figure 69** Protect > Restore: Step 4



- 5 The NAS restores the files and you can use them again.





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# **PART II**

## **Technical Reference**

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# Status Screen

## 6.1 Overview

This chapter describes the **Status** screen, which is the first advanced administration screen that displays.

## 6.2 Status Screen

Click the **Administration** button in the **Desktop** screen ([Section 4.6 on page 85](#)) to open the Web Configurator. From within the Web Configurator screens, click you can also click **Status** on the top-left of the navigation panel to display the status screen.

**Figure 70** Status



The following table describes the labels in this screen.

**Table 38** Status

LABEL	DESCRIPTION
Status	Click <b>Status</b> in the navigation panel to refresh the status screen statistics.
System Information	
Server Name	This displays the name which helps you find the NAS on the network. Click the <b>Edit</b> icon to go to the screen where you can configure this.
Model Name	This displays which model this NAS device is.
Firmware Version	This is the NAS firmware version. Click the <b>Edit</b> icon to go to the <b>Maintenance &gt; FW Upgrade</b> screen from which you can upload/upgrade new firmware.
Media Server Status	This shows whether the media server function is enabled or disabled. It must be enabled for media clients to play content files stored on the NAS. Click the <b>Edit</b> icon to go to the screen where you can configure this.
FTP Server Status	This shows whether the FTP server function is enabled or disabled. It must be enabled to use FTP file transfer to/from the NAS. Click the edit icon to go to the screen where you can configure this.
Web Publishing Status	This shows whether the Web server function is enabled or disabled. It must be enabled to use HTTP to access shares on the NAS. Click the <b>Edit</b> icon to go to the screen where you can configure this.
UPS	This shows the Uninterruptible Power Supply (UPS) capacity. Click the <b>Edit</b> icon to go to the screen where you can configure this.
CPU Usage	This displays a summary of CPU usage by all current processes.  Click the <b>Show CPU Info</b> icon to display the ten processes currently using the most CPU capacity.  Click the <b>Refresh</b> icon to update this display. It also automatically updates itself every 10 seconds.  <b>Note:</b> If too many users are using the NAS then the NAS may appear sluggish.
CPU Temperature	This displays the current temperature near the NAS's CPU. The NAS generates an emergency log if the temperature goes out of the normal operating range. If the temperature goes even higher, the NAS shuts down automatically to avoid damage from overheating. If the NAS overheats, make sure the fans are working and it is in a well ventilated place.  Click the <b>Refresh</b> icon to update this display. It also automatically updates itself every 60 seconds.
Fan Speed	This is the RPM (Rotations Per Minute) of the NAS's fans.  Click the <b>Refresh</b> icon to update this display. It also automatically updates itself every 60 seconds.
Memory Usage	This shows how much of the NAS's total memory is being used.  Click the <b>Refresh</b> icon to update this display. It also automatically updates itself every 10 seconds.
Volume Status	A volume is a storage area on a single disk or spread across a number of disks within a single file system.
External Volume (or USB Volume)	This displays the volumes created on USB hard drives connected to the NAS. USB disks are numbered in the order that you insert USB devices.  Click the <b>Edit</b> icon to open the <b>Storage</b> screen. You can create and edit the external volume. See <a href="#">Chapter 8 on page 169</a> for more details.
Status	This icon indicates whether the volume is healthy, degraded, or down.
Name	This field shows the name for the volume.

**Table 38** Status (continued)

LABEL	DESCRIPTION
File System	This field shows what file system an external (USB) volume is using.
Disk(s)	This field shows to which USB port the disk is connected.
Disk Usage	This field shows total disk size, the percentage of the disk being used and the percentage that is available.
Active Sessions	This shows how many users are currently connected to the NAS.
Type	This shows whether it's a Windows/CIFS, web (web configurator), or FTP connection to the NAS.
Share Name	This displays the shared folder name on the NAS that the user is connected to for CIFS sessions and is blank for FTP and web sessions.
Username	This displays the name of the user connected to the NAS if one is defined. <b>ANONYMOUS FTP</b> displays if a username is not defined for the user's connection.
Connected At	This displays the date and time the user last connected to the NAS in year, month, day, hour, minute, second format.
IP Address	This displays the IP address of the computer connected to the NAS.



# System Setting

## 7.1 Overview

This chapter gives an overview of the various features included in the system setting screens. Upgrade the NAS firmware. Use package management to add more useful applications in your NAS. Identify your NAS on the network and set the time that the NAS follows for its scheduled tasks/logs.

## 7.2 What You Can Do

- Use the **Firmware / Packages** screens ([Section 7.4 on page 160](#) to [Section 7.5 on page 161](#)) to upload new firmware and download and install applications from the web.
- Use the **Server Name** screen ([Section 7.6 on page 164](#)) to specify the NAS's server and workgroup names.
- Use the **Date/ Time** screen ([Section 7.7 on page 165](#)) to set up date/time and choose a time zone for the NAS.

## 7.3 What You Need to Know

### Package Management

This feature enables you to install and use the following applications.

- **Gallery** - This web-based application allows your NAS to host pictures. You can upload images in your local computer or shares to this application. Use the administrator account of your NAS to log in to the Gallery console. The administrator can then create accounts for other users.
- **NFS** - NFS (Network File System) is a file-sharing protocol most commonly implemented on Unix-like systems.
- **NZBGet** - This news grabber helps download files from UseNet.
- **PHP-MySQL-phpMyAdmin** - This tool can be used to manage MySQL through the web. Enter 'root' as the username and '1234' as the password to log in. This includes MySQL, PHP, and phpMyAdmin.
- **Logitech® Media Server** - This enables you to manage a Logitech's Squeezebox device connected to the NAS.
- **TFTP** - Use this to configure the NAS to accept log files from TFTP clients.
- **Transmission** - This Bit Torrent client supports adding tasks through torrent files and magnet links.
- **WordPress** - This allows you to create and manage a blog. Use the NAS administrator credentials to log in. The administrator can then create accounts for other users.

- **pyLoad** - Use this to have the NAS manage your downloads including those from one-click hosting sites. One-click hosting sites allow Internet users to easily upload files to the one-click host's server so others can download them.
- **Memopal** - Use this to back up files on the NAS to your Memopal online backup and storage account.
- **ownCloud** - Use this to store, back up, synchronize, and share files, photos, calendars, and more with computers and mobile devices.
- **myZyXELcloud-Agent** - Use this to go to [mycloud.zyxel.com](http://mycloud.zyxel.com) to set up a free DDNS hostname for the NAS so you can connect to it easily from the Internet.

The following applications come with their own configuration screens and documentation:

- Gallery
- NZBGet
- PHP-MySQL-phpMyAdmin
- Logitech® Media Server
- Transmission
- WordPress
- myZyXELcloud-Agent
- ownCloud

## Windows/CIFS

Common Internet File System (CIFS) is a standard protocol supported by most operating systems in order to share files across the network.

- CIFS is included by default in Windows operating systems.
- You can use Samba with Linux to use CIFS.
- CIFS transfers use security.

## Time Lag

Time lag occurs when the time on the NAS falls behind the time on the time server. This may happen if:

- the time server is no longer reachable
- if the NAS is shut down often (the NAS internal battery keeps time when the NAS is shut down and this may cause possible variance)
- power surges occur.

The NAS gives no warning if time lag occurs. You should resynchronize the time after a power surge or after you have shut down the NAS several times.

# 7.4 Firmware Upgrade Screen

Use this screen to upgrade the NAS firmware. You should first have downloaded the latest firmware files from the ZyXEL website.



**Do not turn off the NAS while it is upgrading the firmware or you may render it unusable.**

Click **System Setting > Firmware / Packages** to open the following screen.

**Figure 71** System Setting > Firmware / Packages



The following table describes the labels in this screen.

**Table 39** System Setting > Firmware / Packages

LABEL	DESCRIPTION
Firmware File	Type the location of the firmware file you want to upload
Browse	Click this to find the file on your computer
Upload	Click this to upload the new firmware. The NAS automatically restarts after you upgrade. Wait until the restart completes before accessing the NAS again. If you interrupt the upgrade, then the NAS may become unusable. See <a href="#">Section on page 345</a> for your model's LED behavior during firmware upgrade.
Reset	Click this to refresh the screen.
Periodically Check for Latest Firmware Automatically	Select this to have the NAS regularly check ZyXEL's server for updated firmware. The NAS notifies you at login if a new firmware is available. Click <b>Apply</b> to save this field's setting.
Check for Latest Firmware Now	Click this to check ZyXEL's server for updated firmware.

## 7.5 Package Management Screen

Use this screen to download and install applications from the web. See [Chapter 11 on page 227](#) for more about the features you can add to the NAS by installing packages.

Click **System Setting > Firmware / Packages > Package** to open the following screen.

**Figure 72** System Setting > Firmware / Packages > Package




The following table describes the labels in this screen.

**Table 40** System Setting > Firmware / Packages > Package

LABEL	DESCRIPTION
Package Management	
Retrieve List From Internet	Click this to retrieve a list of available packages from the ZyXEL website.
Install/Upgrade	Choose the item(s) on the list and click this to install the selected application(s) on your system or upgrade to the latest version if you have previously installed the application.
Uninstall/Cancel Installation	Choose the item(s) on the list and click this to uninstall the selected application(s) from your system or cancel their active download(s) or install process/es.  This is only available if you have previously installed the package.
Enable	This option is only for non built-in packages.  Choose the item(s) on the list and click this to enable the application(s) on your system.  This is only available if you have previously installed the package.
Disable	This option is only for non built-in packages.  Choose the item(s) on the list and click this to disable the application on your system. You have to enable the application again in order to use it.  This is only available if you have previously installed the package.
Package Info	Select an item on the list and click this to display information about the package. See <a href="#">Section 7.5.1 on page 163</a> for more details.

**Table 40** System Setting > Firmware / Packages > Package (continued)

LABEL	DESCRIPTION
Status	This is the current status of the application. It shows: <ul style="list-style-type: none"> <li>• <b>Not Installed</b> - This displays for applications that have not been installed by the NAS.</li> <li>• <b>Installing (%)</b> - This displays when the application is being installed. It also shows the percent of the package already installed.</li> <li>• <b>Built-in</b> - This displays for applications installed by the NAS that you can configure in the NAS Web Configurator.</li> <li>• <b>Enabled</b> - This displays for applications installed and enabled by the NAS that have their own web configurators.</li> <li>• <b>Disabled</b> - This displays for applications installed and disabled by the NAS that have their own web configurators.</li> <li>• <b>Unknown</b> - It is possible to get this status if the web location for the application is unavailable.</li> </ul>
Package Name	This is the name of the application.
Requires	This shows the other packages required in order to run this application.  Note: A package would be disabled/enabled simultaneously if its prerequisite package(s) has been disabled/enabled. For example, when you enable WordPress, this also enables PHP-MySQL-phpMyAdmin automatically. However when you enable PHP-MySQL-phpMyAdmin, this does not automatically enable WordPress.
Version	This is the version number of the item.  The  icon indicates that the application has a newer version available. Move your mouse over this icon to see the latest version number. Choose this item and click <b>Install/ Upgrade</b> .
Description	This shows a brief description of the application.
Management Page	This shows the location of the screens or web configurator where you can manage the application (after the package has been installed on the system).

Note: Once you install an application and enable it, additional links show up in the navigation panel. This applies to **NFS**, **TFTP Server**, **pyLoad**, and **Memopal**. Access the **Gallery**, **NZBGet**, **PHP-MySQL-phpMyAdmin**, **Logitech® Media Server**, **Transmission**, **WordPress**, **OwnCloud**, and **myZyXELcloud-Agent** applications' web configurators through the **Package Management** screen.

## 7.5.1 Displaying the Package Information

Select an item on the list and click **Package Info**. Use this screen to check detailed information about the application.

**Figure 73** System Setting > Firmware / Packages > Package > Package Info

The following table describes the labels in this screen.

**Table 41** System Setting > Firmware / Packages > Package > Package Info

LABEL	DESCRIPTION
Status	This is the current status of the application. It shows: <ul style="list-style-type: none"> <li>• <b>Not Installed</b> - This displays for applications that have not been installed by the NAS.</li> <li>• <b>Installing (%)</b> - This displays when the application is being installed. It also shows the percent of the package already installed.</li> <li>• <b>Built-in</b> - This displays for applications installed by the NAS that you can configure in the NAS Web Configurator.</li> <li>• <b>Enabled</b> - This displays for applications installed and enabled by the NAS that have their own web configurators.</li> <li>• <b>Disabled</b> - This displays for applications installed and disabled by the NAS that have their own web configurators.</li> </ul>
Name	This is the name of the application.
Size	This is the size of the application at initial download.
Needed Space	This is the needed space to complete the installation of the application.
Version	This is the version number of the application.
Requires	This shows other package/s required to run this application.
Required By	This shows which other packages require this application in order to be usable.
Management Page	This shows the location of the screens, console or web configurator where you can manage the application (after the package has been installed on the system).
Source	This shows the location of the installed files of the application.
Description	This shows a brief description of the item.
Close	Click this to close the screen.

## 7.6 Server Name Screen

Click **System Setting > Server Name** to open the following screen. Use this screen to configure your CIFS settings. In this screen you can set your server name and specify if your NAS is a part of a workgroup.

Note: CIFS cannot be disabled on the NAS.

**Figure 74** System Setting > Server Name

The following table describes the labels in these screens.

**Table 42** System Setting > Server Name

LABEL	DESCRIPTION
Server Name	Enter a name to identify your NAS on the network in this field.  You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabet (a-z) and is NOT case sensitive.
Description	Add text here to describe the NAS if the <b>Server Name</b> field is not enough. Use up to 61 characters. You can use all characters except the following: / \ :   [ ] < > + ; , ? = * " ~ .
Workgroup Name	Type your workgroup name in this field. A workgroup is a group of computers on a network that can share files. These user accounts are maintained on the NAS.  You can enter up to 15 alphanumeric characters with minus signs allowed but not as the last character. The name must begin with an alphabet (a-z) and is NOT case sensitive.
Prevent NAS From Being Master Browser	Select this option if computers in your workgroup are named with non-English characters (such as Chinese and Russian). When you perform a search in the workgroup, this option allows you to locate computers named with non-English characters.
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

## 7.7 Date/Time Screen

Use this screen to select a time zone and a time server from which your NAS can get the time and date. This time is then used in NAS logs and alerts.

Click the **System Setting** link in the navigation panel and then click the **Date/ Time** link to access the **Date/ Time** screen.

**Figure 75** System Setting > Date/Time

The screenshot displays the 'System Setting - Date/Time' interface. It is divided into several sections:

- Current System Date Time Setting:** Shows 'Current Time' as 10:28:04 +0800 and 'Current Date' as 2010-2-9.
- Date Time Setup:**
  - Options:  Manual,  Get from Time Server.
  - Manual settings: 'New Date (yyyy-mm-dd)' is 2010-2-9, and 'New Time (hh:mm:ss)' is 10:28:04.
  - Time Server settings: 'Time Server Address' is time.stdtime.gov.tw.
- Time Zone:**
  - Selected: (GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi.
  - Manual Daylight Saving:  Manual Daylight Saving.
  - Start Date: January, First, Monday, at 12:00:00.
  - End Date: January, First, Monday, at 12:00:00.
  - Offset: 1 hours.

At the bottom, there are 'Apply' and 'Reset' buttons.

The following table describes the labels in this screen.

**Table 43** System Setting > Date/Time

LABEL	DESCRIPTION
Current System Date Time Setting	
Current Time	This field displays the time used by your NAS for its logs and alerts.
Current Date	This field displays the date used by your NAS for its logs and alerts.
Date Time Setup	
Manual	<p>Select this radio button to enter the time and date manually.</p> <p>When you enter the time settings manually, the NAS uses the new setting once you click <b>Apply</b>.</p> <p>Note: If you enter time settings manually, they revert to their defaults when power is lost.</p>
New Date (yyyy-mm-dd)	<p>This field displays the last updated date from the time server or the last date configured manually.</p> <p>When you set <b>Time and Date Setup</b> to <b>Manual</b>, enter the new date in this field and then click <b>Apply</b>.</p>
New Time (hh:mm:ss)	<p>This field displays the last updated time from the time server or the last time configured manually.</p> <p>When you set <b>Time and Date Setup</b> to <b>Manual</b>, enter the new time in this field and then click <b>Apply</b>.</p>
Get from Time Server	Select this check box to have the NAS get the time and date from the time server you select in the <b>Time Server Address</b> field.
Time Server Address	Select a time server from the drop-down list box or select <b>Specify my own time server</b> and enter the time server you wish to use in the field below. Check with your ISP/network administrator if you are unsure of this information.
Synchronize Now	Click this for the NAS to retrieve the correct time from the configured time server right away.
Time Zone	
Time Zone	Choose the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).
Manual Daylight Saving	<p>Daylight saving is a period from late spring to fall when many countries set their clocks ahead of normal local time by one hour to give more daytime light in the evening.</p> <p>Select this option to manually enter Daylight Saving Time settings. Clear this option to have the NAS automatically retrieve Daylight Saving Time settings from the Internet. The NAS will download a new daylight saving resource file from the Internet every month.</p>
Start Date	<p>Configure the day and time when Daylight Saving Time starts if you selected <b>Enable Daylight Saving</b>. The hour field uses the 24 hour format. Here are a couple of examples:</p> <p>Daylight Saving Time starts in most parts of the United States on the second Sunday of March. Each time zone in the United States starts using Daylight Saving Time at 2 A.M. local time. So in the United States you would use <b>March, Second, Sunday</b>, at <b>2:00</b>.</p> <p>Daylight Saving Time starts in the European Union on the last Sunday of March. All of the time zones in the European Union start using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select <b>March, Last, Sunday</b>. The time you specify depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+ 1).</p>

**Table 43** System Setting > Date/Time (continued)

LABEL	DESCRIPTION
End Date	<p>Configure the day and time when Daylight Saving Time ends if you selected <b>Enable Daylight Saving</b>. The <b>o'clock</b> field uses the 24 hour format. Here are a couple of examples:</p> <p>Daylight Saving Time ends in the United States on the first Sunday of November. Each time zone in the United States stops using Daylight Saving Time at 2 A.M. local time. So in the United States you would select <b>November, First, Sunday, at 2:00</b>.</p> <p>Daylight Saving Time ends in the European Union on the last Sunday of October. All of the time zones in the European Union stop using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select <b>October, Last, Sunday</b>. The time you specify depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+ 1).</p>
Offset	Specify by how many hours to change the time for Daylight Saving Time.
Apply	Click this to save your changes. If you configured a new time and date, Time Zone and Daylight Saving at the same time, all of the settings take affect.
Cancel	Click this to restore your previously saved settings.





# External Volume

## 8.1 Overview

This chapter covers the management of external volumes and disks.

Use the **External Volume** screen ([Section 8.2 on page 169](#)) to display information on all external volumes, create external volumes, and configure the volume's properties.

### 8.1.1 What You Need to Know About External Storage

#### Disk

USB-attached storage disks and SD cards are treated as external disks/volumes.

#### Volume

A volume is a storage area on a disk or disks. You can create volumes on SD cards or external disks attached to the USB ports. You cannot spread a volume across external disks like you can with internal disks.

## 8.2 External Volume Screen

Click **Storage > External Volume** in the navigation panel to display the following screen. Use this screen to create and edit external volumes on USB-connected storage and SD cards.

Note: It is recommended to scan the volume every three months or 32 reboots.

**Figure 76** Storage > External Volume



The following table describes the labels in this screen.

**Table 44** Storage > External Volume

LABEL	DESCRIPTION
External Volume	This table displays information on all external volumes (created on external disk drives attached to the NAS USB ports).
Status	This field shows whether the volume is <b>Healthy</b> or <b>Down</b> . See <a href="#">Section 8.2.1 on page 170</a> for details on a volume's status.
Volume	The NAS creates the volume name automatically. You can edit it.
File System	This field displays the file system that an external (USB or SD) volume is using.
Disk(s)	This field shows to which USB port the disk is connected. Roll your mouse over a link to display the disk's type (external), model name, and total storage capacity.
Capacity	This field shows total disk size, the percentage of the volume being used and the percentage that is available.
Actions	This field displays icons allowing you to edit, eject, or scan an external volume.
Create an External Volume	Click this to format an external hard drive and create a new volume. All data on the disk will be lost.

## 8.2.1 Volume Status

You (the administrator) can see the status of an external volume in the **Status** or **Storage** screens.

- **Healthy** means the USB connected device is functioning properly.
- **Down** when a volume is down and can not be fixed.

Note: There is no explicit message from CIFS that tells users their volume is degraded or down.

## 8.3 Creating an External (USB or SD) Volume

Click the **Create a New External Volume** button in the **Storage** screen as shown in [Figure 76 on page 169](#) to open the following screen. Use this screen to create a new NAS external disk drive volume.

Note: Creating a volume formats the drive. All data on the disk will be lost.

**Figure 77** Storage > Create an External Volume

The screenshot shows a 'Disk Configuration' window with the following elements:

- Volume Name:** An empty text input field.
- Available Disk(s):** A dropdown menu showing 'USB1 (USB-2-0-Flash-Disk-0-001)'.
- File System:** A dropdown menu showing 'NTFS (Recommended)'.
- Warning:** A yellow warning icon followed by the text: 'Warning: If there is any existing data on the Disk, it will be deleted to create this new Volume.'
- Buttons:** 'Apply' and 'Cancel' buttons at the bottom.

The following table describes the labels in this screen.

**Table 45** Storage > Create an External Volume

LABEL	DESCRIPTION
Volume Name	<p>Type a volume name from 1 to 31 characters. The name cannot be the same as another existing external volume.</p> <p>Acceptable characters are all alphanumeric characters and " " [spaces], "_" [underscores], and "." [periods].</p> <p>The first character must be alphanumeric (A-Z 0-9).</p> <p>The last character cannot be a space " ".</p>
Available Disk(s)	Select the external (USB or SD card) device upon which you want to create the volume.
File System	<p>Select the file system you want the new volume to use.</p> <p>Windows file systems</p> <p><b>NTFS</b>: Recommended.  <b>FAT32</b>: Newer, and more efficient than FAT16. Supports a volume size of up to 2 TB (Tera Bytes) and individual file sizes of up to 4 GB.  <b>exFAT</b>: Designed to bridge the gap between the NTFS file system and the older FAT32 file system. It is a 64-bit file system that can store files over 4 GB.</p> <p>Linux file systems</p> <p><b>EXT2</b>: Older file system.  <b>EXT3</b>: The same as EXT2, but adds a journaled file system and is more robust.  <b>EXT4</b>: Supports larger files and better performance than EXT3.</p>
Apply	Click this to save your changes and create the volume.
Cancel	Click this to exit this screen without saving changes.

### 8.3.1 External Disks

You may use SD cards or USB storage devices that support the following file systems to the NAS.

- Windows File Systems: NTFS, FAT32, and exFAT.
- Linux File Systems: EXT2, EXT3, and EXT4.



## 9.1 Overview

This chapter discusses the network configuration screens. The **Network** screens allow you to configure TCP/IP and PPPoE settings for the NAS.

## 9.2 What You Can Do

- Use the **TCP/ IP** screen ([Section 9.4 on page 175](#)) to configure the NAS's TCP/IP network connection settings such as the teaming mode and IP addresses.
- Use the **UPnP Port Mapping** screen ([Section 9.5 on page 177](#)) to automatically configure your Internet gateway's firewall and Network Address Translation (NAT) to allow access to the NAS from the Internet.
- Use the **PPPoE** screen ([Section 9.6 on page 181](#)) to configure PPPoE settings for a direct Internet connection.
- Use the **Telnet/ SSH** screen ([Section 9.7 on page 182](#)) to enable or disable Telnet access.
- Use the **DyDNS** screen ([Section 9.8 on page 183](#)) to configure the domain name settings of your NAS.

## 9.3 What You Need to Know

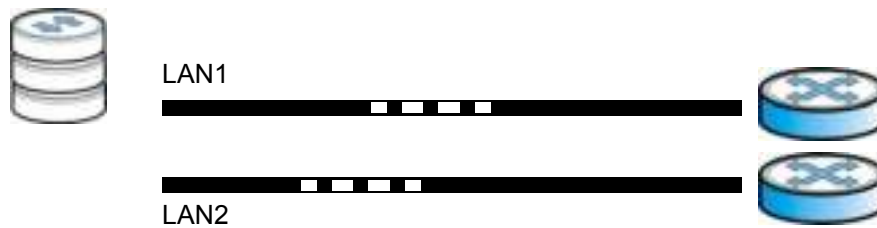
### Teaming Mode

The teaming mode sets how the NAS's two Gigabit Ethernet interfaces behave. They can act independently or they can be trunked into a logical link.

Here are the teaming mode settings the NAS's two Gigabit Ethernet interfaces can use.

**Stand Alone:** LAN1 and LAN2 each use a unique IP address. These IP addresses are independent of each other.

**Figure 78** Stand Alone Teaming Mode



**Link Aggregation:** This uses IEEE 802.3ad port link aggregation to combine LAN1 and LAN2 into a single logical link with greater bandwidth. Both interfaces use the same IP address and MAC address. It also includes fault tolerance and load balancing. Connect LAN1 and LAN2 to the same Ethernet switch. The switch must also have IEEE 802.3ad port link aggregation (also called trunking) enabled for the two interfaces connected to the NAS.

**Figure 79** Link Aggregation Teaming Mode



## IP Address

The NAS needs an IP address to communicate with other devices on your network. The NAS can get an IP address automatically if you have a device on your network that gives them out. Or you can assign the NAS a static (fixed) IP address.

## DNS Server Address

A DNS (Domain Name System) server maps domain names (like [www.zyxel.com](http://www.zyxel.com)) to their corresponding numerical IP addresses. This lets you use domain names to access web sites without having to know their IP addresses. The NAS can receive the IP address of a DNS server automatically (along with the NAS's own IP address). You can also manually enter a DNS server IP address in the NAS.

## PPPoE

Point-to-Point Protocol over Ethernet (PPPoE) allows the NAS to establish a direct Internet connection if you do not have a router. PPPoE is a dial-up connection. You need a username and password from your Internet Service Provider (ISP) to set up the connection.

## 9.4 TCP/IP Screen

Use the **TCP/IP** screen to have the NAS use a dynamic or static IP address, subnet mask, default gateway and DNS servers.

Click **Network > TCP/IP** in the navigation panel to open the following screen.

Note: If you change the NAS's IP address, you need to log in again after you apply changes.

**Figure 80** Network > TCP/IP

**Network > TCP/IP**

**IP Address**

Teaming Mode:

Default Gateway:

**Note:**  
\* The network cable for LAN2 is currently unplugged.

LAN1	LAN2
<input type="radio"/> Dynamic <input checked="" type="radio"/> Static	<input checked="" type="radio"/> Dynamic <input type="radio"/> Static
IP Address: <input type="text" value="192.168.1.228"/>	IP Address: <input type="text" value="0.0.0.0"/>
IP Subnet Mask: <input type="text" value="255.255.255.0"/>	IP Subnet Mask: <input type="text" value="0.0.0.0"/>
Gateway: <input type="text" value="192.168.1.252"/>	Gateway: <input type="text"/>

**DNS**

Dynamic  
 Static

Primary DNS Server:

Secondary DNS Server:

**HTTP (Web Configuration)**

Enable Another HTTP Web Configuration Port

Port Number:

Example: <http://192.168.1.228:8080>

**Note:**  
NAS will use port 8082 for media streaming.

**Network Diagnostic Tool**

Host:

The following table describes the labels in this screen.

**Table 46** Network > TCP/IP

LABEL	DESCRIPTION
Teaming Mode	Select how to use the NAS's two Gigabit Ethernet interfaces.  <b>Stand Alone:</b> Select this option to use a separate IP address on each of the two Gigabit Ethernet interfaces.  <b>Link Aggregation:</b> Select this option to use IEEE 802.3ad port link aggregation to combine the two Gigabit Ethernet interfaces into a single logical link. Connect both Gigabit Ethernet interfaces to the same device. The peer device must also have IEEE 802.3ad port link aggregation enabled for the two interfaces connected to the NAS. Both interfaces use the same IP address. If one interface loses its connection, the NAS continues to use the other interface.
Default Gateway	Select the LAN interface to use as the default gateway.
IP Address	
LAN1 LAN2	Use this section to configure the NAS's IP address or IP addresses (configure LAN1 and LAN2 separately when the <b>Teaming Mode</b> is set to <b>Stand Alone</b> ).
Dynamic	Select this option to have the interface get IP address information automatically.  If no IP address information is assigned, the NAS uses Auto-IP to assign itself an IP address and subnet mask. For example, you could connect the NAS directly to your computer. If the computer is also set to get an IP address automatically, the computer and the NAS will choose addresses for themselves and be able to communicate.
Static	Select this option for the interface to use fixed TCP/IP information. You must fill in the following fields.
IP Address	Type an IP address in this field.
IP Subnet Mask	Type an IP subnet mask in this field.
Default Gateway	Type a default gateway address in this field.
IPv6 Settings	Click this to configure the following IPv6 settings.  <b>Mode -</b> <ul style="list-style-type: none"> <li>• Select <b>Auto</b> to have the Device use the IPv6 prefix from the connected router's Router Advertisement (RA) to generate an IPv6 address.</li> <li>• Select <b>Static</b> if you have a fixed IPv6 address assigned by your ISP.</li> <li>• Select <b>Disable</b> to not assign any IPv6 address for the NAS.</li> </ul> <b>Address -</b> Enter the IPv6 address assigned by your ISP.  <b>Subnet prefix length -</b> Enter the address prefix length to specify how many most significant bits in an IPv6 address compose the network address. The range is 0 to 128  <b>Default Gateway -</b> Enter the IP address of the next-hop gateway. The gateway is a router or switch on the same segment as your Device's interface(s). The gateway helps forward packets to their destinations.
DNS	DNS (Domain Name System) is for mapping a domain name to its corresponding IP address and vice versa. If you have the IP address(es) of the DNS server(s), enter them.
Dynamic	Select the option to have the NAS get a DNS server address automatically.
Static	Select this option to choose a static DNS server address. Type the DNS server IP address(es) into the fields below.
Primary DNS Server	Type a primary DNS server IP address.
Secondary DNS Server	Type a secondary DNS server IP address.
HTTP (Web Configurator)	

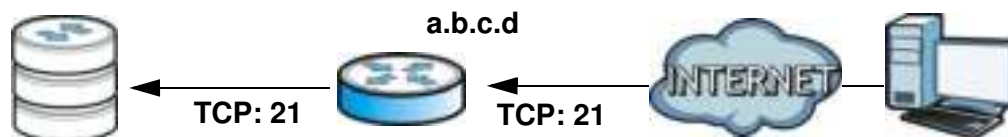


**Table 46** Network > TCP/IP (continued)

LABEL	DESCRIPTION
Enable Another Web Configuration Port	Select this to configure an additional HTTP port for accessing the web configurator. Specify a number in the <b>Port Number</b> field.
Network Diagnostic Tool	Use this section to test the network connection to a particular IP address or domain name. Select an address or type it into the field. Then click <b>Ping</b> to have the NAS send a packet to test the network connection. <ul style="list-style-type: none"> <li>• <b>Successfully pinged host</b> - The NAS is able to “ping” the host, the network connection is OK.</li> <li>• <b>Unable to ping host</b> - The NAS is able to “ping” the selected host.</li> </ul>
Apply	Click this to save your TCP/IP configurations. After you click <b>Apply</b> , the NAS restarts. Wait until you see the <b>Login</b> screen or until the NAS fully boots and then use the NAS Starter Utility to rediscover it.
Reset	Click this to restore your previously saved settings.

## 9.5 UPnP Port Mapping Screen

Use UPnP (Universal Plug and Play) port mapping to allow access from the WAN to services you select on the NAS. It is recommended that you place the NAS behind an Internet gateway firewall device to protect the NAS from attacks from the Internet. Many such Internet gateways use UPnP to simplify peer-to-peer network connectivity between devices. UPnP can automatically configure the Internet gateway’s firewall and Network Address Translation (NAT) to allow access to the NAS from the Internet.

**Figure 81** UPnP for FTP Access**192.168.1.20**

In the above example, UPnP creates a firewall rule and NAT port forwarding mapping to send FTP traffic (using TCP port number 21) from the public IP address a.b.c.d to the NAS’s private IP address of 192.168.1.20.

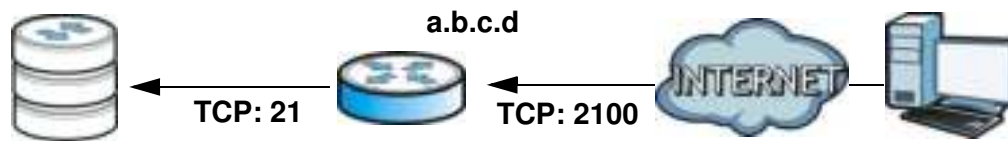
Use the NAS’s **UPnP Port Mapping** screen to configure the UPnP settings your Internet gateway uses to allow access from the WAN (Internet) to services you select on the NAS. You can also set which port Internet users need to use in order to access a specific service on the NAS.

Note: To use UPnP port mapping, your Internet gateway must have UPnP enabled.

If your Internet gateway supports Port Address Translation (PAT is sometimes included with a port forwarding feature), you can have the Internet users use a different TCP port number from the one the NAS uses for the service.

**Figure 82** UPnP Port Address Translation for FTP Example

**192.168.1.20**



In the above example, the Internet gateway uses PAT to accept Internet user FTP sessions on port 2100, translate them to port 21, and forward them to the NAS.

### 9.5.1 UPnP and the NAS's IP Address

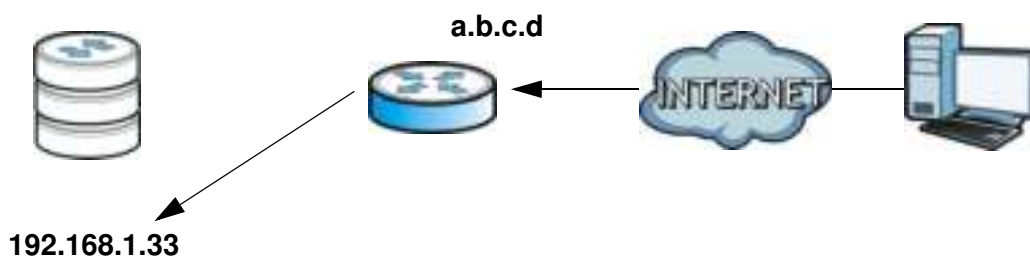
It is recommended that the NAS use a static IP address (or a static DHCP IP address) if you will allow access to the NAS from the Internet. The UPnP-created NAT mappings keep the IP address the NAS had when you applied your settings in the **UPnP Port Mapping** screen. They do not automatically update if the NAS's IP address changes.

Note: WAN access stops working if the NAS's IP address changes.

For example, if the NAS's IP address was 192.168.1.33 when you applied the **UPnP Port Mapping** screen's settings and the NAS later gets a new IP address of 192.168.1.34 through DHCP, WAN access stops working because the Internet gateway still tries to forward traffic to IP address 192.168.1.33. Since you can no longer access the NAS from the WAN, you would have to access the NAS from the LAN and re-apply your **UPnP Port Mapping** screen settings to update the Internet gateway's UPnP port mappings.

**Figure 83** UPnP Using the Wrong IP Address

**192.168.1.34**



### 9.5.2 UPnP and Security

UPnP's automated nature makes it easier to use than manually configuring firewall and NAT rules, but it is also less secure. Using UPnP may make your network more susceptible to snooping and hacking attacks.

### 9.5.3 The NAS's Services and UPnP

This section introduces the NAS's services which an Internet gateway can use UPnP to allow access to from the Internet.

#### CIFS (Windows File Sharing)

Common Internet File System (CIFS) is a standard protocol supported by most operating systems in order to share files across the network. Using UPnP port mapping for CIFS allows users to connect from the Internet and use programs like Windows Explorer to access the NAS's shares to copy files from the NAS, delete files on the NAS, or upload files to the NAS from the Internet.

If you configure UPnP port mapping to allow CIFS access from the WAN but cannot get it to work, you may also have to configure the Internet gateway to also allow NetBIOS traffic. See [Section 7.3 on page 159](#) for more on CIFS.

#### FTP

File Transfer Protocol is a standard file transfer service used on the Internet. Using UPnP port mapping for FTP allows remote users to use FTP from the Internet to access the NAS's shares. A user with read and write access to a share can copy files from the share, delete files from the share, or upload files to the share. See [Section 10.4 on page 189](#) for more on FTP. If you use UPnP to allow FTP access from the WAN, you may want to use a different WAN port number (instead of the default of port 21) to make it more secure. Remember to tell the remote users to use the custom port number when using FTP to access the NAS.

#### HTTP (Web Configurator)

You can use UPnP port mapping to allow access to the NAS's management screens. If you use UPnP to allow web configurator access from the WAN, you may want to use a different WAN port number (instead of the default of port 80) to make it more secure. Remember to use the custom port number when accessing the NAS's web configurator from the Internet.

#### HTTP (Web Published Shares)

This is the NAS's web publishing feature that lets people access files using a web browser without having to log into the Web Configurator. Use UPnP port mapping to allow access to these files from the Internet without having to enter a user name or password. See [Section 10.8 on page 205](#) for more on web publishing.

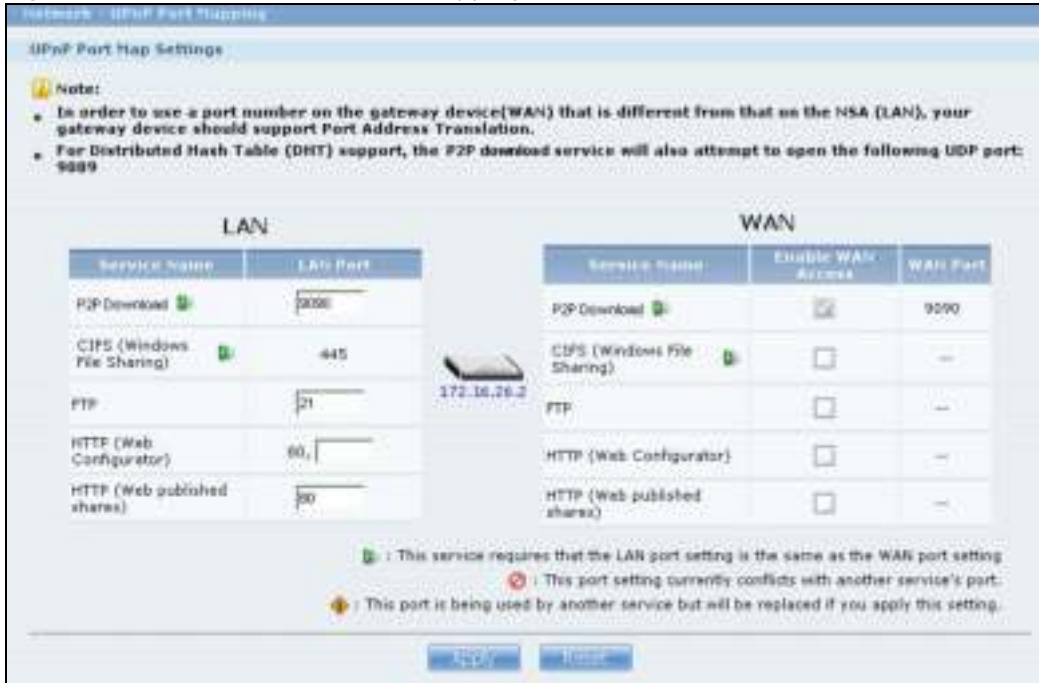
### 9.5.4 Configuring UPnP Port Mapping

Click **Network > UPnP > Port Mapping** to display the **UPnP Port Mapping** screen.

Use this screen to set how the Internet gateway's UPnP feature configure's the Internet gateway's NAT IP address mapping and port mapping settings. These settings allow Internet users connected to the Internet gateway's WAN interface to access services on the NAS. You can set which port Internet users need to use to access a specific service on the NAS.


Note: Some Internet gateways will delete all UPnP mappings after reboot. So if the Internet gateway reboots, you may need to use this screen again to re-apply the UPnP port mapping.

**Figure 84** Network > UPnP > Port Mapping






The following table describes the labels in this screen.

**Table 47** Network > UPnP > Port Mapping

LABEL	DESCRIPTION
LAN	Use these fields to specify what port the Internet gateway uses to connect from its LAN port to the service on the NAS.
Service Name	This read-only field identifies a service on the NAS.
LAN Port	Specify the port number (1~65,536) the Internet gateway needs to use to connect from its LAN port to the service on the NAS. This is the NAS's internal port number for the service. Changing a service's port number in this screen also changes it in other NAS screens that display it. Similarly, changing a service's port number in another NAS screen also changes it here.
	The number below this icon is your Internet gateway's WAN IP address (the IP address your Internet gateway uses for connecting to the Internet).
WAN	Use these fields to specify what port Internet users must use to connect to the Internet gateway's WAN port in order to connect to the service on the NAS.
Service Name	This read-only field identifies a service on the NAS.
Enable WAN Access	Select this check box to have UPnP configure your Internet gateway to allow access from the Internet to the NAS's service.  If you clear this check box, people will not be able to access the NAS's service from the Internet unless you manually configure the Internet gateway's firewall and NAT rules to allow access.

**Table 47** Network > UPnP > Port Mapping (continued)

LABEL	DESCRIPTION
WAN Port	<p>When you enable WAN access for one of the NAS's services, specify the port number (1~65,536) Internet users need to use to connect to the Internet gateway's WAN port in order to access the service on the NAS. Whoever wants to access a service on the NAS from the Internet must use this port number.</p> <p>P2P download's WAN port must be the same as the LAN port.</p> <p>Make sure there is not another service using TCP protocol with the same port number.</p> <p>If another device is using the same port (the Internet gateway has the same port number mapped to another LAN IP address), the NAS overwrites it when you apply the setting and WAN users can no longer access the other device.</p>
	This icon means the service's LAN and WAN port numbers must be the same.
	This icon means another service is using the same port number as this service. Change the port number of one of the services so they use different port numbers.
	This icon means another service is using the listed port, but the port the other service is using will be replaced if you apply the setting. The other service will no longer be accessible from the listed port.
Apply	Click <b>Apply</b> to save your changes back to the NAS.
Reset	Click <b>Reset</b> to begin configuring this screen afresh.

## 9.6 PPPoE Screen

Use this screen to configure PPPoE settings for a direct Internet connection.

Click **Network > PPPoE** in the navigation panel to open the following screen.

**Figure 85** Network > PPPoE


**Network - PPPoE**

**Status**

Status	Disabled
IP Address	N/A
IP Subnet Mask	N/A
Default Gateway	LAN1

**Configuration**

Enable PPPoE to directly connect to the Internet.

Enable PPPoE Connection

Username:

Password:

Password (Confirm):

Apply    Reset

The following table describes the labels in this screen.

**Table 48** Network > PPPoE

LABEL	DESCRIPTION
Status	
Status	This field displays the status of PPPoE connection.
IP Address	This field displays the IP address of your PPPoE connection.
IP Subnet Mask	This field displays the IP subnet mask of your PPPoE connection.
Default Gateway	This field displays which network interface the NAS uses for PPPoE connections.
Configuration	
Enable PPPoE Connection	Select this option to establish a direct Internet connection for the NAS. Select for which Gigabit Ethernet interface to use PPPoE. You need to enter the username and password as given by your ISP.
Username	Enter the username exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given.
Password	Enter the password associated with the username above.
Password (Confirm)	Retype the password for confirmation.
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

## 9.7 Telnet/SSH Service Screen

Use this screen to enable or disable Telnet and SSH (Secure Shell) access to the NAS.

Telnet or SSH access lets you use line commands to configure the NAS. Use these commands at your own risk. The vendor takes no responsibility for any changes you make using the commands.

Click **Network > Telnet/ SSH Service** in the navigation panel to open the following screen.

**Figure 86** Network > Telnet/SSH Service



The following table describes the labels in this screen.

**Table 49** Network > Telnet/SSH Service

LABEL	DESCRIPTION
Enable Telnet Service	Select this to enable Telnet access to the NAS. Clear it to not allow Telnet access to the NAS.  To use Telnet, log in as "admin" or "root" and use the admin password.
Enable SSH Service	Select this to enable SSH access to the NAS. Clear it to not allow SSH access to the NAS.  To use SSH, log in as "admin" or "root" and use the admin password.
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

## 9.8 DyDNS Screen

Use this to enable and configure Dynamic DNS.

Dynamic DNS (DyDNS) allows you to update your current dynamic IP address with a dynamic DNS service so that anyone can contact you (such as through NetMeeting or CUSeeMe). You can also access your FTP server or Web site on your own computer using a domain name (for instance myhost.dhs.org, where myhost is a name of your choice) that will never change instead of using an IP address that changes each time you reconnect. Your friends or relatives will always be able to call you even if they don't know your IP address.

Click **Network > DyDNS** to open the following screen.

**Figure 87** Network > DyDNS

The following table describes the labels in this screen.

**Table 50** Network > DyDNS

LABEL	DESCRIPTION
Status	
Status	This shows the DyDNS update result: <b>Disable by user</b> – You have manually disabled the DyDNS feature. <b>Disable due to fatal errors</b> – An unrecoverable error (such as authentication error) occurred caused the NAS to disable the DyDNS feature automatically. <b>Failure to update, will retry later</b> – A recoverable error (such as a temporary Internet disconnect) occurred. The NAS will retry later. <b>Success to update</b> - The NAS updated the DyDNS server with the NAS's public IP address.
Gateway Information	
Default Gateway	This shows with which public IP of interface the NAS updated the DyDNS server.
Internal Address	This shows the IP address assigned to the NAS by the gateway in your local network.
External Address	This shows the IP address of the NAS that can be accessed in the Wide Area Network (WAN). Note that this is not assigned by the DyDNS server.
Configuration	



**Table 50** Network > DyDNS

LABEL	DESCRIPTION
Enable DyDNS	Select this to use dynamic DNS. You need to have registered a dynamic DNS account with a service provider such as www.dyndns.org. The Dynamic DNS service provider will give you a password or key.
Service Provider	Select your Dynamic DNS service provider.
Hostname	Enter your host name provided by the Dynamic DNS service.
Username	Enter your user name for your DNS account.
Password	Enter the password assigned to your DNS account.
Password (Confirm)	Confirm the password you entered.
Apply	Click this to save your changes.
Reset	Click this to clear the fields.



# Applications

## 10.1 Overview

This chapter discusses the features in the **Application** screens. The NAS contains various applications for file sharing and downloading.

## 10.2 What You Can Do

- Use the **FTP Server** screen ([Section 10.4 on page 189](#)) to configure settings for FTP file transfers to/from the NAS.
- Use the **Media Server** screens ([Section 10.5 on page 190](#)) to share files with media clients.
- Use the **iTunes Server** screens ([Section 10.6 on page 192](#)) to share files with iTunes users on your network.
- Use the **Download Service** screen ([Section 10.7 on page 193](#)) to download files from the Internet.
- Use the **Web Publishing** screen ([Section 10.8 on page 205](#)) to publish shares for people to access files using a web browser.
- Use the **Print Server** screen ([Section 10.9 on page 206](#)) to share a printer.
- Use the **Copy/ Sync Button** screen ([Section 10.10 on page 207](#)) to transfer files between a USB device and the NAS.
- Use the **Auto Upload** screens ([Chapter 12 on page 239](#)) to upload files in selected shares to your Flickr and/or YouTube accounts.
- Use the **Google Drive** screens ([Section 10.12 on page 219](#)) to synchronize local NAS shares or folders and Google Drive accounts.
- Use the **Syslog Server** screen ([Section 10.13 on page 224](#)) to configure the NAS to accept syslog logs from syslog clients.
- Use the **Dropbox** screen ([Chapter 13 on page 253](#)) to log the NAS into your Dropbox account.
- Use the **Time Machine** screen ([Chapter 14 on page 257](#)) to turn Time Machine support on or off, and designate the share for Time Machine backups.

## 10.3 What You Need to Know

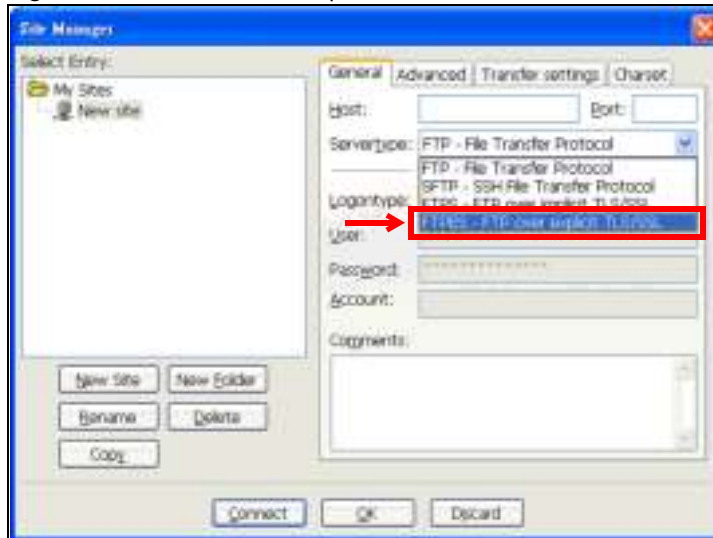
### FTP

File Transfer Protocol (FTP) is a file transfer service that operates on the Internet. A system running the FTP server accepts commands from a system running an FTP client. FTP is not a secure protocol. Your file transfers could be subject to snooping.

## FTPES (File Transfer Protocol over Explicit TLS/SSL)

File Transfer Protocol over Explicit TLS/SSL (FTPES) is a file transfer service that uses either TLS (Transport Layer Security) or SSL (Secure Sockets Layer) for secure transfers across the Internet. It requests for a mutual method of encryption from the FTP server for its file transfer sessions. Your FTP client must be set to use FTPES as in the following example.

**Figure 88** FTP Client Example



## Media Server

The media server feature lets anyone on your network play video, music, and photos from the NAS (without having to copy them to another computer). The NAS can function as a DLNA-compliant media server and/or an iTunes server. The NAS streams files to DLNA-compliant media clients or computers using iTunes. The Digital Living Network Alliance (DLNA) is a group of personal computer and electronics companies that works to make products compatible in a home network.

## iTunes Server

The NAS iTunes server feature lets you use Apple's iTunes software on a computer to play music and video files stored on the NAS. You can download iTunes from [www.apple.com](http://www.apple.com).

## Download Service

The NAS's download service downloads files from the Internet directly to the NAS. You do not have to download to your computer and then copy to the NAS. This can free up your computer's system resources.

The NAS can download using these protocols.

- HTTP: The standard protocol for web pages.
- FTP: A standard Internet file transfer service.
- P2P download: Peer-to-peer files sharing protocol.

## Web Publishing

Web publishing lets you “publish” shares (containing folders and files) on the NAS so people can access the files using a web browser without having to log into the Web Configurator. This way you can share files with others without them having to know and enter a username and password.

For example, if you want to share photos in a FamilyPhotos share, you could “web publish” it and others could use a web browser to access the photos at <http://my-NAS's-IP-Address/MyWeb/FamilyPhotos>.

## RSS

RSS (Really Simple Syndication) is a format for delivering frequently updated digital content. A channel uses a feed to deliver its contents (items). Subscribe the NAS to a feed to be able to download the contents.

## 10.4 FTP Server Screen

Use FTP or FTPES (FTP over Explicit TTL/SSL) to upload files to the NAS and download files from the NAS. Click **Applications > FTP** to open the following screen.

**Figure 89** Applications > FTP

**FTP**

Enable FTP

Connection Limit:  Connection Limit: 20

Idle Timeout:  minutes Max. timeout: 300 minutes

Port Number:

Enable Anonymous FTP Access

Customize the port range for data transfer:

Starting Port:

Ending Port:

Download/Upload Rate For All Users (include admin)

Max. Download Rate:  KB/s (0=No Limit)

Max. Upload Rate:  KB/s (0=No Limit)

Download/Upload Rate For Anonymous Users

Max. Download Rate:  KB/s (0=No Limit)

Max. Upload Rate:  KB/s (0=No Limit)

**Note:**  
To configure a share to allow anonymous FTP access go to the configure shares page and modify a share's access rights to allow the user "Anonymous FTP".

**Character Set**

(UTF-8)

**Note:**  
The NSA uses UTF-8 format for FTP by default. If the NSA's folders or file names do not display correctly in your FTP client, select the appropriate character set here.

Apply Cancel

The following table describes the labels in this screen.

**Table 51** Applications > FTP

LABEL	DESCRIPTION
FTP	
Enable FTP	You can use FTP to send files to the NAS or get files from the NAS. Select this check box to allow users to connect to the NAS via FTP; otherwise clear the check box.
Connection Limit	Enter the maximum number of concurrent FTP connections allowed on the NAS in this field. See your screen for your model's connection limit.
Idle Timeout	Enter the length of time that an FTP connection can be idle before timing out. The timeout limit is 300 minutes.
Port Number	This is the port number used by the NAS for FTP traffic.
Enable Anonymous FTP Access	Select this check box to allow any user to log into the NAS using 'FTP' or 'anonymous' as a username and no password. Any other name is considered a username, so must be valid and have a corresponding correct password.
Customize the port range for data transfer	Select this check box to assign a port range for FTP clients to use when downloading files from the NAS using passive mode.  The connection limit is restricted to half of the port numbers within the range if this value is smaller than the one configured in the <b>Connection Limit</b> field. For example, you specified a port range from 1024 to 1029 and configured 10 in the <b>Connection Limit</b> field. The FTP connection limit will only be 3 (6 ports in the range divided by 2) because it is the smaller value.
Starting Port	Enter the first port number in the range. Choose from 1024 to 65535.
Ending Port	Enter the last port number in the range. Choose from 1024 to 65535.
Download/Upload Rate For All Users (include admin)	Select this if you want to limit the download/upload bandwidth for all users who are logged into the NAS, including the administrator. <ul style="list-style-type: none"> <li>• <b>Max. Download Rate</b> - Enter the download speed (in kilobytes/s) that the NAS allows for users who are logged into the NAS.</li> <li>• <b>Max. Upload Rate</b> - Enter the upload speed (in kilobytes/s) that the NAS allows for users who are logged into the NAS.</li> </ul>
Download/Upload Rate For Anonymous Users	Select this if you want to limit the download/upload bandwidth for users who log into the NAS using 'FTP' or 'anonymous' as a username and no password. <ul style="list-style-type: none"> <li>• <b>Max. Download Rate</b> - Enter the download speed (in kilobytes/s) that the NAS allows for users who are logged into the NAS.</li> <li>• <b>Max. Upload Rate</b> - Enter the upload speed (in kilobytes/s) that the NAS allows for users who are logged into the NAS.</li> </ul>
Character Set	The NAS uses UTF-8 (8-bit UCS/Unicode Transformation Format) format for FTP by default. If the NAS's folders, or file names do not display correctly in your FTP client, select the appropriate language encoding here.  This setting applies to all FTP client connections to the NAS. It does not affect your Windows/CIFS connections (it will not correct the character display in Windows Explorer).
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

## 10.5 Media Server Screens

The media server application allows you to share media files with media clients.

Click **Applications > Media Server** to open the following screen. Use this screen to view the media server's status and rebuild the media server database.

**Figure 90** Applications > Media Server > Media Server



The following table describes the labels in this screen.

**Table 52** Applications > Media Server > Media Server

LABEL	DESCRIPTION
Enable Twonky Media Server	Select this to have the NAS share the media files in the shares selected in the <b>Share Publish</b> tab. Clear it to stop the NAS from sharing media files through the Playzone screens or media players.  Click the hyper link to open the Twonky media server configuration screens to check media server status or modify media server settings. See the help center in the Twonky screens for details.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

## 10.5.1 Media Server Share Publish Screen

Click **Applications > Media Server > Share Publish** to open the following screen. Use this screen to select shares to publish (share with media clients like a media player or iTunes).

**Figure 91** Applications > Media Server > Share Publish



The following table describes the labels in this screen.

**Table 53** Applications > Media Server > Share Publish

LABEL	DESCRIPTION
Publish	Select this to have the media server share a share's media files with media clients.
Share Name	This column lists names of shares on the NAS.
Publish Music Tracks	Select this to give media clients access to the share's music files.

**Table 53** Applications > Media Server > Share Publish

LABEL	DESCRIPTION
Publish Photos	Select this to give media clients access to the share's photo files.
Publish Videos	Select this to give media clients access to the share's video files.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

## 10.5.2 Media Server Logitech® Media Server Screen

Logitech® Media Server enables you to manage a Logitech Squeezebox device connected to the NAS.

Click **Applications > Media Server > Logitech® Media Server** to open the following screen. This screen is available when the Logitech® Media Server application is installed using Package Management (see [Section 7.5 on page 161](#)). Use this screen to turn the Logitech® Media Server application on or off.

**Figure 92** Applications > Media Server > Logitech® Media Server

The following table describes the labels in this screen.

**Table 54** Applications > Media Server > Logitech® Media Server

LABEL	DESCRIPTION
Enable Logitech® Media Server	Check this to enable <b>Logitech® Media Server</b> .  Click the hyper link to open the Logitech media server screens where you can play files and change settings See the help center in the Logitech media server screens for details.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

## 10.6 iTunes Server Screen

Click **Applications > iTunes Server** to open the following screen. Use this screen to turn the iTunes server on or off.

**Figure 93** Applications > iTunes Server



The following table describes the labels in this screen.

**Table 55** Applications > iTunes Server

LABEL	DESCRIPTION
Enable iTunes Server	Check this to let anyone on your network use iTunes to play music files in the published shares.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

## 10.7 Download Service Screen

The **Download Service** screen allows you to download files from the Internet.

Click **Applications > Download Service** to open the following screen. Use this screen to manage the NAS's file downloads.


Note: By default, the NAS saves downloads in the **admin** share's **download** folder.

**Figure 94** Applications > Download Service



The following table describes the labels in this screen.


**Table 56** Applications > Download Service

LABEL	DESCRIPTION
Enable Download Service	Use this option (and click the <b>Apply</b> button) to turn the download service off or on. If you turn off the service, all downloads are paused. Files currently downloading are queued. Turning on the download service resumes downloads (or restarts them if they are not able to resume).
Enable Download Notify	Use this option (and click the <b>Apply</b> button) to turn the download service notification off or on. See <a href="#">Section 10.11.3 on page 211</a> for more details about this feature.
	At the time of writing, the NAS supports RSS 2.0 feeds. Click this to get and subscribe to the NAS channel feed. This enables you to keep track and download the NAS's new contents (items).
Add	After you find a file to download, copy the file's URL. Then log into the NAS web configurator and go to the <b>Applications &gt; Download Server</b> screen and click this button. A screen opens where you create a new download task. You can paste the file's URL or use a P2P download file.

**Table 56** Applications > Download Service (continued)

LABEL	DESCRIPTION
Preferences	Click this to open a screen where you can set the default location for saving downloads and configure your P2P download settings.
Refresh	Click this to update the information displayed on the screen.
Select Files	A single P2P download torrent file is often for multiple files. If you do not need all of the files the torrent file specifies, click this to select which files to download.
Delete	<p>To delete download tasks (or manually clear out completed download tasks), select a download task and click this to remove it from the list. A pop-up screen asks you to confirm. Click <b>Apply</b> to delete or <b>Cancel</b> to quit. When you delete a download task, you are given the option to delete the associated files. Selecting this option deletes a downloaded file and in the case of a P2P download task, also deletes the related .torrent file.</p> <p>Use your keyboard's [SHIFT] key to select a range of download tasks. Use the [CTRL] key and click individual download tasks to select multiple individual download tasks.</p>
Pause	<p>Select a downloading item and click this to temporarily stop the download. Paused downloads appear in the <b>Download Service</b> screen's <b>Inactive tab</b>.</p> <p>Use your keyboard's [SHIFT] key to select a range of download tasks. Use the [CTRL] key and click individual download tasks to select multiple individual download tasks.</p>
Resume	<p>Select a paused item and click this to continue downloading the file.</p> <p>Select a completed item and click this to re-seed a P2P file or download a file again. If you want to re-seed a P2P task, keep the P2P file and the completed file in their original locations.</p>
Task Info	Select an item on the list and click this to display information about the download task. See <a href="#">Section 10.7.6 on page 204</a> for more details.
The table lists your downloads. Click a column's heading to sort the entries by that criteria.	
Active	<p>Click this to see the list of files the NAS is currently downloading or sharing with other P2P users. The NAS handles a maximum of 10 active tasks at a time (or fewer depending on how much of the NAS's system memory is available). If you add more, they appear in the <b>Inactive</b> tab.</p> <p>P2P downloads may appear in the <b>Inactive</b> tab for a while before showing in the <b>Downloading</b> tab. The NAS automatically moves completed tasks to the <b>Completed</b> tab.</p>
Inactive	Click this to see the list of files that are queued (waiting in line) for the NAS to download or the downloads that have been manually paused.
Completed	<p>Click this to see the list of files that the NAS has finished downloading.</p> <p>The <b>Location</b> column shows where a downloaded file is saved on the NAS. Click on the location link to open the share browser and access the file.</p>
Error	Click this to see the list of files that the NAS was not able to download. The NAS automatically retries unsuccessful download attempts. The download displays in the error tab when the re-attempts are also unsuccessful and the NAS stops trying to download the file. To try the download again, use the <b>Add</b> button to create a new download task.

**Table 56** Applications > Download Service (continued)

LABEL	DESCRIPTION
Status	<p>The following icons show the download's status.</p>  <p><b>Completed:</b> The NAS has downloaded the whole file.</p> <p><b>Seeding:</b> The download is finished and the NAS is allowing other P2P users to download it.</p> <p><b>Downloading:</b> The NAS is getting the file.</p> <p><b>Queued:</b> The download is waiting in line for the NAS to download it.</p> <p><b>Pause:</b> The download has been manually stopped. Select it and click <b>Resume</b> to continue it.</p> <p><b>Error:</b> The NAS was not able to complete the download. Select it and click <b>Resume</b> to reattempt the download.</p>
Name	This identifies the download file. A “...” indicates an abbreviated name. Hold your cursor over the name to display the full name.
Complete (%)	This is the percentage of the file that the NAS has downloaded.
Location	<p>This appears in the <b>Completed</b> tab.</p> <p>It displays the path for where the file is saved. Click on the location link to open the share browser and access the file.</p>
Seeds	<p>Seeds apply to P2P downloads. This is the number of computers that are sharing the complete file that you are downloading.</p> <p>This value is in the format “Leeches(Seeds)” where Leeches refer to peers that do not have a complete copy of the file yet and are still downloading; Seeds refer to peers that have the complete file.</p>
Peers	<p>Peers apply to P2P downloads. This is the number of other computers that are also downloading (and sharing) the file you are downloading.</p> <p>This value is in the format “ConnectedPeers(AllPeers)[Health]” where Connected Peers is the number of computers to which the NAS is connected in order to download the file; AllPeers refer to the total number of computers to which the NAS can connect in order to download the file; Health indicates the availability of the file.</p>
Download Speed	<p>This is how fast the NAS is getting the file.</p> <p>It is normal for a P2P download to start out with a slow download speed since it has to set up numerous connections. The speed should increase as the download progresses and decrease near the end of the download.</p>
Upload Speed	This is how fast the NAS is sending the file to other P2P users.
Time Left	This is how much longer (in hours, minutes, and seconds) it should take to finish the download at the current download speed.
Priority	This is the download's priority on the NAS. You can set a currently downloading or queued download to high or automatic priority. You can set a download to high priority to have the NAS try to download it before the other files. However the actual download speed depends more on factors like the speed of you Internet connection, the speed of the download source's Internet connection, how many others are trying to download at the same time, the peers and seeds available and general network conditions.
Error Code	<p>This appears in the <b>Error</b> tab.</p> <p>This shows the tag for the error that occurred.</p>
Error Message	<p>This appears in the <b>Error</b> tab.</p> <p>This message states what went wrong with the download.</p>

## 10.7.1 Adding a Download Task

Click **Applications > Download Service > Add** to open the following screen. Use this screen to specify a file for the NAS to download. [Section 5.7 on page 108](#) provides a tutorial on adding a download task.

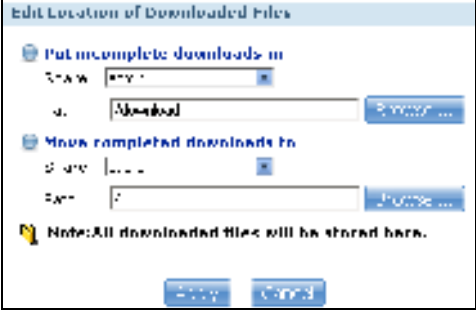


**Figure 95** Applications > Download Service > Add

The following table describes the labels in this screen.

**Table 57** Applications > Download Service > Add

LABEL	DESCRIPTION
Source	
URL	<p>Paste the URL or magnet link of the file you want to download into this field. The URL can be for an HTTP, FTP, or P2P download. A magnet link is for a P2P download.</p> <p>For a P2P download using a magnet link the NAS automatically downloads the file related to the magnet link.</p> <p>For a P2P download using a .torrent file, you can copy and paste the URL of the .torrent file. The NAS will automatically download the .torrent file and use it. You do not have to manually download the .torrent file or save it to your computer.</p> <p>Note: Make sure the link opens either the file you want or a pop-up window about how to handle the file.</p> <p>It is also OK for the link to open a .torrent file. If you are redirected to a screen that says the download should start in a few seconds, there may be a link to click if the download does not start automatically. See if that link opens the file or the pop-up window.</p>
Torrent File	<p>A "torrent" file has information the NAS uses to do a P2P download. A torrent file uses a .torrent extension. If you already have a torrent file saved on your computer, select the <b>Torrent File</b> option and specify its path or click <b>Browse</b> and look for its location.</p>

**Table 57** Applications > Download Service > Add

LABEL	DESCRIPTION
Location of Downloaded Files	<p>This shows where the NAS stores new downloads (<b>Put incomplete downloads in</b>) and where the NAS moves completed downloads (<b>Move completed downloads to</b>).</p> <p>The <b>Share</b> column shows the name of the share where the file is downloaded.</p> <p>The <b>Path</b> column points to the location in the share where the NAS will save the downloaded files.</p> <ul style="list-style-type: none"> <li>• P2P download jobs are stored in /*/incoming (where '*' is a folder that you have set.)</li> <li>• HTTP/FTP jobs are stored in /* (where '*' is a folder that you have set.)</li> <li>• All jobs triggered by RSS channels create the subfolder in /* using the channel name where it store all files downloaded from that channel (where '*' is a folder that you have set.)</li> </ul>
Edit	<p>Click this to open the following screen where you can set the default folder location where you "<b>Put incomplete downloads in</b>" and "<b>Move complete downloads to</b>":</p>  <ul style="list-style-type: none"> <li>• <b>Share</b> - Select the share from the list.</li> <li>• <b>Path</b> - Type the folder location in the share directly or click <b>Browse</b> to open the following screen and navigate to the file's location.</li> </ul>  <ul style="list-style-type: none"> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Folder Name</b> - Enter a new folder name and click  to create it.</li> <li>• <b>Type</b> - This identifies the item as a folder or file.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the <b>Path</b> field. All contents within the specified share are automatically selected.</p> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 10.7.2 Configuring General Download Settings

Click **Applications > Download Service > Preferences** to open the following screen. Use this screen to set the default location for saving downloads and configure the download period.

**Figure 96** Applications > Download Service > Preferences > General Settings

Preferences

General Settings **P2P Download**

**Location of Downloaded Files**

	Share	Path
Put incomplete downloads in	admin	/download
Move completed downloads to	public	/

**Note:**

1. P2P download jobs are stored in /admin/download/incoming.
2. HTTP/FTP jobs are stored in /public.
3. All jobs triggered by RSS channels create the subfolder in /public using the channel name where it store all files downloaded from that channel.

**Download Period Control**

Enable Download Period Control

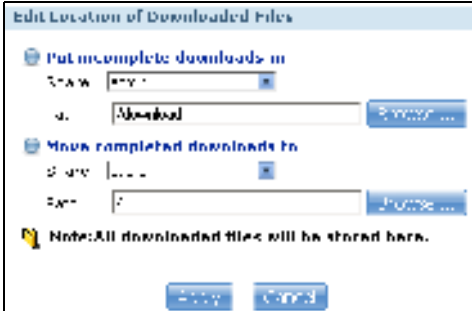


Download Service is active in the specified time period (hh:mm - hh:mm)

00:00 - 00:00

OK Cancel

The following table describes the labels in this screen.

**Table 58** Applications > Download Service > Preferences > General Settings

LABEL	DESCRIPTION
Location of Downloaded Files	<p>This shows where the NAS stores new downloads (<b>Put incomplete downloads in</b>) and where the NAS moves completed downloads (<b>Move completed downloads to</b>).</p> <p>The <b>Share</b> column shows the name of the share where the file is downloaded.</p> <p>The <b>Path</b> column points to the location in the share where the NAS will save the downloaded files.</p> <ul style="list-style-type: none"> <li>• P2P download jobs are stored in /*/incoming (where '*' is a folder that you have set.)</li> <li>• HTTP/FTP jobs are stored in /* (where '*' is a folder that you have set.)</li> <li>• All jobs triggered by RSS channels create the subfolder in /* using the channel name where it store all files downloaded from that channel (where '*' is a folder that you have set.)</li> </ul>
Edit	<p>Click this to open the following screen where you can set the default folder location where you "<b>Put incomplete downloads in</b>" and "<b>Move complete downloads to</b>".</p>  <ul style="list-style-type: none"> <li>• <b>Share</b> - Select the share from the list.</li> <li>• <b>Path</b> - Type the folder location in the share directly or click <b>Browse</b> to open the following screen and navigate to the file's location.</li> </ul>
	 <ul style="list-style-type: none"> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Folder Name</b> - Enter a new folder name and click  to create it.</li> <li>• <b>Type</b> - This identifies the item as a file or folder.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the <b>Path</b> field. All contents within the specified share are automatically selected.</p> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Download Period Control	<p>This feature sets the NAS to download files only within a specified time period.</p>
Enable Download Period Control	<p>Use the check box to turn the download period control on or off.</p>

**Table 58** Applications > Download Service > Preferences > General Settings

LABEL	DESCRIPTION
Download Service is active in the time period (hh:mm - hh:mm)	Specify the time period for the NAS to download files.  <b>Note:</b> If you also configured the <b>Power On/Off Schedule</b> feature in the <b>Power Management</b> screen, make sure your active download period does not conflict with the power-off period.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.
Cancel	Click this to return to the previous screen without saving.

### 10.7.3 Configuring the P2P Download Settings

Click **Applications > Download Service > Preferences > P2P download** to open the following screen. Use this screen to configure P2P download settings.

**Figure 97** Applications > Download Service > Preferences > P2P download

The screenshot shows the 'P2P download' settings page. It includes the following fields and options:

- Port Number:** Input field with value 3000.
- DHT:** Radio buttons for 'Enable' (selected) and 'Disable'.
- Max. Download Rate:** Input field with value 0, unit KB/s (0=No Limit).
- Max. Upload Rate:** Input field with value 0, unit KB/s (0=No Limit).
- Maximum Number of Active Torrents:** Input field with value 10.
- Maximum Number of Seeding Jobs:** Input field with value 10.
- Maximum Number of Active Connections:** Input field with value 300.
- Keep Sharing While:**
  - Upload/Download Ratio is: Input field with value 1, unit % (Enter -1 for unlimited ratio. Enter 0 to ignore ratio.)
  - Or Seeding Time is: Input field with value 30, unit minutes (Enter -1 for unlimited seeding time. Enter 0 to ignore seeding time.)
- Email notifications:**
  - Send an email notice when download starts:  Enable  Disable
  - Send an email notice when seeding starts:  Enable  Disable
  - Send an email notice when download finishes:  Enable  Disable
- Note:** Please go to "Log Report Config" to configure email settings.
- Note:** For Distributed Hash Table (DHT) support, the P2P download service will also attempt to open the following UDP port: 3009

Buttons at the bottom: Back, Home, Forward.



The following table describes the labels in this screen.

**Table 59** Applications > Download Service > Preferences > P2P download

LABEL	DESCRIPTION
Port Number	Assign a port number for P2P downloads. You can select a number from 2 to 65536. It is recommended to use a port number greater than 1025.
DHT	<p>Select <b>Enable</b> or <b>Disable</b> to use Distributed Hash Table (DHT) or not.</p> <p>Note: When you use DHT, the NAS will also attempt to open a UDP port one number smaller than the P2P download port number. So if the P2P download port number is 9090, the NAS uses UDP port 9089.</p>
Max. download rate	You may need to limit the bandwidth the NAS uses for P2P downloads if your network's other Internet applications are not getting enough downstream bandwidth. 0 has the NAS impose no restriction.
Max. upload rate	<p>You may need to limit the bandwidth the NAS uses to share files through P2P download if your network's other Internet applications are not getting enough upstream bandwidth. 0 has the NAS impose no restriction.</p> <p>If you do not allow any uploads, (for example, you set a limit of 1 KB/s) you will not have a good standing in the P2P download community.</p> <p>Note: The settings for maximum download/upload rates would not affect peers accessing the NAS from the same LAN.</p>
Maximum Number of Active Torrents	Specify how many simultaneous P2P downloads are allowed on the NAS. You can enter a number from 1 to 10.
Maximum Number of Seeding Jobs	Specify how many simultaneous seeds are allowed on the NAS. Enter a number from 1 to 10. This value cannot exceed the one you configured in the <b>Maximum Number of Active Torrents</b> field.
Maximum Number of Active Connections	Specify how many active connections are allowed on the NAS. Enter a number from 1 to 500. This specifies the number of computers that can connect to the NAS to download files being shared by the NAS.
Keep Sharing While	<p>With P2P download, the NAS starts sharing a file while you are downloading it. Set how long to continue sharing a file after the NAS finishes the download.</p> <p>Select <b>Upload/ Download Ratio</b> to keep sharing a file until the NAS has uploaded a specific percent compared to the download.</p> <p>Select <b>Seeding Time</b> to keep sharing a file for a specific number of minutes after the download finishes.</p> <p>Continuing to share a file helps other P2P download users finish downloading it. Sharing out at least as much as you download helps keep you in good standing in the P2P download community.</p> <p>Enter -1 to share a file indefinitely. Leave both check boxes blank to have the NAS stop sharing the file as soon as the download finishes.</p> <p>If you select both options, the NAS keeps sharing a file until both conditions exceed the values you configure. For example, you entered 150% in the <b>Upload/ Download Ratio</b> field and 120 minutes in the <b>Seeding Time</b> field. The NAS keeps sharing a file until it has shared 1.5 times the size of the file and has passed 120 minutes.</p>
Email notifications	Select whether or not to send emails to the email address configured for emailing log reports (see <a href="#">Section 19.4.2 on page 291</a> ) when the NAS starts downloading the file, seeding the file, and/or finishes downloading the file.
Edit IP Filter	<p>Click this to enable or disable IP filtering for P2P downloads.</p> <p>Refer to <a href="#">Section 10.7.4 on page 202</a> for information about the fields in this screen.</p>
Apply	Click this to save your changes.

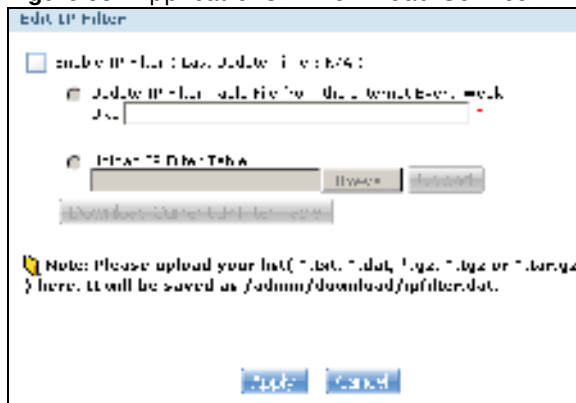
**Table 59** Applications > Download Service > Preferences > P2P download

LABEL	DESCRIPTION
Reset	Click this to restore your previously saved settings.
Cancel	Click this to return to the previous screen without saving.

## 10.7.4 Edit IP Filter

Use this screen to enable or disable IP filtering for P2P downloads. IP filtering blocks IP addresses known to share fake files. You can either get an IP filter table from a website or use your own table.

Click **Edit IP Filter** in the **Applications > Download Service > Preferences > P2P download** screen.

**Figure 98** Applications > Download Service > Preferences > P2P download > Edit IP Filter

The following table describes the labels in this screen.

**Table 60** Applications > Download Service > Preferences > P2P download > Edit IP Filter

LABEL	DESCRIPTION
Enable IP Filter	Click this to enable or disable IP filtering for P2P downloads.
Update IP Filter Table File from the Internet Every Week	Select this option and enter a URL to use an online IP filter table. You can find an online IP filter table in websites such as <a href="http://www.bluetack.co.uk/config/level1.gz">http://www.bluetack.co.uk/config/level1.gz</a> . When you change the URL of the online IP filter table, the NAS also performs an update after you click <b>Apply</b> .
Upload IP Filter Table	Select this option to upload your own IP filter table. Use the <b>Browse</b> button to locate the file and click <b>Upload</b> to save it on the NAS. The NAS supports .txt, .dat, .gz, .tgz, and .tar.gz file extensions. The NAS saves the IP filter table as <b>/admin/download/ipfilter.dat</b> .
Download Current IP Filter Table	Click this to save a copy of the IP filter table on your computer.
Apply	Click <b>Apply</b> to update the IP filter table from the specified URL.
Cancel	Click this to return to the previous screen without saving.

## 10.7.5 Selecting Files to Download

Select an item in the **Applications > Download Service** screen's list and click **Select Files** to open the following screen. Use this screen to select which of the torrent's files to download. [Section 5.7 on page 108](#) provides a tutorial on adding a download task.

**Figure 99** Applications > Download Service > Select Files



The following table describes the labels in this screen.

**Table 61** Applications > Download Service > Select Files

LABEL	DESCRIPTION
Select Files	
File Name	This is the name of a file specified in the torrent file. Select the check boxes of the files you want to download.
Size	This is the size of the file to be downloaded.
OK	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.



**Table 62** Applications > Download Service > Task Info

LABEL	DESCRIPTION
Priority	Use this field to set the priority for downloading the task. Select <b>Auto</b> to have the NAS automatically determine the task's priority. Select <b>High</b> to have the NAS download this file before the other files.
Comment	Enter a description for this task. Click <b>Apply</b> to save the description.
Start Time	This field displays when the NAS started to download files.
Completed on	This field displays when the file was successfully downloaded to the NAS.
Info-Hash	This information is used to verify the torrent file.
Tracker	This field displays the tracker that NAS is currently connected to. A tracker is a server used for finding peers sharing the file.
Close	Click this to close the screen.

## 10.8 Web Publishing Screen

Use this screen to turn web publishing on or off and select shares to publish. Click **Applications > Web Publishing** to open the following screen.

**Figure 101** Applications > Web Publishing

The following table describes the labels in this screen.

**Table 63** Applications > Web Publishing

LABEL	DESCRIPTION
Web Publishing	
Disable / Enable Web Publishing	Turn on web publishing to let people access files in the published shares using a web browser, without having to log into the Web Configurator.
Support HTTPS	Select this to allow users to use web browser security for connections to the web-published shares. In order to use secured connections users must use "https://" in the NAS's web address and install the NAS's public key certificate.

**Table 63** Applications > Web Publishing

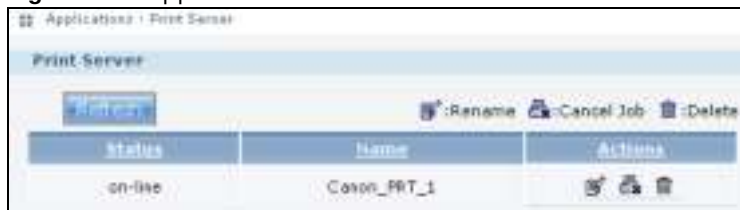
LABEL	DESCRIPTION
Port Number	Specify a port number for accessing the published share websites hosted on the NAS. If you enter a number other than 80, make sure you include it when telling others how to access the web-published share. For example, say you specified port 8080, the NAS's IP address is 192.168.1.23, and the name of the web-published share is FamilyPhotos. You would have to enter "http://192.168.1.23:8080/MyWeb/FamilyPhotos/" in your browser's address bar to access the share's web page.
Unpublished Shares	This list box displays the shares that the NAS does not publish for web browser access.
Publish Selected Share(s)	Select shares in the <b>Unpublished Shares</b> box and click this to let people access files in the published shares using a web browser, without logging into the Web Configurator. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Published Shares	This list box displays the shares people can access using a web browser, without logging into the Web Configurator.
Unpublish Selected Share(s)	Select shares in the <b>Published Shares</b> box and click this to not let people access using a web browser without logging into the Web Configurator. Use the [SHIFT] key to select a range of entries. Hold down the [CTRL] key to select multiple individual entries.
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

Note: If you installed **php-MySQL-phpMyAdmin** through the **Package Management** screen ([Section 7.5 on page 161](#)) and enable it, you can use PHP and MySQL in your published web page.

## 10.9 Print Server Screen

Use the **Print Server** screen to view and manage the NAS's list of printers and print jobs.

Click **Applications > Print Server** to open the following screen.

**Figure 102** Applications > Print Server

The following table describes the labels in this screen.

**Table 64** Applications > Print Server

LABEL	DESCRIPTION
Refresh	Click this to update the list of printers and print jobs.
	The table lists printers and their queued print jobs. Click a column's heading to sort the entries by that criteria.
Status	This fields shows whether the printer is connected and turned on ( <b>on-line</b> ) or not ( <b>off-line</b> ).

**Table 64** Applications > Print Server

LABEL	DESCRIPTION
Name	This identifies the printer. Each printer connected to the NAS must use a unique name.
Actions	<p><b>Rename:</b> Click this to change the name the NAS uses for the printer.</p> <p><b>Cancel Job:</b> Click this to remove all print jobs from the NAS queue for a particular printer. However, since the NAS sends print jobs to the printer as soon as it can, this button may only have an effect if there are very large or many print jobs in the queue. To stop a print job that has already started, you may have to turn off the printer.</p> <p><b>Delete:</b> Click this to remove a printer from the NAS's printer list. To add the printer back into the list, disconnect the printer from the NAS's USB port and reconnect it. If that does not work, disconnect the USB port and turn off the printer's power. Then reconnect the printer and turn it back on.</p>

## 10.9.1 Print Server Rename

Click **Applications > Print Server** and a printer's **Rename** icon to open the following screen. Use this screen to change the name the NAS uses for the printer.

**Figure 103** Applications > Print Server > Rename

The following table describes the labels in this screen.

**Table 65** Applications > Print Server > Rename

LABEL	DESCRIPTION
Name	Type a new name to identify the printer. The name must be unique from all the other names of printers connected to the NAS.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 10.10 Copy/Sync Button Screen

The **Copy/ Sync** button on the front panel allows you to copy or synchronize files between a connected USB or SD device and the NAS.

Click **Applications > Copy/ Sync Button** to open the following screen.

**Figure 104** Applications > Copy/Sync Button

The following table describes the labels in this screen.

**Table 66** Applications > Copy/Sync Button

LABEL	DESCRIPTION
Copy Settings	
NAS Copy Target	Select the NAS share to use with the copy function.
USB Volume	If your USB or SD device has multiple partitions, select which partition to use with the copy function.
Copy Direction	Select <b>USB -&gt; NAS</b> to copy files from your USB or SD device to the NAS. Select <b>NAS -&gt; USB</b> to copy files from the NAS to your USB or SD device.
Create a New Folder for Copied Files	Select this option to place the copied files in a new folder. The name of the folder created for the copied files consists of the date and time of the copy in year_month_day_hour_minute_second format.
Backup Files to be Replaced	This option is only available if you do not select <b>Create a New Folder for Copied Files</b> . Select this option to save the files that will be replaced by the source files.
Backup Target	Select a share in which to save the backup files.  Note: The NAS will not create a new folder to store the backup files. It is recommended to create a specific share (such as "backup") for backup purposes.
Sync Settings	
NAS Sync Target	Select the NAS share to use with the synchronization function.
USB Volume	If your USB device has multiple partitions, select which partition to use with the synchronization function.
Sync Direction	Select <b>USB -&gt; NAS</b> to synchronize files from your USB or SD device to the NAS. Select <b>NAS -&gt; USB</b> to synchronize files from the NAS to your USB or SD device. Select <b>NAS &lt;-&gt; USB</b> to synchronize files in both directions simultaneously.



**Table 66** Applications > Copy/Sync Button

LABEL	DESCRIPTION
Backup Files to be Replaced or Removed	Select this option to save the files that will be replaced by the source files.
Backup Target	Select a share in which to save the backup files.  Note: The NAS will not create a new folder to store the backup files. It is recommended to create a specific share (such as “backup”) for backup purposes.
Apply	Click this to save your changes.  The configuration file is saved on the USB device.
Reset	Click this to restore your previously saved settings.

## 10.11 Technical Reference

This section provides technical background information on the topics discussed in this chapter.

### 10.11.1 Sharing Media Files on Your Network

The media server feature lets anyone on your network play video, music, and photos from the NAS (without having to copy them to another computer). The NAS can function as a DLNA-compliant media server and/or an iTunes server. The NAS streams files to DLNA-compliant media clients or computers using iTunes. The Digital Living Network Alliance (DLNA) is a group of personal computer and electronics companies that works to make products compatible in a home network.

- Publish shares to let others play the contained media files.
- The media server is a convenient way to share files you download.
- Hardware-based media players can also play the files. See [Section on page 345](#) for the supported multimedia file formats.

Note: Anyone on your network can play the media files in the published shares. No user name and password or other form of security is used. The media server is enabled by default with the video, photo, and music shares published.

#### Songs from the iTunes Store

After using iTunes on your computer to download songs from Apple’s iTunes Store, you can copy them to the NAS. Many of these songs have DRM (Digital Rights Management). At the time of writing, you can use your Apple account ID and password to authorize up to a total of five computers to play the files. To authorize a computer, open iTunes and click **Store > Authorize Computer**.

A link for the NAS in iTunes under **SHARED**. Click it to display the NAS's published media files as shown next.

**Figure 105** NAS link in iTunes



## 10.11.2 Download Service

The NAS's download service downloads files from the Internet directly to the NAS. You do not have to download to your computer and then copy to the NAS. This can free up your computer's system resources.

The NAS can download using these protocols.

- HTTP: The standard protocol for web pages.
- FTP: A standard Internet file transfer service.
- P2P download: Peer-to-peer files sharing protocol.

**Note:** Do not use the NAS for illegal purposes. Illegal downloading or sharing of files can result in severe civil and criminal penalties. You are subject to the restrictions of copyright laws and any other applicable laws and will bear the consequences of any infringements thereof. ZyXEL bears NO responsibility or liability for your use of the download service feature.

### Torrent Files

The NAS needs a ".torrent" file for P2P download to download a file. The torrent file gives the NAS information about the file to be downloaded (and shared) and the tracker(s) (computers) that coordinates the distribution of the file.

When you add a P2P download task in the NAS's web configurator screens, you can copy and paste the URL of the torrent file. The NAS automatically downloads the torrent file and saves it in a **torrent** folder within the folder where the NAS stores downloaded files (the **admin** share's **download** folder by default).

If you already have the torrent file saved on your computer, you can just specify its location when adding a download task through the web configurator. Another method is to use FTP or a CIFS

program (Windows Explorer for example) to copy the torrent file into the **torrent** folder. The NAS automatically uses the torrent file.

After your P2P download and sharing are finished, you can go to the **incoming** folder within the destination share or folder and delete the .torrent file if you need to free up hard disk space.

### 10.11.3 Download Service Notification

Use the download service notification to keep track of downloaded files on the NAS. You can subscribe to the NAS's download list on your computer. When the NAS finishes downloading new files, your RSS reader displays the information and links for the files. You can also download the files from the RSS reader to your computer.

See [Section 5.7.3 on page 114](#) for a tutorial about using the download service notification.

In the **Download Service** screen, select **Enable Download Notify** and click **Apply**. An RSS feed icon appears. Click the icon to subscribe to the NAS's download list.

Note: The download service notification only keeps track of files downloaded via P2P download.

**Figure 106** Download Service Notification



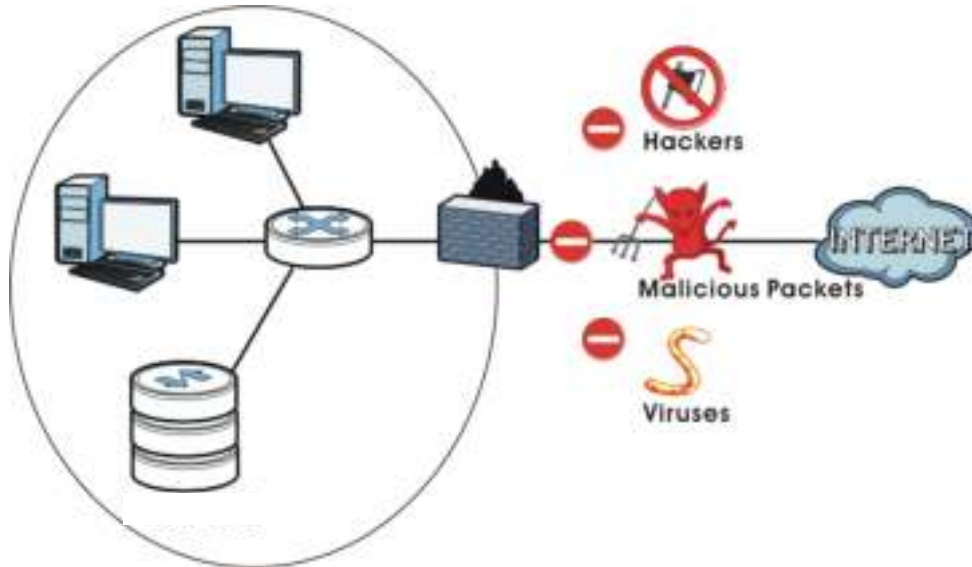
### 10.11.4 P2P Download Security

When you download using P2P, you reveal your IP address. This increases the risk of hacking attacks, which can be protected against by a good firewall.

## Use a Hardware-based Firewall

Place a hardware-based firewall between your network and the Internet (a software-based firewall on your computer would just protect the computer itself, not the NAS since your computer is not between your NAS and the Internet).

**Figure 107** Firewall



Ideally your firewall should have the following:

- Stateful packet inspection to control access between the Internet and your network and protect your NAS (and computers) from hacking attacks.
- IDP (Intrusion Detection and Prevention) to detect malicious packets within normal network traffic and take immediate action against them.
- Anti-virus to check files you download for computer viruses.

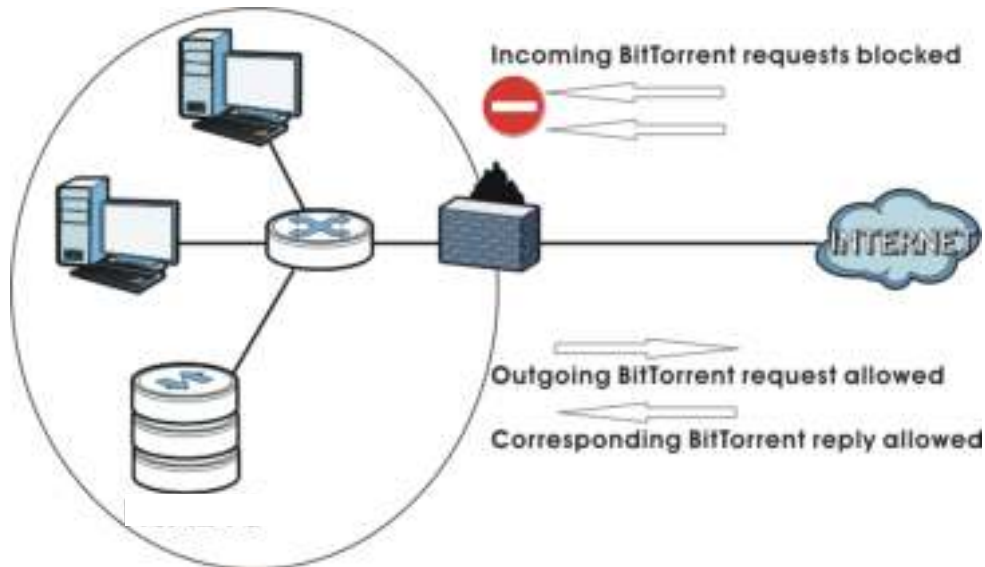
## P2P Download and Your Firewall

The anti-virus feature on a firewall probably cannot check P2P downloads for viruses, so use anti-virus software on your computer to scan the NAS for viruses.

When you download using P2P download, many other P2P download users are also trying to download the file from you. The firewall slows this down because by default, it only allows traffic

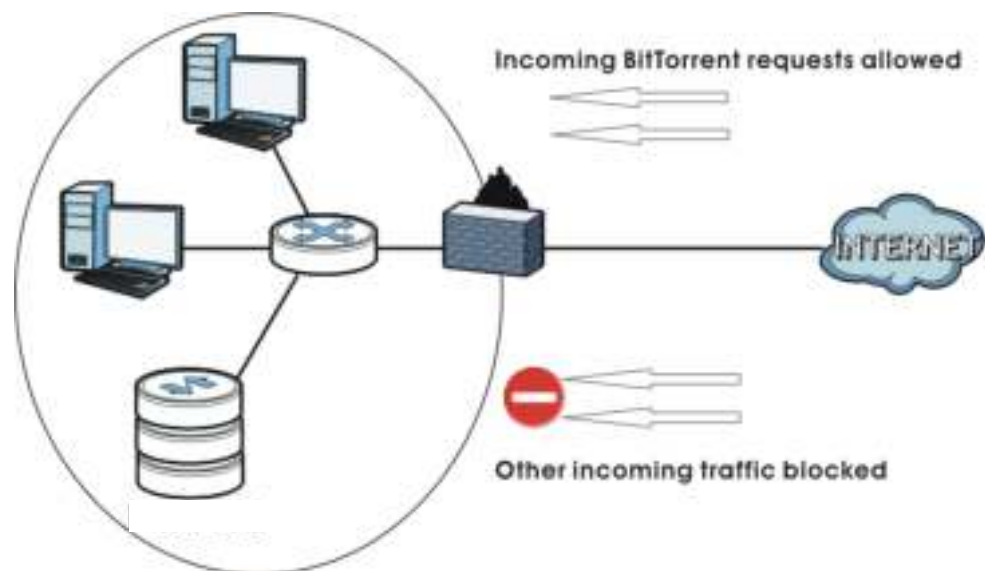
from the Internet in response to a request that originated on the LAN (it lets you get files from the Internet and blocks those on the Internet from getting files from you).

**Figure 108** Firewall Blocking Incoming P2P Download Requests



To speed up P2P download file transfers, configure your firewall's port forwarding to send incoming TCP port 9090 and UDP port 9089 connections to the NAS. You probably need to use your firewall's HTML (web-based) configuration interface to set this up (see the firewall's manual for details). You may also have to configure a corresponding firewall rule.

**Figure 109** Firewall Configured to Allow Incoming P2P Download Requests

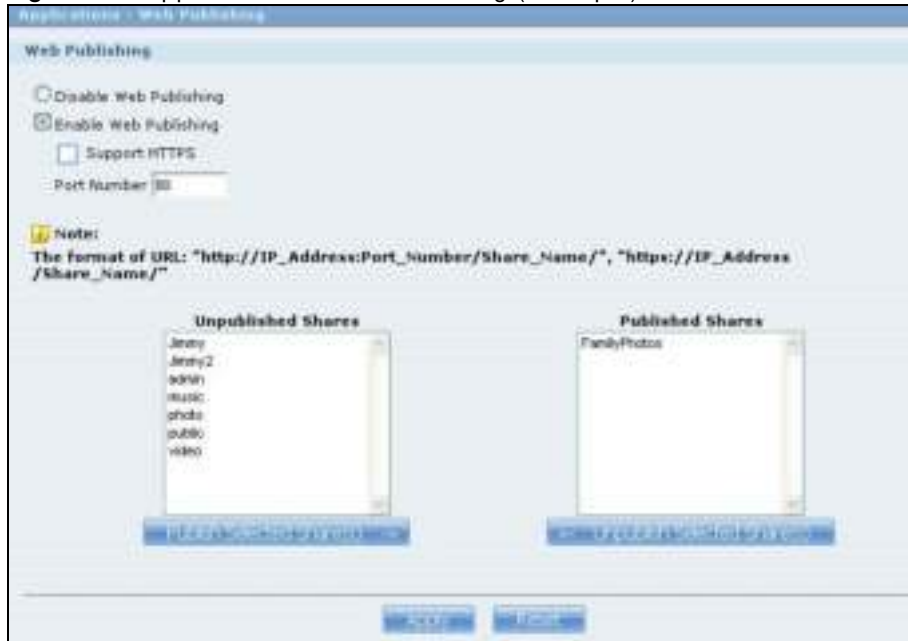


### 10.11.5 Web Publishing Example

This example covers how to configure the **Web Publishing** screen to let people use a web browser to access a share named FamilyPhotos without logging into the Web Configurator and shows how to access the share through the Internet.

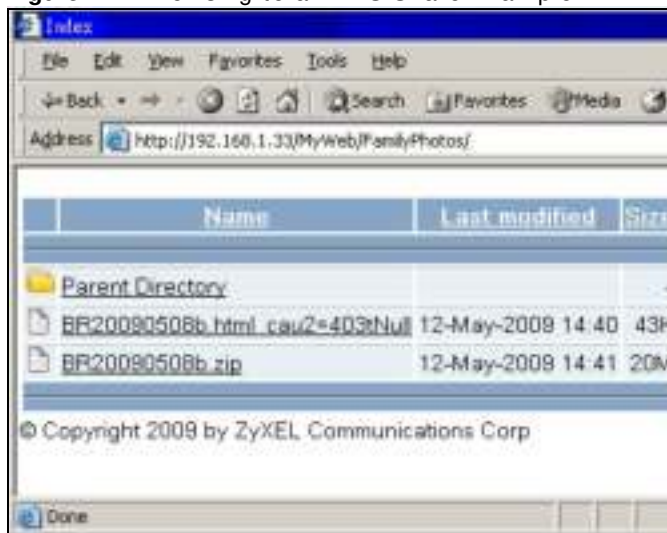
- 1 Click **Applications > Web Publishing** and configure the screen as shown (enable the web publishing and move **FamilyPhotos** over to **Published Shares**) and click **Apply**.

**Figure 110** Applications > Web Publishing (Example)



- 2 Now open your web browser and type in the address of the NAS's FamilyPhotos web page. In this example, the NAS's IP address is 192.168.1.33, and the name of the web-published share is FamilyPhotos. So you would enter "http://192.168.1.33/MyWeb/FamilyPhotos/" in your browser's address bar. Then press [ENTER] or click **Go**. A screen displays listing the share's files.

**Figure 111** Browsing to an NAS Share Example



- Click a file's link to open the file.
- Right-click a file's link and select **Save Target As..** (in Internet Explorer) to save a copy of the file.
- Click a label in the heading row to sort the files by that criteria.
- To customize how the page looks and works, create an index.html or index.htm file and store it in the share.

## 10.11.6 Web Publishing

Web publishing lets you “publish” shares (containing folders and files) on the NAS so people can access the files using a web browser without having to log into the Web Configurator. This way you can share files with others without them having to know and enter a user name and password.

For example, if you want to share photos in a FamilyPhotos share, you could “web publish” it and others could use a web browser to access the photos at `http://my-NAS's-IP-Address/MyWeb/FamilyPhotos`.

Note: The NAS does not use any security for the files in the published folders. It is not recommended to publish shares if you do not have the NAS behind a good hardware-based firewall. See [page 212](#) for more on firewalls.

Additionally, you can use HTML editing software (not included) to create an `index.html` or `index.htm` file to define and customize how your website works and looks.

### Accessing Web-published Shares from the Internet

You need to use a public address to access the NAS's web-published shares from the Internet. If your NAS uses a private IP address, you may need to use the public IP address of your Internet gateway and configure NAT or port forwarding on your Internet gateway and possibly firewall rules in order to let people access the NAS's web-published shares from the Internet.

### Web Publishing Port Number

If the web-published shares use a port number other than 80 (the normal port for web traffic), users must include it after the NAS's IP address in order to access the NAS's web-published shares. For example, say you specified port 8080, the NAS's IP address is 192.168.1.23, and the name of the web-published share is FamilyPhotos. You would have to enter “`http://192.168.1.23:8080/MyWeb/FamilyPhotos/`” in your browser's address bar to access the share's web page.

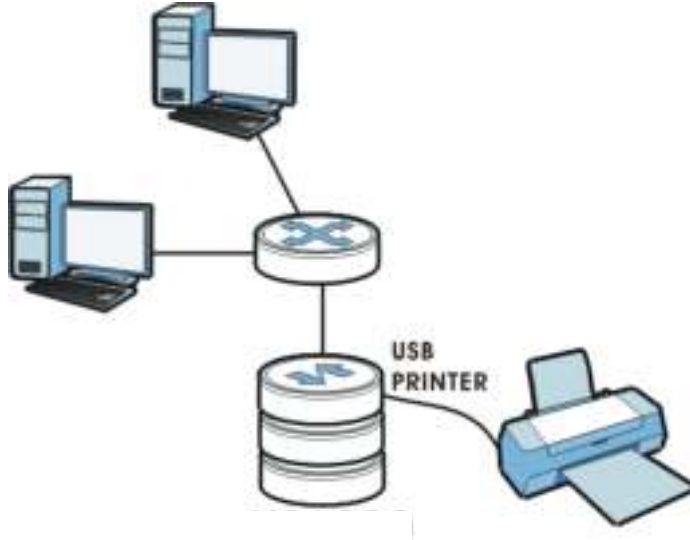
The NAS's web configurator uses port 80. To make the web configurator more secure, you can have the web-published shares use another port number. Then you can configure one set of firewall rules and NAT or port forwarding settings on your Internet gateway specifically for allowing access to the web-published shares and another separate set of rules for accessing the NAS's web configurator.



### 10.11.7 Printer Sharing

The NAS can act as a print server. A print server lets multiple computers share a printer. Connect a printer to the NAS's USB port to let multiple computers on your network use it. See [www.zyxel.com](http://www.zyxel.com) for a list of compatible printers.

**Figure 112** Printer Sharing



### 10.11.8 Copying Files

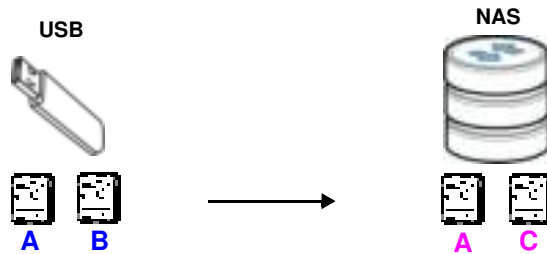
You can copy files from a USB device to the NAS or from the NAS to a USB device. Simply press and release the **COPY/ SYNC** button to start copying files. See [Section 10.10 on page 207](#) for details about configuring the copy settings.



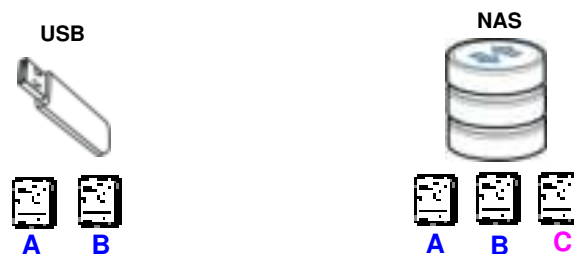
The following figure illustrates how copying files works when you copy files from a USB device to the NAS. The same concept applies when you copy files from the NAS to a USB device.

**Figure 113** Copying Files Example

**Before Copy**



**After Copy**



Both storage devices contain file A.

- A copy of files A and B from the USB device is transferred to the NAS.
- File A from the USB device replaces file A on the NAS.

## 10.11.9 Synchronizing Files

Synchronization makes the contents on the target device identical to the ones on the source device. You can synchronize files from a USB device to the NAS or from the NAS to a USB device. In addition, you may also synchronize files in both directions simultaneously.

Press and hold the **COPY/ SYNC** button until you hear a beep to synchronize files. See [Section 10.10 on page 207](#) for details about configuring the synchronization settings.

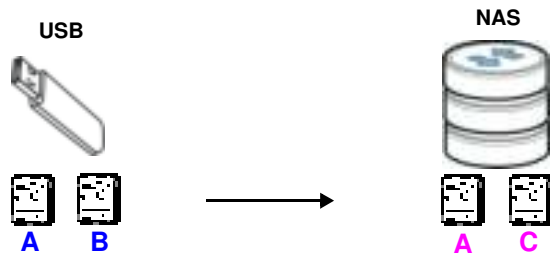
### USB -> NAS or USB <- NAS

When you synchronize files in one direction, contents on the source device replace the files on the target device.

The following figure illustrates how synchronization works when you synchronize files from a USB device to the NAS. The same concept applies when you synchronize files from the NAS to a USB device.

**Figure 114** Synchronizing Files Example 1

### Before Sync



### After Sync



Both storage devices contain A.

- A copy of files A and B from the USB device is transferred to the NAS.
- File A from the USB device replaces file A on the NAS.
- File C on the NAS is deleted.

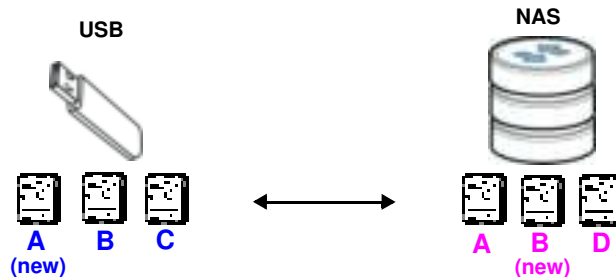
### USB <-> NAS

When you synchronize files in both directions simultaneously, both storage devices transfer unique files to one another. Files with the same file name are synchronized according to their modification date/time. The difference in modification time between the two files has to be greater than five minutes. More recently modified files overwrite the older ones during synchronization.

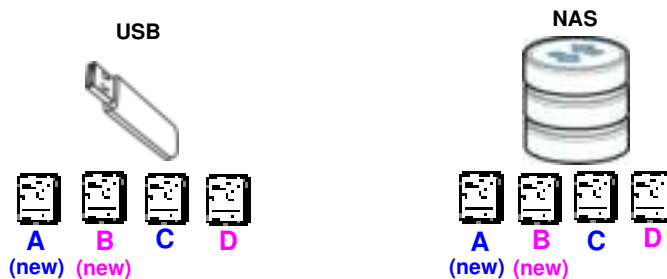
The following figure illustrates how synchronization works when you synchronize files in both directions simultaneously.

**Figure 115** Synchronizing Files Example 2

### Before Sync



### After Sync



A on the USB device and B on the NAS are modified more recently.

- File A from the USB device replaces file A on the NAS.
- File B from the NAS replaces file B on the USB device.
- A copy of file C from the USB device is transferred to the NAS.
- A copy of file D from the NAS is transferred to the USB device.

## 10.12 Google Drive

Use GoogleDrive to synchronize local NAS user folders and Google Drive cloud storage accounts. This two-way synchronization means changes in the Google Drive account appear in the local sync folder and changes in the local sync folder appear in the Google Drive account.

**Note:** Do not store your only copy of a document in Google Drive or the local sync folder.

- Modifying or deleting a file or folder at either end modifies or deletes it at the other end.
- Moving a file out of the local sync folder or Google Drive deletes it at the other end.
- Use the **Protect** screens instead of Google Drive for backups (see [Chapter 20](#) on page 307).
- You can link multiple NAS user accounts to Google accounts.
- You can link an individual NAS user account to multiple Google accounts.

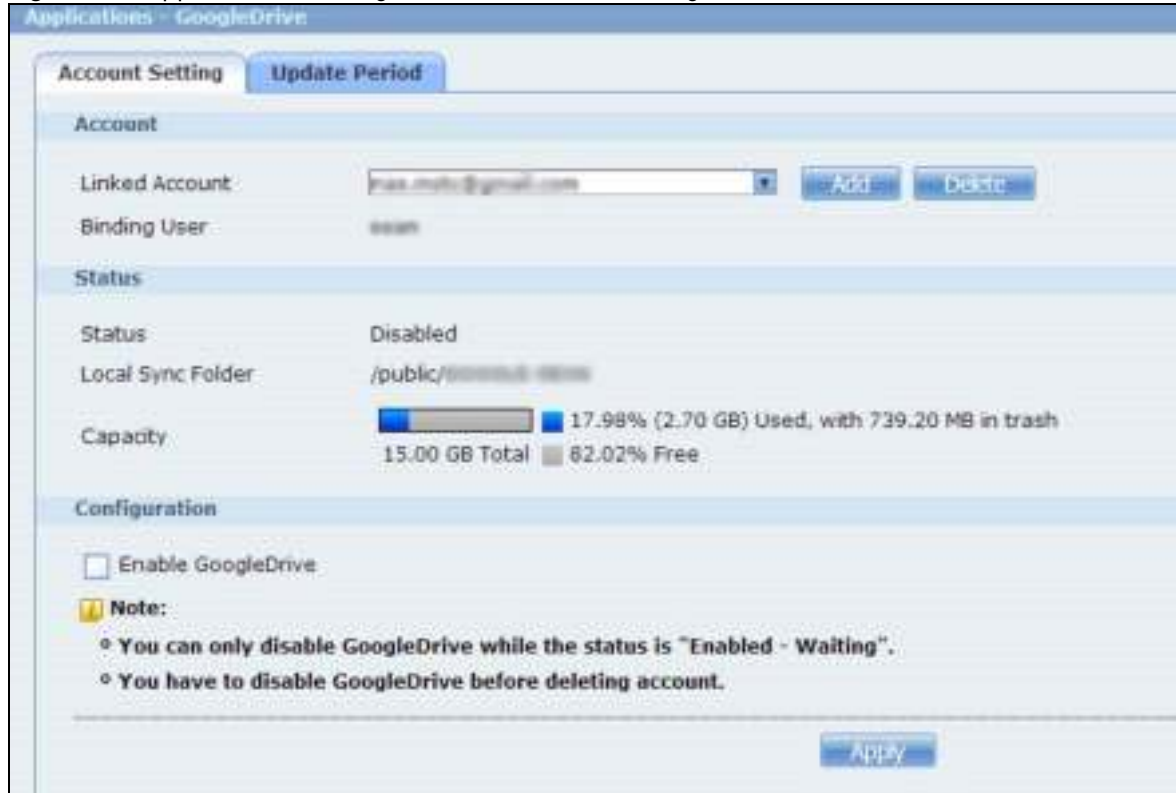
- You can only link each individual Google account to one NAS user account.
- This feature does not currently download Google Documents.

## 10.12.1 Account Setting Screen

Use the **Account Setting** screen to synchronize local NAS shares or folders and Google Drive accounts.


Click **Applications > GoogleDrive** to open the following screen.

**Figure 116** Applications > GoogleDrive > Account Setting



The following table describes the labels in this screen.

**Table 67** Applications > GoogleDrive > Account Setting

LABEL	DESCRIPTION
Linked Account	<p>Select a Google account linked to an NAS user account.</p> <p>Click <b>Add</b> to open a screen where you can link an NAS user account and a Google account.</p> <p>Click <b>Delete</b> to remove the NAS's link to the selected Google account. You must disable the Google Drive feature for the account before you can do this. A screen pops up to let you decide what to do with the data in the NAS's linked local sync folder.</p>  <p>Click <b>Yes</b> to delete all data in the local sync folder. Click <b>No</b> to remove the link to the selected Google account but keep the data in the local sync folder. Click <b>Cancel</b> to do nothing (keep the account link and data).</p>
Binding User	The NAS user account linked to the selected Google account.
Status	<p>The current status of the GoogleDrive feature for the selected Google account.</p> <ul style="list-style-type: none"> <li>• <b>Disabled</b> - The GoogleDrive feature is turned off. During this state you can use the other sections of this screen to add or delete linked accounts or enable Google Drive.</li> <li>• <b>Enabled - Waiting</b> - The GoogleDrive feature is configured, enabled, and waiting to perform the next Google Drive update. During this state you can use the other sections of this screen to add or delete linked accounts or disable Google Drive.</li> <li>• <b>Enabled - Synchronizing</b> - The GoogleDrive feature is synchronizing the local sync folder and the Google account. During this state you can use the other sections of this screen to add linked accounts during this state.</li> </ul>
Local Sync Folder	The NAS folder or share the NAS synchronizes with the linked Google account.
Capacity	The Google account's used, available, and total online Google Drive storage space.
Enable GoogleDrive	<p>Select this to have the NAS periodically synchronize the selected linked account's local sync folder and Google Drive storage. You can enable synchronizing with Google Drive for individual accounts and disable it for other accounts.</p> <p>Clear this option to disable synchronizing the selected linked account's local sync folder and Google Drive storage.</p>
Apply	Click this to save your changes.

## 10.12.2 Account Setting Add Screen

Use the **Account Setting Add** screen to link an NAS user account and a Google account. Click **Applications > GoogleDrive > Add** to open the following screen.

Note: The user has to log into the Google account on the same computer to allow the NAS to link to it.

**Figure 117** Applications > GoogleDrive > Account Setting > Add


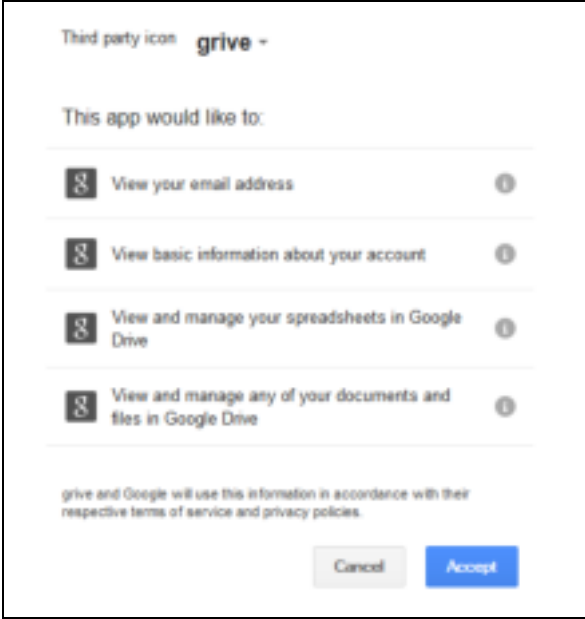


The following table describes the labels in this screen.

**Table 68** Applications > GoogleDrive > Account Setting > Add

LABEL	DESCRIPTION
Step 1	Specify the folder on the NAS to synchronize with Google Drive for the local user.
Share Name	The name of a share on the NAS containing the folder the NAS synchronizes with Google Drive.
Path	The location of the folder the NAS synchronizes with Google Drive.
Edit	<p>Click this to open the following screen where you can specify the share or folder to synchronize with Google Drive. The NAS's sharing configuration must allow the user access. The user must also have a large enough quota on both the NAS and Google Drive to hold whatever files go in the local sync folder and in the Google Drive account (since they both end up containing everything you put in either).</p> <div data-bbox="647 1507 1352 1709" data-label="Image"> </div> <ul style="list-style-type: none"> <li>• <b>Share</b> - Select the share from the list.</li> <li>• <b>Path</b> - Type the folder location in the share or click <b>Browse</b> to navigate to the folder. Use a "/" to synchronize the entire share.</li> </ul>
Step 2	Select the local NAS user account to link with Google Drive.

**Table 68** Applications > GoogleDrive > Account Setting > Add (continued)

LABEL	DESCRIPTION
Step 3	<p>Click the link to get the authorization code from Google. The user must sign into the Google account. You may need to sign out of Google's services first if another user account is already signed in.</p> <div data-bbox="776 369 1219 825" data-label="Image"></div> <p>The NAS GoogleDrive feature uses the Grive app. Review what the Grive app wants to use and click <b>Accept</b> if you agree.</p> <div data-bbox="711 924 1292 1539" data-label="Image"></div> <p>Copy the code and paste it into the field in the Web Configurator screen.</p> <div data-bbox="740 1623 1261 1701" data-label="Code-Block"><pre>Please copy this code, switch to your application and paste it there 1tPW7M8HqGdHVS7G7c_2UqaWUS.0jWb1c2U</pre></div> <p>Click <b>Apply</b> to have the NAS connect to Google and complete the authorization. In the <b>Account Setting</b> screen, select the <b>Enable Google Drive</b> option and click <b>Apply</b> to start synchronizing your files with Google Drive.</p>

**Table 68** Applications > GoogleDrive > Account Setting > Add (continued)

LABEL	DESCRIPTION
Apply	Click this to save your changes and complete the authorization.
Cancel	Click this to return to the previous screen without saving.

### 10.12.3 Update Period Screen

Use the **Update Period** screen to set how often the NAS synchronizes with Google Drive. The NAS initiates the connections, thus you do not have to configure rules on a firewall located in front of the NAS to allow access.

Click **Applications > GoogleDrive > Update Period** to open the following screen.

**Figure 118** Applications > GoogleDrive > Update Period

The following table describes the labels in this screen.

**Table 69** Applications > GoogleDrive > Update Period

LABEL	DESCRIPTION
Update Period	Specify how frequently the NAS synchronizes the local sync folders and the linked Google Drive accounts. The range is 1 to 4320 minutes (3 days).
Apply	Click this to save your changes.

## 10.13 Syslog Server Screen

Use this screen to configure the NAS to accept syslog logs from syslog clients such as ZyXEL's G-4100 v2.

Note: You may need to configure any firewalls between the NAS and the syslog clients in order to let the syslog traffic go to the NAS.




Click **Applications > Syslog Server** to open the following screen.

**Figure 119** Applications > Syslog Server



The following table describes the labels in this screen.

**Table 70** Applications > Syslog Server

LABEL	DESCRIPTION
Enable Syslog Server	Select this to have the NAS accept syslog logs from syslog clients. Clear it to stop the NAS from accepting syslog logs from syslog clients.
Log Location	Click <b>View Files</b> to browse to where you want to store the syslog logs on the NAS.
Shares	Select the share in which to store the syslog logs.
Path	<p>Use this if you want to further specify a folder within the share. This field displays the share folder's path. Type the location of the folder using forward slashes as branch separators or use <b>Browse</b> to find or create a folder on the NAS.</p>  <p>After you click <b>Apply</b> in the <b>Syslog Server</b> screen the NAS creates a folder for the current month's logs. The folder's name uses the year and month in YYYYMM format.</p>
Purge Policy	<p>Select <b>Enable Purge Policy</b> and set a number of months in the <b>Log Deletion Interval</b> field that displays to have the NAS delete the syslog messages after keeping them for the specified period of time.</p> <p>Regardless of how you set the purge policy, to save hard disk space the NAS archives the syslog logs in a .tgz file on the second day of each month and deletes the original folder and syslog files. The NAS creates a new folder for the syslog logs it receives after that. You can use a zip program such as 7-zip to open the archives.</p>

**Table 70** Applications > Syslog Server

LABEL	DESCRIPTION
Log Format	Select the format you want to use for recording the received logs.  The <b>Example</b> item below the drop-down list boxes displays how the selected custom format looks. For example, if you select <b>Full Date</b> , the individual log entries would display with something like 2009 May 13 17:15:51 in front of them.
Apply	Click this to save your changes.
Reset	Click this to restore the screen's last-saved settings.

# Packages

## 11.1 Overview

This chapter describes screens for features you can add to the NAS by installing packages. See [Section 7.5 on page 161](#) for how to manage packages.

## 11.2 What You Can Do

- Use the **NFS** screen ([Section 11.3 on page 228](#)) to configure the Network File System (NFS) settings of your NAS.
- Use the **TFTP Server** screen ([Section 11.4 on page 231](#)) to configure the NAS to accept log files from TFTP clients.
- Use the **pyLoad** screen ([Section 11.5 on page 231](#)) to configure the NAS so you can have it manage your downloads including those from one-click hosting sites.
- Use **ownCloud** ([Section 11.6 on page 232](#)) to store, back up, synchronize, and share files, photos, calendars, and more with computers and mobile devices using an ownCloud client.
- Use **Memopal** ([Section 11.7 on page 235](#)) to back up files on the NAS to your Memopal online backup and storage account.

Access the following applications' configuration screens through the **Package Management** screen. Refer to the applications' own documentation for further information.

- **Gallery** - This web-based application allows your NAS to host pictures. You can upload images in your local computer or shares to this application. Use the administrator account of your NAS to log into the Gallery console. The administrator can then create accounts for other users.
- Use **Logitech® Media Server** ([Section 10.5.2 on page 192](#)) to manage a Logitech Squeezebox device connected to the NAS.
- The **NZBGet** news grabber helps download files from UseNet.
- **PHP-MySQL-phpMyAdmin** can be used to manage MySQL through the web. Enter 'root' as the username and '1234' as the password to log in. This includes MySQL, PHP, and phpMyAdmin.
- **Transmission** - This Bit Torrent client supports adding tasks through torrent files and magnet links.
- **WordPress** - This allows you to create and manage a blog. Use the NAS administrator credentials to log in. The administrator can then create accounts for other users.
- **myZyXELcloud-Agent** - Use this to go to mycloud.zyxel.com to set up a free DDNS hostname for the NAS so you can connect to it easily from the Internet.

## 11.3 NFS Screen

Use this screen to enable and configure Network File System (NFS) settings on your NAS.

NFS is a client/server distributed file service that provides transparent file sharing for network environments. This allows shared folders in your NAS to be accessible like a local folder in a user's computer.

Click **Network > NFS** to open the following screen.

**Figure 120** Network > NFS



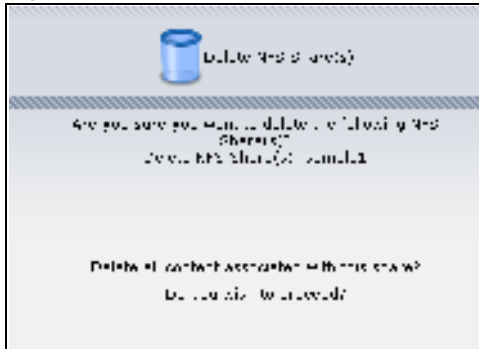
The following table describes the labels in this screen.

**Table 71** Network > NFS

LABEL	DESCRIPTION
NFS Service	
Enable NFS Server	Click this to employ NFS in your NAS.
Disable NFS Server	Click this to stop using NFS. This makes all NFS shares unavailable.
Add NFS Share	Click this to add an NFS share. Refer to <a href="#">Section 11.3.1 on page 229</a> for the <b>Add NFS Share</b> screen.
NFS Session	Click this to view active NFS sessions. You can see the list of users who have access to the NFS shares. Refer to <a href="#">Section 11.3.2 on page 230</a> for the <b>NFS Session</b> screen.
Edit NFS Share	Select an NFS share from the list and click this to edit it. Refer to <a href="#">Section 11.3.1 on page 229</a> for the <b>Edit NFS Share</b> screen.
Delete NFS Share (s)	Select an NFS share from the list and click this to delete it.
The table lists your NFS shares. Click a column's heading to sort the entries by that criteria.	
Status	This shows whether the share is active or not.
NFS Share Path	This shows the location of the share in the NAS.
Volume Name	This shows the volume where the NFS share is located.
DN/IP Filter	This shows which domain name(s) or IP address(es) have read/write access to the NFS shares. Refer to <a href="#">Section 11.3.1 on page 229</a> for the screen where you can configure this.
Comment	This shows a short description of the share.

You see a warning screen before you delete a volume.

**Figure 121** Delete an NFS Share



### 11.3.1 Add/Edit NFS Share

Use this screen to add or edit an NFS share.

Note: Some attributes of the NFS share cannot be edited.

Click **Add** or **Edit** in the **Network > NFS** screen to open the following:

**Figure 122** Network > NFS: Add/Edit

The following table describes the labels in this screen.

**Table 72** Network > NFS: Add/Edit

LABEL	DESCRIPTION
Volume Name	Select the volume where the folder you want to add as an NFS share is located.
NFS Share Name	Enter the name you want to give to the NFS share.
Full Path	This shows the location of the NFS share in the NAS. The NFS server assigns this path to the share folder you input.
Comment	Enter a short description for the share.

**Table 72** Network > NFS: Add/Edit

LABEL	DESCRIPTION
DN/IP Filter	<p>Enter the domain name(s) or IP address(es) that can have access to the NFS share.</p> <p>Enter '*' to make the share available to all users in the network. You can also enter a wildcard, such as '*.domain.com' to indicate that all users within that network have access to the share.</p> <p>Select the access rights you want to grant to each domain name or IP address you enter and click <b>Add</b>.</p> <ul style="list-style-type: none"> <li>• <b>Read Only</b> - Users with this access right can only view and copy files in the NFS share but cannot modify or delete them.</li> <li>• <b>Read/ Write</b> - Users with this access right can view, edit or delete files in the NFS share.</li> </ul>
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 11.3.2 NFS Session

Use this screen to view a list of active NFS sessions. You can see which users are connected the NFS shares.

Click **NFS Session** in the **Network > NFS** screen to open the following.

**Figure 123** Network > NFS: NFS Session

Type	NFS Share Path	Username	Connected At	IP Address
Click OK, then close the session.				

The following table describes the labels in this screen.

**Table 73** Network > NFS: NFS Session

LABEL	DESCRIPTION
Type	This shows if the NFS share is active or not.
NFS Share Path	This shows the location of the share in the NAS.
Username	This shows the username of the active user connected to the NFS share.
Connected At	This displays the date and time the user last connected to the NAS in year, month, day, hour, minute, second format.
IP Address	This shows the IP address of the user accessing the NFS share.
OK	Click this to close the window.

## 11.4 TFTP Server Screen

Trivial File Transfer Protocol (TFTP) is an Internet file transfer protocol similar to FTP and often used for transmitting large numbers of small files. Use this screen to configure the NAS to accept log files from TFTP clients such as ZyXEL's G-4100 v2.

Note: You may need to configure any firewalls between the NAS and the TFTP clients in order to let the log files go to the NAS.


Click **Applications > TFTP Server** to open the following screen.

**Figure 124** Applications > TFTP Server



The following table describes the labels in this screen.

**Table 74** Applications > TFTP Server

LABEL	DESCRIPTION
Enable TFTP Server	Select this to have the NAS accept log files from TFTP clients. Clear it to stop the NAS from accepting log files from TFTP clients.
Upload / Download Directory Setting	Click <b>View Files</b> to browse to where you want to store the log files on the NAS.
Shares	Select the share in which to store the log files.
Path	Use this if you want to further specify a folder within the share. This field displays the share folder's path. Type the location of the folder using forward slashes as branch separators or use <b>Browse</b> to find or create a folder on the NAS. 
Apply	Click this to save your changes.
Reset	Click this to restore the screen's last-saved settings.

## 11.5 pyLoad Screen

Use this screen to configure the NAS so you can use pyLoad to manage your downloads, including those from one-click hosting sites.

Click **Applications > pyLoad** to open the following screen.

**Figure 125** Applications > pyLoad

The following table describes the labels in this screen.

**Table 75** Applications > pyLoad

LABEL	DESCRIPTION
Enable pyLoad	Select this to have the NAS manage your downloads. Clear it to turn the feature off.
Management Page	This is the IP address and port number of the NAS's pyLoad management login screen. The pyLoad management login screen uses the NAS's IPv4 address and the port number you configure. Click this link to go to it.
Username	Only the admin account can log into the pyLoad management screen.
Password	You can configure a separate password for using the admin account to access the NAS's pyLoad management screen.
Password (Confirm)	Type the same password again to make sure you entered it correctly.
Port Number	Set the pyLoad management page's port number. The range of valid port numbers is 1024~65536. Include this port number after the IP address when manually entering the pyLoad management login page's address in your browser's address bar. For example, 192.168.1.2:7272.
Apply	Click this to save your changes.
Reset	Click this to restore the screen's last-saved settings.

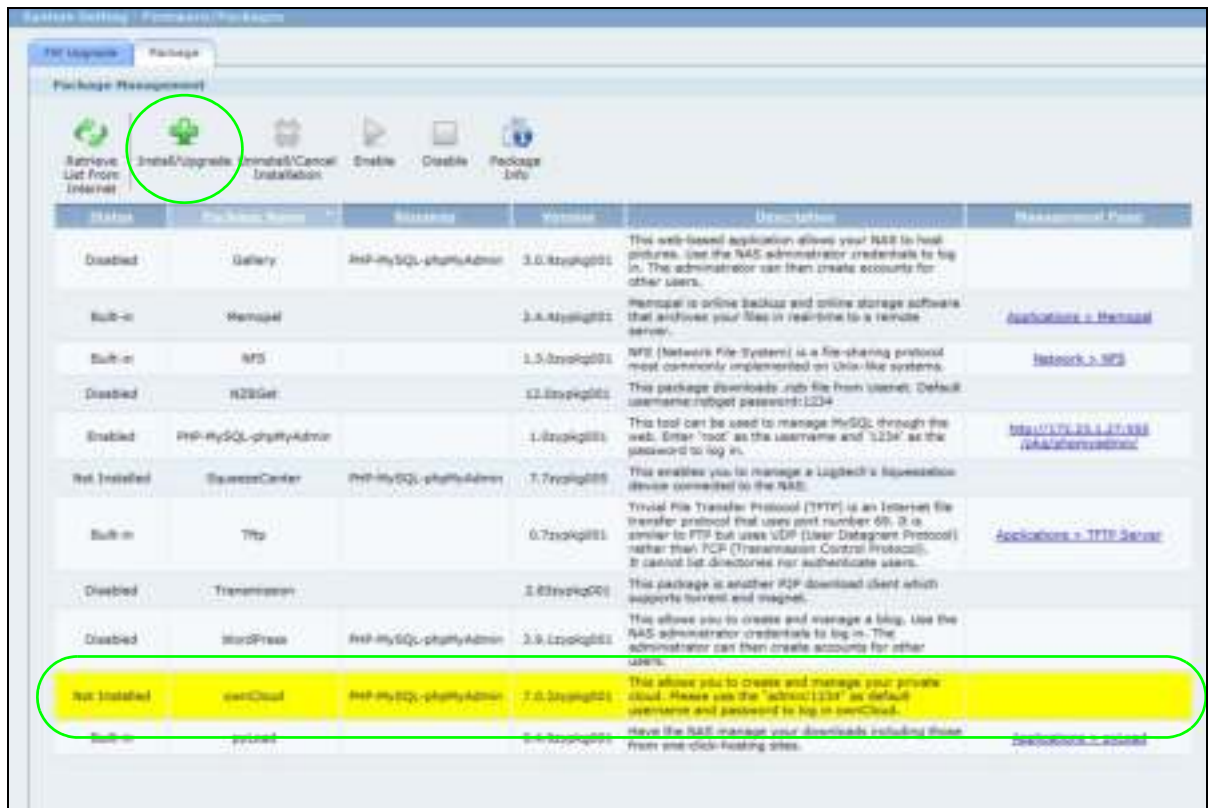
## 11.6 ownCloud Setup

Use the **Package Management** screen to install the ownCloud package. Use ownCloud to store, back up, synchronize, and share files, photos, calendars, and more with computers and mobile devices. Use the following procedure to install the ownCloud package.

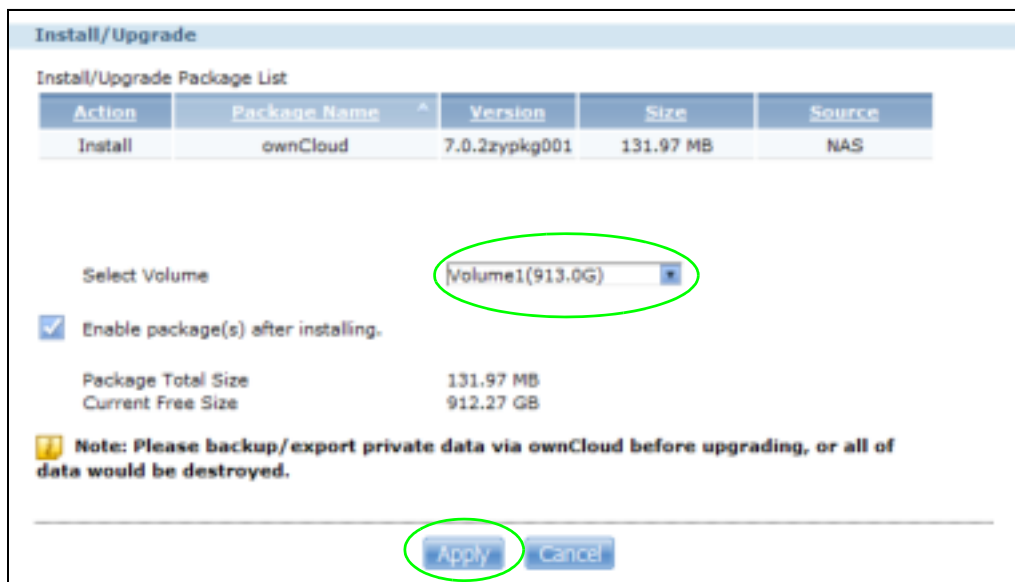
- 1 Click **Firmware/ Packages > Package** and select **ownCloud**. Then click the **Install/ Upgrade** icon.



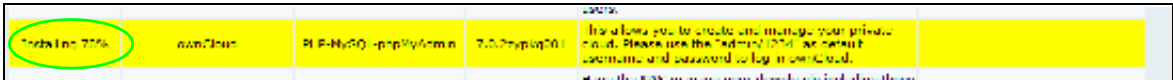
Note: If ownCloud does not appear, click the **Retrieve List from Internet** icon to update the list.



- The following confirmation screen appears. Select the volume in which to install ownCloud and store ownCloud data and click **Apply**. The NAS must have a connection to the Internet to download the package.



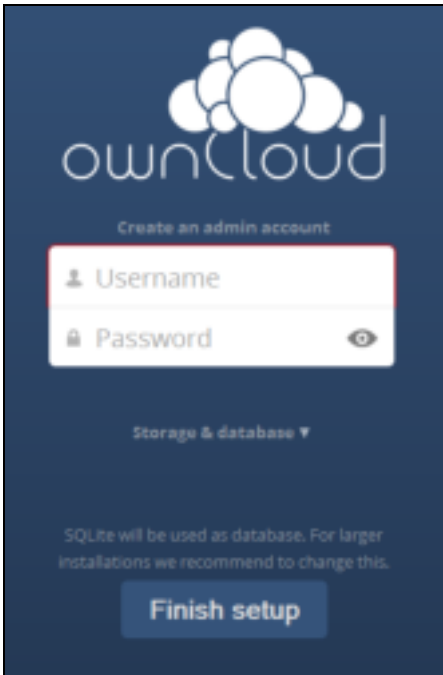
- The installation progress appears in the ownCloud row.



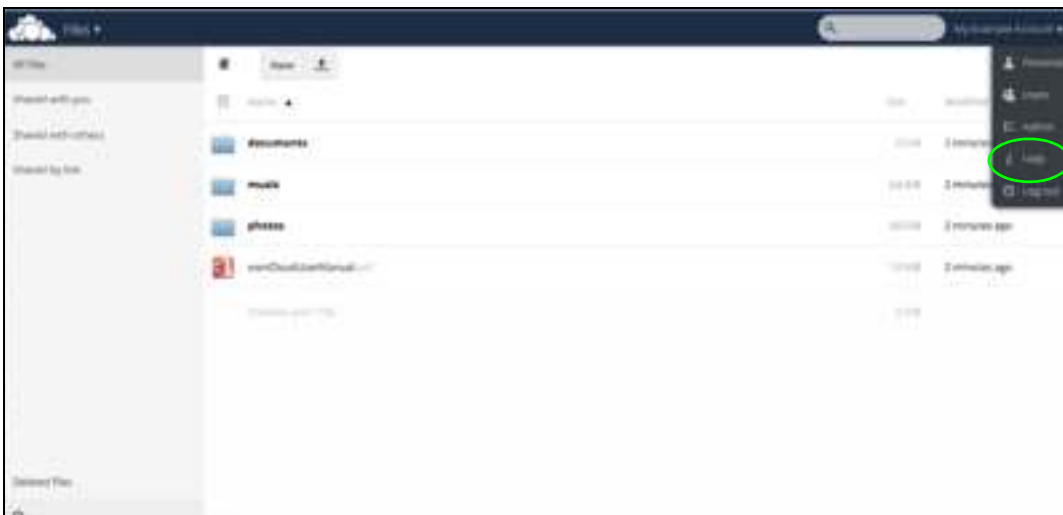
- A link appears in the **Management Page** column after installation finishes. Click this link.



- The ownCloud login screen appears. Create an administrator user name and password and click **Finish Setup**.



- The main ownCloud screen displays. Use this web interface to manage files on the NAS ownCloud server. Click your user name in the upper-right corner to see the help for more information on using ownCloud.



Note: Get ownCloud desktop clients from [owncloud.org](http://owncloud.org) and ownCloud mobile apps from Google Play or the Apple App Store.

## 11.7 Memopal

Install the **Memopal** package to back up folders of files on the NAS to your Memopal online backup and storage account.

Note: Deleting files from your Memopal account's online backup set does not delete the files from the NAS, just as deleting a file from the NAS does not delete a backup copy in your Memopal account's online backup set.

Deleting a file or a folder from your Memopal account's online backup set deletes all versions of that file from the online backup set.

Click **Applications > Memopal** to open the following screen.

**Figure 126** Applications > Memopal



The following table describes the labels in this screen.

**Table 76** Applications > Memopal

LABEL	DESCRIPTION
Status	<p>This shows the status of the Memopal application's interaction with the Memopal server.</p> <p><b>Disabled:</b> The NAS Memopal application is turned off.</p> <p><b>Starting:</b> The backup job is initializing and the NAS is getting ready to back up.</p> <p><b>Running:</b> The backup job is executing.</p> <p><b>Stopped:</b> The backup job is stopped. This may be due to a network error, remote server error, or other issue.</p> <p><b>Completed:</b> The backup job finished.</p>
To Backup	The number of files remaining to back up.
Backed up	The number of files backed up already.
Failures	The number of files the NAS failed to back up to the Memopal server.
Upload Speed	This is how fast in Bytes per second the NAS is backing up to the Memopal server.
Progress	This shows the percentage of the files already backed up from the total files to be backed up.
Restart Backup	Re-scan all files and perform a backup.
Retry Failures	Only re-scan and back up files the NAS failed to back up.
Backup Report	Display back up record details.
Enable Memopal	Select this to back up files to your Memopal account. The rest of the configuration fields display.
Email	Enter the email address you use for your Memopal account.
Password	Enter the password for your Memopal account.
Limit File Size	Select this and enter a number of MegaBytes if you want to restrict the size of files the NAS uploads to the Memopal account. You have to enter your password again if you select this.
Enable Schedule	Select this to set when the Memopal backups occur. You have to enter your password again if you select this. Clear this to have the NAS back up files in the selected folders to your Memopal account in real-time whenever you add or modify the files.
Weekly	Select this to perform a Memopal backup on a weekly basis. The NAS performs the backup job every Sunday at 2:00 AM and continues until the job finishes.
Daily	Select this to perform a Memopal backup every day. The NAS performs the backup job every day at 2:00 AM. Use <b>hours</b> to specify for up to how many hours the NAS can perform a Memopal backup. Enter 0 in <b>hours</b> to have the NAS continue the backup job until it finishes (no time limit).
Hourly	Select this to perform a Memopal backup every hour. Use <b>minutes</b> to specify for up to how many minutes the NAS can perform a Memopal backup. Enter 0 in <b>minutes</b> to have the NAS continue the backup job until it finishes (no time limit).
Share Name	This is the name of the share containing a folder the NAS Memopal application backs up to the Memopal server.
Path	This field displays the share folder's path.
Actions	Click the <b>Delete</b> icon to remove the folder from the list of folders the NAS Memopal application backs up to the Memopal server.
Share	Select the share containing the folder to back up to the Memopal server.

**Table 76** Applications > Memopal (continued)

LABEL	DESCRIPTION
Path	Identify the folder to back up to the Memopal server.  Use <b>Browse</b> to find or create a folder on the NAS or type the location of the folder using forward slashes as branch separators.  Click <b>Add</b> to add the folder to the list of folders the NAS Memopal application backs up to the Memopal server.
Apply	Click this to save your changes.
Reset	Click this to restore the screen's last-saved settings.

# Auto Upload

## 12.1 Overview

This chapter discusses the features in the **Auto Upload** screens.

The auto upload feature uploads media files stored in the NAS to the Flickr and/or YouTube sharing websites. Besides web publishing and media server, auto upload is another convenient way to share media files with your friends and family. You can link the NAS to your Flickr and/or YouTube account and select shares for the NAS to upload. The NAS uploads the media files stored in the specified shares to your Flickr and/or YouTube account. When you add new files to the specified shares, the NAS also automatically uploads the new files to your Flickr and/or YouTube account.

## 12.2 What You Can Do

- Use the **Flickr/ YouTube** screen ([Section 12.4 on page 239](#)) to upload photos and videos to your Flickr and YouTube accounts.
- Use the **FTP Uploadr** screen ([Section 12.5 on page 248](#)) to upload files to FTP servers.

## 12.3 What You Need to Know

### FTP

File Transfer Protocol (FTP) is a file transfer service that operates on the Internet. A system running the FTP server accepts commands from a system running an FTP client. FTP is not a secure protocol. Your file transfers could be subject to snooping.

### FTPES (File Transfer Protocol over Explicit TLS/SSL)

File Transfer Protocol over Explicit TLS/SSL (FTPES) is a file transfer service that uses TLS (Transport Layer Security) or Secure Socket Layer (SSL) for secure transfers across the Internet.

## 12.4 Flickr/YouTube Screen

Use this screen to upload photos and videos to your Flickr and YouTube accounts.

Click **Applications > Auto Upload > Flickr/ YouTube** to open the following screen.

**Figure 127** Applications > Auto Upload > Flickr/YouTube



The following table describes the labels in this screen.

**Table 77** Applications > Auto Upload > Flickr/YouTube

LABEL	DESCRIPTION
Flickr/YouTube	
Disable/Enable	Select a service from the list and click this to turn the service on or off. If you disable the service and add more files to the watch folder(s), the NAS will not auto upload these files. However, the NAS still uploads any files added before you turned off the service.
Pause/Resume	Select a service from the list and click this to pause or resume the auto upload feature.
Config	Select a service from the list and click this to manage the service's settings.
Status	This field displays the service's status. The service may be <b>Enabled</b> , <b>Disabled</b> , <b>Uploading</b> or <b>Paused</b> .
Service Name	This field displays the name of a sharing website to which the NAS can automatically upload files.
Account Information	This field displays the username and related information of the account to use with the auto upload feature.

## 12.4.1 Configuring the Flickr Settings

In the **Applications > Auto Upload > Flickr/ YouTube** screen, select **Flickr** from the list and then click the **Config** button.

The following screen displays if you have not authorized the NAS to use a Flickr account. Click **OK** to continue the authorization process.

**Figure 128** Linking NAS to Flickr





The web browser opens the Yahoo! Flickr login page. Enter your Yahoo account's information and click **Sign In**.

**Figure 129** Yahoo! Flickr Login Page

YAHOO! flickr

Welcome to Yahoo!

**Enjoy all the benefits of Yahoo! Flickr.**

- **Access** all your digital images in one place.
- **Show off** your favorite photos to the world.
- **Share photos** with your friends and family - it's easy!

**Get all the best with one Yahoo! ID.**

Your Yahoo! ID gives you access to powerful communications tools like mail and instant messaging, security features like email AntiVirus and Pop-Up Blocker, and favorites like online photos and music — **all for free.**

**Sign in to Yahoo!**

**Are you protected?**  
Create your sign-in seal.  
(Why?)

Yahoo! ID  
  
 (e.g. foo2bar@yahoo.com)

Password

**Keep me signed in**  
for 2 weeks unless I sign out. info  
(Uncheck it on a shared computer)

**Sign In**

[Forgot your ID or password? | Help](#)

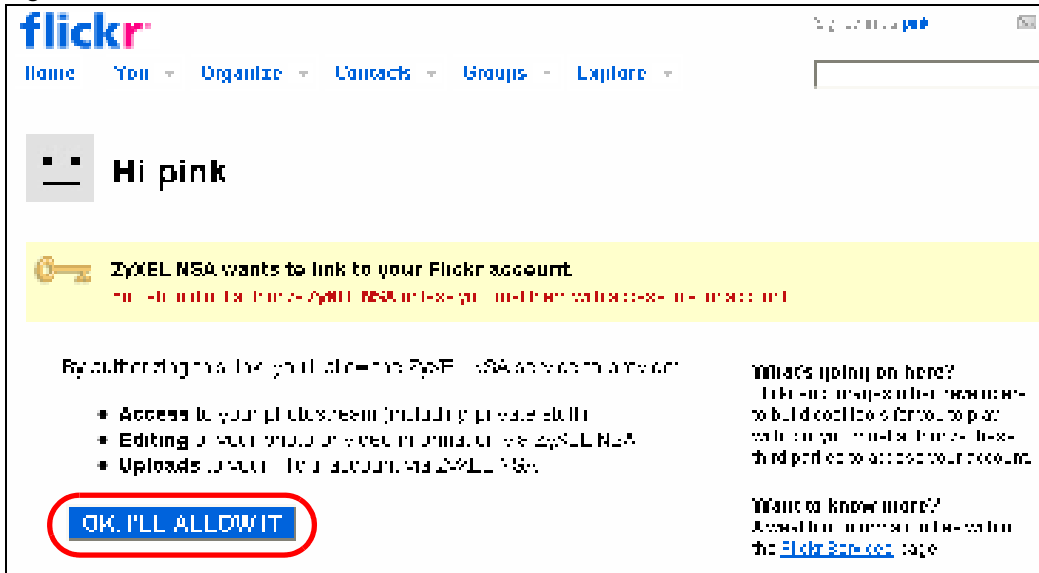
**Don't have a Yahoo! ID?**  
Signing up is easy.

[Sign Up](#)

Copyright © 2006 Yahoo! Inc. All rights reserved. CopyrightMP Photos | Terms of Service | Guide to Online Security  
 NOTICE: We collect personal information on this site.  
 To learn more about how we use your information, see our Privacy Policy

The following page displays asking for your authorization. Click **OK, I'LL ALLOW IT** to establish a link between the NAS and your Flickr account.

**Figure 130** Flickr Authorization



A confirmation page displays indicating successful authorization. Return to the NAS web configurator. Click **Get Ready** in the following screen to complete the authorization process.

**Figure 131** Confirming Flickr Authorization



Once the NAS is associated with your Flickr account, you can configure auto upload settings in the following screen.

**Figure 132** Applications > Auto Upload > Flickr/YouTube > Config (Flickr)

Applications > Auto Upload > Flickr/YouTube

### Flickr Account Configuration

Username: stopitswine

Photo Space Usage:  0% (0.00 Bytes) Used  
 102.40 MB Total  100.00% Free

Video Files Usage: Uploaded: 0, Remain: 2 Switch User

### Folder Selection

#### Folder Watch List

Static	Share Name	Path	Action
	photo	/	

Add

**Note:**  
 Only the following file formats will be automatically uploaded: bmp, gif, jpeg, jpg, png, tiff, tiff, 3gp, 3g2, avi, mov, mpeg, mpg, wmv, mp4

### Grace Period

The time the system will wait before a newly added media file is saved in a watched folder.  
 Grace Period:  minutes

### Default Privacy

Who can see your media files on Flickr?

Only You  
 Your friends  
 Your family  
 Anyone  
 Hide from public site area?

### Default Safety Level

Safe  
 Moderate  
 Restricted

**Note:**  
 Video on Flickr may only include "Safe" or "Moderate" content.  
 "Restricted" video content is not allowed on Flickr and will be removed.




### Default Content Type

Photos / Videos  
 Screenshots / Screencasts  
 Illustration / Art / Animation / CGI

Apply Cancel

The following table describes the labels in this screen.

**Table 78** Applications > Auto Upload > Flickr/YouTube > Config (Flickr)

LABEL	DESCRIPTION
Flickr Account Configuration	
Username	This field displays the Flickr account authorized for the auto upload feature.
Photo Space Usage	This shows how much storage space for photos (in size and percentage) you have used and how much space is still available on your Flickr account.
Video Files Usage	This shows how many videos you have uploaded and how many videos you can still upload to your Flickr account.
Switch User	Click this to use a different Flickr account for the auto upload feature.
Folder Selection	
Folder Watch List	This table displays a list of shares and folders selected for auto upload. Files stored in these locations are uploaded to your Flickr account.
Status	<p>This indicates whether the folder or share is available.</p> <p> represents a valid folder. The folder is available for auto upload.</p> <p> represents a missing folder. The share may be deleted from the NAS, or the hard disk was removed from the NAS.</p>
Share Name	This is the share selected for auto upload.
Path	This is the path of a folder selected for auto upload. The NAS only uploads files stored in the specified share or folder to your Flickr account.
Action	Use the <b>Remove</b> icon to remove a folder from the <b>Folder Watch List</b> .
Add	<p>Click this to open the following screen where you can set a folder that contains files you want the NAS to automatically upload.</p> <div data-bbox="764 1035 1240 1224" data-label="Image"> </div> <ul style="list-style-type: none"> <li>• <b>Share</b> - Select the share from the list.</li> <li>• <b>Path</b> - Type the folder location in the share directly or click <b>Browse</b> to open the following screen and navigate to the folder's location.</li> </ul> <div data-bbox="563 1325 1373 1577" data-label="Image"> </div> <ul style="list-style-type: none"> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Folder Name</b> - Enter a new folder name and click  to create it.</li> <li>• <b>Type</b> - This is the type of the folder/file.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the <b>Path</b> field. All contents within the specified share are automatically selected.</p> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Grace Period	

**Table 78** Applications > Auto Upload > Flickr/YouTube > Config (Flickr) (continued)

LABEL	DESCRIPTION
Grace Period N minutes	Specify how long the NAS should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NAS uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Default Privacy	
Who can see your media files on Flickr?	Determine who has the right to see files uploaded to your Flickr account. Select <b>Only You</b> if you do not want anyone else to see your files. You may also restrict the access to <b>Your friends</b> and/or <b>Your family</b> . You can set up a friend/family list in your Flickr account. Select <b>Anyone</b> to allow everyone to see your files.
Hide from public site area	Check this option to prevent others from finding your files when they perform a search in the Flickr website.
Default Safety Level	Assign a safety level to your files. Select <b>Safe</b> if the contents of your files are suitable for the general public. Select <b>Moderate</b> if the contents of your files may be offensive to some people. Select <b>Restricted</b> if the contents of your files are not suitable for certain people, such as children or your colleagues.
Default Content Type	Select a content type for your files. You can choose <b>Photo/ Video, Screenshots/ Screencasts, or Illustration/ Art/ Animation/ CGI</b> .
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

## 12.4.2 Configuring the YouTube Settings

In the **Applications > Auto Upload > Flickr/ YouTube** screen, select YouTube from the list and then click the **Config** button.

Note: Your YouTube account must be associated with a Google account.

Get a Google account and use it to log into YouTube. You can then merge the existing YouTube account to your Google account.

If you have not authorized a YouTube account on the NAS, the following screen displays. Enter your Google account's e-mail address and password in the fields and click **OK** to authorize the service.

**Figure 133** YouTube Account Settings

The screenshot shows a dialog box titled "YouTube Account Settings". It contains two input fields: "Email" and "Password", each with a small asterisk to its right. Below the fields is a "Note" section with a yellow warning icon. The note text reads: "To use this feature you must use a Google account that is linked to your YouTube account. Please create a Google account if you do not have one. Login to YouTube using your Google account and then link your existing YouTube account or create a new YouTube account." At the bottom of the dialog are two buttons: "OK" and "Cancel".

Once the NAS is associated with your YouTube account, you can configure auto upload settings in the following screen.

**Figure 134** Applications > Auto Upload > Flickr/YouTube > Config (YouTube)

Applications > Auto Upload > Flickr/YouTube

### YouTube Account Configuration

Username

### Folder Selection

#### Folder Watch List

Status	Share Name	Path	Action
	public	/C&D Top 10 Podcast	

**Note:**

- Only the following file formats will be automatically uploaded: 3gp, asf, asx, avi, dif, dl, dv, flv, gl, mov, movie, m4v, mp4, mpe, mpeg, mpg, ogv, qt, wm, wmv, wmx, wvx
- YouTube limits the file size allowed for an uploaded video. Files exceeding the file size limit may not be uploaded successfully.

### Grace Period

The time the system will wait before a newly added media file is saved in a watched folder.

Grace Period  minutes

### Video Category

Please select a category.

Film & Animation       Autos & Vehicles  
 Music                       Pets & Animals  
 Sports                       Travel & Events  
 Comedy                     People & Blogs  
 News & Politics           Entertainment  
 Education                 Hoots & Style  
 Nonprofits & Activism    Science & Technology

### Default Privacy

Who can see your media files on YouTube?






Only You  
 Anyone

The following table describes the labels in this screen.

**Table 79** Applications > Auto Upload > Config (YouTube)

LABEL	DESCRIPTION
YouTube Account Configuration	
Username	This field displays the Youtube account authorized for the auto upload feature.

**Table 79** Applications > Auto Upload > Config (YouTube) (continued)

LABEL	DESCRIPTION
Switch User	Click this to use a different YouTube account for the auto upload feature.
Folder Selection	
Folder Watch List	This table displays a list of shares and folders selected for auto upload. Files stored in these locations are uploaded to your YouTube account.
Status	<p>This field indicates whether the share or folder is available.</p> <p> represents a valid folder. The folder is available for auto upload.</p> <p> represents a missing folder. The share may be deleted from the NAS, or the hard disk was removed from the NAS.</p>
Share Name	This field displays the share selected for auto upload.
Path	This field displays the path of a folder selected for auto upload. The NAS only uploads the files stored in the specified share or folder to your YouTube account.
Action	Use the <b>Remove</b> icon to delete a folder from the <b>Folder Watch List</b> .
Add	<p>Click this to open the following screen where you can set a folder that contains files you want the NAS to automatically upload.</p>  <ul style="list-style-type: none"> <li>• <b>Share</b> - Select the share from the list.</li> <li>• <b>Path</b> - Type the folder location in the share directly or click <b>Browse</b> to open the following screen and navigate to the folder's location.</li> </ul>  <ul style="list-style-type: none"> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Folder Name</b> - Enter a new folder name and click  to create it.</li> <li>• <b>Type</b> - This is the type of the folder/file.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the <b>Path</b> field. All contents within the specified share are automatically selected.</p> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Grace Period	
Grace Period N minutes	Specify how long the NAS should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NAS uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Video Category	Select the category that best describes the media files you want to upload.
Default Privacy	

**Table 79** Applications > Auto Upload > Config (YouTube) (continued)

LABEL	DESCRIPTION
Who can see your media files on YouTube?	Determine who has the right to see files uploaded to your YouTube account. Select <b>Only You</b> if you do not want anyone else to see your files. Select <b>Anyone</b> to allow everyone to see your files.
Apply	Click this to save your changes.
Reset	Click this to restore your previously stored settings.

## 12.5 FTP Uploadr Screen

The FTP Uploadr feature uploads files stored in the NAS to FTP servers. Besides web publishing and media server, auto upload is another convenient way to share media files with your friends and family. You can link the NAS to the FTP server or the FTP server on another NAS and select shares or folders for the NAS to upload. The NAS uploads the files stored in the specified shares to the FTP server. When you add new files to the specified shares, the NAS also automatically uploads the new files to the FTP server.

Use this screen to configure the FTP Uploadr.

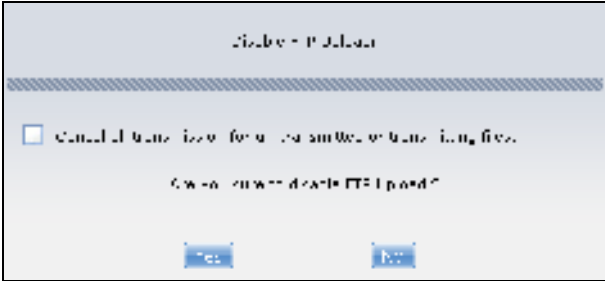

Click **Applications > Auto Upload > FTP Uploadr** to open the screen shown next.

**Figure 135** Applications > Auto Upload > FTP Uploadr



The following table describes the labels in this screen.

**Table 80** Applications > Auto Upload > FTP Uploadr

LABEL	DESCRIPTION
Enable FTP Uploadr	<p>Use the check box to enable or disable the FTP Uploadr. Click <b>Apply</b> to save your changes.</p> <p>When you disable the FTP Uploadr, a screen opens requesting confirmation. Select the check box to stop any current or queued uploads. If you do not select the check box, the FTP Uploadr will finish uploading the files that are already in the queue list. Clicking <b>Yes</b> will disable the FTP Uploadr.</p> 
Add Server	Click this to add a target FTP server entry. See <a href="#">Section 12.5.1 on page 249</a> for more details.
Preferences	Click this to manage the settings of the FTP Uploadr.
Edit Server	Select a server from the list and click this to edit the FTP server entry.
Delete Selected Server(s)	<p>Select a server from the list and click this to remove the FTP server entry.</p> 
Server Information	Select a server from the list and click this to display the status and settings about the FTP server.
Domain Name/IP Address	This is the domain name or IP address of the FTP server.
Port Number	This is the port number used by the FTP server.
Remote Path	The NAS automatically uploads files to this location of the FTP server.
Account Name	This is the login account for the FTP server.
Description	This is the information related to the FTP server.

## 12.5.1 Adding or Editing an FTP Server Entry

Use this screen to add or edit an FTP server entry for auto upload.

In the **FTP Uploadr** screen, click the **Add Server** or **Edit Server** button to open the following screen.

**Figure 136** Applications > Auto Upload > FTP Uploadr > Add or Edit a Server

The following table describes the labels in this screen.

**Table 81** Applications > Auto Upload > FTP Uploadr > Add or Edit a Server

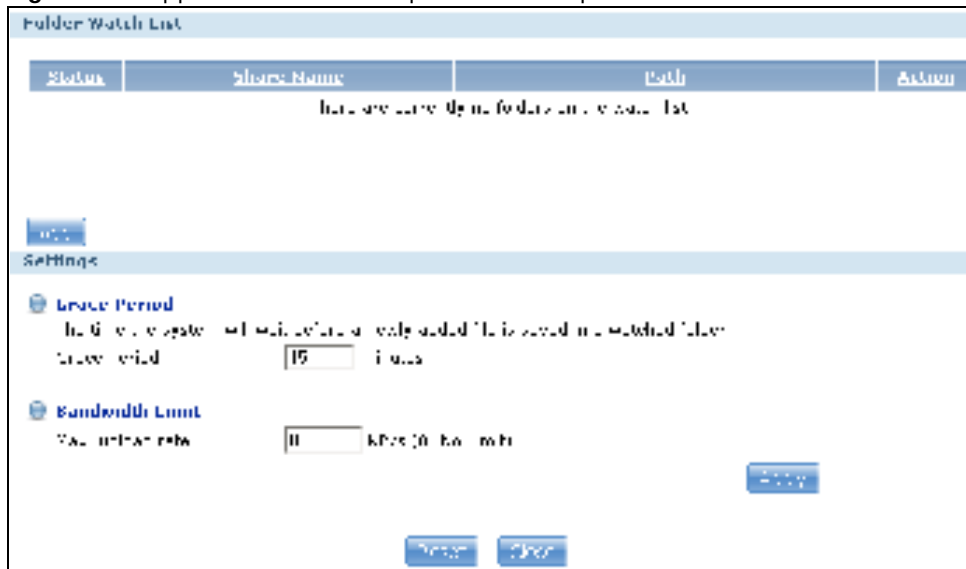
LABEL	DESCRIPTION
Domain Name/IP Address	Enter the domain name or IP address of the FTP server.
Account Name	Enter the account name used to access the FTP server.
Password	Enter the password associated with the account name.
Port Number	Enter the port number for the FTP server.
Remote Path	Enter the path of the FTP server where the NAS automatically uploads files.
Description	Enter additional information about this FTP server.
Test Connection	Click this to test your settings and check whether you can use the settings to connect to the FTP server.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 12.5.2 FTP Uploadr Preferences Screen

Use this screen to configure the general settings for the FTP Uploadr.



In the **FTP Uploadr** screen, click the **Preferences** icon to open the following screen.

**Figure 137** Applications > Auto Upload > FTP Uploadr > Preferences






The following table describes the labels in this screen.

**Table 82** Applications > Auto Upload > FTP Uploadr > Preferences

LABEL	DESCRIPTION
Folder Watch List	
Status	This field indicates whether the share or folder is available.  represents a valid folder. The folder is available for auto upload.  represents a missing folder. The share may be deleted from the NAS, or the hard disk was removed from the NAS.
Share Name	This is the share selected for auto upload.
Path	This is the path of a folder selected for auto upload. The NAS only uploads files stored in the specified share or folder to your FTP server.
Action	Use the <b>Remove</b> icon to delete a folder from the <b>Folder Watch List</b> .

**Table 82** Applications > Auto Upload > FTP Uploadr > Preferences (continued)

LABEL	DESCRIPTION
Add	<p>Click this to open the following screen where you can set a folder that contains files you want the NAS to automatically upload.</p>  <ul style="list-style-type: none"> <li>• <b>Share</b> - Select the share from the list.</li> <li>• <b>Path</b> - Type the folder location in the share directly or click <b>Browse</b> to open the following screen and navigate to the folder's location.</li> </ul>  <ul style="list-style-type: none"> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Folder Name</b> - Enter a new folder name and click  to create it.</li> <li>• <b>Type</b> - This is the type of the folder/file.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the <b>Path</b> field. All contents within the specified share are automatically selected.</p> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Settings	
Grace Period	Specify how long the NAS should wait when you add a new file for auto upload. For example, if you set the grace period to 5 minutes, the NAS uploads a new file after it has been in a watched folder for 5 minutes. You can choose from a range of 1 to 10080 minutes (up to one week).
Bandwidth Limit	<p>Enter the maximum upload rate for auto upload. You can choose from a range of 0 to 100,000 KB/s. Enter 0 if you do not want to set any limit.</p> <p>Use this to leave bandwidth on your network connection for other traffic, especially if your Internet connection has restricted upload speed.</p>
Apply	Click this to save your changes in this section.
Reset	Click this to restore previously saved settings.
Close	Click this to return to the previous screen without saving.

## 13.1 Overview

The Dropbox Web-based file hosting service uses cloud computing to let you use file synchronization to store and share files and folders with others across the Internet. Use your Dropbox account to easily move files to your NAS and have the NAS download \*.torrent files.

## 13.2 Dropbox Screen

Use the **Dropbox** screen to log the NAS into your Dropbox account. This creates Drop2NAS and zDownload folders in your Dropbox account. See [Section 13.3 on page 255](#) for how to use the folders to move files to your NAS and have the NAS download \*.torrent files. The NAS checks the Dropbox account's Drop2NAS and zDownload folders every three minutes.

Click **Applications > Dropbox** to open the following screen.

**Figure 138** Applications > Dropbox






The following table describes the labels in this screen.

**Table 83** Applications > Dropbox

LABEL	DESCRIPTION
Status	<p>This shows the status of the NAS Dropbox application's interaction with the Dropbox server.</p> <p><b>Disable:</b> The NAS Dropbox application is turned off.</p> <p><b>Ready:</b> The NAS Dropbox application has authenticated with the Dropbox server and is ready to use.</p> <p><b>Authenticating with Dropbox. Please wait.:</b> The NAS Dropbox application is logging into the Dropbox server.</p> <p><b>Failed to negotiate link with Dropbox. Please contact your vendor.:</b> The NAS cannot find the Dropbox server at the normal address.</p> <p><b>Receiving file/ folder from Dropbox tunnel.:</b> The NAS is getting a file from your Dropbox account.</p> <p><b>Dropbox account has been already used on other NAS.:</b> One Dropbox account can only work with one NAS at a time. Log the other NAS out of your Dropbox account to be able to use the account with this NAS.</p>
Name	This is the owner of the Dropbox account the NAS is configured to use.
Email	This is the e-mail address of the owner of the Dropbox account the NAS is configured to use.
Logout	<p>This displays after the NAS connects to Dropbox. Click <b>Logout</b> to stop syncing your files with Dropbox and have the NAS log out from your Dropbox account. Use this to be able to use the NAS with another Dropbox account. If you only want to stop syncing your files with Dropbox, you can just clear the <b>Enable Dropbox</b> option and click <b>Apply</b>.</p>
Capacity	This shows how much total storage space is available on the NAS to use for Dropbox as well as the amounts already in use and still available.

**Table 83** Applications > Dropbox (continued)

LABEL	DESCRIPTION
Enable Dropbox	<p>Select this to synchronize and back up your Dropbox account. The first time you do this a Dropbox screen prompts you to log into your Dropbox account.</p>  <p>Then a NAS pop-up opens. Click <b>Get Ready</b>.</p>  <p>Click <b>Allow</b> when the Dropbox screen notifies you of the NAS's DropNAS application trying to connect to your Dropbox account.</p>  <p>After the NAS connects to Dropbox, clear the <b>Enable Dropbox</b> option and click <b>Apply</b> to stop syncing your files with Dropbox without logging out from your Dropbox account. Click <b>Logout</b> instead to be able to use the NAS with another Dropbox account.</p>
Apply	Click this to save your changes.

## 13.3 How to Use Dropbox with the NAS

Here is how to use the Drop2NAS and zDownload folders the NAS creates in your Dropbox account.

### Using the Drop2NAS Folder

The NAS connects to Dropbox and copies files in the Drop2NAS folder to the NAS's admin\Dropbox\FromDropbox folder and empties the Drop2NAS folder. The NAS initiates connections to the Dropbox server so you do not need to configure rules on a firewall in front of the NAS to allow access to the NAS. Dropbox is not connecting to the NAS. When you upload files of the same name to the Drop2NAS folder, the NAS adds a number to the names of the files in the NAS's

admin\Dropbox\FromDropbox folder in the format of “filename(n).extension”. Here is an example of the Drop2NAS folder.

Note: Do not delete the NAS token file as it is needed for your NAS to work with the Dropbox account.

**Figure 139** Dropbox\Drop2NAS



## Using the zDownload Folder

The NAS copies \*.torrent files in the zDownload folder to the NAS's admin\download\torrents folder and automatically starts downloading them. The NAS adds a suffix to the name of each torrent file in the Dropbox account's zDownload folder and keeps updating it to show the job's state (downloading, queued, paused, canceled, uploading, finished, error, or retrying). The NAS does not take any action for folders nor other types of files in the zDownload folder. Here is an example of torrent files in the zDownload folder.

**Figure 140** Dropbox\zDownload

 A screenshot of a Windows Explorer window showing the contents of the Dropbox\zDownload folder. The window title is "Dropbox\zDownload". The folder contains a list of files with columns for Name, Size, Type, and Modified Date.
 

名稱	大小	類型	修改日期
Readme_zDownload.pdf	3 KB	Adobe Ac...	2011/08/05 10:52
test_Torrent(3).torrent downloading	220 KB	DOWNLO..	2009/04/24 17:48
test_Torrent(5).torrent downloading	64 KB	DOWNLO..	2009/04/24 17:45
test_Torrent(7).torrent downloading	56 KB	DOWNLO..	2009/04/24 17:47
test_Torrent torrent downloading	221 KB	DOWNLO..	2009/04/23 17:00
test_Torrent(5).torrent error	14 KB	ERROR ...	2009/04/23 16:59
test_Torrent(2).torrent queue	28 KB	QUEUE ...	2009/04/23 16:58
test_Torrent(4).torrent uploading	14 KB	UPLOADE..	2009/04/23 16:59



# Using Time Machine with the NAS

## 14.1 Overview

Time Machine is a backup system provided by Mac OS X. It automatically backs up everything on your Mac, including pictures, music, videos, documents, applications, and settings. This chapter helps you to enable Time Machine in OS X to use your NAS as a backup volume.

## 14.2 Time Machine Screen

Use the **Time Machine** screen to turn Time Machine support on or off, and designate the share for Time Machine backups.

Click **Applications > Time Machine** to open the following screen.

**Figure 141** Applications > Time Machine



The following table describes the labels in this screen.

**Table 84** Applications > Time Machine

LABEL	DESCRIPTION
Enable Time Machine	Select this to allow Macs to use Time Machine to back up to the NAS. Clear it to turn off Time Machine support.
Share	Select the share the NAS uses to store Time Machine backups.
Apply	Click this to save your changes.
Reset	Click this to restore the screen's last-saved settings.

## 14.3 Using Time Machine

After enabling Time Machine on the NSA, follow the steps below to set up Time Machine on your Mac to use your NAS for backup.

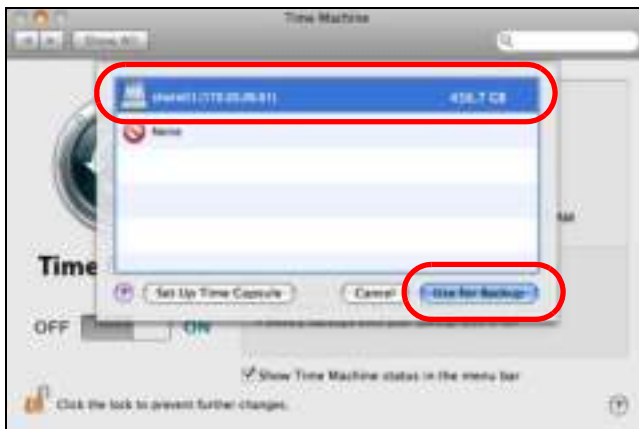
- 1 Click **Apple > System Preferences**. Then go to **System** and select **Time Machine**.



- 2 Turn Time Machine **ON**. Then click **Change Disk**.



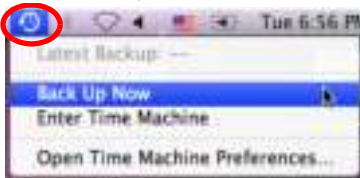
- 3 Select **share01** as the backup disk. Then click **Use for Backup**.



- 4 When prompted for the username and password of **share01**, enter the login information for an existing user account with write access permission on **share01** (for information on configuring user accounts and shares see [Section 5.6 on page 100](#)). In this example **user1/ 12345** is used. Then click **Connect**.



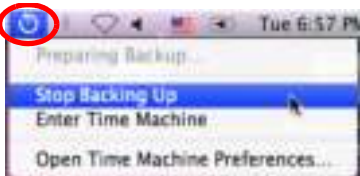
- 5 Time Machine starts backing up files to **share01** after 120 seconds. If you want to backup immediately, click Time Machine icon and select **Back Up Now**.



- 6 The screen shows the status of the backup once the process begins.



- 7 To stop the backup process, click the Time Machine icon and select **Stop Backing Up**. Then turn Time Machine **OFF**.





## 15.1 Overview

This chapter introduces the **Users** screens of the NAS. Use the **Users** screens to create and manage administrator and user accounts.

Administrators can:

- Configure and manage the NAS.
- Create volumes, shares, and user accounts.
- Assign individual users specific access rights for specific shares.

Users are people who have access rights to the NAS and can store files there for later retrieval. A user can:

- Manage shares that he owns.
- Change his own password.
- Access the contents of other shares to which he is given access rights.

## 15.2 What You Can Do

- Use the main **Users** screen ([Section 15.3 on page 261](#)) to display a list of user accounts created on the NAS.
- Use the **Add User** screen ([Section 15.3.2 on page 263](#)) to create new user accounts.
- Use the **Edit User** screen ([Section 15.3.2 on page 263](#)) to edit the properties of an existing account.
- Use the **User Info** screen ([Section 15.4 on page 266](#)) to display the amount of volume space used by a selected account and the account's membership in any groups.

## 15.3 Users Screen

Click **Sharing > Users** to display the screen shown next.


Use this screen to create and manage accounts for users who can store files on the NAS.

**Figure 142** Sharing > Users




The following table describes the labels in this screen.

**Table 85** Sharing > Users

LABEL	DESCRIPTION
Add User	Click this to open a screen where you can configure a new user account. Refer to <a href="#">Section 15.3.2 on page 263</a> to see the screen.
Search	Click this to display a search field. Type in the name of an account and then click <b>Search</b> to look up the account you specified. Click <b>Clear</b> to close the search function. 
Edit User	Select an account and click this to open a screen where you can edit the properties of the account. Refer to <a href="#">Section 15.3.2 on page 263</a> to see the screen.



**Table 85** Sharing > Users (continued)

LABEL	DESCRIPTION
Delete Selected Users	<p>Select an account and click this to open a screen where you can delete the user account.</p> 
User Info	<p>Select an account and click this to open a screen displaying the amount of storage space used by the account. You can also check the account's membership in any groups.</p> <p>Refer to <a href="#">Section 15.4 on page 266</a> to see the screen.</p>
Display Number	Click the drop-down menu to set how many accounts you want to display in one screen.
Go to Page	Click the drop-down menu to display and access more user accounts.
User Type	This field displays whether the account is an administrator account or a user account.
Username	This field displays the username of each account.

### 15.3.1 User Icons

The following table describes the user icons.

**Table 86** User Icons

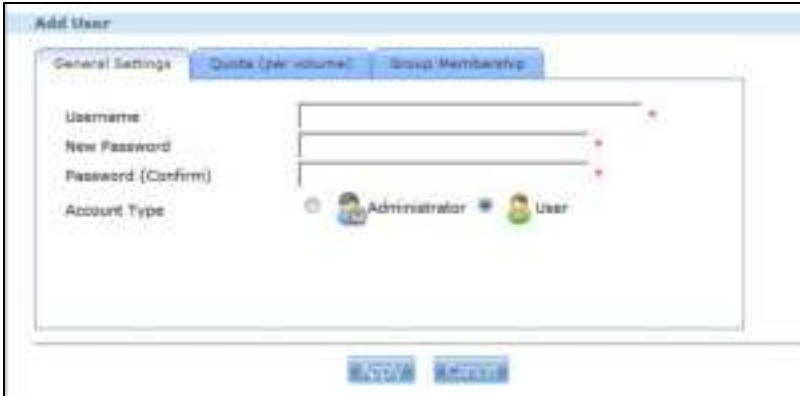
ICON	DESCRIPTION
	The blue icon is for an administrator account.
	The green icon is for a user account.

### 15.3.2 Adding or Editing an Account

Use this screen to create or edit a NAS user account with NAS access password.

Click the **Add User** button in the **Users** screen to open the following screens. Click the **Edit User** button in the screen shown previously to edit an existing account.

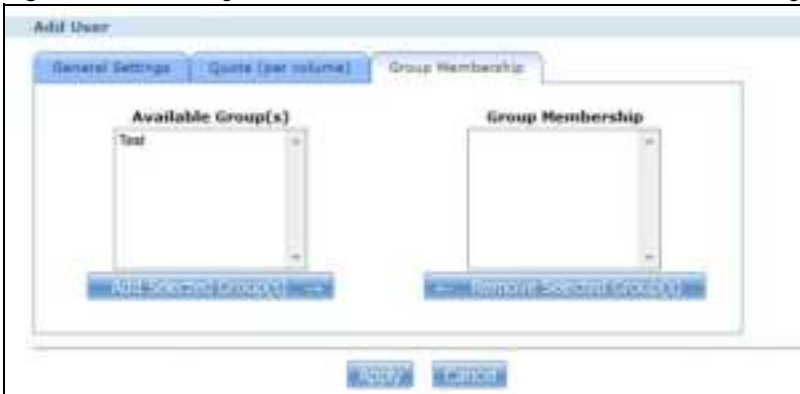
**Figure 143** Sharing > Users > Add or Edit a User: General Settings



**Figure 144** Sharing > Users > Add or Edit a User: Quota (per volume)



**Figure 145** Sharing > Users > Add or Edit a User: General Settings



The following table describes the labels in these screens.

**Table 87** Users > Add or Edit a User

LABEL	DESCRIPTION
General Settings	Click this to configure the user's user name and password.
Username	Type a name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. See <a href="#">Section 15.3.3 on page 265</a> for more details on usernames.
New Password	Create a password associated with this user. You can type from one to 14 single-byte (no Chinese characters allowed for example) ASCII characters.



**Table 87** Users > Add or Edit a User (continued)

LABEL	DESCRIPTION
Password (Confirm)	You must type the exact same password that you just typed in the above field.
Account Type	Select <b>Administrator</b> to give the account full configuration and management access to the NAS.  Select <b>User</b> to give the account basic access rights to the NAS and allow the user to manage his own shares, change his own password, and access the contents of other shares to which he is given access rights.
Quota (per volume)	Click this to configure which volume the user can use and the allowed storage space.
Volume Name	Select the volume in which you want the user's files to be stored.
Quota (per volume)	Enter how much space (in megabytes) you want to allow for the user to store files.
Group Membership	Click this to configure to which groups on the NAS the user belongs.
Available Group(s)	This field lists the groups created on the NAS to which the selected account does not belong.
Group Membership	This field lists the groups that the selected account belongs to.
Add Selected Group(s)	Select a group from the <b>Available Groups</b> list and click this to add the account to that group.
Remove Selected Group(s)	Select a group from the <b>Group Membership</b> list and click this to remove the account from that group.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

### 15.3.3 Usernames

Enter a username from one to 32 characters. The first character must be alphabetical (case insensitive, [A-Z a-z]); numeric characters are not allowed as the first character.

The username can only contain the following characters:

- Alphanumeric A-z 0-9. Unicode usernames are supported with CIFS logins, but not FTP or web configurator logins.
- Spaces
- \_ [underscores]
- . [periods]
- - [dashes]

Other limitations on usernames are:

- All leading and trailing spaces are removed automatically.
- Multiple spaces within names are converted to a single space.
- Usernames are case insensitive. The username cannot be the same (no matter the letter case) as an existing user. For example, if a user exists with the name 'BOB', you cannot create a user named 'bob'. If you enter a user 'bob' but use 'BOB' when connecting via CIFS or FTP, it will use the account settings used for 'bob'.
- The username cannot be the same as a system username such as **ANONYMOUS-FTP** nor be the same as an existing user. Other reserved usernames that are not allowed are:
  - bin
  - daemon

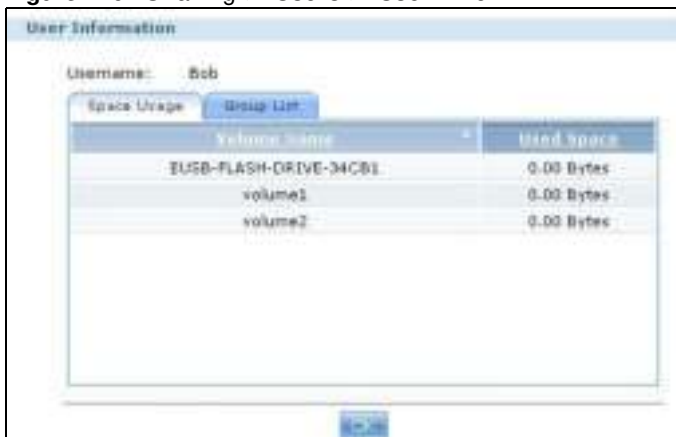
- ftp
- anonymous-ftp
- anonymous
- nobody
- root
- pc-guest
- admin
- password

## 15.4 Displaying User Info

Use this screen to display a user's information.

In the **Users** screen, select an account and click **User Info** to open the following screen.

**Figure 146** Sharing > Users > User Info



The following table describes the labels in this screen.

**Table 88** Sharing > Users > User Info

LABEL	DESCRIPTION
Username	This field displays the selected username.
Space Usage	Click this to display the amount of volume space used by the selected account.
Group List	Click this to display the selected user's group membership.
Volume Name	This field displays the volume(s) created on the NAS.
Used Space	This field displays how much storage space the selected account is currently using. This only applies for files that the user saved onto the NAS while logged in with that username.
Group Name	This shows when you click the <b>Group List</b> tab. This displays the list of groups to which the selected user belongs.
OK	Click this to close the current screen.

## 16.1 Overview

This chapter introduces the **Groups** screens. Use the **Groups** screens to create and manage groups. You can assign users to groups and grant individual groups access rights to specific shares.

## 16.2 What You Can Do

- Use the main **Groups** screen ([Section 16.3 on page 267](#)) to display and manage a list of groups created on the NAS.
- Use the **Add Group** screen ([Section 16.3.1 on page 268](#)) to create new groups.
- Use the **Edit Group** screen ([Section 16.3.1 on page 268](#)) to edit the properties of an existing group.

## 16.3 Groups Screen

Use this screen to create and manage groups.

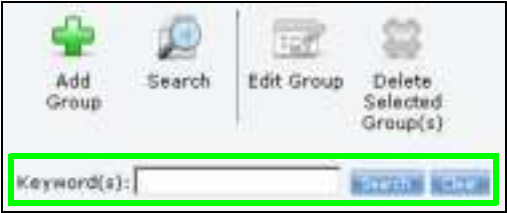


Click **Sharing > Groups** to display the screen shown next.

**Figure 147** Sharing > Groups



The following table describes the labels in this screen.

**Table 89** Sharing > Groups

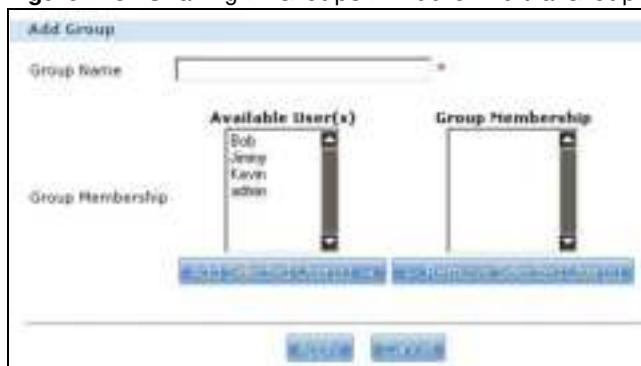
LABEL	DESCRIPTION
Add Group	Click this to open a screen where you can configure a new group.
Search	<p>Click this to display a search field. Type the name of a group and then click <b>Search</b> to look up the group you specified. Click <b>Clear</b> to close the search function.</p> 
Edit Group	Select a group and click this to open a screen where you can edit the properties of the selected group.
Delete Selected Group(s)	<p>Select a group and click this to open a screen where you can delete the group.</p> 
Display Number	Click the drop-down menu to set how many groups you want to display in one screen.
Go to Page	Click the drop-down menu to select a page number. Jump to a different page to display and access more groups.
Status	 This field displays the group icon.
Group Name	This field displays the group names created on the NAS.

### 16.3.1 Adding or Editing a Group

Use this screen to create or edit a NAS group.

Click the **Add Group** button in the **Groups** screen to open the following screen. Click the **Edit Group** button in the screen shown previously to edit an existing group.

**Figure 148** Sharing > Groups > Add or Edit a Group



The following table describes the labels in this screen.

**Table 90** Sharing > Groups > Add or Edit a Group

LABEL	DESCRIPTION
Group Name	Type a name from 1 to 32 single-byte (no Chinese characters allowed for example) ASCII characters. See <a href="#">Section 16.3.2 on page 269</a> for more details on group names.
Group Membership	Use this field to assign group membership to individual users.
Available User(s)	This field lists the user accounts created on the NAS that are not members of the current group.
Group Membership	This field lists the user accounts added to the group.
Add Selected User(s)	Select a user account from the <b>Available Users</b> list and click this to add the account to the group.
Remove Selected User(s)	Select a user account from the <b>Group Membership</b> list and click this to remove the account from the group.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 16.3.2 Group Names

Enter a group name from 1 to 32 characters. The first character must be alphabetical (case insensitive, [A-Z a-z]); numeric characters are not allowed as the first character.

The group name can only contain the following characters:

- Alphanumeric A-z 0-9. Unicode usernames are supported with CIFS logins, but not FTP or web configurator logins.
- Spaces
- \_ [underscores]
- . [periods]
- - [dashes]

Other limitations on group names are:

- All leading and trailing spaces are removed automatically.

- Multiple spaces within names are converted to a single space.
- Group names are case insensitive. The group name cannot be the same (no matter the letter case) as an existing group. For example, if a group exists with the name 'FAMILY', you cannot create a group named 'family'.
- The group name cannot be the same as a system group name such as **EVERYONE** nor be the same as an existing group. Other reserved groups names that are not allowed are:
  - nobody
  - root
  - everyone

## 17.1 Overview

A share is a set of access permissions mapped to a specific folder on a volume. It is equivalent to the Windows concept of a shared folder. You can map a share to a network drive for easy and familiar file transfer for Windows users.

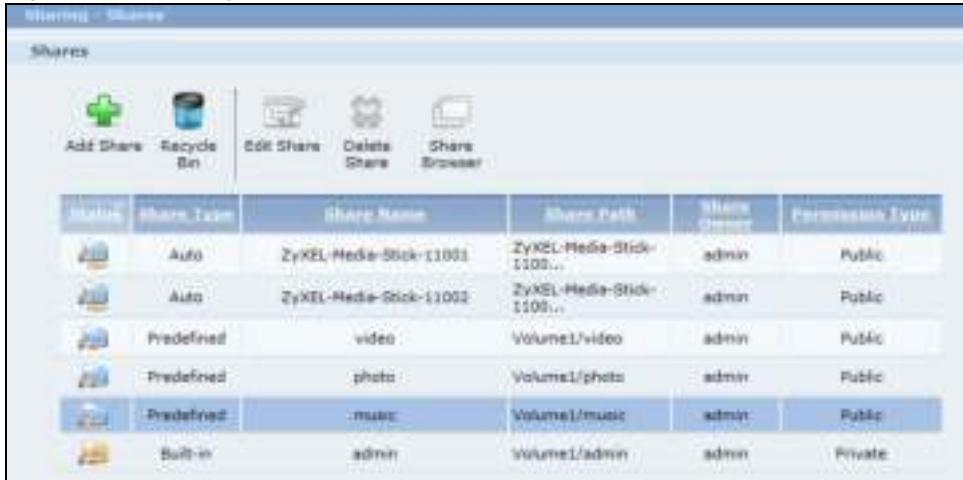
## 17.2 What You Can Do

- Use the **Shares** screen ([Section 17.3 on page 272](#)) to navigate a list of shares created on the NAS.
- Use the **Add Shares** screen ([Section 17.3.1 on page 274](#)) to create additional shares on the NAS.
- Use the **Recycle Bin** screen ([Section 17.4 on page 276](#)) to configure and clean up the recycle bins.
- Use the **Edit Share** screen ([Section 17.3.1 on page 274](#)) to edit a share's properties.
- Use the **Share Browser** screen ([Section 17.5 on page 277](#)) to navigate, add and edit the contents in a share.

## 17.3 Shares Screen


Click **Sharing > Shares** in the navigation panel to open the following screen. This screen lists all shares created on the NAS.

**Figure 149** Sharing > Shares








The following table describes the labels in this screen.

**Table 91** Sharing > Shares

LABEL	DESCRIPTION
Add Share	Click this to create a new share.
Recycle Bin	Click this to configure recycle bins.
Edit Share	Select a share and click this to edit the share.
Delete Share	Select a share and click this to remove or restrict access to the share. 
Share Browser	Select a share and click this to browse the share's contents.



**Table 91** Sharing > Shares (continued)

LABEL	DESCRIPTION
Status	<p>This field displays the share icons.</p> <p> represents a <b>Built-in</b> share on a volume on the internal hard drives.</p> <p> represents a <b>Predefined</b> or <b>User-Created</b> share on a volume on the internal hard drives.</p> <p> represents an <b>Auto</b> or <b>User-Created</b> share on a volume on the external (USB) devices.</p> <p> represents a disabled share that no user can access.</p> <p> represents a missing share. The NAS cannot find the hard disk associated with the share (the disk may be removed from the NAS for example). You may install the disk back to the NAS to recover the share, or you may delete the share from the NAS.</p>
Share Type	<p>This field displays <b>Built-in</b> for the admin share. If you delete the volume containing this share, the NAS automatically creates an admin share in the next volume by alphabetical order.</p> <p>This field displays <b>Predefined</b> for default shares. Default shares, including music, video, and photo, always exist as long as there is a volume. If you delete the volume containing these default shares, the NAS automatically creates these shares in the next volume by alphabetical order.</p> <p>This field displays <b>User-created</b> for shares that an administrator has created. You can delete these shares.</p> <p>This field displays <b>Auto</b> for shares that are automatically created on an external (USB) device when a user plugs in the device.</p>
Share Name	This field displays the share's names.
Share Path	This field displays the share's file path, for example, volume1/music.
Share Owner	This is the name of the user account to which this share belongs.
Permission Type	<p>This field displays the access permission of a share.</p> <p>Everyone on the network can access a <b>Public</b> share.</p> <p>Only the share owner can access a <b>Private</b> share.</p> <p>An <b>Advanced</b> share allows you to assign specific access rights (read-only for example) to individual users/groups.</p>

## 17.3.1 Adding or Editing Share

Click **Add Share** to create a new share. In the **Shares** screen, select a share and click **Edit Share** to open the following screen. Use this screen to create or edit a share.

**Figure 150** Shares > Add Share (or Edit Share)

The following table describes the labels in this screen.

**Table 92** Shares > Add Share (or Edit Share)

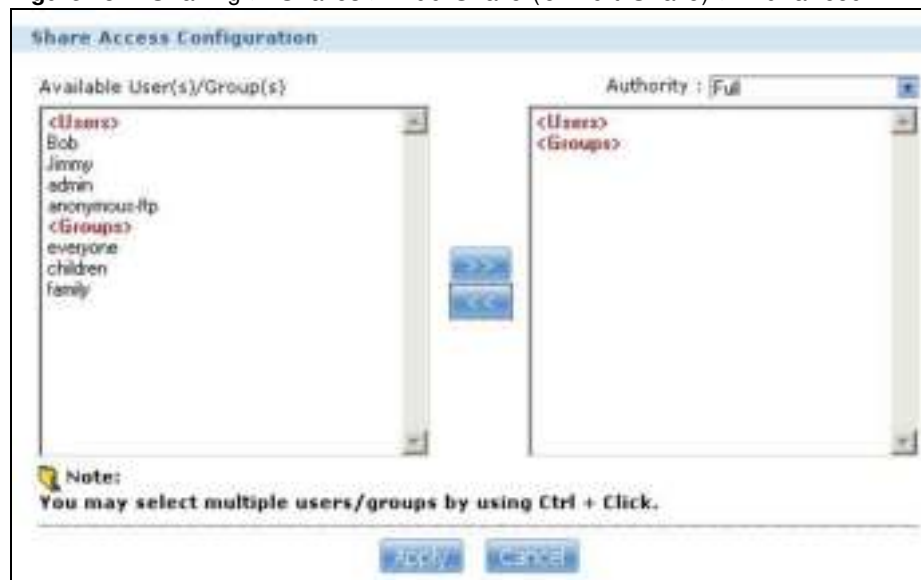
LABEL	DESCRIPTION
Share Name	Type a share name from 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing share. See <a href="#">Section 4.5.6 on page 82</a> for more information on share names.
Volume	You should have already created volumes (a single accessible storage area with a single file system) on the NAS. Select the one that contains the folder that you want to share out. You cannot modify this when editing a share.
Make this share owned by	Select the administrator or user account that can own (manage) this share. The share owner controls access rights to the share.
Enable this share	Click this to allow access to this share.
Enable Recycle Bin	Click this to activate the recycle bin. When you delete a file from this share, a recycle folder is created to store the deleted item.
Publish this share to Media Server	This option is available only when you enable the <b>Media Server</b> ( <a href="#">Section 10.5 on page 190</a> ). Select this option to have the NAS make media files in this share available to media clients and through the Playzone screens. When you publish a share, you can also select whether or not to publish music tracks, photos, and videos. The media clients do not have to use a password to play the shares you publish.
Publish this share to Web	This option is available when you enable the <b>Web Publish</b> ( <a href="#">Section 10.8 on page 205</a> ). Select this option to let people use a web browser to access this share's files without logging into the Web Configurator.

**Table 92** Shares > Add Share (or Edit Share) (continued)

LABEL	DESCRIPTION
Share Access	<p>Assign access rights (full, read only or deny) to users or groups. If you publish the share to the media server or the web, all users will have at least read-only access to the share, regardless of what you configure here.</p> <p><b>Keep it private to owner</b> means only the share owner (selected above) can access the share.</p> <p><b>Make it Public</b> means every user (including people who do not have accounts on the NAS) can access the share.</p> <p><b>Advanced</b> allows you to assign specific access rights (full, read only or deny) to individual users/groups.</p>
Edit	This button is available only when you select <b>Advanced</b> share access. Click this to configure advanced share access rights.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.


## 17.3.2 Configuring Advanced Share Access

In the **Sharing > Shares > Add Share** or **Edit Share** screen, select **Advanced** from the **Share Access** drop-down list. Click **Edit** to open the following screen. Use this screen to configure share access rights for individual users and groups.

**Figure 151** Sharing > Shares > Add Share (or Edit Share) > Advanced

The following table describes the labels in this screen.

**Table 93** Sharing > Shares > Add Share (or Edit Share) > Advanced

LABEL	DESCRIPTION
Available Users/Groups	This field lists the users/groups to which you can assign access rights.
Authority	<p>Use this field to assign access rights to users/groups.</p> <p><b>Full Control</b> gives users/groups full access (read, write and execute) to all files contained within this share.</p> <p><b>Read-Only</b> gives users/groups read-only access (they cannot modify nor execute) to all files contained within this share.</p> <p><b>Deny</b> blocks access (users/groups cannot read, modify, nor execute) to all files contained within this share.</p> <p>Among all access rights, <b>Deny</b> has the highest priority. For example, User A belongs to Group 1. You assign User A full access rights to the Music share but deny access rights to Group 1. Then User A cannot access the Music share.</p> <p>Note: If you deny access to all users, no-one can use the share, not even the administrator.</p>
	Click an arrow button to move users/groups between the left and right fields. Use the arrow buttons to assign access rights to users/groups.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

### 17.3.3 Public and ANONYMOUS Share Access Rights

If you make a share public, users do not need to log in.

With **ANONYMOUS FTP**, you must enter either 'anonymous' or 'ftp' as the username. Any other name is considered a username, so must be valid and have a corresponding correct password.

## 17.4 Recycle Bin Configuration Screen

Use this screen to periodically clean up items in all recycle bins.

### 17.4.1 Recycle Bins

Recycle bins in the NAS help users recover accidentally deleted files or folders in the shares. When you delete an item, a recycle folder is created within the share to hold the deleted item.

Every share can have its own recycle folder. You must enable the recycle-bin function to recycle deleted items. You can configure this setting when you add or edit a share. See [Section 17.3.1 on page 274](#) for details on activating the recycle bin in a share.

Later if you want to retrieve a deleted item, you can locate the item in the recycle folder. You may move or copy the deleted item to another share.

## 17.4.2 Configuring Recycle Bins

In the **Sharing > Shares** screen, click **Recycle Bin** to open the following screen.

**Figure 152** Sharing > Shares > Recycle Bin



The following table describes the labels in this screen.

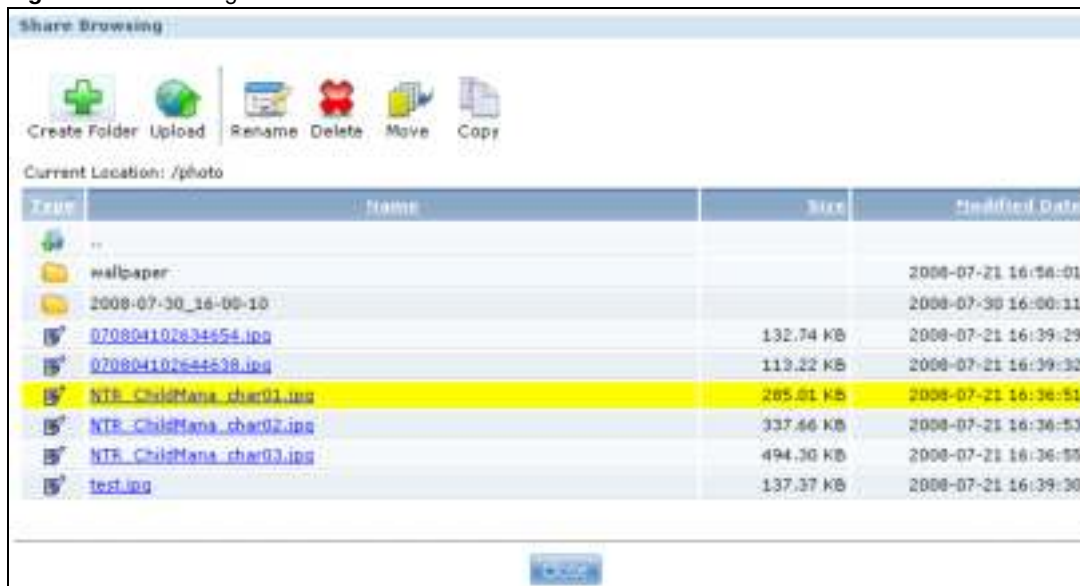
**Table 94** Sharing > Shares > Recycle Bin

LABEL	DESCRIPTION
Clean Recycle Bin every N days	Specify how often you want to clear the contents in all recycle bins. The specified days correspond to how long a file has been stored in a recycle bin. For example, if you set the interval to be 3 days, recycle bins will clean up items deleted or not accessed for 3 days.  Note: Cleaning up recycle bins permanently removes the files from the NAS.
Clean all recycle bins now	Click this to immediately remove contents from all recycle bins.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 17.5 Share Browser Screen

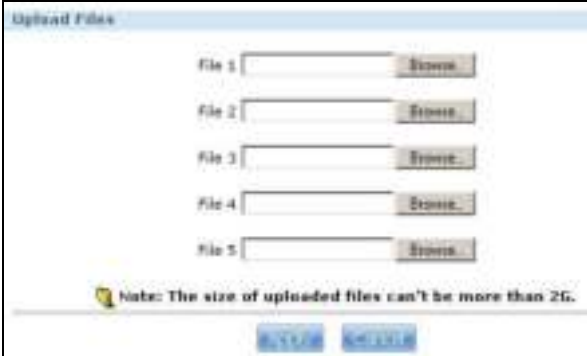


Use this screen to create folders, upload files, and edit files within the share.

**Figure 153** Sharing > Shares > Share Browser



The following table describes the labels in this screen.

**Table 95** Sharing > Shares > Share Browser

LABEL	DESCRIPTION
Create Folder	Type a folder name and click <b>Apply</b> to make a new folder. The name can be 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing folder in the same path. See <a href="#">Section 4.5.6 on page 82</a> for more information on folder names.
Upload	<p>Click this to add files to the share. Use <b>Browse</b> to locate a file and click <b>Apply</b> to upload the file. Note that the size of each file should be less than 2 GB.</p> 
Rename	<p>Select a folder or file and click this to open a screen. Enter the name you want and click OK to make the changes.</p> <p>Note: When you change a file name, make sure you keep the file extension</p> 
Delete	<p>Select a file/folder from the list and click this to open a warning screen. Click <b>Yes</b> to delete the file/folder, or click <b>No</b> to close the screen.</p> 
Move	Select a file/folder from the list and click this to relocate the file/folder to another share.
Copy	Select a file/folder from the list and click this to make a duplicate of the file/folder to another share.
Current location	This is the name of the share and folder path that you are in.
Type	<p>The icon in this column identifies the entry as a folder or a file. Click a music or video file's play icon to play the file.</p> <p>The folder with an arrow pointing up is for the link that takes you to the next higher layer in the share's folder tree.</p>
Name	This section lists the share's existing folders or files. Click to the right of the file/folder name to select the file/folder. You can also click the folder's name to navigate to a sub-folder within the folder.
Size	This field displays size of the file.

**Table 95** Sharing > Shares > Share Browser (continued)

LABEL	DESCRIPTION
Modified Date	This field displays a file's latest modification date.
Close	Click this to close the screen.

## 17.5.1 Moving or Copying Files



Use this screen to move or copy files to another share.

In the **Share Browser** screen, select a file or folder and click **Move** or **Copy** to open the following screen.

**Figure 154** Sharing > Shares > Share Browser > Move (or Copy)

The following table describes the labels in this screen.

**Table 96** Sharing > Shares > Share Browser > Move (or Copy)

LABEL	DESCRIPTION
Shares	Select the destination share from the drop-down list.
Path	This field displays the share folder's path. You can use <b>Browse</b> to find or create a folder on the NAS or type the location of the folder using forward slashes as branch separators.
Browse	<p>Click this to open the following screen and navigate to the location of the file/folder.</p>  <ul style="list-style-type: none"> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Folder Name</b> - Enter a new folder name and click  to create it.</li> <li>• <b>Type</b> - This identifies the item as a folder or file.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Select a folder. If you don't select a folder, a forward slash (/) displays in the <b>Path</b> field. All contents within the specified share are automatically selected.</p> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Yes	Click this to move or copy the file/folder to the designated share.
Close	Click this to return to the <b>Share Browser</b> screen.





## 18.1 Overview

The WebDAV HTTP extension lets users edit and manage files stored on remote servers. The NAS's WebDAV service allows client programs that support WebDAV, such as NetDrive and BitKinex on Windows, Mac OS Finder, and Linux file browsers remotely edit and manage files stored on the NAS.

## 18.2 WebDAV Screen

Use the **WebDAV** screen to allow remote users to use client programs that support WebDAV to edit and manage files stored on the NAS.

Click **Sharing > WebDAV** to open the following screen.

**Figure 155** Sharing > WebDAV



The following table describes the labels in this screen.

**Table 97** Sharing > WebDAV

LABEL	DESCRIPTION
Enable WebDAV (http/https)	Select this to allow remote users to work with files stored on the NAS. Edit the access privileges in <b>Sharing &gt; Shares</b> . Https is for secure WebDAV connections to the NAS.
Example	When you enable WebDAV the screen displays an example of the URL users would use to use WebDAV to connect to the NAS where "sharename" represents a share that the user can access. Use HTTPS for secure WebDAV connections to the NAS.
Enable anonymous WebDAV	Select this to allow remote users to use WebDAV to access all shares on the NAS without a login name or password.

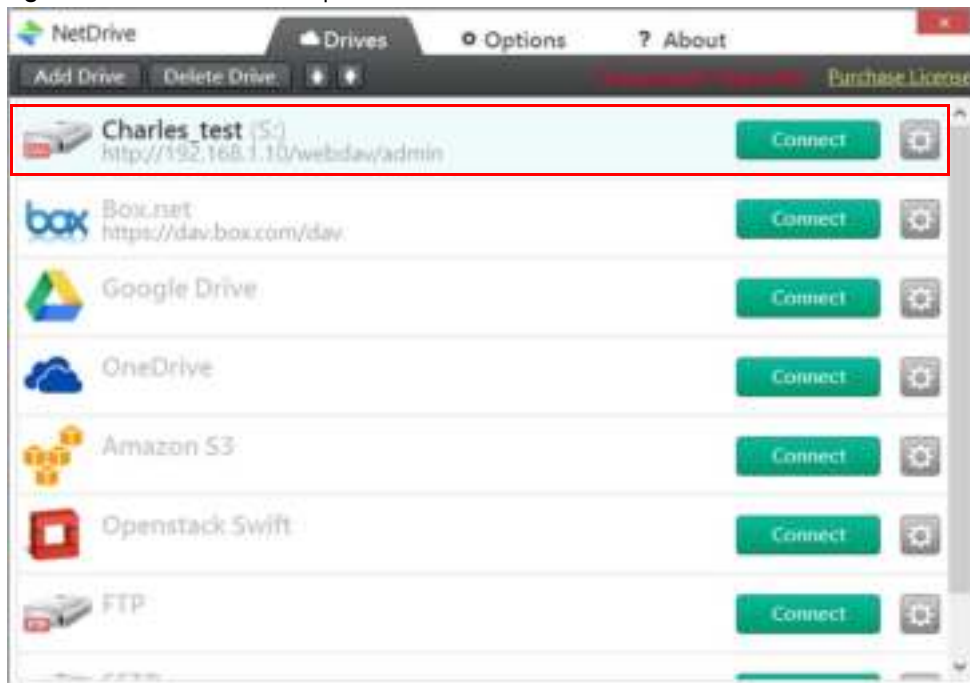
**Table 97** Sharing > WebDAV (continued)

LABEL	DESCRIPTION
Apply	Click this to save your changes.
Reset	Click this to discard any unsaved changes and restore previously saved settings.

## 18.3 How to Use NetDrive with the NAS

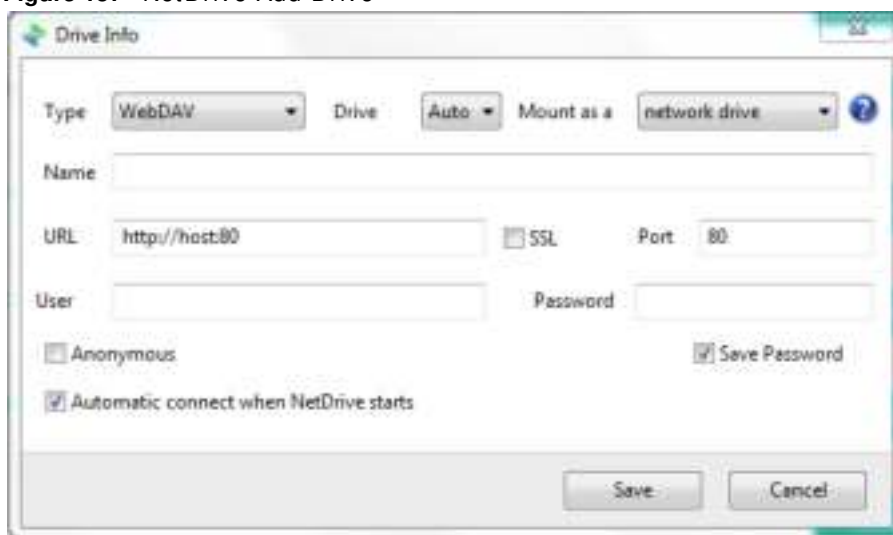
Here is an example of how to use the NetDrive WebDAV client with the NAS.

- 1 Download and install NetDrive.
- 2 Click **Add Drive** and use the URL for WebDAV connections to the NAS to add a drive entry for accessing the NAS.

**Figure 156** NetDrive Example

- 3 Name the drive and specify the URL of the share to access. Select **SSL** if the NAS forces HTTPs use. Specify your user name and password for accessing the share on the NAS.

**Figure 157** NetDrive Add Drive



Drive Info

Type: WebDAV Drive: Auto Mount as a: network drive

Name: \_\_\_\_\_

URL: http://host:80  SSL Port: 80

User: \_\_\_\_\_ Password: \_\_\_\_\_

Anonymous  Save Password

Automatic connect when NetDrive starts

Save Cancel



# Maintenance Screens

## 19.1 Overview

This chapter discusses the **Maintenance** screens. The **Maintenance** screens allow you to manage system configurations.

## 19.2 What You Can Do

- Use the **Power** screen ([Section 19.3 on page 285](#)) to configure power settings for the NAS, including power saving, UPS, power on/off after power failure, power on/off schedule, and Wake on LAN.
- Use the **Log** screen ([Section 19.4 on page 289](#)) to check the system's logs.
- Use the **Configuration** screen ([Section 19.5 on page 293](#)) to backup or restore the NAS configuration file.
- Use the **SSL** screen ([Section 19.6 on page 295](#)) to configure HTTPS and the NAS's SSL certificate.
- Use the **Shutdown** screen ([Section 19.7 on page 297](#)) to restart or shut down your NAS.

## 19.3 Power Screen

Use this screen to manage power settings for the NAS.

Click **Maintenance > Power** to display the following screen.

**Figure 158** Maintenance > Power



The following table describes the labels in this screen.

**Table 98** Maintenance > Power

LABEL	DESCRIPTION
Power Management	
Turn off hard disk(s)	Enter the number of minutes to wait when the NAS is idle before spinning the hard disks down to sleep (hibernation). The default time is 15 minutes.
Enable Sleeping HDD LED Blinking	Select this to have the HDD LED blink slowly when the hard disk is sleeping (hibernating). Clear this to have the HDD LED stay on when the hard disk is sleeping.
Minimum UPS Capacity	
Minimum UPS Capacity	When you use an APC Uninterruptible Power Supply (UPS) with a USB connection to the NAS, the NAS shuts itself down if the APC UPS's battery charge gets down to the percentage you specify in this field. This allows the NAS to shut down properly and avoid data loss caused by a power failure when the UPS stops supplying power.  A setting around 50% is recommended. A setting close to 100% is not recommended since it would cause the NAS to shut down whenever the UPS is charging. A setting close to 0 is also not recommended since the UPS would not have enough power to allow the NAS to shutdown properly.
Power On After Power Failure	Select an option to set whether or not the NAS restarts when the power is restored after a power failure.  Note:
Keep Former Status	Select this option to have the NAS automatically restart only if it was operating when the power failed. The NAS remains off if it was already off when the power failed.
Always Power On	Select this option to keep the NAS operating as much of the time as possible. The NAS restarts automatically even if it was turned off when the power failed.

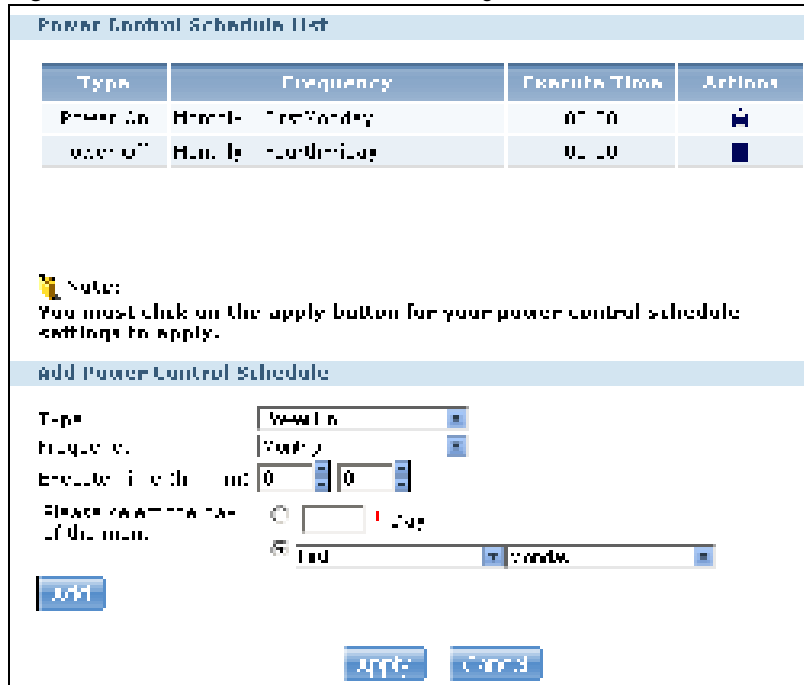
**Table 98** Maintenance > Power (continued)

LABEL	DESCRIPTION
Always Power Off	Select this option to keep the NAS from automatically restarting when the power is restored after a power failure. This is a computer's "traditional" behavior. Select this if you have other servers such as a domain controller or DNS server that you want to start or check after a power failure before the NAS turns on.
Power On/Off Schedule	
Enable Power Control Schedule	<p>Select this option to have the NAS turn itself off and on or reboot according to the schedules you configured.</p> <p>Click <b>Edit</b> to go to the screen where you can configure the power control schedules.</p> <p>Refer to <a href="#">Section 19.3.1 on page 288</a> for this screen.</p> <p>Note:</p>
Enable Wake On LAN	<p>Enable <b>Wake On LAN</b> to be able to turn on the NAS through its wired Ethernet connection.</p> <p>You must have a computer or router on your LAN that supports sending Wake On LAN "magic packets" to turn on the NAS.</p> <p>To use Wake On LAN from a computer on your LAN, install a program such as Wake On LAN EX or another Wake On LAN program that supports sending magic packets.</p> <p>You can use Wake On LAN from a remote location if the router in front of the NAS supports sending magic packets.</p> <p>Use the NAS's power button or the Web Configurator's <b>Maintenance &gt; Shutdown</b> menu to turn off the NAS.</p>
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

### 19.3.1 Editing the Power Control Schedule Screen

Click **Maintenance > Power Management > Edit** to open this screen. Use this screen to configure power control schedules to have the NAS turn on, turn off, or reboot at specified times.

**Figure 159** Maintenance > Power Management > Edit



The following table describes the labels in this screen.

**Table 99** Maintenance > Power Management > Edit

LABEL	DESCRIPTION
Power Control Schedule List	This table lists the power on, power off, and reboot schedules. For example, you could have one schedule to turn the NAS on every morning, at 8:00, another schedule to turn it off every evening at 18:00, and a third schedule to have it reboot every Friday at 14:00.  Click a column's heading cell to sort the schedules by that column's criteria. Click the heading cell again to reverse the sort order.
Type	This field displays whether the power control schedule has the NAS turn on, turn off, or reboot.
Frequency	This field shows how often (monthly, weekly, or daily) the NAS is to apply this power control schedule.
Execute Time	This field shows when the NAS is to use this power control schedule (when the NAS is to turn on, turn off, or reboot).
Actions	Click the <b>Delete</b> icon to remove a power control schedule from the list.
Add Power Control Schedule	Use this part of the screen to configure power on, power off, and reboot times.
Type	Select whether this power control schedule has the NAS turn on, turn off, or reboot.
Frequency	Select whether the NAS is to apply this power control schedule entry on a monthly, weekly, or daily basis.



**Table 99** Maintenance > Power Management > Edit (continued)

LABEL	DESCRIPTION
Execute Time (hh:mm)	<p>Enter the time, day, and/or day of the month as appropriate for this power control schedule entry. Leave more than 10 minutes between the execution times of the entries.</p> <p>If the NAS turns off or restarts while a user is transferring files to or from the NAS, the transfer fails. The user will need to restart the transfer.</p> <p>The NAS skips a scheduled restart or power off if the execution time comes while the NAS is doing any of the following:</p> <ul style="list-style-type: none"> <li>• Resynchronizing a RAID</li> <li>• Upgrading firmware</li> <li>• Replacing the configuration file</li> </ul> <p>If the NAS is turned off at the time when a restart or power off is scheduled, the NAS does not perform the restart or power off.</p> <p>If the NAS is turned on at the time when a power on is scheduled, the NAS does not perform the power on.</p>
Use this part of the screen to configure power on, power off, and reboot times.	
Please select the day of the month	<p>This is only available if you set the <b>Frequency</b> to <b>Monthly</b>.</p> <p>Choose the day of each month for the power control schedule entry.</p>
Every how many weeks?	<p>This is only available if you set the <b>Frequency</b> to <b>Weekly</b>.</p> <p>Enter the interval between weeks and choose the day of the week for the power control schedule entry.</p>
Every how many days?	<p>This is only available if you set the <b>Frequency</b> to <b>Daily</b>.</p> <p>Enter the interval between days for the power control schedule entry.</p>
Add	Click this to add the power control schedule to the list.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 19.4 Log Screen

Click **Maintenance > Log** to open the following screen.

Use this screen to display all NAS logs. There are at most 512 entries in the log. Older logs are removed by the system. You cannot download the log file via FTP or CIFS.

**Figure 160** Maintenance > Log

#	Time	Class	Severity	Message
1	2009-05-18 16:03:43	user	info	User admin has logged in from Web!
2	2009-05-18 16:02:14	user	info	User admin from Web has been logged out (lease timeout)!
3	2009-05-18 15:33:07	user	info	User admin has logged in from Web!
4	2009-05-18 15:30:09	user	info	User admin from Web has been logged out (lease timeout)!
5	2009-05-18 15:14:48	user	info	User admin has logged in from Web!
6	2009-05-18 15:00:33	user	info	User admin from Web has been logged out (lease timeout)!
7	2009-05-18 14:43:03	user	notice	Add new group crashes.
8	2009-05-18 14:41:24	user	info	User admin has logged in from Web!
9	2009-05-18 14:41:04	user	info	User admin from Web has been logged out (lease timeout)!
10	2009-05-18 14:36:32	built-in-service	info	Download service download http://www.garageband.com/mp3cat/UZCMbCSD4a2n /01_April_17__2009__Friday__Part_3.mp3 error (0x20000012)
11	2009-05-18 14:36:31	built-in-service	info	Download service start to download http://www.garageband.com/mp3cat/UZCMbCSD4a2n /01_April_17__2009__Friday__Part_3.mp3

The following table describes the labels in this screen.

**Table 100** Maintenance > Log

LABEL	DESCRIPTION
Refresh	Click this to update the log display.
Purge all Logs	Click this to erase all logs from the NAS.
Report Config	Click this to open a screen where you can configure email alerts for logs. Refer to <a href="#">Section 19.4.1 on page 290</a> to see the screens for this.
Display	The screen always shows all logs by default. Choose a specific log category to view logs for just that category.
#	This is the log entry's number in the list according to the currently selected sort order.
Time	This shows the date and time the log was created. Click the top of the column to sort by oldest or newest.
Class	This displays the log category; see <a href="#">Table 108 on page 298</a> for details.
Severity	This displays how serious the log is rated by the NAS. See <a href="#">Table 109 on page 299</a> for more information.
Message	This displays a description of the log. Click the top of the column to sort by alphabetical or reverse alphabetical order.

## 19.4.1 Report Config Screen

In the **Log** screen, click **Report Config** to do the following:

- Use the **Email Setting** screen ([Section 19.4.2 on page 291](#)) to enable and configure e-mail alerts from the NAS.
- Use the **Report Setting** screen ([Section 19.4.3 on page 292](#)) to select the type of alerts you want to receive through e-mail and schedule when the NAS e-mails the alerts.

- Use the **Syslog Server Setting** screen (Section 19.4.4 on page 293) to enable the syslog server and select the categories to include in the log report.

## 19.4.2 Email Setting

You can enable and configure e-mail alerts from the NAS. In the **Report Config** screen, click the **Email Setting** tab to open the following screen.

**Figure 161** Maintenance > Log > Report Config: Email Setting

The following table describes the labels in this screen.

**Table 101** Maintenance > Log > Report Config: Email Setting

LABEL	DESCRIPTION
Enable Log Email	Click this to have the NAS e-mail log alerts to your e-mail account.
Email To	Enter the e-mail address where you want to receive the log alerts.
Email From	Enter the e-mail address the NAS uses in the From field of the e-mail header for its log alerts.
Email Server	Enter the e-mail server address the NAS uses to send e-mail alerts,
Email Format	Select the e-mail format you want the NAS to use in its e-mail alerts.
Use SMTP Authentication	Click this if the e-mail server you want the NAS to use for its e-mail alerts requires a username and password.
User	Enter the username for the e-mail server.
Password	Enter the password for the e-mail server.
Password (Confirm)	Re-enter the password to confirm it.
After apply settings, send a test email	Click this to have the NAS send a test e-mail to the settings you have entered.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

### 19.4.3 Report Setting

You can have the NAS email you alerts and reports. In the **Report Config** screen, click the **Report Setting** tab to open the following screen.

**Figure 162** Maintenance > Log > Report Config: Report Setting

The screenshot shows a web interface titled "Log Report Configuration" with three tabs: "Email Setting", "Report Setting" (selected), and "Syslog Server Setting". Under "Email Alert", there is a checked checkbox for "Enable Email Log". Under "Email Report", the "Report Time" is set to "Weekly", the day is "Sunday", and the time is "at 0 hours 0 minutes". There is also a checked checkbox for "Enable Email Log". At the bottom, there are "Apply" and "Cancel" buttons.

The following table describes the labels in this screen.

**Table 102** Maintenance > Log > Report Config: Report Setting

LABEL	DESCRIPTION
Email Alert	Select the <b>Enable Email Log</b> check box to have the NAS send an alert email to the configured email address whenever the NAS generates a critical severity log.
Report Time	Select how often ( <b>Weekly</b> , <b>Daily</b> or <b>Hourly</b> ), the day of the week (for weekly reports), and the time (hour:minutes) the NAS sends a report email.
Enable Email Log	Select the check box to have the NAS email reports of all logs the NAS generates to the configured email address.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 19.4.4 Syslog Server Setting

You can enable the syslog server and select the categories to include in the log report. In the **Report Config** screen, click the **Syslog Server Setting** tab to open the following screen.

**Figure 163** Maintenance > Log > Report Config: Syslog Server Setting

The following table describes the labels in this screen.

**Table 103** Maintenance > Log > Report Config: Syslog Server Setting

LABEL	DESCRIPTION
Enable Syslog Server	Check this to enable syslog server.
Server Address	Enter the syslog server address you want the NAS to use for its log alerts.
In the table below, check the type of log alerts you want to receive in your e-mail. Select <b>All Log</b> to include all types of log alerts.	
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 19.5 Configuration Screen

Click **Maintenance > Configuration** to open the following screen. Use this screen to backup or restore the NAS configuration settings.

**Figure 164** Maintenance > Configuration

The following table describes the labels in this screen.

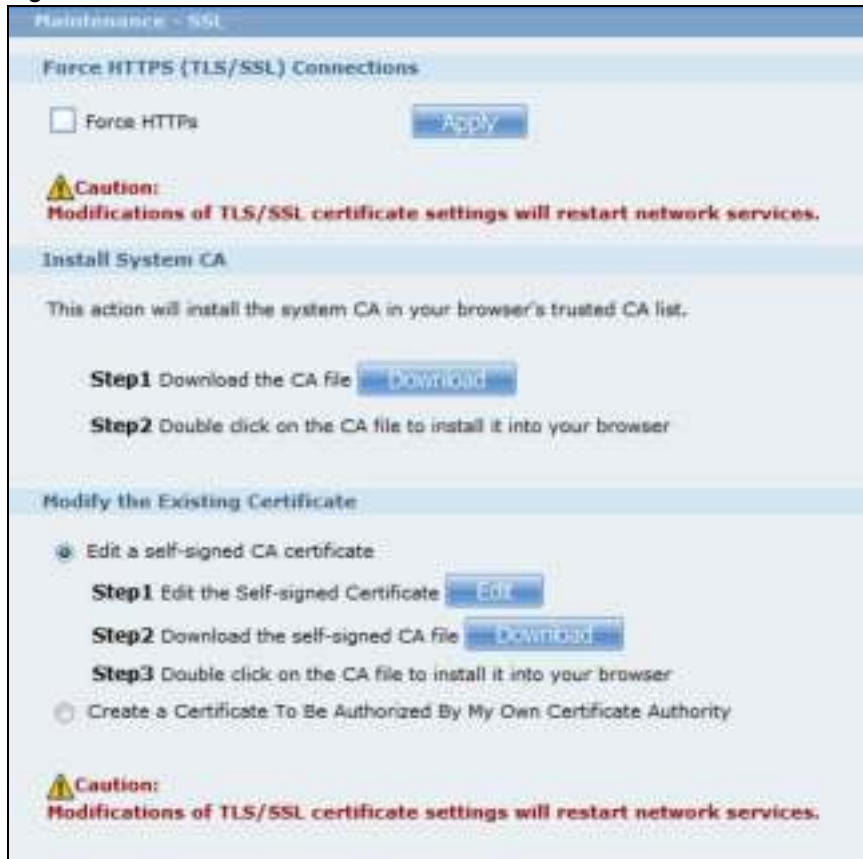
**Table 104** Maintenance > Configuration

LABEL	DESCRIPTION
Backup Current Configuration Settings	
Backup	Click this to save the current configuration of the NAS to your computer. A pop-up screen appears asking you to confirm. Click <b>OK</b> to continue or <b>Cancel</b> to quit.
Restore Configuration	<p>When you restore a file configuration, the NAS checks the volumes/share paths on the NAS and the configuration file.</p> <p>If the volume exists but the share path is missing in the NAS, the NAS automatically creates this share path.</p> <p>If the volume does not exist on the NAS, the <b>Status</b> of the share will show “missing share icon” in <b>Shares</b> screen (see <a href="#">Table 91 on page 272</a>).</p>
Browse	Click this to locate a previously-saved configuration file.
Restore	<p>Click this to load the previously-saved configuration file to the NAS. This replaces your current NAS configuration settings with the settings in the previously-saved configuration file.</p> <p>A pop-up screen appears asking you to confirm. Click <b>OK</b> to continue or <b>Cancel</b> to quit.</p>
Reset MySQL Database Password	Click this to reset the password for your MySQL database.

## 19.6 SSL Certification

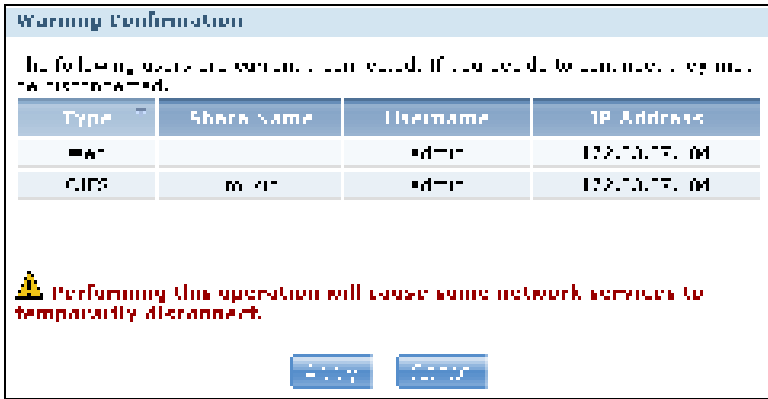
Click **Maintenance > SSL** to open this screen, where you can turn on HTTPS, create a public key certificate, or upload a public key certificate that was issued by a known certificate authority.

**Figure 165** Maintenance > SSL



The following table describes the labels in this screen.

**Table 105** Maintenance > SSL

LABEL	DESCRIPTION
Force HTTPS	<p>Select the <b>Force HTTPS</b> option to turn on the NAS's web browser security. Anyone who connects via HTTPS to the NAS must install the public key certificate associated with it.</p> <p>Note: The NAS will restart the web configurator after you click <b>Apply</b>.</p> <p>The NAS displays a warning screen if applying your change may disconnect some users. Click <b>Apply</b> if you want to continue.</p>  <p>The dialog box titled "Warning Confirmation" contains the text: "The following users are currently connected. If you decide to continue, you may temporarily disconnect them." Below this is a table with columns: Type, Share Name, Username, and IP Address. The table contains two rows: one for "Web" with Username "admin" and IP "192.168.1.101", and one for "CIFS" with Username "admin" and IP "192.168.1.101". Below the table is a warning icon and the text: "Performing this operation will cause some network services to temporarily disconnect." At the bottom are "Apply" and "Cancel" buttons.</p>
Install System Default CA	<p>Click <b>Download</b> button to save a copy of the NAS's public key certificate to your local computer. This is useful for installing the certificate without having to connect to the NAS, or for sending by email to other users for them to install prior to logging into the NAS for the first time. After saving the certificate to your computer, double-click it to install it.</p> <p>Note: Each web browser handles certificate installation differently.</p>
Modify the Existing Certificate	<p>Select <b>Edit a self-signed CA certificate</b>, then follow the on-screen instructions for creating a public key certificate signed by the NAS as the local certificate authority.</p> <p>Note: Use certificates created and signed by the NAS if the device is not open to external access.</p> <p>Select <b>Create a certificate authorized by other CA</b>, then follow the on-screen instructions to install a certificate that has been authorized by a third-party certificate authority.</p> <p>Note: Use this method if the device is open to external access, such as allowing users to connect through the Internet using FTP over TLS or HTTPS.</p>

## 19.6.1 Modifying or Creating a Certificate

When you select the **Edit a self-signed CA certificate** option, then click the **Edit** button, a screen opens to allow you to make adjustments to the NAS's public key certificate.



The screen is also the same for the **Create a certificate authorized by other CA** option.

**Figure 166** Maintenance > SSL > Create or Edit a Certificate

**Create a Certificate Signing Request**

Common Name

Host IP Address

Host Domain Name

Organizational Unit(Optional)  Max length: 64 characters

Organization(Optional)  Max length: 64 characters

Country(Optional)  Country code only, such as TW, US, JP, etc.,

Key Type

Key Length

**Note:**  
If you choose a large key length, it may take a while to make the certificate file.

The following table describes the labels in this screen.

**Table 106** Maintenance > SSL > Create or Edit a Certificate

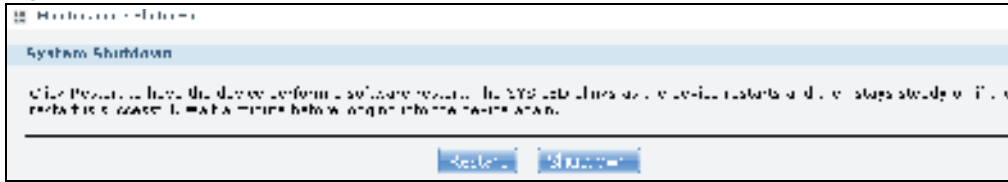
LABEL	DESCRIPTION
Common Name	This name describes the certificate's origin, either in the form of an IP address or a domain name.
Host IP Address	Select this option and enter the NAS's IP address if you want to use this for the common name.
Host Domain Name	Select this option and enter the NAS's domain name if you want to use this for the common name
Organizational Unit (Optional)	Enter this name of the organizational unit which owns or maintains the NAS. This is an optional field.
Organization (Optional)	Enter this name of the organization or company which owns or maintains the NAS. This is an optional field.
Country (Optional)	Enter this name of the country in which the NAS is located. This is an optional field.
Key Type	Select the certificate's key type, either <b>RSA</b> or <b>DSA</b> . RSA is a public-key encryption and digital signature algorithm, while DSA is only a digital signature algorithm.
Key Length	Select the encryption key length. The longer the key, the better the encryption security. The only drawback to having a long key is that the file encrypted with it swells in size as well.
Apply	Click this to save your changes.
Cancel	Click this to discard changes and close the window.

## 19.7 Shutdown Screen

Use this screen to turn off the NAS or perform a software restart. A software restart is faster than turning the NAS off and then turning it on again. Before shutting down or restarting, check the **System Status > Active Sessions** screen to make sure that no one is logged into the NAS or transferring files to or from the NAS.

Click **Maintenance > Shutdown** to open the following screen.

**Figure 167** Maintenance > Shutdown



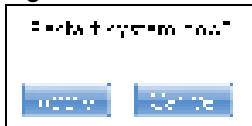
The following table describes the labels in this screen.

**Table 107** Maintenance > Shutdown

LABEL	DESCRIPTION
Restart	Click this to have the device perform a software restart.
Shutdown	Click this to shut down the system and restart it again later.

When you click the **Restart** button a pop-up screen will appear asking you to confirm. Click **OK** to continue or **Cancel** to quit the restart.

**Figure 168** Maintenance > Shutdown > Confirm Restart



When you click the **Shutdown** button a pop-up screen will appear asking you to confirm. Click **OK** to continue or **Cancel** to quit the shutdown.

**Figure 169** Maintenance > Shutdown > Confirm Shutdown



## 19.8 Technical Reference

This section provides technical background information on the topics discussed in this chapter.

### 19.8.1 Log Classes

The following table shows information on log classes.

**Table 108** Log Classes

LOG CATEGORY	DESCRIPTION
Users	This log class shows information on user access to the NAS.
Shares	This log class shows information on shares being created or deleted.
Services	This log class shows information on the operation of the NAS's built-in services.
System	This log class shows all other system related messages.

**Table 108** Log Classes (continued)

LOG CATEGORY	DESCRIPTION
Network	This log class shows information on network configuration, setting changes and so on.
Storage	This log class shows information on the NAS's internal and external storage activities.
Backup	This log class shows information on all backup-related activities.
Auto Upload	This log class shows information on automatic uploads done by the NAS.

## 19.8.2 Log Severity Levels

The following table shows information on log severity levels. Levels range from 0 to 6 with 0 being the most severe level log and 6 being an informational log only. Log levels are not displayed in the logs and are for your reference only.

**Table 109** Log Severity Levels

LEVEL	DESCRIPTION
0	Emergency
1	Alert
2	Critical
3	Error
4	Warning
5	Notice
6	Info

## 19.8.3 Log Messages

Here are some example log messages.

**Table 110** Log Messages

CLASS	SEVERITY	MESSAGE
Auto upload	INFO	%s is queued.
Auto upload	INFO	%s uploaded (Flickr or YouTube Upload).
Auto upload	WARNING	error uploading "%s" (%s): %s
Auto upload	INFO	%s will not be uploaded to %s for there is already a duplicate file.
Auto upload	INFO	Failed to upload %s to %s (FTP Upload) : %s
Auto upload	INFO	Successfully upload %s to %s (FTP Upload)
Copy/Sync Button	ERROR	[USB %s] Backup Folder Does Not Exist.
Copy/Sync Button	ERROR	[USB %s] Target Folder Does Not Exist.
Copy/Sync Button	ERROR	[USB Sync] Failed at %s: It is a Folder in Internal Volume. But It is not a Folder in USB.
Copy/Sync Button	ERROR	[USB Sync] Failed at %s: It is a Folder in USB. But It is not a Folder in Internal Volume.
Copy/Sync Button	ERROR	[USB Sync] Failed at File %s.

**Table 110** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Copy/ Sync Button	ERROR	[USB Sync] Sync Failed at Folder %s.
Copy/ Sync Button	ERROR	Modify COPY/SYNC Button Configuration: %s
Copy/ Sync Button	ERROR	Please Change Your Folder Name. Invalid Path: %s
Copy/ Sync Button	INFO	[USB Sync] Copying %s from Internal Volume to Backup Folder.
Copy/ Sync Button	INFO	[USB Sync] Copying %s from Internal Volume to USB.
Copy/ Sync Button	INFO	[USB Sync] Copying %s from USB to Backup Folder.
Copy/ Sync Button	INFO	[USB Sync] Copying %s from USB to Internal Volume.
Copy/ Sync Button	INFO	[USB Sync] Deleting %s from Internal Volume.
Copy/ Sync Button	INFO	[USB Sync] Deleting %s from USB.
Copy/ Sync Button	INFO	[USB Sync] Deleting %s from USB Recursively.
Copy/ Sync Button	INFO	[USB Sync] Finished. Elapsed Time %s Seconds.
Copy/ Sync Button	INFO	[USB Sync] Moving %s from Internal Volume to Backup Folder.
Copy/ Sync Button	INFO	[USB Sync] Moving %s from USB to Backup Folder
Copy/ Sync Button	INFO	[USB Sync] Skip %s: File not Exist
Copy/ Sync Button	INFO	[USB Sync] Skip %s: Not a Regular File.
Copy/ Sync Button	INFO	[USB Sync] Start Pre-Processing: Generating File Lists.
Copy/ Sync Button	NOTICE	[USB Sync] Start Copying Files.
Download Service	ERROR	Download service cannot find a volume
Download Service	ERROR	Download service failed to find ipfilter.dat
Download Service	INFO	Download service add a URL download job %s
Download Service	INFO	Download service delete %s by user
Download Service	INFO	Download service download %s error (0x%08x)
Download Service	INFO	Download service download %s finished in %s
Download Service	INFO	Download service found a new torrent file %s

**Table 110** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Download Service	INFO	Download service initialized
Download Service	INFO	Download service pause %s by user
Download Service	INFO	Download service set %s to %s priority by user
Download Service	INFO	Download service set default download location to %s
Download Service	INFO	Download service set max P2P download rate to %d KB/s by user
Download Service	INFO	Download service set max P2P upload rate to %d KB/s by user
Download Service	INFO	Download service set max download slot to %d
Download Service	INFO	Download service set seeding time to %d minutes
Download Service	INFO	Download service set TCP port to %d and UDP port to %d
Download Service	INFO	Download service set torrent monitor location to %s
Download Service	INFO	Download service start to download %s
Download Service	INFO	Download service stopped
Download Service	INFO	Download service suspend %s because of no data income detected or to limit max download slot
Download Service	INFO	Download service add comment %s to %s by user
Download Service	INFO	Download service set min upload/download ratio to %d%
Download Service	INFO	Download service set max seed slot to %d
Download Service	INFO	Download service start loading ipfilter.dat
Download Service	INFO	Download service clear all ipfilter rules
Download Service	INFO	Download service blocked peer removed from peer list
Download Service	INFO	Download service disconnected blocked peer
Download Service	INFO	Download service incoming connection blocked by IP filter
Download Service	INFO	Download service peer from tracker blocked by IP filter
Download Service	INFO	Download service abort loading ipfilter.dat
Download Service	INFO	Download service will update ipfilter.dat from %s after %d day(s)

**Table 110** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Download Service	INFO	Download service added %d rules from ipfilter.dat
Download Service	INFO	Download service detected invalid ip range %s in ipfilter.dat
Download Service	WARNING	Download service default location does not exist. Load default
Download Service	WARNING	Download service default torrent location does not exist. Load default
Groups	NOTICE	Add new group %s.
Groups	NOTICE	Delete group %s.
Network	INFO	DyDNS: Start Success
Network	INFO	DyDNS: Stop Success
Network	NOTICE	%s is active because of changing Port Group. Enable DHCP client.
Network	NOTICE	%s is inactive because of changing Port Group. Disable DHCP client.
Network	NOTICE	%s MTU > (%s MTU - 8), %s may not work correctly.
Network	NOTICE	(%s MTU - 8) < %s MTU, %s may not work correctly.
Network	NOTICE	Add interface %s.
Network	NOTICE	Because %s link down. Default route will not apply until %s link up.
Network	NOTICE	Because base interface %s will be disabled. Interface %s is disabled now., base_ud_iface
Network	NOTICE	Network Config setting is changed
Network	NOTICE	Interface %s was disabled.
Network	NOTICE	Interface %s was enabled.
Network	NOTICE	Port Group on %s is changed. Renew DHCP client.
Network	NOTICE	Account pppoe was changed
Network	NOTICE	Add account pppoe
Network	NOTICE	ADD interface ppp0
Network	NOTICE	Interface ppp0 will reapply because Device-Ha become active status.
Network	NOTICE	Interface ppp0 will reapply because Device-Ha is not running.
Network	NOTICE	Network port is disabled
Network	NOTICE	Network port is enabled
Network	ERROR	DyDNS: Start Error
Network	ERROR	DyDNS: Stop Error
Services	INFO	HTTP management port has changed to %s
Services	INFO	Clock timezone is set to GMT%s
Services	INFO	Clock timezone is set to default
Services	INFO	Clock daylight saving is enabled
Services	INFO	Clock daylight saving is disabled
Services	INFO	Clock has disable daylight saving
Services	INFO	MyClock has enable daylight saving
Services	INFO	MyClock has set timezone to %s
Services	INFO	MyClock has set timezone to default
Services	INFO	The date and time are updated from NTP server.

**Table 110** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
Services	INFO	The date and time are updated manually.
Services	INFO	The time is updated manually.
Services	NOTICE	FTP server stops
Services	NOTICE	FTP server starts
Services	NOTICE	MyClock has changed daylight saving interval
Services	NOTICE	MyClock has disabled daylight saving interval
Services	NOTICE	NTP server has set to '%s'
Services	NOTICE	NTP server has set to null
Services	NOTICE	The NTP service is disabled.
Services	NOTICE	The NTP service is enabled.
Services	WARNING	Reaching Maximum Allowed Rules
Services	WARNING	Rule is empty
Services	WARNING	The Rule Does Not Exist
Shares	INFO	Expire recycle-bin finish for share %s, process time: %s seconds, remove %s file (%s bytes)
Shares	NOTICE	Add new disabled share %s for unshared folder: %s in volume: %s.
Shares	NOTICE	Add new share %s.
Shares	NOTICE	Delete share %s.
Shares	NOTICE	Purge all files in recycle-bin folder in share: %s.
Shares	NOTICE	Recycle-bin disabled. Remove recycle-bin folder in share: %s.
Storage	ERROR	Eject External Disk (%s): FAILED
Storage	INFO	Eject External Disk (%s): SUCCESS
Storage	ERROR	Cancel External Volume Scan: FAILED
Storage	ERROR	Cannot Unmount Volume and RAID. System Busy Using Volume and RAID: Please Reboot and Try Again
Storage	ERROR	Create External Normal Volume [%s] (%s): FAILED
Storage	ERROR	Rename External Volume to [%s]: FAILED
Storage	ERROR	Scan External Volume: FAILED
Storage	INFO	Cancel External Volume Scan: SUCCESS
Storage	INFO	Create External Normal Volume [%s] (%s): SUCCESS
Storage	INFO	Rename External Volume to [%s]: SUCCESS
Storage	INFO	Scan External Volume: SUCCESS
storage	Info	Create raidType [Volume1]: SUCCESS
storage	error	Create raidType [Volume1]: FAILED
storage	Info	Create raidType [Disk group 1]: SUCCESS
storage	error	Create raidType [Disk group 1]: FAILED
storage	Info	Create Internal Volume [Volume1] (Size= 512MB): SUCCESS
storage	error	Create Internal Volume [Volume1] (Size= 512MB): FAILED
storage	Info	Delete Volume [Volume1] SUCCESS
storage	error	Delete Volume [Volume1] FAILED
storage	Info	Delete Disk Group [ Disk Group 1] SUCCESS
storage	error	Delete Disk Group [ Disk Group 1] FAILED

**Table 110** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
storage	Info	initialize Repair Degraded Raid [Volume1]: SUCCESS
storage	error	initialize Repair Degraded Raid [Volume1]: FAILED
storage	Info	initialize Repair Degraded Raid [ Disk Group 1]: SUCCESS
storage	error	initialize Repair Degraded Raid [ Disk Group 1]: FAILED
storage	Info	Add disk1 to Volume1: SUCCESS
storage	error	Add disk1 to Volume1: FAILED
storage	Info	Add disk1 to Disk Group 1: SUCCESS
storage	error	Add disk1 to Disk Group 1: FAILED
storage	Info	Change Volume1 Raid type to raid5: SUCCESS
storage	error	Change Volume1 Raid type to raid5: FAILED
storage	Info	Change Disk Group 1 Raid type to raid5: SUCCESS
storage	error	Change Disk Group 1 Raid type to raid5: FAILED
storage	Info	Add Hot-Spare disk1 to Raid [Volume1]: SUCCESS
storage	error	Add Hot-Spare disk1 to Raid [ Volume1]: FAILED
storage	Info	Add Hot-Spare disk1 to Raid [ Disk Group 1]: SUCCESS
storage	error	Add Hot-Spare disk1 to Raid [ Disk Group 1]: FAILED
storage	Info	Remove Hot-Spare disk1 from Raid [Volume1 ]: FAILED
storage	error	Remove Hot-Spare disk1 from Raid [Volume1 ]: SUCCESS
storage	Info	Remove Hot-Spare disk1 from Raid [Disk Group1 ]: FAILED
storage	error	Remove Hot-Spare disk1 from Raid [Disk Group1 ]: SUCCESS
storage	Info	Expand Volume [Volume1] : SUCCESS
storage	error	Expand Volume [Volume1] : FAILED
storage	Info	Expand Disk Group [Disk Group 1] SUCCESS
storage	error	Expand Disk Group [Disk Group 1] FAILED
System	INFO	NTP update failed
System	INFO	NTP updates successfully from %s
System	INFO	NTP fails to update from %s
System	INFO	Device is rebooted by administrator!
System	INFO	Device is shutdown by administrator!
System	NOTICE	DNS server is changed.
System	NOTICE	Hostname is cleared.
System	NOTICE	Hostname is set to '%s'.
System	NOTICE	System description is changed.
System	NOTICE	System description is empty now.
System	NOTICE	DNS server setting is changed
System	NOTICE	DNS server address is changed to be given from DHCP server
System	NOTICE	DNS server address is changed to be assigned by user
System	NOTICE	Name server is changed.
USB	NOTICE	An external APC UPS device is plugged/unplugged.
USB	NOTICE	An external Mass Storage device is plugged/unplugged.
USB	NOTICE	An external Printer device is plugged/unplugged.



**Table 110** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
USB	NOTICE	An external USB hub device is plugged/unplugged.
Users	ALERT	Failed %s login attempt (incorrect password or inexistent username)
Users	ALERT	Failed %s login attempt (incorrect password or inexistent username)
Users	INFO	User %s has logged in from %s!
Users	INFO	User %s has logged out from %s!
Users	INFO	User %s from %s has been logged out (re-auth timeout)!
Users	INFO	User %s from %s has been logged out (lease timeout)!
Users	NOTICE	Add new user %s by %s from %s.
Users	NOTICE	User %s password has been changed.
Users	NOTICE	Delete user %s by %s from %s.
Users	NOTICE	The user %s from %s has attempted to change the user %s password but old password verification fail.
Users	NOTICE	User %s on %u.%u.%u.%u has been denied access from %s
Users	NOTICE	User %s password has been changed by %s from %s.
Backup/ Restore	ERROR	When query remote target [%s]: %s
Backup/ Restore	INFO	Backup job [%s] successfully
Backup/ Restore	ERROR	When backup [%s]: %s
Backup/ Restore	ERROR	When backup [%s], error happens: %s
Backup/ Restore	INFO	Start to restore backup job [%s].
Backup/ Restore	INFO	Restore backup job [%s] successfully.
Backup/ Restore	ERROR	Restore backup job [%s] failed: %s
Backup/ Restore	INFO	Start to restore backup job [%s] from [%s].
Backup/ Restore	INFO	Restore from [%s] successfully.
Backup/ Restore	ERROR	Restore from [%s] failed: %s
Backup/ Restore	ERROR	When restore [%s]: %s
Backup/ Restore	ERROR	When restore job [%s], error happens: %s
Power Management	INFO	Job [%s] is triggered by schedule
Power Management	INFO	Job [%s] is triggered by user
Power Management	ERROR	Job [%s] is resulted as failed
Power Management	INFO	Job [%s] is finished successfully

**Table 110** Log Messages (continued)

<b>CLASS</b>	<b>SEVERITY</b>	<b>MESSAGE</b>
Power Management	INFO	Job [%s] is pending because other job is running
Power Management	INFO	Job [%s] is canceled by user
Power Management	INFO	Restore job [%s] is triggered by user
Power Management	INFO	[Power On] schedule is triggered.
Power Management	INFO	[Power Off] schedule is triggered.
Power Management	INFO	[Reboot] schedule is triggered.

## 20.1 Overview

This chapter introduces different ways of protecting data on the NAS and covers the **Protect** screens.

**Table 111** Overview of Protection Methods

SITUATION	ACTION
Unexpected NAS behavior after configuration changes	Back up the NAS configuration file before you make major configuration changes. See <a href="#">Section 20.5 on page 325</a> .
Need to transfer data from your computer to the NAS after volume(s) have been created	Backup your data to a computer or other storage devices.
Data infected by virus	Use anti-virus software on your computer to scan files before saving them onto the NAS. Although this may be slow so you may want to schedule it to occur while no one is using the NAS.  Use a firewall with anti-virus capability on your network.
Hard drive malfunction.	Use RAID. See <a href="#">Section 4.4.7 on page 68</a> for more information on RAID.
NAS malfunction Network down Natural disaster such as a fire or earthquake occurs where your NAS is located	Back up data to another NAS or external USB hard drive. See <a href="#">Section 5.14 on page 139</a> for an example of how to back up the NAS to another NAS.

## 20.2 What You Can Do

- Use the **Backup** screens ([Section 20.3 on page 307](#)) to create and customize backup jobs.
- Use the **Restore** screens ([Section 20.4 on page 321](#)) to restore previous backups made with the NAS.

## 20.3 Backup Screens

Use this screen to create and customize scheduled backup jobs for your files.

You can have several backup jobs for specific folders and time periods.

Click **Protect > Backup** to open the following screen.

**Figure 170** Protect > Backup



The following table describes the labels in this screen.

**Table 112** Protect > Backup

LABEL	DESCRIPTION
Backup	
Add Job	Click this to create and customize a backup job.
Edit Job	Select a backup job in the list and click this to make some changes to it.
Delete Selected Job(s)	Select a backup job in the list and click this to delete it.
Execute Job Now	Select a backup job in the list and click this to run the backup job immediately.
Restore Archive	Select a backup job in the list and click this to restore the file(s) included in that backup job to the NAS.  This applies to Archive backups only. Refer to <a href="#">Section 20.3.8 on page 319</a> to see the screens.
Abort Job	Select a backup job in the list and click this to stop the process if the backup job is currently active.
Activate Job	Enable the selected backup job.
Inactivate Job	Disable the selected backup job.
Status	This shows the current state of the backup job. <ul style="list-style-type: none"> <li>• <b>Waiting</b> means the backup job is not active but is scheduled to run at some time.</li> <li>• <b>Running</b> indicates that the NAS is currently doing the backup job. When the backup job is running, you can also see a progress bar.</li> </ul>
Job Name	This identifies the backup job.
Job Description	This is a short description of the backup job.
Backup Info	This lists down the backup job details: type, source and target. Refer to <a href="#">Section 20.3.1 on page 308</a> and <a href="#">Section 20.3.2 on page 311</a> .
Scheduler Info	This shows the backup schedule, including the frequency, the time it was last run in (and whether or not it succeeded), and when it is scheduled to run again. The times use yyyy-mm-dd hh:mm:ss format.  Refer to <a href="#">Section 20.3.4 on page 315</a> .

## 20.3.1 Backup: Step 1

Use this screen to specify the job information and back up type.

Click **Add Job** in the **Protect > Backup** screen to open the following:

**Figure 171** Protect > Backup: Step 1

The following table describes the labels in this screen.

**Table 113** Protect > Backup: Step 1

LABEL	DESCRIPTION
Job Information	
Job Name	Enter a name to identify the backup job.
Job Description	Enter a short description (up to 100 keyboard characters) for the backup job.

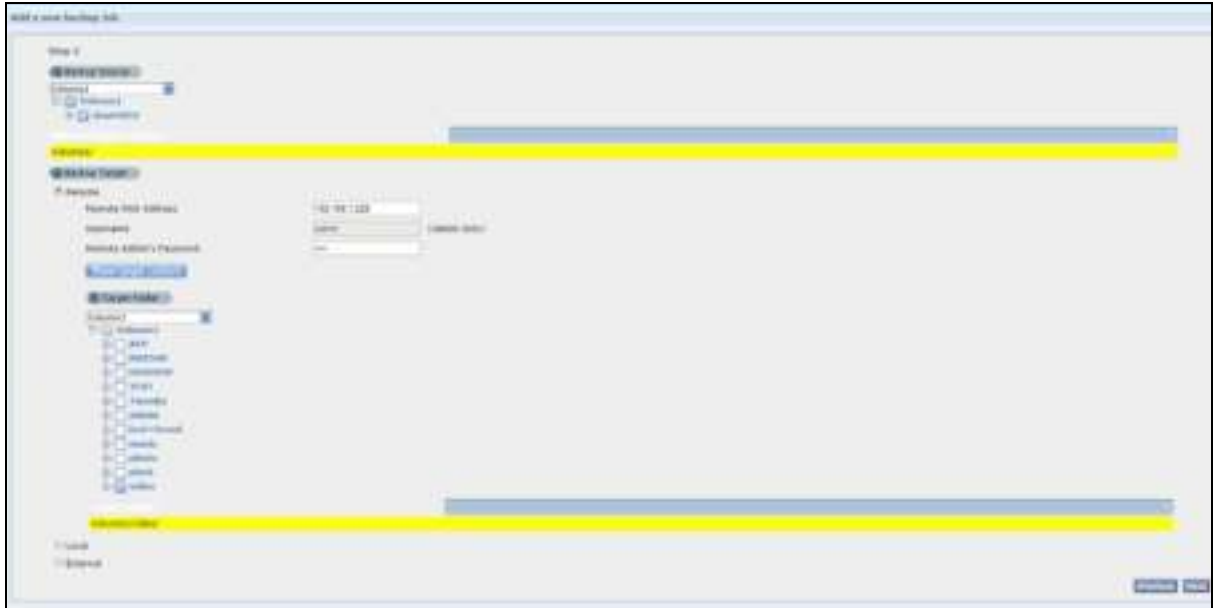
**Table 113** Protect > Backup: Step 1

LABEL	DESCRIPTION
Backup Type	<p>Choose the backup type the NAS implements for the backup job.</p> <p><b>Archive</b> - This is a backup of the source folder in an archive format. Once you backup your files in the target folder, you cannot access the files individually unless you have the extracting tool used by the NAS. If there are existing files in the target folder prior to the NAS's backup job, the files remain undisturbed. You can also choose between the following types of archive:</p> <ul style="list-style-type: none"> <li>• <b>Full</b> - The NAS does a fresh backup each time. This provides the most protection but also requires the most storage space.</li> <li>• <b>Incremental</b> - The NAS backs up new or modified files from the source folder since the last backup. The first backup is a full backup. You can also do a full backup after several incremental backups. Enter how many incremental backups the NAS runs before it performs a full backup of the source folder. You must keep the latest full backup to be able to restore the files later.</li> </ul> <p><b>Synchronization</b> - This does a backup of individual files. If you use this type, you cannot use the <b>Restore</b> feature of the NAS. You can also choose between the following types of synchronization:</p> <ul style="list-style-type: none"> <li>• <b>Mirror</b> - The NAS deletes all data in the target folder before running the backup. It makes the target folder identical to the source folder.</li> <li>• <b>Publish</b> - The NAS does a backup of individual files to the target folder without overwriting existing files in that folder. It makes a copy of the source files.</li> </ul> <p><b>Rsync</b> - This synchronizes individual files to another device that supports rsync. Rsync is open source and provides incremental file transfers. It only sends the differences in the files through the connection so it brings the remote files into sync very quickly.</p> <ul style="list-style-type: none"> <li>• The NAS deletes all data in the target folder before running the backup. It makes the target folder identical to the source folder.</li> <li>• If you use this type, you cannot use the <b>Restore</b> feature of the NAS.</li> </ul>
Next	Click this to go to the next step.

## 20.3.2 Backup: Step 2













Use this screen to specify where the files you want to backup are located and set where you want the backup to be stored.

**Figure 172** Protect > Backup: Step 2



The following table describes the labels in this screen.

**Table 114** Protect > Backup: Step 2

LABEL	DESCRIPTION
Backup Source	<p>Select an (internal) volume and the folders and files to back up using this tree interface.</p> <p>Click  to browse through folders, sub-folders and files.</p> <p>Click  to close a folder in the tree. This is useful if there are many folders or files that you wish to hide from view.</p> <p>Click  to select a folder or file to back up. This also selects all sub-folders and files.</p> <p>Click  to deselect the folder or file. This also deselects all sub-folders and files.</p> <p> and  appear when there are too many folders/files to display. Click the arrows to scroll up or down through the folders/files.</p> <p> for a folder means all sub-folders and files and new folders/files added later will be backed up.</p> <p> for a file means the file will be backed up.</p> <p> (a grayed out check box) for a folder means that only some sub-folders and files under the folder will be backed up. Newly added folders/files will NOT be backed up.</p> <p> means the file structure is still loading. Please wait for the folders/files to display.</p> <p>Note: If you select to back up an entire folder  and then de-select a sub-folder or file within that folder, the main folder icon will turn  and any new sub-folders and files added to this main folder after the initial backup configuration will <b>NOT</b> be backed up.</p> <p>A list of your select folders and files displays below the selection fields.</p>
Selected Source Folders	This shows the path of the backup source folder you selected.
Backup Target	Select the target folder where you want to place your backup.



**Table 114** Protect > Backup: Step 2

LABEL	DESCRIPTION
Remote	<p>Select this to back up to another device.</p> <p>For Archives:</p> <p>The remote device can be another NAS in the network. Fill in the following fields in order to be able to access it.</p> <ul style="list-style-type: none"> <li>• Remote NAS Address</li> <li>• Username</li> <li>• Password</li> <li>• Share Name</li> </ul> <p>Click <b>Test Connection</b> to see if your NAS can communicate with the remote device.</p> <p>For Synchronization:</p> <p>The remote device must be another NAS compatible with the NAS's synchronization feature. Fill in the following fields in order to be able to access it.</p> <ul style="list-style-type: none"> <li>• Remote NAS Address</li> <li>• Username (always "admin")</li> <li>• Remote Admin's Password</li> </ul> <p>Click <b>Show target content</b> to connect to the remote NAS so you can select the target share for the backup.</p> <p>For Rsync:</p> <p>The remote device must be a NAS that supports rsync or a computer running the rsync utility. Fill in the following fields in order to be able to access it.</p> <ul style="list-style-type: none"> <li>• Remote NAS Address</li> <li>• Username (always "admin")</li> <li>• Remote Admin's Password</li> </ul> <p>Click <b>Show target content</b> to connect to the remote NAS or computer so you can select the target folder for the backup.</p>
Local	Select this if you want to place your backup in another volume in the NAS. Select the folder where you want to place the backup.
External	Select this if you have a USB hard disk connected to the NAS that you want to use for your backup. Select the folder where you want to place the backup.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

### 20.3.3 Backup: Step 3

Use this screen to specify compression, encryption and purge policies for the backup job. This step is only available if you are doing an archive backup or a synchronization backup to a remote target.

**Figure 173** Protect > Backup: Step 3

The screenshot shows a web interface for configuring a backup job. The title is 'Add a new backup Job'. Under 'Step 3', there are four sections:

- Compression:** Radio buttons for 'Yes' and 'No'.
- Encryption:** Radio buttons for 'Yes' and 'No'.
- Bandwidth:** Radio buttons for 'Yes' and 'No'.
- Purge Policy:** Three radio button options:
  - Keep All Old Backup files
  - Keep Only the last n backup files (1-30)
  - Keep Backups for n day(s) (1-3650)

At the bottom right, there are 'Back' and 'Next' buttons.

The following table describes the labels in this screen.

**Table 115** Protect > Backup: Step 3

LABEL	DESCRIPTION
Compression	<p>Select <b>Yes</b> if you want NAS to compress the files for your backup. Otherwise, choose <b>No</b>.</p> <p>In an <b>Archive</b> backup, compression is a method of packing computing files in a way that saves hard disk space.</p> <p>For a <b>Synchronization</b> backup (to a remote target), the source data will be compressed before the transmission to reduce the transmission time. It is used in slow networks only.</p>
Encryption	<p>Select <b>Yes</b> if you want NAS to encrypt the files for your backup. Otherwise, choose <b>No</b>.</p> <p>In an <b>Archive</b> backup, this means using a password to secure files.</p> <p>For a <b>Synchronization</b> backup (to a remote target), this means securing the file transfer session. However the final file stored on the remote NAS is unencrypted. This takes a long time. Make sure you really need this feature before enabling it.</p>
Bandwidth	<p>Restrict the bandwidth of synchronization backups to help stop them from using all of your network connection's available bandwidth. This is more important when backing up to a remote NAS or computer through the Internet.</p>
Purge Policy	<p>The NAS maintains the files that have been included in your backups. However to save hard disk space, you can choose to delete files that have been included in previous backups.</p> <ul style="list-style-type: none"> <li>Select <b>Keep All Old Backup files</b> to store all files that have been included in previous backups.</li> <li>If you want to store a certain number of backup files, select <b>Keep Only the last n backup files (1-30)</b>. Enter a value (n) from 1 to 30 to specify how many backups the NAS stores. All backup files older than the last one are deleted. You will not be able to recover files that existed (only) in those previous backups. Select this if backup space is limited and recovery of old files is not important.</li> <li>If you want to store all backups for a certain time period, select <b>Keep Backups for n day(s) (1-3650)</b>. Enter a value (n) from 1 to 3650 to specify how many days the NAS stores all backup files. After this day has expired, all backup files will be deleted.</li> </ul>

**Table 115** Protect > Backup: Step 3

LABEL	DESCRIPTION
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

## 20.3.4 Backup: Step 4

Click this to specify the schedule for the backup job. The backup job automatically runs according to the schedule that you set in this screen.

**Figure 174** Protect > Backup: Step 4

The following table describes the labels in this screen.

**Table 116** Protect > Backup: Step 4

LABEL	DESCRIPTION
Scheduler	
Backup Frequency	Select from <b>Hourly</b> , <b>Daily</b> , <b>Weekly</b> and <b>Monthly</b> backup intervals. The screen changes depending on the item you select.
Every how many hours?	This is only available if you selected <b>Hourly</b> as your backup frequency. Select every how many hours the NAS performs the backup job.
On which minute of the hour?	This is only available if you selected <b>Hourly</b> as your backup frequency. Select the minute (from 0 to 59) in an hour when the NAS performs the backup job.
Start Time (hh:mm)	This is available if you selected <b>Daily</b> , <b>Weekly</b> or <b>Monthly</b> as your backup frequency. Select the time in hour:minute format when you want the NAS to perform the backup job.
Every how many days?	This is only available if you selected <b>Daily</b> as your backup frequency. Enter the interval between days when the NAS performs the backup job.
Every how many weeks?	This is only available if you selected <b>Weekly</b> as your backup frequency. Enter the interval between weeks when NAS performs the backup job.
Step 1: Please select the month(s) of a year	This is only available if you selected <b>Monthly</b> as your backup frequency. Select the month(s) when you want the NAS to perform the backup job.

**Table 116** Protect > Backup: Step 4

LABEL	DESCRIPTION
Step 2: Please select the day of the month	This is only available if you selected <b>Monthly</b> as your backup frequency. Select the day in a month when you want the NAS to perform the backup job.
Previous	Click this to go back to the previous screen.
Done	Click this to close the screen.

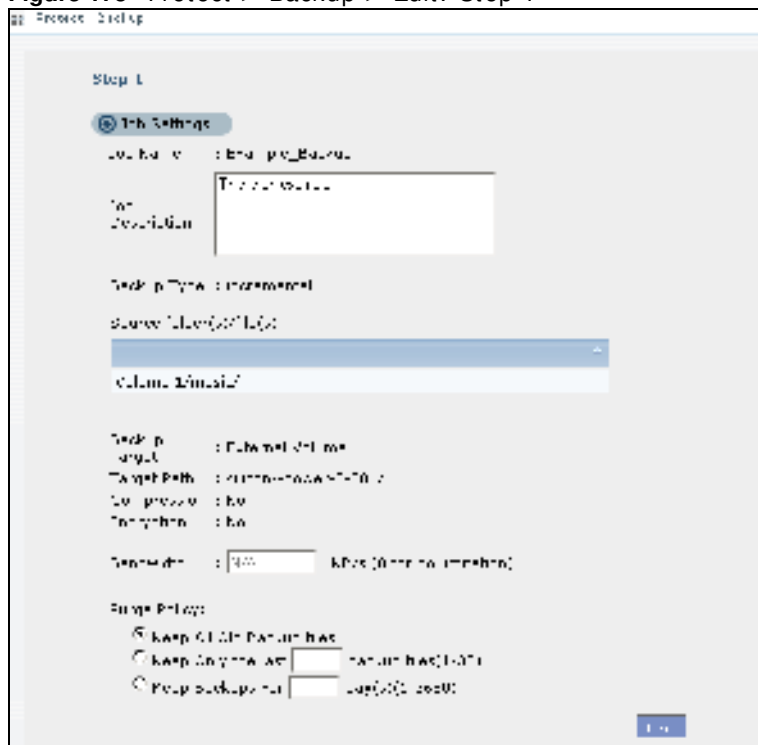
### 20.3.5 Edit Job Screen

Use this screen to edit an existing backup job. Some attributes of the backup job cannot be changed, such as the name, backup type, source folder and so on.

### 20.3.6 Edit Job: Step 1

Click **Protect > Backup**. Select a backup job from the list and click **Edit Job** to open the **Edit Job** screen.

**Figure 175** Protect > Backup > Edit: Step 1



The following table describes the labels in this screen.

**Table 117** Protect > Backup > Edit: Step 1

LABEL	DESCRIPTION
Job Settings	
Job Name	This field is read-only and shows the name of the backup job.
Job Description	Enter a short description for the backup job.

**Table 117** Protect > Backup > Edit: Step 1

LABEL	DESCRIPTION
Backup Type	This field is read-only and shows the backup type.
Source folder(s)/ file(s)	This is read-only and shows the path of the source folder for backup.
Backup Target	This field is read-only and shows on which volume (whether internal or external) the backup files are stored. If the target location is a remote NAS, this shows the remote IP address.
Target Path	This field is read-only and shows the target folder for the backup files.
Compression	<p>This field is read-only and shows whether the backup employs compression.</p> <p>Compression reduces the size of the file that you want to back up. Backup is then faster, but restoring may be slower, so if backup space is not a concern and recovery speed is, then turn off compression.</p>
Encryption	<p>This field is read-only and shows whether the backup employs encryption.</p> <p>You can have the NAS use a password to encrypt the backup files.</p>
Bandwidth	For backups to a remote NAS, you can restrict the bandwidth to help prevent the backups from using all of your network connection's available bandwidth. This is more important when backing up to a remote NAS or computer through the Internet.
Purge Policy	<p>The NAS maintains the files that have been included in your backups. However to save hard disk space, you can choose to delete files that have been included in previous backups.</p> <ul style="list-style-type: none"> <li>• Select <b>Keep All Old Backup files</b> to store all files that have been included in previous backups.</li> <li>• If you want to store a certain number of backup files, select <b>Keep Only the last n backup files (1-30)</b>. Enter a value (n) from 1 to 30 to specify how many backups the NAS stores. All backup files older than the last one are deleted. You will not be able to recover files that existed (only) in those previous backups. Select this if backup space is limited and recovery of old files is not important.</li> <li>• If you want to store all backups for a certain time period, select <b>Keep Backups for n day(s) (1-3650)</b>. Enter a value (n) from 1 to 3650 to specify how many days the NAS stores all backup files. After this day has expired, all backup files will be deleted.</li> </ul>
Next	Click this to go to the next screen.

## 20.3.7 Edit Job: Step 2

Use this screen to edit the schedule for the backup job.

**Figure 176** Protect > Backup > Edit: Step 2

The following table describes the labels in this screen.

**Table 118** Protect > Backup > Edit: Step 2

LABEL	DESCRIPTION
Scheduler Settings	
Backup Frequency	Edit this by selecting from <b>Hourly</b> , <b>Daily</b> , <b>Weekly</b> and <b>Monthly</b> backup intervals. The screen changes depending on the item you select.
Every how many hours?	This is only available if you selected <b>Hourly</b> as your backup frequency. Select every how many hours the NAS performs the backup job.
On which minute of the hour?	This is only available if you selected <b>Hourly</b> as your backup frequency. Select the minute (from 0 to 59) in an hour when the NAS performs the backup job.
Start Time (hh:mm)	This is available if you selected <b>Daily</b> , <b>Weekly</b> or <b>Monthly</b> as your backup frequency. Select the time in hour:minute format when you want the NAS to perform the backup job.
Every how many days?	This is only available if you selected <b>Daily</b> as your backup frequency. Enter the interval between days when the NAS performs the backup job.
Every how many weeks?	This is only available if you selected <b>Weekly</b> as your backup frequency. Enter the interval between weeks when NAS performs the backup job.
Step 1: Please select the month(s) of a year	This is only available if you selected <b>Monthly</b> as your backup frequency. Select the month(s) when you want the NAS to perform the backup job.
Step 2: Please select the day of the month	This is only available if you selected <b>Monthly</b> as your backup frequency. Select the day in a month when you want the NAS to perform the backup job.
Previous	Click this to go back to the previous screen.
Done	Click this to close the screen.

## 20.3.8 Restore Archive Screen

Use this screen to restore previous backups made with the NAS.

## 20.3.9 Restore Archive: Step 1

Click **Protect** > **Backup** screen ([Section 20.3 on page 307](#)). You can restore a previous backup job by selecting a backup job from the list and clicking **Restore Archive**.

**Figure 177** Protect > Backup > Restore Archive: Step 1

The screenshot shows a web interface titled 'Restore'. Underneath, it says 'Step 1. Select Restore Point'. There is a search bar with the text '@\_v\_ - form.0.0'. Below that is a table with four rows of job information:

Job Name:	Example
Job Description:	Example
Backup Type:	Full
Scheduler Information:	every 10 min

Below this table is another table with a header 'Restored Time' and a single row containing the date '2010051910:01:01'. At the bottom right of the form is a 'Next' button.

The following table describes the labels in this screen.

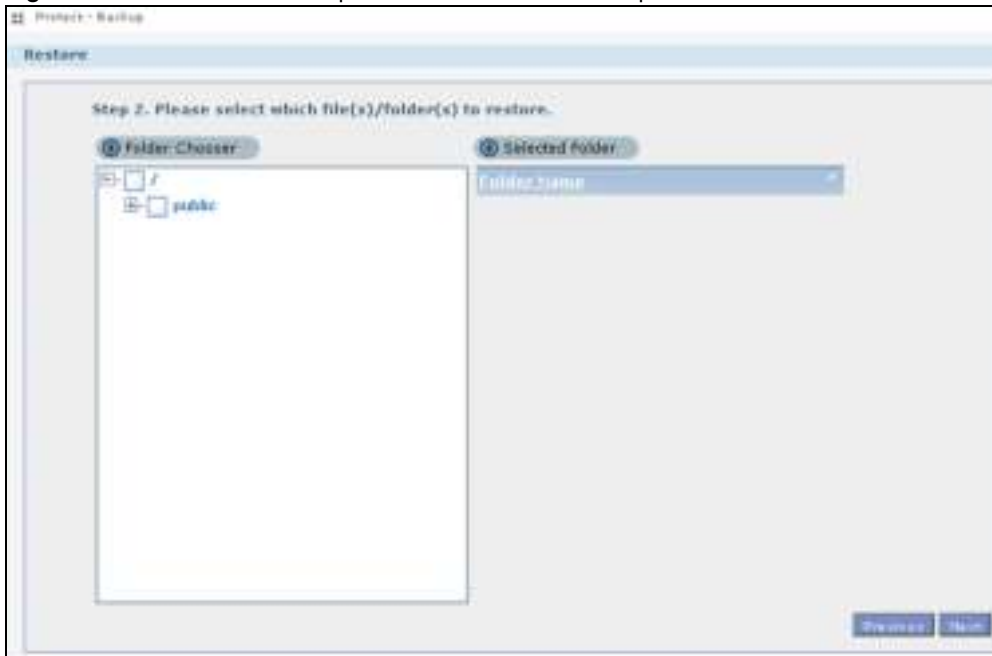
**Table 119** Protect > Backup > Restore Archive: Step 1

LABEL	DESCRIPTION
Step 1. Select Restore Source	Select a previous archive backup that you want to restore to the NAS.
Job Information	
Job Name	This is the name to identify the backup job.
Job Description	This is a short description (up to 100 keyboard characters) for the backup job.
Backup Type	This is the type of backup implemented for the backup job.
Scheduler Information	This field displays the backup's frequency.
Restored Time	Select a previous backup in the list that you want to restore to your NAS.
Next	Click this to go to the next screen.

### 20.3.10 Restore Archive: Step 2

Use this screen to select the folder where the archive you want to restore is located.

**Figure 178** Protect > Backup > Restore Archive: Step 2



The following table describes the labels in this screen.

**Table 120** Protect > Backup > Restore Archive: Step 2

LABEL	DESCRIPTION
Step 2. Please select which file(s)/folder(s) to restore.	
Folder Chooser	Select the folder where the backup you want to restore is located.
Selected Folder	This shows the path of the folder you selected.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

### 20.3.11 Restore Archive: Step 3

Use this screen to select the location in the NAS where you want to restore your backup.


**Figure 179** Protect > Backup > Restore Archive: Step 3





The following table describes the labels in this screen.

**Table 121** Protect > Backup > Restore Archive: Step 3

LABEL	DESCRIPTION
Step 3. Set a restore target and start restoring	
Original Location	Select this to restore the files to their original location in the NAS.
Other Location	<p>Click this to select a folder where you want to place the restored files. Click <b>Browse</b> to open the following screen.</p>  <ul style="list-style-type: none"> <li>• <b>Volume</b> - Select a volume from the list.</li> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Type</b> - This identifies the item as a file or folder.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Previous	Click this to go back to the previous screen.
Done	Click this to run the restore process and go back to the <b>Backup</b> screen.

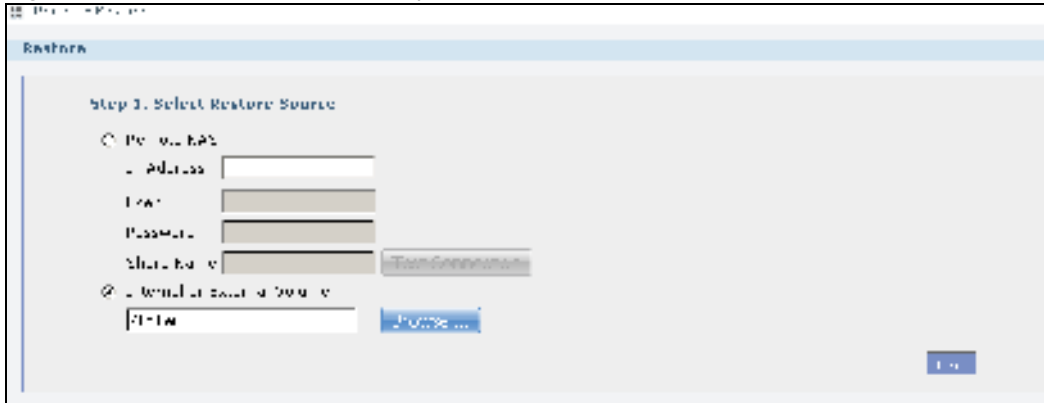
## 20.4 Restore Screen

Use this screen to restore previous backups made with the NAS, including archives and folders from internal, external or remote NASs to the NAS.

## 20.4.1 Restore: Step 1

You can access this screen by clicking **Protect > Restore**.

**Figure 180** Protect > Restore: Step 1



The following table describes the labels in this screen.

**Table 122** Protect > Restore: Step 1

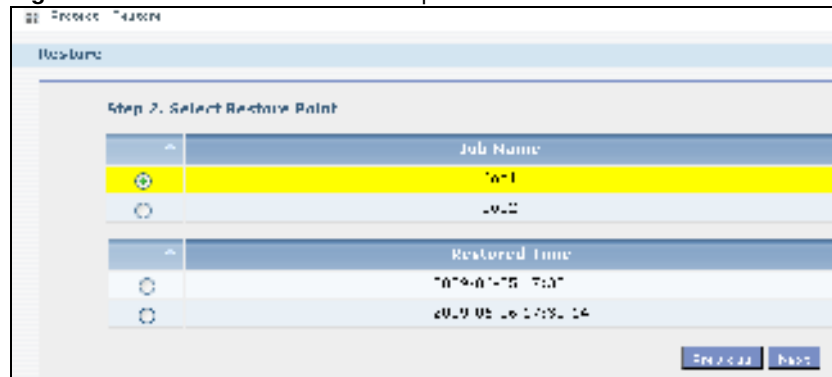
LABEL	DESCRIPTION
Step 1. Select Restore Source	Select a previous archive backup that you want to restore to the NAS. Select <b>Remote NAS</b> if the file is in another NAS in the network that you used for your backup. Fill in the fields below when you choose this option. Select <b>Internal or External Volume</b> if you want to use another volume in the NAS or an attached USB hard disk for your backup. Click <b>Browse</b> to select the backup file.
IP Address	Enter the address of the NAS you want to use.
User	Enter the username you use to access the NAS.
Password	Enter the password of your NAS account.
Share Name	Enter the name of the share you want to use.
Test Connection	Click this to test your connection to the remote NAS that you have specified in the fields above.

**Table 122** Protect > Restore: Step 1

LABEL	DESCRIPTION
Browse	<p>Click this to select where the previous backup that you want to restore is located.</p>  <ul style="list-style-type: none"> <li>• <b>Volume</b> - Select a volume from the list.</li> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Type</b> - This identifies the item as a file or folder.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Next	Click this to go to the next screen.

## 20.4.2 Restore: Step 2

Select a previous archive backup that you want to restore to the NAS.

**Figure 181** Protect > Restore: Step 2

The following table describes the labels in this screen.

**Table 123** Protect > Restore: Step 2

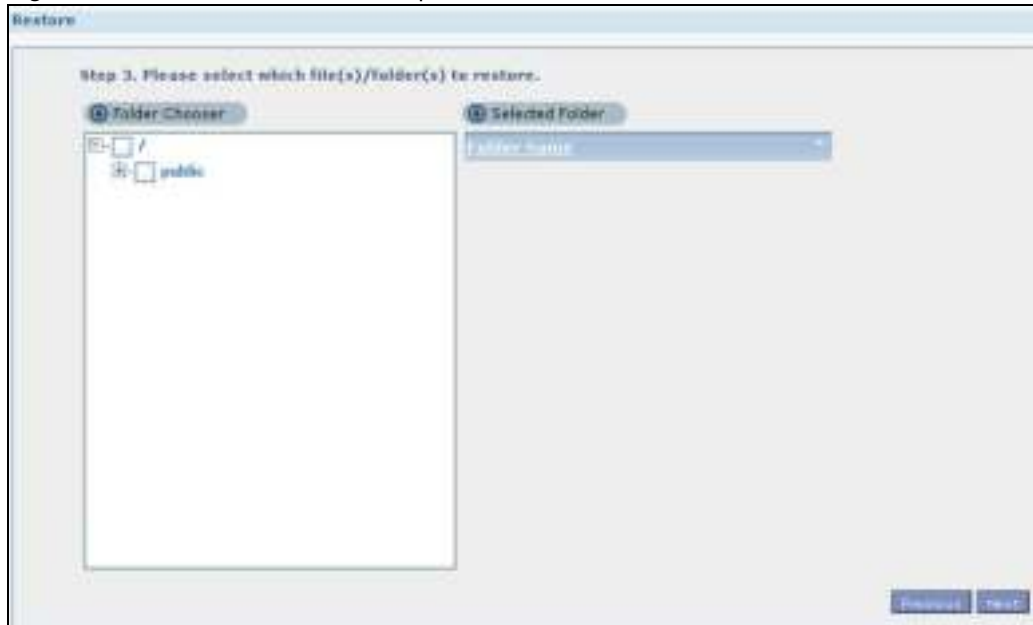
LABEL	DESCRIPTION
Step 2. Select Restore Point	<p>If you selected <b>Remote NAS</b> for the backup you want to restore, you can see a list of all the backups you performed in the <b>Job Name</b> table.</p> <p>If you selected <b>Internal or External Volume</b> for the backup you want to restore, you can see a list of restore times for the backups you performed in the <b>Restored Time</b> table.</p>
Job Name	Select a previous backup job in the list that you want to restore to your NAS. Once you choose a job name, all available restore times for that backup job shows in the <b>Restored Time</b> table.

**Table 123** Protect > Restore: Step 2

LABEL	DESCRIPTION
Restored Time	Select a previous backup job in the list that you want to restore to your NAS.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

### 20.4.3 Restore: Step 3

Use this screen to select the folder where the archive you want to restore is located.

**Figure 182** Protect > Restore: Step 3

The following table describes the labels in this screen.

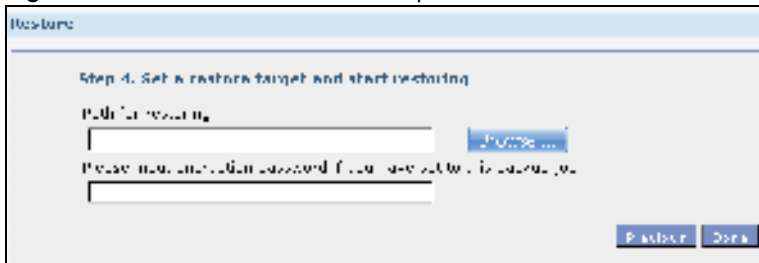
**Table 124** Protect > Restore: Step 3

LABEL	DESCRIPTION
Step 3. Please select which file(s)/folder(s) to restore.	
Folder Chooser	Select the folder where the backup you want to restore is located.
Selected Folder	This shows the path of the folder you selected.
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

## 20.4.4 Restore: Step 4

Use this screen to select the location in the NAS where you want to restore your backup.

**Figure 183** Protect > Restore: Step 4



The following table describes the labels in this screen.

**Table 125** Protect > Restore: Step 4

LABEL	DESCRIPTION
Step 3. Set a restore target and start restoring	
Browse	<p>Click this to select a folder where you want to place the restored files.</p> <ul style="list-style-type: none"> <li>• <b>Volume</b> - Select a volume from the list.</li> <li>• <b>Current Location</b> - This is the location of the selected folder.</li> <li>• <b>Type</b> - This identifies the item as a file or folder.</li> <li>• <b>Name</b> - This is the name of the folder/file.</li> </ul> <p>Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.</p>
Previous	Click this to go back to the previous screen.
Done	Click this to run the restore process and go back to the <b>Backup</b> screen.

## 20.5 Configuration File Backup and Restoration

Use the **Maintenance > Configuration** menus to create a file of your NAS configurations such as passwords, shares and volumes created, network settings and so on. If you're going to do some major configuration changes, then it is advisable to create a configuration backup file. If things go wrong after you make the configuration changes, you can always go back to the previous configuration by restoring an earlier configuration file.

If you forgot the NAS password, then use the **RESET** button (see [Section 1.1.5 on page 17](#)) to return the NAS to the factory default configuration.

Note: Configuration File Backup and Restoration does not affect data (your files and folders), volumes on the NAS.

# Troubleshooting

## 21.1 Troubleshooting Overview

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- [Power, Hardware, Connections, and LEDs](#)
- [NAS Starter Utility](#)
- [NAS Login and Access](#)
- [I Cannot Access The NAS](#)
- [Users Cannot Access the NAS](#)
- [External USB Drives](#)
- [Storage](#)
- [Firmware](#)
- [File Transfer](#)
- [Networking](#)
- [Some Features' Screens Do Not Display](#)
- [Media Server Functions](#)
- [Download Service Functions](#)
- [Web Publishing](#)
- [Auto Upload](#)
- [Package Management](#)
- [Backups](#)
- [Google Drive](#)

## 21.2 Power, Hardware, Connections, and LEDs

---

The NAS **PWR** LED does not turn on (no LEDs are on).

---

- Make sure the NAS is turned on.
- Make sure you are using the power adaptor or cord included with the NAS.
- Make sure the power adaptor or cord is connected to the NAS and plugged in to an appropriate power source. Make sure the power source is turned on.

- Turn the NAS off and on.
- If the problem continues, contact the vendor.

---

### An HDD LED is off.

---

The **HDD** LED is off when the NAS cannot detect a hard drive in the drive bay. Replace or install a hard drive. See [Installing or replacing a hard disk](#).

---

### An HDD LED is red.

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Red means that the NAS detected an error on the hard drive (like a bad sector for example). The NAS automatically tries to recover a bad sector, but the LED stays red until the NAS restarts. Even if the hard drive still functions, it is recommended that you replace it since errors are a sign that the hard drive may fail soon. See [Installing or replacing a hard disk](#).

---

### Installing or replacing a hard disk.

---

**Do not remove or install a hard disk while the NAS is turned on. The NAS must be turned off before you remove or install the hard disk.**

- 1 Turn the NAS off, remove the front panel and make sure:
  - there is a SATA I or SATA II (3.0 Gbit/s) compatible hard disk installed.
  - the hard disk is installed correctly in the disk bay. Push the disk back into the NAS disk bay until the hard disk is fitted snugly inside the NAS (see the NAS Quick Start Guide).
  - the hard disk could be faulty. Try a different hard drive or test the original hard disk in a different NAS or computer.
- 2 If you had to replace the drive, turn on the NAS and go to the **Storage** screen.
  - If you have a RAID 1 volume click the **Repair** icon next to the new drive.
  - If you are using RAID 0 you will need to recreate the whole volume. All of your data is lost.
  - If you are using a single-disk JBOD volume, you need to create a new volume on the new drive.
  - If you are using a two-disk JBOD volume, you need to create a whole new volume on both drives.

---

### The LAN LED (by the LAN port) is off.

---



- Make sure the Ethernet cable is connected properly to the NAS and connected to another (Ethernet) device. Make sure the other device is turned on. If it's connected directly to a computer, make sure that the computer network card is working (ping 127.0.0.1 on the computer).
- Use another Ethernet cable. If you're connecting to a Gigabit Ethernet, make sure you're using an 8-wire Ethernet cable.
- If the problem continues, contact the vendor.

See [Section on page 345](#) for a description of NAS LEDs.

---

### The NAS turns off or reboots by itself.

---

Check the **Power Management** screen. This is where you configure power settings for the NAS, including power saving, UPS, power on/off during power failure and power on/off schedule. The NAS may be set to turn off under certain conditions.

---

### A power failure occurred while the NAS was downloading files.

---

- If power failure occurs during the active download period, the NAS will verify whether the downloaded files were damaged.
- If a file is corrupted, the NAS will download the file again.
- If the file is intact but not completely downloaded, the NAS will resume the download task after it restarts.

## 21.3 NAS Starter Utility

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### The NAS Starter Utility cannot discover my NAS.

---

- Close the NAS Starter Utility and reopen it.
- Check your hardware connections and make sure they are set up correctly.
- Only one instance of the NAS Starter Utility can run on your computer. Make sure you close any duplicate windows for this application.
- Wait for the **SYS** LED to stop blinking before clicking **Discover**.
- Confirm that the computer running the NAS Starter Utility has a network connection. See the section on the NAS's LAN connection for related information.
- The computer running the NAS Starter Utility can only discover NASs in the same subnet. NASs connected to the same switch or router as your NAS Starter Utility computer are usually in the same subnet unless the router is doing subnetting or the switch is implementing VLAN.

---

The NAS Starter Utility discovered my NAS but the status is always unreachable, even though I can access it.

---

You may need to add the NAS Starter Utility to your software firewall's allow list or lower your software firewall or anti-virus scanner's security level. Alternatively you may have to configure your software firewall or other security software to allow UDP port 50127 traffic from the NAS. If there is a hardware firewall between you and the NAS, configure it to allow UDP port 50127 traffic from the NAS.

---

I have at least two NASs in my network, how do I identify which one I want to configure in the NAS Starter Utility screens.

---

If you have several NASs connected to your computer/network, give each a unique name. You may have to disconnect all but one and use the NAS Starter Utility to rename it. Then connect another NAS and rename it and continue to connect and rename the NASs one-by-one until they are all connected and each has a unique name.

Alternatively, if you have a DHCP server on your network and you can access it's list of assigned IP addresses, you could see which IP address belongs to which NAS. You can check the MAC address of your NAS by checking the attached sticker in the device housing.

## 21.4 NAS Login and Access

---

I forgot the server name of the NAS.

---

- The default server name is 'NAS' followed by the number of your model ('**NAS540**' for example).
- Use the NAS Starter Utility to discover your NAS. If you have admin privileges, you can directly change the IP address of the NAS using the NAS Starter Utility.
- If the server name has changed and you don't have the NAS Starter Utility, see [Section 1.1.5 on page 17](#) to use the **RESET** button to return to the default setting.

---

I cannot get to the NAS login screen.

---

- Use the NAS Starter Utility to discover your NAS. If you have admin privileges, you can directly change the IP address of the NAS using the NAS Starter Utility.
- Make sure you have used the NAS Starter Utility to initialize your NAS.
- If you used the **RESET** button, the NAS may have a new IP address. Close and reopen the NAS Starter Utility to discover the NAS.
- Make sure the NAS is turned on.

- If you are trying to login directly by typing the server name into your web browser's address field, make sure you are using the correct server name as the web site address.
  - The default server name is 'NAS' followed by the number of your model ('**NAS540**' for example). If you have changed the server name, use the new one.
  - If the server name has been changed and you do not know the new server name, see the troubleshooting suggestions for [I forgot the server name of the NAS](#).
  - If it still doesn't work, try using the NAS Starter Utility.
- Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide and [Section on page 345](#).
- By default, the NAS gets an IP address automatically. The NAS assigns itself an IP address if no device assigns one. If your computer is also set to get an IP address automatically, the computer and the NAS can both assign themselves IP addresses and communicate. See [Section 9.4 on page 175](#) if you need to configure the NAS with a static IP address.
- If you are connecting to the NAS by its IP address, make sure you use the correct one. If the NAS has a wired Ethernet connection and a wireless connection through an attached USB wireless dongle, the NAS has a different IP address for each connection. To connect through the wired Ethernet connection, use the wired Ethernet connection's IP address. To connect through the wireless connection, use the wireless connection's IP address.
- Make sure your computer's IP address is in the same subnet as the NAS's IP address. You can use the NAS Starter Utility to find the NAS's IP address. Skip this if you know that there are routers between your computer and the NAS.
- Ping the NAS from your computer. Make sure your computer's Ethernet adapter is installed and functioning properly. In a (Windows) computer, click **Start, (All) Programs, Accessories** and then **Command Prompt**. In the **Command Prompt** window, type "ping" followed by the NAS's IP address (use the NAS Starter Utility to find the NAS's IP address if you don't know it) and then press [ENTER].
- Make sure you are using Internet Explorer 6.0 (and later) or Firefox 1.07 (and later).
- Make sure your Internet browser does not block pop-up windows and has JavaScript and Java enabled. With Internet Explorer 6, you may also have to enable scripting of safe ActiveX controls. See [Section 21.4.1 on page 331](#).

---

### [I forgot the password.](#)

---

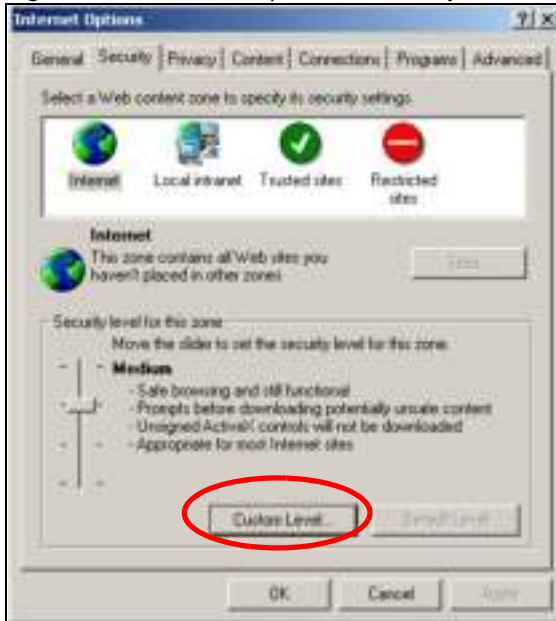
- The default password is **1234**.
- If you have changed the password and forgotten it, you will have to reset the NAS.

## 21.4.1 Enabling Scripting of Safe ActiveX Controls

If pages of the web configurator do not display properly in Internet Explorer, check that scripting of safe ActiveX controls is enabled.

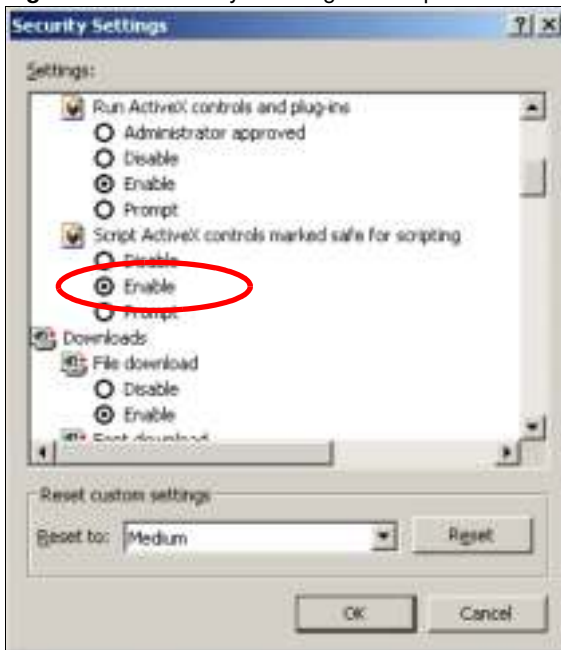
- 1 In Internet Explorer, click **Tools, Internet Options** and then the **Security** tab.

**Figure 184** Internet Options: Security



- 2 Click the **Custom Level...** button.
- 3 Under **Script ActiveX controls marked safe for scripting**, make sure that **Enable** is selected (the default).
- 4 Click **OK** to close the window.

**Figure 185** Security Settings - Script Safe ActiveX Controls



---

I can see the login screen, but I cannot log in to the NAS.

---

- Make sure you have entered the username and password correctly. The default username is **admin**, and the default password is **1234**. These fields are case-sensitive, so make sure [Caps Lock] is not on.
- Turn the NAS off and on.
- If this does not work, see [Section 1.1.5 on page 17](#) to reset the device.

---

I cannot see the multi-language web configurator screens while using Internet Explorer.

---

Use [Section 21.4.1 on page 331](#) to enable the scripting of safe ActiveX controls.

---

The Web Configurator logs out by itself.

---

The web configurator management session automatically times out if it is left idle for 15 minutes. Simply log back into the NAS if this happens to you.

## 21.5 I Cannot Access The NAS

---

I cannot access a share.

---

- Check that the NAS is turned on and connected to the network. Try to ping the NAS or use the NAS Starter Utility to discover it.
- Make sure you have used the NAS Starter Utility to initialize your NAS. See [Chapter 2 on page 19](#) for more information.
- Check that you entered your login name and password correctly.
- Check that the share exists and check its access settings.
- Check if the shared folder is a subfolder of another (parent) share. Check that the parent share's access rights do not conflict with the subfolder share. It is recommended that you do not create subfolder shares.
- Check if there are any existing mapped network drives to the NAS. You may need to disconnect existing mapped network drives as a new mapped network drive connection may use (different) previously-saved login information. To do this, open Windows Explorer and click **Tools > Disconnect Mapped Network Drives**.
- Check that the volume in which the share resides, exists and is not down or degraded. If it is down or degraded, see [Section 21.2 on page 327](#).
- Make sure you have the client for Microsoft networks installed and enabled in your network connection's properties.

- In Windows XP or 2000, click **Start > Settings > Control Panel > Network Connections (Network and Dial-up Connections in Windows 2000/NT) > Local Area Connection > Properties**.
- Check that **Client for Microsoft Networks** is in the list of components and has its check box selected.

## 21.6 Users Cannot Access the NAS

---

### A local user cannot access a share

---

- Check that the NAS is turned on and connected to the network. The local user should try to ping the NAS or use the NAS Starter Utility to discover it.
- The local user should check that he entered his login name and password correctly.
- Check if the share exists and has the correct access settings for this user.
- Check the Access Control List (ACL) of read/write permissions associated with specific files and/or folders. Account names added to the list are linked to the files and folders that they are allowed to access, along with what kinds of actions they are allowed to perform with those files and folders (delete, move, rename, and so on).
- The user's computer may already be connected to another of the NAS's shares using a different user name and/or password. This can happen without the user realizing it if the user's computer automatically connects to a share at logon. Right-click any other connected shares and click **Disconnect**. Then re-attempt to connect to the desired share.
- Check if the share has an ANONYMOUS or EVERYONE access right. If the user is already logged into a share using her username and password, she will NOT be able to access a share that has ANONYMOUS FTP only access rights (as these require 'no login'). In this case she should log out and try to access the share again without logging in. See [Section 10.4 on page 189](#) for more details.
- Check if the shared folder is a subfolder of another (parent) share. Check that the parent share's access rights do not conflict with the subfolder share. It is recommended that you do not create subfolder shares.
- Check if the user belongs to a group with conflicting access rights. **DENY** always takes precedence. If you allow a user **FULL** access to a share but set his group to **DENY**, then he will NOT be able to access the share.
- The local user should check if there are any existing mapped network drives to the NAS. He may need to disconnect existing CIFS connections as new CIFS connection may use previously-saved login information that may be different to NAS login.
- Check that the array in which the share resides, exists and is not down or degraded. If the array is down or degraded, see [Section 21.2 on page 327](#).
- If the user is using DFS links, then he can only access the NAS using CIFS and not FTP.
- Check that the share has not been disabled.

---

I cannot import domain user or user group information even though testing of the connection to the domain controller is OK.

---

- Check the NAS's DNS setting. The DNS server the NAS is using must be able to resolve the domain controller's address. If the domain controller uses a private IP address, the NAS needs to use a private DNS server. If the domain controller uses a public IP address, the NAS needs to use a public DNS server.
- Leave the domain and re-join it.

---

### A domain user can't access a share.

---

In addition to the checks listed previously for local users, check that the domain controller is turned on and connected to the network.

---

### A user can access a share but cannot access individual folders or files within the share.

---

- Check the Access Control List (ACL) of read/write permissions associated with the share's specific files and/or folders. Account names added to the list are linked to the files and folders that they are allowed to access, along with what kinds of actions they are allowed to perform with those files and folders (delete, move, rename, and so on).

## 21.7 External USB Drives

---

### The COPY LED is red.

---

Copying files to or from from a USB device or SD card failed. The USB device or SD card may not be compatible with the NAS. Try to save the files onto a computer and then from the computer to the NAS (through the network connection).

## 21.8 Storage

---

### Migrating from RAID 1 to RAID 5 did not expand the storage capacity.

---

The NAS normally expands the storage capacity by itself after rebuilding the RAID but may not if the NAS rebooted during the RAID re-build.

After the re-build finishes, go to the **Storage** screens and select the volume or disk group and click **Manage** and use **Expand the volume with unallocated disk space**.

---

Replacing smaller disks in a RAID 1, RAID 5, or RAID 6 with larger capacity hard disks did not expand the storage capacity.

---

The NAS normally expands the storage capacity by itself after rebuilding the RAID but may not if the NAS rebooted during the RAID re-build.

After the re-build finishes, go to the **Storage** screens and select the volume or disk group and click **Manage** and use **Expand the volume with unallocated disk space**.

## 21.9 Firmware

---

I want to know the firmware version on the NAS.

---

Go to the **Status** screen. The **Firmware** field shows you the current firmware version running.

## 21.10 File Transfer

---

I want to transfer my file(s) from my local computer or storage device to the NAS.

---

- After you initialize your hard disk, you can directly access the folders in your NAS and transfer files in the same way you transfer files in your local computer:
- 1 On your Windows computer, click **Start > Run** or open a web browser.
  - 2 Enter \\ **nas** followed by the number of your model (**540** for example) or the **Server Name** you assigned the NAS. This shows you the folders in the NAS.
  - 3 Use drag-and-drop or copy-and-paste to transfer files over to your NAS.
    - Use the **COPY/ SYNC** button to transfer files from an external (USB) storage device to the NAS.

---

I want to transfer my file(s) from the NAS to my local computer or storage device.

---

- After you initialize your hard disk, you can directly access the folders in your NAS and transfer files in the same way you transfer files in your local computer:
- 1 On your Windows computer, click **Start > Run** or open a web browser.



- 2 Enter `\\nas` followed by the number of your model (**540** for example) or the **Server Name** you assigned the NAS. This shows you the folders in the NAS.
- 3 Use drag-and-drop or copy-and-paste to transfer files from your NAS to your local computer's folder or your storage device.
  - You can download the files from your NAS. Just click on the file(s) in the **Share Browsing** screen ([Section 4.5.5 on page 79](#)). Your computer will prompt you for the location where you want to save the file.

## 21.11 Networking

---

I want to control who can access my folder(s)/file(s).

---

- If you are an administrator, you can configure a user's access rights. Use the **Shares** screen ([Section 17.3 on page 272](#)) to do this.
- If you enabled **Web Publishing** for a folder, anyone on your network can play the media files in the published shares. No user name and password or other form of security is used. The media server is enabled by default with the video, photo, and music shares published.

---

One of the computers in my network cannot use the printer I connected to the NAS.

---

- You must install the printer driver on each computer that will use the printer.
- Check [Section 21.4 on page 330](#) and check for related connectivity issues.

## 21.12 Some Features' Screens Do Not Display

---

Many NAS features require a valid internal volume.

---

Features like the print server, download service, FTP and Windows/CIFS access will not work without a valid internal volume. Make sure you have a volume on an internal disk and that the volume is in the healthy state.

- Install an internal disk if one is not installed yet or has failed. See the Quick Start Guide for how to install an internal disk.
- Create a new volume if you do not have one on the internal disk yet.
- Make sure the volume on the installed internal disk is in a healthy state.

---

I cannot use some applications in the Web Configurator.

---

- The firmware installed in your NAS includes the features mentioned in [Section 4.6.2 on page 87](#). This does not include the applications you can install using the **Package Management** screen.
- You can use the **Package Management** screen ([Chapter 11 on page 227](#)) to install more applications from a web location (specified in the firmware) to your NAS.
- If you have installed the application and can see the application's configuration screen but still cannot use it, check that you have **Enabled** the application.

## 21.13 Media Server Functions

---

I set the media server function to publish a folder, but some of the files in the folder do not display in the list on the media client.

---

Files with formats that are not supported on the media server may not display in the list. See [Section on page 345](#) for the file formats that the media server supports.

---

I published a folder with the media server function, but the media client does not play some of the files (or does not play them properly).

---

- 1 Files with formats that are not supported on the media server may not display in the list. See [Section on page 345](#) for the file formats that the media server supports.
- 2 If you are using media client software, you may need to install codecs on your computer. Since the media client software uses your computer's installed codecs, files do not play if the required codec is not installed on your computer.
- 3 The media client may not support the file's format.

---

iTunes does not display the names of all the music files I just put on the NAS.

---

- 1 Make sure the files are a format supported by iTunes. See [Section on page 346](#).
- 2 Go to **Applications > Media Server**. Make sure the share containing the music files is published and the iTunes server option is enabled.

- 3 If an iTunes client is connected, the NAS's iTunes server function scans the published media server folders for files every three minutes. Leave iTunes connected to the NAS for three minutes. Then use the NAS's eject button (as shown next) to disconnect.

**Figure 186** iTunes Eject Button



- 4 Then click the NAS's link to reconnect.

**Figure 187** iTunes Reconnected



- 5 Another way to get the NAS's iTunes server function to scan the published media server folders for files is to go to **Applications > Media Server** and disable and re-enable the iTunes server option. If you uploaded many files, it may take awhile for the NAS to find and list all of them. Then try reconnecting your iTunes client.

---

I cannot use iTunes to play files located on my NAS.

---

- 1 Make sure the files are a format supported by iTunes. See [Section](#) on page 346.

- 2 If you have files from the iTunes Store that use DRM, you need to use your Apple account ID and password to authorize other computers to play the files. Apple permits you to authorize up to five computers at a time. To authorize a computer, open iTunes and click **Store > Authorize Computer**.
- 3 If you are connecting through a NAT router, make sure that TCP port 3689 and UDP port 5353 are open for traffic on both the server and the client and all points in between (especially the NAT router). If your router includes a firewall, make sure it also allows TCP port 3689 and UDP port 5353 traffic.

## 21.14 Download Service Functions

---

The download list items are missing after I removed a hard drive.

---

The NAS's download list is stored on the system volume. If you have two JBOD volumes, it is possible to remove one and still use the other. However if you remove the system volume, you may lose the download list. With two JBOD volumes, the hard disk that was installed first is usually the system volume.

---

I cannot find the download files.

---

By default, the **Download Service** feature stores downloaded files as follows:

- P2P download jobs are stored in /\*/incoming (where '\*' is a folder that you have set.)
- HTTP/FTP jobs are stored in /\* (where '\*' is a folder that you have set.)
- All jobs triggered by RSS channels create the subfolder in /\* using the channel name where it store all files downloaded from that channel (where '\*' is a folder that you have set.)

Check your **Preferences** in the **Download Service** ([Section 10.7 on page 193](#)) screens to know or configure where downloaded files are stored.

## 21.15 Web Publishing

---

A web-published share cannot be accessed by web browser from the Internet.

---

- Make sure the person trying to access the share is using the correct web address (and port number if the NAS's web publishing feature is not using port 80). See [page 215](#) for details.
- Make sure the publishing feature is turned on and the share is in the list of published shares.

- Make sure the person trying to access the share is using Internet Explorer 6.0 (and later) or Firefox 1.07 (and later).
- You need to use a public address to access the NAS's web-published shares from the Internet. If your NAS uses a private IP address, use the public IP address of your Internet gateway (firewall) and configure NAT or port forwarding on your Internet gateway and possibly firewall rules in order to let people access the NAS's web-published shares from the Internet.
- Make sure the firewall's public IP address is static or that the firewall uses a Dynamic Domain Name (DDNS).
- Web publishing uses TCP protocol and the port number you specify. Make sure there is not another service using TCP protocol with the same port number.
- If Firefox access to the share does not work, check that you did not set the Web publishing feature to use one of the following ports. (Firefox blocks these ports by default.)

**Table 126** Ports Blocked By Default in Firefox

PORT	SERVICE
1	tcpmux
7	echo
9	discard
11	systat
13	daytime
15	netstat
17	qotd
19	chargen
20	ftp data
21	ftp control
22	ssh
23	telnet
25	smtp
37	time
42	name
43	nickname
53	domain
77	priv-rjs
79	finger
87	ttylink

PORT	SERVICE
95	supdup
101	hostriame
102	iso-tsap
103	gppitnp
104	acr-nema
109	POP2
110	POP3
111	sunrpc
113	auth
115	sftp
117	uucp-path
119	NNTP
123	NTP
135	loc-srv epmap
139	netbios
143	IMAP2
179	BGP
389	LDAP
465	SMTP+ SSL
512	print exec

PORT	SERVICE
513	login
514	shell
515	printer
526	tempo
530	courier
531	chat
532	netnews
540	uucp
556	remotefs
563	NNTP+ SSL
587	submission
601	syslog
636	LDAP+ SSL
993	IMAP+ SSL
995	POP3+ SSL
2049	nfs
4045	lockd
6000	X11

- Make sure your ISP allows you to run a server and is not blocking the port number of the NAS's web publishing feature.

## 21.16 Auto Upload

---

The NAS does not automatically upload files to Flickr or YouTube.

---

- 1 Make sure the NAS is connected to the Internet. See [Section 9.4 on page 175](#) for details about testing network connections.
- 2 Click **Maintenance > Log** to check the NAS's log for a message about the file.
  - 2a If the log message displays “no such file or directory”, the file may have been removed from the NAS. Make sure the file still exists in the watch folder.
  - 2b If the log message displays “filename is queued”, the file may still be waiting for auto upload. Check the grace period setting in the service's **Configuration** screen. You can set a smaller grace period to shorten the queue time.
  - 2c If you cannot find any log messages about the file:
    - Make sure the **Folder Watch List** includes the folder containing the file. You can upload the file to the watch folder again.
    - Make sure the file's format is supported by Flickr or YouTube. You can find the supported file extensions in the **Folder Watch List**.
  - 2d If the log message displays “not authorized yet”, check if you can enter the NAS's **Configuration** screen for the service. If you changed the password of your Flickr or YouTube account, you cannot access the service's **Configuration** screen, and the NAS cannot auto upload files. Make sure you also update the account information in the NAS.
- 3 Make sure the file size does not exceed the limit imposed by the service. At the time of writing, Flickr restricts the file size to 10 MB, and YouTube restricts the file size to 100 MB.
- 4 Make sure you did not exceed the service's upload quota. Flickr and YouTube have different policies about how much you can upload within a certain period, for example, 100 MB/week.
- 5 The NAS may have temporarily failed to connect to the service. You can upload the file to the watch folder again.

## 21.17 Package Management

---

The NAS won't install the package(s) I selected in the **Package Management** screen.

---

- The web location of the package may be undergoing maintenance. Try again at a later time. Upgrade the firmware of the NAS.
- If a new firmware is available, do an upgrade and try installing the package(s) again.

---

I want to know how my hard disk is performing.

---

Use S.M.A.R.T. (Self Monitoring, Analysis, and Reporting Technology) to monitor hard disks. It detects and reports the reliability of hard disks using standard indicators, enabling administrators to anticipate possible disk failures.

## 21.18 Backups

---

I cannot make a backup.

---

- Check that enough space is available on the external disk. If there isn't you may need to purge older backups or delete other files on the backup USB disk or NAS.
- If you are using the **Backup** screen ([Section 20.3 on page 307](#)):
  - You can look at the **Backup** screen's **Last Run Result** display.
  - If you're backing up to another NAS or a computer, check that it allows the NAS to write files to it. For a synchronization backup, the target must be another NAS or another compatible model.
  - Check that the NAS is not performing another backup job. **Scheduler** queues backups when a different backup is already going on at the time a backup is scheduled.

---

The backup does not run at the time configured.

---

- Check that the correct time is configured on the NAS.
- Check that the NAS is able to access the time server from which it gets the time; see [Section 7.7 on page 165](#).

## 21.19 Google Drive

---

Google Drive stopped syncing.

---

- 1 Make sure the NAS is connected to the Internet. See [Section 9.4 on page 175](#) for details about testing network connections.
- 2 Check if you have exceeded the Google Drive account's storage quota. You may need to:
  - Delete unneeded files.
  - Empty the Google Drive trash bin. Note, this permanently deletes everything in the bin, even if Google moved it there without telling you (because you moved a file out of the local sync folder for example).
  - Upgrade the account's capacity
- 3 Click **Maintenance** > **Log** to check the NAS's log messages. If a log message says you have exceeded your storage quota on the NAS:
  - Delete unneeded files.
  - Clean out the recycle bin (see [Section 17.4.2 on page 277](#)).

- Increase the user's quota on the volume containing the local sync folder (see [Section 15.3.2 on page 263](#)).
- 4 Check for any logs about removal of the user account. When you remove a user's NAS account, the NAS also removes the link to the user's Google account. However the NAS keeps the data in the local sync folder. Reconfigure a user account and link it to the Google account to let the user use Google Drive again.



# Product Specifications

See also [Chapter 1 on page 15](#) for a general overview of the key features.

## LEDs

This table describes the NAS's LEDs.

**Table 127** LEDs

LED	COLOR	STATUS	DESCRIPTION
POWER	White	On	The NAS is turned on and receiving power.
		Off	The NAS is turned off.
SYSTEM	White	On	The NAS has fully started and is operating normally.
		Blinking	The NAS is starting up or upgrading the firmware.  Note: Do not turn off the NAS while it is upgrading the firmware or you may render it unusable.
	Red	On	The NAS has a system error.
HDD	White	On	The hard disk drive is connected properly to the NAS. This LED stays on white when the hard disk drive is in hibernation if you do not enable sleeping HDD LED blinking.
		Blinking	The NAS is saving data to the hard disk drive.
		Slow Blinking	Sleeping HDD LED blinking is enabled and the hard disk drive is in hibernation.
	Red	On	The NAS detected an error on the hard disk drive (like a bad sector for example). The NAS automatically tries to recover a bad sector, but the LED stays red until the NAS restarts.
		Off	The NAS cannot detect a hard disk in the disk bay or the LED is disabled.
COPY	White	On	A USB device is connected to the NAS and the NAS is ready to copy.
		Blinking	The NAS is copying or synchronizing files.
	Red	On	Copying or synchronizing files to or from the USB or SD failed.
		Off	No USB device is connected.
LAN1 / LAN2	Green	On	The NAS has a successful 10/100 Mbps Ethernet connection.
		Blinking	The 100M LAN is sending or receiving packets.
		Off	The NAS does not have a 10/100 Mbps Ethernet connection.
	Amber	On	The NAS has a successful 1000 Mbps Ethernet connection.
		Blinking	The 1000 M LAN is sending or receiving packets.
		Off	The NAS does not have a 1000 Mbps Ethernet connection.

## Supported Media Server Content Formats

The following describes the details about the files that the NAS media server can publish.

- Audio: LPCM (not supported as a file format), MP3, WMA, M4A, M4B, MP4, 3GP, WAV, OGG, FLAC, AAC, MP2, AC3, MPA, MP1, AIF, ASF, FLV, DSD
- Images: JPEG, PNG, TIF, TIFF, BMP, GIF
- Video: WMV, MPEG2, MP1, MPG, SPTS, MP4, AVI, VOB, DivX, 3GP, VDR, MPE, DVR-MS, Xvid, M1V, M4V, MOV, MPV, MKV, OGG, FLV, MTS

Note: Not all published file types can be viewed by all client applications.

## Supported iTunes Server Content Formats

At the time of writing, the NAS supports iTunes publishing audio files of the following formats: mp3, m4a, m4p, wav, and mp4.

# Customer Support

In the event of problems that cannot be solved by using this manual, you should contact your vendor. If you cannot contact your vendor, then contact a ZyXEL office for the region in which you bought the device. Regional websites are listed below (see also [http://www.zyxel.com/about\\_zyxel/zyxel\\_worldwide.shtml](http://www.zyxel.com/about_zyxel/zyxel_worldwide.shtml)). Please have the following information ready when you contact an office.

## Required Information

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

## Corporate Headquarters (Worldwide)

### Taiwan

- ZyXEL Communications Corporation
- <http://www.zyxel.com>

## Asia

### China

- ZyXEL Communications (Shanghai) Corp.
- ZyXEL Communications (Beijing) Corp.
- ZyXEL Communications (Tianjin) Corp.
- <http://www.zyxel.cn>

### India

- ZyXEL Technology India Pvt Ltd
- <http://www.zyxel.in>

### Kazakhstan

- ZyXEL Kazakhstan
- <http://www.zyxel.kz>

### **Korea**

- ZyXEL Korea Corp.
- <http://www.zyxel.kr>

### **Malaysia**

- ZyXEL Malaysia Sdn Bhd.
- <http://www.zyxel.com.my>

### **Pakistan**

- ZyXEL Pakistan (Pvt.) Ltd.
- <http://www.zyxel.com.pk>

### **Philippines**

- ZyXEL Philippines
- <http://www.zyxel.com.ph>

### **Singapore**

- ZyXEL Singapore Pte Ltd.
- <http://www.zyxel.com.sg>

### **Taiwan**

- ZyXEL Communications Corporation
- <http://www.zyxel.com>

### **Thailand**

- ZyXEL Thailand Co., Ltd
- <http://www.zyxel.co.th>

### **Vietnam**

- ZyXEL Communications Corporation-Vietnam Office
- <http://www.zyxel.com/vn/vi>

## **Europe**

### **Austria**

- ZyXEL Deutschland GmbH
- <http://www.zyxel.de>

### **Belarus**

- ZyXEL BY
- <http://www.zyxel.by>

**Belgium**

- ZyXEL Communications B.V.
- <http://www.zyxel.com/be/nl/>

**Bulgaria**

- ZyXEL България
- <http://www.zyxel.com/bg/bg/>

**Czech**

- ZyXEL Communications Czech s.r.o
- <http://www.zyxel.cz>

**Denmark**

- ZyXEL Communications A/S
- <http://www.zyxel.dk>

**Estonia**

- ZyXEL Estonia
- <http://www.zyxel.com/ee/et/>

**Finland**

- ZyXEL Communications
- <http://www.zyxel.fi>

**France**

- ZyXEL France
- <http://www.zyxel.fr>

**Germany**

- ZyXEL Deutschland GmbH
- <http://www.zyxel.de>

**Hungary**

- ZyXEL Hungary & SEE
- <http://www.zyxel.hu>

**Latvia**

- ZyXEL Latvia
- <http://www.zyxel.com/lv/lv/homepage.shtml>

## **Lithuania**

- ZyXEL Lithuania
- <http://www.zyxel.com/lt/lt/homepage.shtml>

## **Netherlands**

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## **Spain**

- ZyXEL Spain
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## **Sweden**

- ZyXEL Communications
- <http://www.zyxel.se>

## **Switzerland**

- Studerus AG
- <http://www.zyxel.ch/>

**Turkey**

- ZyXEL Turkey A.S.
- <http://www.zyxel.com.tr>

**UK**

- ZyXEL Communications UK Ltd.
- <http://www.zyxel.co.uk>

**Ukraine**

- ZyXEL Ukraine
- <http://www.ua.zyxel.com>

**Latin America****Argentina**

- ZyXEL Communication Corporation
- <http://www.zyxel.com/ec/es/>

**Ecuador**

- ZyXEL Communication Corporation
- <http://www.zyxel.com/ec/es/>

**Middle East****Egypt**

- ZyXEL Communication Corporation
- <http://www.zyxel.com/homepage.shtml>

**Middle East**

- ZyXEL Communication Corporation
- <http://www.zyxel.com/homepage.shtml>

**North America****USA**

- ZyXEL Communications, Inc. - North America Headquarters
- <http://www.us.zyxel.com/>

## Oceania

### Australia

- ZyXEL Communications Corporation
- <http://www.zyxel.com/au/en/>

## Africa

### South Africa

- Nology (Pty) Ltd.
- <http://www.zyxel.co.za>



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## Certifications

### Federal Communications Commission (FCC) Interference Statement

The device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

## Notices

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## Viewing Certifications

Go to <http://www.zyxel.com> to view this product's documentation and certifications.

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to two years from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

## Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact your vendor. You may also refer to the warranty policy for the region in which you bought the device at [http://www.zyxel.com/web/support\\_warranty\\_info.php](http://www.zyxel.com/web/support_warranty_info.php).

## Registration

Register your product online to receive e-mail notices of firmware upgrades and information at [www.zyxel.com](http://www.zyxel.com) for global products, or at [www.us.zyxel.com](http://www.us.zyxel.com) for North American products.

## Open Source Licenses

This product contains in part some free software distributed under GPL license terms and/or GPL like licenses. Open source licenses are provided with the firmware package. You can download the latest firmware at [www.zyxel.com](http://www.zyxel.com). If you cannot find it there, contact your vendor or ZyXEL Technical Support at [support@zyxel.com.tw](mailto:support@zyxel.com.tw). To obtain the source code covered under those Licenses, please contact your vendor or ZyXEL Technical Support at [support@zyxel.com.tw](mailto:support@zyxel.com.tw).

## Safety Warnings

- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- Do NOT open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- ONLY qualified service personnel should service or disassemble this device.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Use ONLY an appropriate power adaptor or cord for your device.
- Connect the power adaptor or cord to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).

- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the power outlet.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- CAUTION: RISK OF EXPLOSION IF BATTERY (on the motherboard) IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS. Dispose them at the applicable collection point for the recycling of electrical and electronic equipment. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.

Your product is marked with this symbol, which is known as the WEEE mark. WEEE stands for Waste Electronics and Electrical Equipment. It means that used electrical and electronic products should not be mixed with general waste. Used electrical and electronic equipment should be treated separately.



## "INFORMAZIONI AGLI UTENTI"

**Ai sensi dell'art. 13 del Decreto Legislativo 25 luglio 2005, n.151 "Attuazione delle Direttive 2002/95/CE, 2002/96/CE e 2003/108/CE, relative alla riduzione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche, nonché allo smaltimento dei rifiuti"**

Il simbolo del cassonetto barrato riportato sull'apparecchiatura o sulla sua confezione indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.



La raccolta differenziata della presente apparecchiatura giunta a fine vita è organizzata e gestita dal produttore. L'utente che vorrà disfarsi della presente apparecchiatura dovrà quindi contattare il produttore e seguire il sistema che questo ha adottato per consentire la raccolta separata dell'apparecchiatura giunta a fine vita.

L'adeguata raccolta differenziata per l'avvio successivo dell'apparecchiatura dismessa al riciclaggio, al trattamento e allo smaltimento ambientalmente compatibile contribuisce ad evitare possibili effetti negativi sull'ambiente e sulla salute e favorisce il reimpiego e/o riciclo dei materiali di cui è composta l'apparecchiatura.

Lo smaltimento abusivo del prodotto da parte del detentore comporta l'applicazione delle sanzioni amministrative previste dalla normativa vigente."

Environmental Product Declaration

Bulgariska (Bulgarian)	Čeština (Czech)	Dansk (Danish)	Deutsch (German)
<p>Declaratie de mediu pentru produs</p> <p>RoHS: Conform cu 2011/65/UE REACH: Conform cu 2002/61/CE RoHS: Conform cu 2011/65/UE REACH: Conform cu 2002/61/CE</p> <p>RoHS: Conform cu 2011/65/UE REACH: Conform cu 2002/61/CE</p>	<p>Declarace environmentální prohlášení o produktu</p> <p>RoHS: Souhlasí s 2011/65/ES REACH: Souhlasí s 2002/61/ES RoHS: Souhlasí s 2011/65/ES REACH: Souhlasí s 2002/61/ES</p> <p>RoHS: Souhlasí s 2011/65/ES REACH: Souhlasí s 2002/61/ES</p>	<p>Miljødeklaration</p> <p>RoHS: Godkjennt av 2011/65/EU REACH: Godkjennt av 2002/61/EF RoHS: Godkjennt av 2011/65/EU REACH: Godkjennt av 2002/61/EF</p> <p>RoHS: Godkjennt av 2011/65/EU REACH: Godkjennt av 2002/61/EF</p>	<p>Produkt-Umweltdeklaration</p> <p>RoHS: Gemäß 2011/65/EU REACH: Gemäß 2002/61/EG RoHS: Gemäß 2011/65/EU REACH: Gemäß 2002/61/EG</p> <p>RoHS: Gemäß 2011/65/EU REACH: Gemäß 2002/61/EG</p>
Esti keel (Estonian)	English	Español (Spanish)	Français (French)
<p>Toote keskkonnamärgistamine</p> <p>RoHS: Vastab 2011/65/EL REACH: Vastab 2002/61/EL RoHS: Vastab 2011/65/EL REACH: Vastab 2002/61/EL</p> <p>RoHS: Vastab 2011/65/EL REACH: Vastab 2002/61/EL</p>	<p>Environmental product declaration</p> <p>RoHS: Complies with 2011/65/EU REACH: Complies with 2002/61/EC RoHS: Complies with 2011/65/EU REACH: Complies with 2002/61/EC</p> <p>RoHS: Complies with 2011/65/EU REACH: Complies with 2002/61/EC</p>	<p>Declaración ambiental de Producto</p> <p>RoHS: Cumple con 2011/65/UE REACH: Cumple con 2002/61/CE RoHS: Cumple con 2011/65/UE REACH: Cumple con 2002/61/CE</p> <p>RoHS: Cumple con 2011/65/UE REACH: Cumple con 2002/61/CE</p>	<p>Produit environnemental le produit</p> <p>RoHS: Conforme à 2011/65/UE REACH: Conforme à 2002/61/CE RoHS: Conforme à 2011/65/UE REACH: Conforme à 2002/61/CE</p> <p>RoHS: Conforme à 2011/65/UE REACH: Conforme à 2002/61/CE</p>
Hrvatski (Croatian)	Italiano (Italian)	Latviešu valoda (Latvian)	Lietuvių kalba (Lithuanian)
<p>Declaracija o okolišnoj prikladnosti</p> <p>RoHS: U skladu s 2011/65/EU REACH: U skladu s 2002/61/EC RoHS: U skladu s 2011/65/EU REACH: U skladu s 2002/61/EC</p> <p>RoHS: U skladu s 2011/65/EU REACH: U skladu s 2002/61/EC</p>	<p>Declarazione ambientale di prodotto</p> <p>RoHS: Conforme a 2011/65/UE REACH: Conforme a 2002/61/CE RoHS: Conforme a 2011/65/UE REACH: Conforme a 2002/61/CE</p> <p>RoHS: Conforme a 2011/65/UE REACH: Conforme a 2002/61/CE</p>	<p>Produkta vides ietekmējuma deklarācija</p> <p>RoHS: Atbilst 2011/65/EU REACH: Atbilst 2002/61/ES RoHS: Atbilst 2011/65/EU REACH: Atbilst 2002/61/ES</p> <p>RoHS: Atbilst 2011/65/EU REACH: Atbilst 2002/61/ES</p>	<p>Aplinkosaugos gamtos deklaracija</p> <p>RoHS: Atitinka 2011/65/ES REACH: Atitinka 2002/61/ES RoHS: Atitinka 2011/65/ES REACH: Atitinka 2002/61/ES</p> <p>RoHS: Atitinka 2011/65/ES REACH: Atitinka 2002/61/ES</p>
Magyar (Hungarian)	Malta (Maltese)	Nederlands (Dutch)	Polski (Polish)
<p>Környezetbaróság termékjelölés</p> <p>RoHS: Megfelel a 2011/65/EU REACH: Megfelel a 2002/61/EC RoHS: Megfelel a 2011/65/EU REACH: Megfelel a 2002/61/EC</p> <p>RoHS: Megfelel a 2011/65/EU REACH: Megfelel a 2002/61/EC</p>	<p>Declarazzjoni ambjentali ta' il-Prodott</p> <p>RoHS: Konformi ma 2011/65/UE REACH: Konformi ma 2002/61/CE RoHS: Konformi ma 2011/65/UE REACH: Konformi ma 2002/61/CE</p> <p>RoHS: Konformi ma 2011/65/UE REACH: Konformi ma 2002/61/CE</p>	<p>Milieuverklaring</p> <p>RoHS: Overeenkomstig met 2011/65/EU REACH: Overeenkomstig met 2002/61/EG RoHS: Overeenkomstig met 2011/65/EU REACH: Overeenkomstig met 2002/61/EG</p> <p>RoHS: Overeenkomstig met 2011/65/EU REACH: Overeenkomstig met 2002/61/EG</p>	<p>Declaracja środowiskowa produktu</p> <p>RoHS: Zgodny z 2011/65/UE REACH: Zgodny z 2002/61/CE RoHS: Zgodny z 2011/65/UE REACH: Zgodny z 2002/61/CE</p> <p>RoHS: Zgodny z 2011/65/UE REACH: Zgodny z 2002/61/CE</p>
Português (Portuguese)	Română (Romanian)	Slovenčina (Slovak)	Slovenščina (Slovene)
<p>Declaración ambiental de producto</p> <p>RoHS: Conforme a 2011/65/UE REACH: Conforme a 2002/61/CE RoHS: Conforme a 2011/65/UE REACH: Conforme a 2002/61/CE</p> <p>RoHS: Conforme a 2011/65/UE REACH: Conforme a 2002/61/CE</p>	<p>Declaratie de mediu privind produsul</p> <p>RoHS: Conformă cu 2011/65/UE REACH: Conformă cu 2002/61/CE RoHS: Conformă cu 2011/65/UE REACH: Conformă cu 2002/61/CE</p> <p>RoHS: Conformă cu 2011/65/UE REACH: Conformă cu 2002/61/CE</p>	<p>Ujbenenie o environmentálnom vplyve</p> <p>RoHS: Súhlasí s 2011/65/EU REACH: Súhlasí s 2002/61/EC RoHS: Súhlasí s 2011/65/EU REACH: Súhlasí s 2002/61/EC</p> <p>RoHS: Súhlasí s 2011/65/EU REACH: Súhlasí s 2002/61/EC</p>	<p>Okoliščinska deklaracija izdelka</p> <p>RoHS: Skladno s 2011/65/UE REACH: Skladno s 2002/61/CE RoHS: Skladno s 2011/65/UE REACH: Skladno s 2002/61/CE</p> <p>RoHS: Skladno s 2011/65/UE REACH: Skladno s 2002/61/CE</p>
Suomi (Finnish)	Svenska (Swedish)	Ελληνική (Greek)	Norsk (Norwegian)
<p>Declaratie de mediu pentru produs</p> <p>RoHS: Conform cu 2011/65/UE REACH: Conform cu 2002/61/CE RoHS: Conform cu 2011/65/UE REACH: Conform cu 2002/61/CE</p> <p>RoHS: Conform cu 2011/65/UE REACH: Conform cu 2002/61/CE</p>	<p>Miljødeklaration</p> <p>RoHS: Godkjennt av 2011/65/EU REACH: Godkjennt av 2002/61/EF RoHS: Godkjennt av 2011/65/EU REACH: Godkjennt av 2002/61/EF</p> <p>RoHS: Godkjennt av 2011/65/EU REACH: Godkjennt av 2002/61/EF</p>	<p>Thalassiorrhizē Hylōtēs Epilēgēs</p> <p>RoHS: Συμφωνεί με 2011/65/ΕΥ REACH: Συμφωνεί με 2002/61/ΕΓ RoHS: Συμφωνεί με 2011/65/ΕΥ REACH: Συμφωνεί με 2002/61/ΕΓ</p> <p>RoHS: Συμφωνεί με 2011/65/ΕΥ REACH: Συμφωνεί με 2002/61/ΕΓ</p>	<p>Miljødeklarasjon</p> <p>RoHS: I samsvar med 2011/65/EU REACH: I samsvar med 2002/61/EF RoHS: I samsvar med 2011/65/EU REACH: I samsvar med 2002/61/EF</p> <p>RoHS: I samsvar med 2011/65/EU REACH: I samsvar med 2002/61/EF</p>

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