



# Cloud Storage

NAS Series

Version 5.1

Edition 2

## User's Guide

### Default Login Details

Web Address	nas326 nas542 nas540 nas520
User Name	admin
Password	1234

# Related Documentation and Online Support

**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.

## Online Support Information

Visit our product support website at [http://www.zyxel.com/support/support\\_landing.shtml](http://www.zyxel.com/support/support_landing.shtml) and choose from these topics:

- **ZyXEL Support Center** - Acquire firmware, software, FAQ, product application or other support files for ZyXEL devices.
- **Downloads** - Acquire firmware, software, driver or other support files for ZyXEL devices.
- **Knowledge Base** - Find articles related to product applications, FAQ, and user experience.
- **Warranty Information** - ZyXEL offers warranty to the original end user (purchaser) that the product is free from any material or workmanship defects for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region.
- **Product Registration** - Register your ZyXEL product to receive the latest drivers and firmware updates.

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# Getting to Know Your NAS

## 1.1 Overview

Use the NAS as your own personal cloud. Here are some key features:

**Start using ZyXEL NAS instantly with FindMe** - Use ZyXEL FindMe to discover your NAS on your home network and get in control in under 15 seconds. Then do an easy installation with no need to install a NAS utility.

**Access and share files from your NAS wherever you are** - Using the ZyXEL Drive mobile app makes it easy.

**Create a shared cloud space for people without a NAS** - Provide your cloud space for your friends or family members when you share a folder from the NAS with the ZyXEL Drive mobile app. Your friends and family members don't need to purchase an additional NAS - just install the ZyXEL Drive mobile app on their mobile devices.

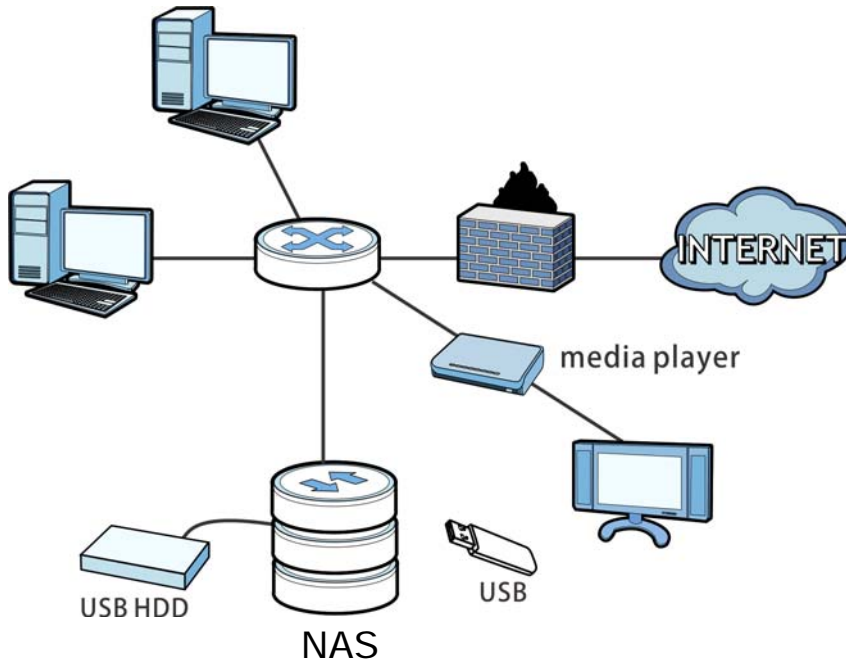
**Protect your data from drive failure** - The NAS's RAID 1 capability clones contents from one drive to another. If a drive is damaged or corrupted, you still have another drive to restore from or use.

**Get up and running quickly with the easy-to-use interface** - The ZyXEL NSM (NAS Station Management) 5.1 intelligent desktop provides a rich feature set of tools with an easy-to-understand GUI design to help you get things done quickly. The multitasking capability through a multi-window interface enables you to quickly get applications up and running.

**Check your NAS while you're away** - Even if you have several ZyXEL NAS devices, visit the myZyXELcloud Web portal from anywhere to see their health status at a glance.

**Stream multimedia contents to your big screen TV** - Bring your favorite multimedia files on the NAS to the big screen. ZyXEL zCloud app lets you play your favorite videos, music, or photos on your big screen with TV streaming devices such as Apple TV, Google Chromecast, Roku 3, and Amazon Fire TV; or directly on smart TVs like those from Samsung and LG.

**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.

## 1.2 LEDs

This table describes the NAS's LEDs.

**Table 1** 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.

**Table 1** LEDs (continued)

LED	COLOR	STATUS	DESCRIPTION
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.

## 1.3 Hard Disks

The NAS has internal hard disk bays. Install 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.

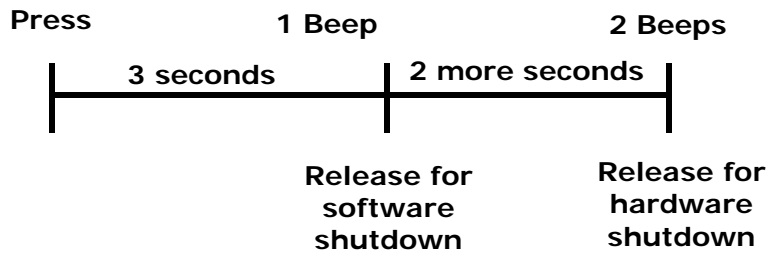
## 1.4 SD Card

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 1.6 on page 17](#) for details).

## 1.5 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

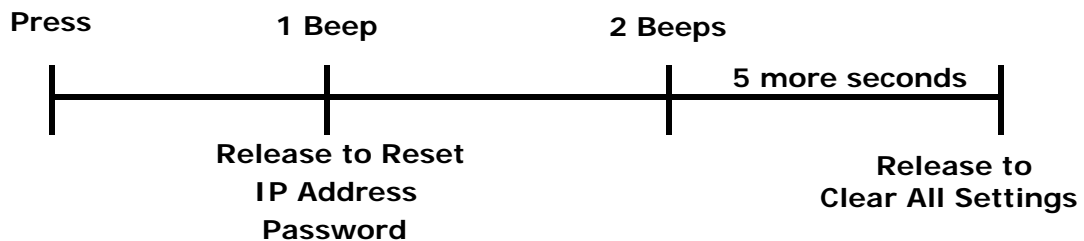
- To have the NAS go through its normal software shutdown process and turn itself off, press the power button until you hear one beep (after about three seconds), then release it.
- To perform a hardware shutdown and have the NAS immediately turn itself off without going through the normal shutdown process,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

## 1.6 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 17.10 on page 232](#) for more details on how to configure the copy/sync settings.

## 1.7 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 26.5 on page 310](#) 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.

# Getting Started

## 2.1 Overview

Use FindMe or the NAS Starter Utility to find and access the NAS and 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.

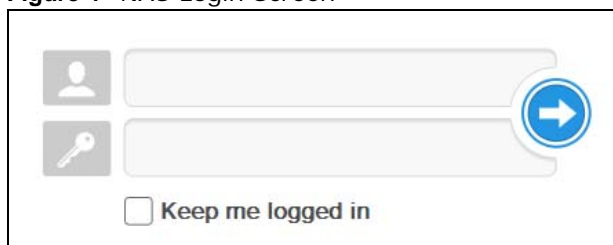
Note: Installing this version of the NAS Starter Utility uninstalls previous versions.

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

## 2.2 FindMe

- 1 Connect to <https://findme.zyxel.com> in your browser to find and connect to your NAS.
- 2 Use the default username "admin" and password "1234" to log in. See [Chapter 7 on page 38](#) for more on the web desktop.

**Figure 4** NAS Login Screen



## 2.3 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.

## 2.3.1 NAS Seeker Screen

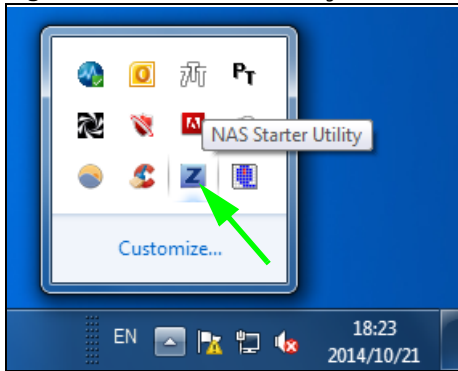
Use this screen to view the NASs in your network. The NAS's **Server Name**. The default is 'NAS' followed by the number of your model ('NAS540' for example). See [Section 2.3.5 on page 23](#) for how to change it to a more recognizable one in your network.

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 5** NAS Starter Utility Desktop Icon

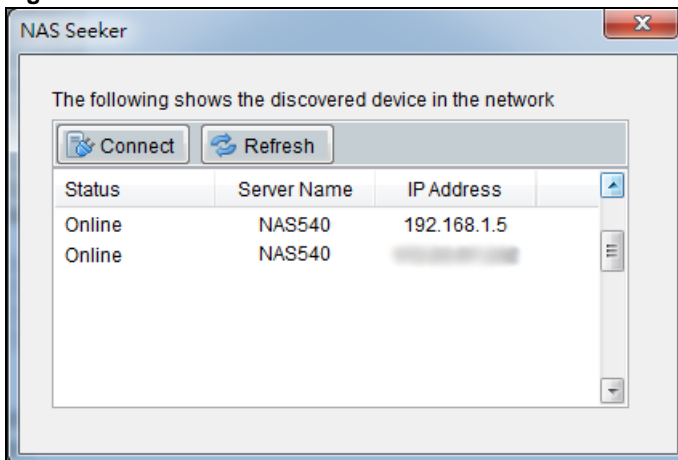


**Figure 6** NAS Starter Utility Windows System Tray Icon



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

**Figure 7** NAS Seeker



The following table describes the labels in this screen.

**Table 2** 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.



**Table 2** NAS Seeker (continued)

LABEL	DESCRIPTION
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.

## 2.3.2 Main NAS Starter Utility Screen

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

**Figure 8** NAS Starter Utility Main Screen

The following table describes the labels in this screen.

**Table 3** NAS Starter Utility Main Screen

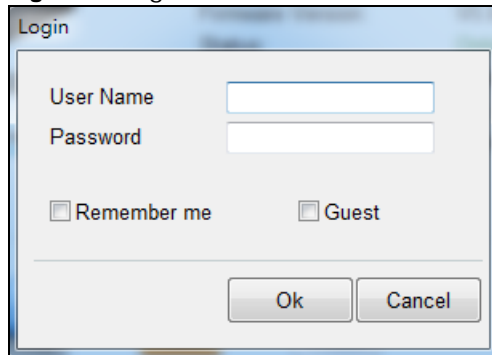
LABEL	DESCRIPTION
?	Click this to display the utility help.
Configuration	Click this to configure system settings (see <a href="#">Section 2.3.5 on page 23</a> ).
NAS Seeker	Click this to use the NAS Seeker screen ( <a href="#">Section 2.3.1 on page 20</a> ) to find and connect to a different NAS on 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.

**Table 3** NAS Starter Utility Main Screen (continued)

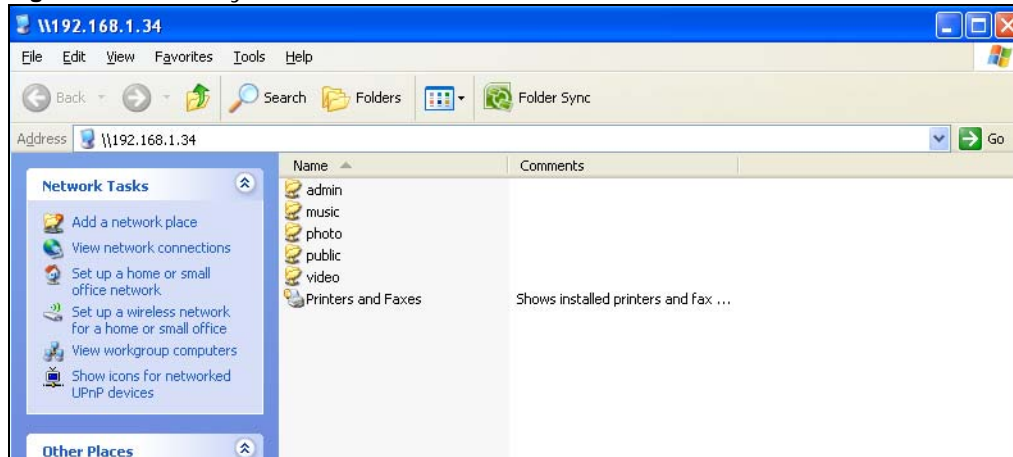
LABEL	DESCRIPTION
MAC Address	This is the NAS's unique physical hardware address (MAC).
Firmware Version	This shows the version of firmware the NAS is currently using.
Status	This shows whether the NAS is <b>Online</b> , <b>Uninitialized</b> , <b>Unreachable</b> , <b>Configuring</b> , or <b>Config Failed</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 7.2 on page 38</a> ).
Capacity	This shows the NAS's total, in-use, and remaining storage capacity.
DeskTop	Click this button to go to the Web Configurator login screen (see <a href="#">Section 7.2 on page 38</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.

### 2.3.3 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 9** Login

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

**Figure 10** Directory

## 2.3.4 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 11** Login

The screenshot shows a 'Login' dialog box with the following elements:

- User Name:** A text input field.
- Password:** A text input field.
- Remember me:** A checkbox.
- Guest:** A checkbox.
- Buttons:** 'Ok' and 'Cancel' buttons at the bottom.

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 12** Network Drive

The screenshot shows a 'Network Drive' dialog box with the following elements:

- Text:** "To quickly and easily access the files that are stored in the NAS directly right from Windows Explorer or My Computer, you can map a drive letter to a Shared".
- Drive Letter:** A dropdown menu currently showing 'Z:'.
- Shared Folder:** A list box containing:
 

Shared Folder	Network Drive
public	
video	
photo	
music	
...	
- Options:**
  - Open the network drive after clicking Apply
  - Reconnect at Windows login
- Buttons:** 'Apply' and 'Cancel' buttons at the bottom.

## 2.3.5 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 13** NAS Starter Utility > Configuration > System Setting

The following table describes the labels in this screen.

**Table 4** 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.  <b>Note:</b> 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 4** NAS Starter Utility > Configuration > System Setting (continued)

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.

## Accessing Your Cloud Remotely

Use the NAS to set up your own secure personal cloud. Keep your videos, photos, music, and files safely at home and under your control. Access, share, and stream files from anywhere using your PC, Mac computer, and mobile devices.

### 3.1 myZyXELCloud Service

Use the myZyXELCloud service at <https://mycloud.zyxel.com> to set up a free hostname like [name.zyxel.me](https://name.zyxel.me) and set the NAS to use it. This lets you easily access the NAS through the Internet. The myZyXELcloud Web portal also lets you monitor the NAS's health from anywhere.

### 3.2 ZyXEL Drive

Use the ZyXEL Drive app to stream or download photos, videos, and music to your Android or iOS phone through the Internet. You can also upload files from your phone to the NAS.

After setting up the myZyXELCloud service, go to <http://zyxel.to/zdrive> to get the ZyXEL Drive app for your Android or iOS phone.

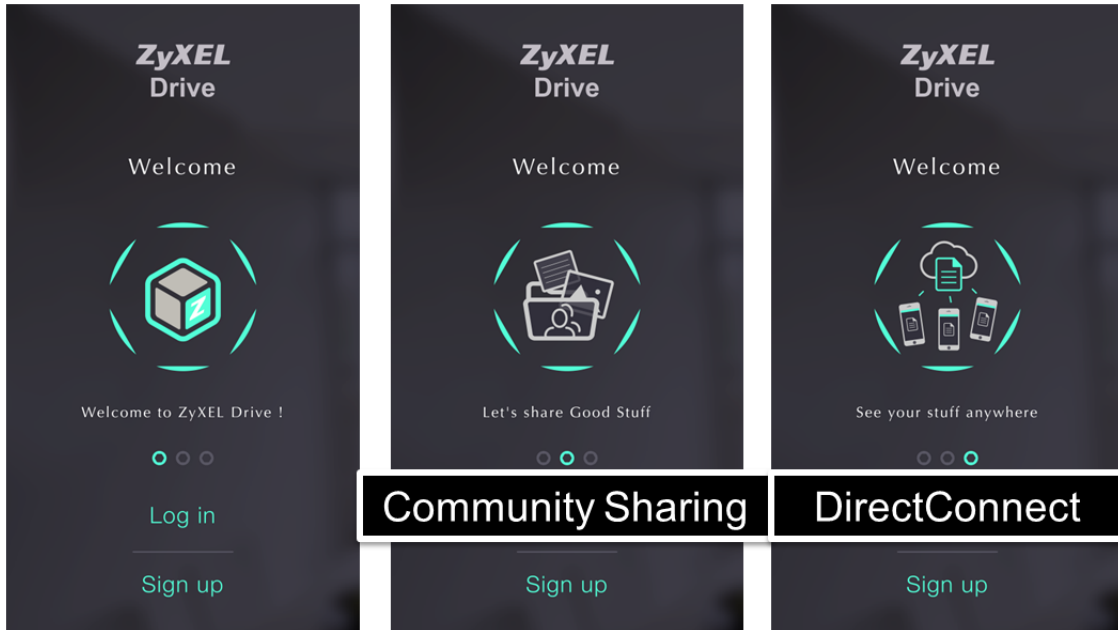
Log in, sign-up, and start playing.

#### 3.2.1 ZyXEL Drive Welcome

**Community Sharing** - Send invitation links to friends and family to conveniently share selected NAS folders.

**DirectConnect** - Privately and securely access your NAS content from anywhere.

Figure 14 ZyXEL Drive Welcome

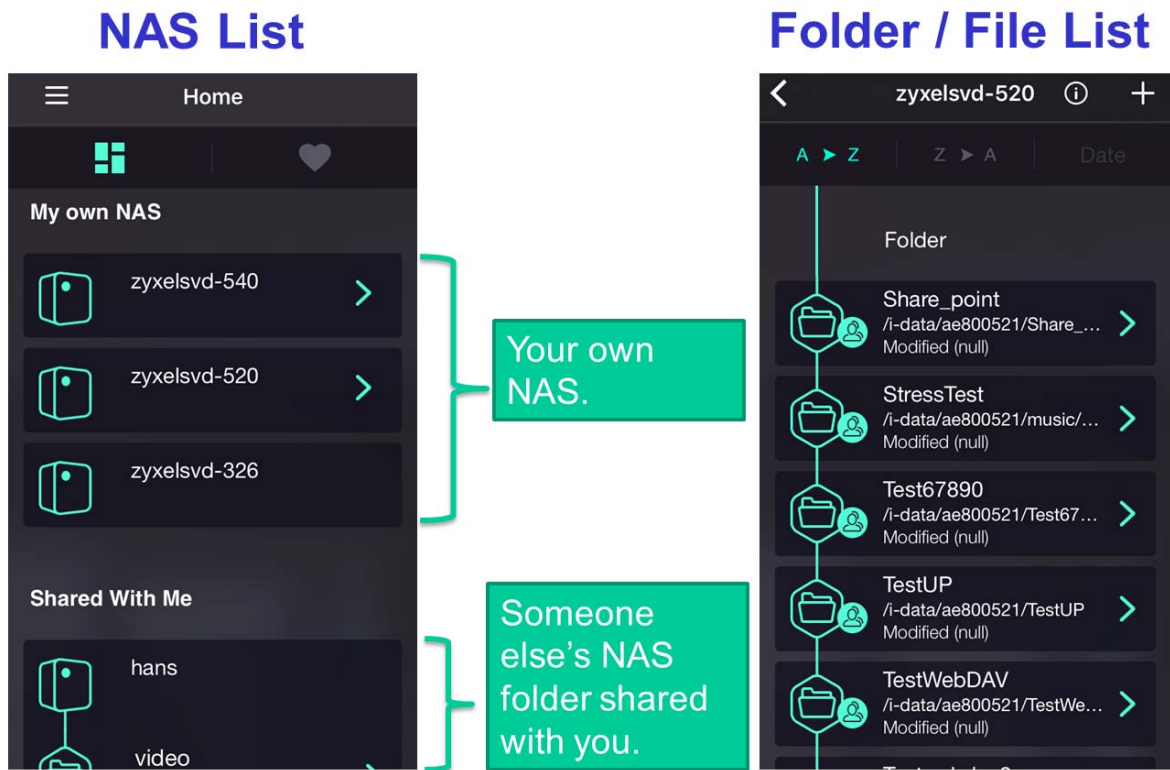


### 3.2.2 NAS and File List

**My own NAS** - Access and share files from your own NAS.

**Shared With Me** - Access files on someone else's NAS folder that they have shared with you.

Figure 15 NAS and File List

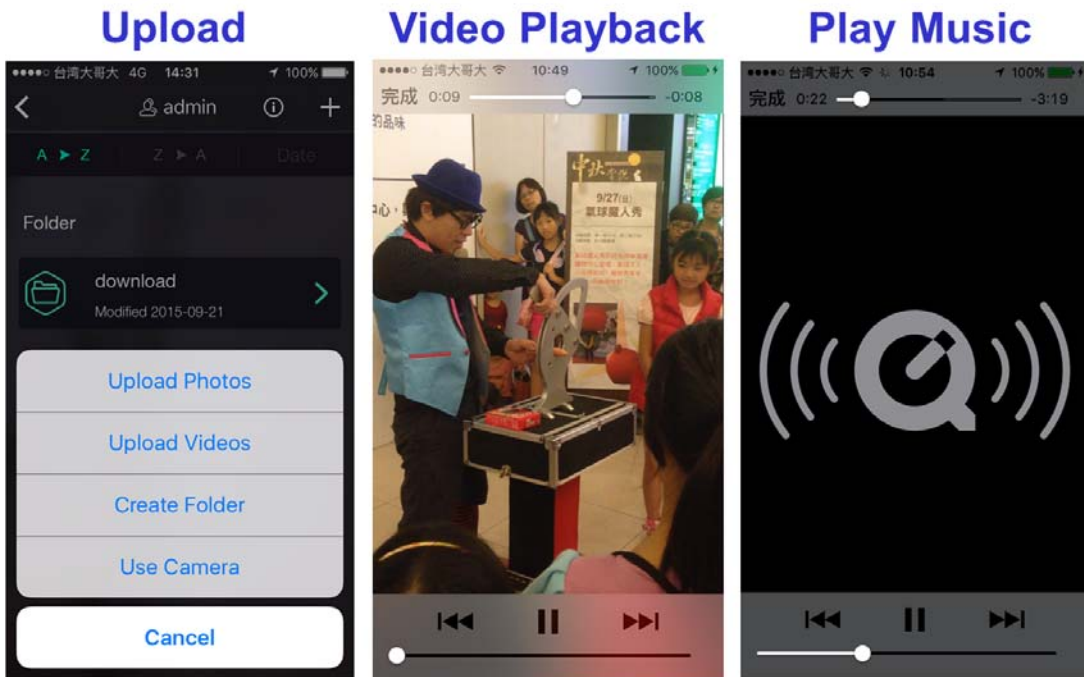


### 3.2.3 Uploading and Media Streaming

Use ZyXEL Drive to upload photos and videos from your mobile device to the NAS. You can also stream videos and music stored on the NAS.



Figure 16 Uploading and Media Streaming



## zCloud

ZyXEL zCloud app lets you play your favorite multimedia files on the NAS on your big screen TV. Use TV streaming devices such as Apple TV, Google Chromecast, Roku 3, and Amazon Fire TV; or play files directly on smart TVs like those from Samsung and LG.

- 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.

### 4.1 Using zCloud

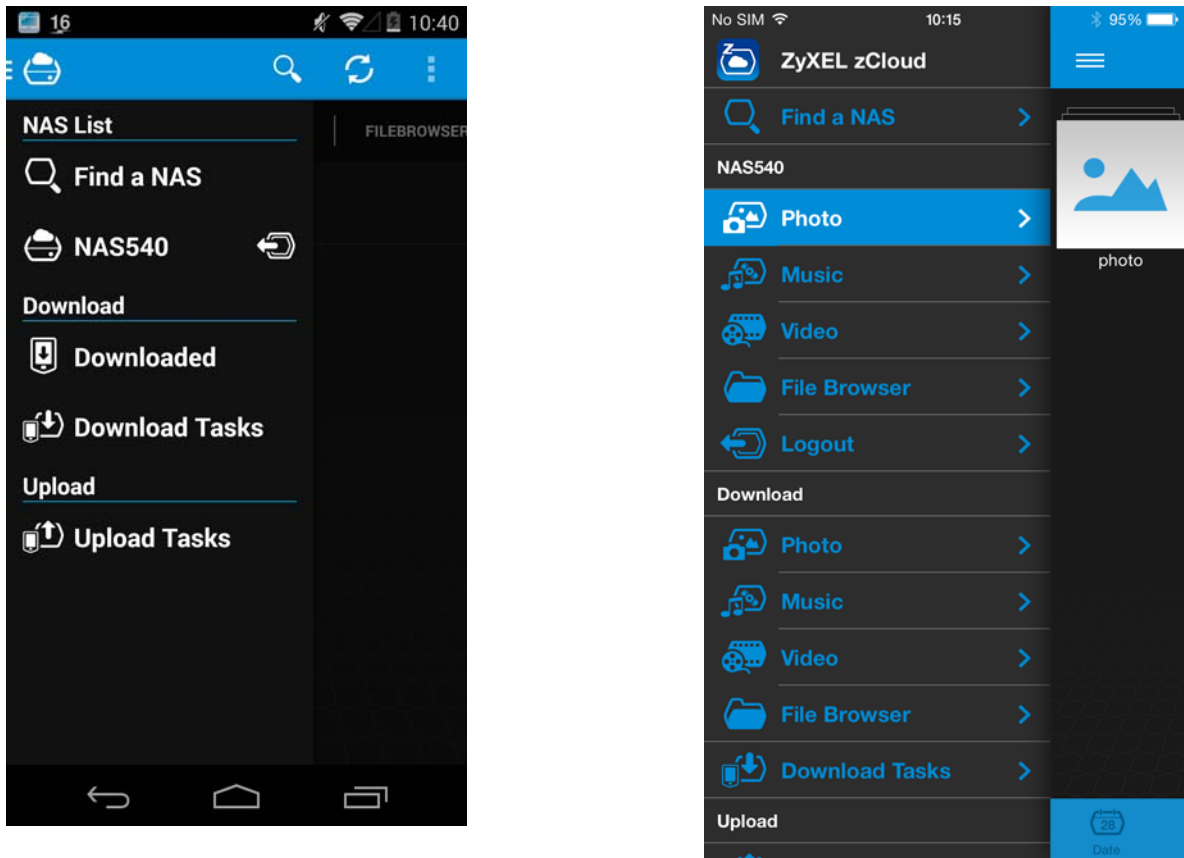
Install the zCloud app from Google Play or the Apple App store. Then tap the zCloud icon to open it.

**Figure 17** zCloud Icon



The main menu displays.

Figure 18 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.

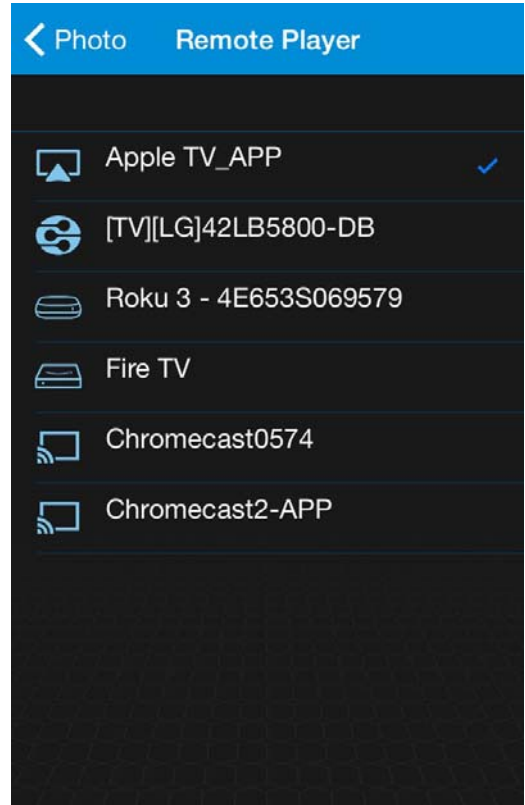
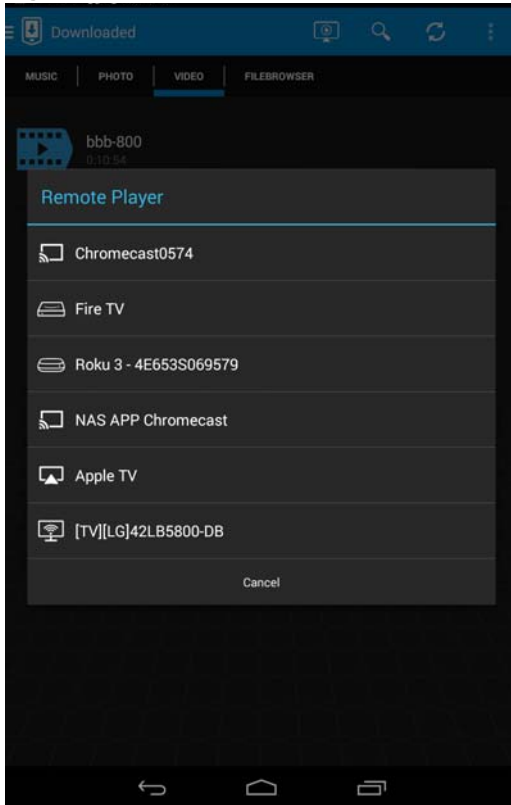
**Download** - access and manage files downloaded from the NAS to your Android or iOS device and manage download tasks.

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

## 4.2 zCloud TV Streaming

Here is an example of the zCloud app letting you choose a player to use to stream a video on your TV.

**Figure 19** zCloud Android and iOS TV Streaming



# Managing Users, Groups, and Shares

## 5.1 Managing Users, Groups, and Shares

- Use the **Users** screens ([Chapter 22 on page 281](#)) to create and manage administrator and user accounts.
- Use the **Groups** screens ([Chapter 23 on page 287](#)) to create and manage groups of user accounts. You can assign users to groups and grant individual groups access rights to specific shares.
- Use the **Shares** screens ([Chapter 24 on page 291](#)) to manage access permissions mapped to specific folders on a volume. A share is equivalent to the Windows concept of a shared folder. Map a share to a network drive for easy and familiar file transfer for Windows users.

# Backing Up, Retrieving, and Syncing Files

## 6.1 About Backups

Backup before you need it. The NAS's multiple backup methods make it easy to follow the 3-2-1 backup rule:

- At least **3** copies of data
- Stored on at least **2** different media
- With at least **1** copy off-site.

## 6.2 Managing a USB Device and USB Backups

Use the USB ports and SD card slot to copy or synchronize files between a connected USB or SD device and the NAS. You can use the USB drive or SD card for off-site backups.

- Use the **Copy/Sync** button on the front panel to copy or synchronize files between a connected USB or SD storage device and the NAS. See [Section 17.10 on page 232](#) to configure the copy/sync settings.
- Use the NAS's **Backup** screens ([Section 27.3 on page 321](#)) to schedule backups of files and folders on your NAS to a USB device or SD card. See [Section 14.14.2 on page 194](#) for an example.

## 6.3 Remote Backups

Use the NAS's **Backup** screens ([Section 27.3 on page 321](#)) to schedule backups of files and folders on your NAS to another ZyXEL NAS or a NAS using rsync.

- See [Section 14.14.1 on page 192](#) for an example of backing up to a remote NAS.
- Use the **Restore** screens ([Section 27.4 on page 332](#)) to restore previous backups based on the backup job. See [Section 14.14.3 on page 196](#) for an example.
- If you deleted an archive backup job or the NAS or the RAID array containing the backup job failed, you can restore by backup files. See [Section 14.14.3 on page 196](#) for an example.

## 6.4 Internal Backups

Use the NAS's **Backup** screens ([Section 27.3 on page 321](#)) to schedule backups of files and folders on your NAS to another folder on the NAS.

- See [Section 14.14.2 on page 194](#) for an example of how to back up the NAS to another NAS.
- Use the **Restore** screens ([Section 27.4 on page 332](#)) to restore previous backups based on the backup job. See [Section 14.14.3 on page 196](#) for an example.

## 6.5 Cloud Backups

Use the NAS with cloud services for off-site backups and synchronization.

- Use **Dropbox** ([Chapter 20 on page 274](#)) to log the NAS into your Dropbox account to easily move files to your NAS and have the NAS download \*.torrent files.
- Use **Memopal** ([Section 18.7 on page 254](#)) to back up files on the NAS to your Memopal online backup and storage account.

## 6.6 Synchronizing Files

Besides backups, the NAS also provides pure synchronization solutions.

Note: Synchronization is not backup. When you delete a file in one location, synchronization deletes it in the other location. Do not store your only copy of a document in a synchronized folder.

- Use the **GoogleDriveClient** package ([Section 18.8 on page 256](#)) to two-way synchronize local NAS folders and Google Drive accounts. 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.
- Use the **ownCloud** package ([Section 18.6 on page 251](#)) to host your own private cloud on the NAS. The ownCloud package lets the NAS work as an ownCloud server so computers and mobile devices using the ownCloud client can access, sync, and share files across devices.

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# **PART I**

## **Web Desktop at a Glance**

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# Web Configurator

## 7.1 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.

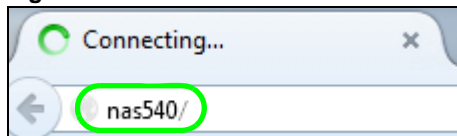
In order to use the web configurator you need to allow:

- 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).

## 7.2 Accessing the NAS Web Configurator

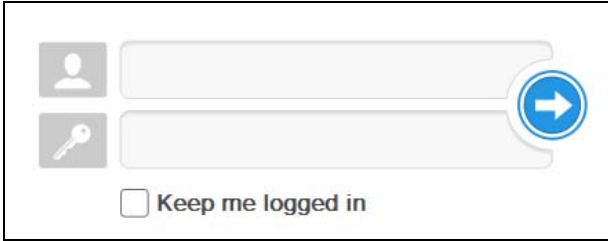
- 1 Make sure your NAS is properly connected and that your computer is in the same subnet as the NAS (refer to the Quick Start Guide or the appendices).
- 2 Open your browser and type in the server name of the NAS. The default is “nas” followed by the number of your model (“nas540” for example). Configure the server name of your NAS using the **Network Configuration** screen ([Section 2.3.5 on page 23](#)) of the NAS Starter Utility.

**Figure 20** NAS URL



- 3 The default username and password are “admin” and “1234” respectively. Enter your username and password. See [Chapter 22 on page 281](#) 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 a different Desktop screen (see [Section 7.3 on page 41](#) for details).

Figure 21 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.**

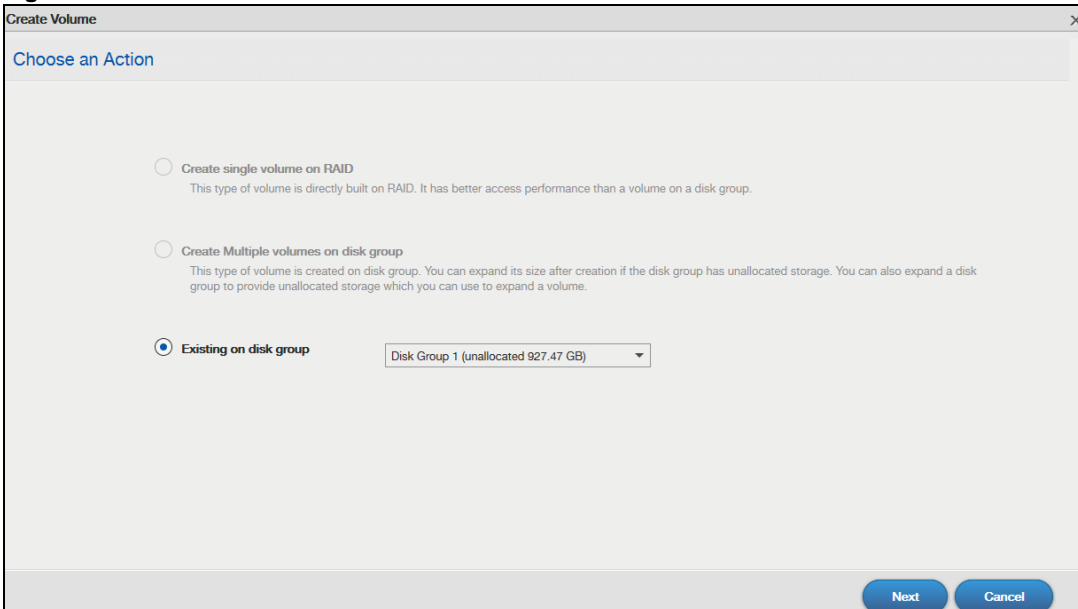
- This screen displays if you have not created a volume yet. Click **Create Volume** to make a volume or click the **x** to close the screen to go to the **Desktop** (Section 7.3 on page 41).

Figure 22 Welcome Screen



- Select **Create single volume on RAID** for a simple set up. Go to Section 8.3.1 on page 55 for details.  
Select **Create Multiple volumes on disk group** to be able to create more than one storage volume. Go to Section 8.3.3 on page 64 for details.

Figure 23 Create Volume



If you choose **Existing on disk group**, you will go to the screens below after clicking **Next**.

**Figure 24** Existing on Disk Group

The figure displays two screenshots of the 'Create Volume' web configurator interface. The top screenshot shows the 'Create volume on disk group' step, and the bottom screenshot shows the 'Summary' step.

**Top Screenshot: Create Volume / ② Summary**

**Create volume on disk group**

**Disk group information**

Name	Disk Group 1
Unallocated capacity	<div style="width: 99.99%; background-color: green; border: 1px solid green;">99.99%</div> 927.47 GB / 927.57 GB

**Create Volume**

Volume Name	<input type="text" value="Volume1"/>
Allocated volume size	<input type="text" value="10"/> GB <input type="button" value="MAX"/>

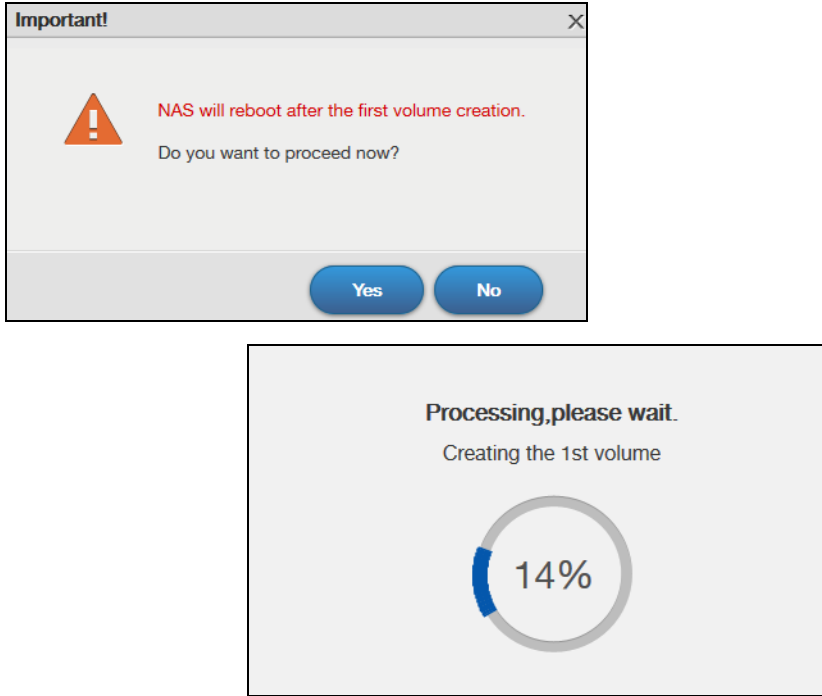
**Bottom Screenshot: Create Volume / ② Summary**

Item	Value
Volume Type	Multiple volumes on RAID (Disk Group 1)
Volume Name	Volume1
Volume Capacity	10 GB

Buttons: Back, Apply, Cancel

If this is the first time the NAS has created a volume, it needs to reboot after the volume is created. Click **Yes** to reboot or **No** to go to the Desktop.

**Figure 25** Reboot



## 7.3 Desktop

The **Desktop** screen displays after you log in. Hover your mouse over the heading bar icons to display their names.

**Figure 26** Desktop (Administrator)



**Figure 27** Desktop (User)



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 Manager**- click this to open the storage configuration screens.
- 3 **Control Panel** - click this to open the control panel screens to configure the network setting and upgrade firmware.
- 4 **Status Center** - click this to display NAS status information.
- 5 **Help** - click this to display the NAS' embedded help system screens.
- 6 **Administrator** - click this to open the administrator configuration screens in a new tab.
- 7 **File Browser** - click this to see files in a tree-folder structure.
- 8 **Photo** - click this to view photos in the shares that publish photos.
- 9 **Music** - click this to view and play music files in the shares that publish music.
- 10 **Video** - click this to view and play video files in the shares that publish videos.
- 11 **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.
- 12 **User** - click this to display the **Logout** link.
- 13 **Eject NAS External Drives** - click this to eject the connected external volumes.
- 14 **Playzone Settings** - click this to open the playzone configuration screen in a new tab.
- 15 **Application Zone** - click this to open the application zone in a new tab.


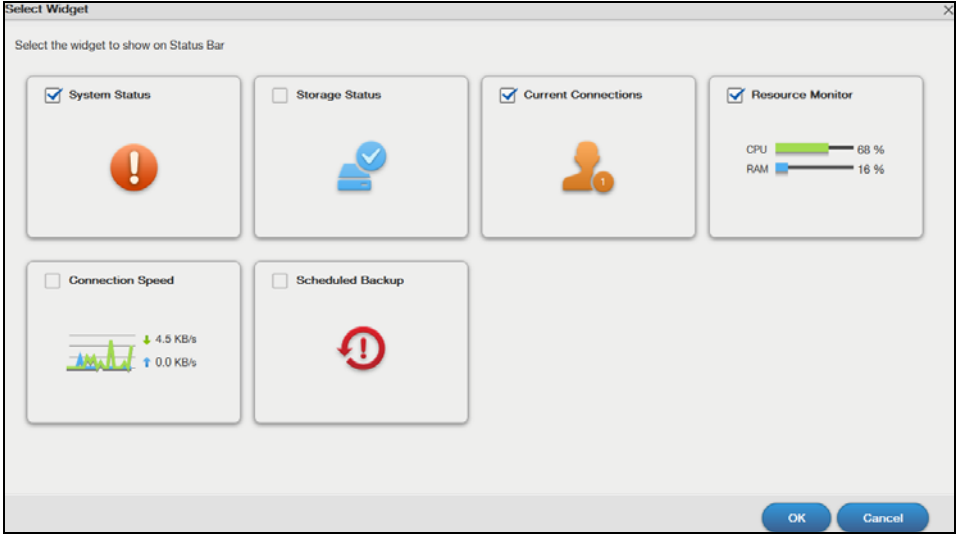

### 7.3.1 Status Zone

The Status Zone displays icons for various features you can access.

**Table 5** Status Zone Icons

ICON	DESCRIPTION
	Click <b>System Status</b> to open the <b>Status Center</b> screen. <b>System Status</b> displays the health state of the NAS. A green circle with a check mark indicates healthy.
	<b>Web Sessions</b> displays the current number of web sessions. Click this to go to the <b>Network</b> screen for more details.

**Table 5** Status Zone Icons (continued)

ICON	DESCRIPTION
	<p>Click this to select widgets to show on the status bar.</p>  <p>Select or clear the widgets to show or hide on the Status bar. Click OK to save your changes or Cancel to exit this screen without saving changes.</p>
	<p>Click this to hide or show the status bar.</p>

### 7.3.2 Grouping Icons

You can drag one icon to another one and make them a group as shown below.



**Figure 28** Grouping Icons



After the group is created, the default group name is NewGroup. You can click the icon to change the group name. In the following example, the group name is changed to Media.

**Figure 29** Change the Group Name



You can also move the group to another page by right-clicking the icon as shown next.

**Figure 30** Move the Group Location



# Storage Manager

## 8.1 Overview

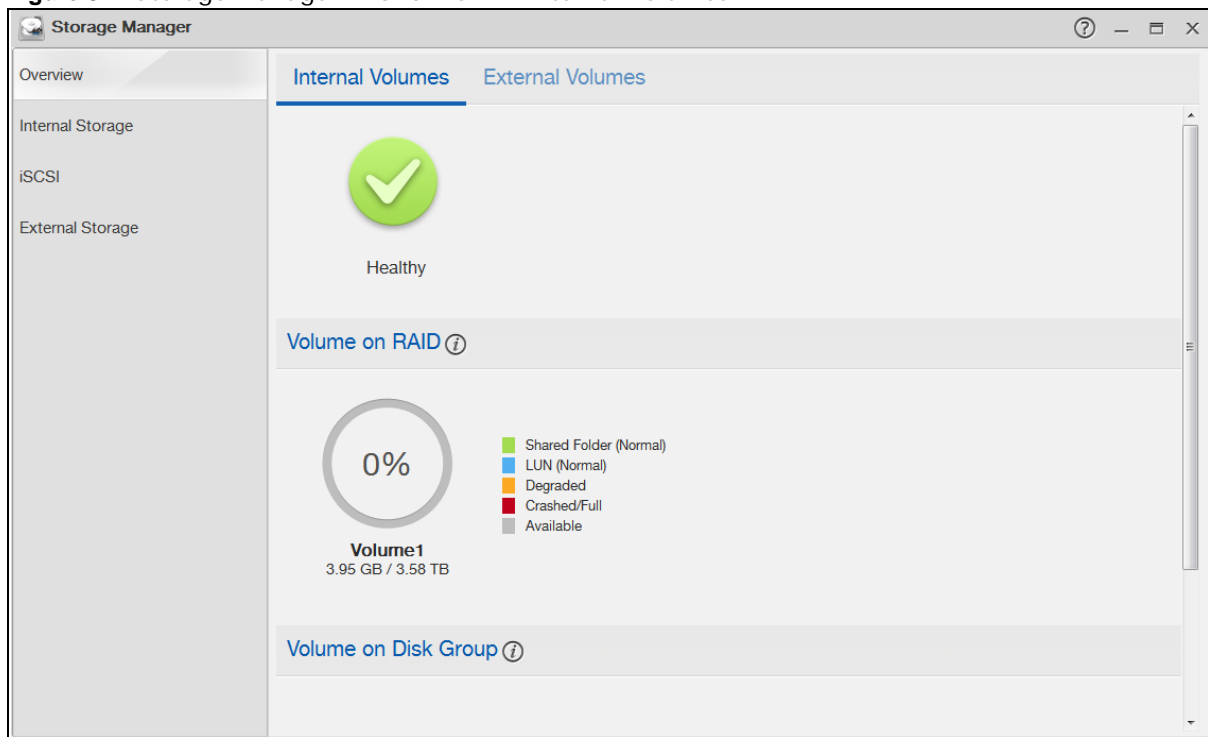
This chapter displays the status of both internal and external storage, and introduces how to configure disk groups, volumes, and iSCSI functions. Click **Storage Manager** on the **Desktop** to go to the following screens in a new window.

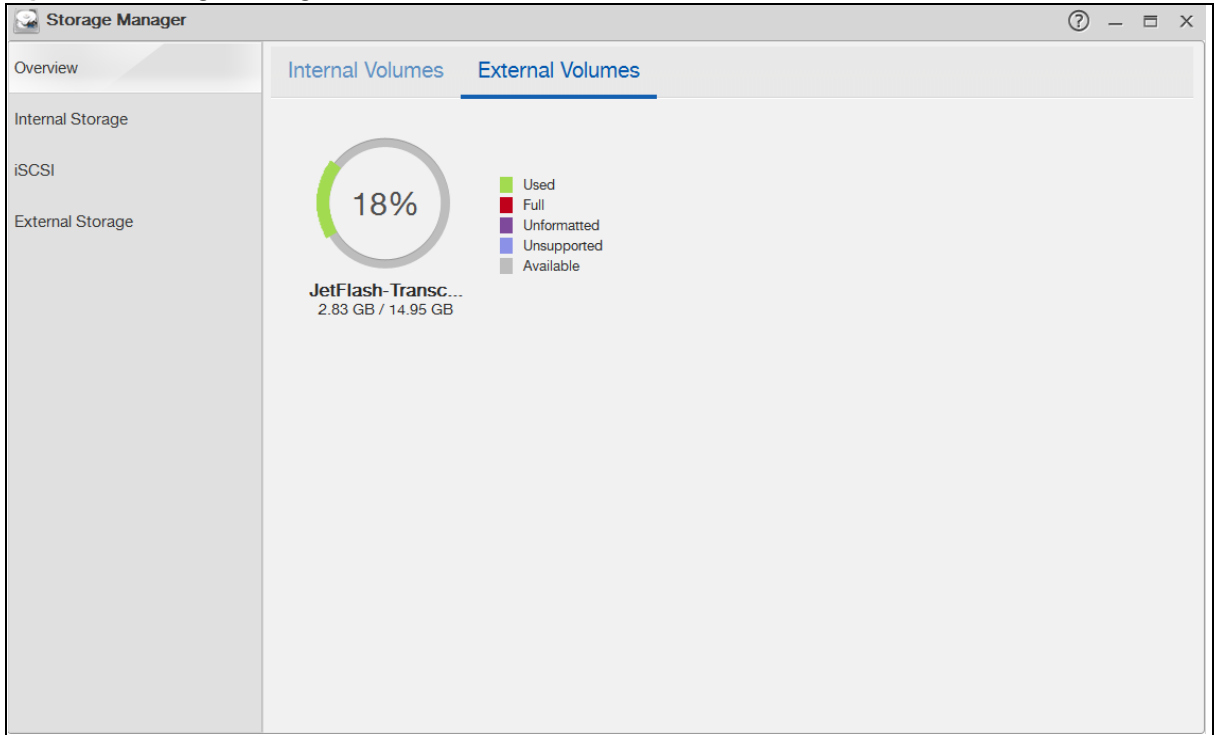
## 8.2 Storage Manager Overview

Click **Storage Manager** on the **Desktop** to display the status of both internal and external storage, and configure disk groups, volumes, and iSCSI functions.

The **Storage Manager Overview** screen displays the status, current storage configuration and volume usage of internal volumes and capacity usage of external volumes.

**Figure 31** Storage Manager > Overview > Internal Volumes



**Figure 32** Storage Manager > Overview > External Volumes

The following table describes the labels in this screen.

**Table 6** Storage Manager > 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 6** Storage Manager > Overview (continued)

LABEL	DESCRIPTION
Volume (for Internal Volumes)	<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>Shared Folder (Normal)</b> - green on the circle represents the volume's percentage of used capacity in a healthy state.</p> <p><b>LUN (Normal)</b> - blue on the circle represents the iSCSI LUN's percentage of used capacity.</p> <p><b>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/Full</b> - a red exclamation point represents the volume is in a down state. Down means you cannot recover the volume. Full means the volume has run out of space.</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 (for External Volumes)	<p>Details include the currently used percentage of the volume.</p> <p><b>Used</b> - green on the circle represents the volume's percentage of used capacity in a healthy state.</p> <p><b>Full</b> - a red exclamation point represents the volume has run out of space.</p> <p><b>Unformatted</b> - purple on the circle represents the connected USB storage device is not formatted with a file system.</p> <p><b>Unsupported</b> - violet on the circle represents the connected USB storage device uses a file system the NAS does not support.</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>

## 8.3 Internal Storage

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 7** Internal Volumes

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

## 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 8** 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 **Internal 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 9** 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

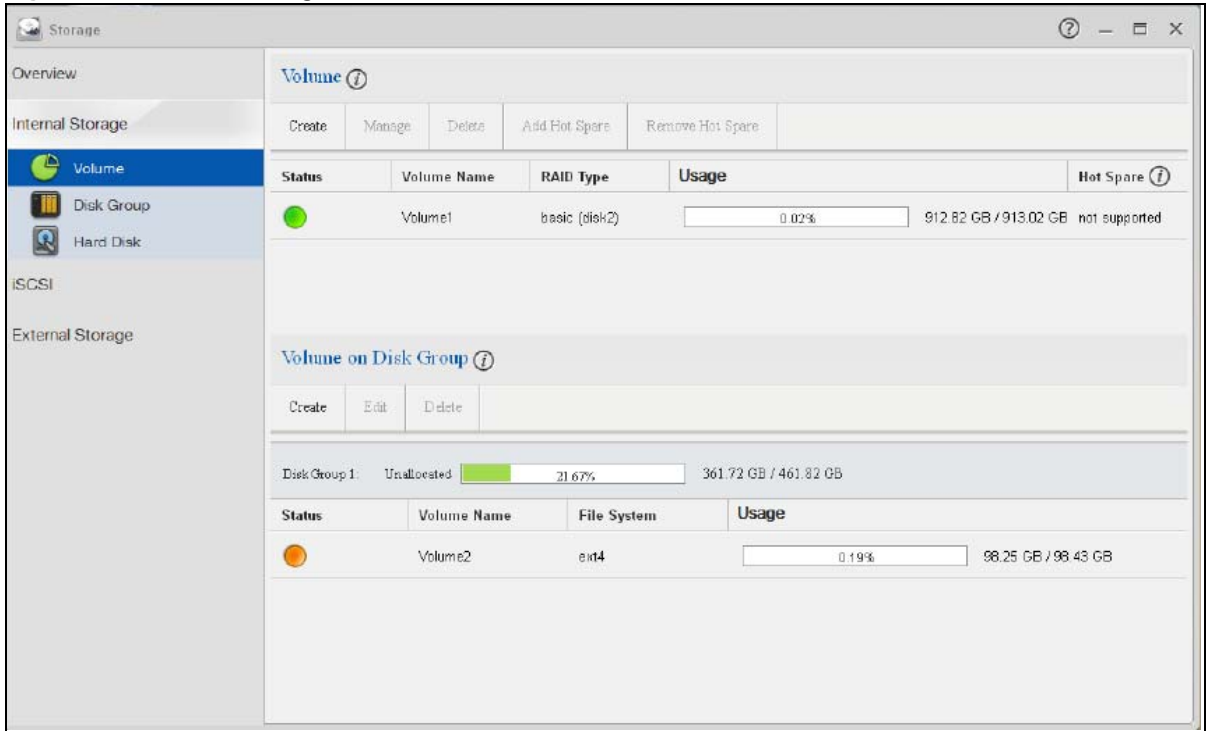
As your content grows, you can do the following to expand the storage capacity of a volume or disk group without losing stored data.

**Table 10** 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>Internal Storage</b> screen's <b>Manage</b> link to repair the volume.  Wait for the repair process to complete before you replace another disk.


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

Figure 33 Internal Storage Volume



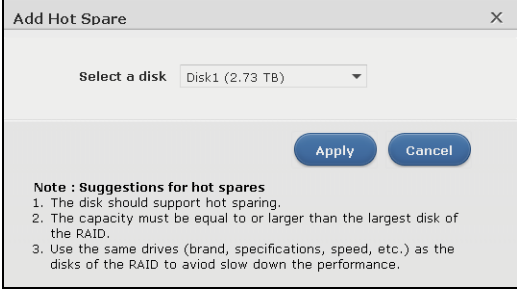
The following table describes the labels in this screen.

Table 11 Internal 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><b>Note:</b> 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>No Disk in NAS</p> <div data-bbox="526 1520 1149 1814" style="border: 1px solid gray; padding: 5px;"> <p><b>No Disk in NAS</b> <span style="float: right;">✕</span></p> <p> To create volumes on the NAS, you need to put hard disks into the NAS first.</p> <p><b>Note:</b> This NAS support hot swapping, so you can put in disks without shutting down your NAS.</p> <p style="text-align: right;"><b>OK</b></p> </div>



**Table 11** Internal Storage > Volume (continued)

LABEL	DESCRIPTION
Manage	<p>Select a volume and click <b>Manage</b> to edit, repair or expand the volume.</p> <p><b>Note:</b> 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><b>Note:</b> 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 34</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="#">Table 8 on page 50</a> for more information about RAID.</p> <p><b>Note:</b> 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>
Remove Hot Spare	<p>Select a RAID 1 or RAID 5 volume and click <b>Remove Hot Spare</b> to remove the standby drive from the RAID array.</p>
Status	<p>This field shows whether the volume is normal, degraded, crashed, <b>Creating, Deleting, Expanding, 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	<p>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.</p>
RAID Type	<p>This field shows what type of disk storage technology (<b>Basic</b>, a RAID level or <b>JBOD</b>) a volume uses.</p>

**Table 11** Internal Storage > Volume (continued)

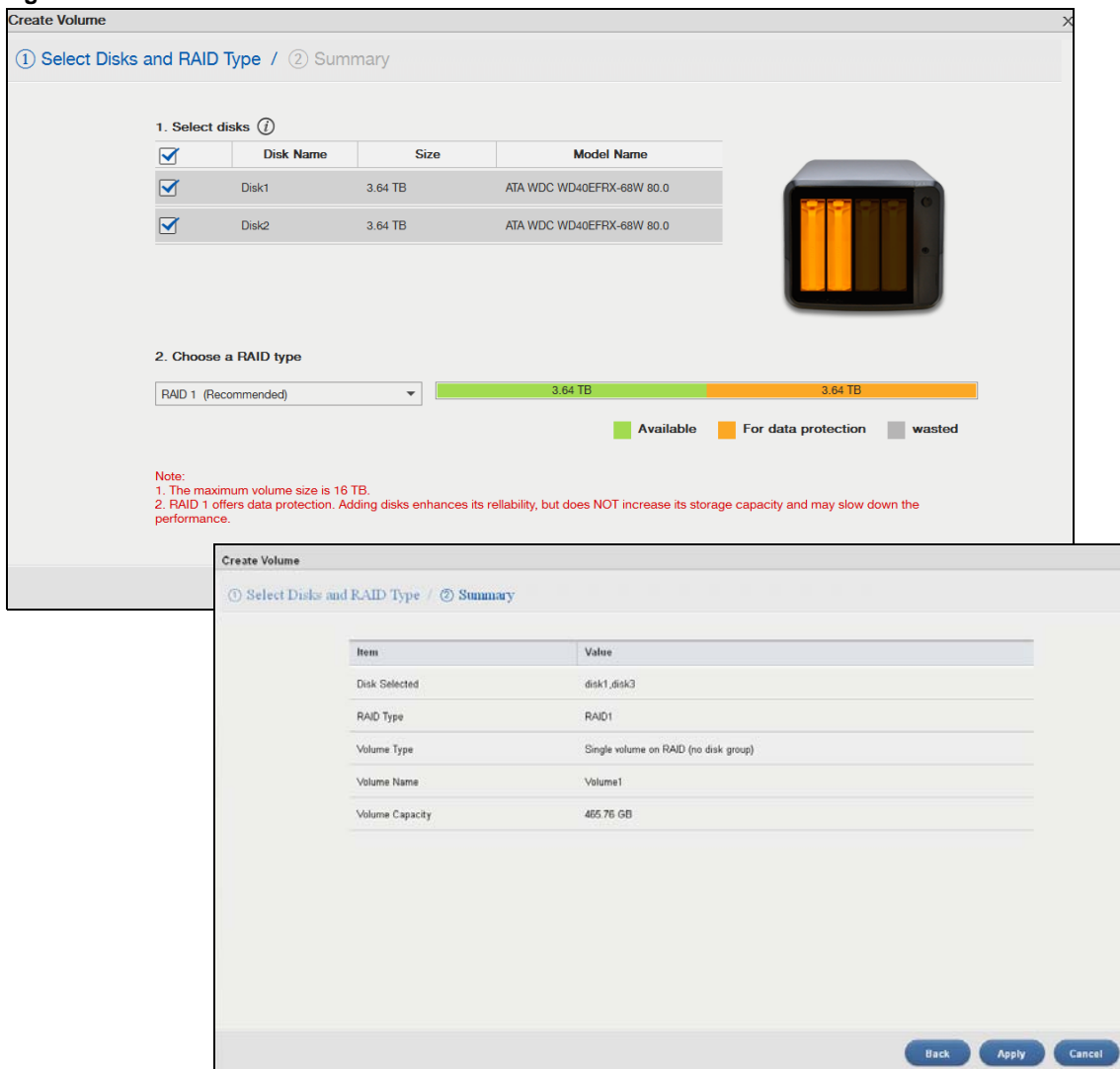
LABEL	DESCRIPTION
Usage	This field shows the percentage of the volume being used, the percentage that is available, and the total disk size.
Hot Spare	This field shows the name of the standby disk if there is any for a RAID 1 or RAID 5 volume. Otherwise, it shows <b>not supported</b> .
<p>Volume on Disk 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><b>Note:</b> 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><b>Note:</b> If you delete a volume, all data in the volume disks is erased.</p> <p><b>Note:</b> Deleting a volume on a disk group here does not delete the corresponding disk group. To delete a disk group, click <b>Internal 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.
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> .
Usage	This field shows the percentage of the volume being used, the percentage that is available, and the total disk group size.

### 8.3.1 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 **Internal 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 8.3.3 on page 64](#) for more information. Moreover, the maximum size for one volume is 16TB.

**Figure 35** Create Volume



The following table describes the labels in this screen.

**Table 12** 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.

**Table 12** Create Volume (continued)

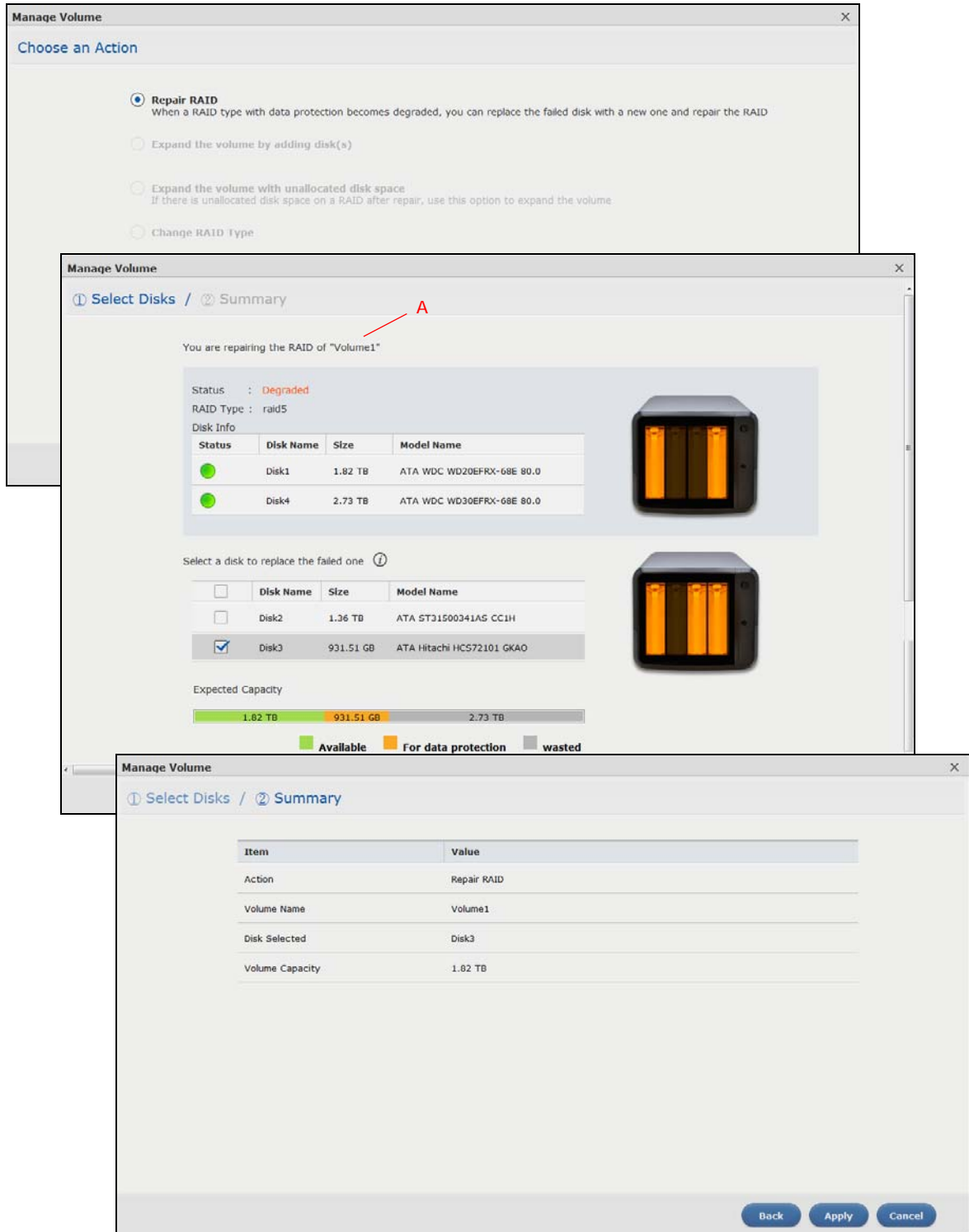
LABEL	DESCRIPTION
	Select one or more hard disks where you want to create a volume. Use the check box on the top to select or unselect all entries in this column.
Disk Name	This field shows the name of the hard disk.
Size	This field shows the total disk size.
Model Name	This field shows the model of the hard disk.
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 8 on page 50</a> or <a href="#">Section 8.6 on page 98</a> for more information.</p> <p><b>Note:</b> 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.

## 8.3.2 Managing a Volume

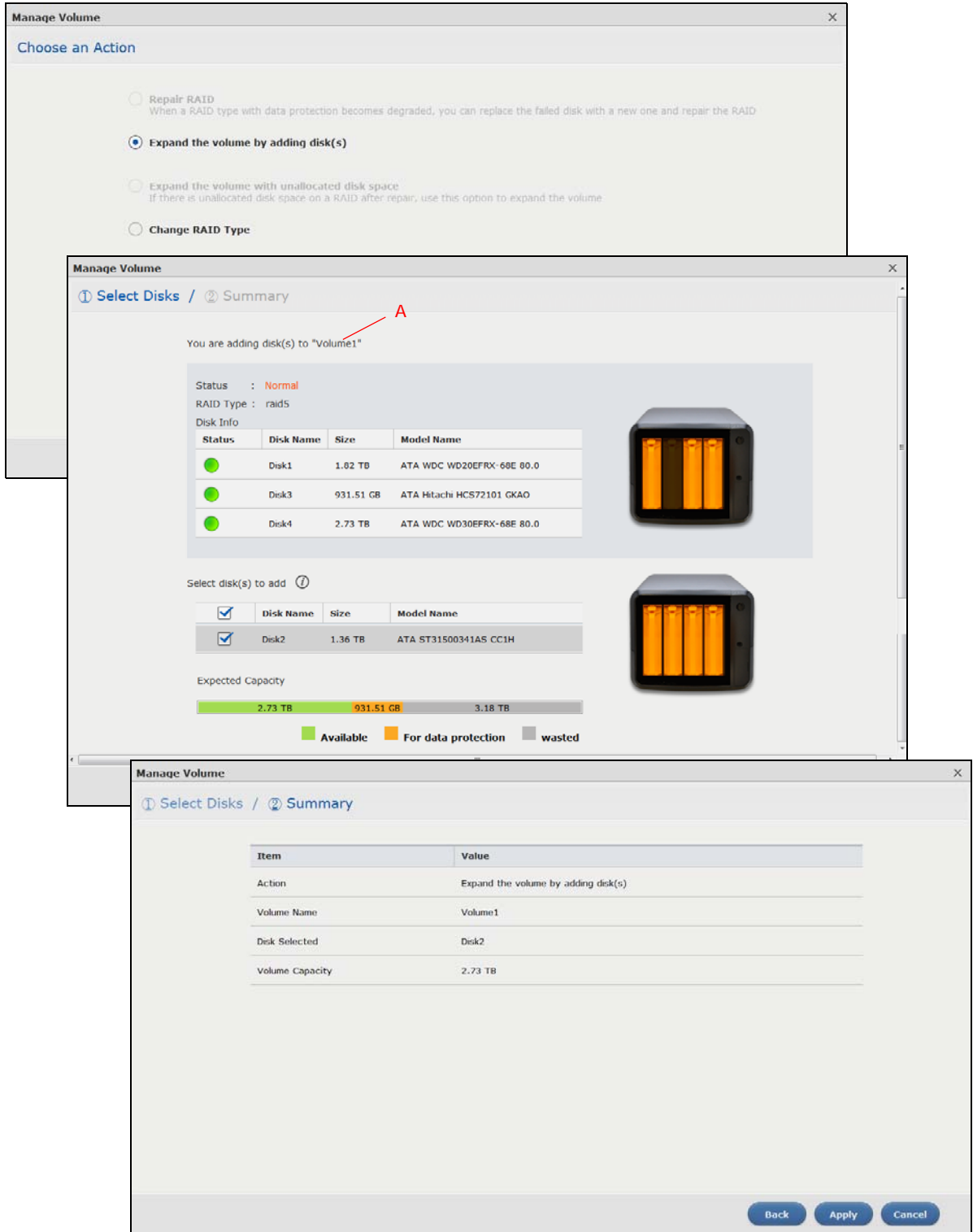
Use the **Manage Volume** screen to repair, expand a volume or change the volume's RAID type. In the **Internal Storage > Volume** screen, select a volume and then click **Manage** in the **Volume** section to open the screen as shown.

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.

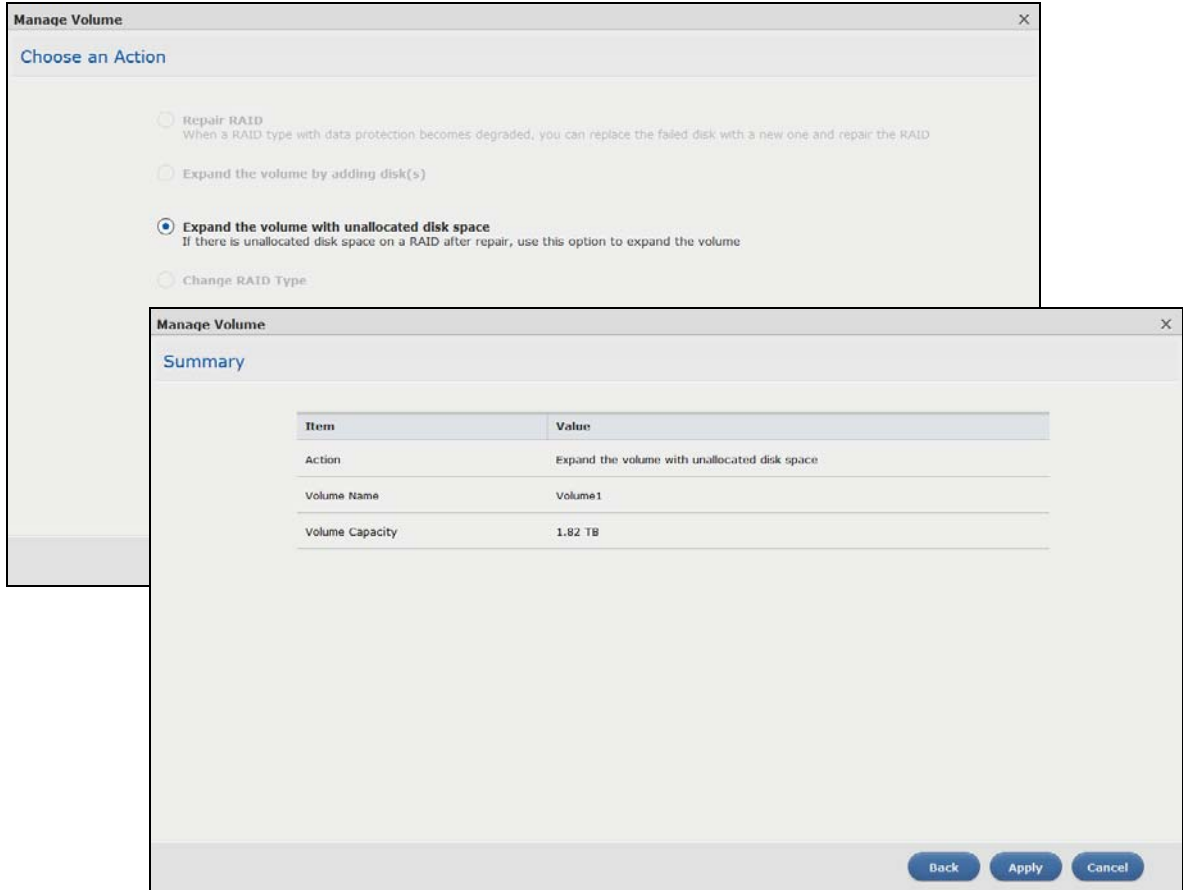
Figure 36 Manage Volume (Repair RAID)



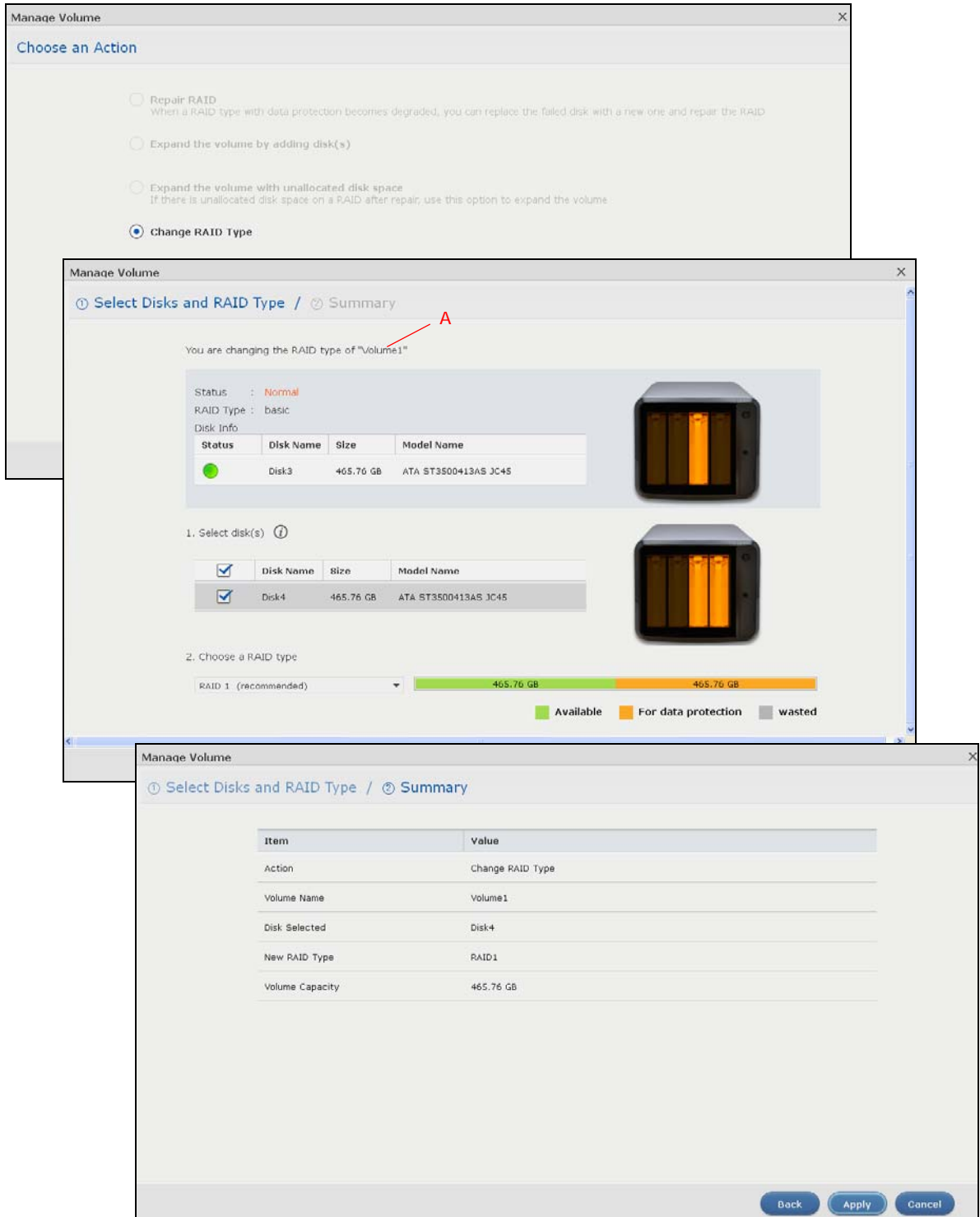
**Figure 37** Manage Volume (Expand the volume by adding disk(s) )



**Figure 38** Manage Volume (Change RAID Type)



**Figure 39** Manage Volume (Change RAID Type)





The following table describes the labels in this screen.

**Table 13** 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.  <b>Note:</b> 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.  <b>Note:</b> 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 13** 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.  <b>Note: Use the same capacity of hard disks for RAID 1, 5, 6, or 10 to avoid wasting space.</b>
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 13** 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 8 on page 50</a> or <a href="#">Section 8.6 on page 98</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 13** Manage Volume (continued)

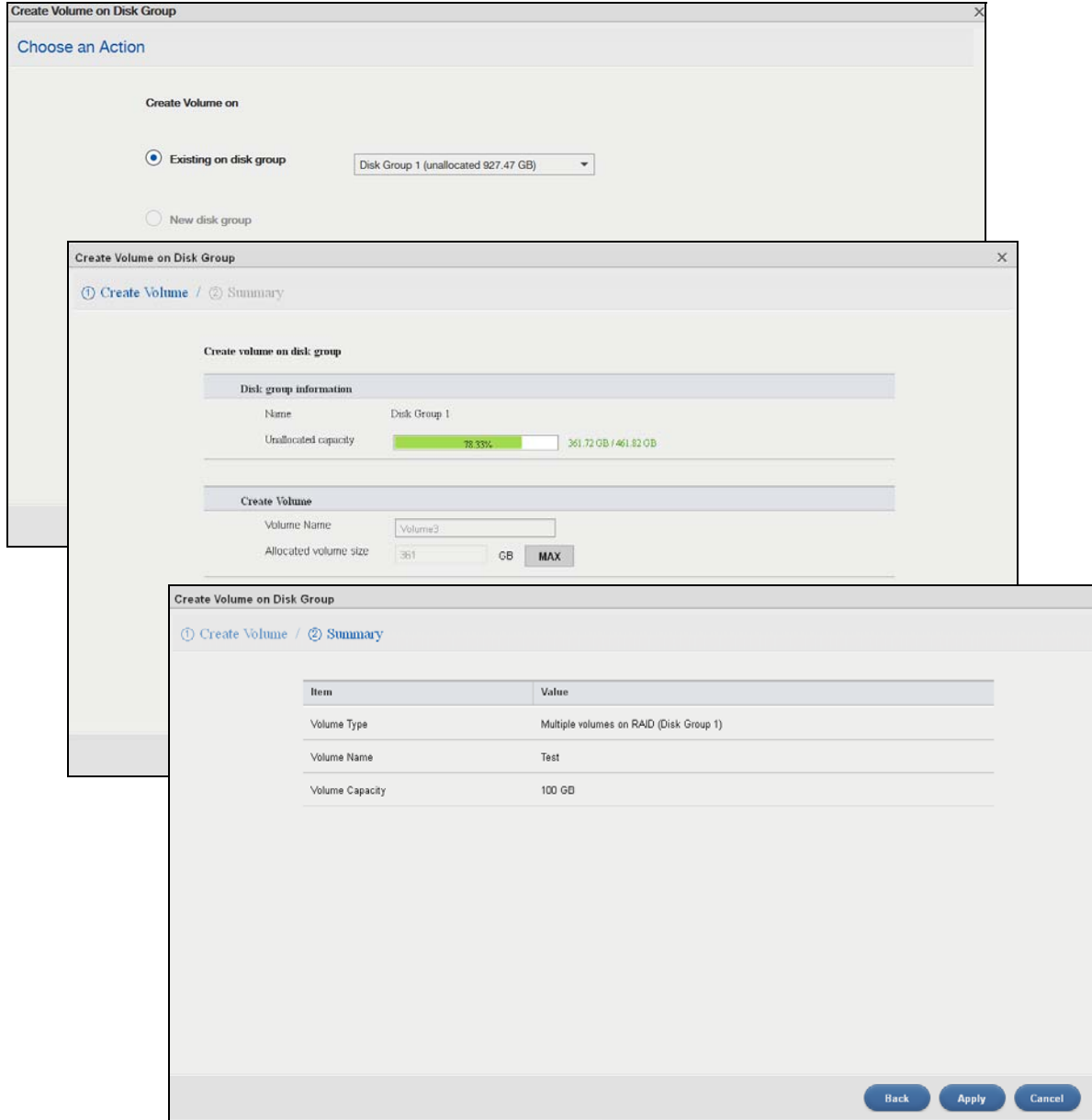
LABEL	DESCRIPTION
Volume Capacity	This field displays the total size of the volume.
Back	Click <b>Back</b> to go to the previous step.
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

### 8.3.3 Creating a Volume on Disk Group

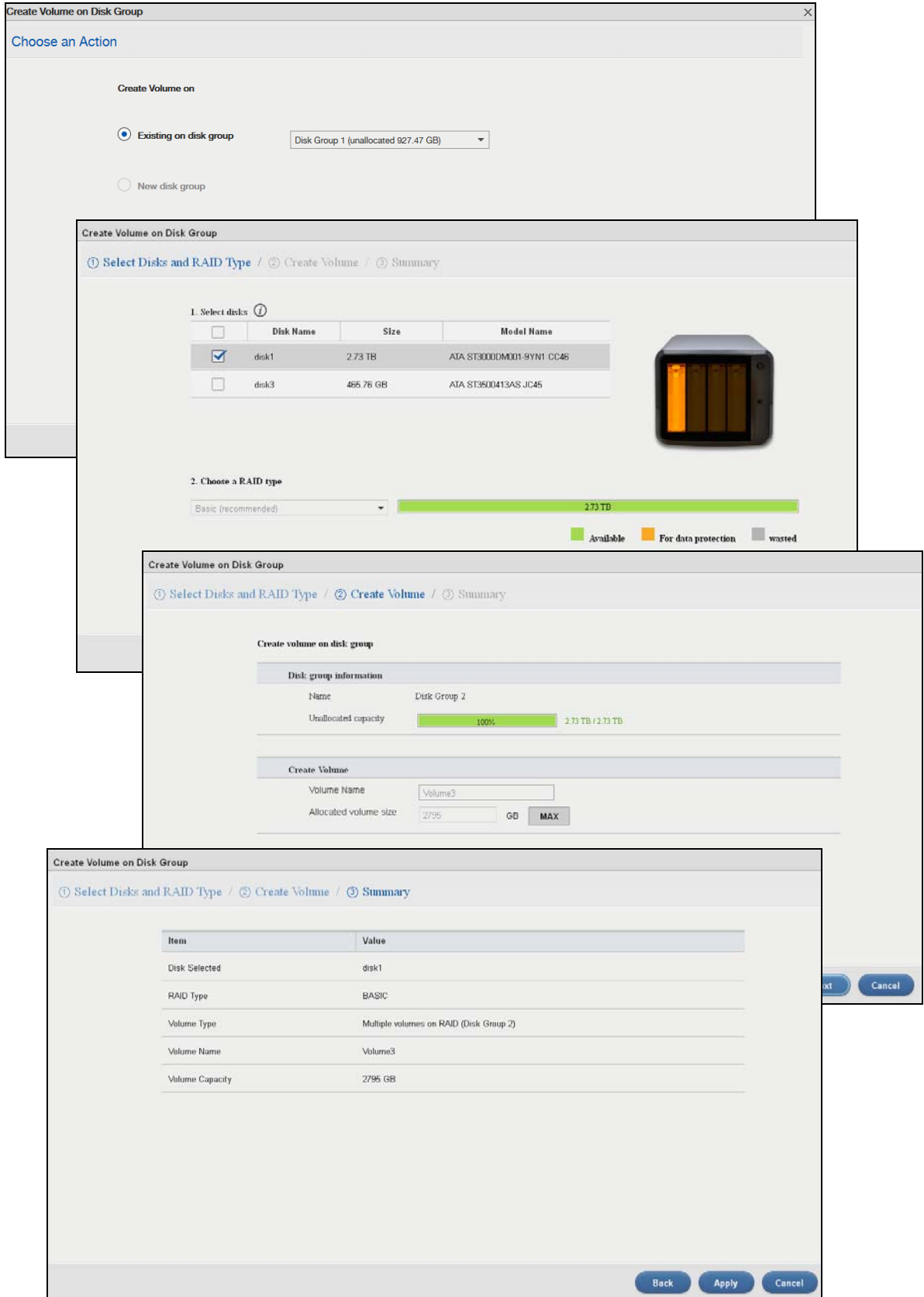
Use the **Create Volume on Disk Group** screen to configure a volume on an existing or new disk group. Click **Create** in the **Volume on Disk Group** section of the **Internal Storage > Volume** screen to open the screen as shown.

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 8.3.1 on page 55](#) for more information.

**Figure 40** Create Volume on an Existing Disk Group



**Figure 41** Create Volume on a New Disk Group



The following table describes the labels in this screen.

**Table 14** Create Volume on Disk Group

LABEL	DESCRIPTION
Choose an Action	
Create Volume on	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.  Select <b>New disk group</b> to create a disk group and then a volume on the disk group.
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. Summery	
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 14** 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 8 on page 50</a> or <a href="#">Section 8.6 on page 98</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.



### 8.3.4 Editing a Volume on Disk Group

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

**Figure 42** Edit Volume on Disk Group

The screenshot shows a window titled "Edit Volume on Disk Group". Inside, there's a progress bar for "Unallocated capacity on Disk Group 1" at 99.96%, with "2.72 TB / 2.73 TB" next to it. Below that, "Current volume size" is 1007.90 MB. The "New volume size" field contains "1" followed by "GB" and a "MAX" button. At the bottom right, there are "Apply" and "Cancel" buttons.

The following table describes the labels in this screen.

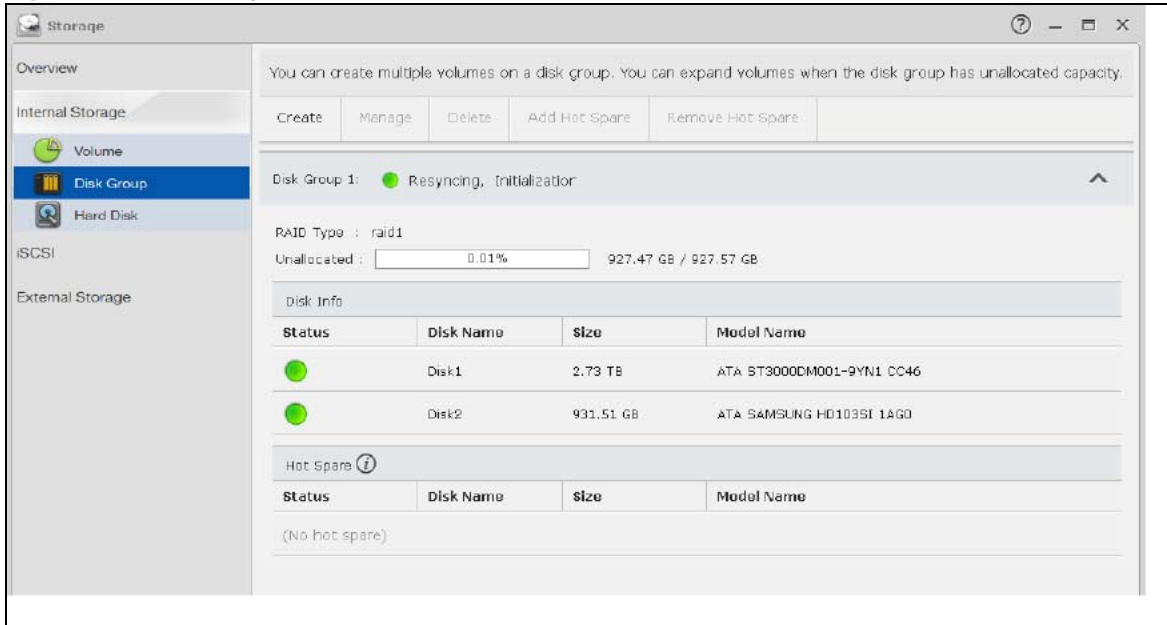
**Table 15** Edit Volume on Disk Group

LABEL	DESCRIPTION
Unallocated capacity on Disk Group X	This field displays 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.

### 8.3.5 Disk Group

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

Figure 43 Disk Group



The following table describes the labels in this screen.

Table 16 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 8.6 on page 98</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 hot spare.
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 16** Disk Group (continued)

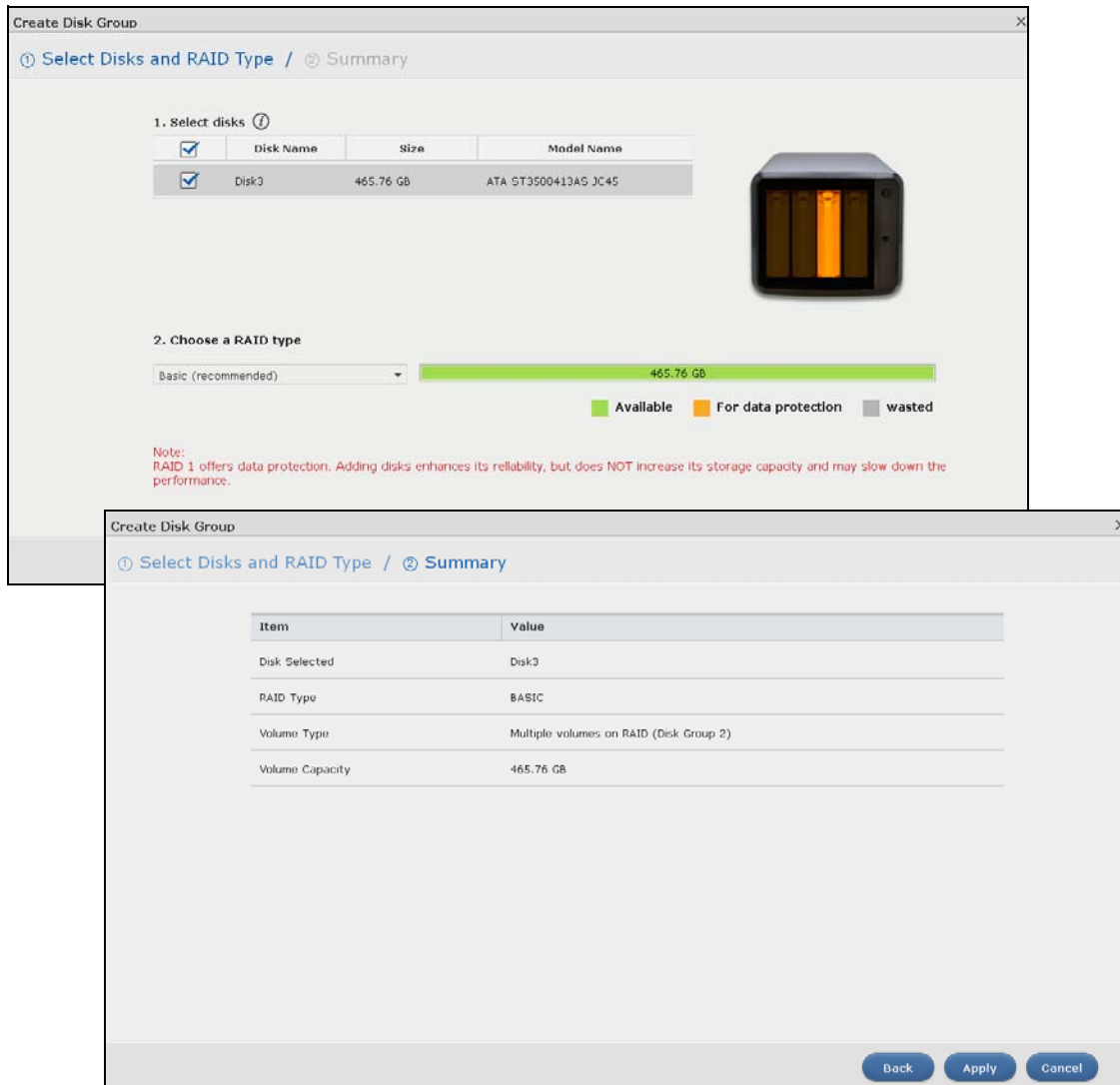
LABEL	DESCRIPTION
Disk Group X	<p>This field shows the name of the disk group and whether it is normal, degraded, crashed, <b>Creating</b>, <b>Deleting</b>, <b>Expanding</b>, <b>Repairing</b> or <b>Changing</b> the RAID type.</p> <p><b>Normal:</b> A green circle represents a healthy volume.</p> <p><b>Degraded:</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 16** 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, Deleting, Expanding, 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.

### 8.3.5.1 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 44** Create Disk Group

The following table describes the labels in this screen.

**Table 17** 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.
Model Name	This field shows the model of the hard disk.

**Table 17** Create 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 8 on page 50</a> or <a href="#">Section 8.6 on page 98</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. 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 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.

### 8.3.6 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 45 Hard Disk

The screenshot shows the 'Storage' application window with the 'S.M.A.R.T.' tab selected. The left sidebar shows 'Internal Storage' with 'Hard Disk' selected. 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 CC46	39°C/102.2°F
●	disk2	Volume1 (basic)	931.51 ...	ATA SAM5UNG HD103SI 1AG0	33°C/91.4°F
●	disk3		465.76 ...	ATA ST3500413AS JC46	40°C/104°F
●	disk4	Disk Group 1 (raid1)	465.76 ...	ATA ST3500413AS JC46	41°C/105.8°F

The following table describes the labels in this screen.

Table 18 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).

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

**Figure 46** S.M.A.R.T Overview

Item	Value
Power_On_Hours	1047 hour(s)
Spin_Retry_Count	0
Reallocated_Sector_Ct	0
Command_Timeout	0
Model Family	Seagate Barracuda 7200.14 (AF)
Device Model	ST3000DM001-9YN166
Serial Number	W1F06F0B
LU WWN Device Id	5 000c50 044c38157
Firmware Version	CC46
User Capacity	3.00 TB
Sector Sizes	512 bytes logical, 4096 bytes physical
Rotation Rate	7200 rpm
ATA Version	ATA8-ACS T13/1699-D revision 4
SATA Version	SATA 3.0, 6.0 Gb/s (current: 6.0 Gb/s)
Local Time	Tue Aug 19 17:12:14 2014 GMT

The following table describes the labels in this screen.

**Table 19** 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.
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.



**Table 19** S.M.A.R.T Overview (continued)

LABEL	DESCRIPTION
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.

### 8.3.6.2 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 47 S.M.A.R.T Info

The screenshot shows a window titled "S.M.A.R.T - Disk3" with a sub-header "Overview 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		346
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 20 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 20** 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.

### 8.3.6.3 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 21** 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 21** 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 21** 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.

## 8.4 iSCSI

The NAS supports the iSCSI (Internet Small Computer System Interface) standard and can serve as an iSCSI target. When the iSCSI initiator is successfully connected to an iSCSI target over an IP

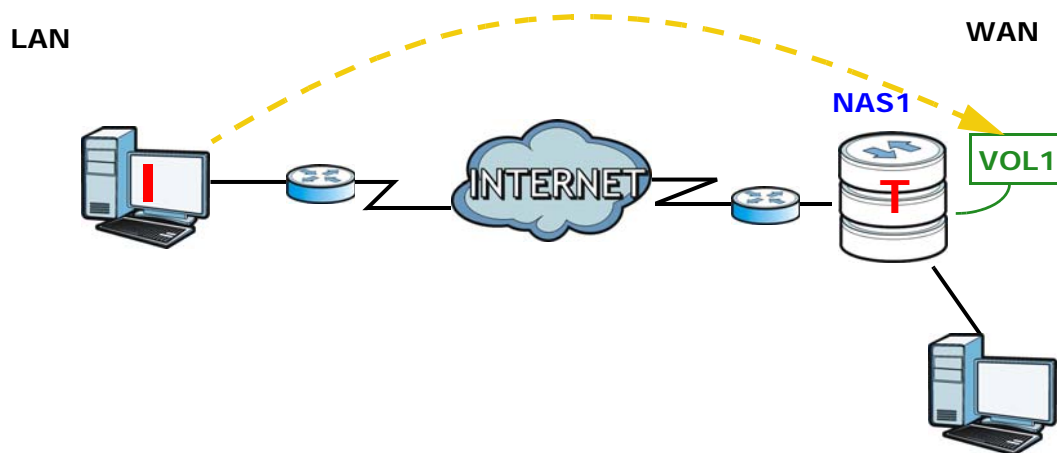
network, data transmission and storage management can be processed through the network. In other words, you can access and manage the target the same way as a locally attached drive.

In the following example, a branch office has a NAS named **NAS1**. You want to expand your data storage capacity by accessing an iSCSI LUN (Logical Unit Number) volume called **VOL1** on **NAS1** over the Internet. Your computer is the iSCSI initiator and the NAS is the iSCSI target. When the initiator is successfully connected to the target, your computer can use **VOL1** on the NAS as its own internal storage.

The configuration steps are as follows:

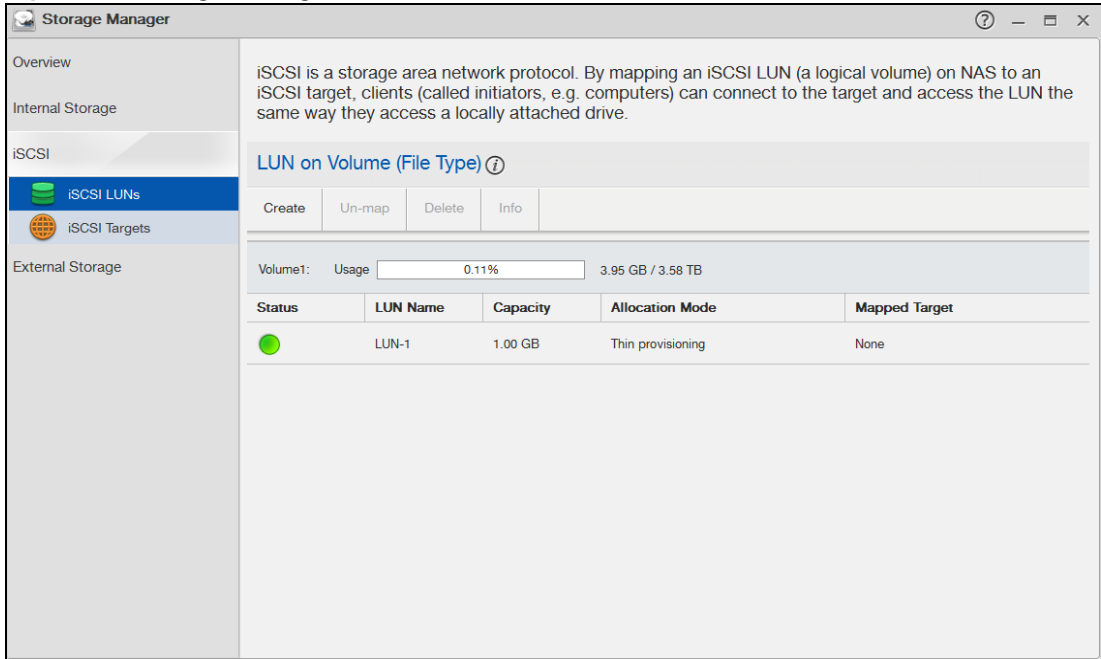
- 1 Create an iSCSI LUN Volume for the iSCSI target in NAS1.
- 2 Configure NAS1 as an iSCSI target.

**Figure 48** iSCSI Connection Example



## 8.4.1 iSCSI LUNs Screens

This section enables you to create, up-map, and delete LUN volumes, as well as display the volumes' information. Click **Storage Manager > iSCSI > iSCSI LUNs** to display the following screen.

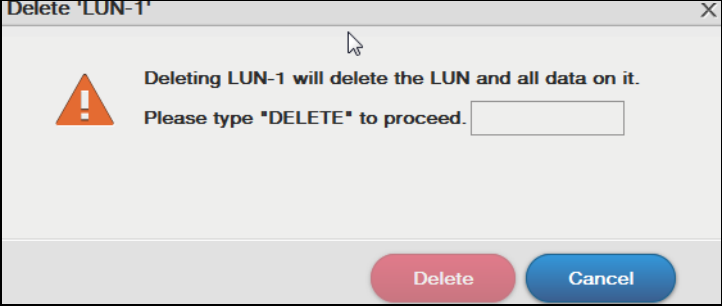
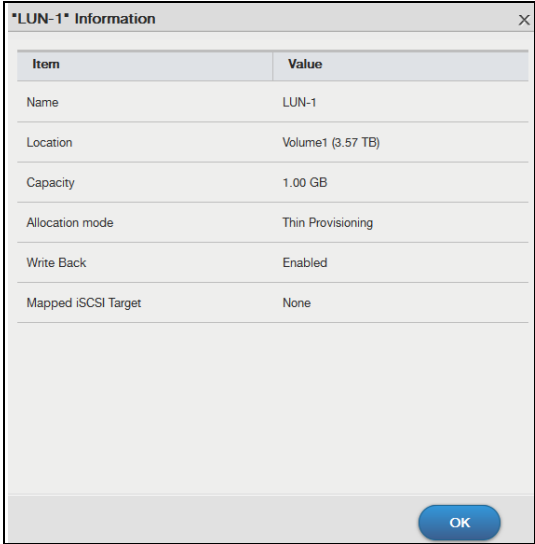
**Figure 49** Storage Manager > iSCSI > iSCSI LUNs

The following table describes the labels in this screen.

**Table 22** iSCSI > iSCSI LUNs

LABEL	DESCRIPTION
Create	Click this to create a new LUN on a volume. See more details on <a href="#">Section 8.4.1.1 on page 84</a> .
Un-map	Click this to open the following screen where you can un-map the LUN from the iSCSI target. <div data-bbox="597 1150 1331 1470" data-label="Image"> </div> <p>Key in <b>UN-MAP</b> and click <b>Un-map</b> to un-map the LUN from the iSCSI target. Click <b>Cancel</b> to close this screen.</p>

**Table 22** iSCSI > iSCSI LUNs (continued)

LABEL	DESCRIPTION
Delete	<p>Click this to open the following screen where you can delete an existing LUN.</p>  <p>Key in <b>DELETE</b> and click <b>Delete</b> to remove an existing LUN. Click <b>Cancel</b> to close this screen.</p>
Info	<p>Click this item to check detailed information about the LUN.</p>  <p><b>Name</b> - Displays the name of the LUN.</p> <p><b>Location</b> - Displays the name of the volume the LUN is located in.</p> <p><b>Capacity</b> - Displays the size of the LUN.</p> <p><b>Allocation mode</b> - Displays the allocation method the LUN applies.</p> <p><b>Write Back</b> - Displays whether the write back feature is enabled or disabled.</p> <p><b>Mapped iSCSI Target</b> - Displays the iSCSI target name the LUN is mapped to.</p>

### 8.4.1.1 Creating a New LUN

A LUN is a unit of storage shared over iSCSI that can be mapped to an iSCSI target. You must create an iSCSI LUN volume before you configure an iSCSI target for it. Click **Create** in the **iSCSI LUNs** section of the **Storage Manager > iSCSI** screen to open the screens as shown.



**Figure 50** Creating a New LUN

Create a LUN on Volume (File Type) X

Set up LUN Properties / Summary

Name

Location

Capacity  GB

Allocation mode

Thin provisioning ?

Instant allocation ?

Enable write back ?

Create a LUN on Volume (File Type) X

Set up LUN Properties / Summary

Item	Value
Name	LUN-1
Location	Volume1 (Available 3659.73 GB)
Capacity	1 GB
Allocation mode	Thin Provisioning
Write Back	Enabled

The following table describes the labels in these screens.

**Table 23** Create a New LUN

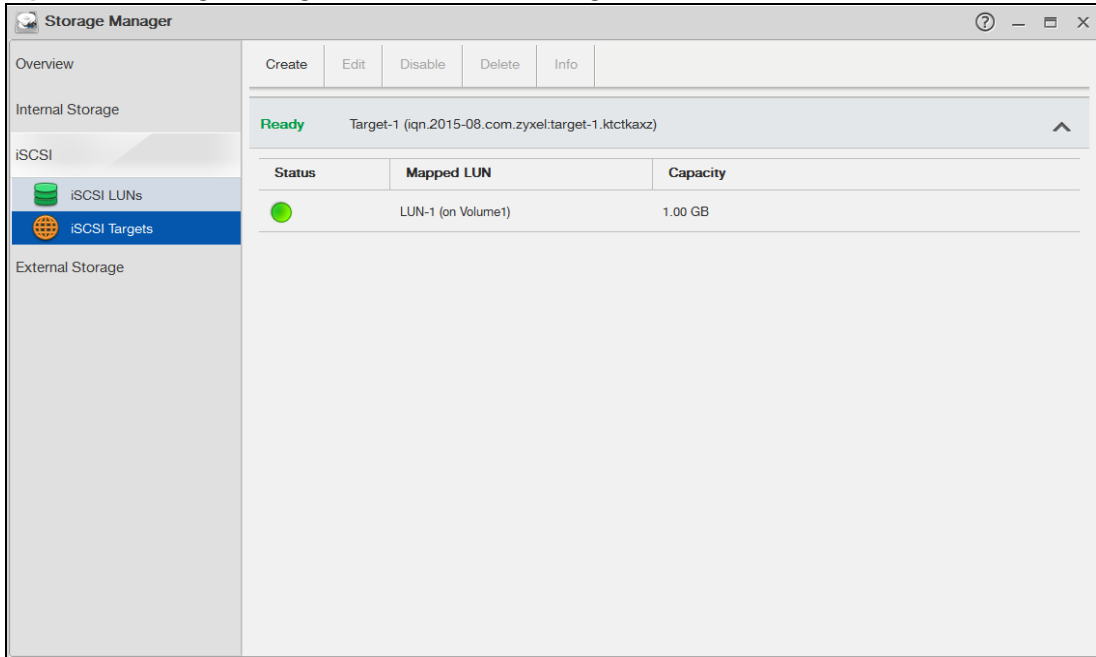
LABEL	DESCRIPTION
Step 1. Set Up LUN Properties	
Name	Type a LUN name in this field.  Note: Valid characters for the name are 0-9, a-z, and A-Z, and the maximum length is 30 characters. The "-" symbol is allowed as well, but cannot be the first character.
Location	Select a volume to create the LUN on.
Capacity	Type the size of the LUN in this field.
Allocation Mode	Select the method the NAS uses to allocate storage space to the LUN.  <b>Thin provisioning</b> - Allocate space only when an initiator writes data to it.  <b>Instant allocation</b> - Allocate the specified disk space to the LUN when you create the LUN.
Enable Write Back	Select this option to increase the write performance. Write Back is a feature that collects data in the hard disk's cache memory first and permanently writes data into the hard disk when the system is idle.  Note: It also creates a serious data integrity hazard. Data loss may occur if the NAS experiences unexpected power loss before it has time to write the cached data to the hard disk.
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.	
Name	Displays the name of the LUN.
Location	Displays the name of the volume the LUN is located in.
Capacity	Displays the size of the LUN.
Allocation Mode	Displays the allocation method the LUN applies.
Write Back	Displays whether the Write Back feature is enabled or disabled.
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.

## 8.4.2 iSCSI Targets Screens

The iSCSI target refers to the storage resource that is actually attached to the iSCSI storage device. The initiator can manage the assigned disk volume on the iSCSI target over the Internet as if it was the initiator's internal storage volume.

**iSCSI Targets** allows you to create, edit, and delete an iSCSI target and map a target to an existing LUN. Click **Storage Manager > iSCSI > iSCSI Targets** to show the following screen.

**Figure 51** Storage Manager > iSCSI > iSCSI Targets

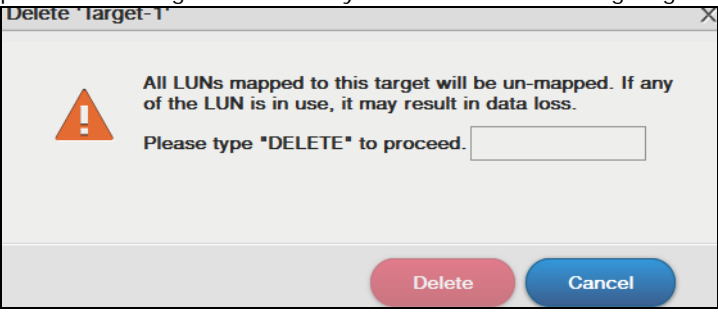
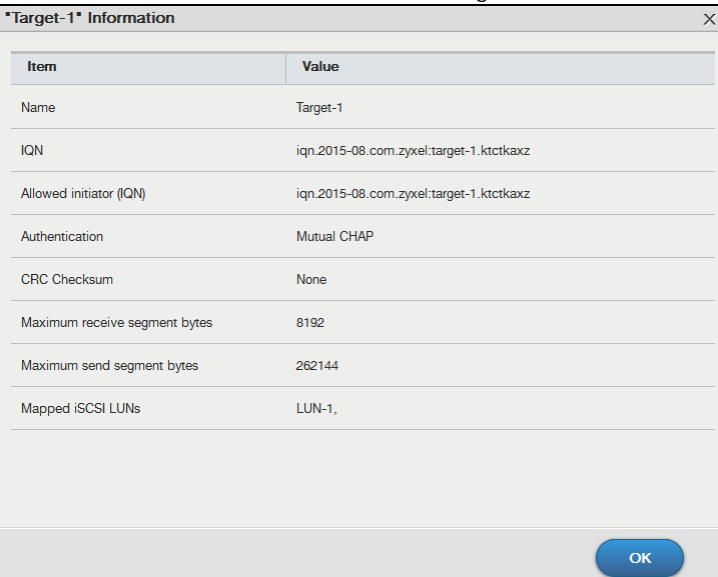


The following table describes the labels in these screens.

**Table 24** iSCSI > iSCSI Targets

LABEL	DESCRIPTION
Create	Click this to create a new iSCSI target. See more details on <a href="#">Section 8.4.2.1 on page 88</a> .
Edit	Click this to modify the configuration of the iSCSI target. See more detailed on <a href="#">Section 8.4.2.2 on page 92</a> .
Disable / Enable	<p><b>Disable</b> - Click this to open the following screen where you can deactivate an existing target.</p> <div data-bbox="609 1228 1323 1543" style="border: 1px solid gray; padding: 10px; margin: 10px 0;"> <p style="text-align: right;">Disable 'Target-1' <span style="float: right;">X</span></p> <p style="text-align: center;"> <b>If the LUN(s) mapped to the target is in use, to disable the target may result in data loss.</b></p> <p style="text-align: center;">Please type <b>"DISABLE"</b> to proceed. <input style="width: 100px;" type="text"/></p> <p style="text-align: right;"> <span style="border: 1px solid gray; border-radius: 15px; padding: 5px 15px; background-color: #f08080; color: white; margin-right: 10px;">Disable</span> <span style="border: 1px solid gray; border-radius: 15px; padding: 5px 15px; background-color: #4a90e2; color: white;">Cancel</span> </p> </div> <p>Key in <b>DISABLE</b> and click <b>Disable</b> to deactivate the target. Click <b>Cancel</b> to close this screen.</p> <p><b>Enable</b> - When the iSCSI is disabled, click Enable will activate the target.</p>

**Table 24** iSCSI > iSCSI Targets (continued)

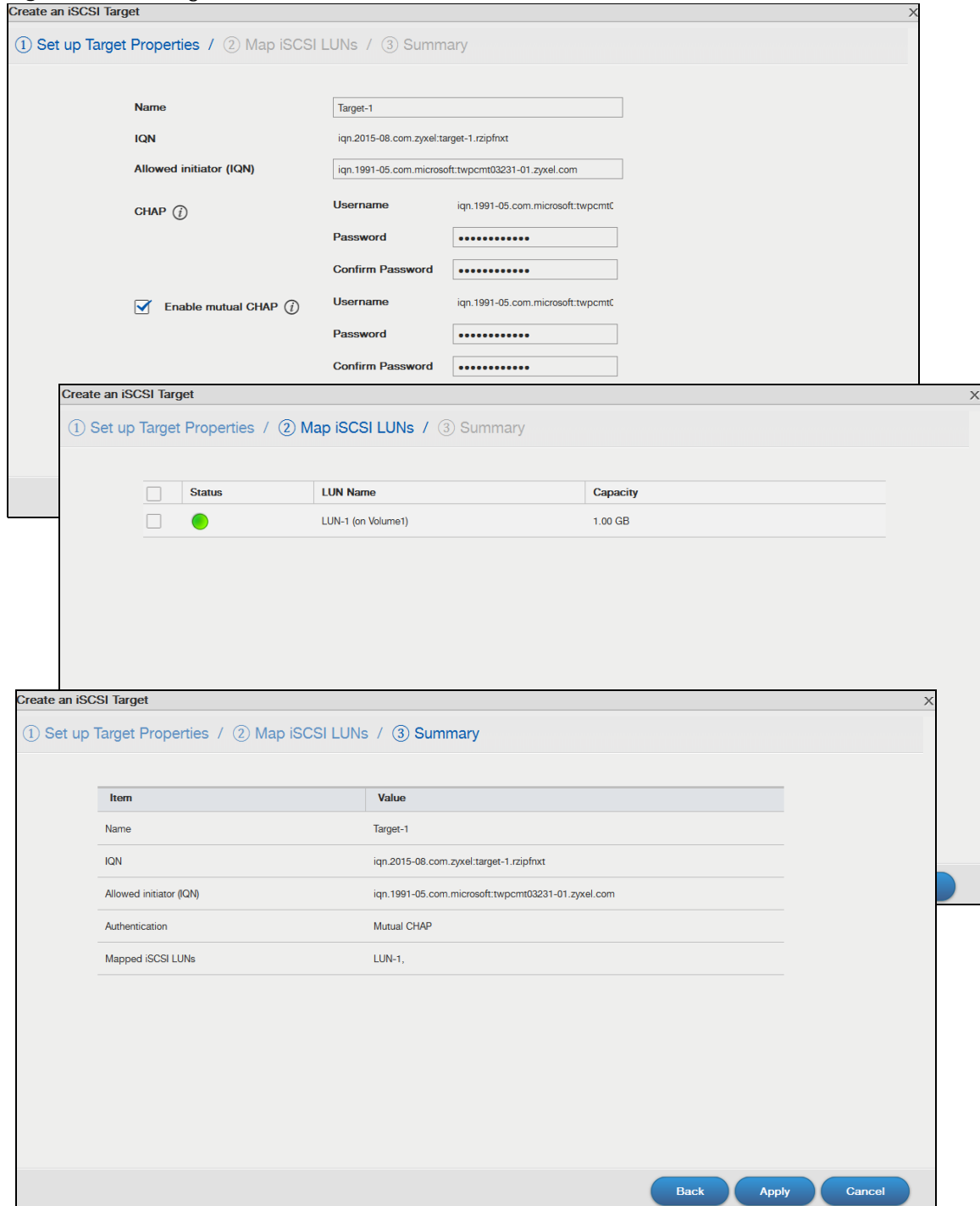
LABEL	DESCRIPTION
Delete	<p>Click this to open the following screen where you can delete an existing target.</p>  <p>Key in <b>DELETE</b> and click <b>Delete</b> to remove an existing target. Click <b>Cancel</b> to close this screen.</p>
Info	<p>Click this item to check detailed information about the target.</p>  <p><b>Name</b> - Displays the created target name.</p> <p><b>IQN</b> - Displays the target's iSCSI Qualified Name (IQN) format.</p> <p><b>Allowed initiator (IQN)</b> - Displays the allowed initiator's iSCSI Qualified Name (IQN) format.</p> <p><b>Authentication</b> - Displays the authentication method the target applies.</p> <p><b>CRC Checksum</b> - Displays the data transmission error detecting technique.</p> <p><b>Maximum receive segment bytes</b> - Displays the maximum data segment length in bytes that the iSCSI target can receive.</p> <p><b>Maximum send segment bytes</b> - Displays the maximum data segment length in bytes that the iSCSI target can send. This feature is for the NAS326 only.</p> <p><b>Mapped iSCSI Luns</b> - Displays the LUNs mapped with the target.</p>

### 8.4.2.1 Creating a New Target

Click **Create** in the **iSCSI Targets** section of the **Storage Manager > iSCSI** screen to open the screens as shown.

Note: The NAS can create only 10 targets at maximum.

**Figure 52** Creating a new LUN



The following table describes the labels in these screens.

**Table 25** Create a New Target

LABEL	DESCRIPTION
Step 1. Set Up Target Properties	
Name	Enter the name of your iSCSI target.  Note: Valid characters for the name are 0-9, a-z, and A-Z, and the maximum length is 30 characters. The “-” symbol is allowed as well, but cannot be the first character.
IQN	The iSCSI Qualified Name (IQN) of the target is automatically generated after you enter the target name.
Allowed initiator (IQN)	The allowed initiator name is in the iSCSI Qualified Name (IQN) format.  To check the initiator name, open the iSCSI Initiator program on your computer. Select the <b>Configuration</b> tab and you can see the initiator name as shown in the following screen. <div data-bbox="695 674 1295 1440" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>The screenshot shows the 'iSCSI Initiator Properties' dialog box with the 'Configuration' tab selected. The 'Initiator Name' field contains the text 'iqn.1991-05.com.microsoft:twpcmt03231-01.zyxel.com'. Other tabs include 'Targets', 'Discovery', 'Favorite Targets', 'Volumes and Devices', and 'RADIUS'. Buttons for 'Change...', 'CHAP...', 'IPsec...', and 'Report' are visible at the bottom.</p> </div> <p>Note: If you use your computer as the iSCSI initiator, download and install the iSCSI Initiator first. For example, use Microsoft iSCSI Software Initiator with a Microsoft OS or globalSAN iSCSI Initiator with MAC OS.</p>

**Table 25** Create a New Target (continued)

LABEL	DESCRIPTION
CHAP	<p>If the iSCSI target has configured Challenge Handshake Authentication Protocol (CHAP) here, the initiator needs to enter the secret before the initiator connects to the target. The target will authenticate the initiator with the username and password (shared secret). The connection fails if the username and password are not entered correctly.</p> <p><b>Username</b> - The user name is for the initiator to authenticate the initiator when attempting connection.</p> <p><b>Password</b> - The password is for the target to authenticate the initiator when attempting connection.</p> <p><b>Confirm password</b> - Re-type the password to make sure you entered it correctly.</p> <p>Note: Valid characters for password are 0-9, a-z, and A-Z.</p>
Enable mutual CHAP	<p>Mutual CHAP is a two-way authentication between the iSCSI initiator and the target. If the initiator has configured CHAP authentication, the target must enter the secret that's set up by the initiator when attempting connection.</p> <p>Select this check box to perform mutual CHAP on the target.</p> <p><b>Username</b> - The user name is for the initiator to authenticate the initiator when attempting connection.</p> <p><b>Password</b> - The password is for the target to authenticate the initiator when attempting connection.</p> <p><b>Confirm password</b> - Re-type the password to make sure you entered it correctly.</p> <p>Note: Valid characters for password are 0-9, a-z, and A-Z.</p>
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. Map iSCSI LUNs</p> <p>Use this screen to map the iSCSI target to an existing LUN.</p> <p>Note: One iSCSI target can map to several LUN, but one LUN can only map to one target.</p>	
Status	Displays the status of the iSCSI LUN(s).
LUN Name	Displays the LUN name.
Capacity	Displays the size of the iSCSI LUN(s).
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.
<p>Step 3. Summary</p> <p>Use this screen to review the settings you configured in the last step.</p>	
Name	Displays the iSCSI target name.
IQN	Displays the IQN of the target.
Allowed initiator (IQN)	Displays the IQN of the allowed initiator.
Authentication	Displays the CHAP authentication method the target applies.
Mapped iSCSI LUNs	Displays the iSCSI LUN the target maps to.
Back	Click <b>Back</b> to go to the previous step.

**Table 25** Create a New Target (continued)

LABEL	DESCRIPTION
Apply	Click <b>Apply</b> to save the settings.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

### 8.4.2.2 Editing a Created Target

You can edit iSCSI target settings such as allowed initiator (IQN), CHAP, and CRC checksum after you create a target. Click **Storage Manager > iSCSI Targets** and select **Edit** to open the following screens.

#### Properties

The **Properties** screen allows you to edit the allowed initiator (IQN), CHAP authentication features as shown in the following screen.

**Figure 53** iSCSI Targets > Edit > Properties

**Table 26** iSCSI Targets > Edit > Properties

LABEL	DESCRIPTION
Name	Displays the name of your iSCSI target.
IQN	Displays the iSCSI Qualified Name (IQN) of the target.
Allowed initiator (IQN)	The allowed initiator name is in the iSCSI Qualified Name (IQN) format. You can connect with another initiator by changing the allowed initiator IQN.  The system will display a prompt if you enter an invalid character or username of unacceptable length in this field.

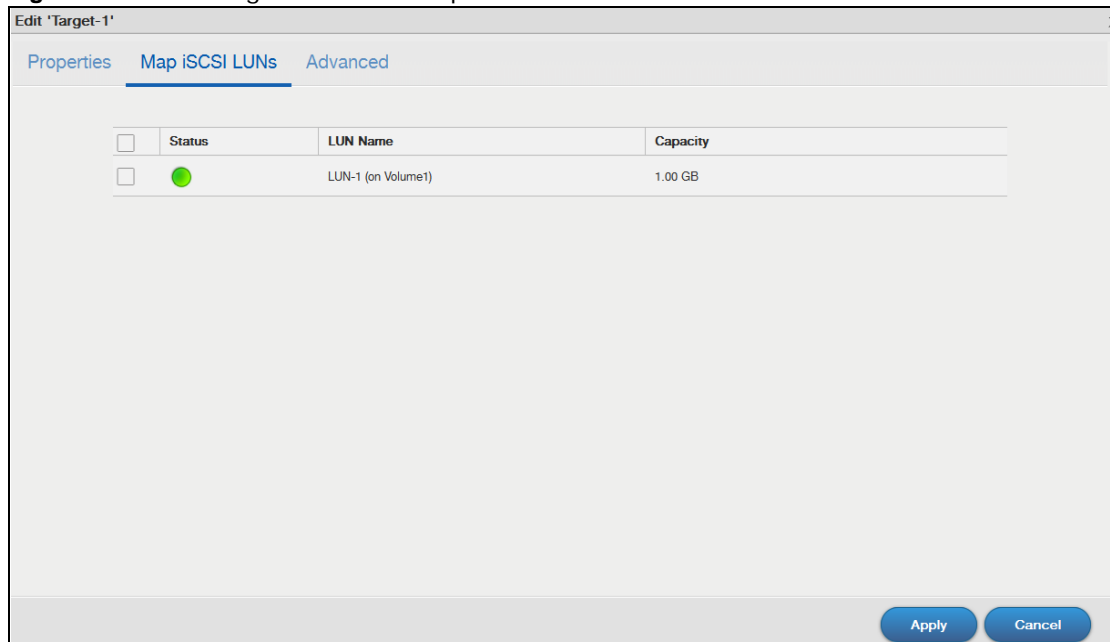


**Table 26** iSCSI Targets > Edit > Properties (continued)

LABEL	DESCRIPTION
CHAP	<p><b>Username</b> - The user name is for the initiator to authenticate the initiator when attempting connection.</p> <p><b>Password</b> - The password is for the target to authenticate the initiator when attempting connection.</p> <p><b>Confirm password</b> - Re-type the password to make sure you entered it correctly.</p> <p>Note: Valid characters for password are 0-9, a-z, and A-Z, and the valid length is 12-14 characters.</p>
Enable mutual CHAP	<p>Select this check box to perform mutual CHAP on the target.</p> <p><b>Username</b> - The user name is for the target to authenticate the initiator when attempting connection.</p> <p><b>Password</b> - The password is for the target to authenticate the initiator when attempting connection.</p> <p><b>Confirm password</b> - Re-type the password to make sure you entered it correctly.</p> <p>Note: Valid characters for password are 0-9, a-z, and A-Z, and the valid length is 12-14 characters.</p>
Apply	Click <b>Apply</b> to save your changes.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

## Map iSCSI LUNs

If the existing iSCSI target doesn't map to any iSCSI LUN, go to **Map iSCSI LUNs** to configure the mapping.

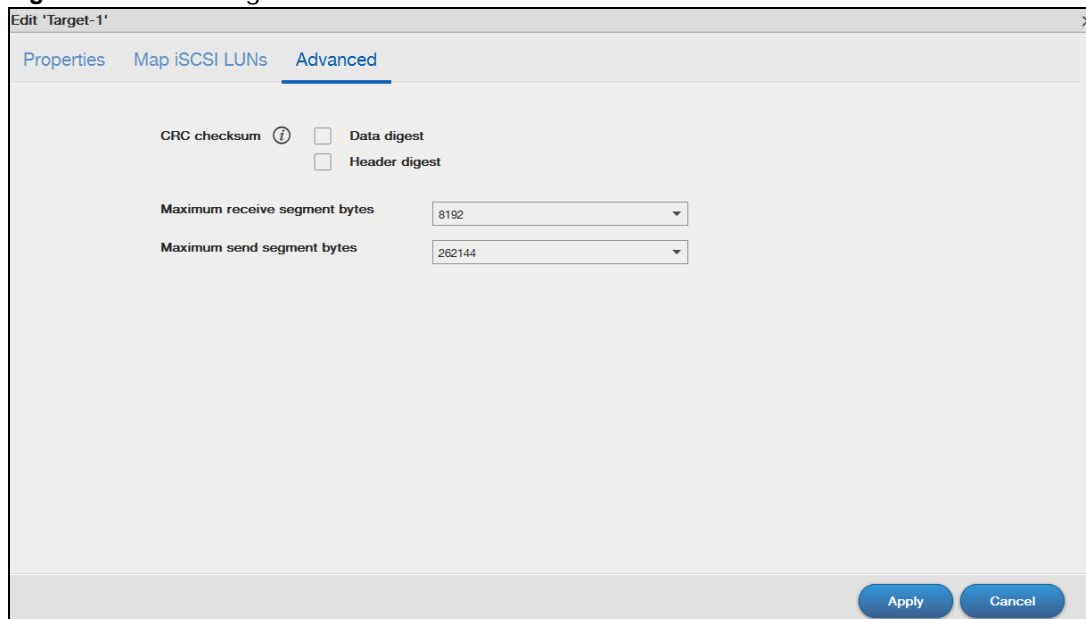
**Figure 54** iSCSI Targets > Edit > Map iSCSI LUNs

**Table 27** iSCSI Targets > Edit > Map iSCSI LUNs

LABEL	DESCRIPTION
Status	Displays the status of the iSCSI LUN.
LUN Name	Displays the iSCSI LUN name.
Capacity	Displays the size of the iSCSI LUN.
Apply	Select the check to choose a LUN, and click <b>Apply</b> to save your changes.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

## Advanced

Go to **Advanced** screen for other configurations such as CRC checksum and maximum receive/send segments.

**Figure 55** iSCSI Targets > Edit > Advanced**Table 28** iSCSI Targets > Edit > Advanced

LABEL	DESCRIPTION
CRC checksum	Cyclic Redundancy Check (CRC) checksum is a technique for detecting data transmission errors. It ensures correct data transmissions between the initiator and the target. If you select the Data/Header Digest, the iSCSI initiator will be verified by these parameters when transmitting data.
Data digest	Select the check box to enable data digest. The data digest protects the integrity of the data.
Header digest	Select the check box to enable header digest. The header digest protects the integrity of the header.
Maximum receive segment bytes	Select the maximum receive segments allowed in bytes. Four options are applied: 262144, 65536, 9182, 4092.

**Table 28** iSCSI Targets > Edit > Advanced (continued)

LABEL	DESCRIPTION
Maximum send segment bytes	Select the maximum send segments allowed in bytes. Four options are applied: 262144, 65536, 9182, 4092. Note: This feature is for the NAS326 only.
Apply	Click <b>Apply</b> to save your changes.
Cancel	Click <b>Cancel</b> to close the screen without saving any settings.

## 8.5 External Storage

This chapter covers the management of external volumes and disks.

Use the **External Storage** screen ([Section 8.5.2 on page 95](#)) to display information on all external volumes, configure volumes' name and format volumes.

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

#### Disk

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

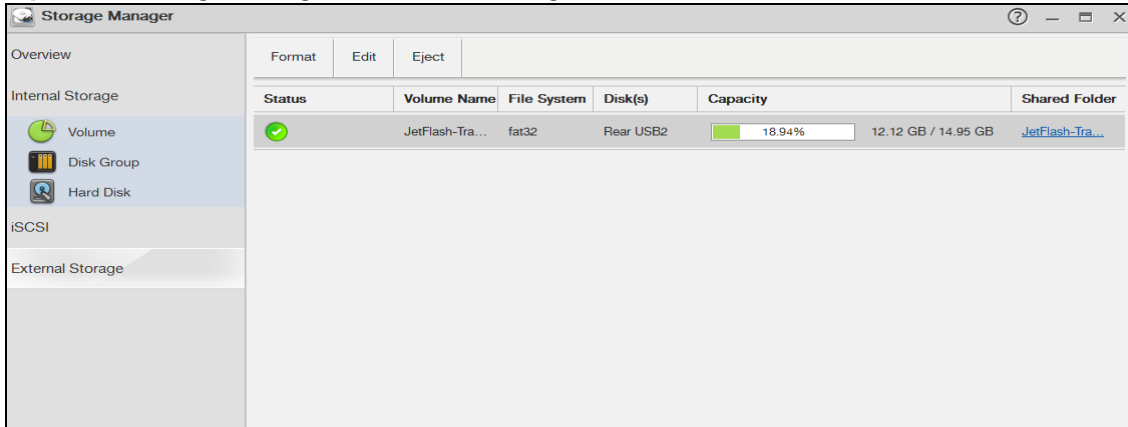
#### Volume

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.

### 8.5.2 External Storage Screen

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

**Figure 56** Storage Manager > External Storage

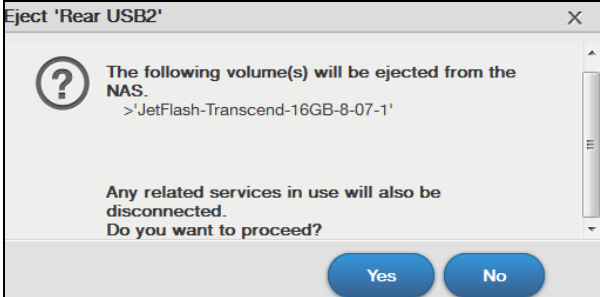


The following table describes the labels in this screen.

**Table 29** Storage Manager > External Storage

LABEL	DESCRIPTION
Format	Click this to format the connected USB disk. See <a href="#">Section 8.5.3 on page 97</a> for more information.
Edit	<p>Click this to modify the volume name.</p> <div data-bbox="656 919 1256 1205" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> </div> <p><b>Volume name -</b></p> <ul style="list-style-type: none"> <li>• Type a volume name from 1 to 31 characters.</li> <li>• Acceptable characters are all alphanumeric characters and " " [spaces], "_" [underscores], and "." [periods].</li> <li>• The first character must be alphanumeric (A-Z 0-9).</li> <li>• The last character cannot be a space " ".</li> </ul> <p><b>Apply -</b> Click this to save your change and rename the volume.</p> <p><b>Cancel -</b> Click this to exit this screen without saving changes.</p>

**Table 29** Storage Manager > External Storage (continued)

LABEL	DESCRIPTION
Eject	<p>Click this to eject the external volume.</p>  <p>Click <b>Yes</b> to eject the volume or <b>No</b> to exit this screen without saving changes.</p>
Status	<p>This field shows whether the volume is <b>Normal</b>, <b>Unsupported</b>, or <b>Unformatted</b>.</p> <p><b>Normal</b> means the USB connected device is functioning properly.</p> <p><b>Unsupported</b> means the USB connected device uses a file system the NAS does not support.</p> <p><b>Unformatted</b> means the USB connected device is not formatted with a file system.</p> <p>Note: There is no explicit message from CIFS that tells users their volume is degraded or down.</p>
Volume Name	<p>This field displays the volume name. If the status is <b>Unsupported</b> or <b>Unformatted</b>, the volume name displays "--".</p>
File System	<p>This field displays the file system that an external (USB or SD) volume is using.</p>
Disk(s)	<p>This field shows to which USB port the disk is connected.</p>
Capacity	<p>This field shows total disk size, the percentage of the volume being used and the percentage that is available. If the status is <b>Unsupported</b>, the capacity displays "Unknown". If the status is <b>Unformatted</b>, the capacity displays "--".</p>
Shared Folder	<p>This field displays the folder that shares files. Roll your mouse over the link and click it to display the files in the File Browser.</p>

### 8.5.3 Format the Volume

This allows you to format the connected USB disk. Click **External Storage > Format** to show the following screen.

Note: Formatting the disk will also delete all your data in the USB drive. If the connected external volume has more than one partition, you can choose which partition you want to format.

**Figure 57** External Storage > Format

The screenshot shows a dialog box titled "Format 'JetFlash-Transcend-16GB-8-07-1'". It contains two input fields: "Volume Name" with the text "JetFlash-Transcend-16GB-8-07-1" and "File System" with a dropdown menu showing "NTFS (Recommended)". At the bottom, there are two buttons: "Apply" and "Cancel".

The following table describes the labels in this screen.

**Table 30** External Storage > Format

LABEL	DESCRIPTION
Volume Name	Type a volume name from 1 to 31 characters. Acceptable characters are all alphanumeric characters and " " [spaces], "_" [underscores], and "." [periods]. The first character must be alphanumeric (A-Z 0-9). The last character cannot be a space " ".
File System	Select the file system you want the new volume to use. Windows file systems <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. Linux file systems <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.
Apply	Click this to save your changes and format the disk.
Cancel	Click this to exit this screen without saving changes.

## 8.6 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 31** 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 32** 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 33** RAID 1

A1	A1
A2	A2
A3	A3
A4	A4
<b>DISK 1</b>	<b>DISK 2</b>

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 34** RAID 6

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



## 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 35** 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 36** RAID 5

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

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.

# Status Center

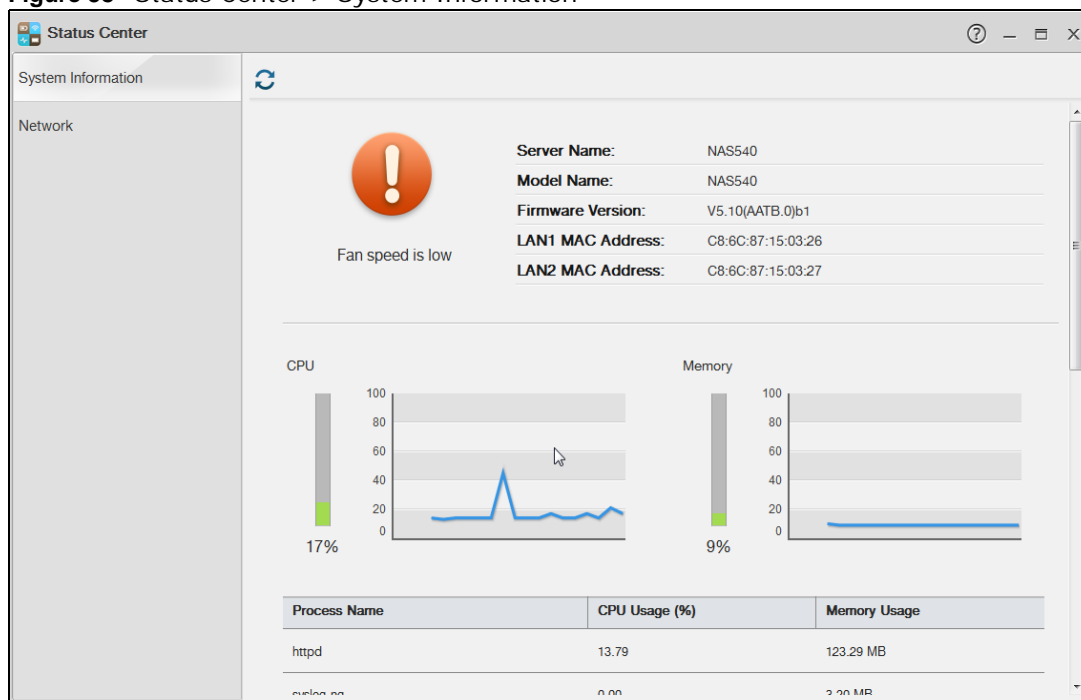
## 9.1 Overview

**Status Center** displays the system information or network connection status.

### 9.1.1 System Information

In the **Desktop** screen, click **Status Center** to display **System Information** for detailed NAS status information.

**Figure 58** Status Center > System Information



The following table describes the labels in this screen.

**Table 37** Status Center > System Information

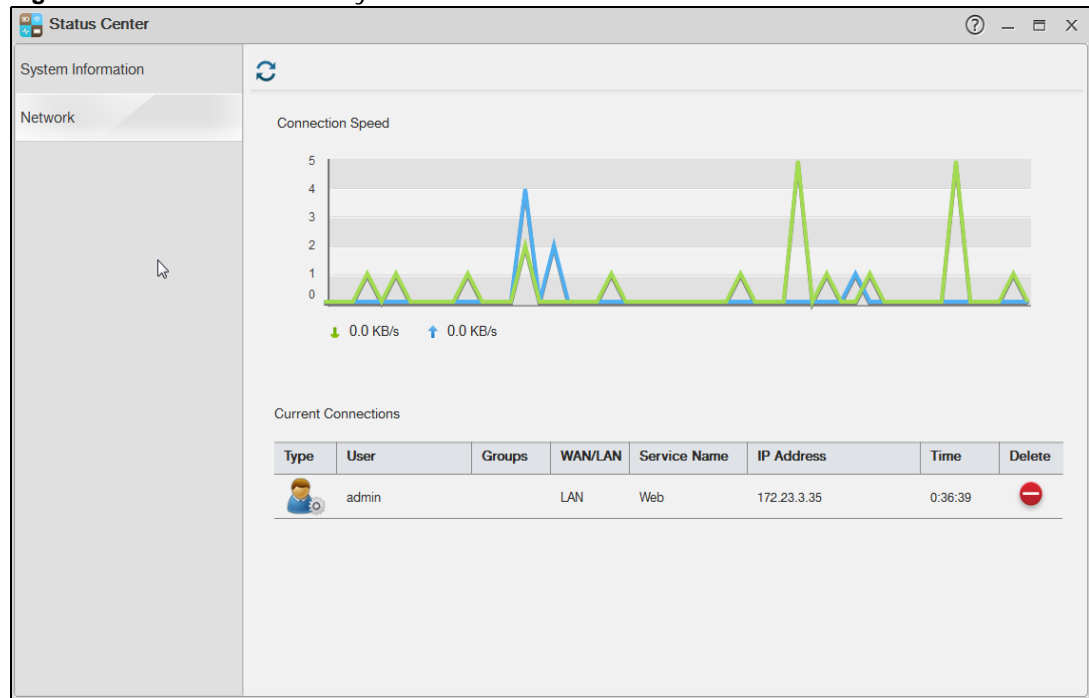
LABEL	DESCRIPTION
Refresh	Click the <b>Refresh</b> icon to update this display.
Status	The circular icon displays the health state of the NAS. A green circle with a check mark indicates healthy.
Server Name	This displays the name which helps you find the NAS on the network.
Model Name	This displays which model this NAS device is.
Firmware Version	This is the NAS firmware version.

**Table 37** Status Center > System Information (continued)

LABEL	DESCRIPTION
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.  <b>Note: If too many users are using the NAS then the NAS may appear sluggish.</b>
Memory	This shows how much of the NAS's total memory is being used.
Process Name	This displays the top 10 processes that occupy the most CPU usage.
CPU Usage	This displays a summary of CPU usage by all current processes.
Memory Usage	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.

## 9.1.2 Network

The **Network** screen display the NAS connection status. From **Status Center** screen, click **Network** to open the screen as shown.

**Figure 59** Status Center > System Information

The following table describes the labels in this screen.

**Table 38** Status Center > Network

<b>LABEL</b>	<b>DESCRIPTION</b>
Type	Displays the type of the user account.
User	Displays the user name.
Groups	Displays the group the current user belongs to.
WAN/LAN	Displays whether the connection is from the WAN or the LAN.
Service Name	Displays the service name.
IP Address	Displays the IP address of the user.
Time	Displays the connection time.
Delete	Click this to disconnect the user.

# Control Panel

## 10.1 Overview

This chapter discusses the **Control Panel** screens. Use the **Control Panel** screens to configure network settings and upload firmware.

## 10.2 What You Can Do

- Use the **TCP/IP** screen ([Section 10.4 on page 107](#)) to configure the NAS's TCP/IP network connection settings such as the teaming mode and IP addresses.
- Use the **PPPoE** screen ([Section 10.4.2.2 on page 111](#)) to configure PPPoE settings for a direct Internet connection.
- Use the **UPnP Port Mapping** screen ([Section 10.5 on page 113](#)) to automatically configure your Internet gateway's firewall and Network Address Translation (NAT) to allow access to the NAS from the Internet.
- Use the **Terminal** screen ([Section 10.6 on page 119](#)) to enable or disable Telnet and SSH access.
- Use the **DyDNS** screen ([Section 10.7 on page 120](#)) to configure the domain name settings of your NAS.
- Use the **FW Upgrade** screen ([Section 10.8 on page 122](#)) to upload new firmware.

## 10.3 What You Need to Know

### 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.

## 10.4 TCP/IP Screens

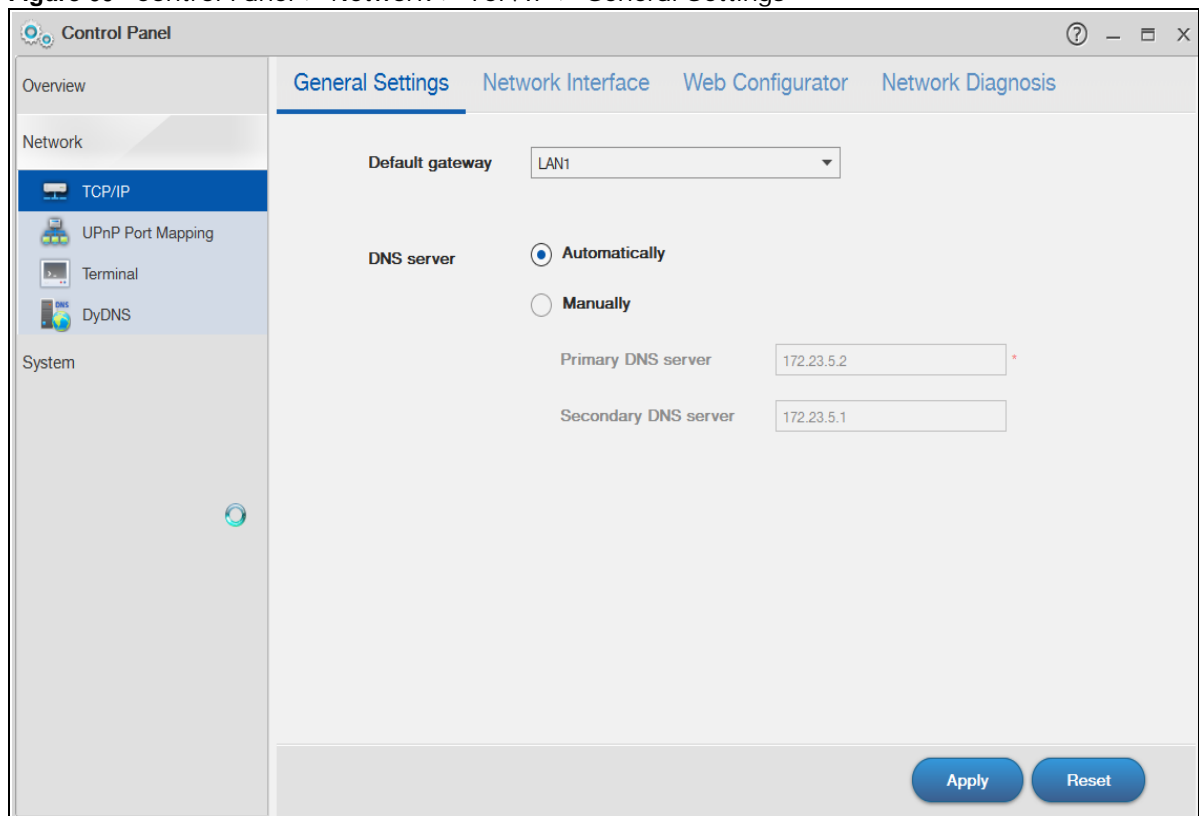
Use the **TCP/IP** screens to have the NAS use a dynamic or static IP address, subnet mask, default gateway, PPPoE and DNS servers, and to test the network connection.

### 10.4.1 Configuring General TCP/IP Settings

Click **Control Panel > Network > TCP/IP > General Settings** in the navigation panel to open the following screen. This screen allows you to configure the default gateway and DNS server.

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

**Figure 60** Control Panel > Network > TCP/IP > General Settings



The following table describes the labels in this screen

**Table 39** Control Panel > Network > TCP/IP > General Settings

LABEL	DESCRIPTION
Default Gateway	Select the LAN interface to use as the default gateway.
DNS Server	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.
Automatically	Select the option to have the NAS get a DNS server address automatically.
Manually	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.
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.

## 10.4.2 Configuring Network Interface

Use the **Network Interface** screen to edit the IPv4 or IPv6 settings of LAN 1 and LAN 2, set up port trunking, and configure PPPoE settings. Click **Control Panel > Network > TCP/IP > Network Interface** in the navigation panel to open the following screen.

**Figure 61** Control Panel > Network > TCP/IP > Network Interface

Status	Interface	IP Settings	IP Address	Subnet Mask
●	LAN 2	Automatically	0.0.0.0	0.0.0.0
● 100 Mbps, full-duplex	LAN 1	Automatically	172.23.3.37	255.255.255.0
●	ppp0	--	0.0.0.0	0.0.0.0



The following table describes the labels in this screen.

**Table 40** Control Panel > Network > TCP/IP > Network Interface

LABEL	DESCRIPTION
Status	Display data transmission rate and transmission system.
Interface	Display the interface name.
IP Settings	Display the IP settings (automatically or manually) of an interface.
IP Address	Display the IP address of an interface.
Subnet Mask	Display the subnet mask of an interface.
Create	Click it to open the following screen to set up a port trunking. For adding a port trunking, see <a href="#">Section 10.4.2.1 on page 110</a> .
Automatically	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.
Manually	Select this option for the interface to use fixed TCP/IP information. You must fill in the following fields.  <b>IP Address</b> - Type an IP address in this field. <b>Subnet Mask</b> - Type an IP subnet mask in this field. <b>Default Gateway</b> - Type a default gateway address in this field.
Create	Click this to save the settings and create a port trunk.
Cancel	Click this to return to the previous screen without saving.
Edit	Click this to modify the IPv4 or IPv6 settings of LAN 1 and LAN 2. For editing the PPPoE settings, see <a href="#">Section 10.4.2.2 on page 111</a> .
IPv4 Settings	Click this to configure the following IPv4 settings.  <b>Automatically</b> - Select this option to have the interface get IP address information automatically.  <b>Manually</b> - Select this option for the interface to use fixed TCP/IP information.  <ul style="list-style-type: none"> <li>• <b>IP Address</b> - Type an IP address in this field.</li> <li>• <b>Subnet Mask</b> - Type an IP subnet mask in this field.</li> <li>• <b>Default Gateway</b> - Type a default gateway address in this field.</li> </ul>
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>Manual</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.
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.

**Table 40** Control Panel > Network > TCP/IP > Network Interface (continued)

LABEL	DESCRIPTION
Cancel	Click this to return to the previous screen without saving.
Remove	Click this to remove the port trunking.  Note: This button is available only when the port trunking is created.

### 10.4.2.1 Creating a Port Trunking

**Link Aggregation:** Link aggregation combines 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.

**Figure 62** Link Aggregation

Use this screen to set up port trunking. Click **Control Panel > Network > TCP/IP > Network Interface**, and then click **Create**.

**Figure 63** Creating a Port Trunking

The following table describes the labels in this screen.

**Table 41** Control Panel > Network > TCP/IP > Network Interface > Create

LABEL	DESCRIPTION
Automatically	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.
Manually	Select this option for the interface to use fixed TCP/IP information. You must fill in the following fields.  <b>IP Address</b> - Type an IP address in this field. <b>Subnet Mask</b> - Type an IP subnet mask in this field. <b>Default Gateway</b> - Type a default gateway address in this field.
Create	Click this to save the settings and create a port trunking.
Cancel	Click this to return to the previous screen without saving.

### 10.4.2.2 Configuring PPPoE Settings

Use this screen to configure PPPoE settings for a direct Internet connection. Select the ppp0 interface and then click **Edit**.

**Figure 64** Control Panel > Network > TCP/IP > Network Interface > PPPoE

The following table describes the labels in this screen.

**Table 42** Control Panel > Network > TCP/IP > Network Interface > PPPoE

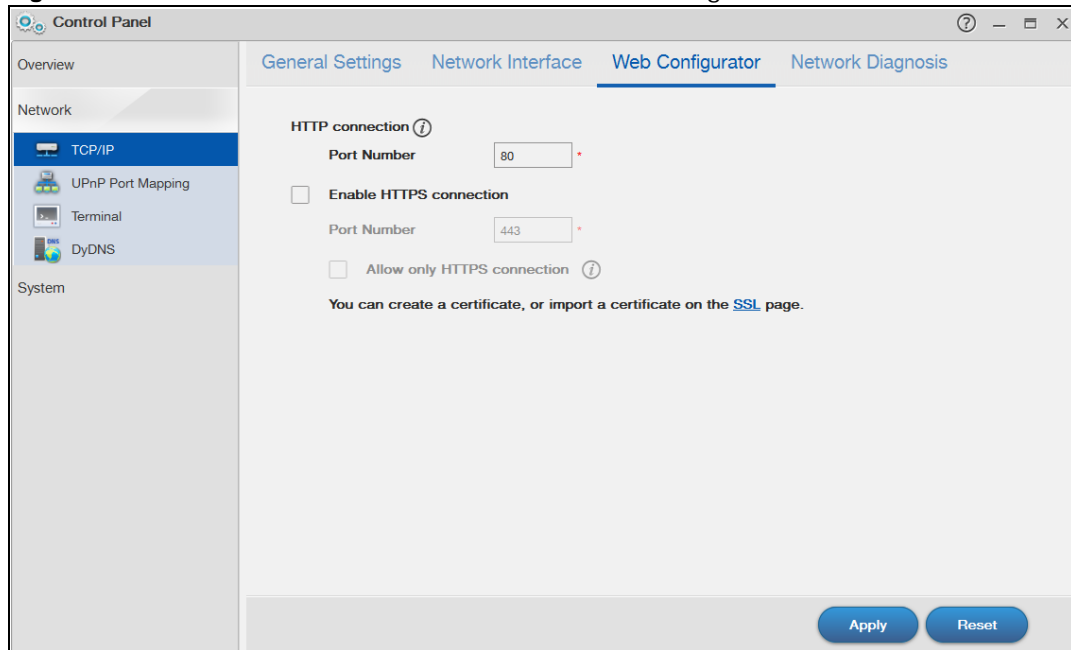
LABEL	DESCRIPTION
Enable PPPoE to directly connect to the Internet	Select or clear this field to enable or disable PPPoE.
Username	Enter the username exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given.
Password	Enter the password associated with the username above.
Show password	Select this field to reveal the password hidden behind asterisks or clear this field to hide the password.

**Table 42** Control Panel > Network > TCP/IP > Network Interface > PPPoE (continued)

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

### 10.4.3 Configuring Web Configurator

Click **Control Panel > Network > TCP/IP > Web Configurator** to configure the port number of HTTP and HTTPS.

**Figure 65** Control Panel > Network > TCP/IP > Web Configurator

The following table describes the labels in this screen.

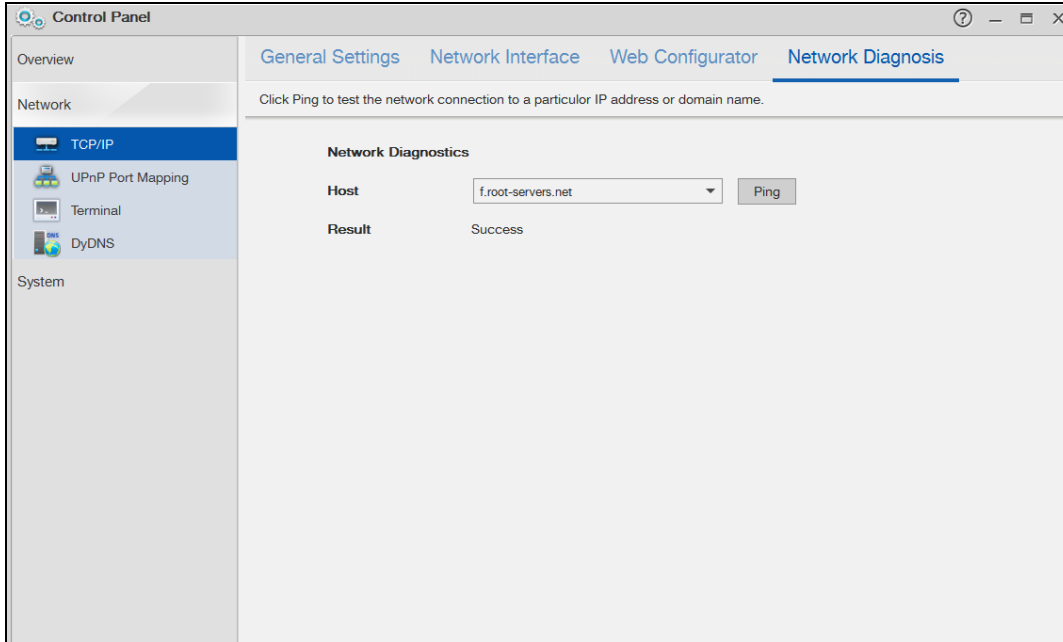
**Table 43** Control Panel > Network > TCP/IP > Web Configurator

LABEL	DESCRIPTION
Port Number	Specify the port number of HTTP connection.  <b>Note:</b> The port number 8082 is reserved for media streaming.
Enable HTTPS connection	Select or clear this field to enable or disable HTTPS connection.
Port Number	Specify the port number of HTTPS connection.
Allow only HTTPS connection	Select this field to allow connection to the Web Configurator via HTTPS only. Clear this field to allow connection to the Web Configurator via both HTTP and HTTPS.
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 10.4.4 Configuring Network Diagnosis

Click **Control Panel > Network > TCP/IP > Network Diagnosis** to test the network connection to a particular IP address or domain name.

**Figure 66** Control Panel > Network > TCP/IP > Network Diagnosis



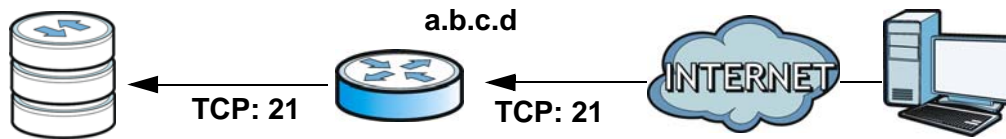
The following table describes the labels in this screen.

**Table 44** Control Panel > Network > TCP/IP > Network Diagnosis

LABEL	DESCRIPTION
Host	Select a specific host to perform the diagnosis.
Ping	Click this to test the network connection.
Result	Displays whether or not the test received a response from the host.

## 10.5 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.

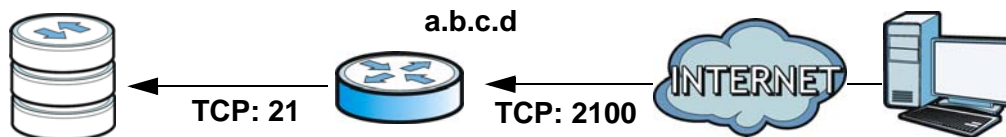
**Figure 67** UPnP for FTP Access**192.168.1.20**

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 68** UPnP Port Address Translation for FTP Example**192.168.1.20**

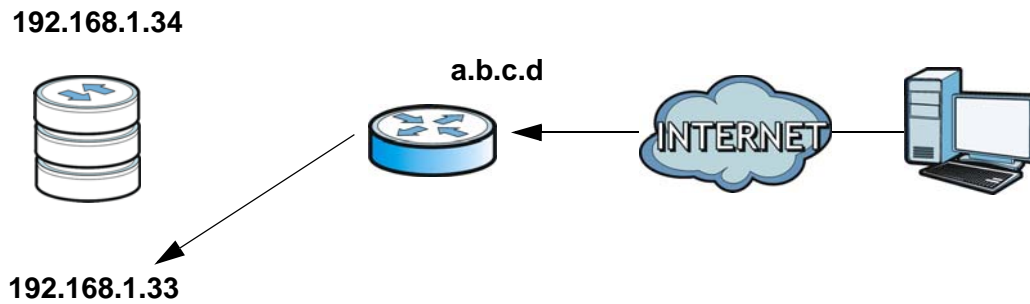
In the above example, the Internet gateway uses PAT to accept Internet user FTP sessions on port 2100, translate them to port 21, and forward them to the NAS.

## 10.5.1 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 69** UPnP Using the Wrong IP Address

## 10.5.2 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.

## 10.5.3 The NAS's Services and UPnP

This section introduces the NAS's services which an Internet gateway can use UPnP to allow access to and 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 16.3 on page 205](#) 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 17.4 on page 215](#) 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.

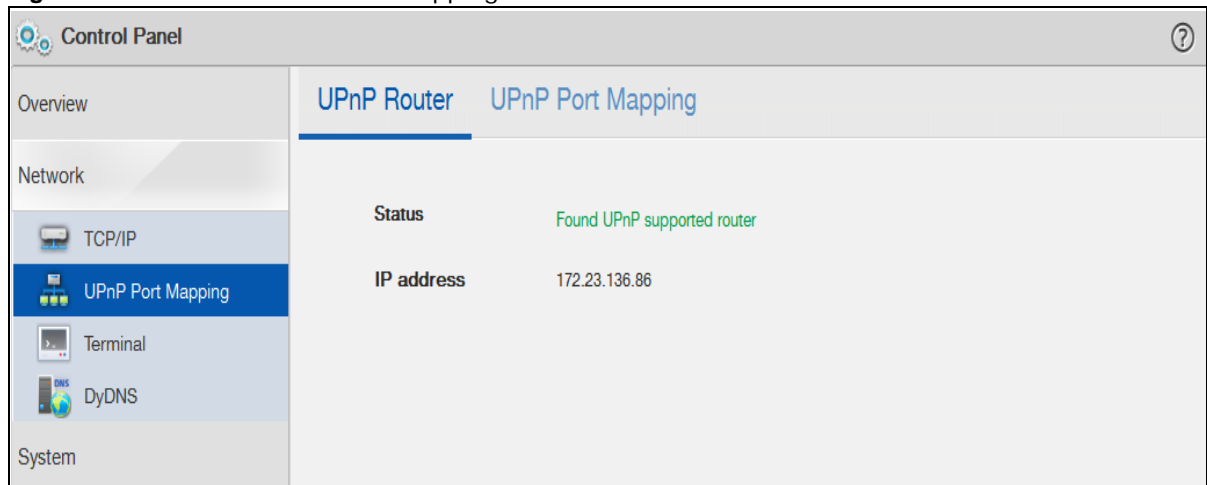
## HTTP (Web Published Shares)

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 17.8 on page 230](#) for more on web publishing.

### 10.5.4 UPnP Router

UPnP allows access to your NAS through a UPnP router. Click **Network > UPnP Port Mapping > UPnP Router** to check if the NAS has found a UPnP router on the network.

**Figure 70** Network > UPnP Port Mapping > UPnP Router



The following table describes the labels in this screen.

**Table 45** Network > UPnP Port Mapping > UPnP Router

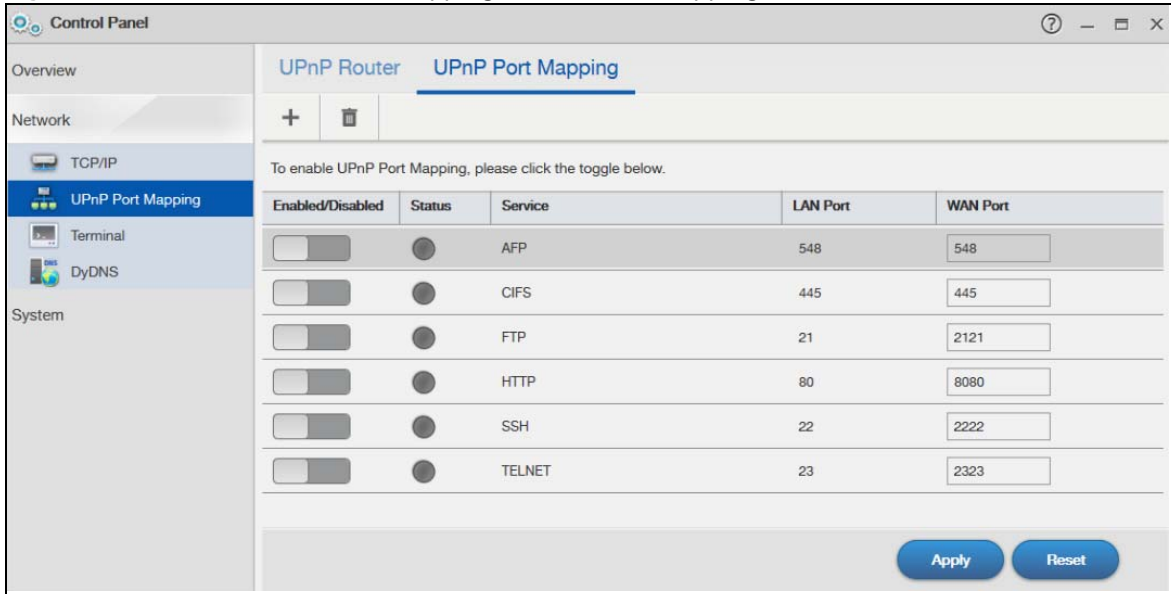
LABEL	DESCRIPTION
Status	Displays whether a UPnP router is found.
IP address	Displays the IP address of the UPnP router.

### 10.5.5 Configuring UPnP Port Mapping

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

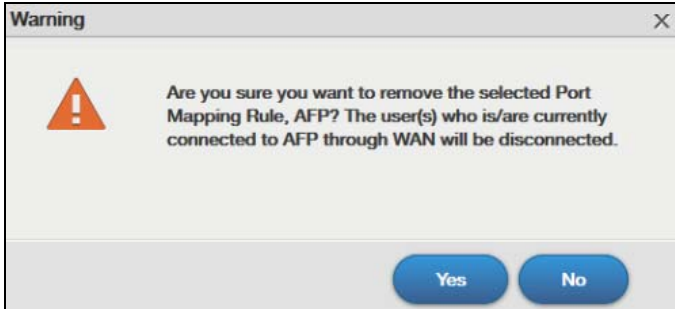
Use this screen to set how the Internet gateway's UPnP feature configure's the Internet gateway's NAT IP address mapping and port mapping settings. These settings allow Internet users connected to the Internet gateway's WAN interface to access services on the NAS. You can set which port Internet users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



**Figure 71** Network > UPnP Port Mapping > UPnP Port Mapping

The following table describes the labels in this screen.

**Table 46** Network > UPnP Port Mapping > UPnP Port Mapping

LABEL	DESCRIPTION
Add	Click this to add a service and create a port mapping rule. See more details on <a href="#">Section 10.5.5.1 on page 118</a> .
Remove	Click this to open the following screen where you can remove a port mapping rule.  Click <b>Yes</b> to remove the selected port mapping rule or <b>No</b> to close this screen.
Enabled/Disabled	Use this to enable or disable a selected port mapping rule.
Status	Displays the status of the port mapping rule. A green circle indicates the port mapping rule is enabled and you can access the service. A grey circle indicates the port mapping rule is disabled. A red circle indicates the router's settings failed to be changed. "-" indicates a new mapping rule.
Service	This read-only field identifies a service on the NAS.
LAN Port	Displays the NAS's internal port number for the service.

**Table 46** Network > UPnP Port Mapping > UPnP Port Mapping (continued)

LABEL	DESCRIPTION
WAN Port	<p>When you enable one of the NAS's services, specify the port number (1 ~65,535) Internet uses 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>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>
Apply	Click <b>Apply</b> to save your changes back to the NAS.
Reset	Click <b>Reset</b> to begin configuring this screen afresh.

### 10.5.5.1 Adding a Port Mapping Rule

Some Internet gateways will delete all UPnP mappings after reboot. So if the Internet gateway reboots, you may need to re-apply the UPnP port mapping again. Click **UPnP Port Mapping > Add** to add NAS services and create port mapping rules.

**Add Port Mapping Rule(s)** X

To use port number on the router (WAN) that is different from the one on the NAS (LAN), your router should support Port Address Translation (PAT).

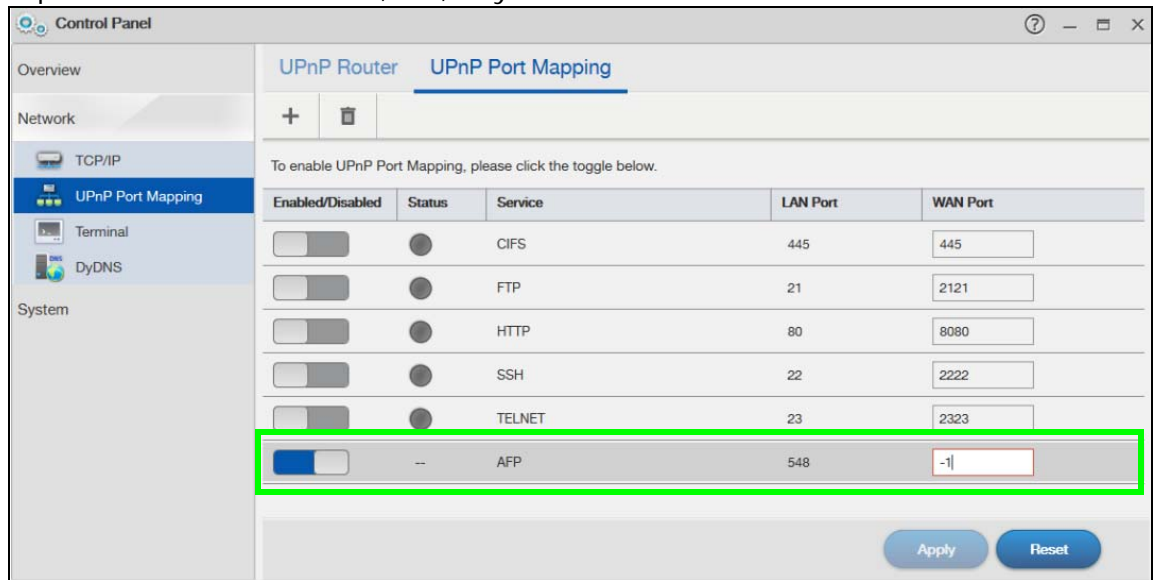
Select the service(s) to create port mapping rules

<input type="checkbox"/>	Service	LAN Port
<input type="checkbox"/>	MEDIASERVER	9001
<input type="checkbox"/>	HTTPS	443
<input type="checkbox"/>	WEBDAV_HTTP	5002
<input type="checkbox"/>	WEBDAV_HTTPS	5003
<input type="checkbox"/>	WEBPUBLISHING_HTTP	80
<input type="checkbox"/>	WEBPUBLISHING_HTTPS	443

Apply Cancel

Select the services you want to create port mapping rules for, and click **Apply** to add the services. Click **Cancel** to close the screen without saving any setting.

Note: The default of the WAN port for the newly created service displays -1. Specify the port number from 1 to 65,535, or you cannot access that service from the Internet.



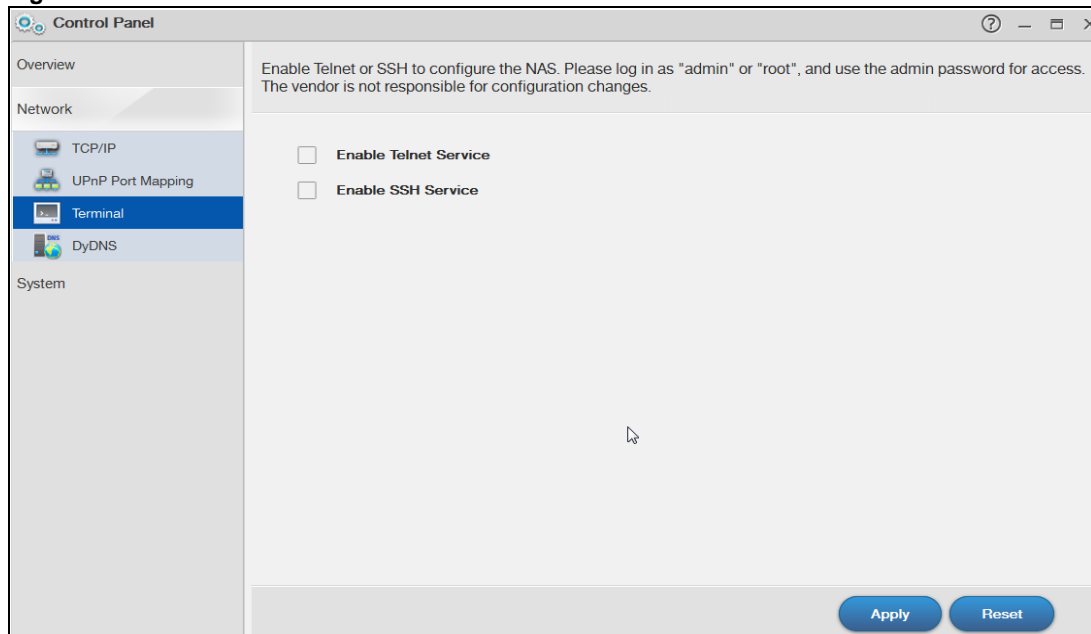
## 10.6 Terminal Screen

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 **Control Panel** > **Network** > **Terminal** in the navigation panel to open the following screen.

**Figure 72** Control Panel > Network > Terminal



The following table describes the labels in this screen.

**Table 47** Control Panel > Network > Terminal

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.

## 10.7 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 **Control Panel > Network > DyDNS** to open the following screen.

**Figure 73** Control Panel > Network > DyDNS

The following table describes the labels in this screen.

**Table 48** Control Panel > 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 <a href="http://www.dyndns.org">www.dyndns.org</a> . 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.
Status	This shows the DyDNS update result: <b>Disabled</b> – You have manually disabled the DyDNS feature. <b>Error</b> – An unrecoverable error (such as authentication error) occurred caused the NAS to disable the DyDNS feature automatically. <b>Fail to update</b> – A recoverable error (such as a temporary Internet disconnect) occurred. The NAS will retry later. <b>Updated</b> - The NAS updated the DyDNS server with the NAS's public IP address.
Default Gateway	This shows with which public IP of interface the NAS updated the DyDNS server.
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.
Apply	Click this to save your changes.
Reset	Click this to clear the fields.

## 10.8 FW 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 **Control Panel > System > FW Upgrade** to open the following screen. **Latest Firmware Check** allows you to check the latest firmware version and perform the upgrade.

**Figure 74** Control Panel > System > FW Upgrade > Latest Firmware Check

**Latest Firmware Check**    Manual Firmware Upgrade

Before upgrading, please back up all disk data. The system LED will start blinking after you click Upgrade Now. Please do not power off NAS while FW is upgrading. Until the reboot completes, you may need to reconfigure device in some cases.

**Model Name** NAS540

**Current firmware version** V2015-09-13\_22\_22\_36(AATB.0)b1

**Last Check** 2015/06/03 19:29:05

Periodically check for latest firmware automatically

**Status** V5.04(AATB.0) is ready to upgrade

Release Date	2015/05/14
Release Note	<a href="#">504AATB0C0.pdf</a>
Size	58.15 MB

The following table describes the labels in this screen.

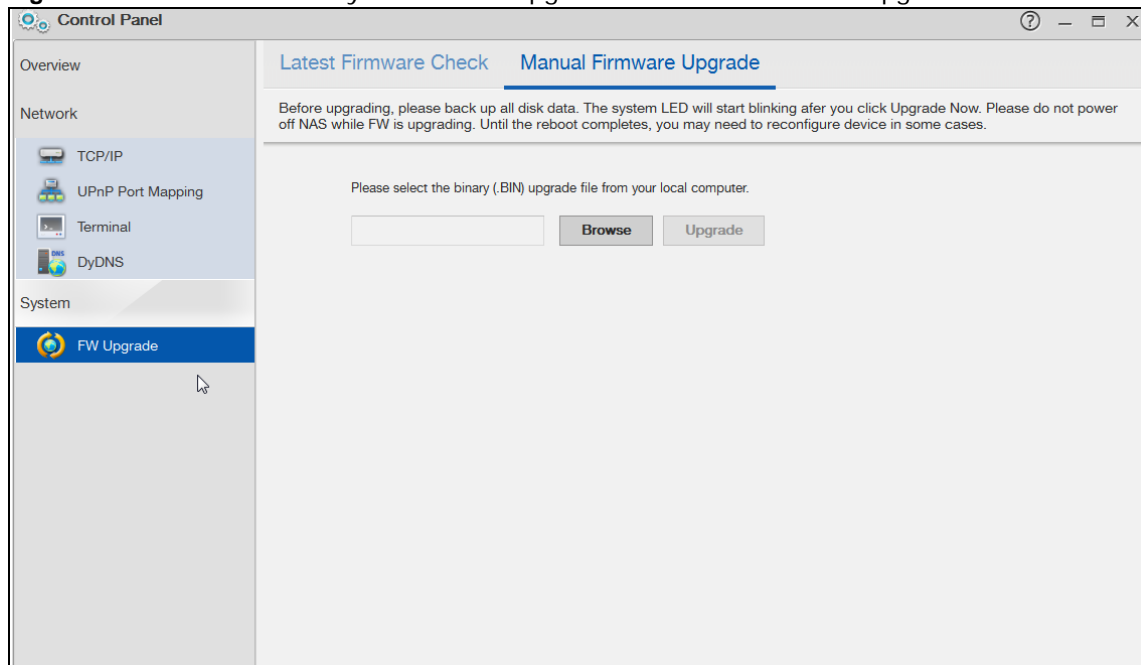
**Table 49** Control Panel > System > FW Upgrade > Latest Firmware Check

LABEL	DESCRIPTION
Model Name	Displays the model name of your NAS
Current Firmware Version	Displays the current firmware version of your NAS
Last Check	Displays the last checking time. If no, it is blank.
Check Now	Click this to check ZyXEL's server for updated firmware.
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.
Status	Displays the firmware checking status or error messages. If there is no previous checking information, it displays --.

**Table 49** Control Panel > System > FW Upgrade > Latest Firmware Check (continued)

LABEL	DESCRIPTION
Upgrade Now	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="#">page 354</a> for your model's LED behavior during firmware upgrade.
Reset	Click this to refresh the screen.

You can also download the firmware from the ZyXEL website and upgrade the firmware manually. Click **Control Panel > System > Manual Firmware Upgrade** to show the following screen.

**Figure 75** Control Panel > System > FW Upgrade > Manual Firmware Upgrade

The following table describes the labels in this screen.

**Table 50** Control Panel > System > Firmware > Manual Firmware Upgrade

LABEL	DESCRIPTION
Browse	Click this to find the file on your computer.  Note: You cannot choose a downgraded firmware. If you do, the screen will show: The NAS firmware cannot be downgraded, please select a newer version of binary (BIN) upgrade file from your computer.
Upgrade	Click this to upgrade the firmware after you find the file.

# Videos, Photos, Music, & File Browser

## 11.1 Overview

This chapter introduces the **File Browser**, **Photo**, **Music**, **Video**, **Media Server** and the **iTunes Server** for sharing media files.

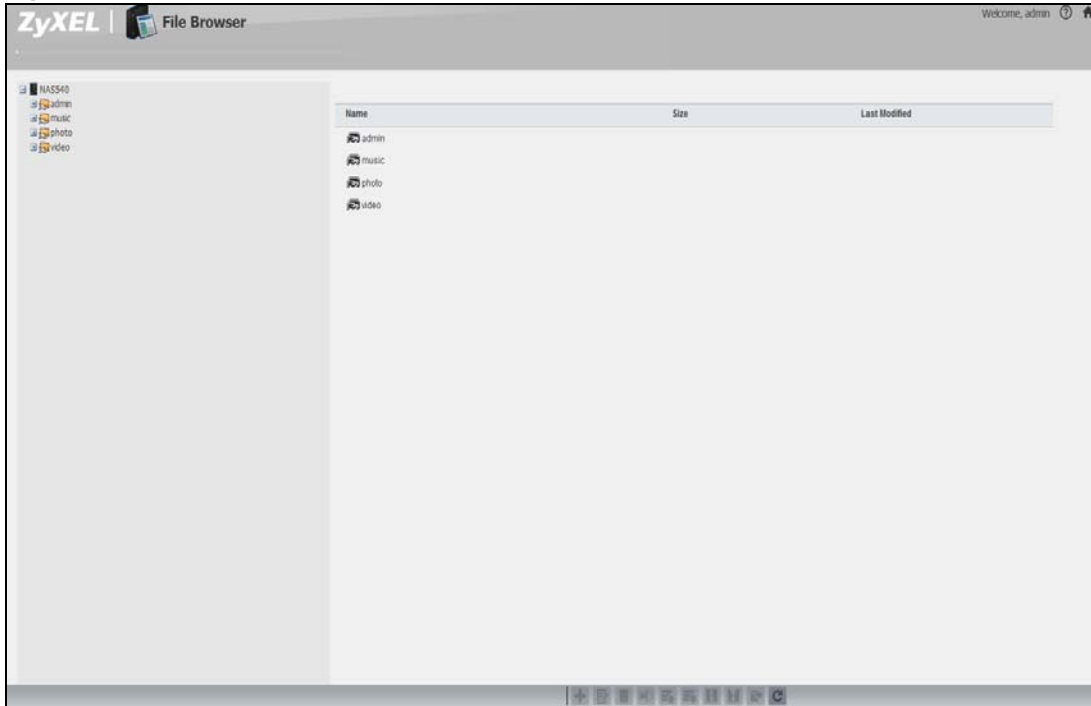
## 11.2 File Browser

Click **File Browser** on the Desktop to open the following screen in a new tab. 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.

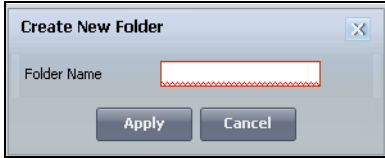


Figure 76 File Browser




The following table describes the labels in this screen.

Table 51 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 11.2.2 on page 128</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.

**Table 51** File Browser (continued)

LABEL	DESCRIPTION
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	<p>Select files or folders and click this to compress them into a zip file.</p>
Decompress	<p>Select a zipped file and click this to create a folder named after the zip file and save the decompressed files into the folder.</p>
Restore	<p>When you are in a recycle bin folder, select a folder or file and click this to restore it.</p>
Refresh	<p>Click this to update the information displayed in the screen.</p> <p>Note: Do not refresh the screen while an upload or download is in progress.</p>

## 11.2.1 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 77** File Browser > Configure Share

The following table describes the labels in the this screen.

**Table 52** 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 11.2.2 on page 128</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.
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.

## 11.2.2 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.

## 11.3 Photo

Click the **Photo** icon on the **Desktop** to open the photo folder in a new tab. Double-click the photo folder to view photos in the shares that publish photos. The following figures show the files as thumbnail and list views of files.

Figure 78 Photo (Thumbnail)

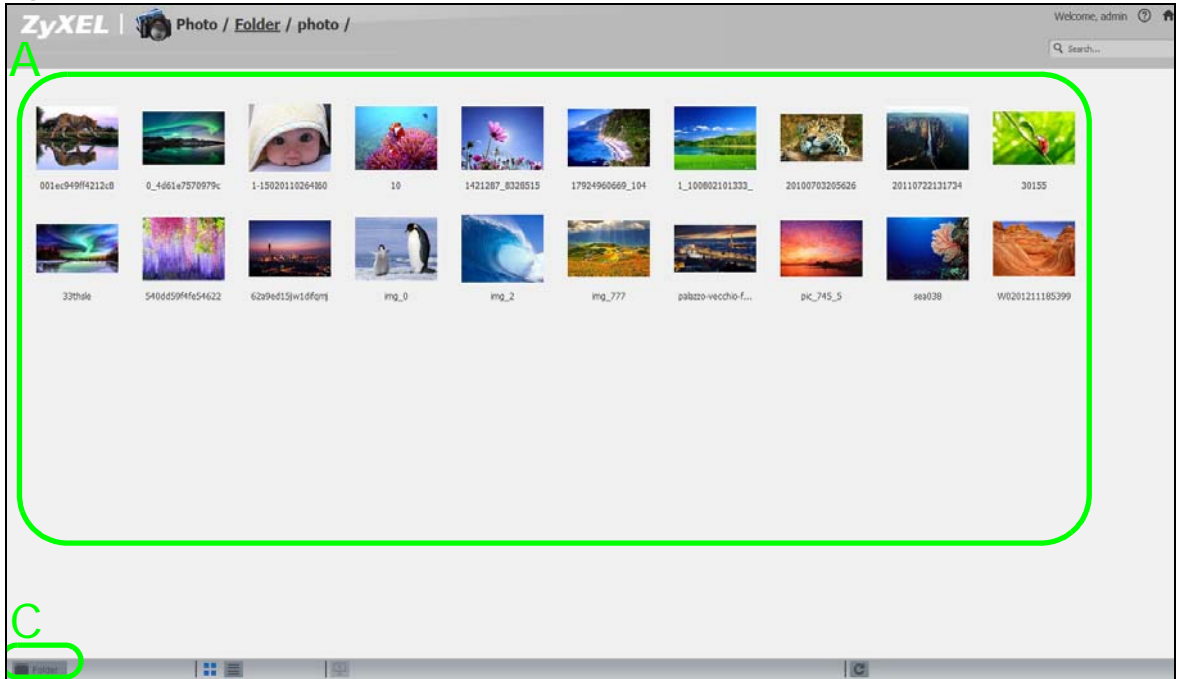
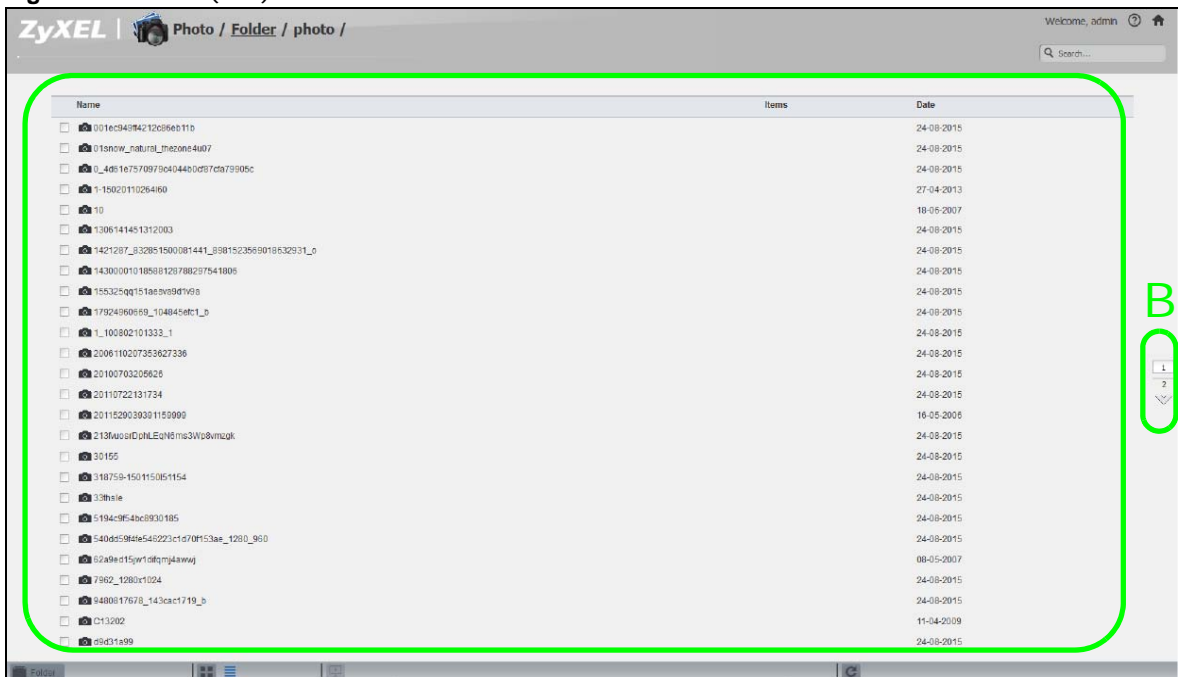


Figure 79 Photo (List)



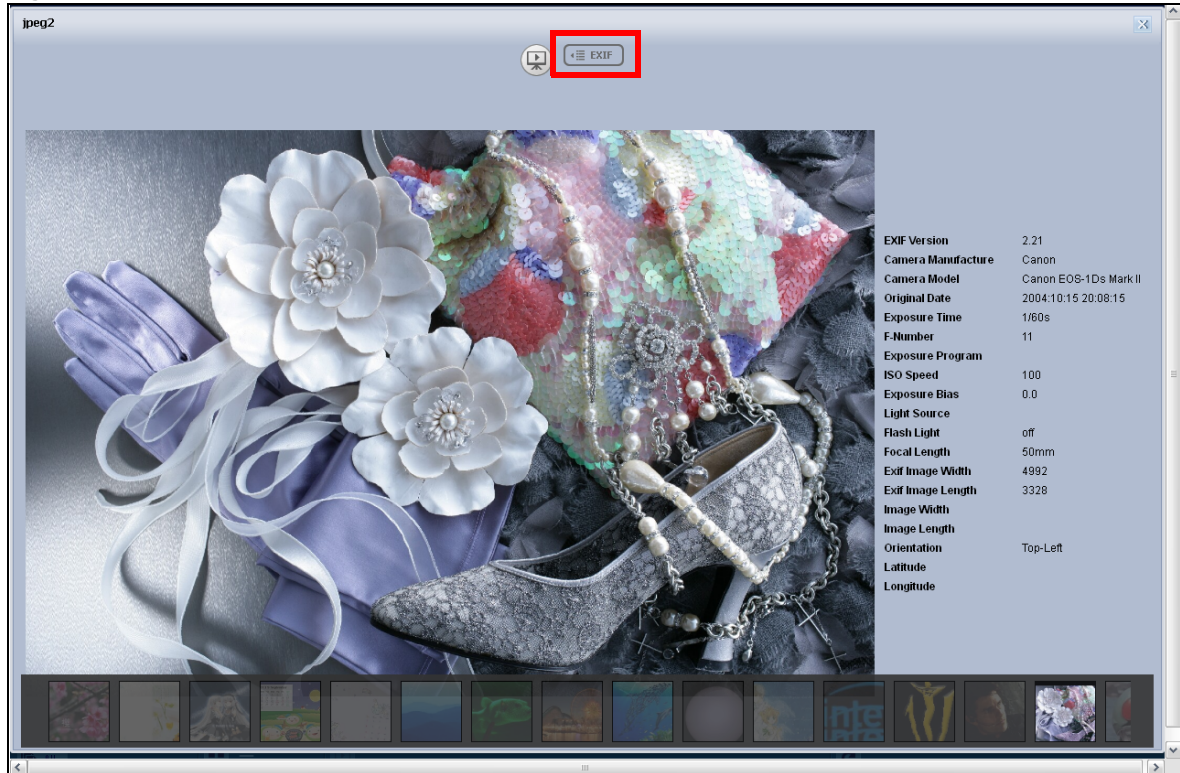
The following table describes the labels in this screen.

**Table 53** Photo Screen

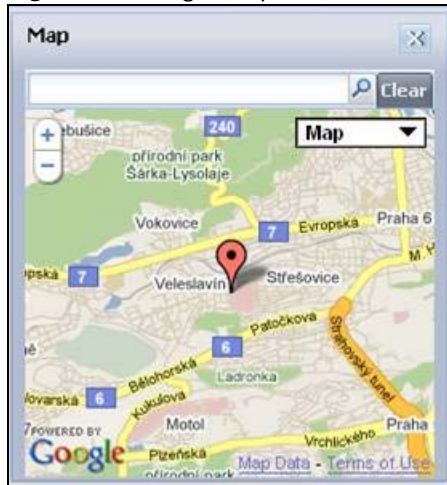
LABEL	DESCRIPTION
ZyXEL	The path of the current view. Click an underlined link to go to that location in the path. <b>Music, Photo, or Video</b> indicates the category of files.
Search	Use this to look for a file by name.
A	View files. Double-click an item to play it. You can also select check boxes 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>Date</b> - Sort photos by date. <b>All</b> - Display all of the category's files. <b>Folder</b> - List the folders containing files.
Thumbnail	Click this to view the files as thumbnails.
List	Click this to view the files as a list.
Slideshow	Click this to display files as a slideshow.
Refresh	Click this to update the display in the screen.

### 11.3.1 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 80** 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 81** Google Maps

## 11.3.2 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 82** Slideshow



## 11.4 Music

Click the **Music** icon on the **Desktop** to open the music folder in a new tab. Double-click the music folder to view and play music files in the shares that publish photos. The following figures show thumbnail and list views of files.



Figure 83 Music (Thumbnail)

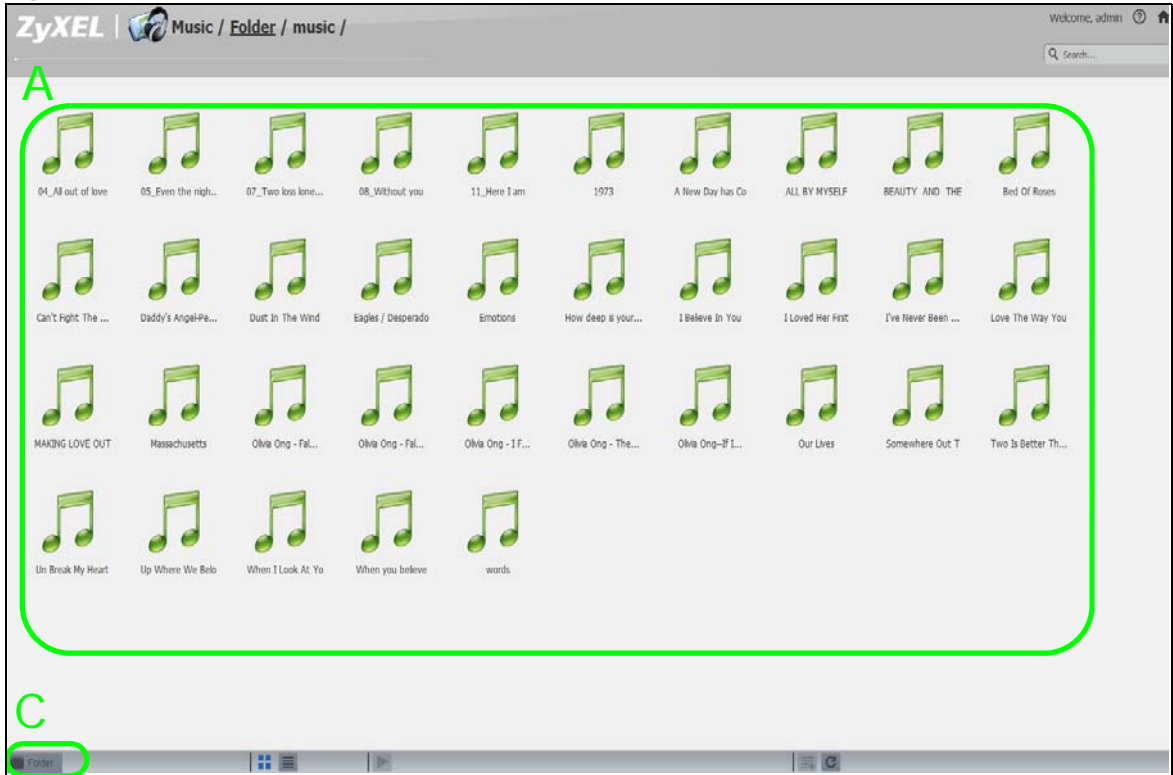
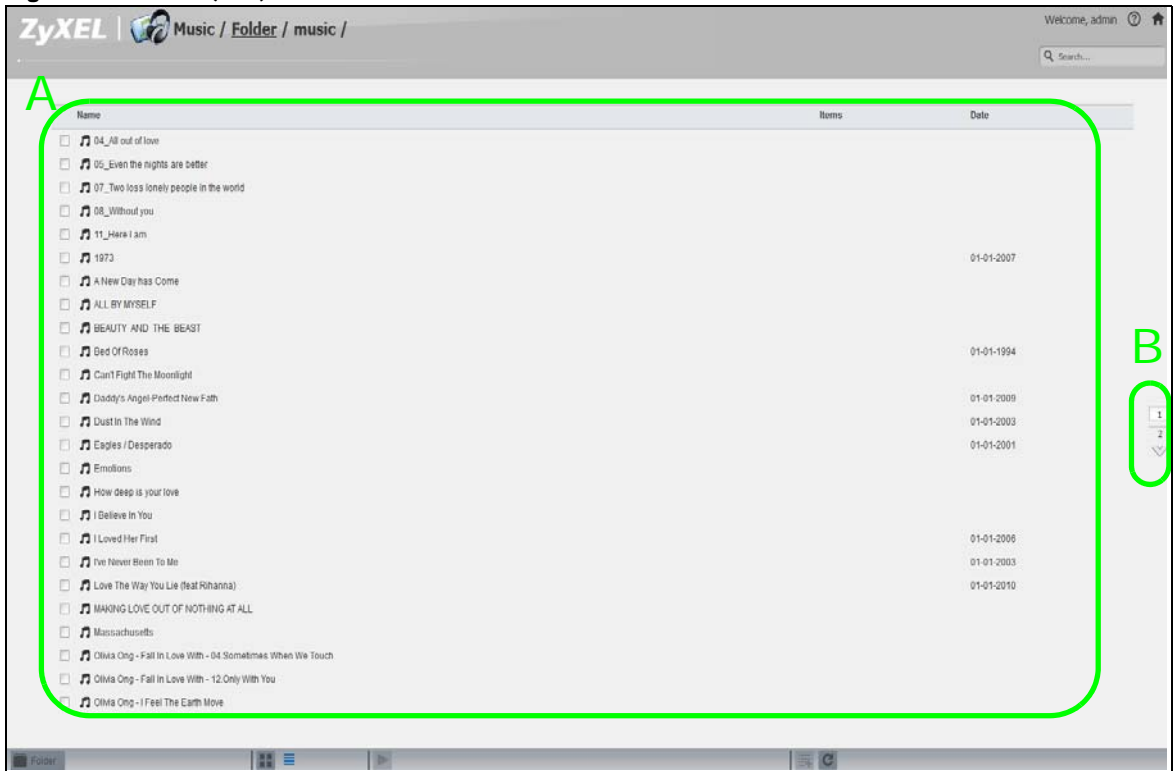


Figure 84 Music (List)



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

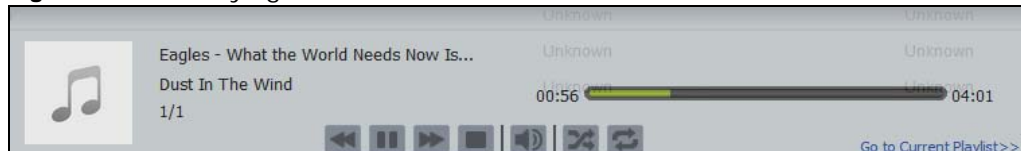
**Table 54** Music Screen

LABEL	DESCRIPTION
ZyXEL	The path of the current view.  Click an underlined link to go to that location in the path.  <b>Music, Photo, or Video</b> indicates the category of files.
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.
Play	Click this to play the currently selected file. You can also double-click a file to play it.
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.

### 11.4.1 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 it's play progress and lets you control the playback.

**Figure 85** Now Playing



## 11.5 Video

Click the **Video** icon on the **Desktop** to open the video folder in a new tab. Double-click the video folder to view and play video files in the shares that publish videos. The following figures show the thumbnail and list views of files.

Figure 86 Video (Thumbnail)

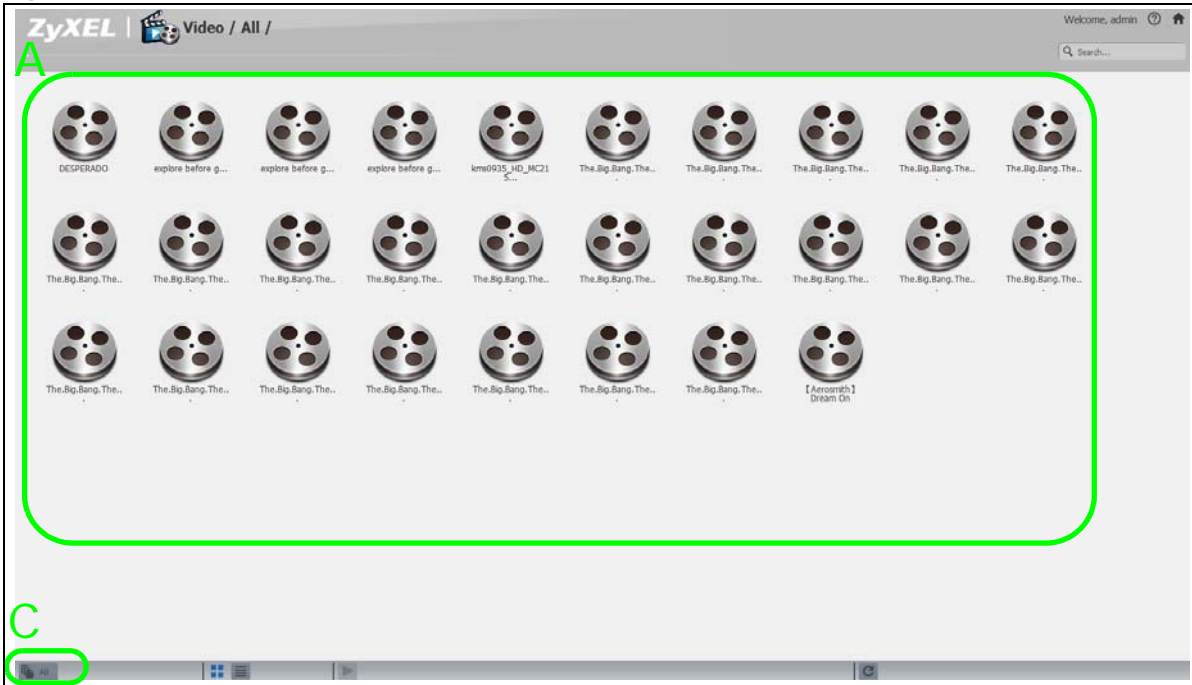
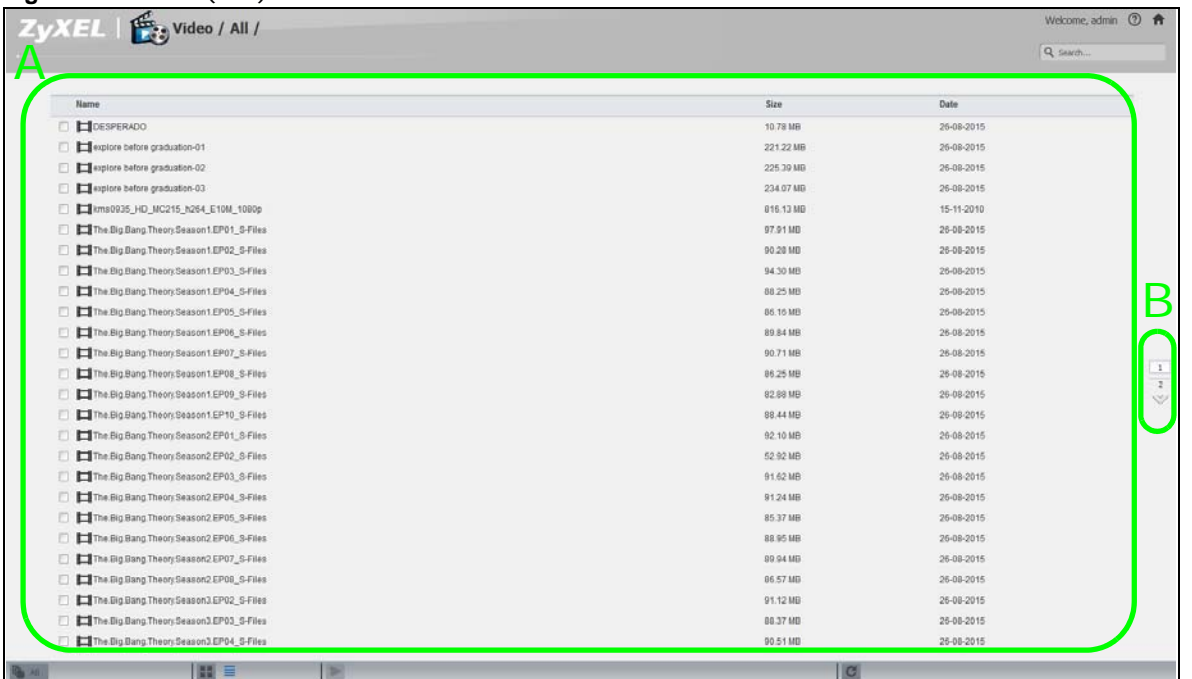


Figure 87 Video (List)



The following table describes the labels in this screen.

**Table 55** Video Screen

LABEL	DESCRIPTION
ZyXEL	The path of the current view.  Click an underlined link to go to that location in the path.  <b>Music, Photo, or Video</b> indicates the category of files.
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>All</b> - Display all of the category's files.  <b>Folder</b> - List the folders containing music files.
Thumbnail	Click this to view the files as thumbnails.
List	Click this to view the files as a list.
Play	Click this to play the currently selected file. You can also double-click a file to play it.
Refresh	Click this to update the display in the screen.

## 11.6 Playzone Settings

The **Playzone Settings** screen is only available with user accounts. Click **Playzone Settings** to open the following screen. Use this screen to change general Playzone screen settings and account passwords.

**Figure 88** Playzone Settings

**ZyXEL | Playzone Settings**

**Player**  
WMP [Install WMP](#)

**Music Setting**  
Double Click Behavior Setting  
 Replace current playlist and start to play  
 Append to current playlist

**Photo Slideshow**  
Slide Effect  Enable Ken Burns  
Slide Interval

**Change Password**

**Video Setting**  
Video Playback  Play Next  
Account Name   
Old Password   
New Password   
Password (Confirm)

**System Language**  
Language

**System Administration**  
[Go to system administration page.](#)

The following table describes the labels in this screen.

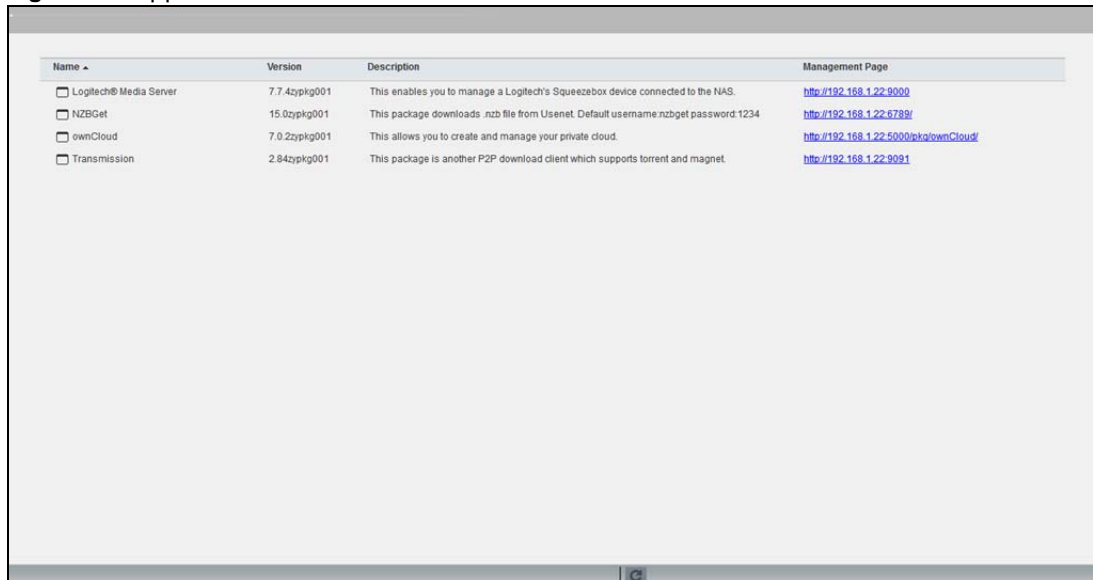
**Table 56** Playzone Settings

LABEL	DESCRIPTION
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.
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 administrator screens. The NAS opens the administrator configuration screens in a new browser if you click <b>Go to system administration page</b> while using the 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.

## 11.7 Application Zone

Normal users can click **Application Zone** to go to the management page of installed, non-built-in packages.

**Figure 89** Application Zone



Name	Version	Description	Management Page
<input type="checkbox"/> Logitech® Media Server	7.7.4zypkg001	This enables you to manage a Logitech's Squeezebox device connected to the NAS.	<a href="http://192.168.1.22:9000">http://192.168.1.22:9000</a>
<input type="checkbox"/> NZBGet	15.0zypkg001	This package downloads .nzb file from Usenet. Default username:nzbget password:1234	<a href="http://192.168.1.22:6789/">http://192.168.1.22:6789/</a>
<input type="checkbox"/> ownCloud	7.0.2zypkg001	This allows you to create and manage your private cloud.	<a href="http://192.168.1.22:5000/pkg/ownCloud/">http://192.168.1.22:5000/pkg/ownCloud/</a>
<input type="checkbox"/> Transmission	2.84zypkg001	This package is another P2P download client which supports torrent and magnet.	<a href="http://192.168.1.22:9091">http://192.168.1.22:9091</a>

The following table describes the labels in the this screen.

**Table 57** 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.
Management Page	Click this link to go the application's management page where you can configure settings for it.
Refresh	Update the list of applications in the screen.

## 11.8 Media Server

Use the **Media Server** screens to enable or disable the sharing of media files with media clients and select which shares to share. See [Section 17.5 on page 216](#) for details.

## 11.9 iTunes Server

Use the iTunes server to share media files with iTunes users on your network. See [Section 17.6 on page 218](#) for details.

# Administrator

## 12.1 Overview

This chapter describes how to access the administrator screens and provides an overview of its screens.

## 12.2 Administrator 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 displays first. See [Chapter 15 on page 203](#) for more information about the **Status** screen.

Figure 90 Status

The screenshot shows the ZyXEL Status page. The interface includes a top navigation bar with the ZyXEL logo and a language dropdown set to English. A left sidebar contains a tree view of configuration categories: System Setting, Applications, Auto Upload, Sharing, Maintenance, and Protect. The main content area is divided into two sections: System Information and Active Sessions. The System Information section displays a table of system details, and the Active Sessions section displays a table of active users.

Numbered callouts in the image indicate: 1. Top navigation bar; 2. Left sidebar; 3. System Information table; 4. Bottom status bar.

Server Name	Model Name	Firmware Version	Media Server Status	FTP Server Status	Web Publishing Status	UPS
NAS540	NAS540	V5.10(AA1B.0)bt	Enabled	Enabled	Disabled	N/A

Type	Share Name	Username	Connected At	IP Address
Web		admin	2015-08-28 16:47:18	172.23.3.35
Web		admin	2015-09-01 14:30:24	172.23.3.35

## 12.2.1 Global Administrator Icons

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

**Table 58** 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.

## 12.2.2 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 59** 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	Packages	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.



**Table 59** 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.
	GoogleDriveClient	Use GoogleDriveClient 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.
	Unpair myZyXELcloud	Remove the pairing between the NAS and the myZyXELcloud account.
Protect	Backup	Create and customize backup jobs.
	Restore	Restore previous backups made with the NAS.
Network	NFS	Install the NFS package to display this screen where you can configure NFS (Network File System) file-sharing.

## 12.2.3 Main Window

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











## 12.2.4 Status Messages

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

## 12.2.5 Common Administrator Screen Icons

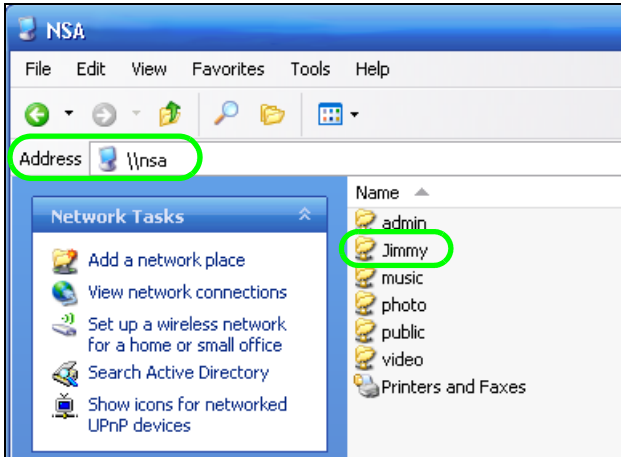
The following table explains some icons that appear in several administrator configuration screens.

**Table 60** 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.

## 12.2.6 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.



# Managing Packages

## 13.1 About Packages

Packages enhance the functions of your NAS. Your NAS supports various packages that let you do more. Your NAS comes with some packages pre-installed. The **Packages** screen also includes a list of packages to add.

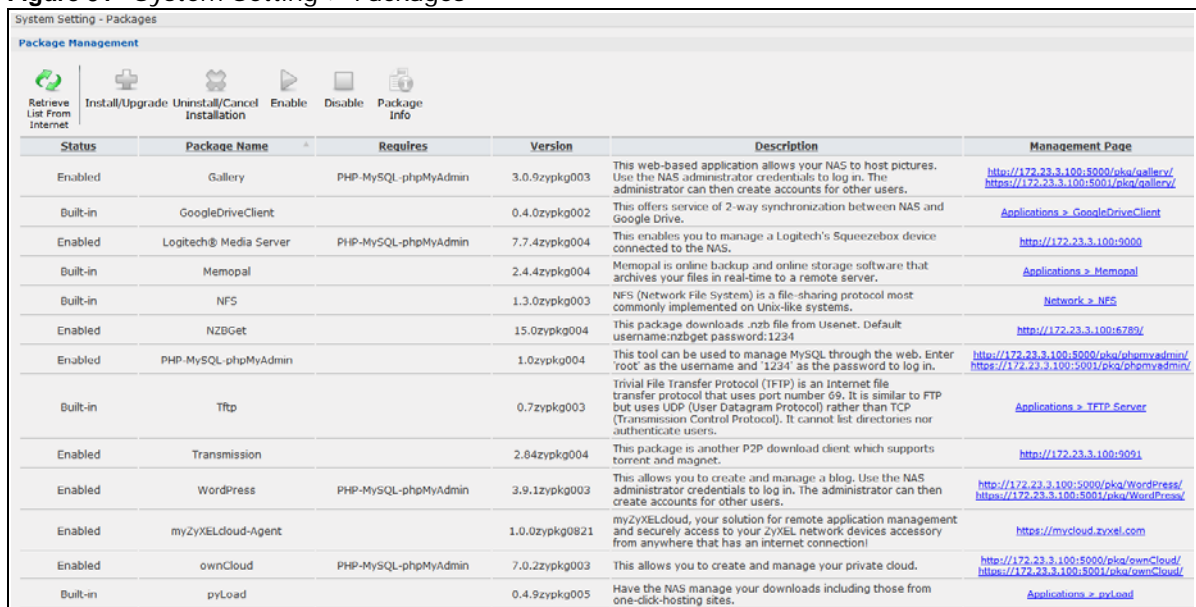
Note: Check what packages do before you install them. Only install packages you actually plan to use.

Note: Get support for each package through its individual vendor.

## 13.2 Managing Packages

In the administrator screens, click **System Setting** > **Packages** to install, remove, or upgrade packages. See [Section 16.4 on page 207](#) for details.

**Figure 91** System Setting > Packages



The screenshot shows the 'System Setting - Packages' interface. At the top, there are several action buttons: 'Retrieve List From Internet', 'Install/Upgrade', 'Uninstall/Cancel Installation', 'Enable', 'Disable', and 'Package Info'. Below these buttons is a table with the following columns: Status, Package Name, Requires, Version, Description, and Management Page.

Status	Package Name	Requires	Version	Description	Management Page
Enabled	Gallery	PHP-MySQL-phpMyAdmin	3.0.9zypkg003	This web-based application allows your NAS to host pictures. Use the NAS administrator credentials to log in. The administrator can then create accounts for other users.	<a href="http://172.23.3.100:5000/pka/gallery/">http://172.23.3.100:5000/pka/gallery/</a> <a href="https://172.23.3.100:5001/pka/gallery/">https://172.23.3.100:5001/pka/gallery/</a>
Built-in	GoogleDriveClient		0.4.0zypkg002	This offers service of 2-way synchronization between NAS and Google Drive.	<a href="#">Applications &gt; GoogleDriveClient</a>
Enabled	Logitech® Media Server	PHP-MySQL-phpMyAdmin	7.7.4zypkg004	This enables you to manage a Logitech's Squeezebox device connected to the NAS.	<a href="http://172.23.3.100:9000">http://172.23.3.100:9000</a>
Built-in	Memopal		2.4.4zypkg004	Memopal is online backup and online storage software that archives your files in real-time to a remote server.	<a href="#">Applications &gt; Memopal</a>
Built-in	NFS		1.3.0zypkg003	NFS (Network File System) is a file-sharing protocol most commonly implemented on Unix-like systems.	<a href="#">Network &gt; NFS</a>
Enabled	NZBGet		15.0zypkg004	This package downloads .nzb file from Usenet. Default username:nzbget password:1234	<a href="http://172.23.3.100:6789/">http://172.23.3.100:6789/</a>
Enabled	PHP-MySQL-phpMyAdmin		1.0zypkg004	This tool can be used to manage MySQL through the web. Enter 'root' as the username and '1234' as the password to log in.	<a href="http://172.23.3.100:5000/pka/phpmyadmin/">http://172.23.3.100:5000/pka/phpmyadmin/</a> <a href="https://172.23.3.100:5001/pka/phpmyadmin/">https://172.23.3.100:5001/pka/phpmyadmin/</a>
Built-in	Tftp		0.7zypkg003	Trivial File Transfer Protocol (TFTP) is an Internet file transfer protocol that uses port number 69. It is similar to FTP but uses UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol). It cannot list directories nor authenticate users.	<a href="#">Applications &gt; TFTP Server</a>
Enabled	Transmission		2.84zypkg004	This package is another P2P download client which supports torrent and magnet.	<a href="http://172.23.3.100:9091">http://172.23.3.100:9091</a>
Enabled	WordPress	PHP-MySQL-phpMyAdmin	3.9.1zypkg003	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.	<a href="http://172.23.3.100:5000/pka/WordPress/">http://172.23.3.100:5000/pka/WordPress/</a> <a href="https://172.23.3.100:5001/pka/WordPress/">https://172.23.3.100:5001/pka/WordPress/</a>
Enabled	myZYXELcloud-Agent		1.0.0zypkg0821	myZYXELcloud, your solution for remote application management and securely access to your ZyXEL network devices accessory from anywhere that has an internet connection!	<a href="https://mycloud.zyxel.com">https://mycloud.zyxel.com</a>
Enabled	ownCloud	PHP-MySQL-phpMyAdmin	7.0.2zypkg003	This allows you to create and manage your private cloud.	<a href="http://172.23.3.100:5000/pka/ownCloud/">http://172.23.3.100:5000/pka/ownCloud/</a> <a href="https://172.23.3.100:5001/pka/ownCloud/">https://172.23.3.100:5001/pka/ownCloud/</a>
Built-in	pyLoad		0.4.9zypkg005	Have the NAS manage your downloads including those from one-click-hosting sites.	<a href="#">Applications &gt; pyLoad</a>

## 13.3 Available Packages

Use packages to add the following applications to the NAS.

- Use the **NFS** screen ([Section 18.3 on page 247](#)) to configure the Network File System (NFS) settings of your NAS.
- Use the **TFTP Server** screen ([Section 18.4 on page 250](#)) to configure the NAS to accept log files from TFTP clients.
- Use the **pyLoad** screen ([Section 18.5 on page 251](#)) to use pyLoad manage your downloads including those from one-click hosting sites.
- Use **ownCloud** ([Section 18.6 on page 251](#)) to store, synchronize, and share files, photos, calendars, and more with computers and mobile devices using an ownCloud client.
- Use **Memopal** ([Section 18.3 on page 247](#)) to back up files on the NAS to your Memopal online backup and storage account.
- Use the **GoogleDriveClient** screens ([Section 18.8 on page 256](#)) to synchronize local NAS shares or folders and Google Drive accounts.

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 Gallery administrator account (default username admin, password 1234) to log into the Gallery console. There you can create accounts for other users.
- Use **Logitech® Media Server** ([Section 17.5.2 on page 218](#)) 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 WordPress administrator account (default username admin, password 1234) to log in. You 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.

## 14.1 Overview

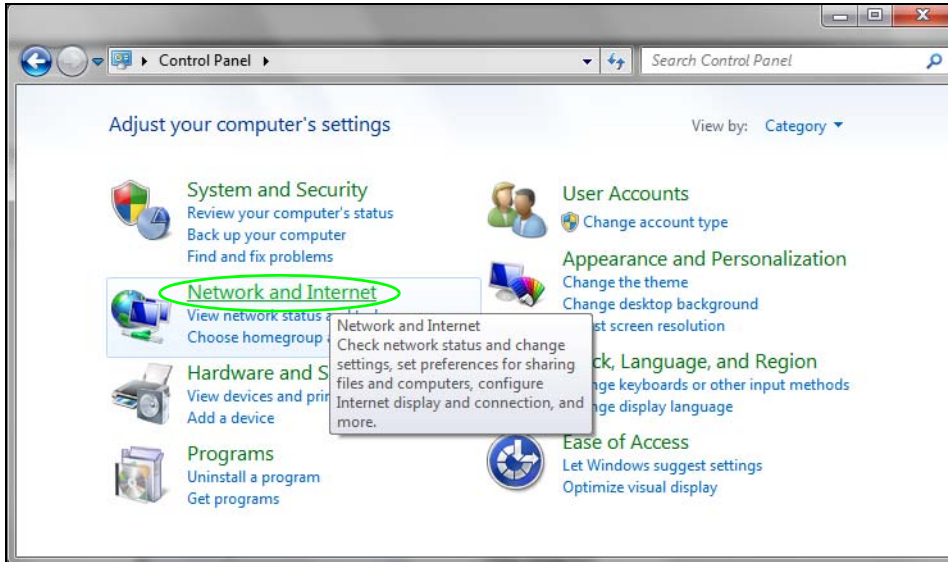
This chapter provides tutorials that show how to use the NAS.

- [Windows 7 Network](#), see [page 146](#)
- [Windows 7 Network Map](#), see [page 150](#)
- [Playing Media Files in Windows 7](#), see [page 152](#)
- [Windows 7 Devices and Printers](#), see [page 152](#)
- [File Sharing Tutorials](#), see [page 155](#)
- [Download Service Tutorial](#), see [page 162](#)
- [Copy and Flickr Auto Upload Tutorial](#), see [page 173](#)
- [FTP Uploadr Tutorial](#), see [page 174](#)
- [Web Configurator's Security Sessions](#), see [page 177](#)
- [Using FTPES to Connect to the NAS](#), see [page 188](#)
- [Using a Mac to Access the NAS](#), see [page 189](#)
- [How to Use the BackupPlanner](#), see [page 191](#)

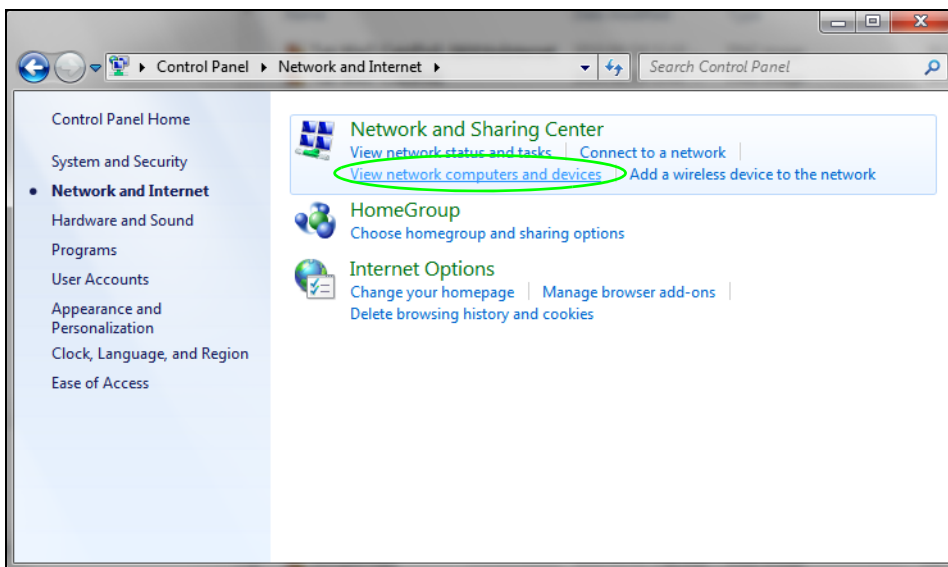
## 14.2 Windows 7 Network

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

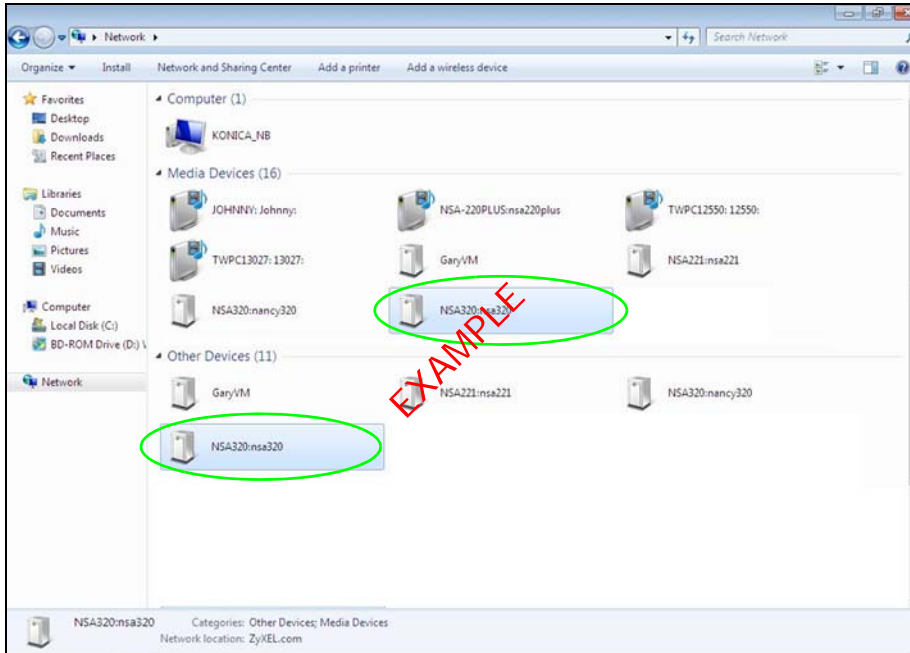
- 1 Click **Start > Control Panel**. Set **View by** to **Category** and click **Network and Internet**.



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



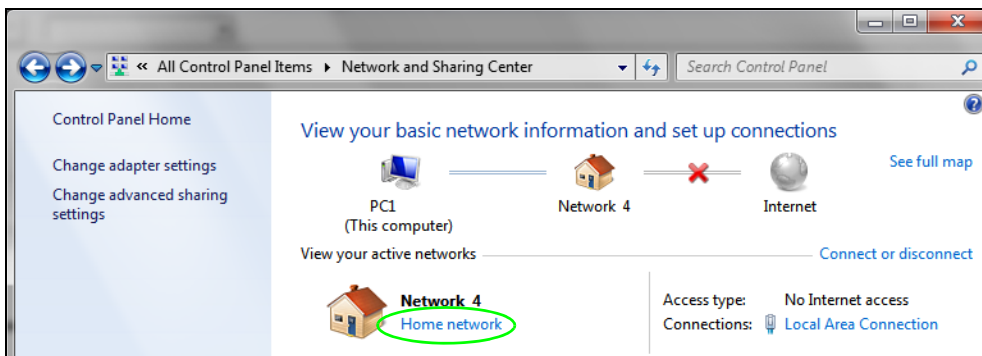
- 3 The NAS icon displays twice because the NAS is both a media server and a storage device. Double-click either NAS icon to open the Web Configurator login screen.



### 14.2.1 If the NAS Icon Does Not Display

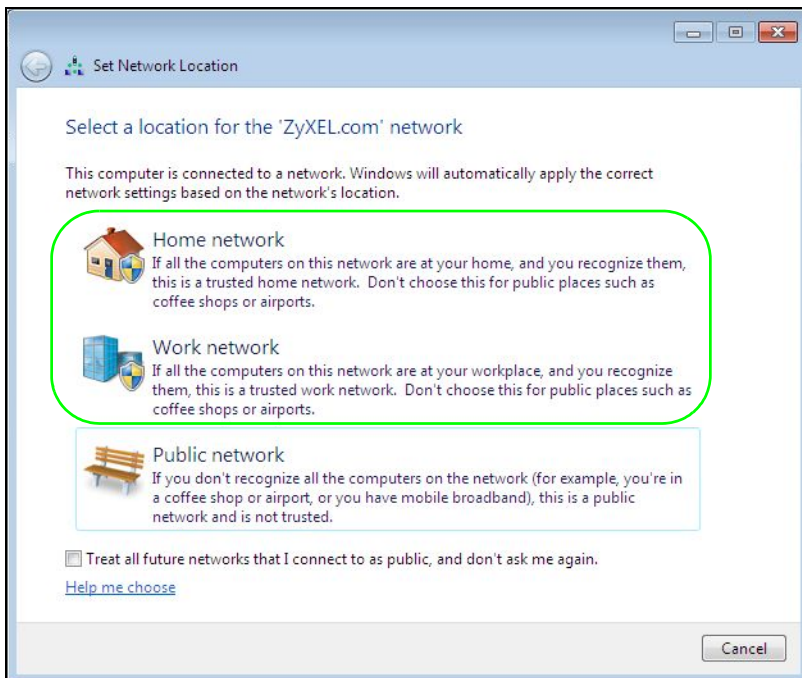
The network containing the NAS must be set as a home or work network in order for the NAS icons to display. If the network containing the NAS displays as “Public”:

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



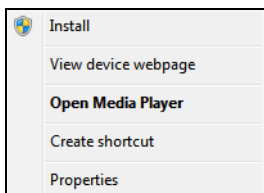
- 2 Use the **Set Network Location** screen to set the network’s location to home or work.



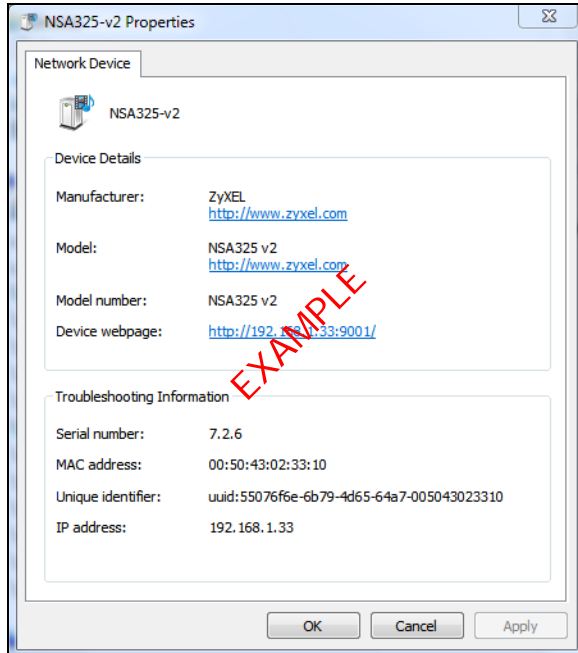


## 14.2.2 NAS Icon Right-click Options

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 14.5 on page 152](#)). 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.

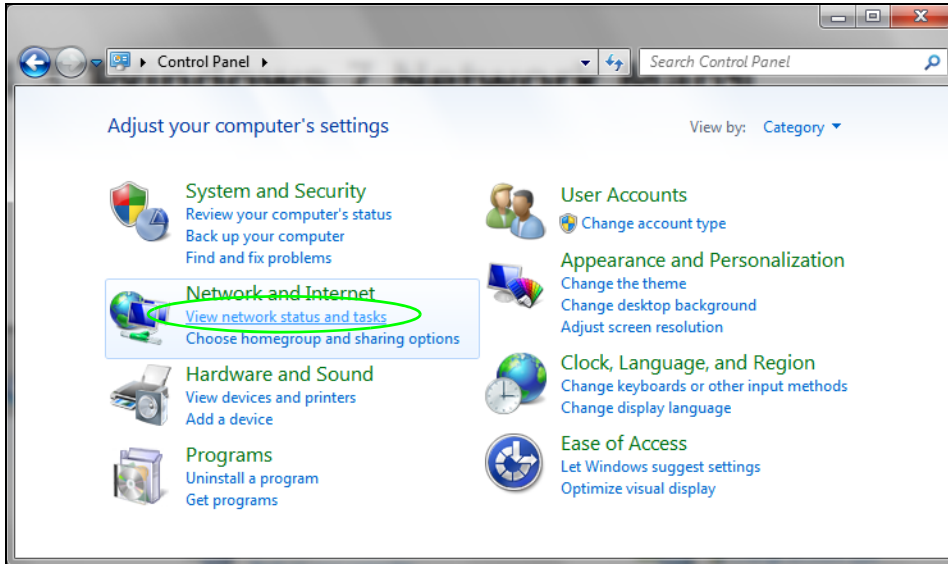


- **Manufacturer** identifies the company that produced the NAS.
- **Model** identifies the NAS model.
- **Model number** identifies the NAS model number.
- **Device webpage** shows the IP address for accessing the Web Configurator.
- **Serial number** is unavailable because the NAS does not have one.
- **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.

## 14.3 Windows 7 Network Map

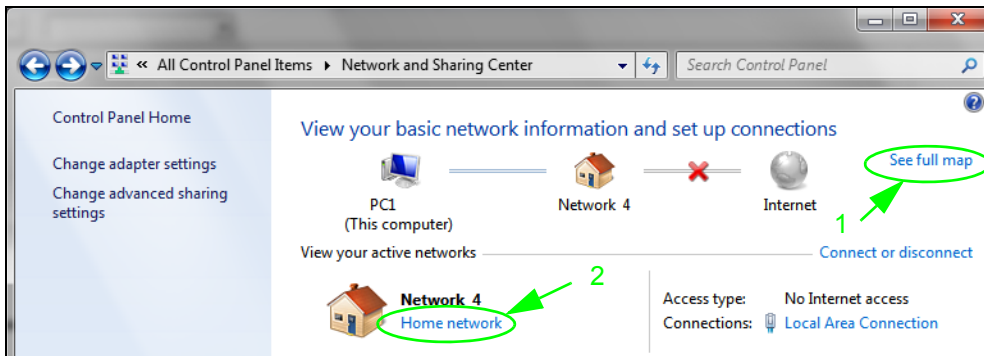
To see your NAS in a Windows 7 home or work network map:

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

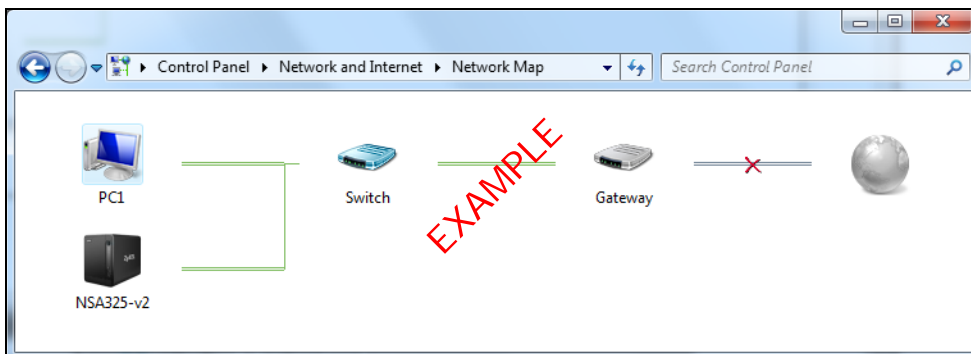


- 2 Click **See full map** (1 in the figure).

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 148](#)).



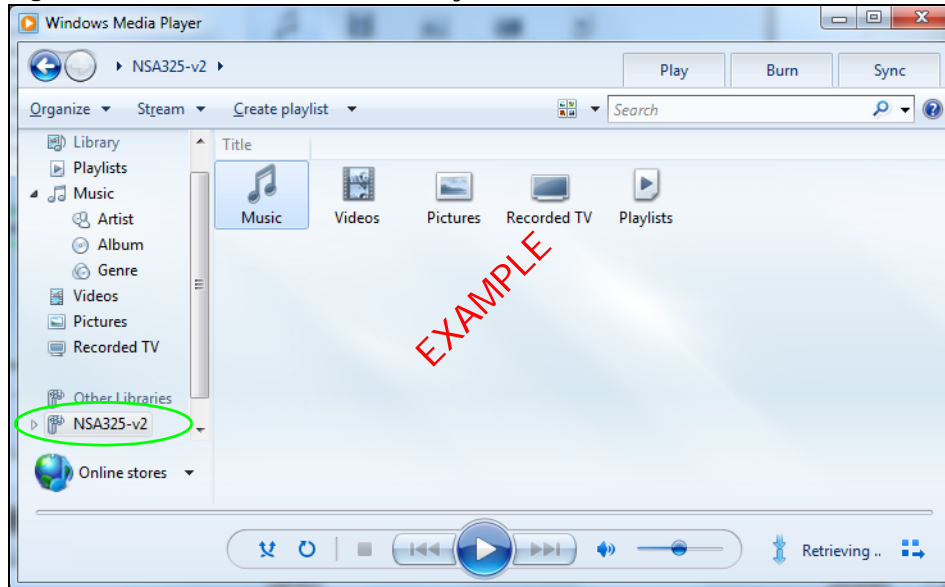
- 3 Double-click the NAS’s icon to open the Web Configurator login screen. See [Section 14.2.2 on page 149](#) for the NAS icon’s right-click options.



## 14.4 Playing Media Files in Windows 7

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

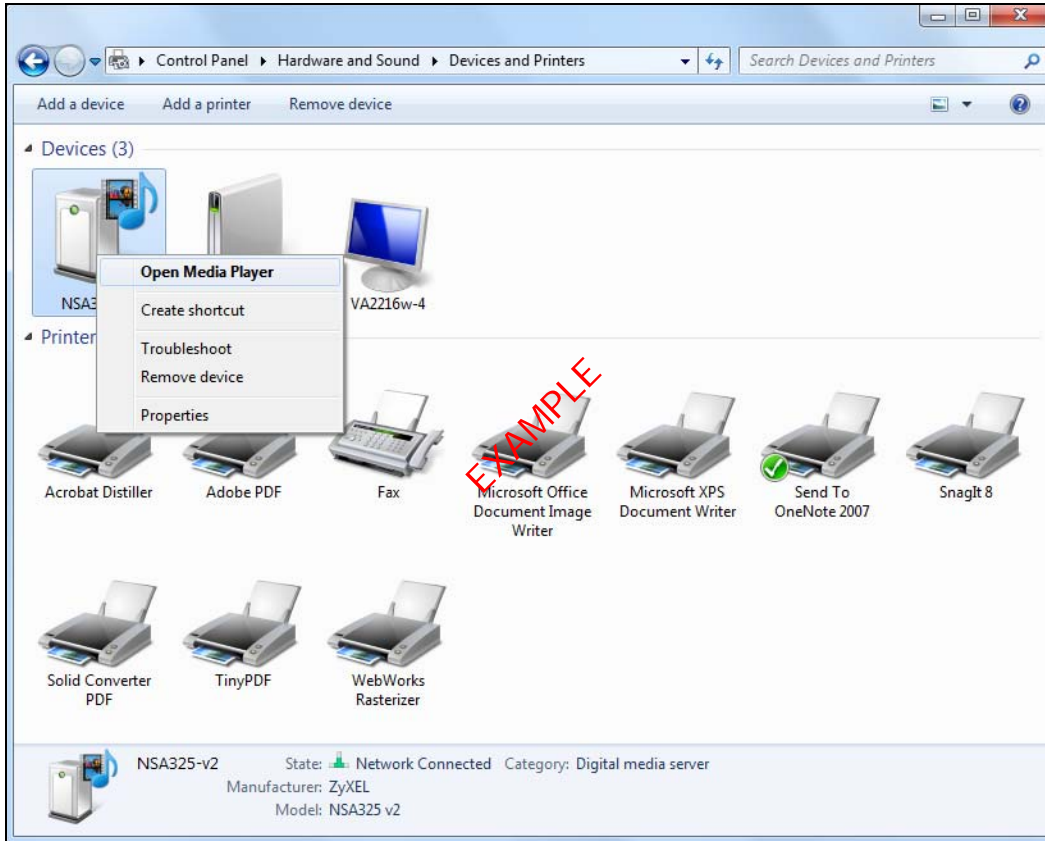
**Figure 92** NAS in Windows Media Player



## 14.5 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.

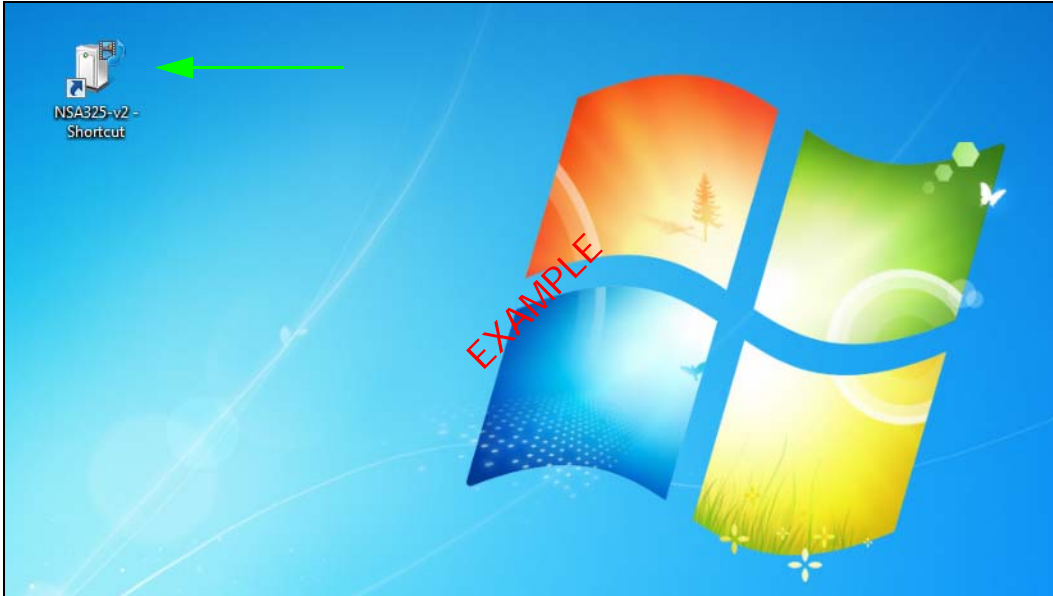
Click **Start > Control Panel > Hardware and Sound > Devices and Printers**. Select the NAS icon to display information about the NAS. Double-click the NAS icon to open a properties window (see [page 149](#)). Right-click the icon to display these options:



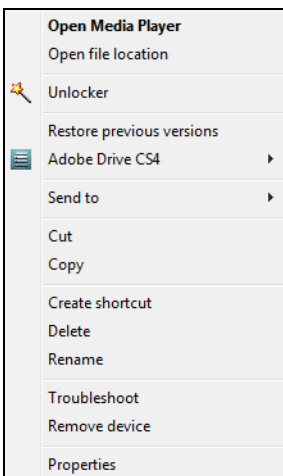
- **Open Media Player** opens the computer's default media player.
- **Create shortcut** has Windows make a desktop shortcut to this screen.
- **Troubleshoot** opens Windows' device troubleshooting wizard.
- **Remove device** removes the NAS from the Windows 7 **Devices and Printers** folder.
- **Properties** opens a window of NAS details and troubleshooting information (see [page 149](#)).

### 14.5.1 Windows 7 Desktop Shortcut

This is the NAS's desktop shortcut. Double-click it to open a properties window (see [page 149](#)).



- 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.

## 14.6 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.

### 14.6.1 Creating a User Account

Jimmy wants to create accounts for his sons Bob 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 Bob. If the username and password are the same as Bob's Windows login, Bob 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 Bob doesn't get to configure the whole NAS. Click **Apply** to create the account.

**Add User**

General Settings   Quota (per volume)   Group Membership

Username: Bob





New Password: ●●●●

Password (Confirm): ●●●●

Account Type:  Administrator  User

Apply   Cancel

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

User Type		Username
		Bob
		Jimmy
		John
		admin

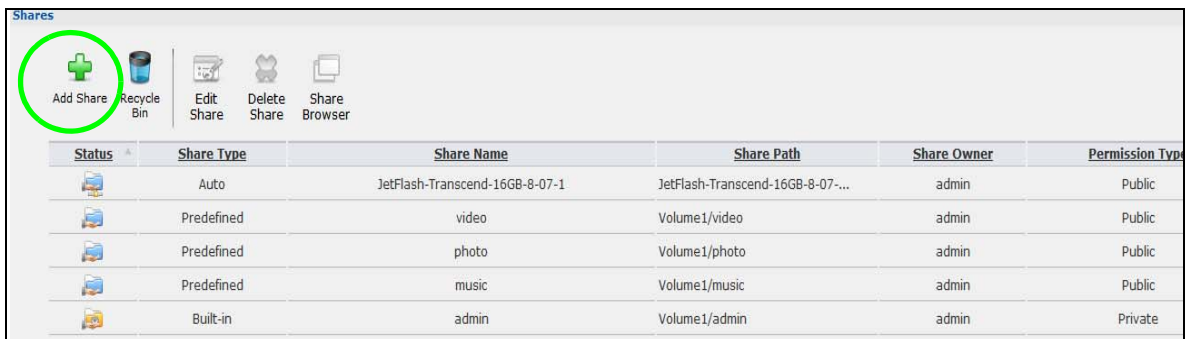
Page 1 Of 1






Now that Jimmy has created Bob'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 14.6.2 on page 156](#) to create shares for Bob and Kevin.

## 14.6.2 Creating a Share

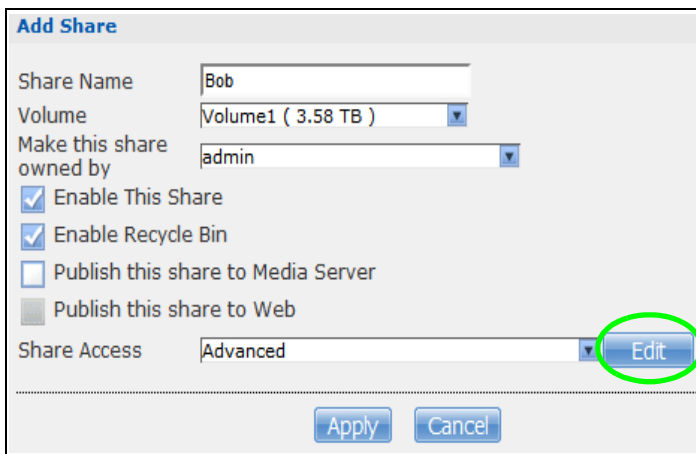
Suppose Jimmy has already created separate accounts for his sons Bob and Kevin. Now Jimmy wants to create a share for each son. He also wants to make sure that each son can only access his own share (to keep them from deleting each other's files). This is how he would do it.

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



Status	Share Type	Share Name	Share Path	Share Owner	Permission Type
	Auto	JetFlash-Transcend-16GB-8-07-1	JetFlash-Transcend-16GB-8-07-...	admin	Public
	Predefined	video	Volume1/video	admin	Public
	Predefined	photo	Volume1/photo	admin	Public
	Predefined	music	Volume1/music	admin	Public
	Built-in	admin	Volume1/admin	admin	Private

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



**Add Share**

Share Name:

Volume:

Make this share owned by:

Enable This Share

Enable Recycle Bin

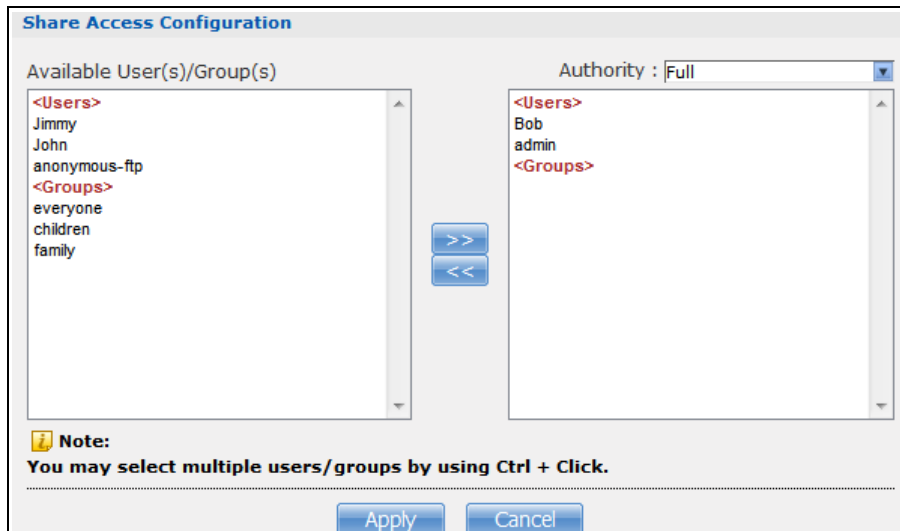
Publish this share to Media Server

Publish this share to Web

Share Access:



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

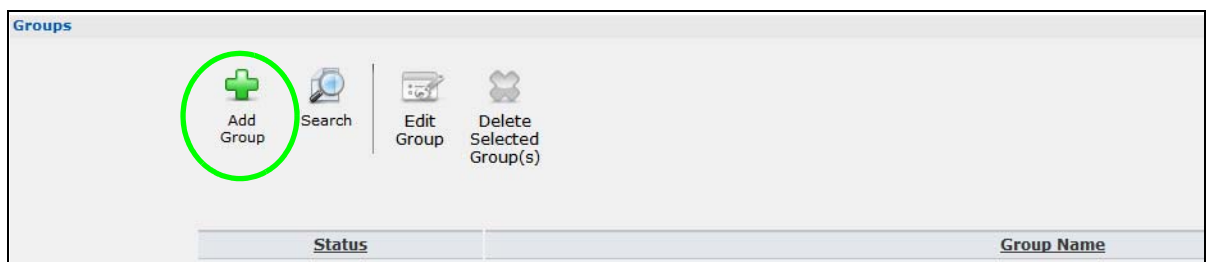


Now that Jimmy has created Bob's share, he can go through the steps again to create another share for Kevin.

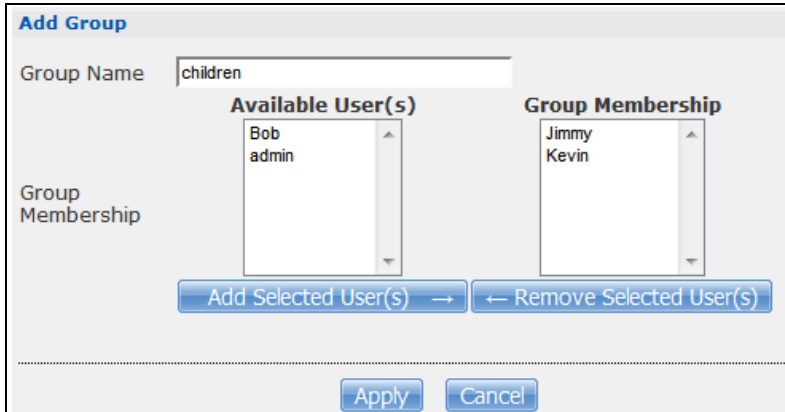
### 14.6.3 Creating a Group

After creating user accounts for Bob and Kevin, Jimmy wants to create a group for his sons and another one for the parents. Jimmy 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.

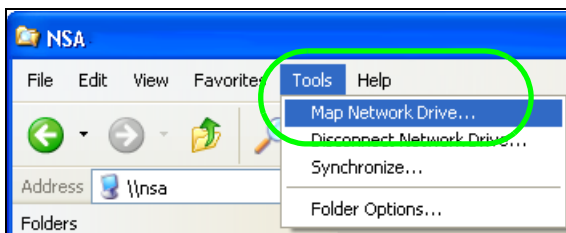


Now that Jimmy has created a group for Bob and Kevin, he can go through the steps again to create another group for the parents. Then he can see the rest of the tutorials for how to use the groups in assigning access rights to shares.

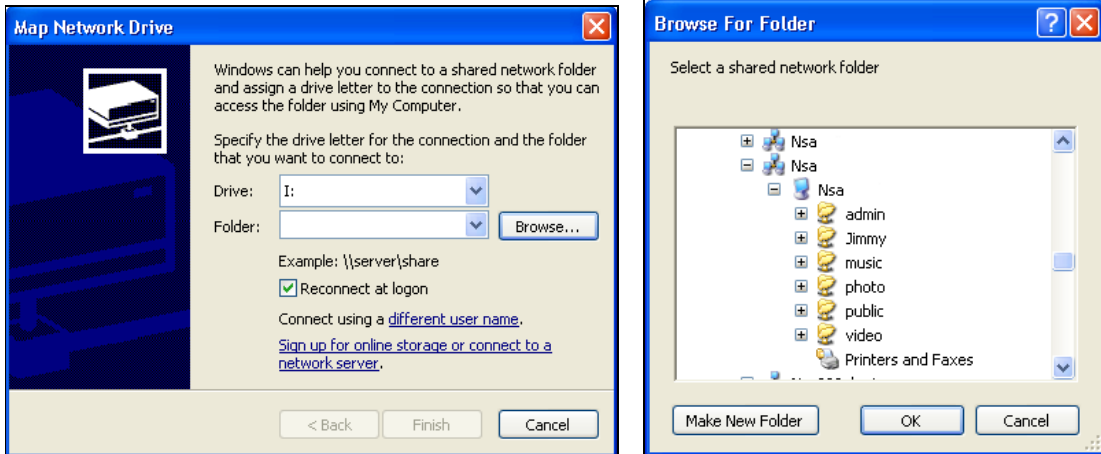
#### 14.6.4 Accessing a Share From Windows Explorer

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.

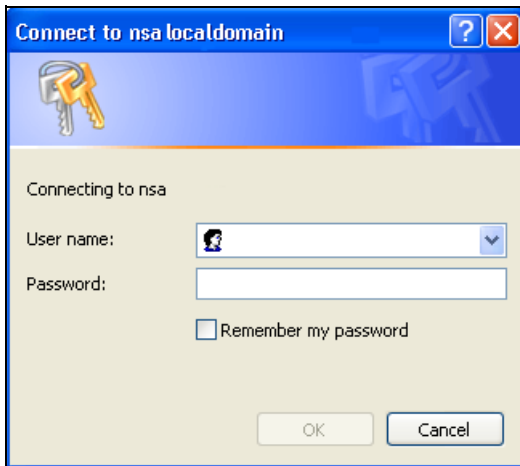
- 1 Start Windows Explorer and go to the NAS's server name. The default is 'nas' followed by the number of your model ('nas540' for example).
- 2 Click **Tools > Map Network Drive**.



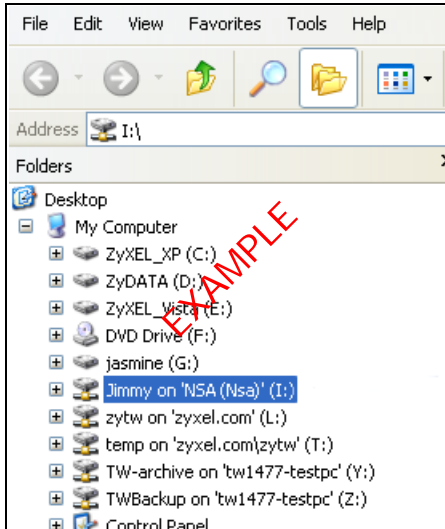
- 3 Select the network drive that you want to map the NAS to from the **Drive** list box. This example uses **I**. Then browse to and select the share on the NAS. Click **Finish**.



- 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.



- 5 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.

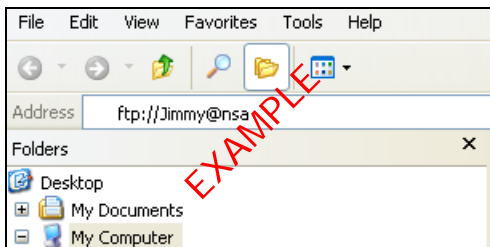


Now that Bob has mapped Jimmy's share to Jimmy's computer, he can go through the steps again to map Kevin's share to Kevin's computer.

### 14.6.5 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.

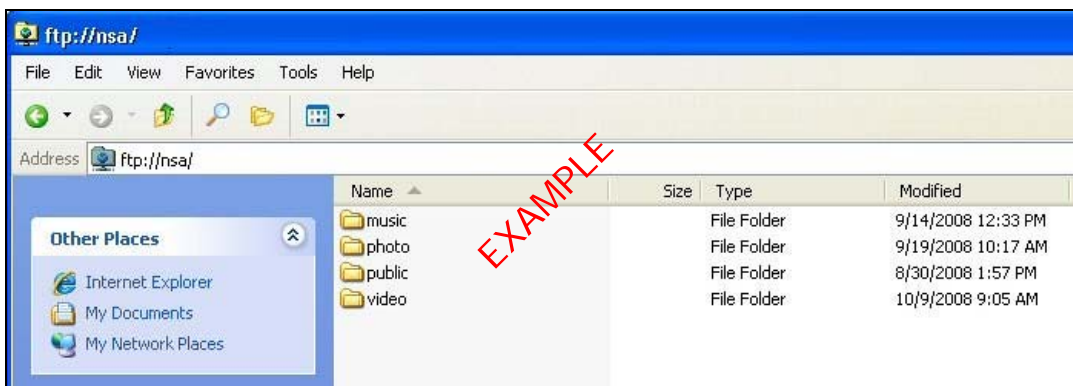
- 1 Open the FTP client (Windows Explorer is used here) and type "ftp://username@server" where "username" is the account's username and "server" is the NAS's IP address or server name.



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



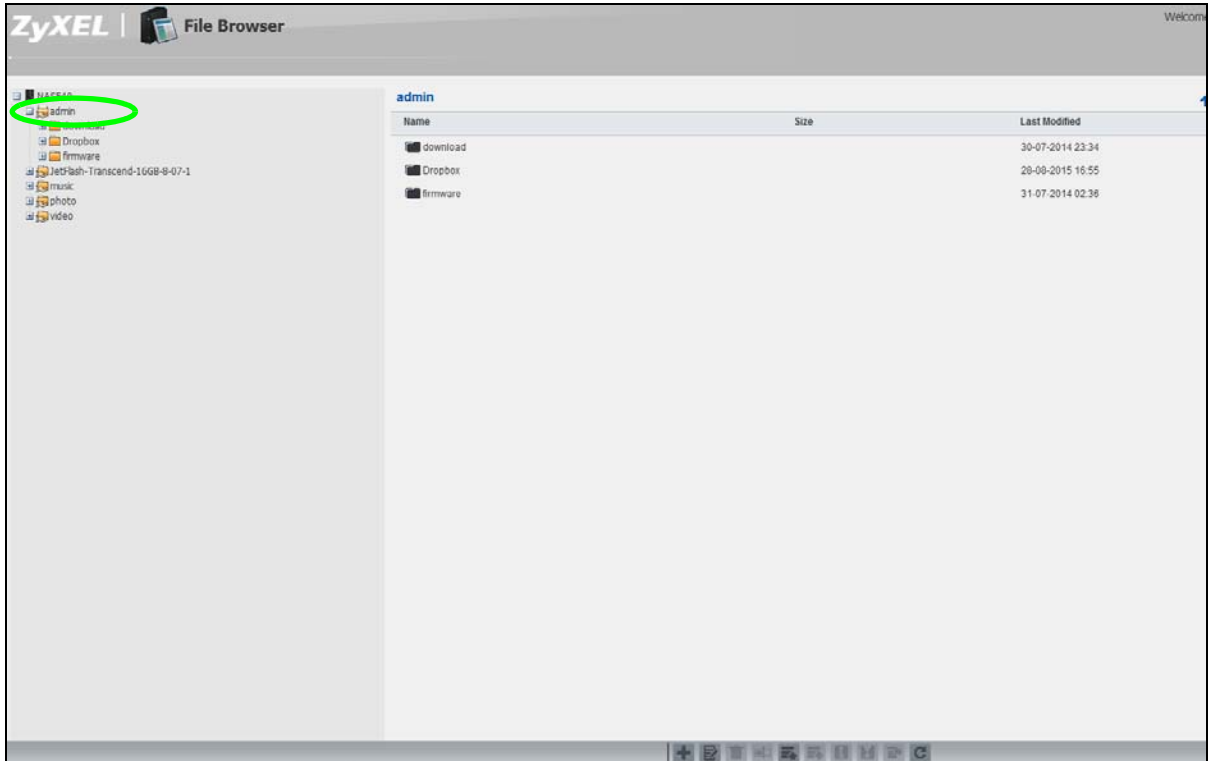
- Now you can access files and copy files from/to your local computer's drives to or from this network folder.



### 14.6.6 Accessing a Share Through the Web Configurator

You can browse and access files through the web configurator.

- Log into the NAS web configurator (see [Section 7.2 on page 38](#)) using the appropriate user name and password (this example uses Jimmy's) and click **File Browser**. Click a share (the admin 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 your are done.

## 14.7 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 17.11.2 on page 235](#) for more on the download service.

### 14.7.1 Copying/Pasting a Download Link

- 1 Open your Internet browser (this example uses Internet Explorer).
- 2 Find a download link for the file you want. In this example, [www.zyxel.com](http://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.

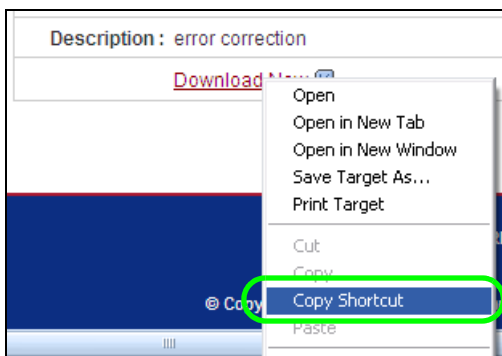
[Search Again](#)

Material Type	Product Model	Version	Release Date	Download
Firmware	NSA325 v2	V4.71(AALS.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

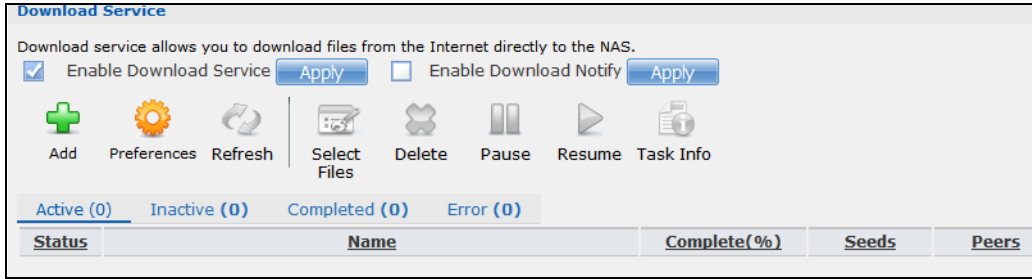
Note: Make sure the link opens either the file you want or a pop-up window about how to handle the file.

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.

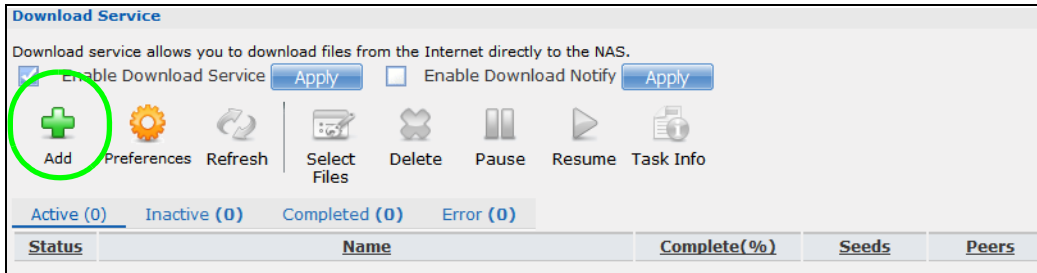
- 3 Right-click the download link and select **Copy Shortcut** in Internet Explorer (or **Copy Link Location** in Firefox).



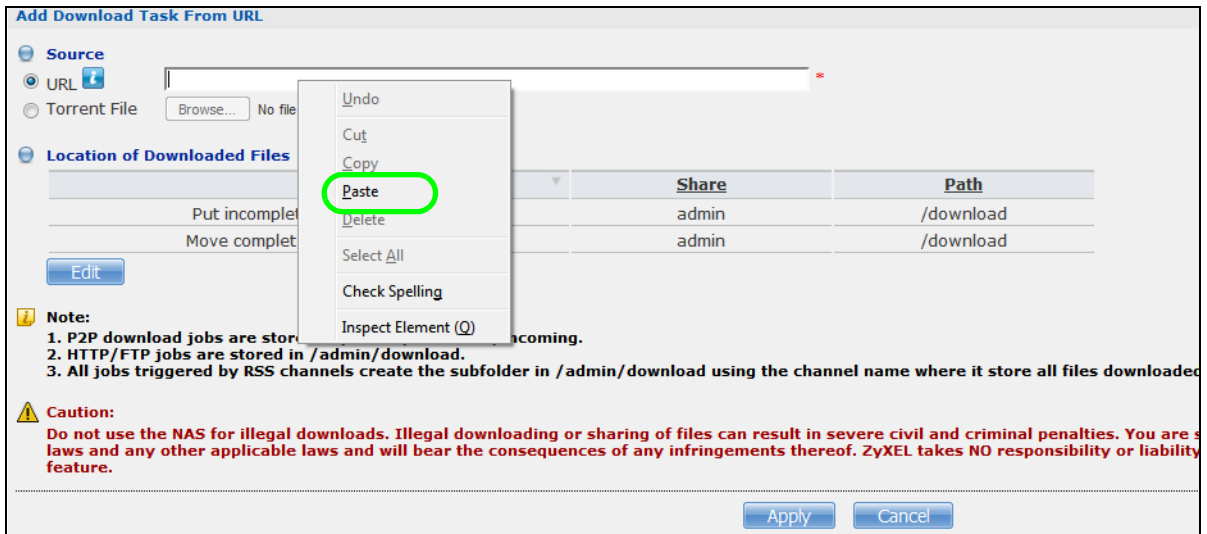
- 4 Log into the NAS web configurator (see [Section 7.2 on page 38](#)) using the administrator account and click **Application Zone** and the **Application Zone > Download Service** link.



5 Click **Add**.



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



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



**Add Download Task From URL**

**Source**

URL

Torrent File  No file selected.

**Location of Downloaded Files**

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

**Note:**

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

**Caution:**

Do not use the NAS for illegal downloads. Illegal downloading or sharing of files can result in severe civil and criminal p laws and any other applicable laws and will bear the consequences of any infringements thereof. ZyXEL takes NO respon feature.

- 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 14.6.4 on page 158](#), [Section 14.6.5 on page 160](#), or [Section 14.6.6 on page 161](#) for how to access a share.

## 14.7.2 Configuring the Download Service Preferences

Once you added a list of download tasks to the NAS (see [Section 14.7.1 on page 162](#)), 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.

**Preferences**

General Settings P2P download

**Location of Downloaded Files**

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

Edit

**Note:**

1. P2P download jobs are stored in /admin/download/incoming.
2. HTTP/FTP jobs are stored in /admin/download.
3. All jobs triggered by RSS channels create the subfolder in /admin/download using the channel name where it s

**Download Period Control**

Enable Download Period Control

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

23 :30 - 09 :00

Apply Reset Cancel

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.

**Download Service**

Download service allows you to download files from the Internet directly to the NAS.

Enable Download Service  Enable Download Notify

Add Preferences Refresh Select Files Delete Pause Resume Task Info

**Note : Download Service is not active. It will be active between 23:30 - 09:00.**

Active (1) Inactive (0) Completed (0) Error (0)

Status	Name	Complete(%)
--------	------	-------------

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

**Preferences**

General Settings    P2P download

Port Number: 9090

DHT:  Enable     Disable

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

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

Maximum Number of Active Torrents: 10

Maximum Number of Seeding Jobs: 10

Maximum Number of Active Connections: 300

Keep Sharing While:

Upload/Download Ratio is ≤ 0 % (Enter -1 for unlimited ratio. Enter 0 to ignore ratio.)

Or Seeding Time is ≤ 60 minutes (Enter -1 for unlimited seeding time. Enter 0 to ignore se)

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

Apply    Reset    Cancel

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.

**Edit IP Filter**

Enable IP Filter ( Last Update Time : N/A )

Update IP Filter Table File from the Internet Every Week  
URL:

Upload IP Filter Table  
Browse... No file selected. Upload

Download Current IP Filter Table

**Note:**  
Please upload your list( \*.txt, \*.dat, \*.gz, \*.tgz or \*.tar.gz ) here. It saved as /admin/download/ipfilter.dat.

Apply    Cancel

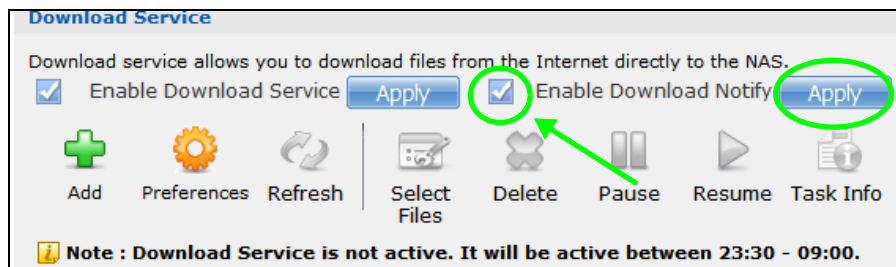
### 14.7.3 Using Download Service Notification

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 17.11.3 on page 236](#) 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.

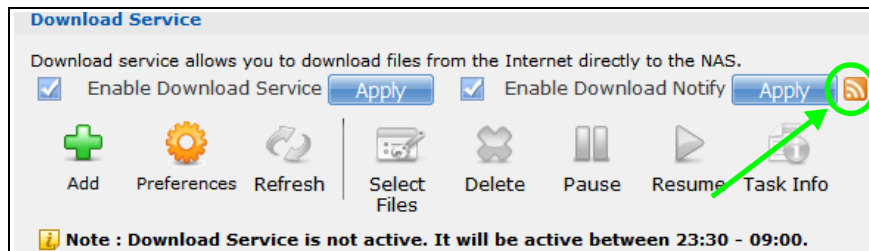
Note: It is recommended to subscribe to the download service notifications using the built-in reader in Internet Explorer 7 or higher, or Firefox.

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**.

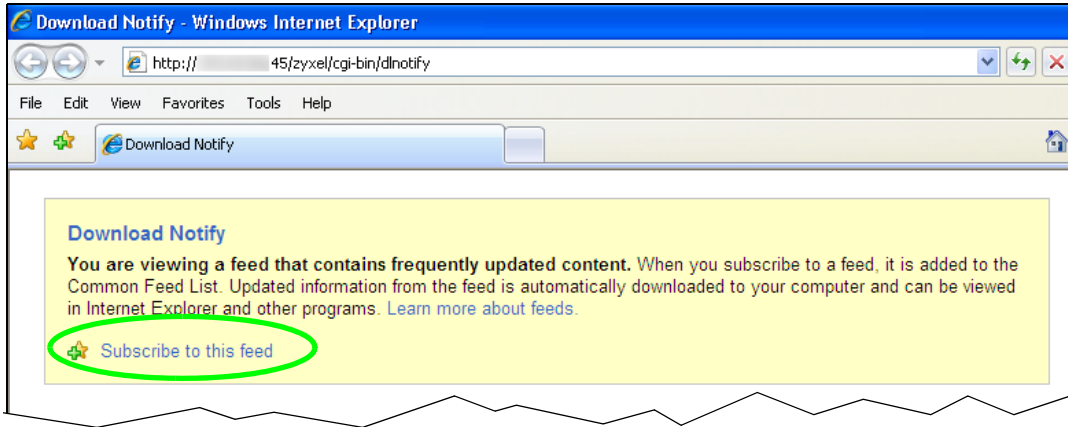


#### Internet Explorer 7 Example

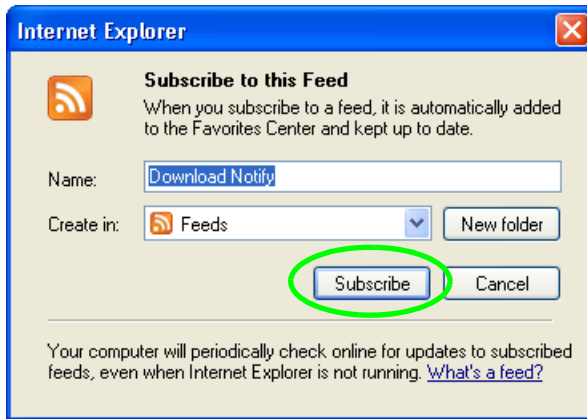
- 1 After you activate download service notification, click the **RSS** feed icon.



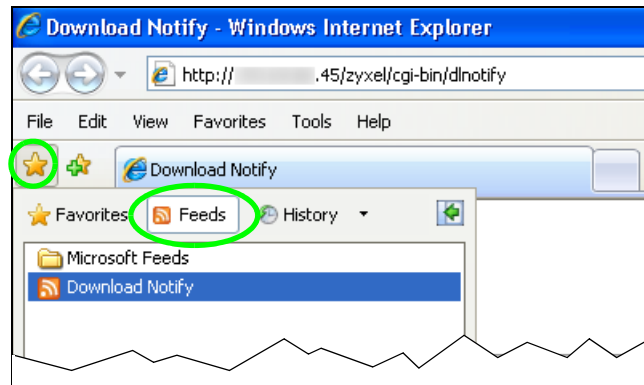
- 2 The following screen displays. Select **Subscribe to this feed**.



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

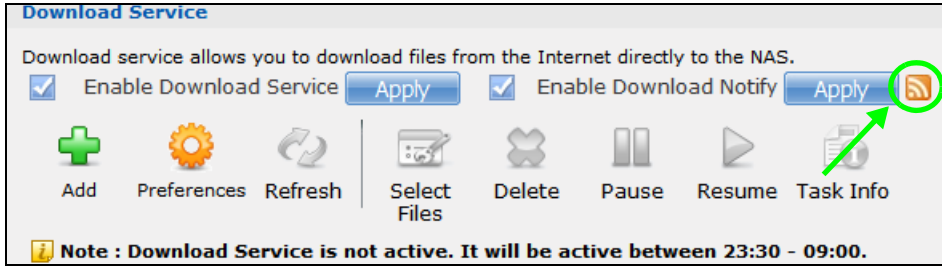


- 4 Click the **Favorite** icon on your browser and select the **Feeds** tab to check the updates of your NAS's download list.

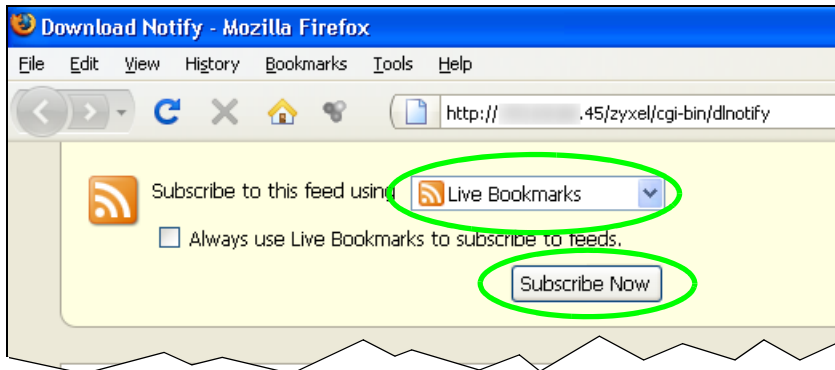


## Firefox Example

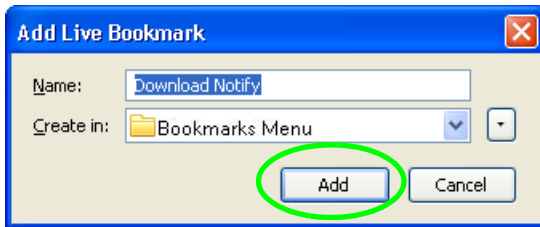
- 1 After you activate download service notification, click the **RSS** feed icon.



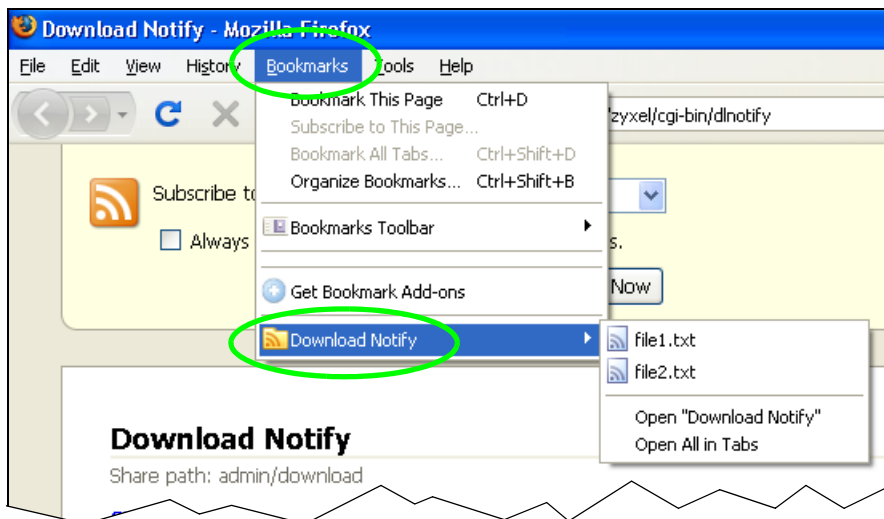
- 2 The following screen displays. Select **Live Bookmarks** from the drop-down list and click **Subscribe Now**.



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



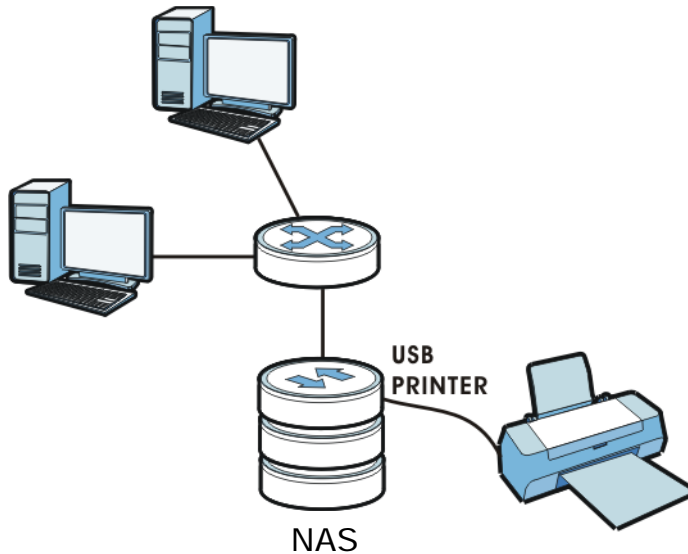
- 4 From the Firefox's **Bookmarks Menu**, select **Download Notify** to check the updates of your NAS's download list.



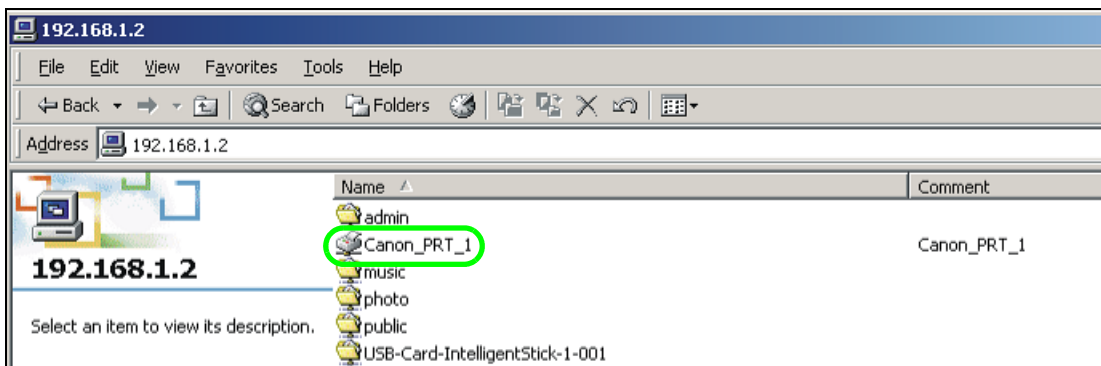
## 14.8 Printer Server Tutorial

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.

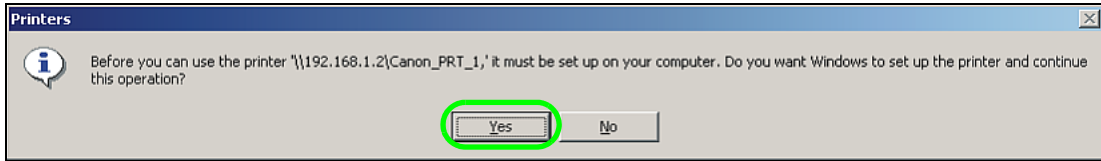
- 1 Make sure the NAS is on and the **SYS** light is on steady (not blinking).
- 2 Use a USB cable to connect the printer's USB port to one of the NAS's USB ports. Make sure the printer is also connected to an appropriate power source.



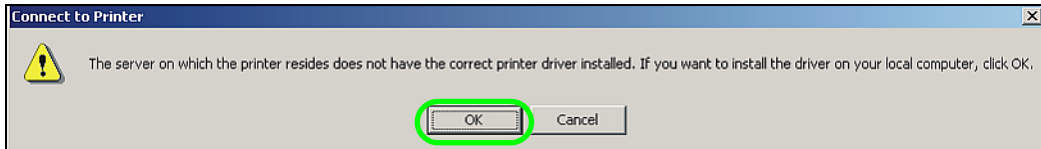
- 3 Turn on the printer.
- 4 The NAS detects the printer after a few moments.
- 5 On your computer, open your CIFS file sharing program (Windows Explorer for example) and browse to the NAS. Double-click the printer's icon.



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

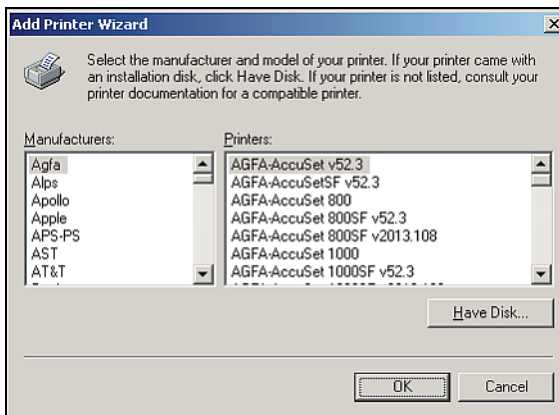


- 7 If your computer does not already have the printer's driver installed, you will need to install it. In this example, click **OK**.

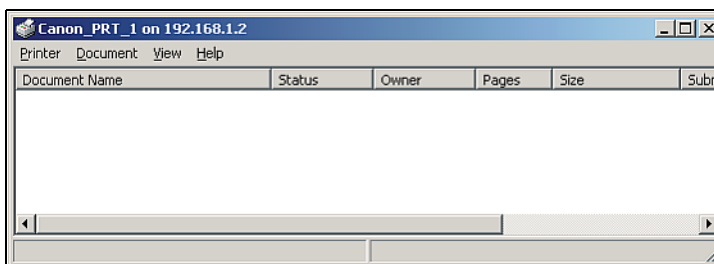


- 8 Use the wizard screens to install the printer driver on the computer. You may need to get the file from the printer's CD or the printer manufacturer's website (the driver is not installed on the NAS).

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.



## 14.9 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 19.4 on page 262](#) 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**.

Applications - Copy/Sync Button

**Copy Settings**

Press and release the button to copy data between the USB storage and NAS copy target.

NAS Copy Target: photo

USB Volume: JetFlash-Transcend-16G

Copy Direction: USB -> NAS

Create a New Folder for Copied Files

Backup Files to be Replaced

**Sync Settings**

Press and hold the button until you hear a beep to synchronize data between the USB storage and NAS sync target.

NAS Sync Target: [empty]

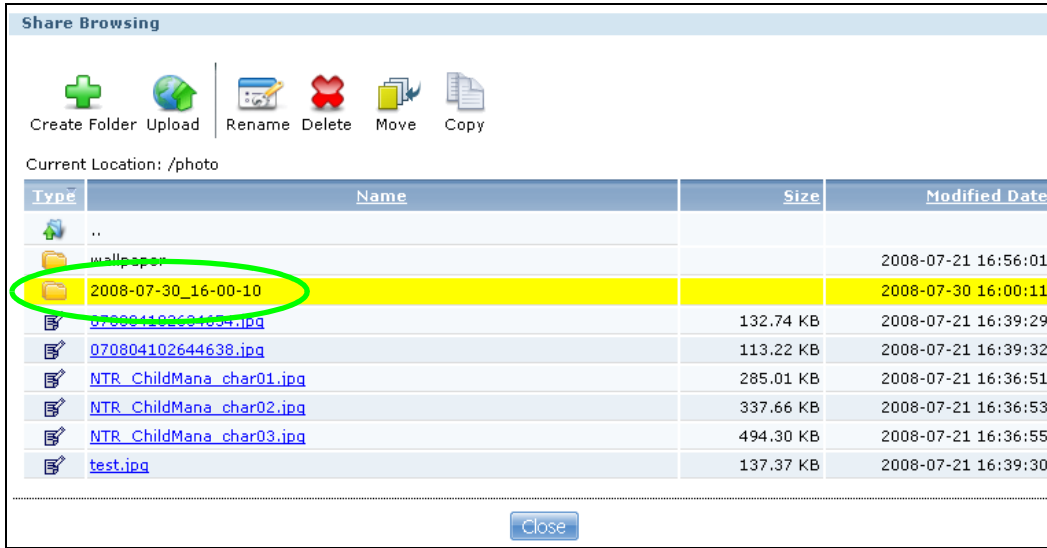
USB Volume: JetFlash-Transcend-16G

Sync Direction: NAS <-> USB

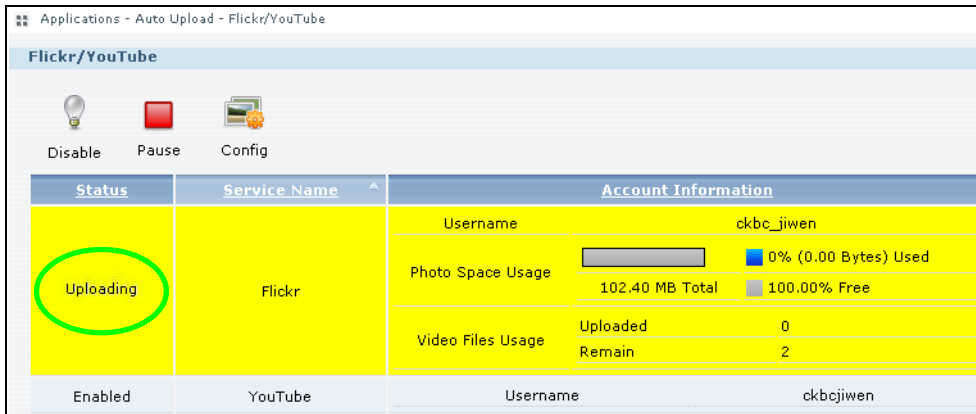
Backup Files to be Replaced or Removed

Apply Reset

- 3 Press and release the **COPY/SYNC** button on the NAS's front panel to start copying files.
- 4 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.

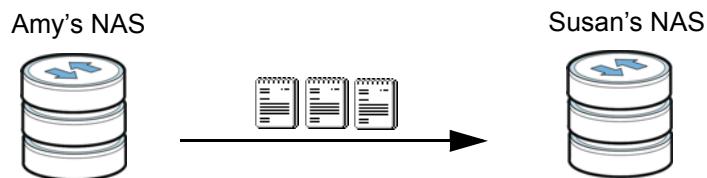


- The NAS also automatically uploads the copied files to Flickr.

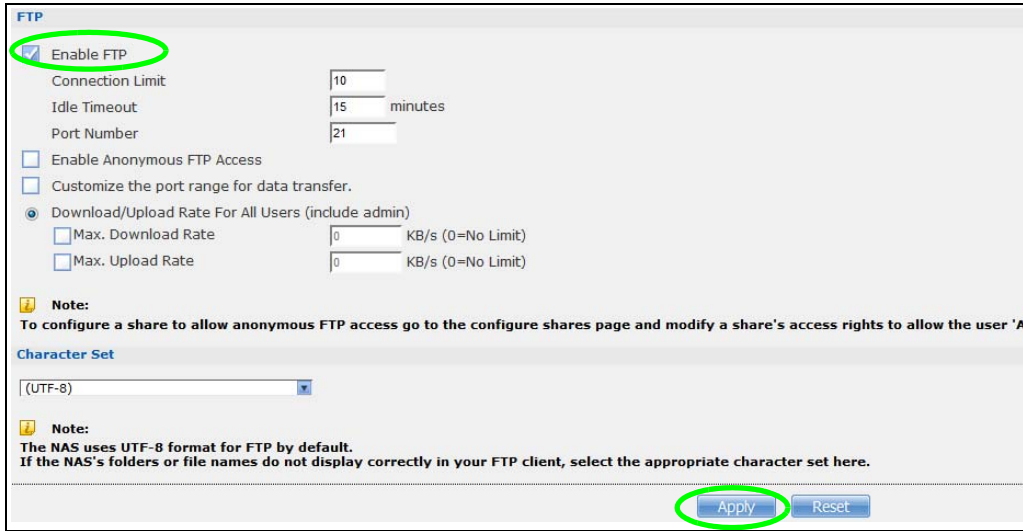


## 14.10 FTP Uploadr Tutorial

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**.



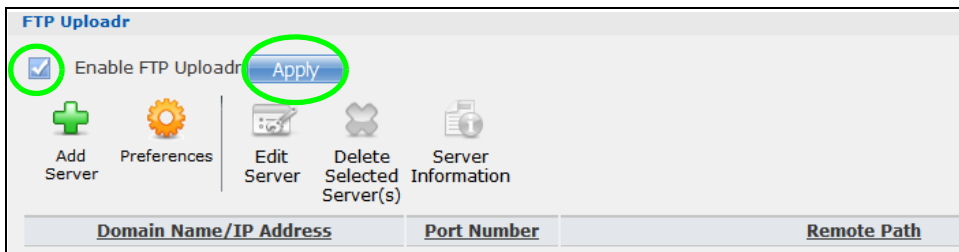
Susan also has to create a user account and share on her NAS for Amy to upload files. The share is used for files uploaded from Amy's NAS. Amy will then use the following information to configure FTP Uploadr on her NAS.

**Table 61** FTP Uploadr Tutorial: FTP Server Information

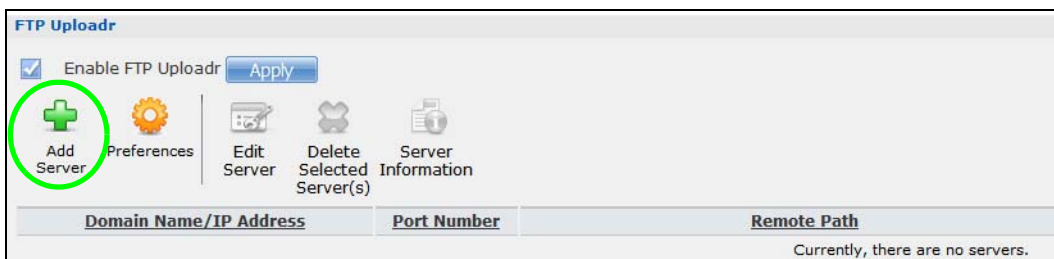
FTP Domain Name or IP Address	example2.com
FTP User Name	Amy
FTP Password	xxxxx
Share (Remote Path)	Amy

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.



- 2 Click **Add Server**.



- 3 Enter the information as describe in [Table 61 on page 175](#). Click **Apply** to add the server.

**Add Server**

Domain Name/IP Address: example2.com

Account Name: Amy

Password: .....

Port Number: 21

Remote Path: /Amy

Description: Send to Susan

Test Connection

Apply Cancel

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

**FTP Uploadr**

Enable FTP Uploadr Apply

Add Server
Preferences
Edit Server
Delete Selected Server(s)
Server Information

Domain Name/IP Address	Port Number	Remote Path	Account Name
example2.com	21	/Amy	Amy

- 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**.

**Folder Watch List**

Status	Share Name	Path	Action
There are currently no folders on the watch list.			

**Add Watch Folder**

Share: video

Path: /

Browse ...

Apply Cancel

**Add**

**Settings**

**Grace Period**  
The time the system will wait before a newly added file is saved in a watched folder.  
Grace Period: 15 minutes

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

Apply

Reset Close

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

Status	Share Name	Path	Action
	video	/	

**Add**

**Settings**

**Grace Period**  
The time the system will wait before a newly added file is saved in a watched folder.  
Grace Period  minutes

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

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.



## 14.11 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.

### 14.11.1 Customizing the NAS's Certificate

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

Maintenance - SSL

**Install System CA**

This action will install the system CA in your browser's trusted CA list.

**Step1** Download the CA file

**Step2** Double click on the CA file to install it into your browser

**Modify the Existing Certificate**

Edit a self-signed CA certificate

**Step1** Edit the Self-signed Certificate

**Step2** Download the self-signed CA file

**Step3** Double click on the CA file to install it into your browser

Create a Certificate To Be Authorized By My Own Certificate Authority

**Caution:**  
Modifications of TLS/SSL certificate settings will restart network services.

- 2 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

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.

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

**ZyXEL**

---

 **Restarting Network Services ...**

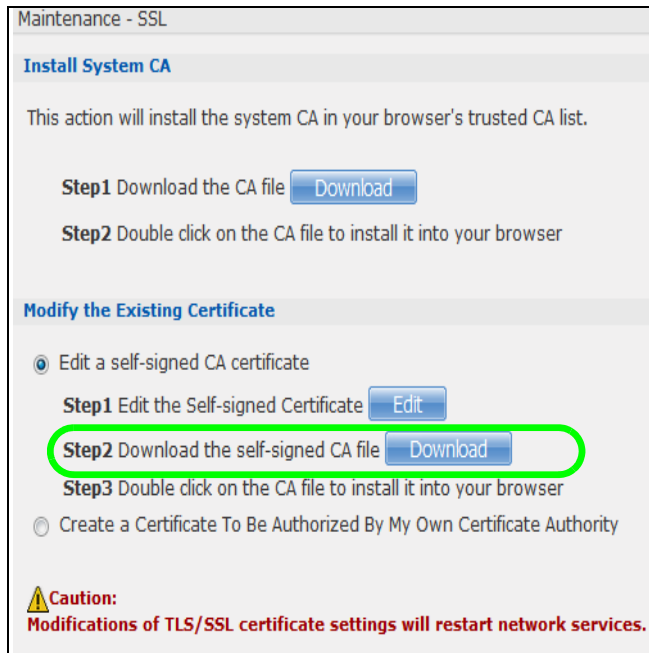
**Current Status :** Waiting for new network settings to apply...

The NAS will restart network services. After services have been restarted you can begin accessing the system using the new network host settings.

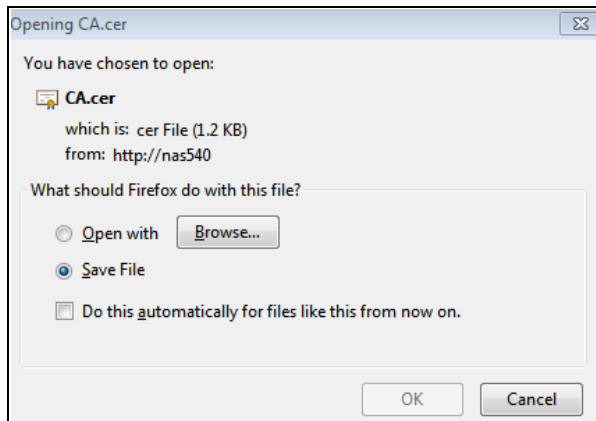
This page will TRY to automatically redirect you to the web configurator using the new network settings when it is available.

## 14.11.2 Downloading and Installing Customized Certificate

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



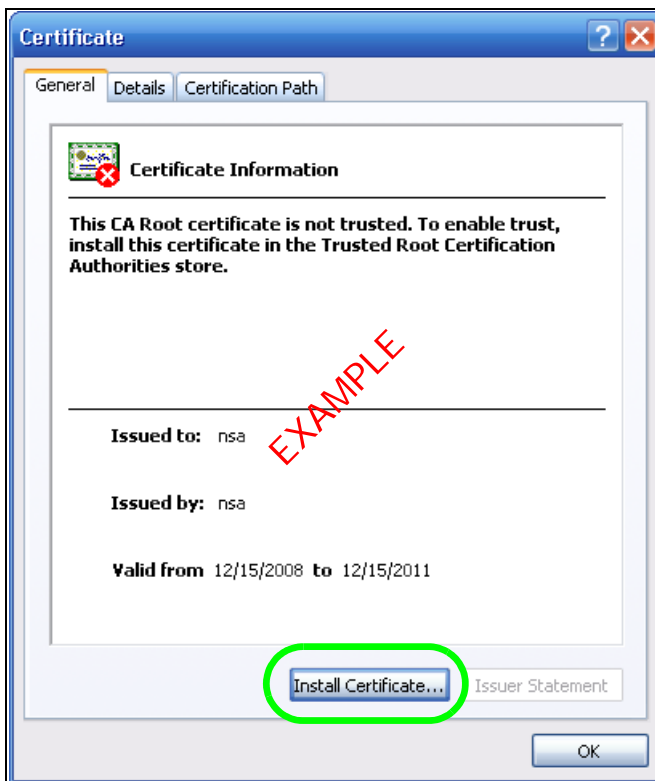
- 2 Save the file to your computer.



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

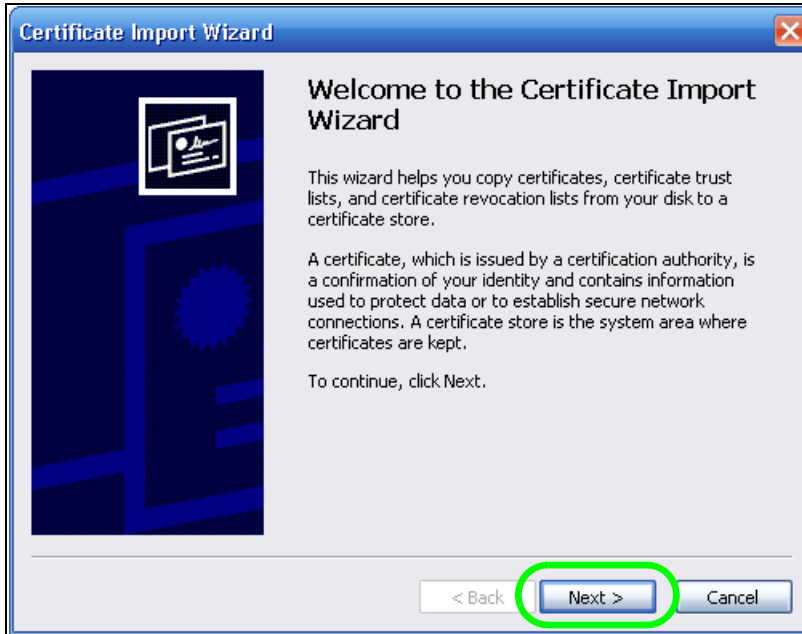


- 4 Install the certificate. The rest of the steps in this section are an example of installing a certificate in Windows. In the **Certificate** dialog box, click **Install Certificate**.

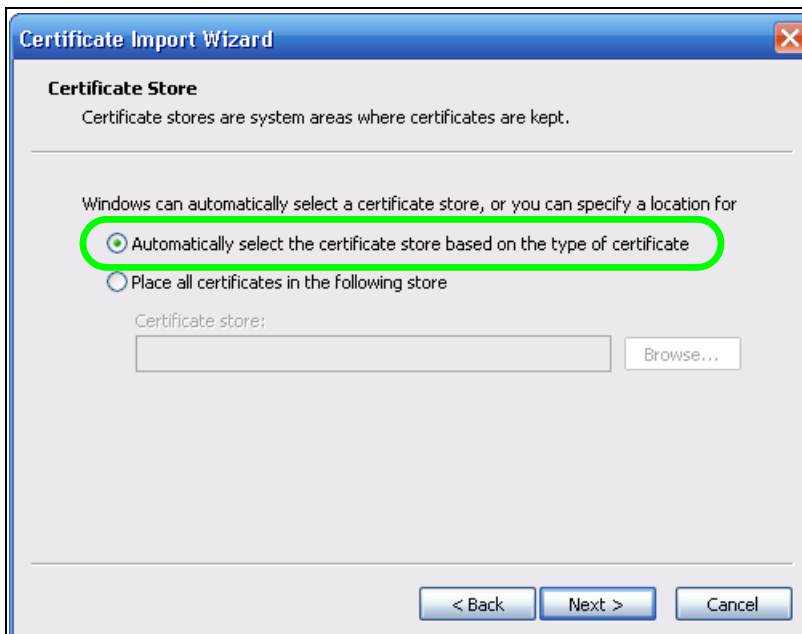


- 5 In the **Certificate Import Wizard**, click **Next**.

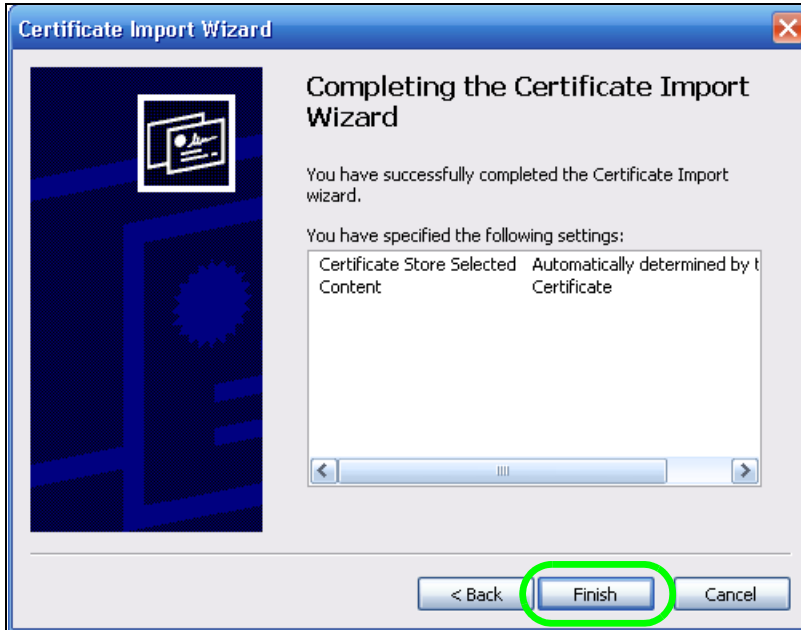




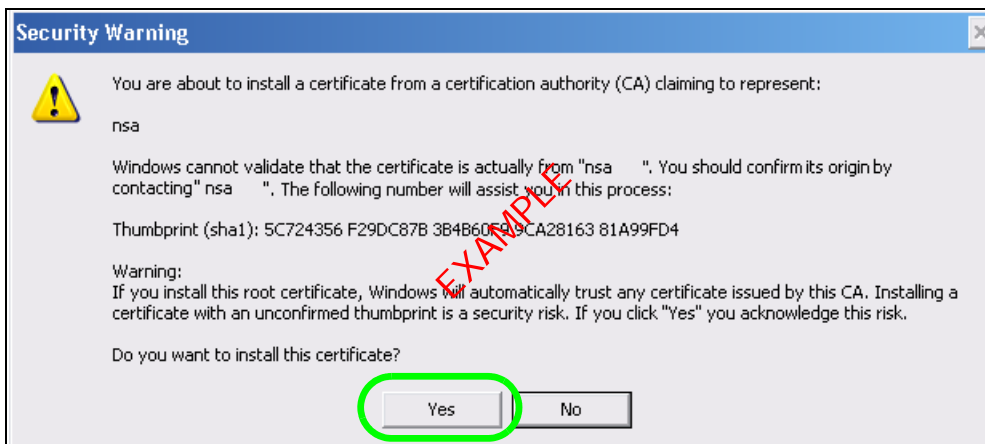
- 6 Leave **Automatically select certificate store based on the type of certificate** selected and click **Next**.



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



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



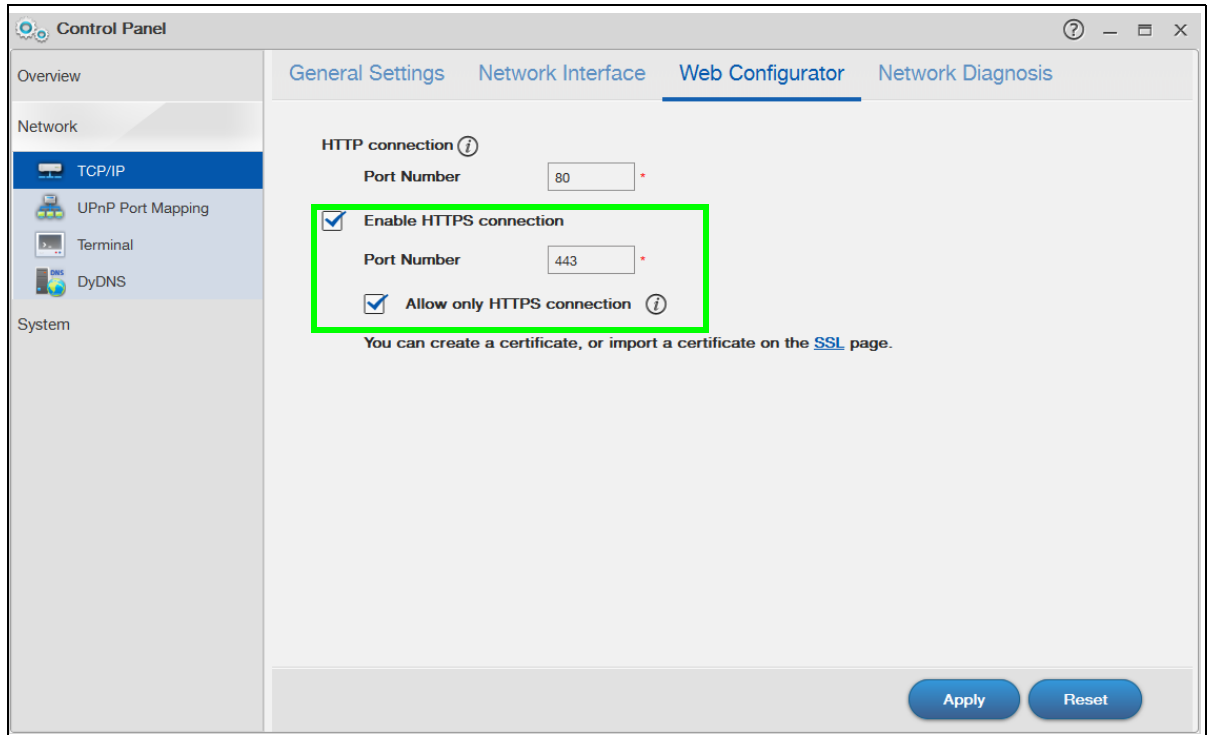
- 9 Finally, click **OK** when presented with the successful certificate installation message.



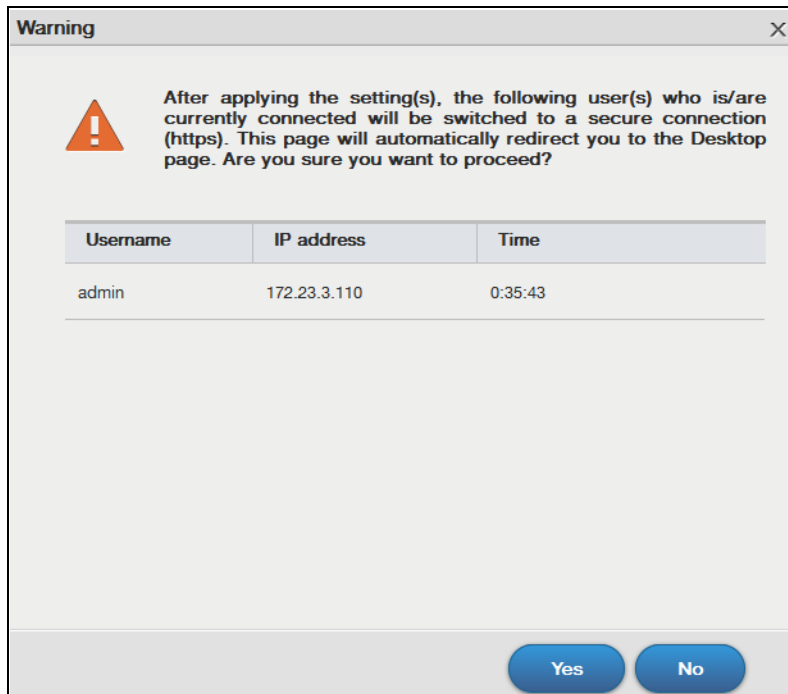
### 14.11.3 Turn on the NAS's Web Security

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.

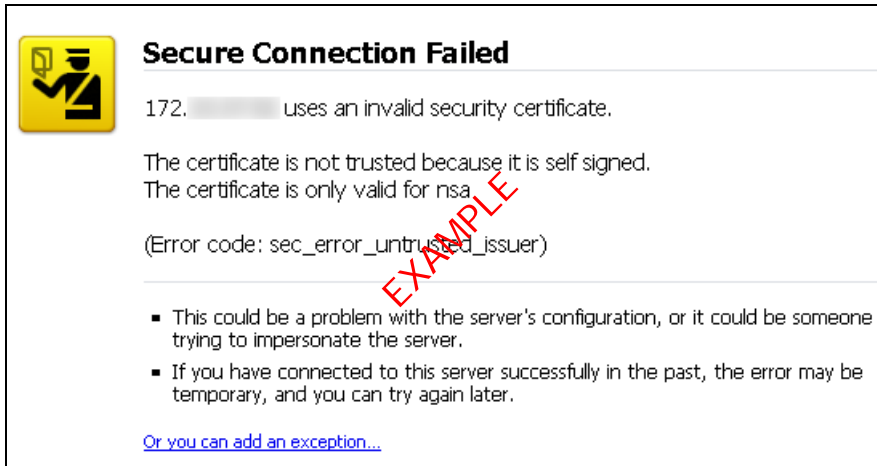
- 1 Close your web browser and open it again to reset its session with the NAS. Log in and click **Control Panel > TCP/IP > Web Configurator**. Select **Enable HTTPS connection** and click **Apply**.



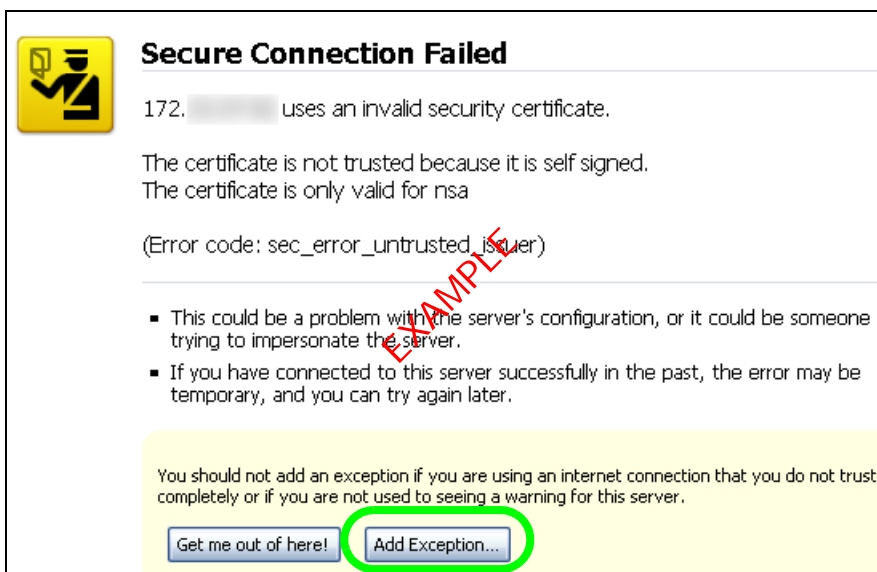
- 2 A warning screen pops up if applying your change may disconnect some users. Click **Yes** to continue.



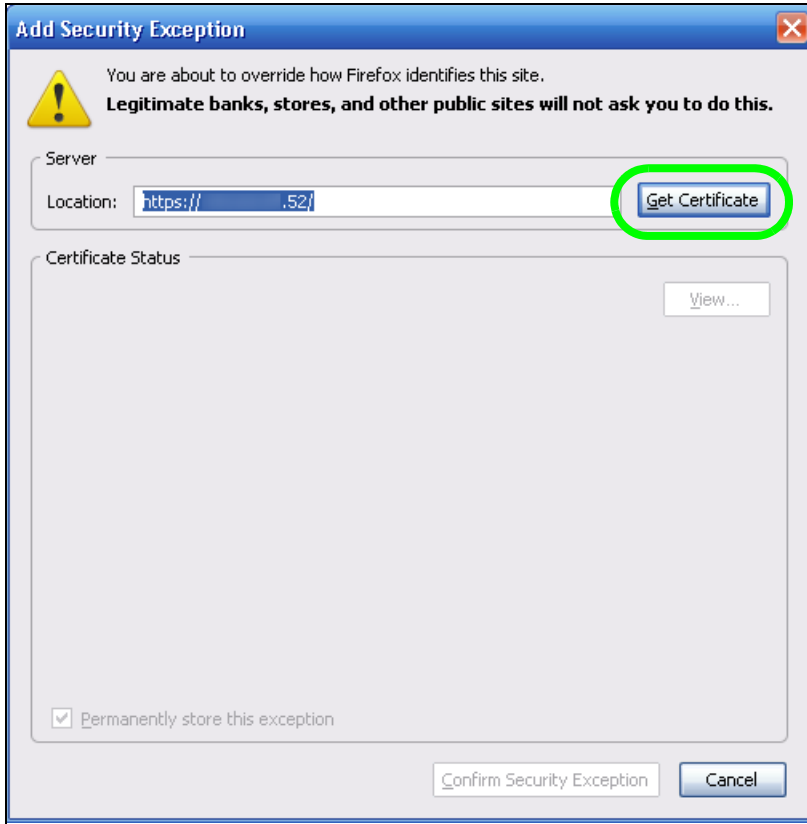
- The NAS logs you out and automatically redirects your formerly non-secure (HTTP) connection to a secure (HTTPS) connection. Your browser may give you a warning about the device's public key certificate. Add an exception to allow your browser to bypass the warning.



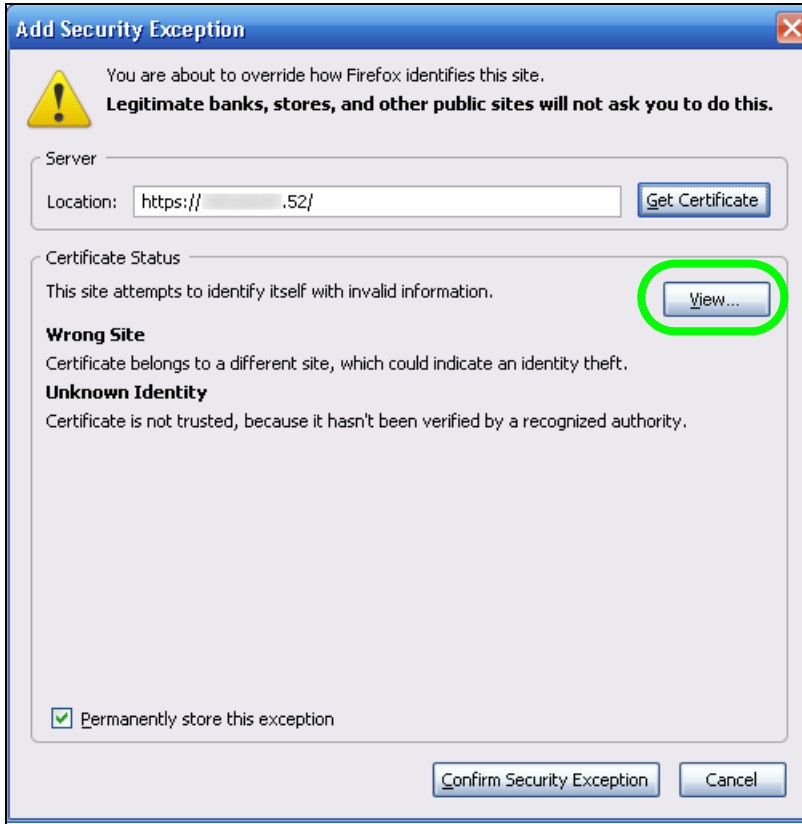
- Click **Add Exception**.



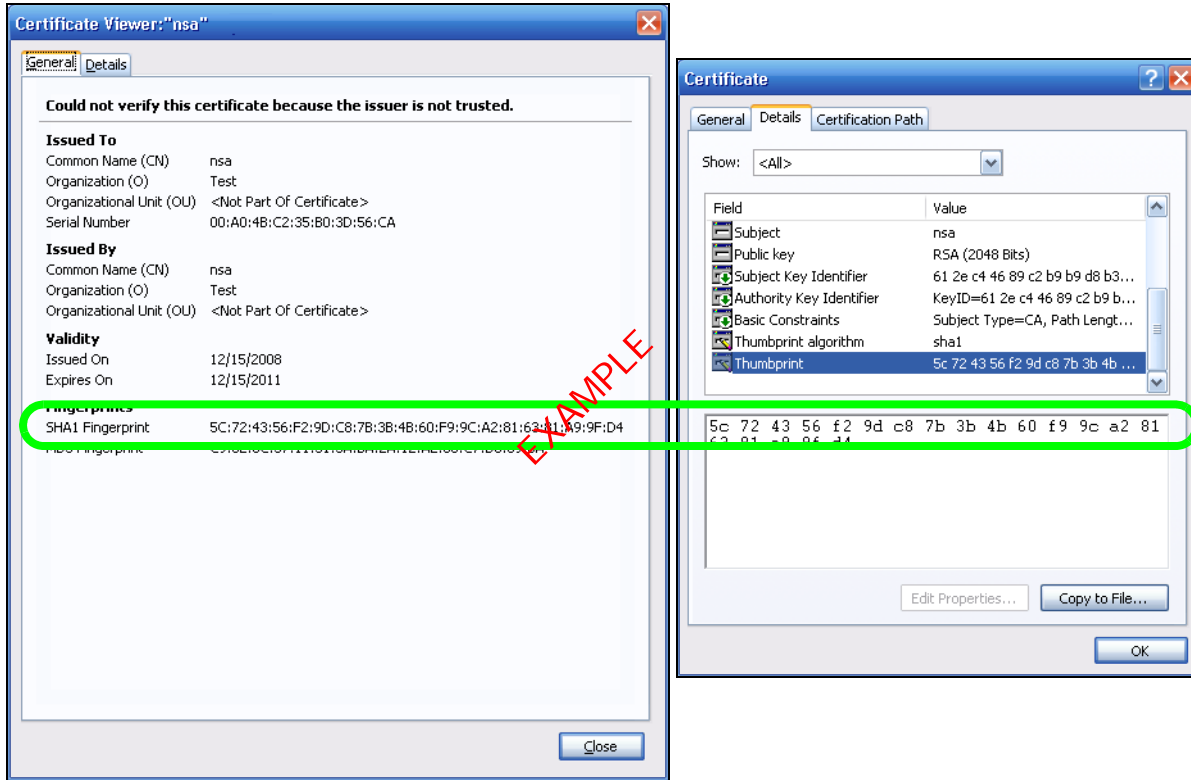
- Click **Get Certificate**.



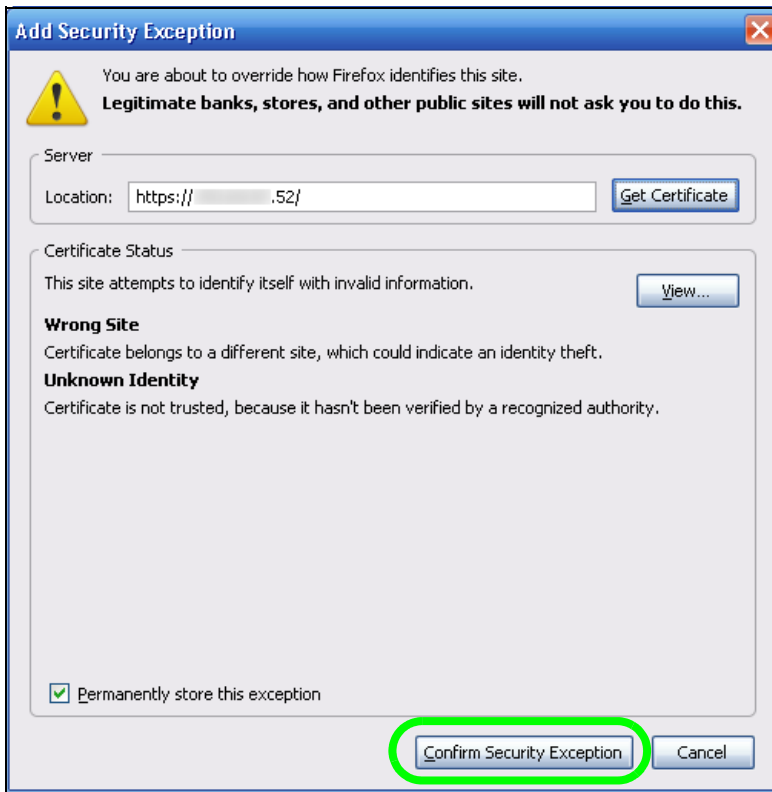
- 6 Before you add an exception, verify that the device to which you are trying to connect is providing the correct certificate. Click **View**.



- 7 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.

The login screen features two input fields: the top one is preceded by a person icon and the bottom one by a key icon. To the right of these fields is a large blue circular button with a white arrow pointing right. Below the input fields is a checkbox labeled 'Keep me logged in'.

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 185 to 186). See the next section for how to use FTPES with the NAS for secure FTP transfers.

## 14.12 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 14.11 on page 177](#) 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**.

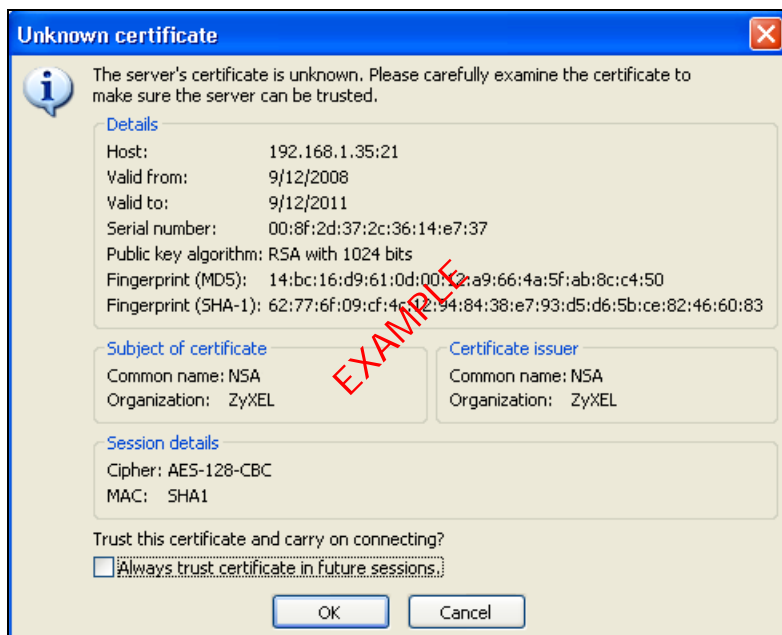
The screenshot shows the 'Site Manager' dialog box with the 'General' tab selected. On the left, a tree view shows 'My Sites' containing a 'New site' entry. Below the tree are buttons for 'New Site', 'New Folder', 'Rename', 'Delete', and 'Copy'. The main configuration area includes:
 

- Host:** 192.168.1.35
- Port:** 21
- Servertype:** FTPES - FTP over explicit TLS/SSL
- Logontype:** Normal
- User:** Gonzo
- Password:** (masked with dots)
- Account:** (empty)
- Comments:** (empty text area)

 At the bottom are 'Connect', 'OK', and 'Discard' buttons.



- 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.

## 14.13 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:

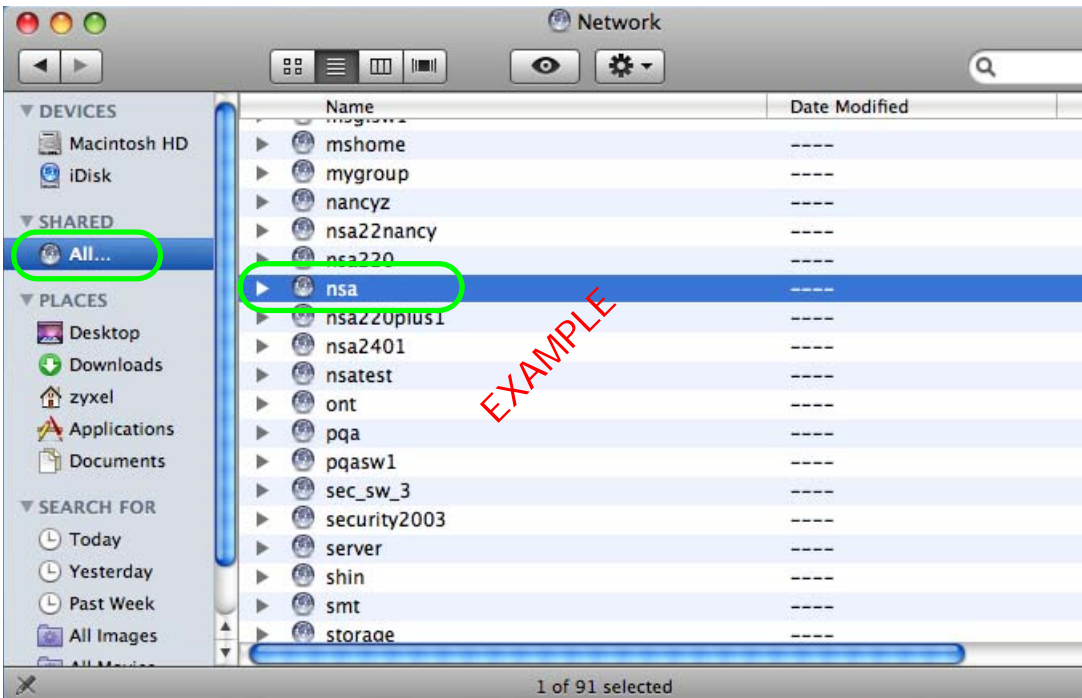
- Use the **Finder** to browse for the NAS, or
- Use the **Finder > Go** option to connect to the NAS.

### 14.13.1 Finder

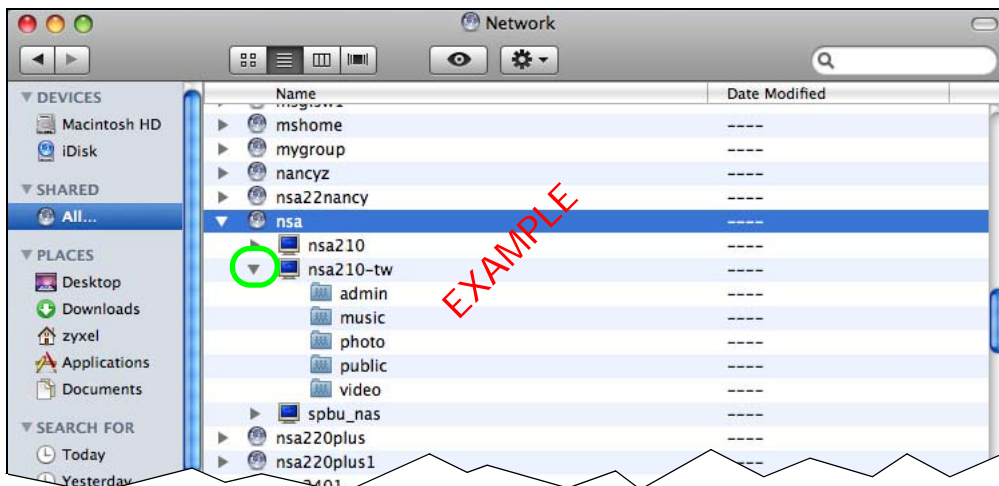
- 1 Open a new **Finder** window.



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

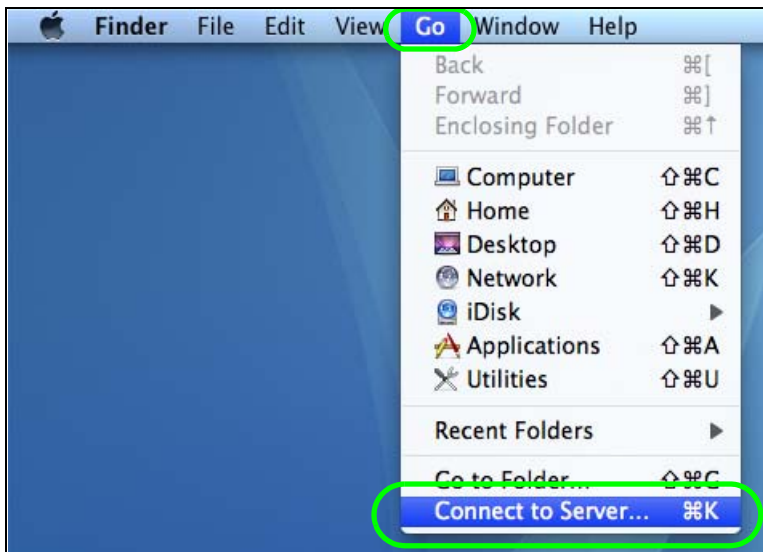


3 Expand the NAS to display the shares you may access.

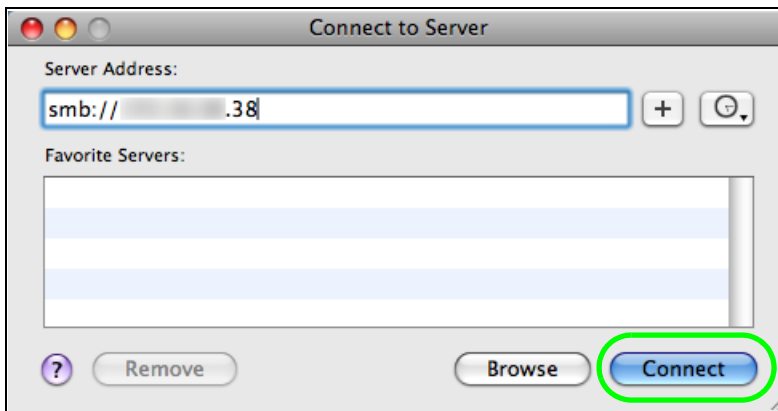


## 14.13.2 Go Menu

- 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.

## 14.14 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 18 on page 246](#).)

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

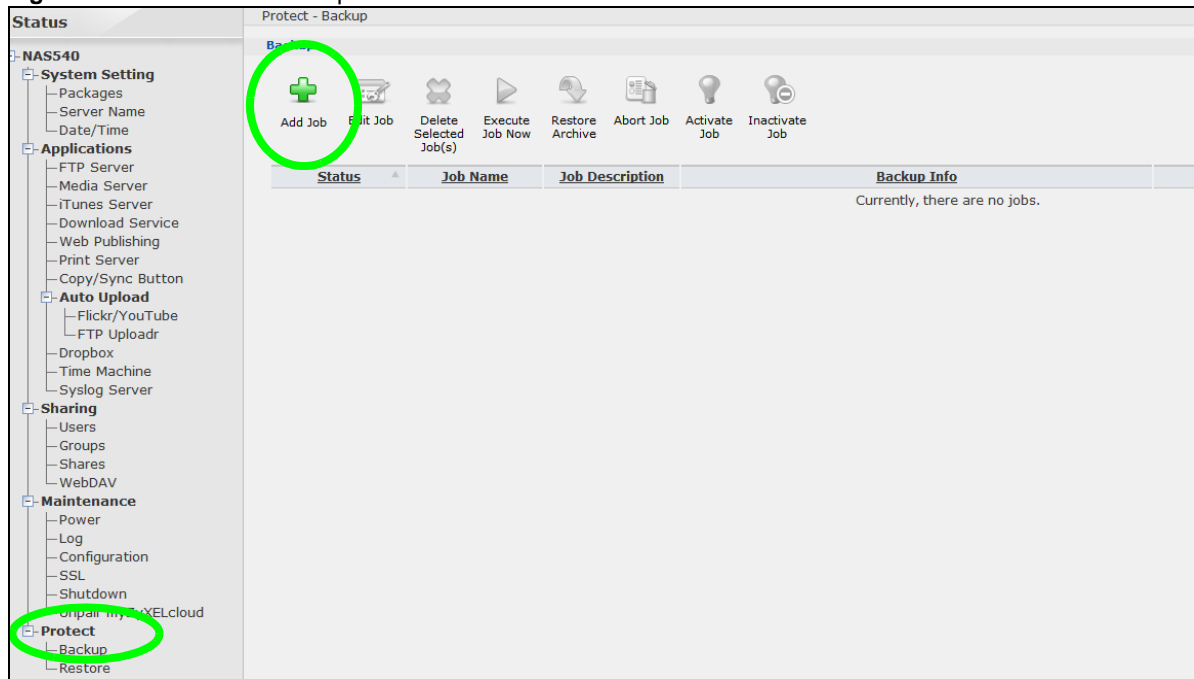
Schedule backups for times when the network is not busy (like at night or on weekends). For example, you might do daily backups of important individual files or folders and a weekly general archive. You can save backups to another location so your files can survive even if the original RAID or NAS fails.

### 14.14.1 Creating an Archive Backup

To backup the NAS every week to a remote NAS:

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

**Figure 93** 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 94** Protect > Backup > Add Job: Step 1

The screenshot shows the 'Add a new backup Job' form, Step 1. The form is divided into sections:

- Job Information:** Job Name: Weekly-backup; Job Description: (empty field)
- Backup Type:**
  - Archive
    - Full
    - Incremental
 

Perform a full backup job after 4 increments.
  - Synchronization
  - Rsync

A 'Next' button is located at the bottom right of the form.

- 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 95** Protect > Backup > Add Job: Step 2

Step 2

Backup Source

Volume1

Volume1

video

photo

music

admin

Selected Source Folders

Volume1/

Backup Target

Remote

Remote NSA Address: 192.168.3.2

Username: admin

Password: \*\*\*\*

Share Name: backup

Test Connection

Local

External

Previous Next

- 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 96** Protect > Backup > Add Job: Step 3

Step 3

Compression

Yes

No

Encryption

Yes

No

Purge Policy

Keep All Old Backup files

Keep Only the last 3 backup files

Keep Backups For [ ] day(s)

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

Protect > Backup > Add Job: Step 4

Step 4

Scheduler

Backup Frequency: Weekly

Start Time (hh:mm): 5:00

Every how many weeks? 1 (1-52)

on every  Sunday  Monday  Tuesday  Wednesday  Thursday  Friday  Saturday

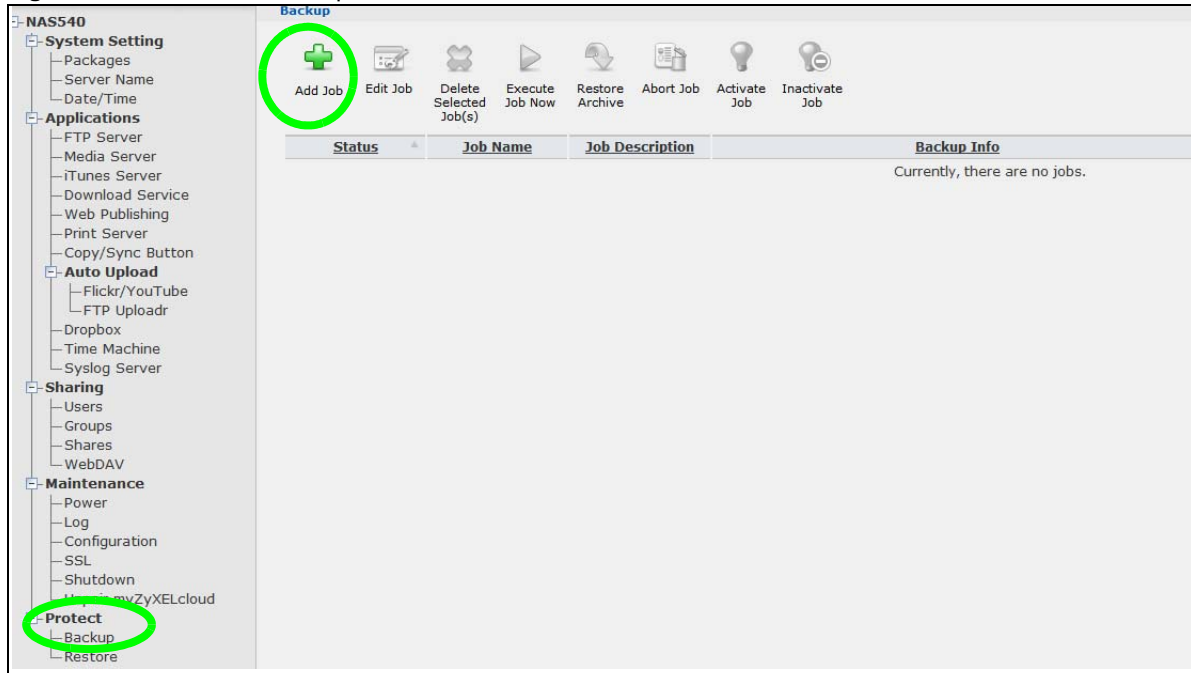
Previous Done

## 14.14.2 Creating a Synchronization Backup

To create a synchronization backup:

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

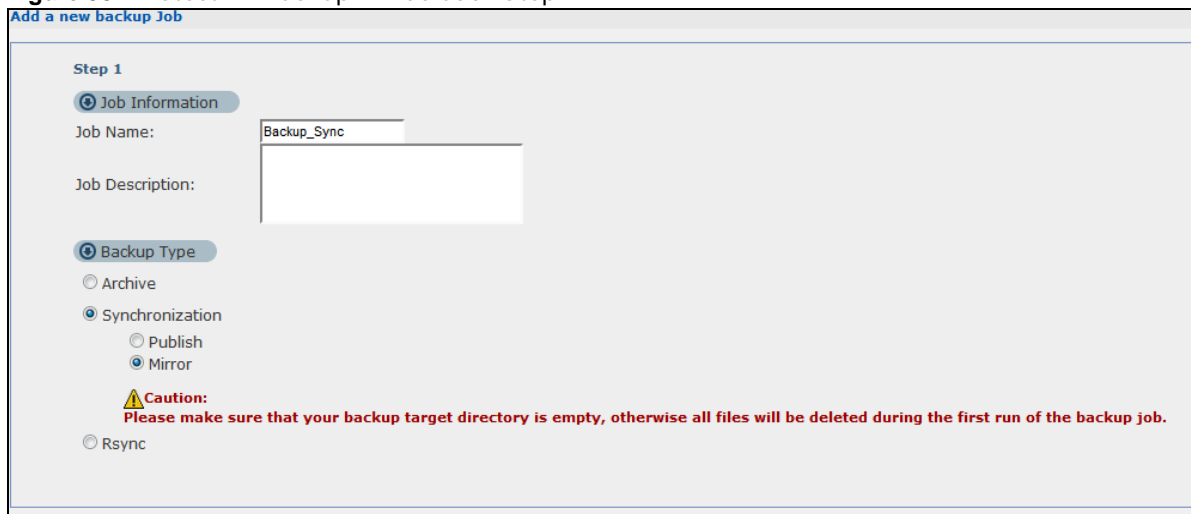
**Figure 97** Protect > Backup



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

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

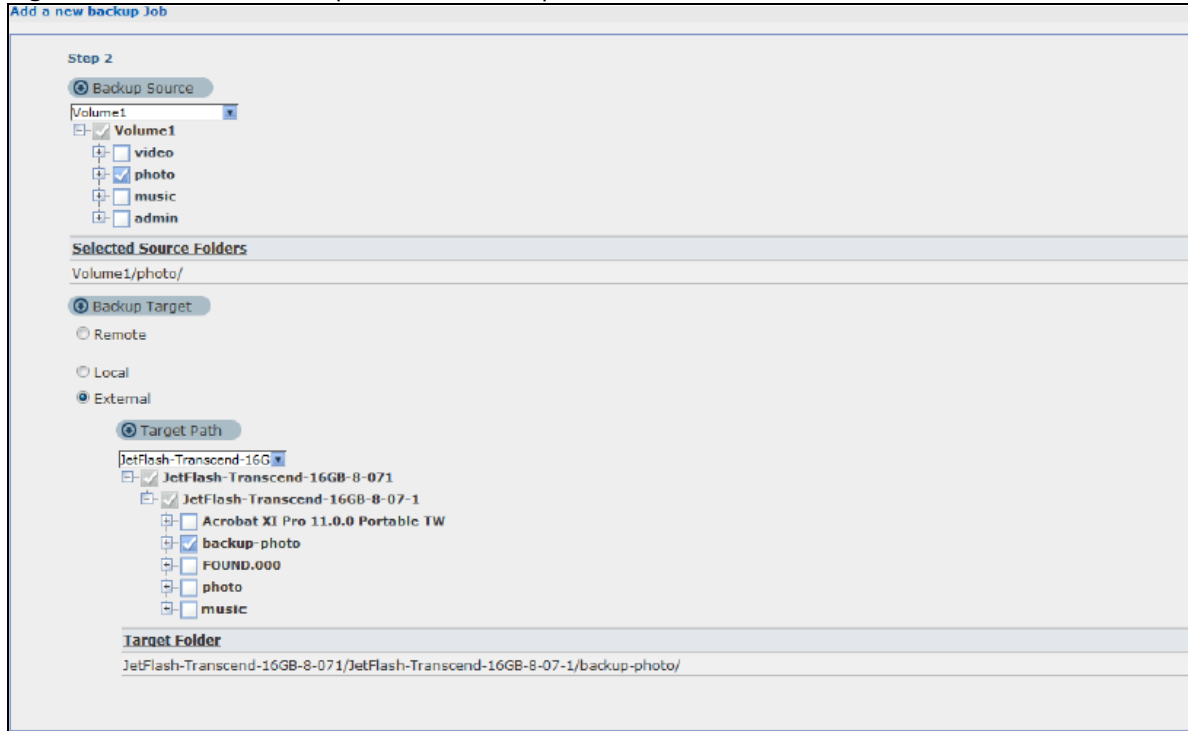
**Figure 98** Protect > Backup > Add Job: Step 1



- 2 Select the folder that needs to be mirrored (your **Photo** folder in this example) and **External**.

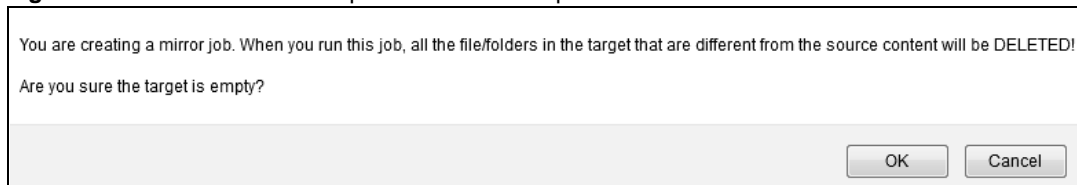
- Select the destination on the External (**Backup Photo** in this example).
- Click **Next**.

**Figure 99** Protect > Backup > Add Job: Step 2



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

**Figure 100** Protect > Backup > Add Job: Step 3



- 4 For this example, assume 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 101** Protect > Backup > Add Job: Step 3

Step 3

**Compression**

Yes

No

**Encryption**

Use Encrypted Connection

Yes

No

**Bandwidth**

256 KB/s (0 : No Limit)

**Purge Policy**

Keep All Old Backup files

Keep Only the last  backup files(1-30)

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

Previous Next

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

**Figure 102** Protect > Backup > Add Job: Step 4

Step 4

**Scheduler**

Backup Frequency: Daily

Start Time (hh:mm): 3:00

Every how many days? 1

Previous Done

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.

### 14.14.3 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:

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

**Figure 103** Protect > Backup

Backup

Add Job Edit Job Delete Selected Job(s) Execute Job Now **Restore Archive** Abort Job Activate Job Inactivate Job

Status	Job Name	Job Description	Backup Info
WAITING	Weekly_backup		Backup Type: Incremental Backup Source: /Volume1/ Backup Target: 192.168.3.2:Backups/



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

**Figure 104** Protect > Backup > Restore Archive: Step 1

**Restore**

**Step 1. Select Restore Point**

**Job Information**

Job Name:	Weekly_backup
Job Description:	
Backup Type:	incremental
Scheduler Information:	every week

Restored Time	
<input type="radio"/>	2008-09-08 14:35:45
<input checked="" type="radio"/>	2008-09-08 14:37:28

**Next**

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

**Figure 105** Protect > Backup > Restore Archive: Step 2

**Restore**

**Step 2. Please select which file(s)/folder(s) to restore.**

**Folder Chooser**

- /
- Gonzo

**Selected Folder**

Folder Name

/

**Previous** **Next**

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

**Figure 106** Protect > Backup > Restore Archive: Step 3

**Restore**

**Step 3. Set a restore target and start restoring**

Original Location  
 Other Location

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

**Figure 107** Protect > Backup > Restore Archive: Progress

**Progress**

Job Name : test  
 Target Path : original location [Volume: volume1]

Progress

100%

#### 14.14.4 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 108** Protect > Restore: Step 1

**Restore**

**Step 1. Select Restored Source**

Remote NSA  
 Internal or External Volume

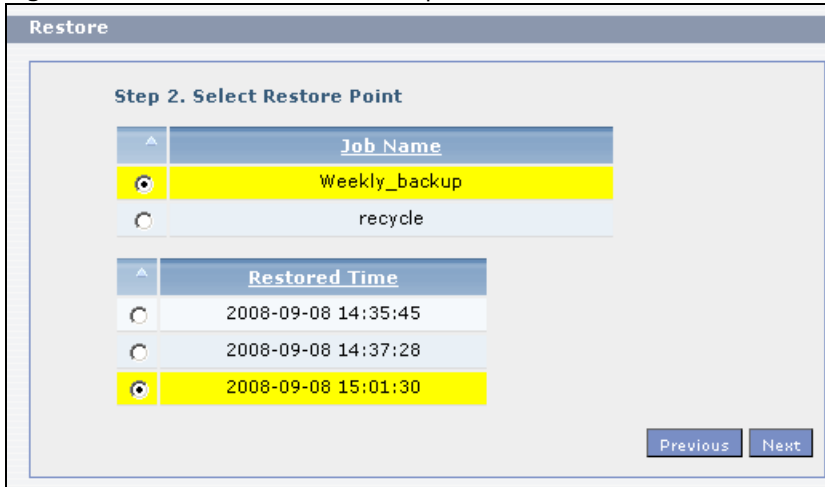
IP Address: 192.168.3.2  
 User: admin  
 Password:    
 Share Name: Backups

Successfully connected to the Remote NSA.

EXAMPLE

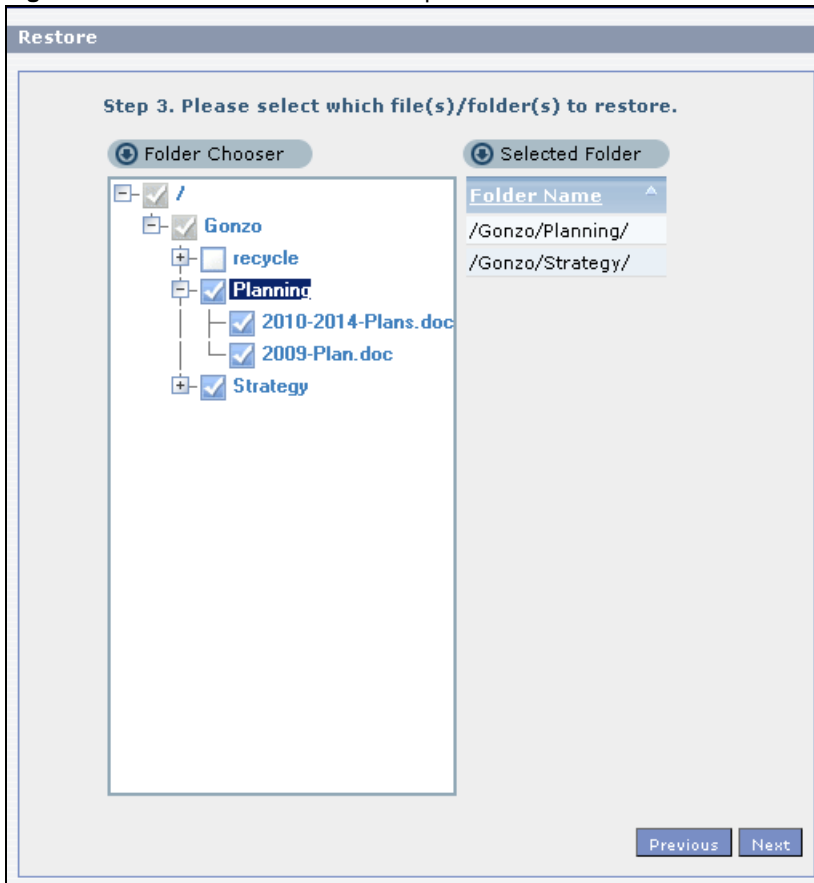
- 2 Select the backup job and backup time and click **Next**.

**Figure 109** Protect > Restore: Step 2



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

**Figure 110** Protect > Restore: Step 3



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

**Figure 111** Protect > Restore: Step 4

**Restore**

**Step 4. Set a restore target and start restoring**

Path for restoring

[Browse ...](#)

Please input encryption password if you have set to this backup job

[Previous](#) [Done](#)

- 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

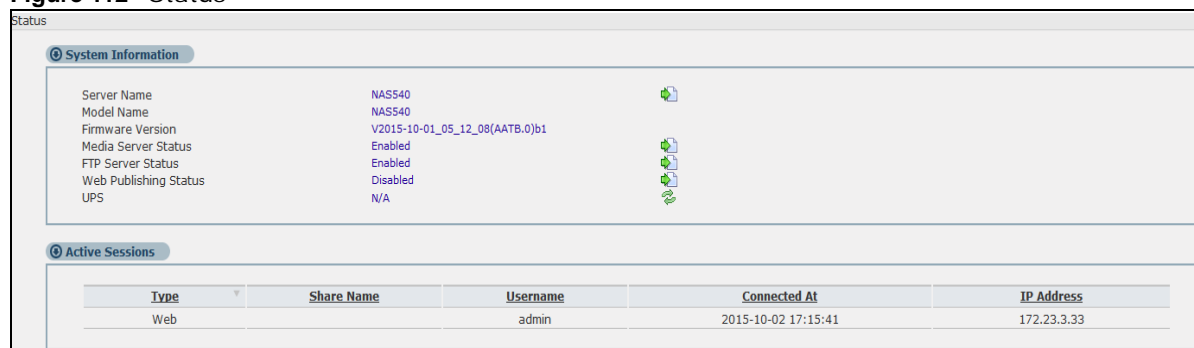
## 15.1 Overview

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

## 15.2 Status Screen

Click the **Administration** button in the **Desktop** screen ([Chapter 12 on page 139](#)) to open the Web Configurator. From within the Web Configurator screens, you can also click **Status** on the top-left of the navigation panel to display the status screen.

**Figure 112** Status



The following table describes the labels in this screen.

**Table 62** 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.

**Table 62** Status (continued)

LABEL	DESCRIPTION
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.
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

## 16.1 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.

## 16.2 What You Can Do

- Use the **Packages** screens ([Section 16.4 on page 207](#)) to upload new firmware and download and install applications from the web.
- Use the **Server Name** screen ([Section 16.5 on page 209](#)) to specify the NAS's server and workgroup names.
- Use the **Date/Time** screen ([Section 16.6 on page 210](#)) to set up date/time and choose a time zone for the NAS.

## 16.3 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 Gallery administrator account (default username admin, password 1234) to log into the Gallery console. There you can 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 WordPress administrator account (default username admin, password 1234) to log in. You 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, synchronize, and share files, photos, calendars, and more with computers and mobile devices.
- **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.

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.

## 16.4 Package Management Screen

Use this screen to download and install applications from the web. See [Chapter 18 on page 246](#) for more about the features you can add to the NAS by installing packages.

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

**Figure 113** System Setting > Packages


Status	Package Name	Requires	Version	Description	Management Page
Enabled	Gallery	PHP-MySQL-phpMyAdmin	3.0.9zypkg003	This web-based application allows your NAS to host pictures. Use the NAS administrator credentials to log in. The administrator can then create accounts for other users.	<a href="http://172.23.3.100:5000/pka/gallery/">http://172.23.3.100:5000/pka/gallery/</a> <a href="https://172.23.3.100:5001/pka/gallery/">https://172.23.3.100:5001/pka/gallery/</a>
Built-in	GoogleDriveClient		0.4.0zypkg002	This offers service of 2-way synchronization between NAS and Google Drive.	<a href="#">Applications &gt; GoogleDriveClient</a>
Enabled	Logitech® Media Server	PHP-MySQL-phpMyAdmin	7.7.4zypkg004	This enables you to manage a Logitech's Squeezebox device connected to the NAS.	<a href="http://172.23.3.100:9000">http://172.23.3.100:9000</a>
Built-in	Memopal		2.4.4zypkg004	Memopal is online backup and online storage software that archives your files in real-time to a remote server.	<a href="#">Applications &gt; Memopal</a>
Built-in	NFS		1.3.0zypkg003	NFS (Network File System) is a file-sharing protocol most commonly implemented on Unix-like systems.	<a href="#">Network &gt; NFS</a>
Enabled	NZBGet		15.0zypkg004	This package downloads .nzb file from Usenet. Default username:nzbget password:1234	<a href="http://172.23.3.100:6789/">http://172.23.3.100:6789/</a>
Enabled	PHP-MySQL-phpMyAdmin		1.0zypkg004	This tool can be used to manage MySQL through the web. Enter 'root' as the username and '1234' as the password to log in.	<a href="http://172.23.3.100:5000/pka/phpmyadmin/">http://172.23.3.100:5000/pka/phpmyadmin/</a> <a href="https://172.23.3.100:5001/pka/phpmyadmin/">https://172.23.3.100:5001/pka/phpmyadmin/</a>
Built-in	Tftp		0.7zypkg003	Trivial File Transfer Protocol (TFTP) is an Internet file transfer protocol that uses port number 69. It is similar to FTP but uses UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol). It cannot list directories nor authenticate users.	<a href="#">Applications &gt; TFTP Server</a>
Enabled	Transmission		2.84zypkg004	This package is another P2P download client which supports torrent and magnet.	<a href="http://172.23.3.100:9091">http://172.23.3.100:9091</a>
Enabled	WordPress	PHP-MySQL-phpMyAdmin	3.9.1zypkg003	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.	<a href="http://172.23.3.100:5000/pka/WordPress/">http://172.23.3.100:5000/pka/WordPress/</a> <a href="https://172.23.3.100:5001/pka/WordPress/">https://172.23.3.100:5001/pka/WordPress/</a>
Enabled	myZyXELcloud-Agent		1.0.0zypkg0821	myZyXELcloud, your solution for remote application management and securely access to your ZyXEL network devices accessory from anywhere that has an internet connection!	<a href="https://mycloud.zyxel.com">https://mycloud.zyxel.com</a>
Enabled	ownCloud	PHP-MySQL-phpMyAdmin	7.0.2zypkg003	This allows you to create and manage your private cloud.	<a href="http://172.23.3.100:5000/pka/ownCloud/">http://172.23.3.100:5000/pka/ownCloud/</a> <a href="https://172.23.3.100:5001/pka/ownCloud/">https://172.23.3.100:5001/pka/ownCloud/</a>
Built-in	pyLoad		0.4.9zypkg005	Have the NAS manage your downloads including those from one-click-hosting sites.	<a href="#">Applications &gt; pyLoad</a>

The following table describes the labels in this screen.

**Table 63** System Setting > Packages

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 16.4.1 on page 208</a> for more details.

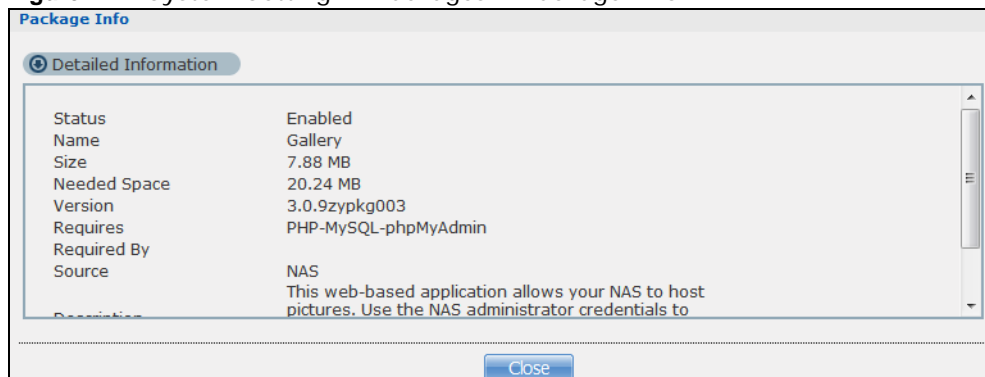
**Table 63** System Setting > Packages

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.

## 16.4.1 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 114** System Setting > Packages > Package Info

The following table describes the labels in this screen.

**Table 64** System Setting > Packages > 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.

## 16.5 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 115** System Setting > Server Name

System Setting - Server Name

**Server Identification**

Server Name:

Description:

Workgroup Name:

Prevent NAS From Being Master Browser

**Note:** Prevent NAS from being the Master Browser if computers on your network uses non-ascii character computer names.

The following table describes the labels in these screens.

**Table 65** 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.

## 16.6 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 116** System Setting > Date/Time

System Setting - Date/Time

**Current System Date Time Setting**

Current Time 13:51:21 +0800  
Current Date 2015-8-28

**Date Time Setup**

Manual

New Date (yyyy-mm-dd) 2015-8-28

New Time (hh:mm:ss) 13 : 50 : 49

Get from Time Server

Time Server Address time.stdtime.gov.tw

**Time Zone**

Time Zone (GMT+08:00) Krasnoyarsk

Auto Daylight Saving

Manual Daylight Saving

Start Date January First Monday at 12 : 0

End Date January First Monday at 12 : 0

Offset 1 hours

The following table describes the labels in this screen.

**Table 66** 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><b>Note:</b> 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	<p>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.</p>
Time Server Address	<p>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.</p>
Synchronize Now	<p>Click this for the NAS to retrieve the correct time from the configured time server right away.</p>
Time Zone	
Time Zone	<p>Choose the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).</p>
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 66** 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.



# Applications

## 17.1 Overview

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

## 17.2 What You Can Do

- Use the **FTP Server** screen ([Section 17.4 on page 215](#)) to configure settings for FTP file transfers to/from the NAS.
- Use the **Media Server** screens ([Section 17.5 on page 216](#)) to share files with media clients.
- Use the **iTunes Server** screens ([Section 17.6 on page 218](#)) to share files with iTunes users on your network.
- Use the **Download Service** screen ([Section 17.7 on page 219](#)) to download files from the Internet.
- Use the **Web Publishing** screen ([Section 17.8 on page 230](#)) to publish shares for people to access files using a web browser.
- Use the **Print Server** screen ([Section 17.9 on page 231](#)) to share a printer.
- Use the **Copy/Sync Button** screen ([Section 17.10 on page 232](#)) to transfer files between a USB device and the NAS.
- Use the **Auto Upload** screens ([Chapter 19 on page 262](#)) to upload files in selected shares to your Flickr and/or YouTube accounts.
- Use the **Syslog Server** screen ([Section 17.12 on page 243](#)) to configure the NAS to accept syslog logs from syslog clients.
- Use the **Dropbox** screen ([Chapter 20 on page 274](#)) to log the NAS into your Dropbox account.
- Use the **Time Machine** screen ([Chapter 21 on page 278](#)) to turn Time Machine support on or off, and designate the share for Time Machine backups.

## 17.3 What You Need to Know

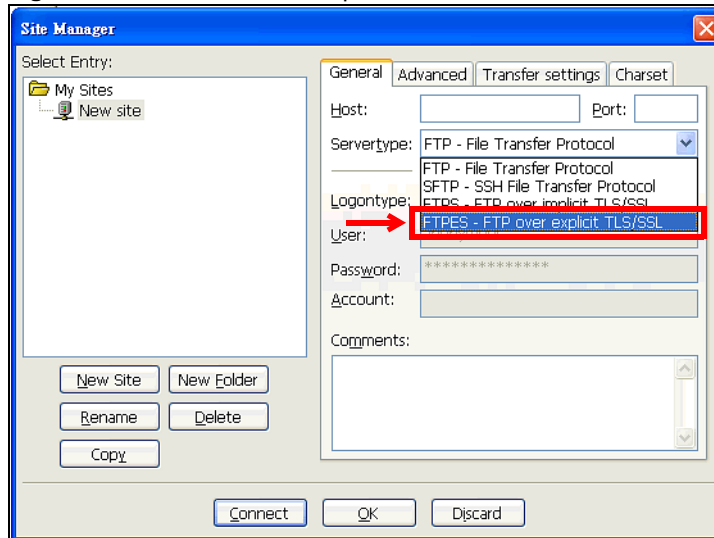
### FTP

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 117** 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.

## 17.4 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 Server** to open the following screen.

**Figure 118** Applications > FTP Server

Applications - FTP Server

**FTP**

Enable FTP

Connection Limit

Idle Timeout  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**

▼

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

The following table describes the labels in this screen.

**Table 67** Applications > FTP Server

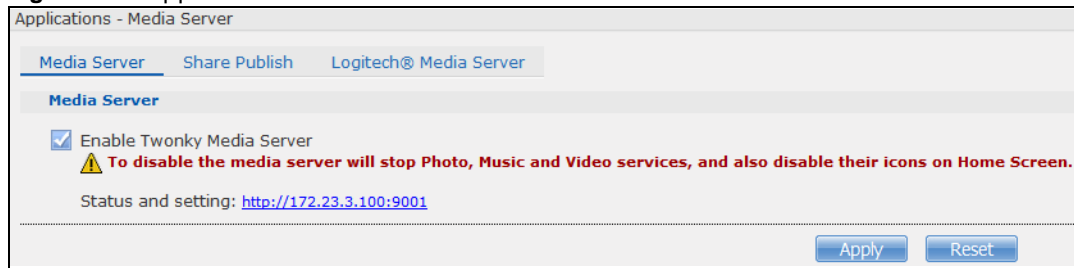
LABEL	DESCRIPTION
FTP	
Enable FTP	You can use FTP to send files to the NAS or get files from the NAS. Select this check box to allow users to connect to the NAS via FTP; otherwise clear the check box.
Connection Limit	Enter the maximum number of concurrent FTP connections allowed on the NAS in this field. 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.

## 17.5 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 119** Applications > Media Server > Media Server



The following table describes the labels in this screen.

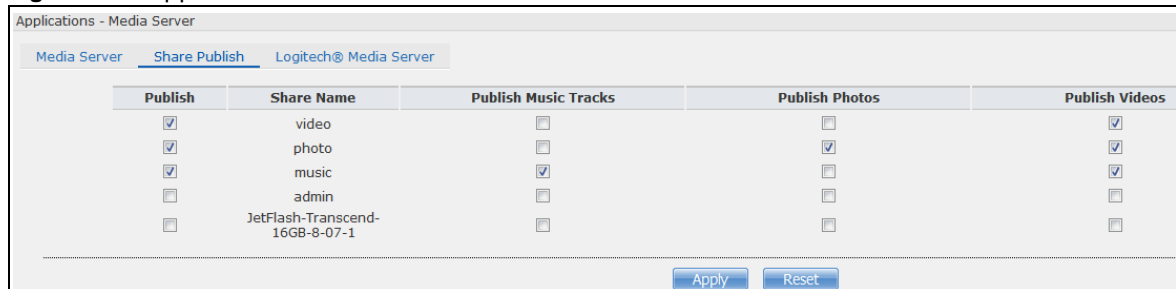
**Table 68** Applications > Media Server > Media Server

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.

## 17.5.1 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 120** Applications > Media Server > Share Publish



The following table describes the labels in this screen.

**Table 69** 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.
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.

**Table 69** Applications > Media Server > Share Publish

LABEL	DESCRIPTION
Apply	Click this to save your changes.
Reset	Click this to restore your previously saved settings.

## 17.5.2 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 17.5.2 on page 218](#)). Use this screen to turn the Logitech® Media Server application on or off.

**Figure 121** Applications > Media Server > Logitech® Media Server

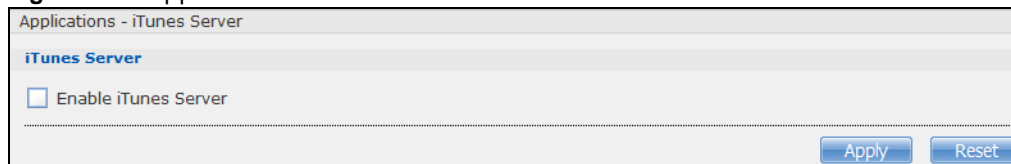
The following table describes the labels in this screen.

**Table 70** 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.

## 17.6 iTunes Server Screen

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

**Figure 122** Applications > iTunes Server

The following table describes the labels in this screen.

**Table 71** 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.

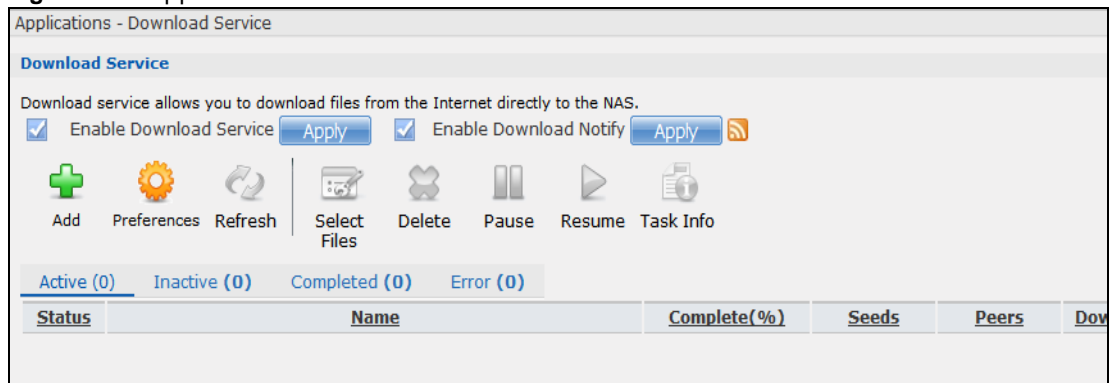
## 17.7 Download Service Screen

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 123** Applications > Download Service



The following table describes the labels in this screen.

**Table 72** 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 17.11.3 on page 236</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 72** 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	<p>Select an item on the list and click this to display information about the download task. See <a href="#">Section 17.7.6 on page 229</a> for more details.</p>
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 72** 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>

## 17.7.1 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 14.7 on page 162](#) provides a tutorial on adding a download task.


**Figure 124** Applications > Download Service > Add

The following table describes the labels in this screen.

**Table 73** 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><b>Note:</b> 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>

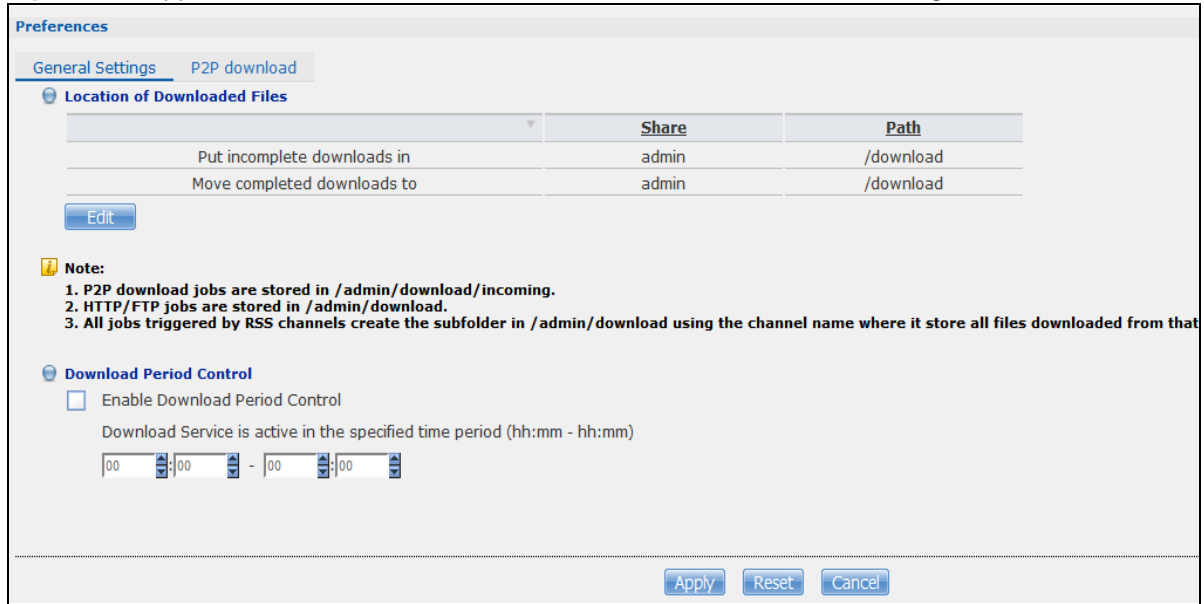
**Table 73** Applications > Download Service > Add (continued)

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> <div data-bbox="740 648 1240 957" 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 file's location.</li> </ul> <div data-bbox="560 1054 1422 1318" 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 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.

## 17.7.2 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 125** Applications > Download Service > Preferences > General Settings

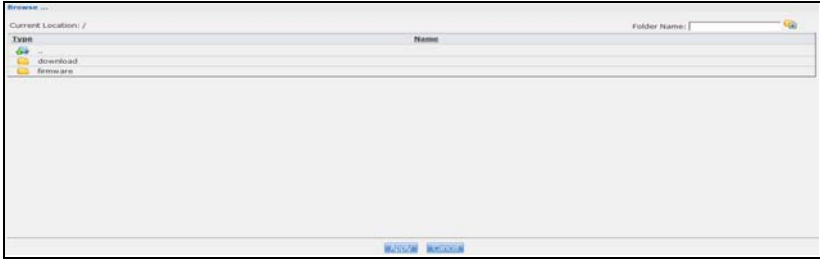



The following table describes the labels in this screen.

**Table 74** 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> <div data-bbox="706 1360 1274 1675" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Edit Location of Downloaded Files</b></p> <p><b>Put incomplete downloads in</b></p> <p>Share: <input type="text" value="admin"/> <span style="float: right;">▼</span></p> <p>Path: <input type="text" value="/download"/> <span style="float: right;">Browse ...</span></p> <p><b>Move completed downloads to</b></p> <p>Share: <input type="text" value="admin"/> <span style="float: right;">▼</span></p> <p>Path: <input type="text" value="/download"/> <span style="float: right;">Browse ...</span></p> <p><b>Note : All downloaded files will be stored here.</b></p> <p style="text-align: right;"><span>Apply</span> <span>Cancel</span></p> </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 file's location.</li> </ul>

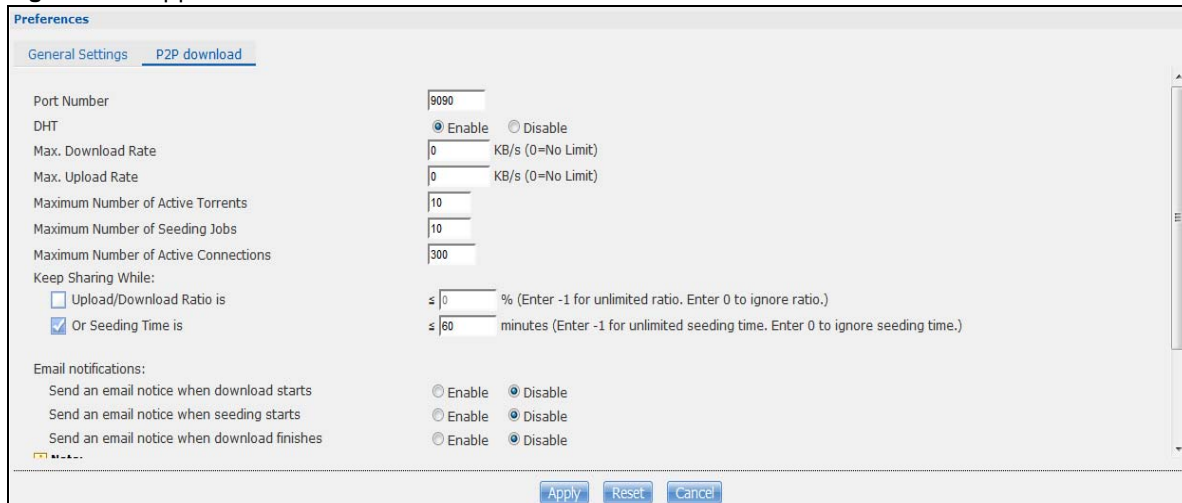
**Table 74** Applications > Download Service > Preferences > General Settings (continued)

LABEL	DESCRIPTION
	 <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	This feature sets the NAS to download files only within a specified time period.
Enable Download Period Control	Use the check box to turn the download period control on or off.
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.

### 17.7.3 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 126** Applications > Download Service > Preferences > P2P download



The following table describes the labels in this screen.

**Table 75** 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	Select <b>Enable</b> or <b>Disable</b> to use Distributed Hash Table (DHT) or not.  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.
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	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.  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.  Note: The settings for maximum download/upload rates would not affect peers accessing the NAS from the same LAN.
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.

**Table 75** Applications > Download Service > Preferences > P2P download (continued)

LABEL	DESCRIPTION
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	<p>Select whether or not to send emails to the email address configured for emailing log reports (see <a href="#">Section 26.4.2 on page 308</a>) when the NAS starts downloading the file, seeding the file, and/or finishes downloading the file.</p>
Edit IP Filter	<p>Click this to enable or disable IP filtering for P2P downloads.</p> <p>Refer to <a href="#">Section 17.7.4 on page 227</a> for information about the fields in this screen.</p>
Apply	<p>Click this to save your changes.</p>
Reset	<p>Click this to restore your previously saved settings.</p>
Cancel	<p>Click this to return to the previous screen without saving.</p>

## 17.7.4 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 127** Applications > Download Service > Preferences > P2P download > Edit IP Filter

**Edit IP Filter**

Enable IP Filter ( Last Update Time : N/A )

Update IP Filter Table File from the Internet Every Week  
URL

Upload IP Filter Table  
Browse... No file selected.

**Note:**  
Please upload your list( \*.txt, \*.dat, \*.gz, \*.tgz or \*.tar.gz ) here. It will be saved as /admin/download/ipfilter.dat.

The following table describes the labels in this screen.

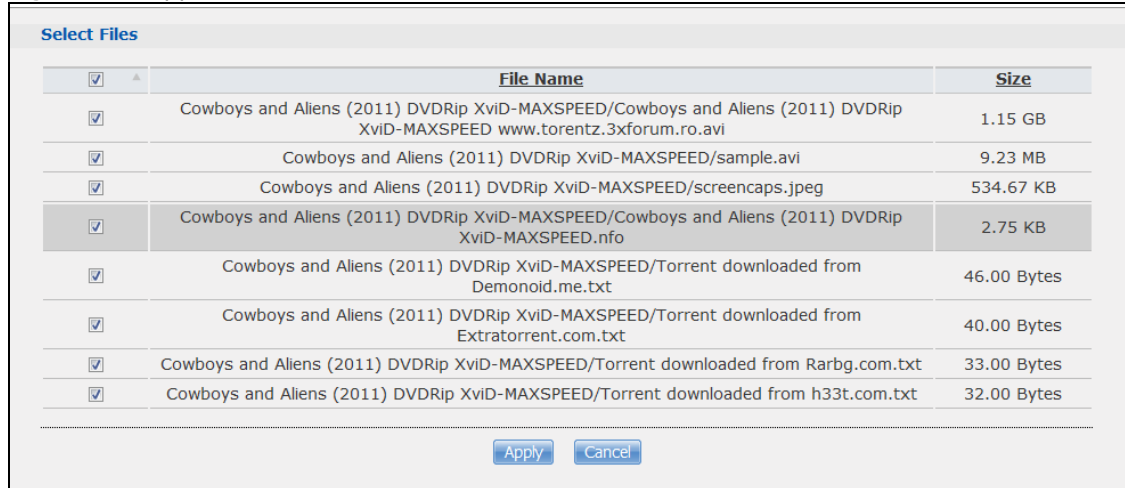
**Table 76** Applications > Download Service > Preferences > P2P download > Edit IP Filter

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.

## 17.7.5 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 14.7 on page 162](#) provides a tutorial on adding a download task.

**Figure 128** Applications > Download Service > Select Files



The following table describes the labels in this screen.

**Table 77** 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.

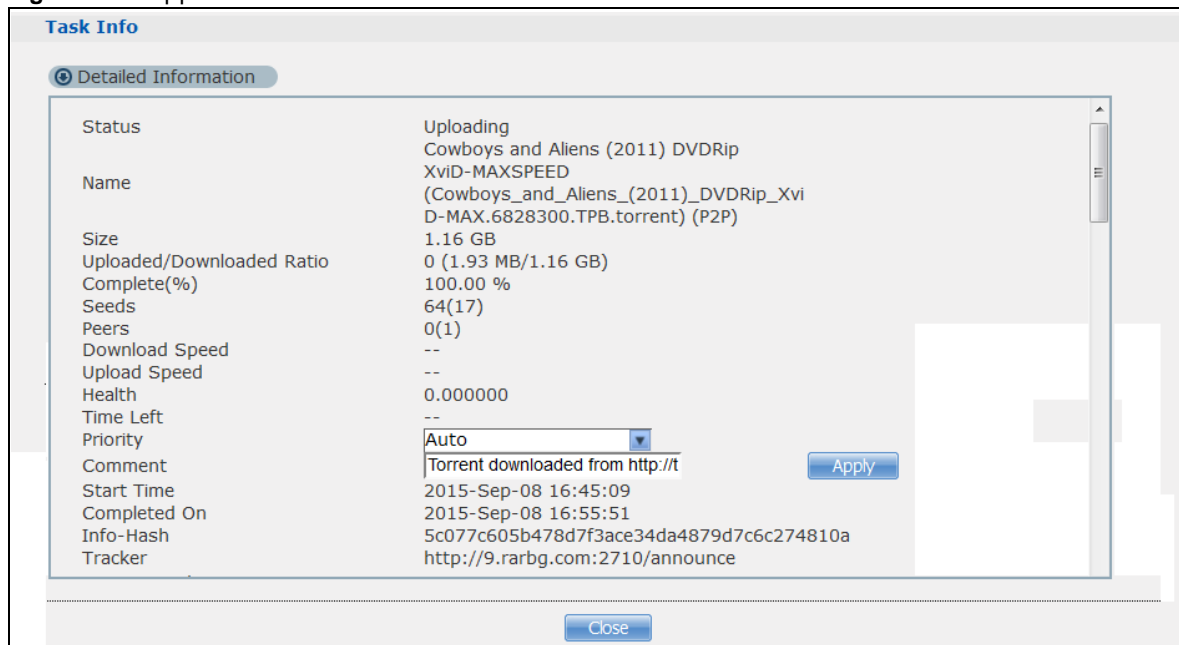


**Table 77** Applications > Download Service > Select Files (continued)

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

## 17.7.6 Displaying the Task Information

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

**Figure 129** Applications > Download Service > Task Info

The following table describes the labels in this screen.

**Table 78** Applications > Download Service > Task Info

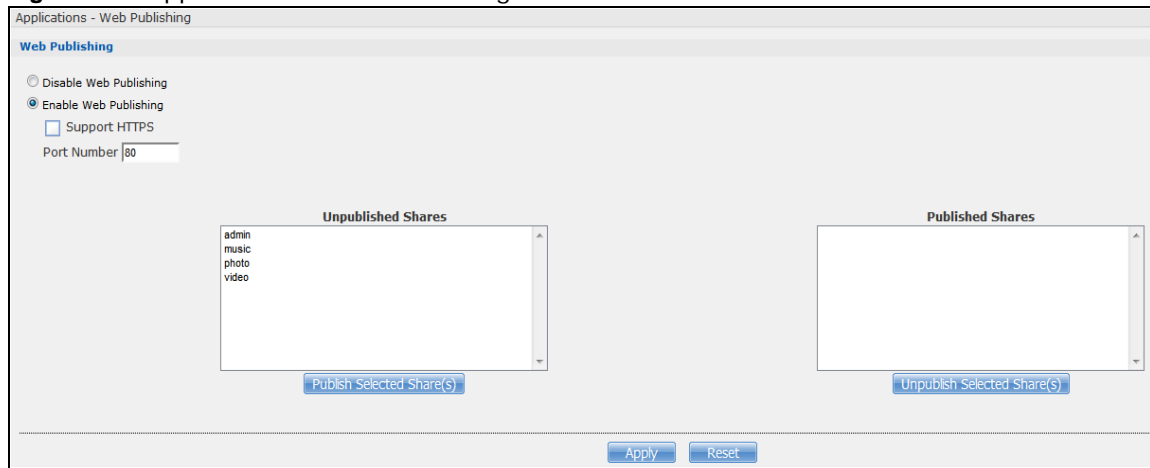
LABEL	DESCRIPTION
Status	This is the current status of the task.
Name	This is the name of the task.
Size	This is the size of the file to be downloaded.
Uploaded/ Downloaded Ratio	This is the ratio of total uploaded data to downloaded data.
Complete(%)	This field displays how much has been downloaded to the NAS.
Seeds	This is the number of computers that are sharing the complete file that you are downloading.
Peers	This is the number of other computers that are also downloading (and sharing) the file you are downloading.
Download Speed	This field displays how fast the NAS downloads the file.
Upload Speed	This field displays how fast the NAS uploads the file.

**Table 78** Applications > Download Service > Task Info (continued)

LABEL	DESCRIPTION
Health	This field displays how many full copies of the file are available for this task. The NAS can download a file with a higher health value more efficiently. If the health value is less than 1 (0.65 for example), there is no full copy of the file, and the NAS may not be able to complete downloading the file.
Time Left	This is the time remaining to complete the task.
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.

## 17.8 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 130** Applications > Web Publishing

The following table describes the labels in this screen.

**Table 79** 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.

**Table 79** Applications > Web Publishing (continued)

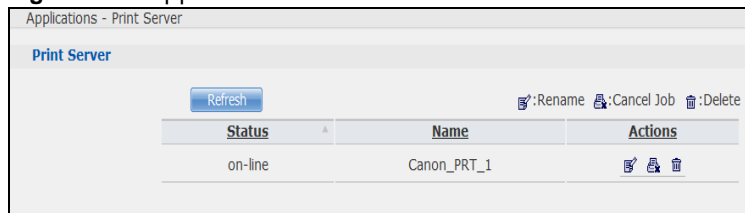
LABEL	DESCRIPTION
Support HTTPS	Select this to allow users to use web browser security for connections to the web-published shares. In order to use secured connections users must use "https://" in the NAS's web address and install the NAS's public key certificate.
Port Number	Specify a port number for 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 18.6 on page 251](#)) and enable it, you can use PHP and MySQL in your published web page.

## 17.9 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 131** Applications > Print Server

The following table describes the labels in this screen.

**Table 80** 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 80** Applications > Print Server (continued)

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>

## 17.9.1 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 132** Applications > Print Server > Rename

The following table describes the labels in this screen.

**Table 81** 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.

## 17.10 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 133** Applications > Copy/Sync Button

Applications - Copy/Sync Button

**Copy Settings**

Press and release the button to copy data between the USB storage and NAS copy target.

NAS Copy Target

USB Volume

Copy Direction

Create a New Folder for Copied Files

Backup Files to be Replaced

Backup Target

**Sync Settings**

Press and hold the button until you hear a beep to synchronize data between the USB storage and NAS sync target.

NAS Sync Target

USB Volume

Sync Direction

Backup Files to be Replaced or Removed

Backup Target

The following table describes the labels in this screen.

**Table 82** 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 82** Applications > Copy/Sync Button (continued)

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.

## 17.11 Technical Reference

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

### 17.11.1 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 [page 354](#) for the supported multimedia file formats.

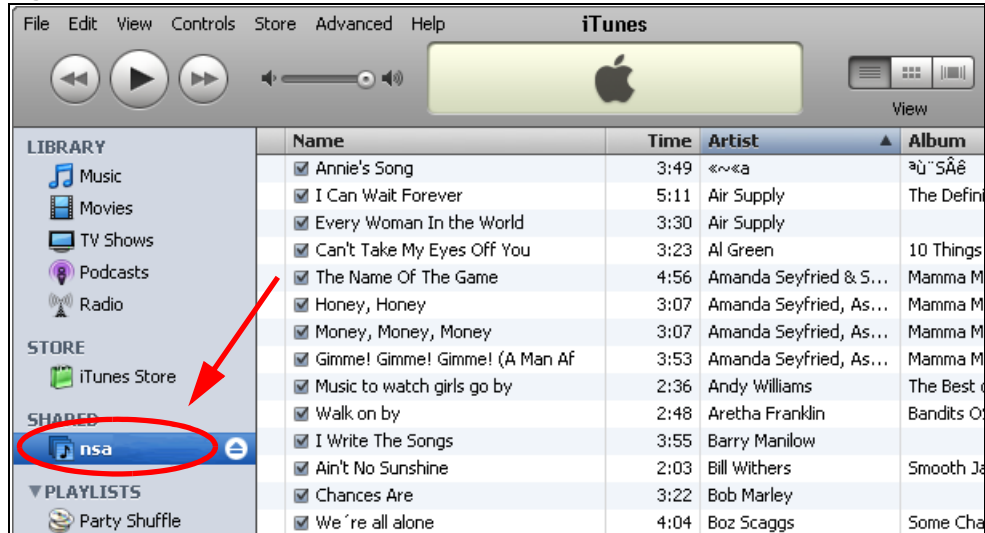
Note: Anyone on your network can play the media files in the published shares. No user name and password or other form of security is used. The media server is enabled by default with the video, photo, and music shares published.

#### 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 134 NAS link in iTunes



## 17.11.2 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.

### 17.11.3 Download Service Notification

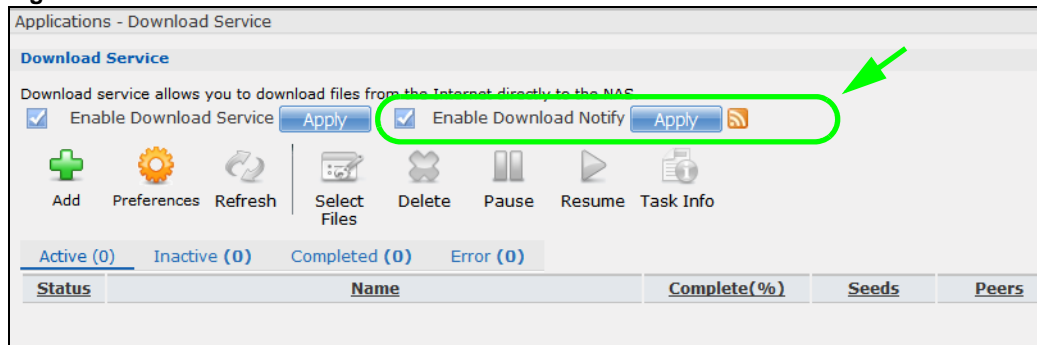
Use the download service notification to keep track of downloaded files on the NAS. You can subscribe to the NAS's download list on your computer. When the NAS finishes downloading new files, your RSS reader displays the information and links for the files. You can also download the files from the RSS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

See [Section 14.7.3 on page 168](#) 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 135** Download Service Notification



### 17.11.4 P2P Download Security

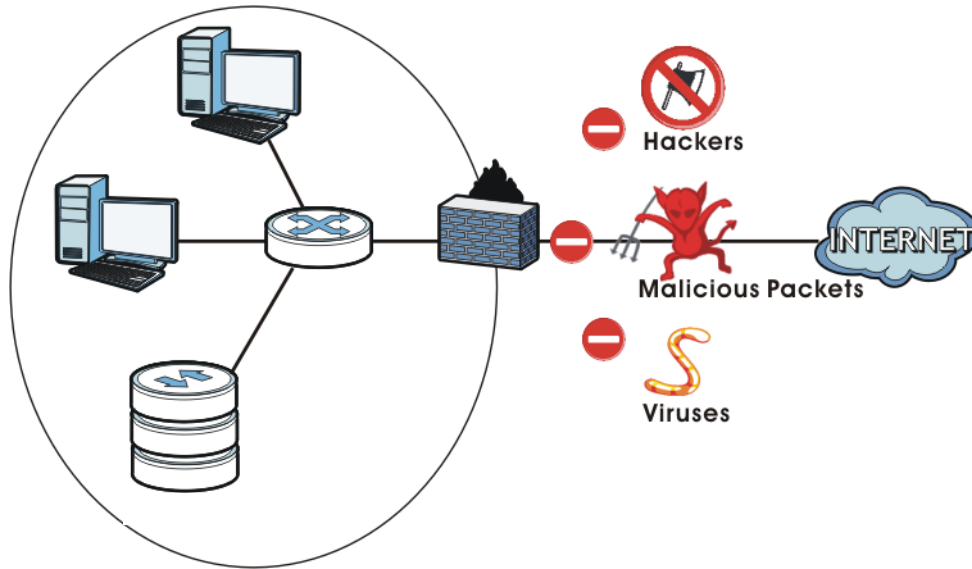
When you download using P2P, you reveal your IP address. This increases the risk of hacking attacks, which can be protected against by a good firewall.

#### 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 136 Firewall



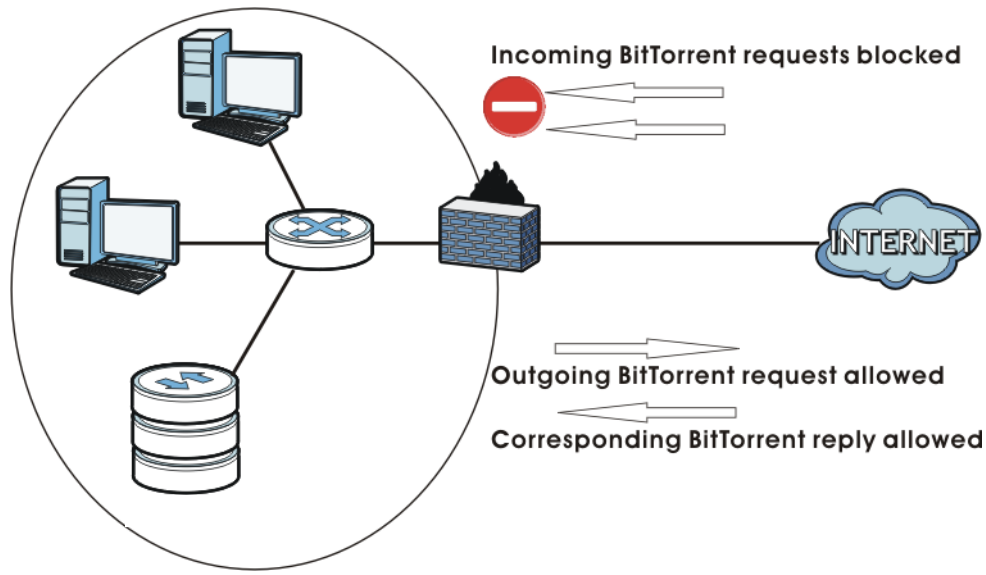
Ideally your firewall should have the following:

- 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.

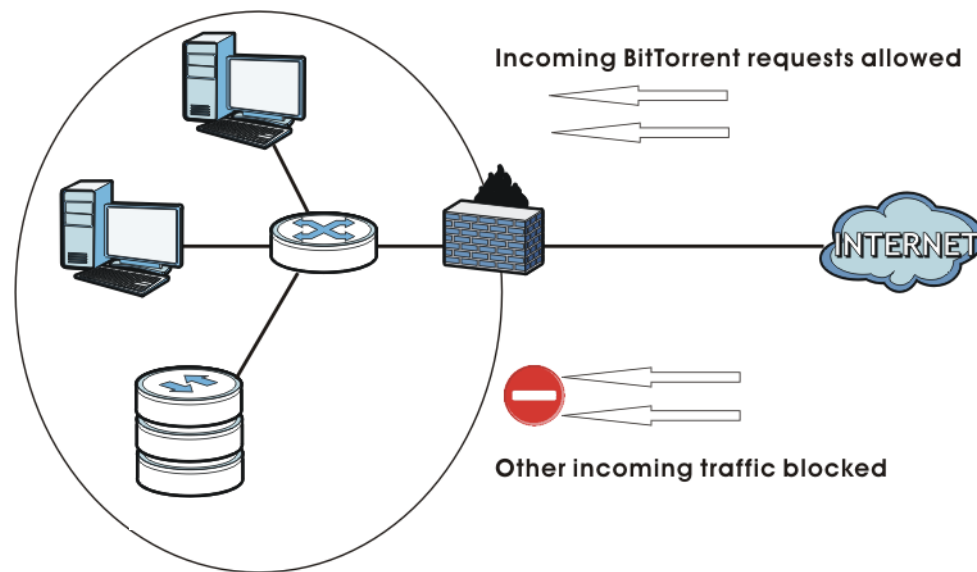
## P2P Download and Your Firewall

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 137** 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.

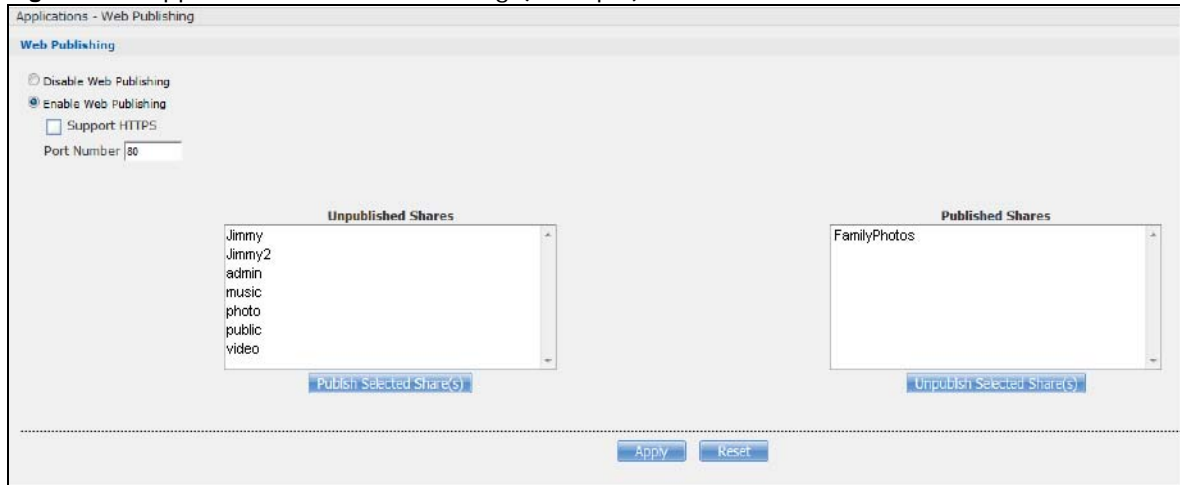
**Figure 138** Firewall Configured to Allow Incoming P2P Download Requests

### 17.11.5 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.

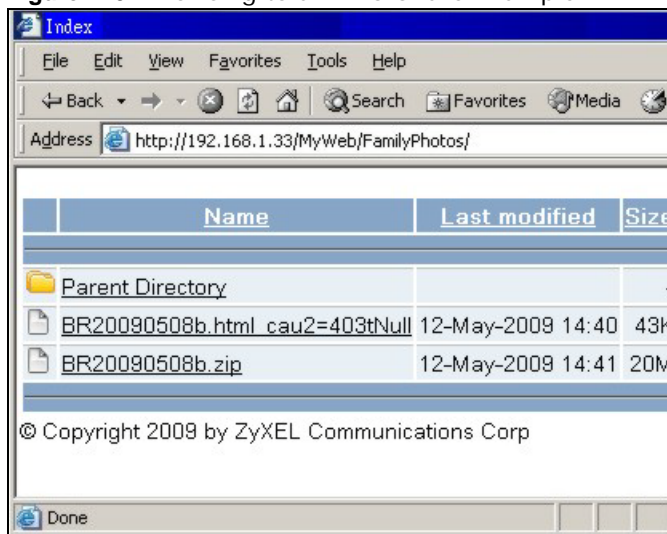
- 1 Click **Applications > Web Publishing** and configure the screen as shown (enable the web publishing and move **FamilyPhotos** over to **Published Shares**) and click **Apply**.

**Figure 139** 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 140** 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.

## 17.11.6 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 236](#) 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.

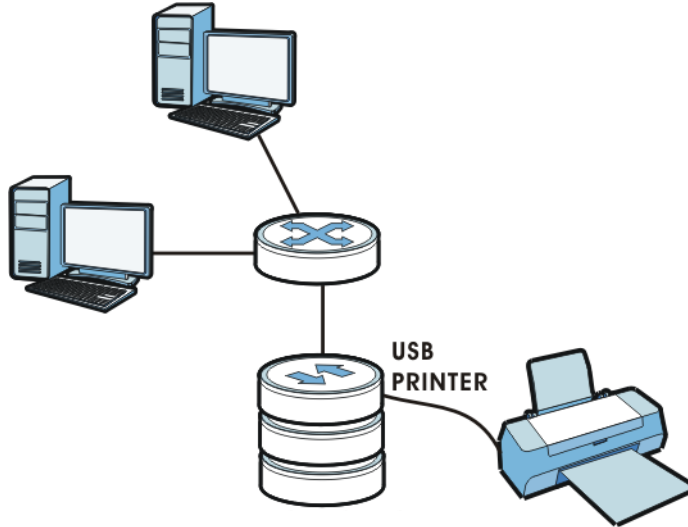
### Web Publishing Port Number

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.

## 17.11.7 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 141** Printer Sharing

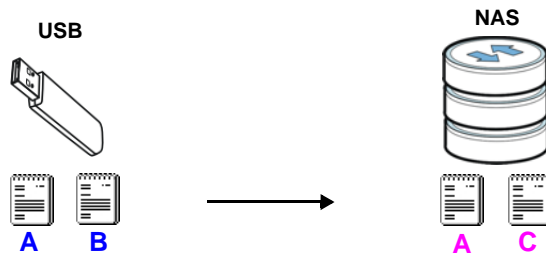
### 17.11.8 Copying Files

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 17.10 on page 232](#) 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 142** 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.

## 17.11.9 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 17.10 on page 232](#) for details about configuring the synchronization settings.

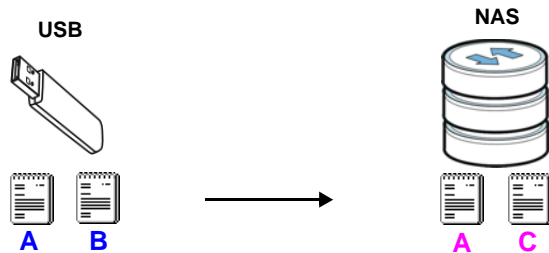
### USB -> NAS or USB <- NAS

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 143** 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.

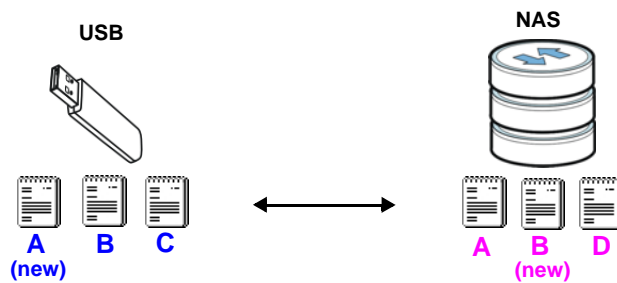
## USB <-> NAS

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.

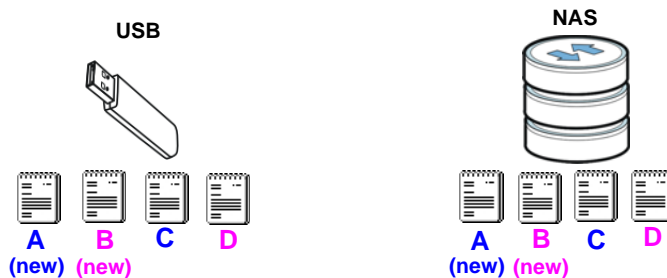
The following figure illustrates how synchronization works when you synchronize files in both directions simultaneously.

**Figure 144** 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.

## 17.12 Syslog Server Screen

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

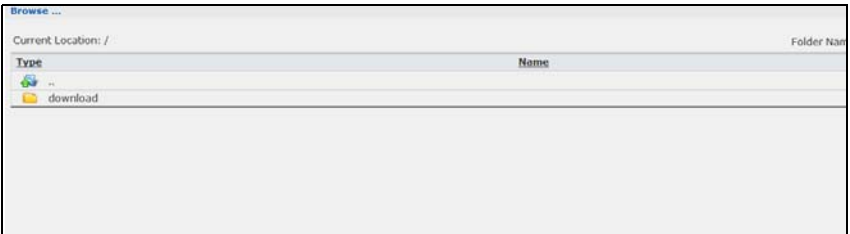
Note: You may need to configure any firewalls between the NAS and the syslog clients in order to let the syslog traffic go to the NAS.

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

**Figure 145** Applications > Syslog Server

The following table describes the labels in this screen.

**Table 83** 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	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.  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.
Purge Policy	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.  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.



**Table 83** Applications > Syslog Server (continued)

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

## 18.1 Overview

This chapter describes screens for features you can add to the NAS by installing packages. See [Section 16.4 on page 207](#) for how to manage packages.

## 18.2 What You Can Do

- Use the **NFS** screen ([Section 18.3 on page 247](#)) to configure the Network File System (NFS) settings of your NAS.
- Use the **TFTP Server** screen ([Section 18.4 on page 250](#)) to configure the NAS to accept log files from TFTP clients.
- Use the **pyLoad** screen ([Section 18.5 on page 251](#)) to configure the NAS so you can have it manage your downloads including those from one-click hosting sites.
- Use **ownCloud** ([Section 18.6 on page 251](#)) to store, synchronize, and share files, photos, calendars, and more with computers and mobile devices using an ownCloud client.
- Use **Memopal** ([Section 18.7 on page 254](#)) to back up files on the NAS to your Memopal online backup and storage account.
- Use the **GoogleDriveClient** screens ([Section 18.8 on page 256](#)) to synchronize local NAS shares or folders and Google Drive accounts.

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 Gallery administrator account (default username admin, password 1234) to log into the Gallery console. There you can create accounts for other users.
- Use **Logitech® Media Server** ([Section 17.5.2 on page 218](#)) 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 WordPress administrator account (default username admin, password 1234) to log in. You 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.

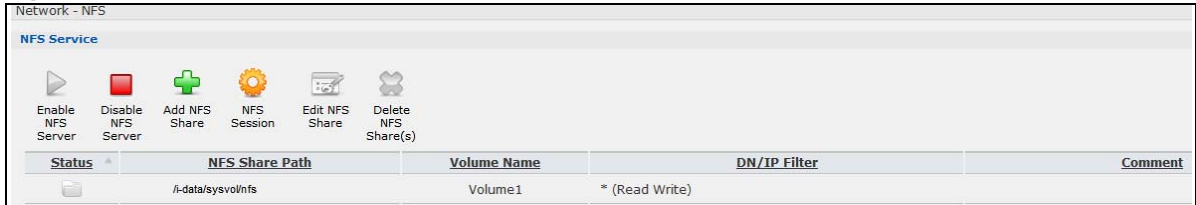
## 18.3 NFS Screen

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 146** Network > NFS



The following table describes the labels in this screen.

**Table 84** 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 18.3.1 on page 248</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 18.3.2 on page 249</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 18.3.1 on page 248</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 18.3.1 on page 248</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 147** Delete an NFS Share

### 18.3.1 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 148** Network > NFS: Add/Edit

Add NFS Share

Volume Name: Volume1 ( 3.58 TB )

NFS Share Name: \*

Full Path: \*

Comment:

DN/IP Filter: Read Only

Add

**Note:**  
You can input a domain name or IP in the filter. "\*" character represent public. Ex: 172.23.26.0/24 or \*.zyxel.com.tw

Apply Cancel

The following table describes the labels in this screen.

**Table 85** 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.

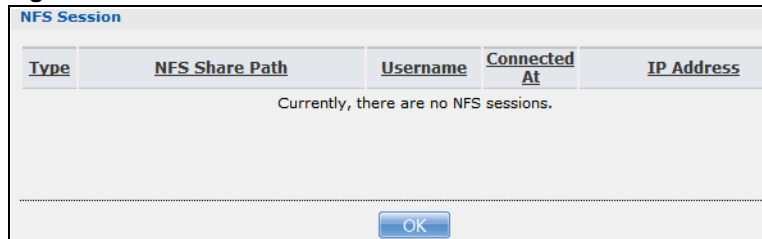
**Table 85** Network > NFS: Add/Edit (continued)

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> <p>Note: NFS v4 supports <b>Read/Write</b> only, and NFS v3 supports both <b>Read Only</b> and <b>Read/Write</b>.</p>
Apply	Click this to save your changes.
Cancel	Click this to return to the previous screen without saving.

## 18.3.2 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 149** Network > NFS: NFS Session

The following table describes the labels in this screen.

**Table 86** 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.

## 18.4 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.

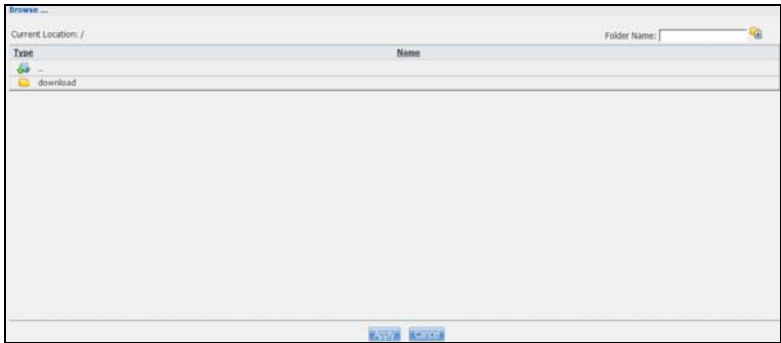
Note: You may need to configure any firewalls between the NAS and the TFTP clients in order to let the log files go to the NAS.

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

**Figure 150** Applications > TFTP Server

The following table describes the labels in this screen.

**Table 87** 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.

## 18.5 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 151** Applications > pyLoad

The following table describes the labels in this screen.

**Table 88** Applications > pyLoad

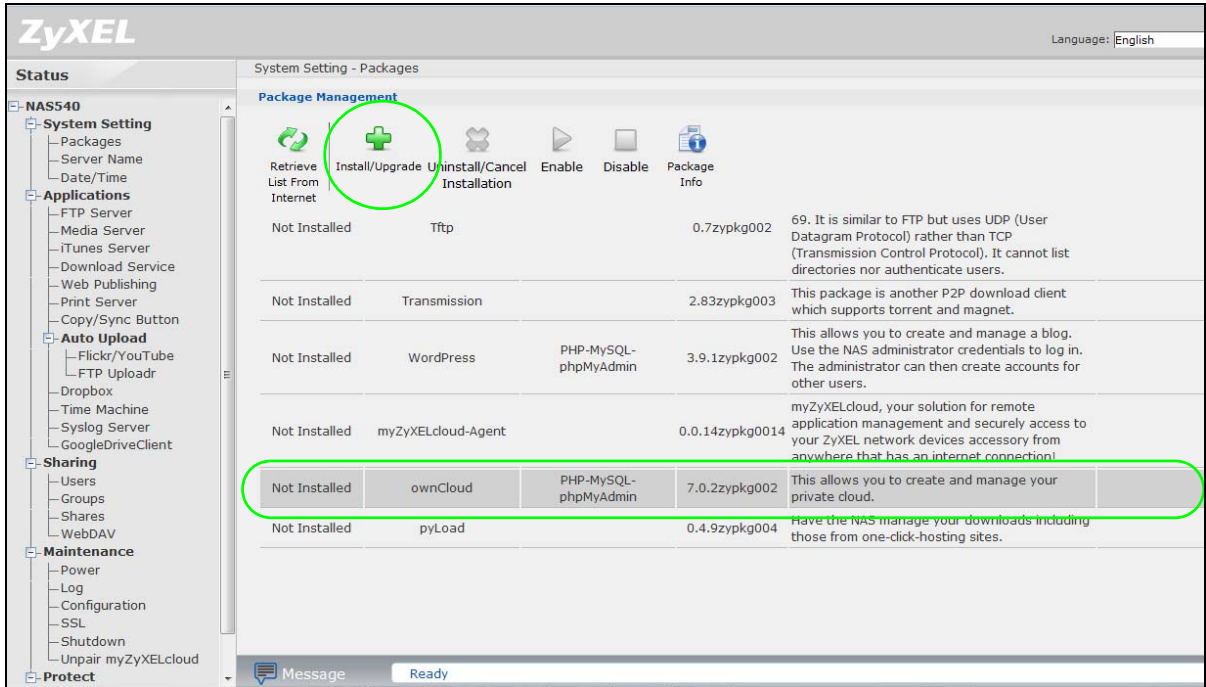
LABEL	DESCRIPTION
Enable pyLoad	Select this to have the NAS manage your downloads. Clear it to turn the feature off.
Management Page	This is the IP address and port number of the NAS's pyLoad management login screen. The pyLoad management login screen uses the NAS's IPv4 address and the port number you 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.

## 18.6 ownCloud Setup

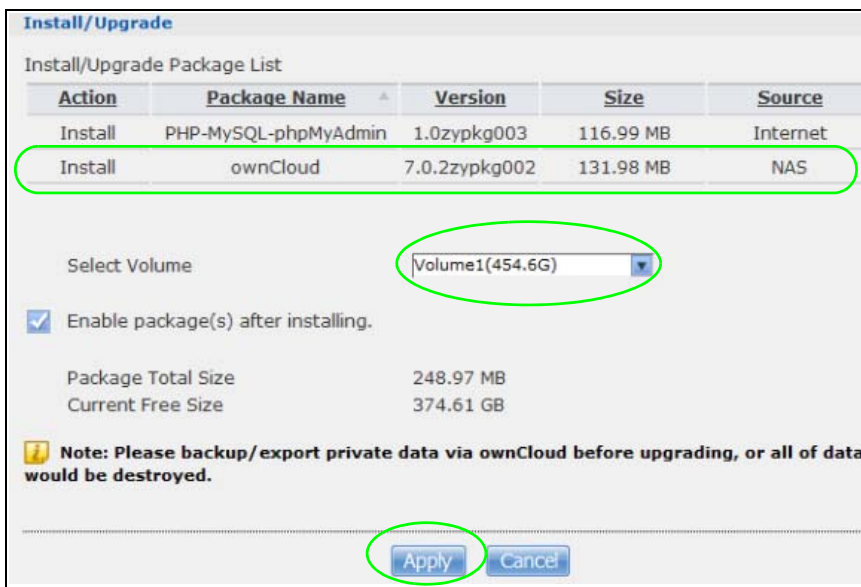
Use the **Package Management** screen to install the ownCloud package. Use ownCloud to store, synchronize, and share files, photos, calendars, and more with computers and mobile devices. Use the following procedure to install the ownCloud package.

- 1 Click **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.



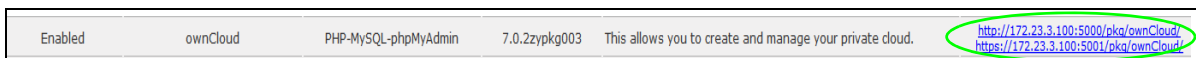
- The following confirmation screen appears. Select the volume in which to install ownCloud and store ownCloud data and click **Apply**. The NAS must have a connection to the Internet to download the package.



- The installation progress appears in the ownCloud row.

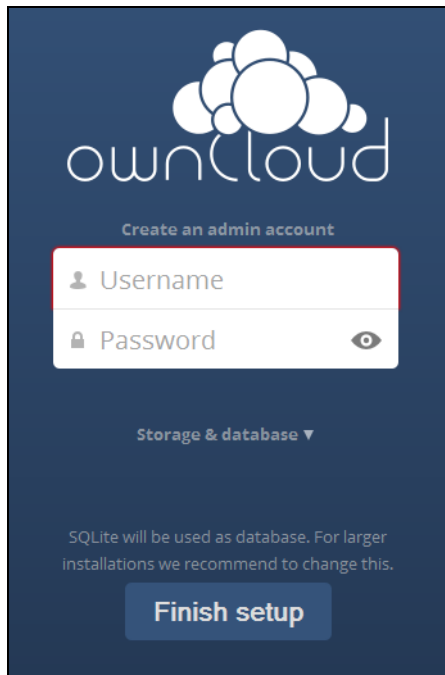


- A link appears in the **Management Page** column after installation finishes. Click this link.

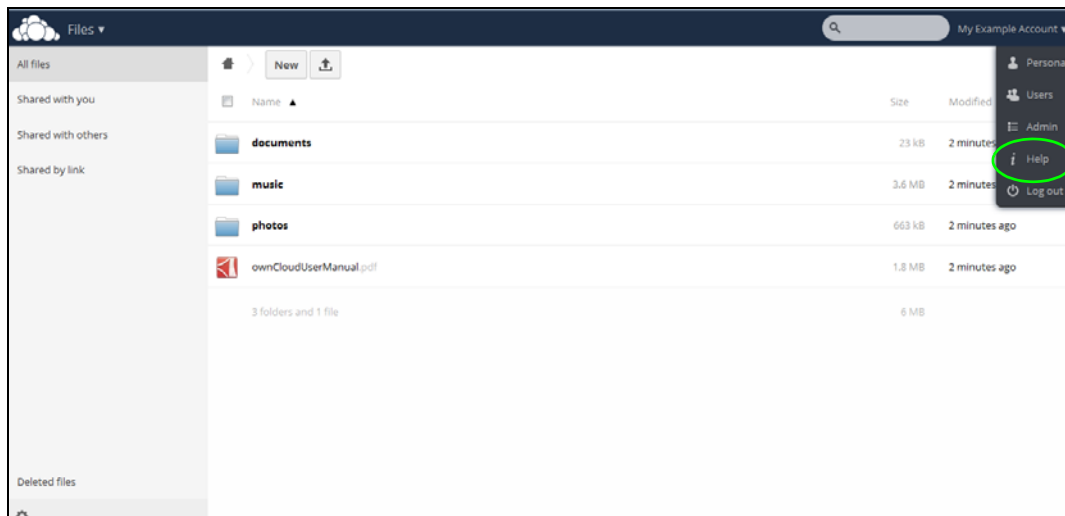




- The ownCloud login screen appears. Create an administrator user name and password and click **Finish Setup**.



- 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.

## 18.7 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 152** Applications > Memopal

Applications - Memopal

**Status**

Status	Disabled
To Backup	--
Backed up	--
Failures	--
Upload Speed	--
Progress	--

**Note:**  
Size limitation of single file is 1GB.

**Settings**

Enable Memopal

**General Setting**

Email

Password

Limit File Size  MB

**Schedule Setting**

Enable Schedule

Weekly  hours

Daily  minutes

Hourly

**Backup Folder Setting**

Share Name	Path	Actions

Share

Path

**Note:**  
You must click "Apply" button to finish Backup Folder Setting.

The following table describes the labels in this screen.

**Table 89** Applications > Memopal

LABEL	DESCRIPTION
Status	This shows the status of the Memopal application's interaction with the Memopal server. <b>Disabled:</b> The NAS Memopal application is turned off. <b>Starting:</b> The backup job is initializing and the NAS is getting ready to back up. <b>Running:</b> The backup job is executing. <b>Stopped:</b> The backup job is stopped. This may be due to a network error, remote server error, or other issue. <b>Completed:</b> The backup job finished.
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 89** 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.

## 18.8 GoogleDriveClient

Use GoogleDriveClient 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.

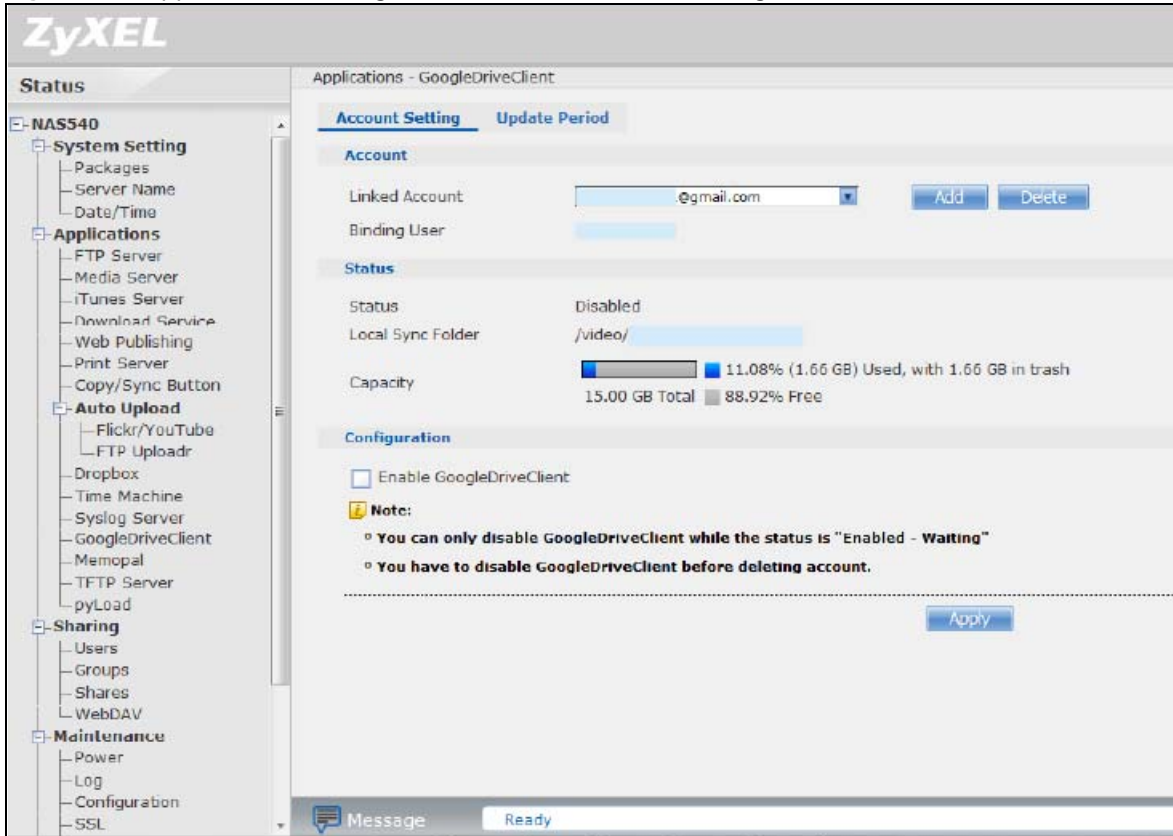
- Modifying or deleting a file or folder at either end modifies or deletes it at the other end.
- Moving a file out of the local sync folder or Google Drive deletes it at the other end.
- Use the **Protect** screens instead of Google Drive for backups (see [Chapter 27 on page 321](#)).
- You can link 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.

### 18.8.1 Account Setting Screen

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

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

Figure 153 Applications &gt; GoogleDriveClient &gt; Account Setting



The following table describes the labels in this screen.

Table 90 Applications &gt; GoogleDriveClient &gt; 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> <div data-bbox="630 1430 1377 1541" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Do you want to delete data in "/public/LOCAL SYNC"?</p> <hr style="width: 80%; margin: 0 auto;"/> <p style="text-align: center;"> <input type="button" value="Yes"/> <input type="button" value="No"/> <input type="button" value="Cancel"/> </p> </div> <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.

**Table 90** Applications > GoogleDriveClient > Account Setting (continued)

LABEL	DESCRIPTION
Status	The current status of the GoogleDrive feature for the selected Google account. <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	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.  Clear this option to disable synchronizing the selected linked account's local sync folder and Google Drive storage.
Apply	Click this to save your changes.

## 18.8.2 Account Setting Add Screen

Use the **Account Setting Add** screen to link an NAS user account and a Google account. Click **Applications > GoogleDriveClient > 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 154** Applications > GoogleDriveClient > Account Setting > Add

The screenshot shows a multi-step configuration interface for linking a Google account to the NAS. It is divided into three main sections:

- Step 1 - Set A Local Sync Folder:** Contains a table with columns 'Share Name' and 'Path'. Below the table, it states 'There is currently no local sync folder.' and includes an 'Edit' button.
- Step 2 - Select A User To Bind With Google Account:** Features a dropdown menu with 'admin' selected. Below it is a 'Note' icon and text: 'Please make sure that the user has enough quota.'
- Step 3 - Authorization:** Contains three sub-steps:
  - Step 3-1:** A link to 'Click here to get the authorization code from Google'.
  - Step 3-2:** A text prompt 'Enter the authorization code below' followed by an empty input field with a red asterisk on the right.
  - Step 3-3:** A text prompt 'Press Apply and authorization is done'.

At the bottom of the screen are 'Apply' and 'Cancel' buttons.

The following table describes the labels in this screen.

**Table 91** Applications > GoogleDriveClient > 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="672 625 1328 814" 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 91** Applications > GoogleDriveClient > Account Setting > Add (continued)

LABEL	DESCRIPTION
<p>Step 3</p>	<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="776 367 1219 823" style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> </div> <p>The NAS GoogleDriveClient 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="711 921 1292 1537" style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p>Third party icon <b>grive</b> ▾</p> <p>This app would like to:</p> <ul style="list-style-type: none"> <li> View your email address <span style="float: right;"></span></li> <li> View basic information about your account <span style="float: right;"></span></li> <li> View and manage your spreadsheets in Google Drive <span style="float: right;"></span></li> <li> View and manage any of your documents and files in Google Drive <span style="float: right;"></span></li> </ul> <p style="font-size: small; text-align: center;">grive and Google will use this information in accordance with their respective terms of service and privacy policies.</p> <p style="text-align: right;"> <input type="button" value="Cancel"/> <input type="button" value="Accept"/> </p> </div> <p>Copy the code and paste it into the field in the Web Configurator screen.</p> <div data-bbox="740 1623 1261 1698" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="font-size: x-small;">Please copy this code, switch to your application and paste it there:  4/PWAf8R6gGdiI4V54G7c_2UqaMB8.0jWhoTq2Li</p> </div> <p>Click <b>Apply</b> to have the NAS connect to Google and complete the authorization.</p> <p>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 91** Applications > GoogleDriveClient > 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.

### 18.8.3 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 > GoogleDriveClient > Update Period** to open the following screen.

**Figure 155** Applications > GoogleDriveClient > Update Period

The following table describes the labels in this screen.

**Table 92** Applications > GoogleDriveClient > 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.

# Auto Upload

## 19.1 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.

## 19.2 What You Can Do

- Use the **Flickr/YouTube** screen ([Section 19.4 on page 262](#)) to upload photos and videos to your Flickr and YouTube accounts.
- Use the **FTP Uploadr** screen ([Section 19.5 on page 270](#)) to upload files to FTP servers.

## 19.3 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.

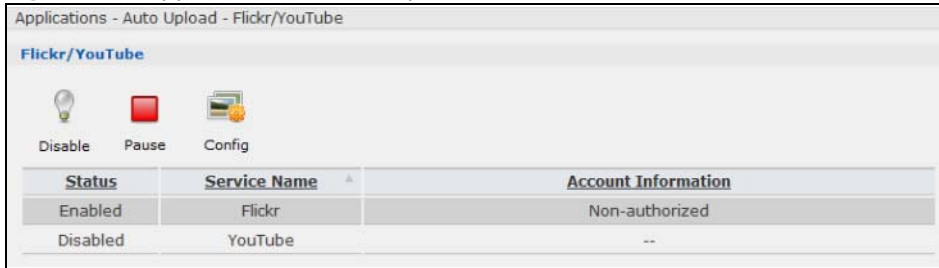
### FTPES (File Transfer Protocol over Explicit TLS/SSL)

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.

## 19.4 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 156** Applications > Auto Upload > Flickr/YouTube

The following table describes the labels in this screen.

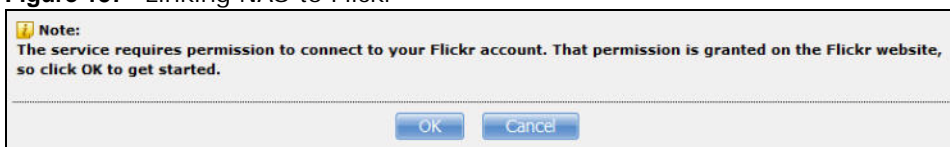
**Table 93** Applications > Auto Upload > Flickr/YouTube

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, Disabled, Uploading or 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.

## 19.4.1 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 157** Linking NAS to Flickr

The web browser opens the Yahoo! Flickr login page. Enter your Yahoo account's information and click **Sign In**.

Figure 158 Yahoo! Flickr Login Page

YAHOO! flickr Yahoo! - Help

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. free2rhyme@yahoo.com)

Password:

**Keep me signed in**  
 for 2 weeks unless I sign out. [Info](#)  
[Uncheck if on a shared computer]

[Forget your ID or password? | Help](#)

**Don't have a Yahoo! ID?**  
 Signing up is easy. [Sign Up](#)

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 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 159 Flickr Authorization

flickr Signed in as pink

Home You Organize Contacts Groups Explore

**ZyXEL NSA wants to link to your Flickr account.**  
You should not authorize ZyXEL NSA unless you trust them with access to your account.

By authorizing this link, you'll allow the ZyXEL NSA service to provide:

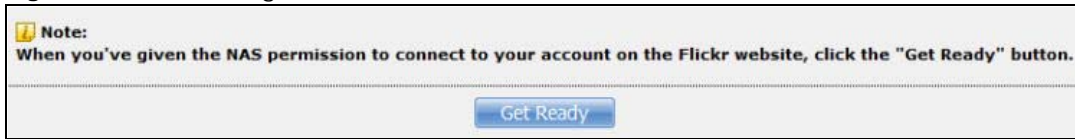
- **Access** to your photostream (including private stuff)
- **Editing** of your photo or video information via ZyXEL NSA
- **Uploads** to your Flickr account via ZyXEL NSA

**What's going on here?**  
 Flickr encourages other developers to build cool tools for you to play with, but you must authorize these third parties to access your account.

**Want to know more?**  
 A wealth of information lies within the [Flickr Services](#) page.

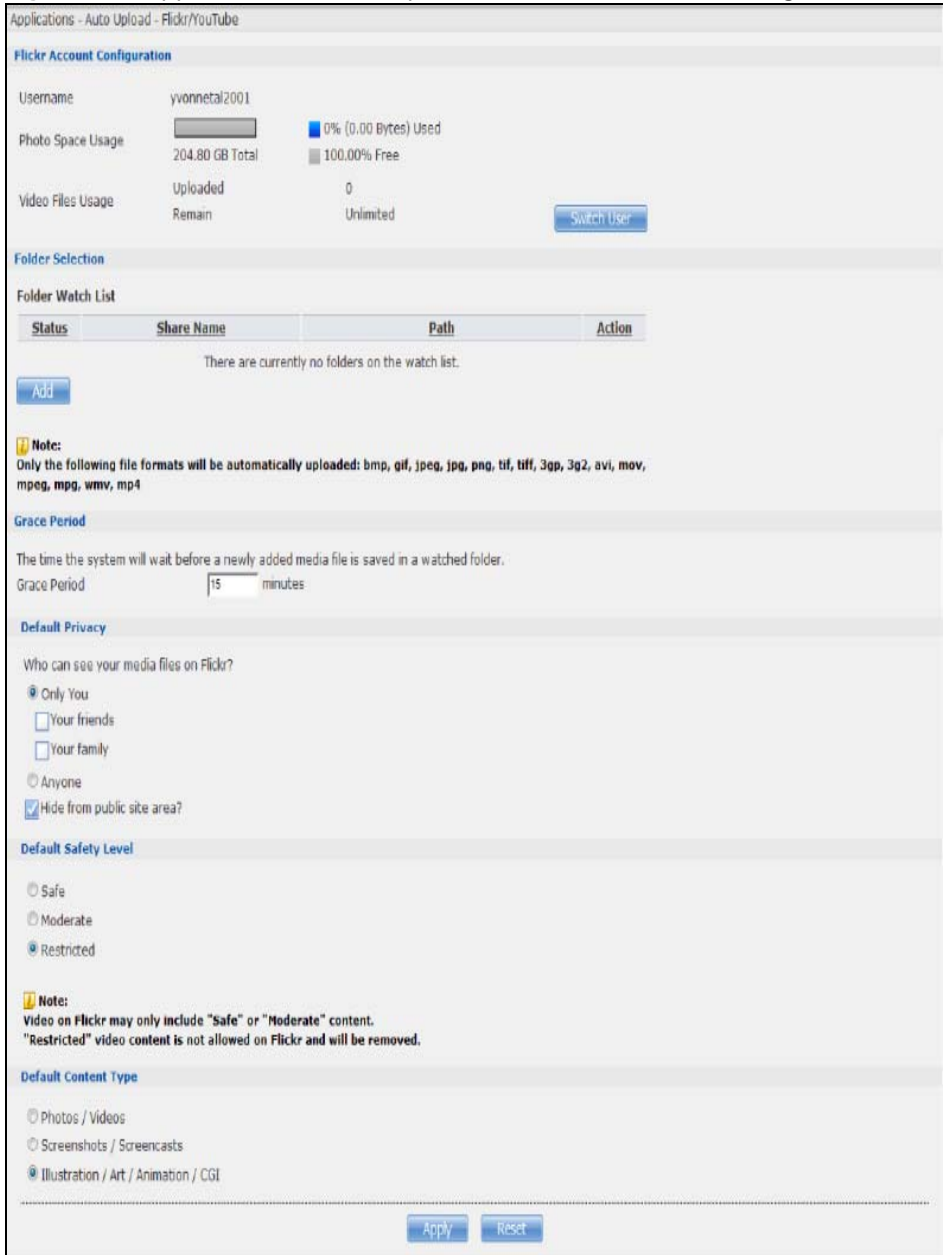
A confirmation page displays indicating successful authorization. Return to the NAS web configurator. Click **Get Ready** in the following screen to complete the authorization process.

**Figure 160** Confirming Flickr Authorization






Once the NAS is associated with your Flickr account, you can configure auto upload settings in the following screen.

**Figure 161** Applications > Auto Upload > Flickr/YouTube > Config (Flickr)



The following table describes the labels in this screen.

**Table 94** 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="711 1031 1291 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="561 1325 1380 1583" 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 94** 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</b> , <b>Screenshots/Screencasts</b> , or <b>Illustration/Art/Animation/CGI</b> .
Apply	Click this to save your changes.
Reset	Click this to restore previously saved settings.

## 19.4.2 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 162** YouTube Account Settings

**YouTube Account Settings**

Email  \*

Password  \*

**Note:**  
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. Log into YouTube using your Google account and then link your existing YouTube account or create a new YouTube account.

OK Cancel

Once the NAS is associated with your YouTube account, you can configure auto upload settings in the following screen.

**Figure 163** Applications > Auto Upload > Flickr/YouTube > Config (YouTube)

Applications - Auto Upload - Flickr/YouTube

**YouTube Account Configuration**

Account

**Folder Selection**

**Folder Watch List**

Status	Share Name	Path	Action
There are currently no folders on the watch list.			

**Note:**

- Only the following file formats will be automatically uploaded: 3gp, asf, asx, avi, dif, dl, dv, flv, gl, mkv, 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                    Howto & 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 95** Applications > Auto Upload > Config (YouTube)

LABEL	DESCRIPTION
YouTube Account Configuration	
Username	This field displays the Youtube account authorized for the auto upload feature.
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.



**Table 95** Applications > Auto Upload > Config (YouTube) (continued)

LABEL	DESCRIPTION								
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> <div data-bbox="716 625 1292 810" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Add Watch Folder</b></p> <p>Share <input type="text" value="video"/></p> <p>Path <input type="text" value=""/> <input type="button" value="Browse ..."/></p> <p><input type="button" value="Apply"/> <input type="button" value="Cancel"/></p> </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="570 911 1393 1167" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Browse ...</b></p> <p>Current Location: /</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Type</th> <th style="text-align: left;">Name</th> </tr> </thead> <tbody> <tr> <td> ..</td> <td></td> </tr> <tr> <td> download</td> <td></td> </tr> <tr> <td> firmware</td> <td></td> </tr> </tbody> </table> </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>	Type	Name	 ..		 download		 firmware	
Type	Name								
 ..									
 download									
 firmware									
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									
Who can see your media files on YouTube?	<p>Determine who has the right to see files uploaded to your YouTube account.</p> <p>Select <b>Only You</b> if you do not want anyone else to see your files.</p> <p>Select <b>Anyone</b> to allow everyone to see your files.</p>								
Apply	Click this to save your changes.								
Reset	Click this to restore your previously stored settings.								

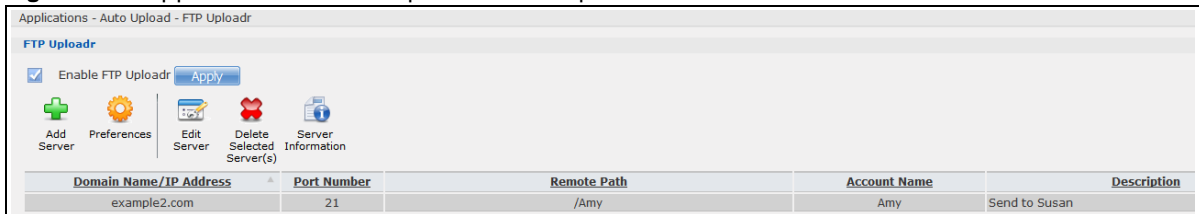
## 19.5 FTP Uploadr Screen

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.

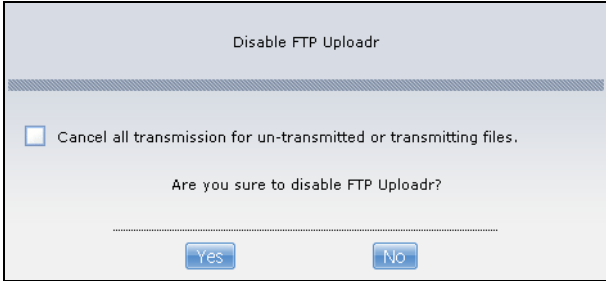
Click **Applications > Auto Upload > FTP Uploadr** to open the screen shown next.

**Figure 164** Applications > Auto Upload > FTP Uploadr




The following table describes the labels in this screen.

**Table 96** 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 19.5.1 on page 271</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.

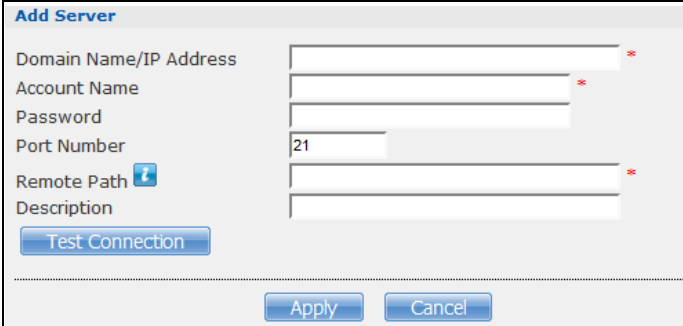
**Table 96** Applications > Auto Upload > FTP Uploadr (continued)

LABEL	DESCRIPTION
Delete Selected Server(s)	Select a server from the list and click this to remove the FTP server entry. 
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.

## 19.5.1 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 165** Applications > Auto Upload > FTP Uploadr > Add or Edit a Server


The following table describes the labels in this screen.

**Table 97** 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.

**Table 97** Applications > Auto Upload > FTP Uploadr > Add or Edit a Server (continued)

LABEL	DESCRIPTION
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.

## 19.5.2 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.

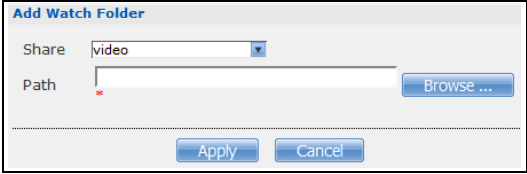
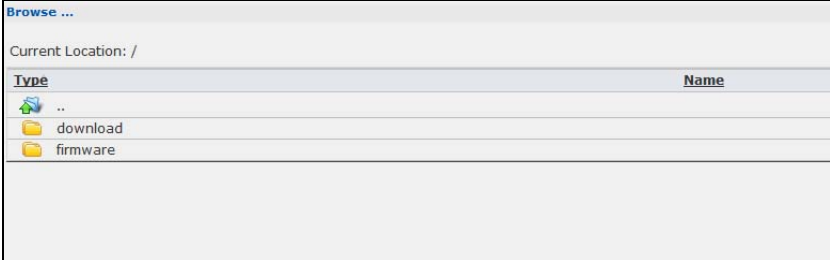

**Figure 166** Applications > Auto Upload > FTP Uploadr > Preferences

The following table describes the labels in this screen.

**Table 98** 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 98** 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.

## 20.1 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.

## 20.2 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 20.3 on page 276](#) 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 167** Applications > Dropbox

Applications - Dropbox

**Status**

Status	Ready
Name	N/A
Email	N/A

Capacity  0% (0.00 Bytes) Used  
0.00 Bytes Total  100.00% Free

**Configuration**

Enable Dropbox

**Note:**  
The default directory is in admin/Dropbox/FromDropbox.

Logout


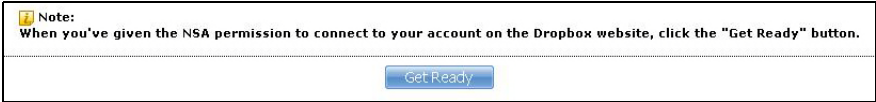
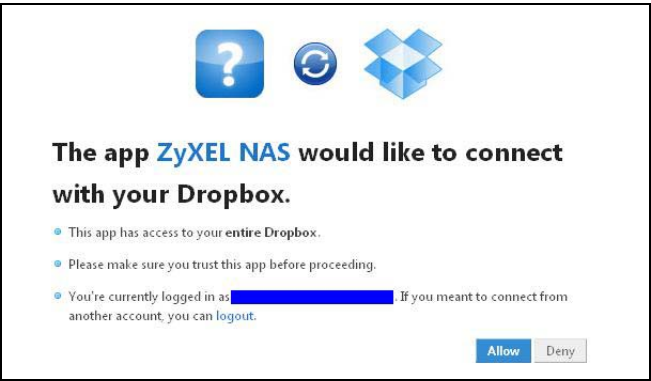
Apply

The following table describes the labels in this screen.

**Table 99** 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 99** 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.

## 20.3 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 168** 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 169** Dropbox\zDownload

The screenshot shows a Windows Explorer window titled '\Dropbox\zDownload' displaying a list of files in a table format. The columns are '名稱' (Name), '大小' (Size), '類型' (Type), and '修改日期' (Modification Date).

名稱	大小	類型	修改日期
Readme_zDownload.pdf	3 KB	Adobe Acr...	2011/08/05 10:52
test_Torrent(3).torrent.downloading	220 KB	DOWNLO...	2009/04/24 17:48
test_Torrent(6).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	UPLOADI...	2009/04/23 16:59

# Using Time Machine with the NAS

## 21.1 Overview

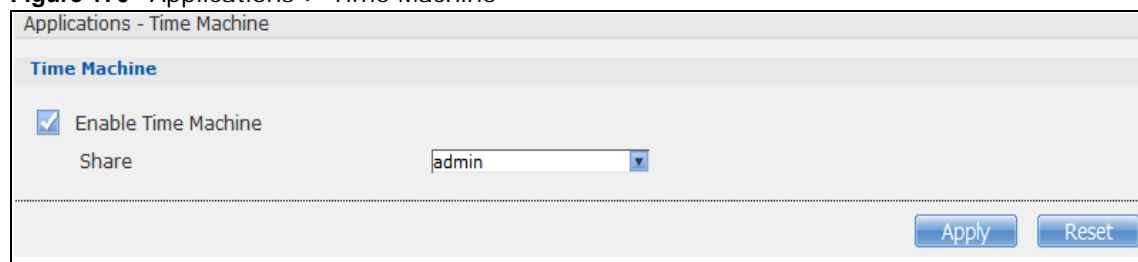
Time Machine is a backup system provided by Mac OS X. It automatically backs up everything on your Mac, including pictures, music, videos, documents, applications, and settings. This chapter helps you to enable Time Machine in OS X to use your NAS as a backup volume.

## 21.2 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 170** Applications > Time Machine



The following table describes the labels in this screen.

**Table 100** 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.

## 21.3 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.

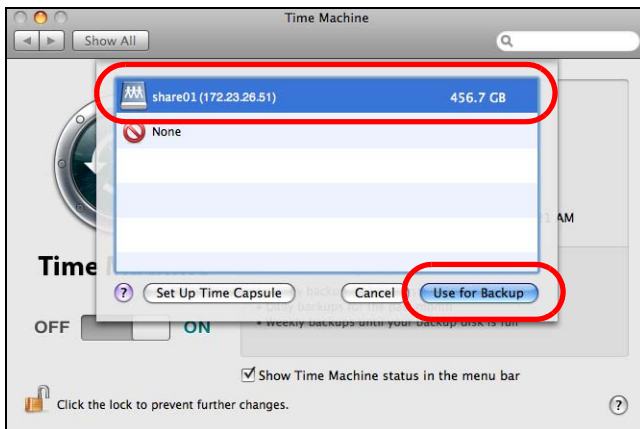
- 1 Click **Apple > System Preferences**. Then go to **System** and select **Time Machine**.



- 2 Turn Time Machine **ON**. Then click **Change Disk**.



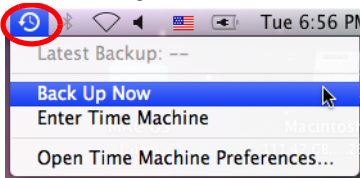
- 3 Select **share01** as the backup disk. Then click **Use for Backup**.



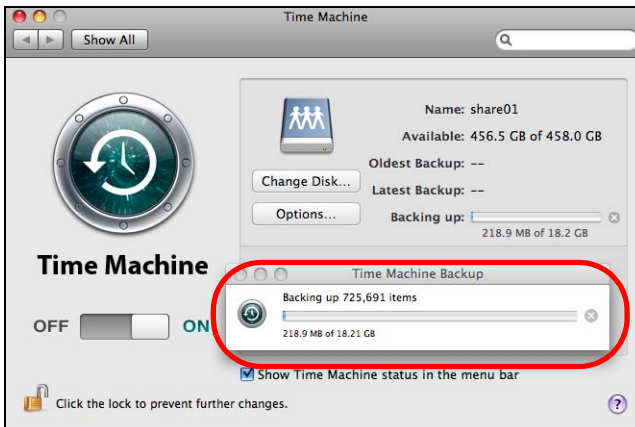
- 4 When prompted for the username and password of **share01**, enter the login information for an existing user account with write access permission on **share01** (for information on configuring user accounts and shares see [Section 14.6 on page 155](#)). In this example **user1/12345** is used. Then click **Connect**.



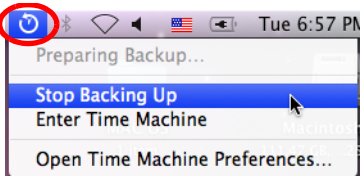
- 5 Time Machine starts backing up files to **share01** after 120 seconds. If you want to backup immediately, click Time Machine icon and select **Back Up Now**.



- 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**.



## 22.1 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.

## 22.2 What You Can Do

- Use the main **Users** screen ([Section 22.3 on page 281](#)) to display a list of user accounts created on the NAS.
- Use the **Add User** screen ([Section 22.3.2 on page 283](#)) to create new user accounts.
- Use the **Edit User** screen ([Section 22.3.2 on page 283](#)) to edit the properties of an existing account.
- Use the **User Info** screen ([Section 22.4 on page 285](#)) to display the amount of volume space used by a selected account and the account's membership in any groups.

## 22.3 Users Screen

Click **Sharing > Users** to display the screen shown next.

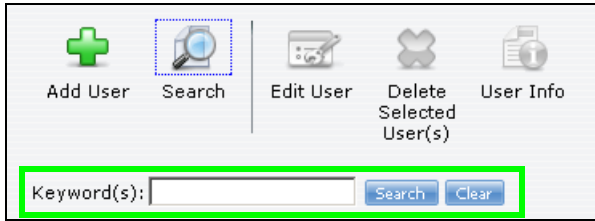
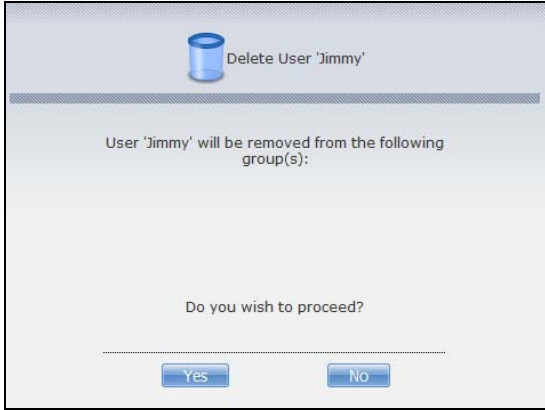
Use this screen to create and manage accounts for users who can store files on the NAS.

Figure 171 Sharing &gt; Users



The following table describes the labels in this screen.

Table 101 Sharing &gt; Users

LABEL	DESCRIPTION
Add User	Click this to open a screen where you can configure a new user account. Refer to <a href="#">Section 22.3.2 on page 283</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 22.3.2 on page 283</a> to see the screen.
Delete Selected Users	Select an account and click this to open a screen where you can delete the user account. 
User Info	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. Refer to <a href="#">Section 22.4 on page 285</a> to see the screen.
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.



**Table 101** Sharing > Users (continued)

LABEL	DESCRIPTION
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.

## 22.3.1 User Icons

The following table describes the user icons.

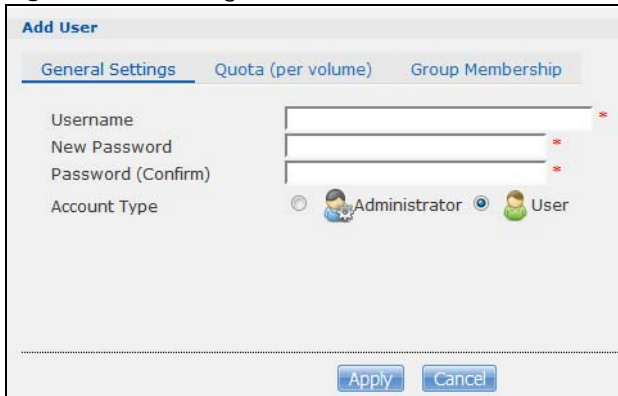
**Table 102** User Icons

ICON	DESCRIPTION
	The blue icon is for an administrator account.
	The green icon is for a user account.

## 22.3.2 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 172** Sharing > Users > Add or Edit a User: General Settings


**Add User**

General Settings   Quota (per volume)   Group Membership

Username

New Password

Password (Confirm)

Account Type  Administrator  User

Apply   Cancel

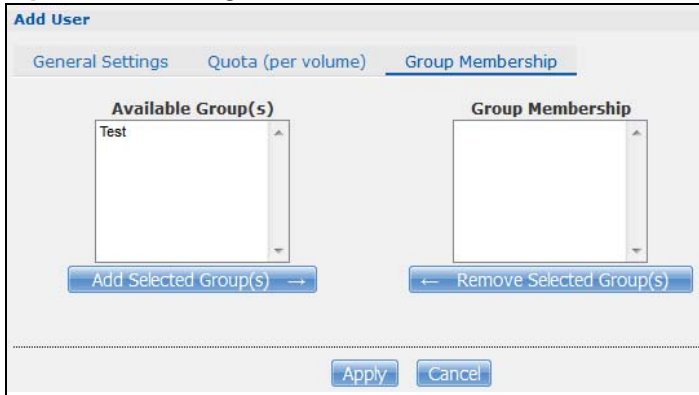
**Figure 173** Sharing > Users > Add or Edit a User: Quota (per volume)


**Add User**

General Settings   Quota (per volume)   Group Membership

Volume Name	Quota (per volume)
Volume1 ( 3.58 TB )	0 MB (0 means unlimited)

Apply   Cancel

**Figure 174** Sharing > Users > Add or Edit a User: General Settings

The following table describes the labels in these screens.

**Table 103** 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 22.3.3 on page 284</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.
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.

### 22.3.3 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]

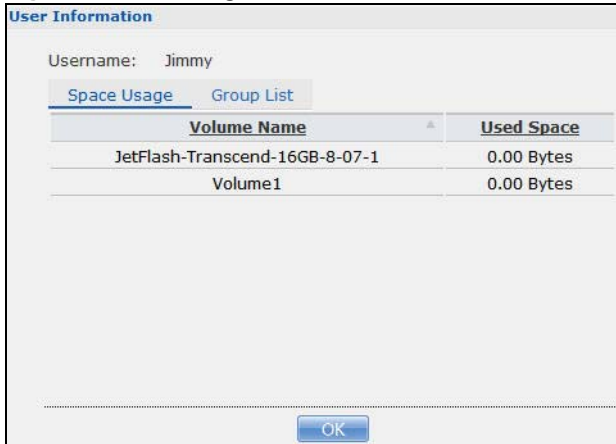
Other limitations on usernames are:

- 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

## 22.4 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 175** Sharing > Users > User Info

The following table describes the labels in this screen.

**Table 104** 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.

## 23.1 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.

## 23.2 What You Can Do

- Use the main **Groups** screen (Section 23.3 on page 287) to display and manage a list of groups created on the NAS.
- Use the **Add Group** screen (Section 23.3.1 on page 288) to create new groups.
- Use the **Edit Group** screen (Section 23.3.1 on page 288) to edit the properties of an existing group.

## 23.3 Groups Screen

Use this screen to create and manage groups.

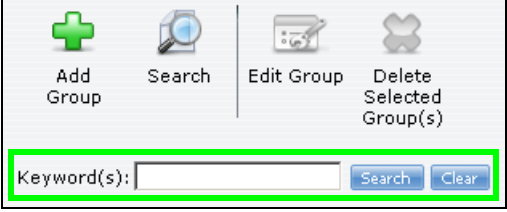
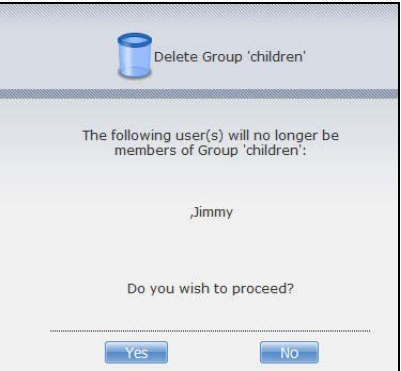

Click **Sharing** > **Groups** to display the screen shown next.

**Figure 176** Sharing > Groups



The following table describes the labels in this screen.

**Table 105** 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 Search to look up the group you specified. Click Clear 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.

### 23.3.1 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 177** Sharing > Groups > Add or Edit a Group

The following table describes the labels in this screen.

**Table 106** 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 23.3.2 on page 289</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.

## 23.3.2 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

# Shares

## 24.1 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.

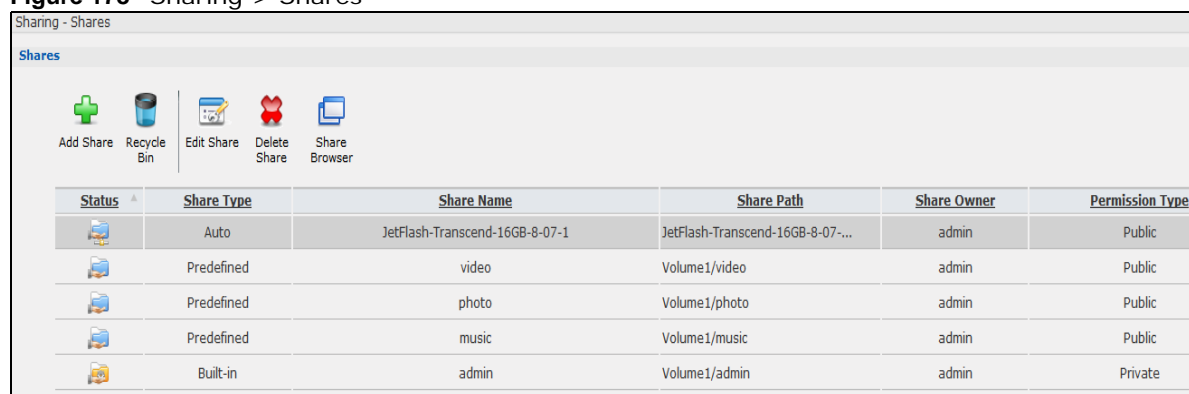
## 24.2 What You Can Do

- Use the **Shares** screen ([Section 24.3 on page 291](#)) to navigate a list of shares created on the NAS.
- Use the **Add Shares** screen ([Section 24.3.1 on page 293](#)) to create additional shares on the NAS.
- Use the **Recycle Bin** screen ([Section 24.4 on page 295](#)) to configure and clean up the recycle bins.
- Use the **Edit Share** screen ([Section 24.3.1 on page 293](#)) to edit a share's properties.
- Use the **Share Browser** screen ([Section 24.5 on page 296](#)) to navigate, add and edit the contents in a share.

## 24.3 Shares Screen

Click **Sharing > Shares** in the navigation panel to open the following screen. This screen lists all shares created on the NAS.







**Figure 178** Sharing > Shares



Status	Share Type	Share Name	Share Path	Share Owner	Permission Type
	Auto	JetFlash-Transcend-16GB-8-07-1	JetFlash-Transcend-16GB-8-07-...	admin	Public
	Predefined	video	Volume1/video	admin	Public
	Predefined	photo	Volume1/photo	admin	Public
	Predefined	music	Volume1/music	admin	Public
	Built-in	admin	Volume1/admin	admin	Private

The following table describes the labels in this screen.

**Table 107** 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	<p>Select a share and click this to remove or restrict access to the share.</p> 
Share Browser	Select a share and click this to browse the share's contents.
Status	<p>This field displays the share icons.</p> <ul style="list-style-type: none"> <li> represents a <b>Built-in</b> share on a volume on the internal hard drives.</li> <li> represents a <b>Predefined</b> or <b>User-Created</b> share on a volume on the internal hard drives.</li> <li> represents an <b>Auto</b> or <b>User-Created</b> share on a volume on the external (USB) devices.</li> <li> represents a disabled share that no user can access.</li> <li> 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.</li> </ul>
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.



**Table 107** Sharing > Shares (continued)

LABEL	DESCRIPTION
Share Owner	This is the name of the user account to which this share belongs.
Permission Type	This field displays the access permission of a share. Everyone on the network can access a <b>Public</b> share. Only the share owner can access a <b>Private</b> share. An <b>Advanced</b> share allows you to assign specific access rights (read-only for example) to individual users/groups.

### 24.3.1 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 179** Shares > Add Share (or Edit Share)

The following table describes the labels in this screen.

**Table 108** Shares > Add Share (or Edit Share)

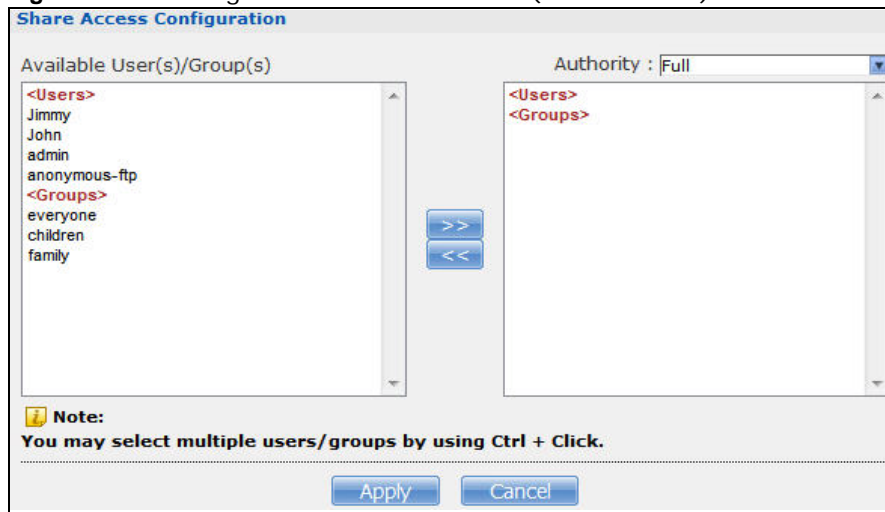
LABEL	DESCRIPTION
Share Name	Type a share name from 1 to 239 single-byte (no Chinese characters allowed for example) ASCII characters. The name cannot be the same as another existing share. See <a href="#">Section 11.2.2 on page 128</a> for more information on share names.
Volume	You should have already 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 17.5 on page 216</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.

**Table 108** Shares > Add Share (or Edit Share) (continued)

LABEL	DESCRIPTION
Publish this share to Web	This option is available when you enable the <b>Web Publish</b> (Section 17.8 on page 230). Select this option to let people use a web browser to access this share's files without logging into the Web Configurator.
Share Access	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.  <b>Keep it private to owner</b> means only the share owner (selected above) can access the share.  <b>Make it Public</b> means every user (including people who do not have accounts on the NAS) can access the share.  <b>Advanced</b> allows you to assign specific access rights (full, read only or deny) to individual users/groups.
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.



## 24.3.2 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 180** Sharing > Shares > Add Share (or Edit Share) > Advanced

The following table describes the labels in this screen.

**Table 109** 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	Use this field to assign access rights to users/groups.  <b>Full Control</b> gives users/groups full access (read, write and execute) to all files contained within this share.  <b>Read-Only</b> gives users/groups read-only access (they cannot modify nor execute) to all files contained within this share.  <b>Deny</b> blocks access (users/groups cannot read, modify, nor execute) to all files contained within this share.  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.  Note: If you deny access to all users, no-one can use the share, not even the administrator.
 	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.

### 24.3.3 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.

## 24.4 Recycle Bin Configuration Screen

Use this screen to periodically clean up items in all recycle bins.

### 24.4.1 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.

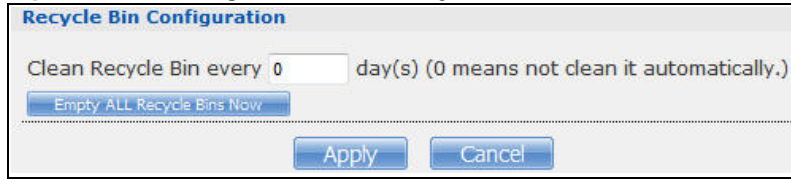
Every share can have its own recycle folder. You must enable the recycle-bin function to recycle deleted items. You can configure this setting when you add or edit a share. See [Section 24.4.2 on page 296](#) for details on activating the recycle bin in a share.

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.

## 24.4.2 Configuring Recycle Bins

In the **Sharing > Shares** screen, click **Recycle Bin** to open the following screen.

**Figure 181** Sharing > Shares > Recycle Bin



The following table describes the labels in this screen.

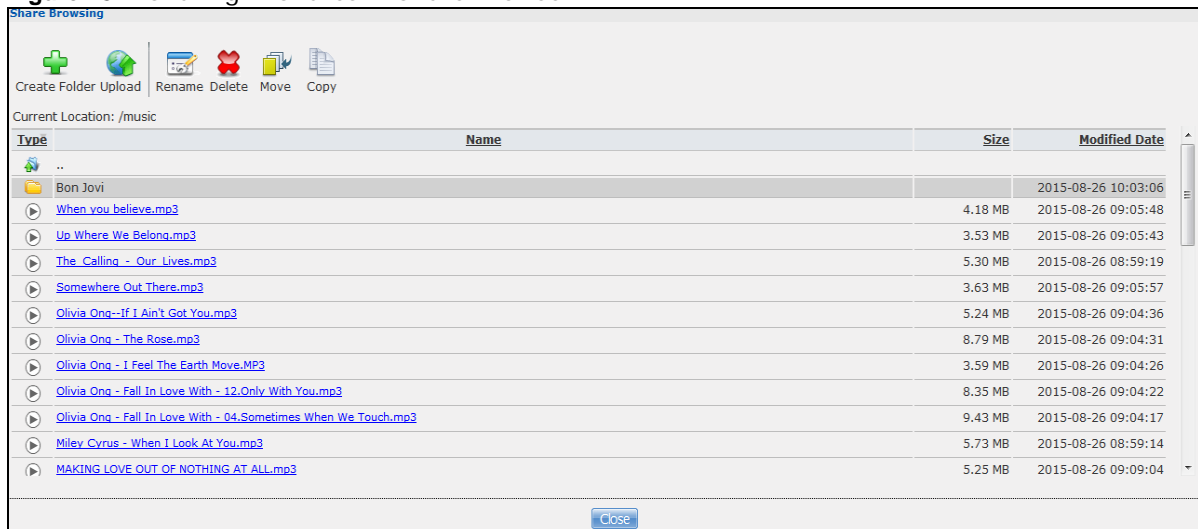
**Table 110** Sharing > Shares > Recycle Bin

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.
Empty 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.

## 24.5 Share Browser Screen

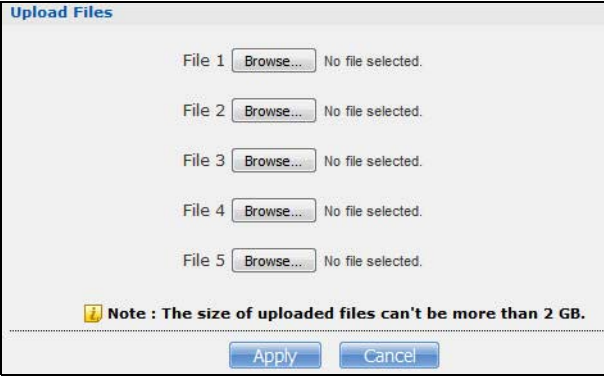
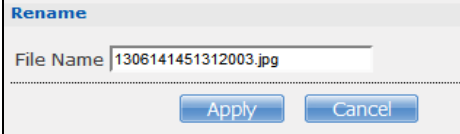
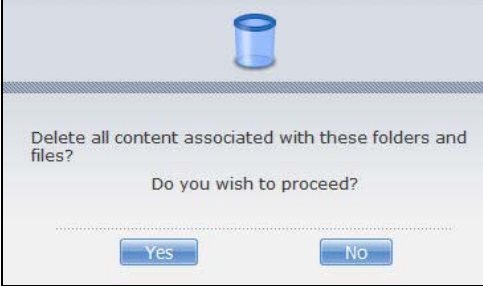
Use this screen to create folders, upload files, and edit files within the share.

**Figure 182** Sharing > Shares > Share Browser



The following table describes the labels in this screen.

**Table 111** 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 11.2.2 on page 128</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>

**Table 111** Sharing > Shares > Share Browser (continued)

LABEL	DESCRIPTION
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.
Modified Date	This field displays a file's latest modification date.
Close	Click this to close the screen.

## 24.5.1 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 183** Sharing > Shares > Share Browser > Move (or Copy)

The following table describes the labels in this screen.

**Table 112** 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>

**Table 112** Sharing > Shares > Share Browser > Move (or Copy) (continued)

LABEL	DESCRIPTION
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.

## 25.1 Overview

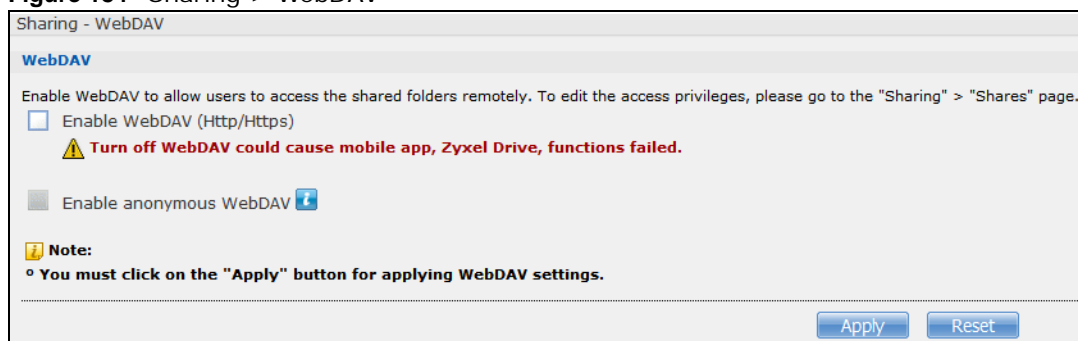
The WebDAV HTTP extension lets users edit and manage files stored on remote servers. The NAS's WebDAV service allows client programs that support WebDAV, such as NetDrive and BitKinex on Windows, Mac OS Finder, and Linux file browsers remotely edit and manage files stored on the NAS.

## 25.2 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 184** Sharing > WebDAV



The following table describes the labels in this screen.

**Table 113** 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.
Apply	Click this to save your changes.
Reset	Click this to discard any unsaved changes and restore previously saved settings.

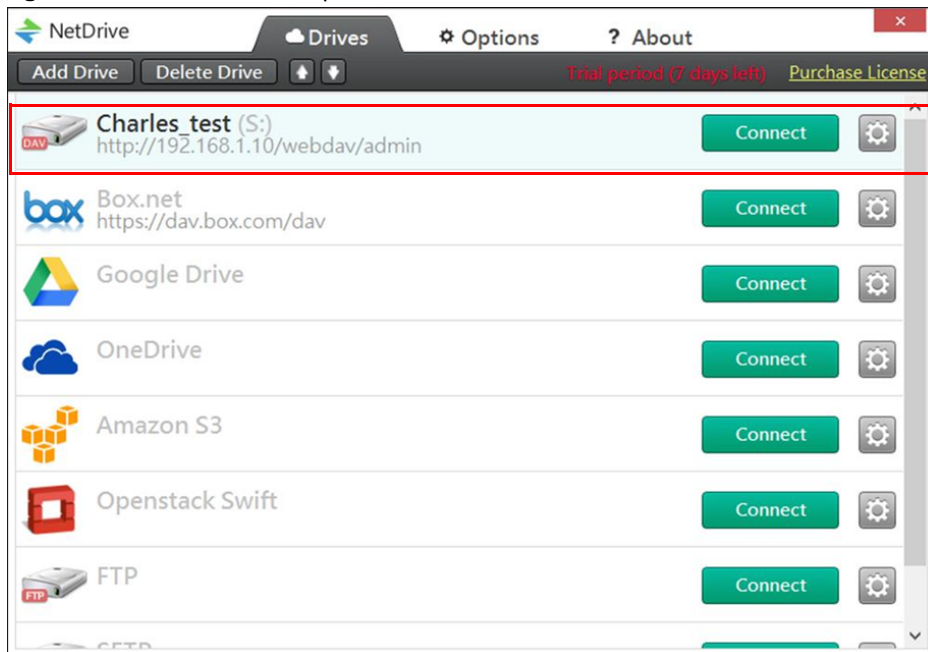


## 25.3 How to Use NetDrive with the NAS

Here is an example of how to use the NetDrive WebDAV client with the NAS.

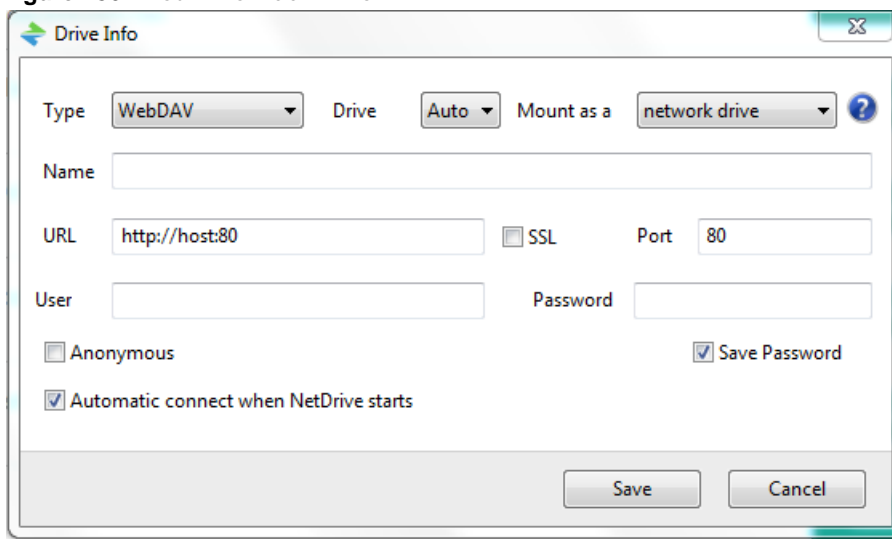
- 1 Download and install NetDrive.
- 2 Click **Add Drive** and use the URL for WebDAV connections to the NAS to add a drive entry for accessing the NAS.

**Figure 185** 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 186** NetDrive Add Drive



# Maintenance Screens

## 26.1 Overview

This chapter discusses the **Maintenance** screens. The **Maintenance** screens allow you to manage system configurations.

## 26.2 What You Can Do

- Use the **Power** screen ([Section 26.3 on page 302](#)) 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 26.4 on page 306](#)) to check the system's logs.
- Use the **Configuration** screen ([Section 26.5 on page 310](#)) to backup or restore the NAS configuration file.
- Use the **SSL** screen ([Section 26.6 on page 311](#)) to configure HTTPS and the NAS's SSL certificate.
- Use the **Shutdown** screen ([Section 26.7 on page 313](#)) to restart or shut down your NAS.
- Use the **Unpair myZyXELcloud** screen ([Section 26.8 on page 314](#)) to remove the pairing between the NAS and the myZyXELcloud account.

## 26.3 Power Screen

Use this screen to manage power settings for the NAS.

Click **Maintenance** > **Power** to display the following screen.

**Figure 187** Maintenance > Power

The following table describes the labels in this screen.

**Table 114** 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.  <b>Note:</b>
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 114** 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 26.3.1 on page 304</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.

### 26.3.1 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 188** Maintenance > Power Management > Edit

**Power Control Schedule List**

Type	Frequency	Execute Time	Actions
Power On	Monthly : FirstMonday	00:00	

**Note:**  
You must click on the "Apply" button for your power control schedule settings to apply.

**Add Power Control Schedule**

Type:

Frequency:

Execute Time (hh:mm):  :

Please select the day of the month:   \* Day

First

The following table describes the labels in this screen.

**Table 115** 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 115** 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.

## 26.4 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 189** Maintenance > Log

#	Time	Class	Severity	Message
1	2015-08-31 08:50:40	user	notice	Add new group family.
2	2015-08-31 08:50:31	user	notice	Add new group children.
3	2015-08-31 08:50:14	user	notice	Delete group Test.
4	2015-08-31 08:44:46	user	info	User admin has logged in from Web!
5	2015-08-31 04:47:16	system	info	NTP fails to update from time.stdtime.gov.tw
6	2015-08-31 04:47:02	built-in-service	info	Auto daylight saving setting: SUCCESS
7	2015-08-30 16:47:17	system	info	NTP fails to update from time.stdtime.gov.tw
8	2015-08-30 16:47:03	built-in-service	info	Auto daylight saving setting: SUCCESS
9	2015-08-30 04:47:16	system	info	NTP fails to update from time.stdtime.gov.tw
10	2015-08-30 04:47:02	built-in-service	info	Auto daylight saving setting: SUCCESS
11	2015-08-29 16:47:17	system	info	NTP fails to update from time.stdtime.gov.tw
12	2015-08-29 16:47:03	built-in-service	info	Auto daylight saving setting: SUCCESS
13	2015-08-29 04:47:16	system	info	NTP fails to update from time.stdtime.gov.tw

The following table describes the labels in this screen.

**Table 116** 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 26.4.1 on page 307</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 124 on page 314</a> for details.
Severity	This displays how serious the log is rated by the NAS. See <a href="#">Table 125 on page 315</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.

## 26.4.1 Report Config Screen

In the **Log** screen, click **Report Config** to do the following:

- Use the **Email Setting** screen ([Section 26.4.2 on page 308](#)) to enable and configure e-mail alerts from the NAS.
- Use the **Report Setting** screen ([Section 26.4.3 on page 308](#)) 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 26.4.4 on page 309](#)) to enable the syslog server and select the categories to include in the log report.

## 26.4.2 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 190** Maintenance > Log > Report Config: Email Setting

The following table describes the labels in this screen.

**Table 117** 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.

## 26.4.3 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 191** Maintenance > Log > Report Config: Report Setting

The following table describes the labels in this screen.

**Table 118** 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.

## 26.4.4 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 192** Maintenance > Log > Report Config: Syslog Server Setting

The following table describes the labels in this screen.

**Table 119** 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.

## 26.5 Configuration Screen

Click **Maintenance > Configuration** to open the following screen. Use this screen to backup or restore the NAS configuration settings.

**Figure 193** Maintenance > Configuration

The following table describes the labels in this screen.

**Table 120** 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	When you restore a file configuration, the NAS checks the volumes/share paths on the NAS and the configuration file.  If the volume exists but the share path is missing in the NAS, the NAS automatically creates this share path.  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 107 on page 292</a> ).
Browse	Click this to locate a previously-saved configuration file.
Restore	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.  A pop-up screen appears asking you to confirm. Click <b>OK</b> to continue or <b>Cancel</b> to quit.

## 26.6 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 194** Maintenance > SSL

Maintenance - SSL

**Install System CA**

This action will install the system CA in your browser's trusted CA list.

**Step1** Download the CA file

**Step2** Double click on the CA file to install it into your browser

**Modify the Existing Certificate**

Edit a self-signed CA certificate

**Step1** Edit the Self-signed Certificate

**Step2** Download the self-signed CA file

**Step3** Double click on the CA file to install it into your browser

Create a Certificate To Be Authorized By My Own Certificate Authority

**⚠ Caution:**  
Modifications of TLS/SSL certificate settings will restart network services.

The following table describes the labels in this screen.

**Table 121** Maintenance > SSL

LABEL	DESCRIPTION
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>

## 26.6.1 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 195** Maintenance > SSL > Create or Edit a Certificate

**Edit the Self-signed Certificate**

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 122** Maintenance > SSL > Create or Edit a Certificate

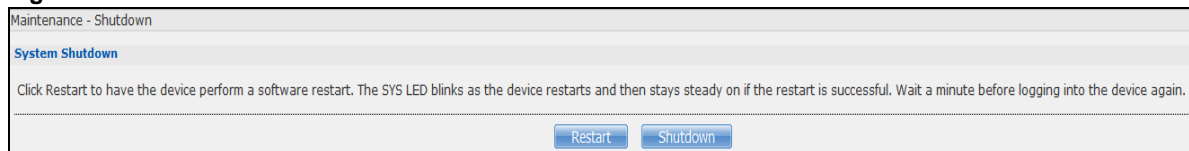
LABEL	DESCRIPTION
Common Name	This name describes the certificate's origin, either in the form of an IP address or a domain name.
Host IP Address	Select this option and enter the NAS's IP address if you want to use this for the common name.
Host Domain Name	Select this option and enter the NAS's domain 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.

## 26.7 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 196** Maintenance > Shutdown

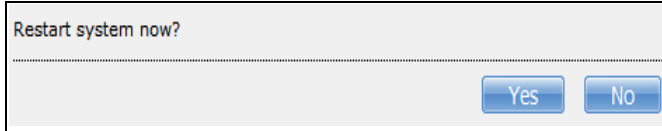


The following table describes the labels in this screen.

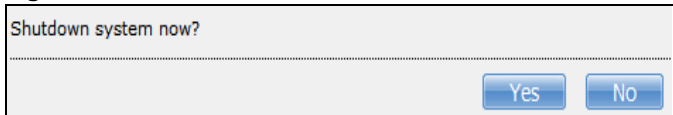
**Table 123** Maintenance > Shutdown

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.

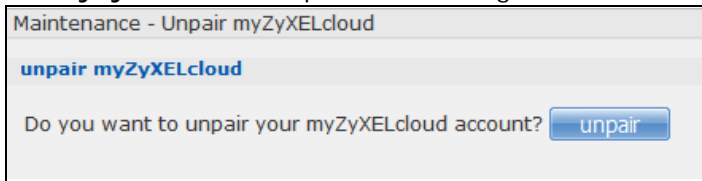
**Figure 197** Maintenance > Shutdown > Confirm Restart

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 198** Maintenance > Shutdown > Confirm Shutdown

## 26.8 Unpair myZyXELcloud Screen

**Figure 199** Use this screen to remove the pairing between the NAS and the myZyXELcloud account if you want to pair the NAS with a different myZyXELcloud account. You have to pair the NAS and your myZyXELcloud account before performing the unpair. Click **Maintenance > Unpair myZyXELcloud** to open the following screen, and click **Unpair**.



## 26.9 Technical Reference

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

### 26.9.1 Log Classes

The following table shows information on log classes.

**Table 124** 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.
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.

## 26.9.2 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 125** Log Severity Levels

LEVEL	DESCRIPTION
0	Emergency
1	Alert
2	Critical
3	Error
4	Warning
5	Notice
6	Info

## 26.9.3 Log Messages

Here are some example log messages.

**Table 126** 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.
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.

**Table 126** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
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
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)
Download Service	INFO	Download service added %d rules from ipfilter.dat
Download Service	INFO	Download service detected invalid ip range %s in ipfilter.dat



**Table 126** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
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.
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

**Table 126** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
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
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

**Table 126** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
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.
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!

**Table 126** Log Messages (continued)

CLASS	SEVERITY	MESSAGE
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
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.

## 27.1 Overview

This chapter introduces different ways of protecting data on the NAS and covers the **Protect** screens.

**Table 127** 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 27.5 on page 336</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 8.6 on page 98</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 14.14 on page 191</a> for an example of how to back up the NAS to another NAS.

## 27.2 What You Can Do

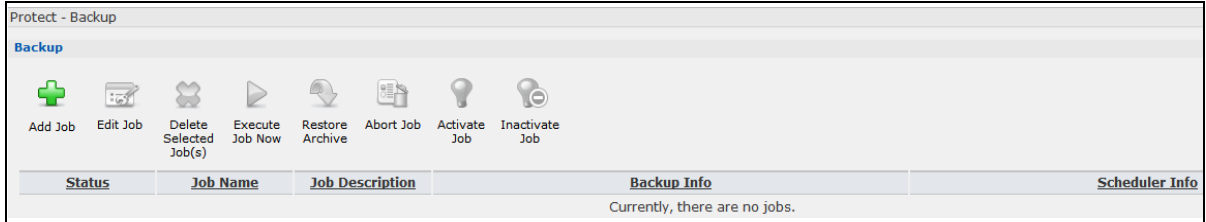
- Use the **Backup** screens ([Section 27.3 on page 321](#)) to create and customize backup jobs.
- Use the **Restore** screens ([Section 27.4 on page 332](#)) to restore previous backups made with the NAS.

## 27.3 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 200** Protect > Backup

The following table describes the labels in this screen.

**Table 128** 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 27.3.8 on page 330</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 27.3.1 on page 322</a> and <a href="#">Section 27.3.2 on page 323</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 27.3.4 on page 326</a> .

### 27.3.1 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 201** Protect > Backup: Step 1

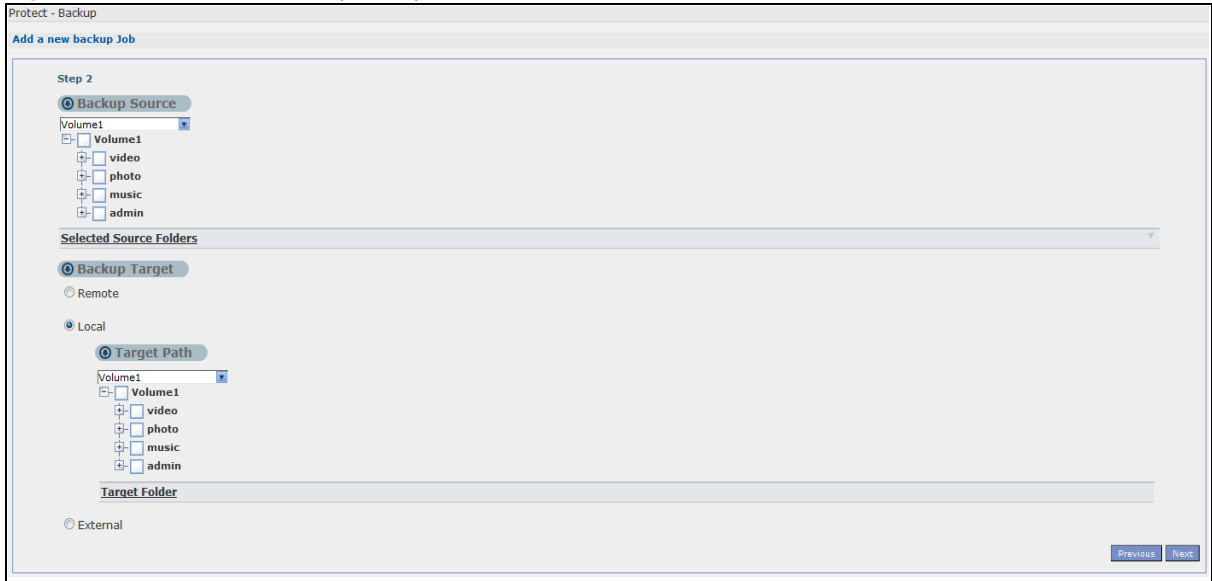
The following table describes the labels in this screen.

**Table 129** 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.
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.




## 27.3.2 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 202** Protect > Backup: Step 2

The following table describes the labels in this screen.

**Table 130** 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 <input type="checkbox"/> to select a folder or file to back up. This also selects all sub-folders and files.</p> <p>Click <input checked="" type="checkbox"/> to deselect the folder or file. This also deselects all sub-folders and files.</p> <p><b>More ... ▲</b> and <b>More ... ▼</b> appear when there are too many folders/files to display. Click the arrows to scroll up or down through the folders/files.</p> <p><input checked="" type="checkbox"/> for a folder means all sub-folders and files and new folders/files added later will be backed up.</p> <p><input checked="" type="checkbox"/> for a file means the file will be backed up.</p> <p><input type="checkbox"/> (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 <b>NOT</b> be backed up.</p> <p> means the file structure is still loading. Please wait for the folders/files to display.</p> <p><b>Note:</b> If you select to back up an entire folder <input checked="" type="checkbox"/> and then de-select a sub-folder or file within that folder, the main folder icon will turn <input checked="" type="checkbox"/> 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 130** Protect > Backup: Step 2 (continued)

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.

### 27.3.3 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 203** Protect > Backup: Step 3

The following table describes the labels in this screen.

**Table 131** 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>
Previous	Click this to go back to the previous screen.
Next	Click this to go to the next screen.

### 27.3.4 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 204** Protect > Backup: Step 4

The following table describes the labels in this screen.

**Table 132** 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.
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.

### 27.3.5 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.

## 27.3.6 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 205** Protect > Backup > Edit: Step 1

The following table describes the labels in this screen.

**Table 133** 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.
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	This field is read-only and shows whether the backup employs compression. 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.
Encryption	This field is read-only and shows whether the backup employs encryption. You can have the NAS use a password to encrypt the backup files.
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.

**Table 133** Protect > Backup > Edit: Step 1 (continued)

LABEL	DESCRIPTION
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.

## 27.3.7 Edit Job: Step 2

Use this screen to edit the schedule for the backup job.

**Figure 206** Protect > Backup > Edit: Step 2

The following table describes the labels in this screen.

**Table 134** 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.

**Table 134** Protect > Backup > Edit: Step 2 (continued)

LABEL	DESCRIPTION
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.

## 27.3.8 Restore Archive Screen

Use this screen to restore previous backups made with the NAS.

## 27.3.9 Restore Archive: Step 1

Click **Protect > Backup** screen ([Section 27.3 on page 321](#)). You can restore a previous backup job by selecting a backup job from the list and clicking **Restore Archive**.

**Figure 207** Protect > Backup > Restore Archive: Step 1

The following table describes the labels in this screen.

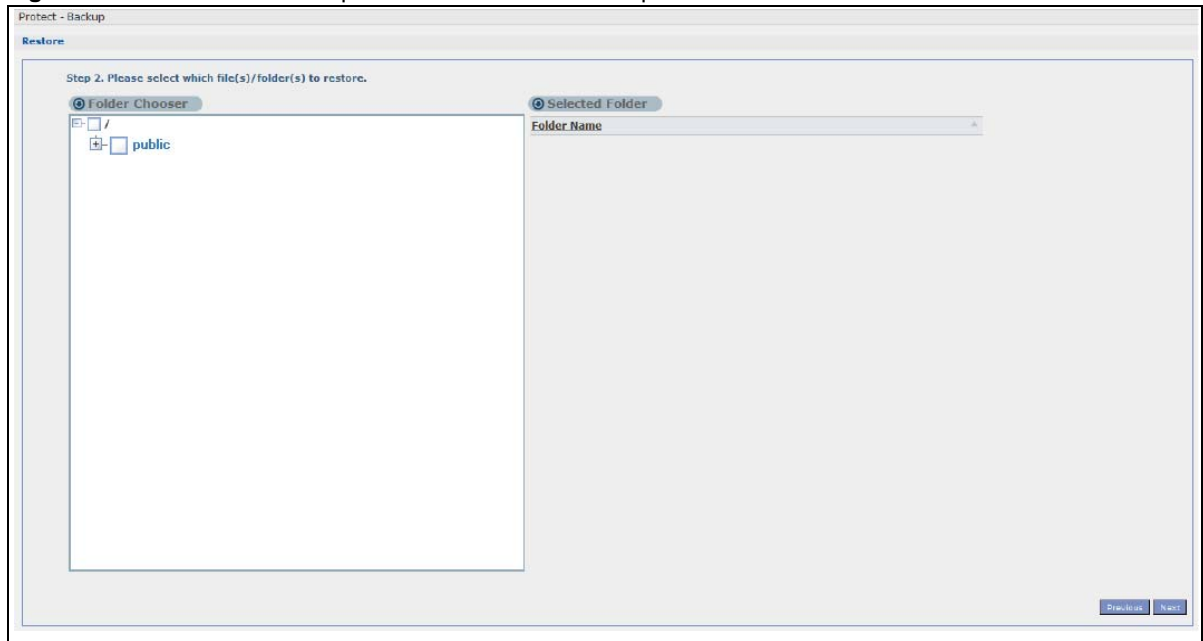
**Table 135** Protect > Backup > Restore Archive: Step 1

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.

## 27.3.10 Restore Archive: Step 2

Use this screen to select the folder where the archive you want to restore is located.

**Figure 208** Protect > Backup > Restore Archive: Step 2



The following table describes the labels in this screen.

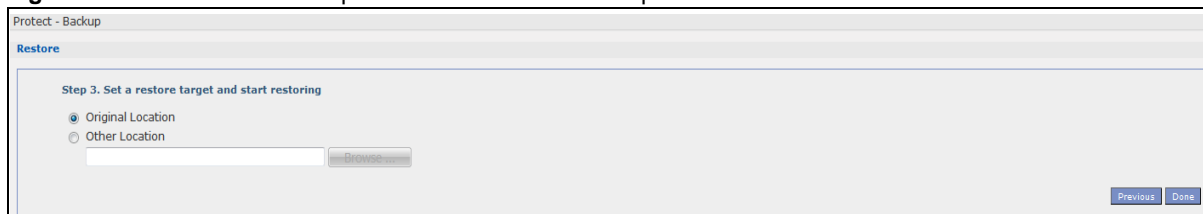
**Table 136** Protect > Backup > Restore Archive: Step 2

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.

## 27.3.11 Restore Archive: Step 3

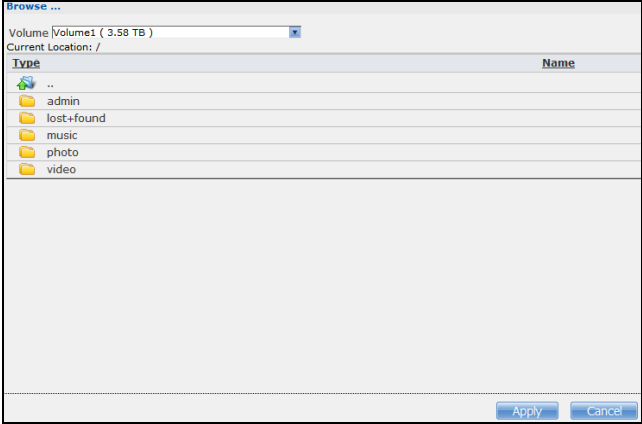
Use this screen to select the location in the NAS where you want to restore your backup.

**Figure 209** Protect > Backup > Restore Archive: Step 3



The following table describes the labels in this screen.

**Table 137** 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.

## 27.4 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.

### 27.4.1 Restore: Step 1

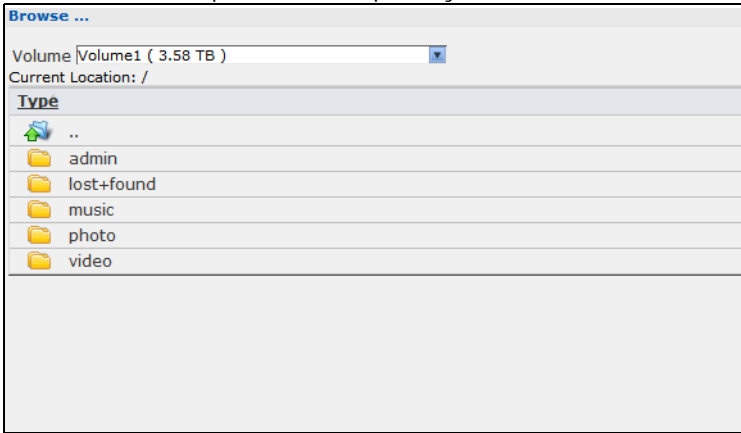
You can access this screen by clicking **Protect > Restore**.



**Figure 210** Protect > Restore: Step 1

The following table describes the labels in this screen.

**Table 138** 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.
Browse	Click this to select where the previous backup that you want to restore is located.   <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> Click <b>Apply</b> to save your settings and <b>Cancel</b> to close the screen.
Next	Click this to go to the next screen.

## 27.4.2 Restore: Step 2

Select a previous archive backup that you want to restore to the NAS.

**Figure 211** Protect > Restore: Step 2

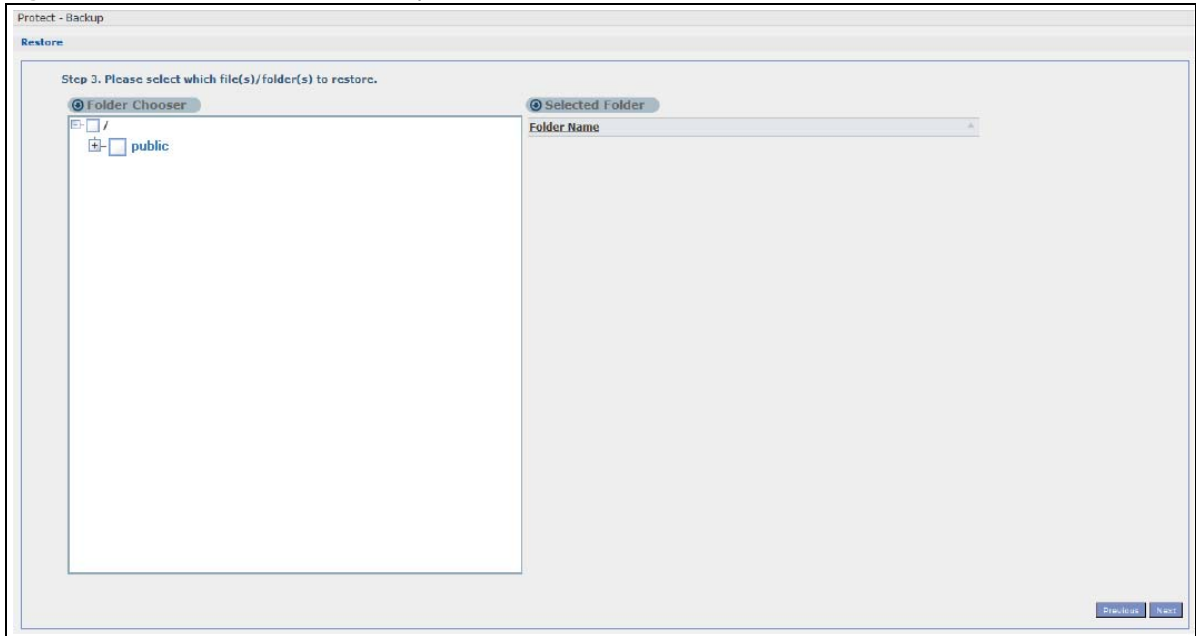
The following table describes the labels in this screen.

**Table 139** Protect > Restore: Step 2

LABEL	DESCRIPTION
Step 2. Select Restore Point	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.  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.
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.
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.

## 27.4.3 Restore: Step 3

Use this screen to select the folder where the archive you want to restore is located.

**Figure 212** Protect > Restore: Step 3

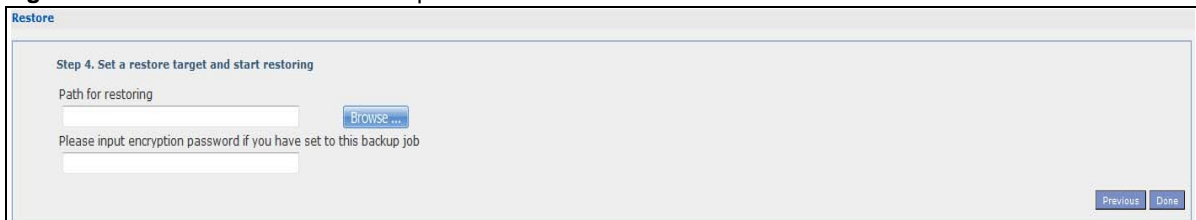
The following table describes the labels in this screen.

**Table 140** 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.

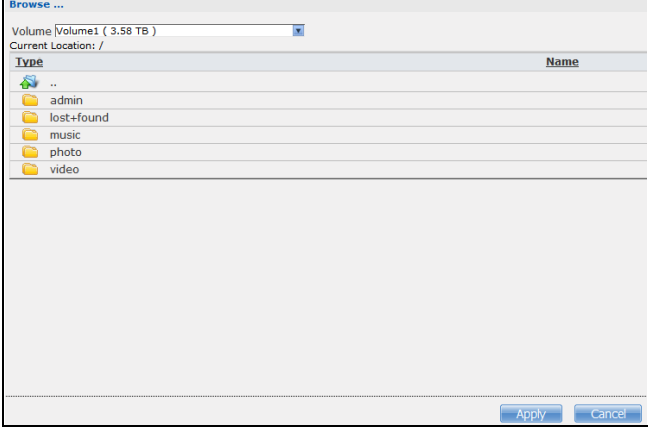
## 27.4.4 Restore: Step 4

Use this screen to select the location in the NAS where you want to restore your backup.

**Figure 213** Protect > Restore: Step 4

The following table describes the labels in this screen.

**Table 141** 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.

## 27.5 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 1.7 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

## 28.1 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](#)

## 28.2 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](#).

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### 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.

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**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 [Table 1 on page 15](#) 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.

## 28.3 NAS Starter Utility

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### The NAS Starter Utility cannot discover my NAS.

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- 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.

## 28.4 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 1.7 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 [Table 1 on page 15](#).
- 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 10.4 on page 107](#) 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 28.4.1 on page 341](#).

---

### [I forgot the password.](#)

---

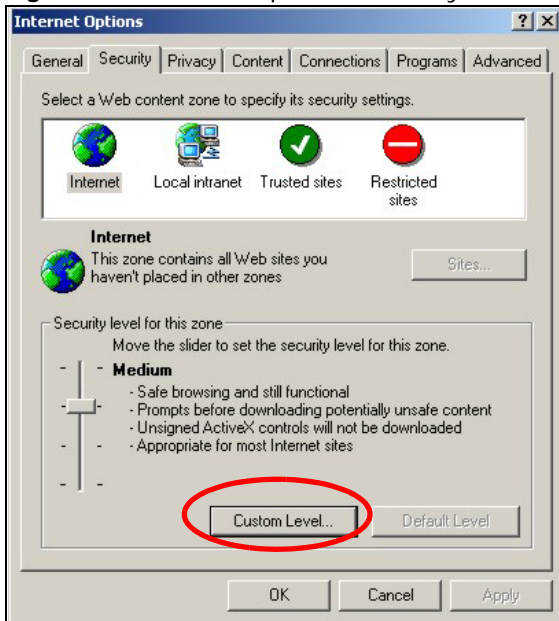
- The default password is **1234**.
- If you have changed the password and forgotten it, you will have to reset the NAS.

## 28.4.1 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.

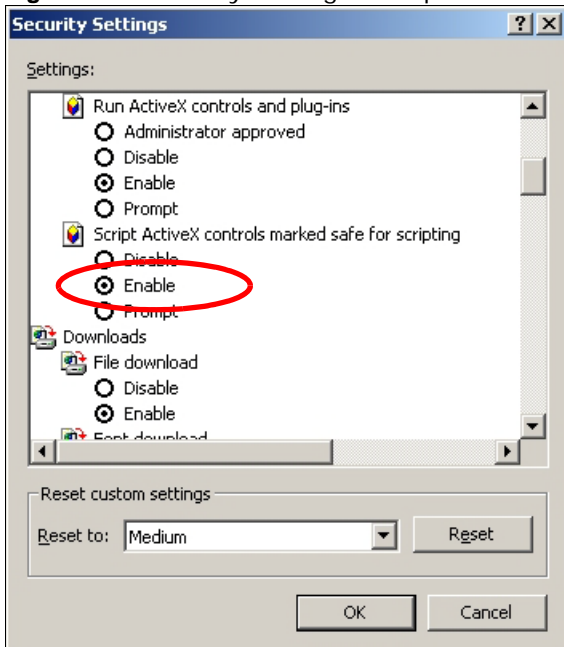
- 1 In Internet Explorer, click **Tools, Internet Options** and then the **Security** tab.

Figure 214 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 215 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 1.7 on page 17](#) to reset the device.

---

I cannot see the multi-language web configurator screens while using Internet Explorer.

---

Use [Section 28.4.1 on page 341](#) 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.

## 28.5 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 28.2 on page 337](#).
- 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.

## 28.6 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 17.4 on page 215](#) 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 28.2 on page 337](#).
- 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).

## 28.7 External USB Drives

---

### The COPY LED is red.

---

Copying files to or 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).

## 28.8 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**.

## 28.9 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.

## 28.10 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 11.2 on page 124](#)). Your computer will prompt you for the location where you want to save the file.

## 28.11 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 24.3 on page 291](#)) 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 28.4 on page 340](#) and check for related connectivity issues.

## 28.12 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 10.8 on page 122](#). This does not include the applications you can install using the **Package Management** screen.
- You can use the **Package Management** screen ([Chapter 18 on page 246](#)) 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.

## 28.13 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 [page 354](#) 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 [page 354](#) 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.

---

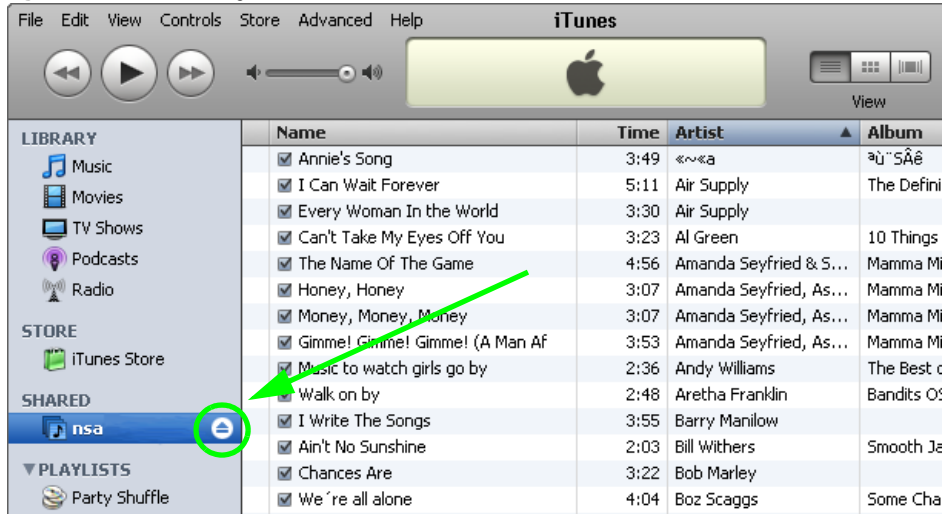
iTunes does not display the names of all the music files I just put on the NAS.

---

- 1 Make sure the files are a format supported by iTunes. See [page 354](#).
- 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.

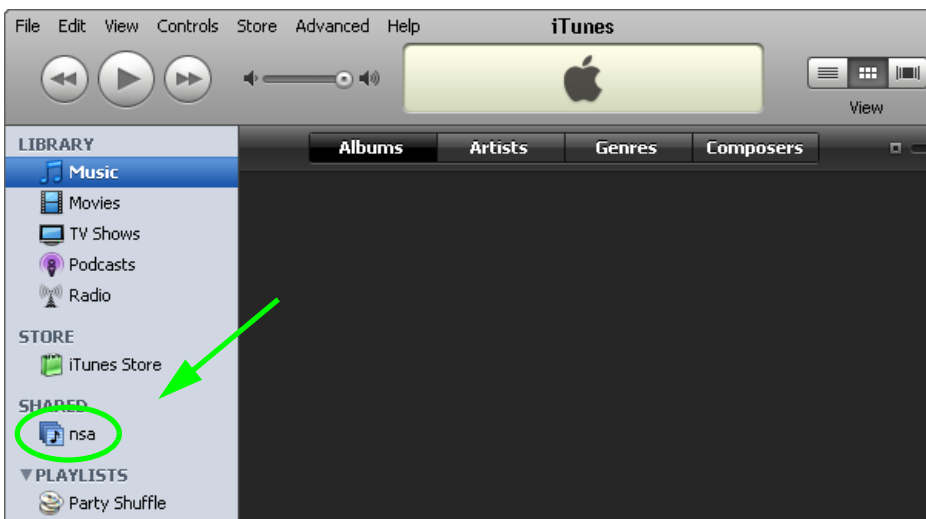


Figure 216 iTunes Eject Button



- 4 Then click the NAS's link to reconnect.

Figure 217 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 [page 354](#).
- 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.

## 28.14 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 17.7 on page 219) screens to know or configure where downloaded files are stored.

## 28.15 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 240 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 142** 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	nicname
53	domain
77	priv-rjs
79	finger
87	ttylink

PORT	SERVICE
95	supdup
101	hostriname
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.

## 28.16 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 10.4 on page 107](#) 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.

## 28.17 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.

## 28.18 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 27.3 on page 321](#)):
  - 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 16.6 on page 210](#).

## 28.19 Google Drive

---

Google Drive stopped syncing.

---

- 1 Make sure the NAS is connected to the Internet. See [Section 10.4 on page 107](#) 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 24.4.2 on page 296](#)).
  - Increase the user's quota on the volume containing the local sync folder (see [Section 22.3.2 on page 283](#)).
- 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 14](#) for a general overview of the key features.

## 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.

See <http://www.zyxel.com/homepage.shtml> and also

[http://www.zyxel.com/about\\_zyxel/zyxel\\_worldwide.shtml](http://www.zyxel.com/about_zyxel/zyxel_worldwide.shtml) for the latest information.

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/tw/zh/>

### **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/>
- <http://www.zyxel.com/be/fr/>

## **Bulgaria**

- ZyXEL България
- <http://www.zyxel.com/bg/bg/>

## **Czech Republic**

- 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>

## **Italy**

- ZyXEL Communications Italy
- <http://www.zyxel.it/>

## **Latvia**

- ZyXEL Latvia
- <http://www.zyxel.com/lv/lv/homepage.shtml>

## **Lithuania**

- ZyXEL Lithuania
- <http://www.zyxel.com/lt/lt/homepage.shtml>

## **Netherlands**

- ZyXEL Benelux
- <http://www.zyxel.nl>

## **Norway**

- ZyXEL Communications
- <http://www.zyxel.no>

## **Poland**

- ZyXEL Communications Poland
- <http://www.zyxel.pl>

## **Romania**

- ZyXEL Romania
- <http://www.zyxel.com/ro/ro>

## **Russia**

- ZyXEL Russia
- <http://www.zyxel.ru>

## **Slovakia**

- ZyXEL Communications Czech s.r.o. organizacna zlozka
- <http://www.zyxel.sk>

## **Spain**

- ZyXEL Communications ES Ltd
- <http://www.zyxel.es>

## **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/>

### **Brazil**

- ZyXEL Communications Brasil Ltda.
- <https://www.zyxel.com/br/pt/>

### **Ecuador**

- ZyXEL Communication Corporation
- <http://www.zyxel.com/ec/es/>

## **Middle East**

### **Israel**

- ZyXEL Communication Corporation
- <http://il.zyxel.com/homepage.shtml>

### **Middle East**

- ZyXEL Communication Corporation

- <http://www.zyxel.com/me/en/>

## **North America**

### **USA**

- ZyXEL Communications, Inc. - North America Headquarters
- <http://www.zyxel.com/us/en/>

## **Oceania**

### **Australia**

- ZyXEL Communications Corporation
- <http://www.zyxel.com/au/en/>

## **Africa**

### **South Africa**

- Nology (Pty) Ltd.
- <http://www.zyxel.co.za>

# Legal Information

## Copyright

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## Disclaimer

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## Regulatory Notice and Statement

### UNITED STATES of AMERICA



The following information applies if you use the product within USA area.

#### FCC EMC Statement

- The device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:
  - (1) This device may not cause harmful interference, and
  - (2) this device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This product has been tested and complies with the specifications 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 equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
- If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna
  - Increase the separation between the equipment or devices
  - Connect the equipment to an outlet other than the receiver's
  - Consult a dealer or an experienced radio/TV technician for assistance

### CANADA

The following information applies if you use the product within Canada area

#### Industry Canada ICES statement

CAN ICES-3 (B)/NMB-3(B)

## EUROPEAN UNION



The following information applies if you use the product within the European Union.

## List of national codes

COUNTRY	ISO 3166 2 LETTER CODE	COUNTRY	ISO 3166 2 LETTER CODE
Austria	AT	Liechtenstein	LI
Belgium	BE	Lithuania	LT
Bulgaria	BG	Luxembourg	LU
Croatia	HR	Malta	MT
Cyprus	CY	Netherlands	NL
Czech Republic	CZ	Norway	NO
Denmark	DK	Poland	PL
Estonia	EE	Portugal	PT
Finland	FI	Romania	RO
France	FR	Serbia	RS
Germany	DE	Slovakia	SK
Greece	GR	Slovenia	SI
Hungary	HU	Spain	ES
Iceland	IS	Switzerland	CH
Ireland	IE	Sweden	SE
Italy	IT	Turkey	TR
Latvia	LV	United Kingdom	GB

## 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.
- 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.
- DO NOT remove the plug and connect it to a power outlet by itself; always attach the plug to the power adaptor first before connecting it to a power outlet.
- 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.
- Please use the provided or designated connection cables/power cables/ adaptors. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe). If the power adaptor or cord is damaged, it might cause electrocution. Remove it from the device and the power source, repairing the power adapter or cord is prohibited. 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 is replaced by an incorrect type, dispose of used batteries according to the instruction. Dispose them at the applicable collection point for the recycling of electrical and electronic devices. 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.

The following warning statements apply, where the disconnect device is not incorporated in the device or where the plug on the power supply cord is intended to serve as the disconnect device,

- For permanently connected devices, a readily accessible disconnect device shall be incorporated external to the device;
- For pluggable devices, the socket-outlet shall be installed near the device and shall be easily accessible.

## Environment Statement

### ErP (Energy-related Products)

ZyXEL products put on the EU market in compliance with the requirement of the European Parliament and the Council published Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products (recast), so called as "ErP Directive (Energy-related Products directive) as well as ecodesign requirement laid down in applicable implementing measures, power consumption has satisfied regulation requirements which are:

Network standby power consumption < 12W, and/or

Off mode power consumption < 0.5W, and/or

Standby mode power consumption < 0.5W.

Wireless setting, please refer to "Wireless" chapter for more detail.

### European Union - Disposal and Recycling Information

The symbol below means that according to local regulations your product and/or its battery shall be disposed of separately from domestic waste. If this product is end of life, take it to a recycling station designated by local authorities. At the time of disposal, the separate collection of your product and/or its battery will help save natural resources and ensure that the environment is sustainable development.

Die folgende Symbol bedeutet, dass Ihr Produkt und/oder seine Batterie gemäß den örtlichen Bestimmungen getrennt vom Hausmüll entsorgt werden muss. Wenden Sie sich an eine Recyclingstation, wenn dieses Produkt das Ende seiner Lebensdauer erreicht hat. Zum Zeitpunkt der Entsorgung wird die getrennte Sammlung von Produkt und/oder seiner Batterie dazu beitragen, natürliche Ressourcen zu sparen und die Umwelt und die menschliche Gesundheit zu schützen.

El símbolo de abajo indica que según las regulaciones locales, su producto y/o su batería deberán depositarse como basura separada de la doméstica. Cuando este producto alcance el final de su vida útil, llévelo a un punto limpio. Cuando llegue el momento de desechar el producto, la recogida por separado éste y/o su batería ayudará a salvar los recursos naturales y a proteger la salud humana y medioambiental.

Le symbole ci-dessous signifie que selon les réglementations locales votre produit et/ou sa batterie doivent être éliminés séparément des ordures ménagères. Lorsque ce produit atteint sa fin de vie, amenez-le à un centre de recyclage. Au moment de la mise au rebut, la collecte séparée de votre produit et/ou de sa batterie aidera à économiser les ressources naturelles et protéger l'environnement et la santé humaine.

Il simbolo sotto significa che secondo i regolamenti locali il vostro prodotto e/o batteria deve essere smaltito separatamente dai rifiuti domestici. Quando questo prodotto raggiunge la fine della vita di servizio portarlo a una stazione di riciclaggio. Al momento dello smaltimento, la raccolta separata del vostro prodotto e/o della sua batteria aiuta a risparmiare risorse naturali e a proteggere l'ambiente e la salute umana.

Symbolen innebär att enligt lokal lagstiftning ska produkten och/eller dess batteri kastas separat från hushållsavfallet. När den här produkten når slutet av sin livslängd ska du ta den till en återvinningsstation. Vid tiden för kasseringen bidrar du till en bättre miljö och mänsklig hälsa genom att göra dig av med den på ett återvinningsställe.



Environmental Product Declaration

Български (Bulgarian)	Čeština (Czech)	Dansk (Danish)	Deutsch (German)
<p>Екологична продуктова декларация</p> <p>RoHS Директива 2011/65/EC WEEE Директива 2012/19/EC PPW Директива 94/62/EC REACH REGULATION (EC) № 1907/2006 EoP Директива 2009/125/EC</p> <p>Име/ титла : Richard Hsu / Quality Management Division Senior Manager Подпис : Дата (dd/mm/yyyy): 01/10/2014</p>  	<p>Environmentální prohlášení o produktu</p> <p>RoHS Směrnice 2011/65/EU WEEE Směrnice 2012/19/EU PPW Směrnice 94/62/EC REACH Nařízení (ES) č. 1907/2006 EoP Směrnice 2009/125/ES</p> <p>Jméno/ titul : Richard Hsu / Quality Management Division Senior Manager Podpis : Datum (dd/mm/yyyy): 01/10/2014</p>  	<p>Miljøvaredeklaration</p> <p>RoHS Direktiv 2011/65/EU WEEE Direktiv 2012/19/EC PPW Direktiv 94/62/EF REACH Forordning (EF) nr. 1907/2006 EoP Direktiv 2009/125/EF</p> <p>Navn/ titel : Richard Hsu / Quality Management Division Senior Manager Underskrift : Dato (dd/mm/åååå): 01/10/2014</p>  	<p>Produkt-Umweltdeklaration</p> <p>RoHS Richtlinie 2011/65/EU WEEE Richtlinie 2012/19/EC PPW Richtlinie 94/62/EG REACH VERORDNUNG (EG) Nr. 1907/2006 EoP Richtlinie 2009/125/EG</p> <p>Name/ titel : Richard Hsu / Quality Management Division Senior Manager Unterschrift : Datum (dd/mm/jj): 2014/10/01</p>  
<p>Toote keskkonnadeklaratsioon</p> <p>RoHS Direktiiv 2011/65/EU WEEE Direktiiv 2012/19/EC PPW Direktiiv 94/62/EÜ REACH Määrus (EÜ) nr. 1907/2006 EoP Direktiiv 2009/125/EÜ</p> <p>Nimi/ amet : Richard Hsu / Quality Management Division Senior Manager Allkiri : Kuupäev (pp/kk/aaaa): 01/10/2014</p>  	<p>Environmental product declaration</p> <p>RoHS Directive 2011/65/EU WEEE Directive 2012/19/EC PPW Directive 94/62/EC REACH Regulation (EC) No. 1907/2006 EoP Directive 2009/125/EC</p> <p>Name/ title : Richard Hsu / Quality Management Division Senior Manager Signature : Date (dd/mm/yyyy): 01/10/2014</p>  	<p>Declaraciones Ambientales de Producto</p> <p>RoHS Directiva 2011/65/UE WEEE Directiva 2012/19/UE PPW Directiva 94/62/CE REACH Reglamento (CE) nº 1907/2006 EoP Directiva 2009/125/CE</p> <p>Nombre/ título : Richard Hsu / Quality Management Division Senior Manager Firma : Fecha (dd/mm/aaaa): 2014/10/01</p>  	<p>Profil environnemental de produit</p> <p>RoHS Directive 2011/65/UE WEEE Directive 2012/19/UE PPW Directive 94/62/CE REACH REGLEMENTAS (EG) nr 1907/2006 EoP Directive 2009/125/CE</p> <p>Nom/ titre : Richard Hsu / Quality Management Division Senior Manager Signature : Date (dd/mm/aaaa): 2014/10/01</p>  
<p>Deklaraciju o zbrinjavanju proizvoda</p> <p>RoHS Direktiva 2011/65/EU WEEE Direktiva 2012/19/EC PPW Direktiva 94/62/EZ REACH Uredba (EZ) br. 1907/2006 EoP Direktiva 2009/125/EZ</p> <p>Ime/ naslov : Richard Hsu / Quality Management Division Senior Manager Podpis : Datum (dd/mm/yyyy): 01/10/2014</p>  	<p>Dichiarazione ambientale di prodotto</p> <p>RoHS Direttiva 2011/65/UE WEEE Direttiva 2012/19/UE PPW Direttiva 94/62/CE REACH REGOLAMENTO (CE) n. 1907/2006 EoP Direttiva 2009/125/CE</p> <p>Nome/ titolo : Richard Hsu / Quality Management Division Senior Manager Firma : Data (dd/mm/aaaa): 2014/10/01</p>  	<p>Produkta vides ietekmējuma deklarācija</p> <p>RoHS Direktīva 2011/65/ES WEEE Direktīva 2012/19/ES PPW Direktīva 94/62/EK REACH Regula (EK) Nr. 1907/2006 EoP Direktīva 2009/125/EK</p> <p>Nosaukums/ tituls : Richard Hsu / Quality Management Division Senior Manager Paraksts : Datums (dd/mm/yyyy): 01/10/2014</p>  	<p>Apinkosaušingų gaminių deklaraciją</p> <p>RoHS Direktyva 2011/65/ES WEEE Direktyva 2012/19/ES PPW Direktyva 94/62/EB REACH REGLAMENTAS (EB) nr 1907/2006 EoP Direktyva 2009/125/EB</p> <p>Vardas/ šiuo : Richard Hsu / Quality Management Division Senior Manager Parašas : Data (dd/mm/aaaa): 01/10/2014</p>  
<p>Környezetvédelmi terméknyilatkozatot</p> <p>RoHS 2011/65/EU irányelve WEEE 2012/19/EU irányelve PPW 94/62/EK irányelve REACH 1907/2006/EK rendelet EoP 2009/125/EK irányelve</p> <p>Név/ cím : Richard Hsu / Quality Management Division Senior Manager Aláírás : Dátum (dd/mm/yyyy): 2014/10/01</p>  	<p>Dikjarazzjoni Ambientali dwar il-Prodott</p> <p>RoHS Direttiva 2011/65/UE WEEE Direttiva 2012/19/UE PPW Direttiva 94/62/CE REACH REGOLAMENTO (CE) NR 1907/2006 EoP Direttiva 2009/125/CE</p> <p>Isim/ titolu : Richard Hsu / Quality Management Division Senior Manager Firma : Data (dd/mm/aaaa): 2014/10/01</p>  	<p>Miljøproductverklaring</p> <p>RoHS Richtlin 2011/65/EU WEEE Richtlin 2012/19/EC PPW Richtlin 94/62/EG REACH Verordning (EG) nr. 1907/2006 EoP Richtlin 2009/125/EG</p> <p>Navn/ titel : Richard Hsu / Quality Management Division Senior Manager Handskrevet : Datum (dd/mm/aaar): 01/10/2014</p>  	<p>Deklaracja środowiskowa produktu</p> <p>RoHS Dyrektywa 2011/65/UE WEEE Dyrektywa 2012/19/UE PPW Dyrektywa 94/62/WE REACH Rozporządzenie (WE) nr 1907/2006 EoP Dyrektywa 2009/125/WE</p> <p>Nazwisko/ tytuł : Richard Hsu / Quality Management Division Senior Manager Podpis : Data (dd/mm/aaaa): 2014/10/01</p>  
<p>Declaração ambiental do produto</p> <p>RoHS Diretiva 2011/65/UE WEEE Diretiva 2012/19/UE PPW Diretiva 94/62/CE REACH Regulamento (CE) nº 1907/2006 EoP Diretiva 2009/125/CE</p> <p>Nome/ título : Richard Hsu / Quality Management Division Senior Manager Assinatura : Data (dd/mm/aaaa): 01/10/2014</p>  	<p>Declarație de mediu privind produsele</p> <p>RoHS Directiva 2011/65/UE WEEE Directiva 2012/19/UE PPW Directiva 94/62/CE REACH REGULAMENTUL (CE) NR 1907/2006 EoP Directiva 2009/125/CE</p> <p>Nume/ titlu : Richard Hsu / Quality Management Division Senior Manager Semnatura : Data (dd/mm/aaaa): 01/10/2014</p>  	<p>Vyhášení o environmentálnom výrobku</p> <p>RoHS Směrnice 2011/65/EU WEEE Směrnice 2012/19/EC PPW Směrnice 94/62/ES REACH Nařízení (ES) č. 1907/2006 EoP Směrnice 2009/125/ES</p> <p>Menor/ titul : Richard Hsu / Quality Management Division Senior Manager Podpis : Datum (dd/mm/yyyy): 01/10/2014</p>  	<p>Okoljsko deklaracija izdelka</p> <p>RoHS Direktiva 2011/65/UE WEEE Direktiva 2012/19/UE PPW Direktiva 94/62/ES REACH Uredba (ES) br. 1907/2006 EoP Direktiva 2009/125/ES</p> <p>Ime/ nadz : Richard Hsu / Quality Management Division Senior Manager Podpis : Datum (dd/mm/jj): 01/10/2014</p>  
<p>Standardin perustava ympäristötuoteseloste</p> <p>RoHS Direktiiv 2011/65/EU WEEE Direktiiv 2012/19/EC PPW Direktiiv 94/62/EY REACH ASETUS (EY) N:o 1907/2006 EoP Direktiiv 2009/125/EY</p> <p>Nimi/ osasto : Richard Hsu / Quality Management Division Senior Manager Alaenkirja : Päivämäärä (pp/kk/vvvv): 01/10/2014</p>  	<p>Miljöproduktdeklaration</p> <p>RoHS Direktiv 2011/65/EU WEEE Direktiv 2012/19/EC PPW Direktiv 94/62/EY REACH Förordning (EG) nr 1907/2006 EoP Direktiv 2009/125/EG</p> <p>Navn/ titel : Richard Hsu / Quality Management Division Senior Manager Namnteckning : Datum (dd/mm/åååå): 01/10/2014</p>  	<p>Περιβαλλοντική δήλωση προϊόντος</p> <p>RoHS Οδηγία 2011/65/ΕΕ WEEE Οδηγία 2012/19/ΕΕ PPW Οδηγία 94/62/ΕΚ REACH Λειτουργία (ΕΚ) αριθ. 1907/2006 EoP Οδηγία 2009/125/ΕΚ</p> <p>Όνομα/ τίτλος : Richard Hsu / Quality Management Division Senior Manager Υπογραφή : Ημερομηνία (gg/mm/aaaa): 01/10/2014</p>  	<p>Miljødeklarasjon</p> <p>RoHS Direktiv 2011/65/UE WEEE Direktiv 2012/19/UE PPW Direktiv 94/62/CE REACH Forordning (EF) nr. 1907/2006 EoP Direktiv 2009/125/EF</p> <p>Navn/ titel : Richard Hsu / Quality Management Division Senior Manager Signatur : Dato (dd/mm/åååå): 01/10/2014</p>  



台灣

**安全警告**

為了您的安全，請先閱讀以下警告及指示：

- 請勿將此產品接近水、火焰或放置在高溫的環境。
- 避免設備接觸任何液體。切勿讓設備接觸水、雨水、高濕度、污水腐蝕性的液體或其他水份。
- 灰塵及污物。切勿接觸灰塵、污物、沙土、食物或其他不適合的材料。
- 雷雨天氣時，不要安裝，使用或維修此設備。有遭受電擊的風險。
- 切勿重摔或撞擊設備，並勿使用不正確的電源變壓器。
- 若接上不正確的電源變壓器會有爆炸的風險。
- 請勿隨意更換產品內的電池。
- 如果更換不正確之電池型式，會有爆炸的風險，請依製造商說明書處理使用過之電池。
- 請將廢電池丟棄在適當的電器或電子設備回收處。
- 請勿將設備解體。
- 請勿阻礙設備的散熱孔，空氣對流不足將會造成設備損害。
- 請插在正確的電壓供給插座（如：北美 / 台灣電壓 110V AC，歐洲是 230V AC）。
- 假若電源變壓器或電源變壓器的纜線損壞，請從插座拔除，若您還繼續插電使用，會有觸電死亡的風險。
- 請勿試圖修理電源變壓器或電源變壓器的纜線，若有毀損，請直接聯絡您購買的店家，購買一個新的電源變壓器。
- 請勿將此設備安裝於室外，此設備僅適合放置於室內。
- 請勿隨一般垃圾丟棄。
- 請參閱產品背貼上的設備額定功率。
- 請參考產品型錄或是彩盒上的作業溫度。
- 產品沒有斷電裝置或者採用電源線的插頭視為斷電裝置的一部分，以下警語將適用：
  - 對永久連接之設備，在設備外部須安裝可觸及之斷電裝置；
  - 對插接式之設備，插座必須接近安裝之地點而且是易於觸及的。

**Viewing Certifications**

Go to <http://www.zyxel.com> to view this product's documentation and certifications.

**ZyXEL Limited Warranty**

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in material or workmanship for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region. Check with your vendor and/or the authorized ZyXEL local distributor for details about the Warranty Period of this product. 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). To obtain the source code covered under those Licenses, please contact [support@zyxel.com.tw](mailto:support@zyxel.com.tw) to get it.

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