

# **QNAP Turbo NAS User Manual**

**(Version: 3.3.0)**

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# Table of Contents

<b>1. Notice</b> .....	<b>6</b>
1.1 Regulatory Notice .....	7
1.2 Symbols in this document .....	8
1.3 Safety Information and Precautions .....	9
<b>2. Getting Started</b> .....	<b>10</b>
2.1 Browse the CD-ROM .....	15
2.2 Hard Disk Drive Compatibility List .....	17
2.3 Check System Status (LED and Alarm Buzzer) .....	18
2.4 Connect to the NAS Network Shares .....	21
2.5 Connect to the NAS by Web Browser .....	23
2.6 System Migration .....	29
<b>3. System Administration</b> .....	<b>32</b>
3.1 General Settings .....	33
3.2 Network .....	37
3.3 Hardware .....	48
3.4 Security .....	51
3.5 Notification .....	54
3.6 Power Management .....	57
3.7 Network Recycle Bin .....	59
3.8 Backup/ Restore Settings .....	60
3.9 System Logs .....	61
3.10 Firmware Update .....	64
3.11 Restore to Factory Default .....	69
<b>4. Disk Management</b> .....	<b>70</b>
4.1 Volume Management .....	70
4.2 RAID Management .....	74

4.3 HDD SMART .....	96
4.4 Encrypted File System .....	97
4.5 iSCSI .....	98
4.6 Virtual Disk .....	135
<b>5. Access Right Management.....</b>	<b>137</b>
5.1 Users .....	137
5.2 User Groups .....	143
5.3 Share Folders .....	144
5.4 Quota .....	161
<b>6. Network Services.....</b>	<b>162</b>
6.1 Microsoft Networking .....	163
6.2 Apple Networking .....	176
6.3 NFS Service .....	177
6.4 FTP Service .....	180
6.5 Telnet/ SSH .....	182
6.6 SNMP Settings .....	183
6.7 Web Server .....	185
6.7.1 Virtual Host .....	208
6.8 Network Service Discovery .....	212
<b>7. Web File Manager.....</b>	<b>214</b>
<b>8. Multimedia Station.....</b>	<b>222</b>
8.1 QMobile .....	255
<b>9. Download Station.....</b>	<b>282</b>
<b>10. Surveillance Station.....</b>	<b>294</b>
<b>11. iTunes Service.....</b>	<b>302</b>
<b>12. UPnP Media Server.....</b>	<b>305</b>
<b>13. MySQL Server.....</b>	<b>307</b>
<b>14. QPKG Plugins .....</b>	<b>309</b>

<b>15. Backup</b> .....	<b>311</b>
15.1 External Drive .....	<b>311</b>
15.2 USB One Touch Copy .....	<b>313</b>
15.3 Remote Replication .....	<b>316</b>
15.4 Time Machine .....	<b>327</b>
<b>16. External Device</b> .....	<b>332</b>
16.1 External Storage Device .....	<b>332</b>
16.2 USB Printer .....	<b>333</b>
16.2.1 Windows XP Users .....	334
16.2.2 Windows Vista/ Windows 7 Users .....	336
16.2.3 Mac OS X 10.4 .....	338
16.2.4 Mac OS X 10.5 .....	343
16.3 UPS Settings .....	<b>349</b>
<b>17. System Status</b> .....	<b>354</b>
17.1 System Information .....	<b>354</b>
17.2 System Service .....	<b>355</b>
17.3 Resource Monitor .....	<b>356</b>
<b>18. Use the LCD Panel</b> .....	<b>359</b>
<b>19. NetBak Replicator</b> .....	<b>366</b>
<b>20. Connect to QNAP NAS from the Internet (DDNS Service)</b> .....	<b>383</b>
<b>21. Set SMS and Email Alert</b> .....	<b>391</b>
<b>22. Set up UPnP Media Server for Media Playing</b> .....	<b>400</b>
<b>23. Host a Forum with phpBB on QNAP NAS</b> .....	<b>409</b>
<b>24. NAS Maintenance Settings</b> .....	<b>421</b>
24.1 Restart/ Shut down Server .....	<b>422</b>
24.2 Reset Administrator Password and Network Settings .....	<b>424</b>
24.3 System Temperature Protection .....	<b>426</b>
24.4 Troubleshooting-Abnormal RAID Operation .....	<b>427</b>



**25. GNU GENERAL PUBLIC LICENSE.....429**

# 1. Notice

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Thank you for choosing QNAP products! This user manual provides detailed instructions of using the Turbo NAS (network-attached storage). Please read carefully and start to enjoy the powerful functions of the Turbo NAS!

- The Turbo NAS is hereafter referred to as the NAS.
- This manual provides the description of all the functions of the Turbo NAS. The product you purchased may not support certain functions dedicated to specific models.

## Legal Notices

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All the features, functionality, and other product specifications are subject to change without prior notice or obligation. Information contained herein is subject to change without notice.

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Back up your system periodically to avoid any potential data loss. QNAP disclaims any responsibility of all sorts of data loss or recovery.

Should you return any components of the NAS package for refund or maintenance, make sure they are carefully packed for shipping. Any form of damages due to improper packaging will not be compensated.

## 1.1 Regulatory Notice

---



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined 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 and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.




Shielded interface cables, if any, must be used in order to comply with the emission limits.



Class B only.

## 1.2 Symbols in this document

---

 Warning	This icon indicates the instructions must be strictly followed. Failure to do so could result in injury to human body or death.
 Caution	This icon indicates the action may lead to disk clearance or loss OR failure to follow the instructions could result in data damage, disk damage, or product damage.
 Important	This icon indicates the information provided is important or related to legal regulations.

## 1.3 Safety Information and Precautions

---

1. The NAS can operate normally in the temperature of 0°C–40°C and relative humidity of 0%–95%. Please make sure the environment is well-ventilated.
2. The power cord and devices connected to the NAS must provide correct supply voltage (100W, 90–264V).
3. Do not place the NAS in direct sunlight or near chemicals. Make sure the temperature and humidity of the environment are in optimized level.
4. Unplug the power cord and all the connected cables before cleaning. Wipe the NAS with a dry towel. Do not use chemical or aerosol to clean the NAS.
5. Do not place any objects on the NAS for the server's normal operation and to avoid overheat.
6. Use the flat head screws in the product package to lock the hard disk drives (HDD) in the NAS when installing the HDD for proper operation.
7. Do not place the NAS near any liquid.
8. Do not place the NAS on any uneven surface to avoid falling off and damage.
9. Make sure the voltage is correct in your location when using the NAS. If you are not sure, please contact the distributor or the local power supply company.
10. Do not place any object on the power cord.
11. Do not attempt to repair your NAS in any occasions. Improper disassembly of the product may expose you to electric shock or other risks. For any enquiries, please contact the distributor.
12. The chassis (also known as rack mount) NAS models should only be installed in the server room and maintained by the authorized server manager or IT administrator. The server room is locked by key or keycard access and only certified staff is allowed to enter the server room.



**Warning:**

- Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- Do NOT touch the fan inside the system to avoid serious injuries.

## 2. Getting Started

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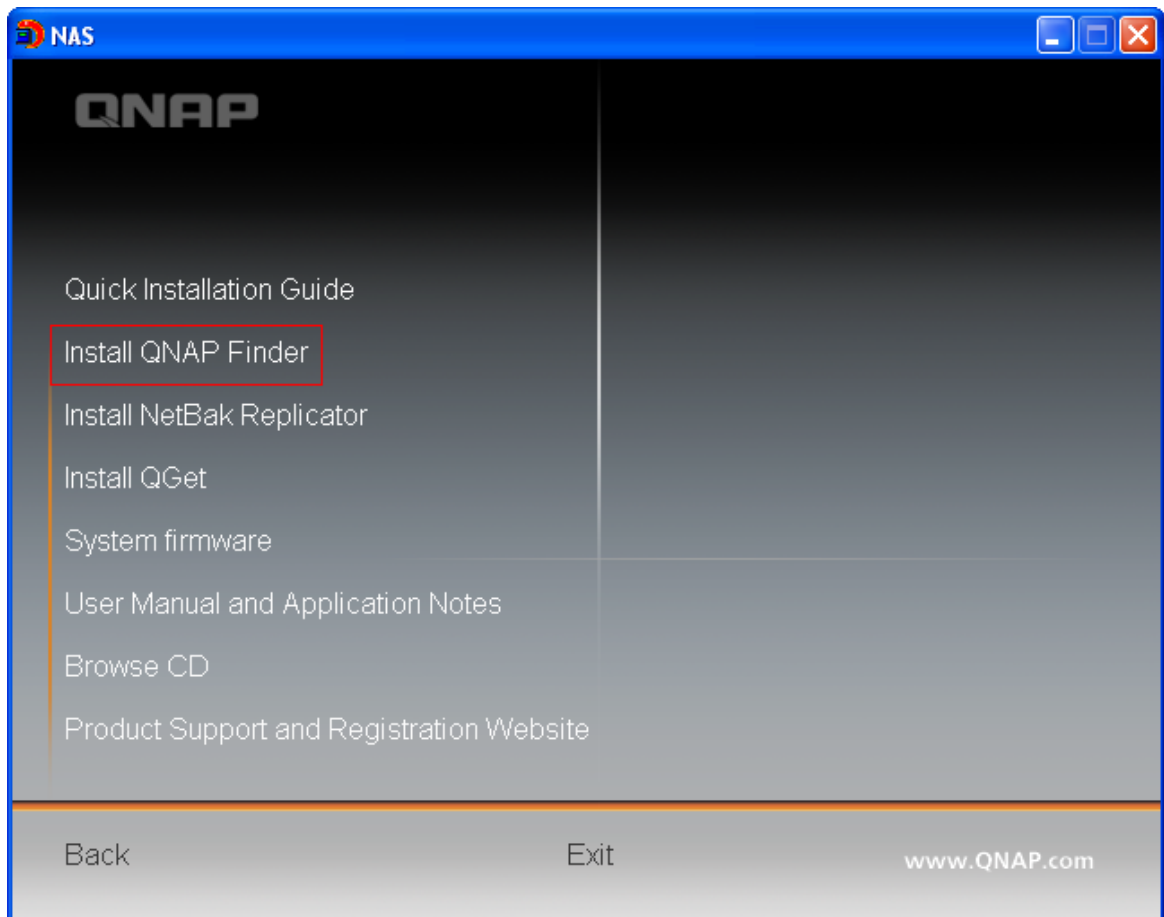
### Hardware Installation

For the information of hardware installation, see the 'Quick Installation Guide' (QIG) in the product package. You can also find the QIG in the product CD-ROM or QNAP website (<http://www.qnap.com/>).

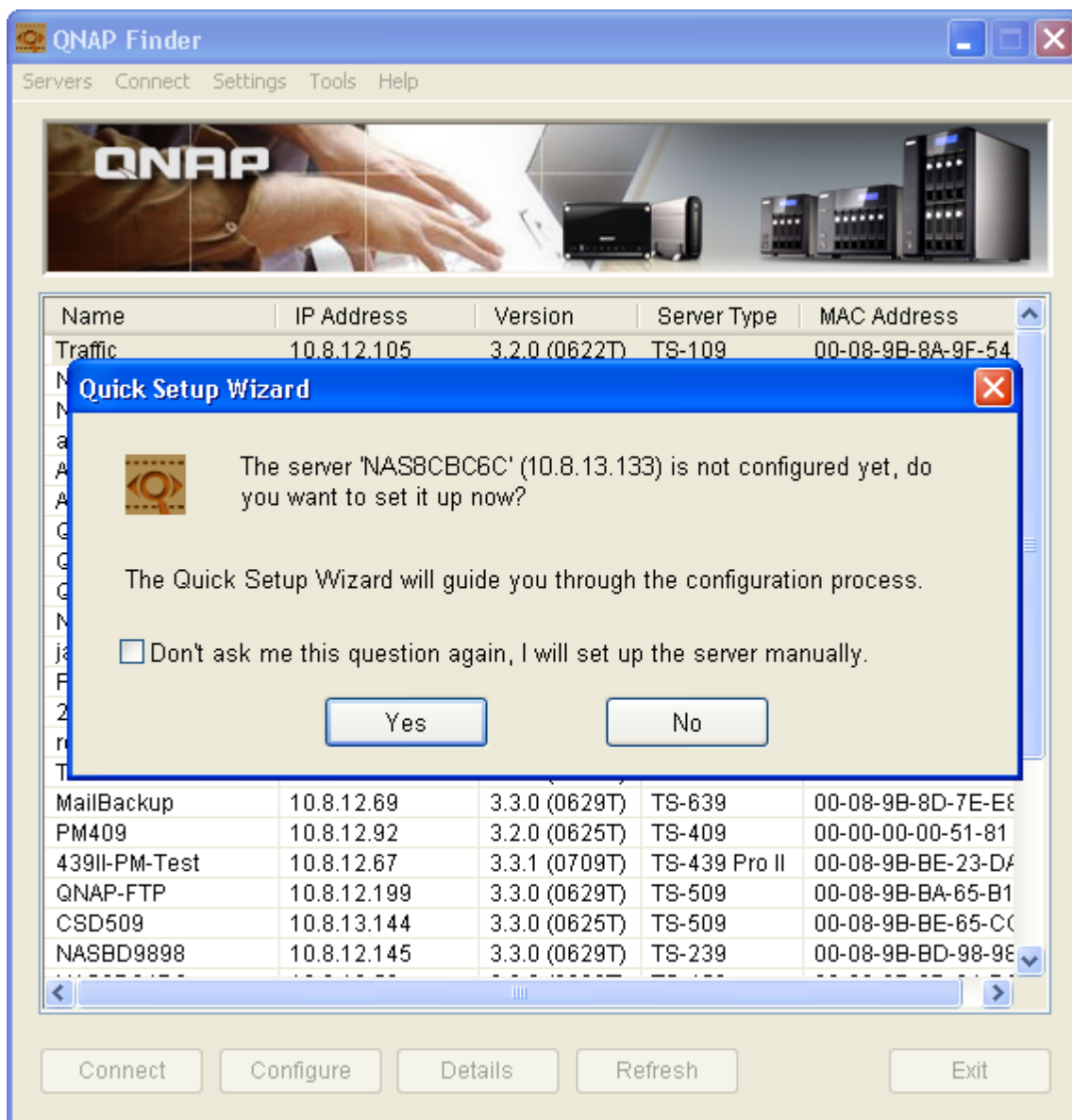
### Software Installation

After you have installed the NAS hardware, you can proceed to the software installation. The following demonstration is based on Windows OS.

1. Install QNAP Finder from the product CD-ROM.



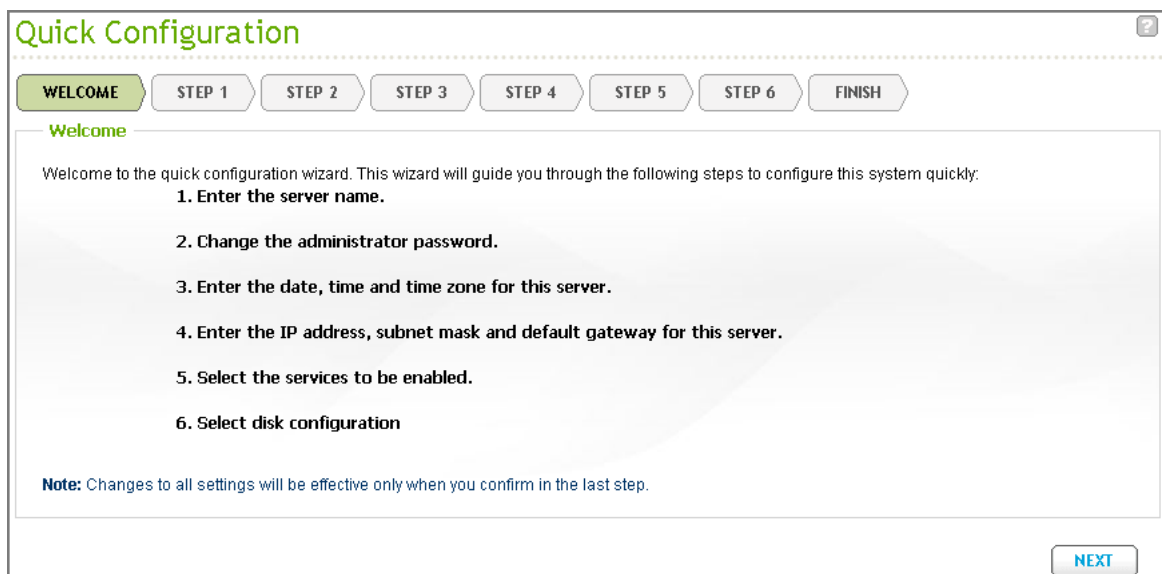
2. Run QNAP Finder. If Finder is blocked by your firewall, unblock the utility.
3. QNAP Finder detects your NAS which has not been configured. Click 'Yes' which you are prompted to perform quick setup of the NAS.



4. Click 'OK' to proceed.



5. Your default web browser will be opened. Follow the instructions to configure the NAS.





6. Click 'START INSTALLATION' in the last step.

### Quick Configuration

WELCOME STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 STEP 6 **FINISH**


**Finish**

The changes you have made to the server are as below. Click "Start installation" to begin the quick configuration; or click "Back" to return to the previous steps to modify the settings.

Server Name :	NAS8CBC6C
Password:	The password is unchanged.
Time Zone :	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi
Time Setting:	Set the server time the same as your computer time.
Network :	Obtain TCP/IP settings automatically via DHCP
IP Address:	--
Subnet Mask:	--
Default Gateway:	--
Primary DNS Server	0.0.0.0
Secondary DNS Server	0.0.0.0
Network services:	Microsoft Networking, Web File Manager, FTP Service, Download Station, Multimedia Station, Web Server
Disk configuration:	Raid 1
Encrypt disk volume:	Yes
File System:	EXT4
Drive 1:	Seagate ST3160318AS CC44 149.05 GB
Drive 2:	Seagate ST3160318AS CC44 149.05 GB

BACK START INSTALLATION

7. All the installed hard disk drives will be formatted and all the data will be cleared. Click 'OK' to proceed.



The hard drives will be formatted and all data will be cleared. Are you sure?

OK CANCEL


- When finished, click 'Return to system administration page' or enter the NAS IP in the web browser to connect to the web administration page of the NAS.

## Quick Configuration ?

**System is initializing, please wait.**

The system is being configured. Do NOT power off the server or unplug the hard drive(s).

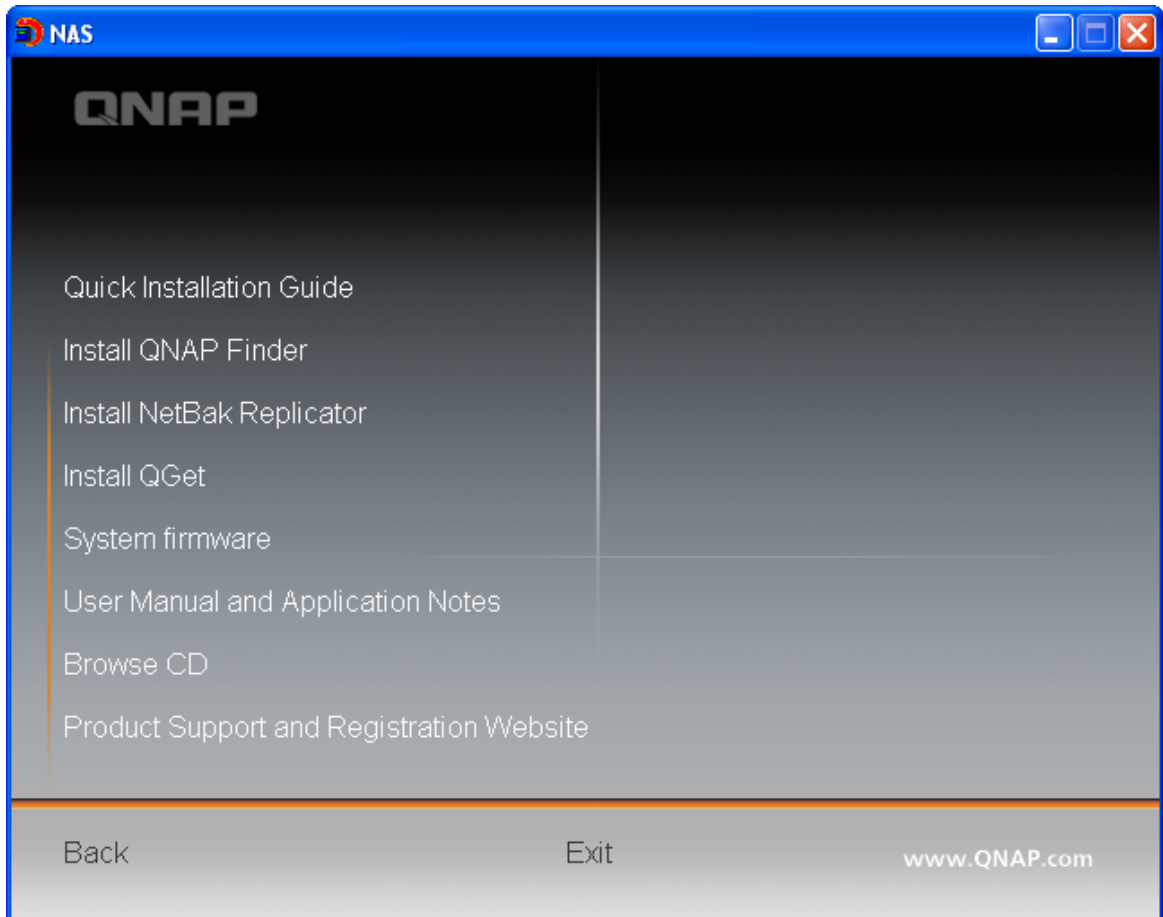
- ✔ 1. Change the name for this server.
- ✔ 2. Change the administrator password.
- ✔ 3. Change the time settings.
- ✔ 4. Change the network settings.
- ✔ 5. Start the network services.
- ✔ 6. Initialize the hard disk.

 System configuration completed. [Return to system administration page.](#)

## 2.1 Browse the CD-ROM

---

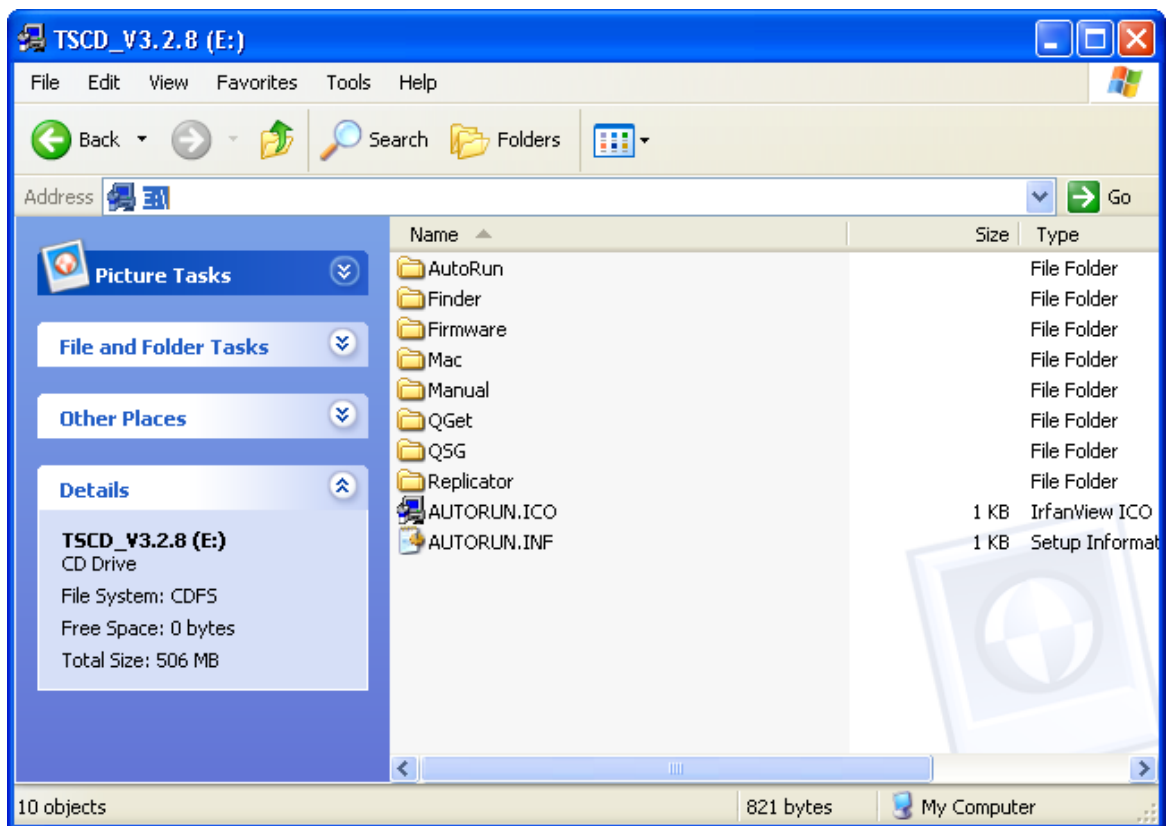
The NAS CD-ROM contains documentation including Quick Installation Guide (QIG), user manual, application notes, and software utilities QNAP Finder, NetBak Replicator, and QGet.



You can browse the CD-ROM and access the following contents:

- Finder: The setup program of QNAP Finder (for Windows OS).
- Firmware: The firmware IMG file for the NAS model you purchased.
- Mac: The setup program of QNAP Finder (for Mac OS).
- Manual: The Quick Installation Guide, software user manuals, and hardware manual of Turbo NAS.
- QGet: The setup program of QGet download utility (for Windows OS).
- QSG: View the hardware installation instructions of the NAS.
- Replicator: The setup program of NetBak Replicator (Windows utility for data backup from Windows OS to QNAP NAS).

The above contents are also available on QNAP website (<http://www.qnap.com/>).



## 2.2 Hard Disk Drive Compatibility List

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This product works with 2.5-inch/ 3.5-inch SATA hard disk drives (HDD) from major HDD brands. For the HDD compatibility list, please visit <http://www.qnap.com/>.



**Important:** QNAP disclaims any responsibility for product damage/ malfunction or data loss/ recovery due to misuse or improper installation of hard disks in any occasions for any reasons.



**Caution:** Note that if you install a HDD (new or used) which has never been installed on the NAS before, the HDD will be formatted and partitioned automatically and all the disk data will be cleared.

## 2.3 Check System Status (LED and Alarm Buzzer)

### LED Display & System Status Overview

LED	Colour	LED Status	Description
System Status	Red / Green	Flashes green and red alternately every 0.5 sec	<ol style="list-style-type: none"> <li>1) The HDD on the NAS is being formatted</li> <li>2) The NAS is being initialised</li> <li>3) The system firmware is being updated</li> <li>4) RAID rebuilding is in process</li> <li>5) Online RAID capacity expansion is in process</li> <li>6) Online RAID level migration is in process</li> </ol>
		Red	<ol style="list-style-type: none"> <li>1) The HDD is invalid</li> <li>2) The disk volume has reached its full capacity</li> <li>3) The disk volume is going to be full</li> <li>4) The system fan is out of function (TS-119 does not support smart fan.)</li> <li>5) An error occurs when accessing (read/write) the disk data</li> <li>6) A bad sector is detected on the HDD</li> <li>7) The NAS is in degraded read-only mode (2 member HDD fail in a RAID 5 or RAID 6 configuration, the disk data can still be read)</li> <li>8) (Hardware self-test error)</li> </ol>
		Flashes red every 0.5 sec	The NAS is in degraded mode (one member HDD fails in RAID 1, RAID 5 or RAID 6 configuration)
		Flashes green every 0.5 sec	<ol style="list-style-type: none"> <li>1) The NAS is starting up</li> <li>2) The NAS is not configured</li> <li>3) The HDD is not formatted</li> </ol>

LED	Colour	LED Status	Description
		Green	The NAS is ready
		Off	All the HDD on the NAS are in standby mode
LAN	Orange	Orange	The disk data is being accessed and a read/write error occurs during the process
		Flashes orange	The NAS is connected to the network
HDD	Red/ Green	Flashes red	The NAS is being accessed from the network
		Red	A HDD read/write error occurs
		Flashes green	The disk data is being accessed
		Green	The HDD can be accessed
USB	Blue	Flashes blue every 0.5 sec	<ol style="list-style-type: none"> <li>1) A USB device (connected to front USB port) is being detected</li> <li>2) A USB device (connected to front USB port) is being removed from the NAS</li> <li>3) The USB device (connected to the front USB port) is being accessed</li> <li>4) The data is being copied to or from the external USB or eSATA device</li> </ol>
		Blue	<ol style="list-style-type: none"> <li>1) A front USB device is detected (after the device is mounted)</li> <li>2) The NAS has finished copying the data to or from the USB device connected to the front USB port</li> </ol>
		Off	No USB device can be detected
eSATA*	Orange	Flashes	The eSATA device is being accessed
		Off	No eSATA device can be detected

\* TS-210, TS-219, TS-439U-SP/RP, TS-809 Pro, TS-809U-RP do not support eSATA port.

**Alarm Buzzer (the alarm buzzer can be disabled in 'System Tools' > 'Hardware Settings')**

<b>Beep sound</b>	<b>No. of Times</b>	<b>Description</b>
Short beep (0.5 sec)	1	<ol style="list-style-type: none"><li>1) The NAS is starting up</li><li>2) The NAS is being shut down (software shutdown)</li><li>3) The user presses the reset button to reset the NAS</li><li>4) The system firmware has been updated</li></ol>
Short beep (0.5 sec)	3	The NAS data cannot be copied to the external storage device from the front USB port
Short beep (0.5 sec), long beep (1.5 sec)	3, every 5 min	The system fan is out of function (TS-119 does not support smart fan.)
Long beep (1.5 sec)	2	<ol style="list-style-type: none"><li>1) The disk volume is going to be full</li><li>2) The disk volume has reached its full capacity</li><li>3) The HDD on the NAS are in degraded mode</li><li>4) The user starts HDD rebuilding</li></ol>
	1	<ol style="list-style-type: none"><li>1) The NAS is turned off by force shutdown (hardware shutdown)</li><li>2) The NAS has been turned on and is ready</li></ol>

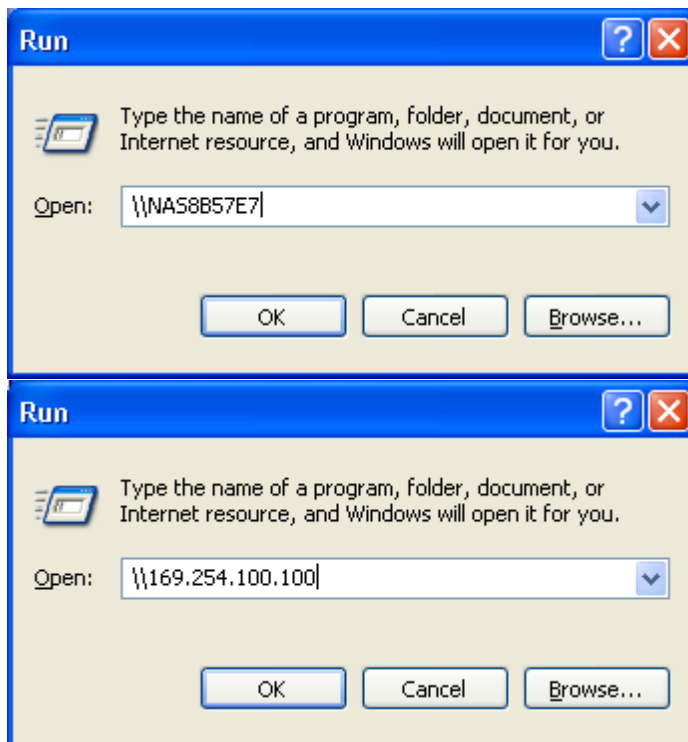


## 2.4 Connect to the NAS Network Shares

---

### Windows Users

1. You can connect to the network shares of the NAS by the following means:
  - a. Open My Network Places and find the workgroup of the NAS. If you cannot find the server, browse the whole network to search for the NAS. Double click the name of the NAS for connection.
  - b. Use the Run function in Windows. Enter \\NAS name or \\NAS IP



2. Enter the default administrator name and password.

```
Default user name: admin
Default password: admin
```

3. You can upload files to the network shares.

## Mac Users

1. Choose 'Go' > 'Connect to Server'.
2. There are two ways to mount a disk:
  - AFP: type NAS IP or afp://NAS\_IP
  - SMB: type smb://NAS\_IP or NAS\_nameFor example, 169.254.100.100 or smb://169.254.100.100
3. Click 'Connect'.

## Linux Users

On Linux, run the following command:

```
mount -t nfs <NAS IP>:/<Network Share Name> <Directory to Mount>
```

For example, if the IP address of your NAS is 192.168.0.1 and you want to link the network share folder 'public' under the /mnt/pub directory, use the following command:

```
mount -t nfs 192.168.0.1:/public /mnt/pub
```

**Note:** You must login as the 'root' user to initiate the above command.

Login as the user ID you define, you can use the mounted directory to connect to your shared files.

## 2.5 Connect to the NAS by Web Browser

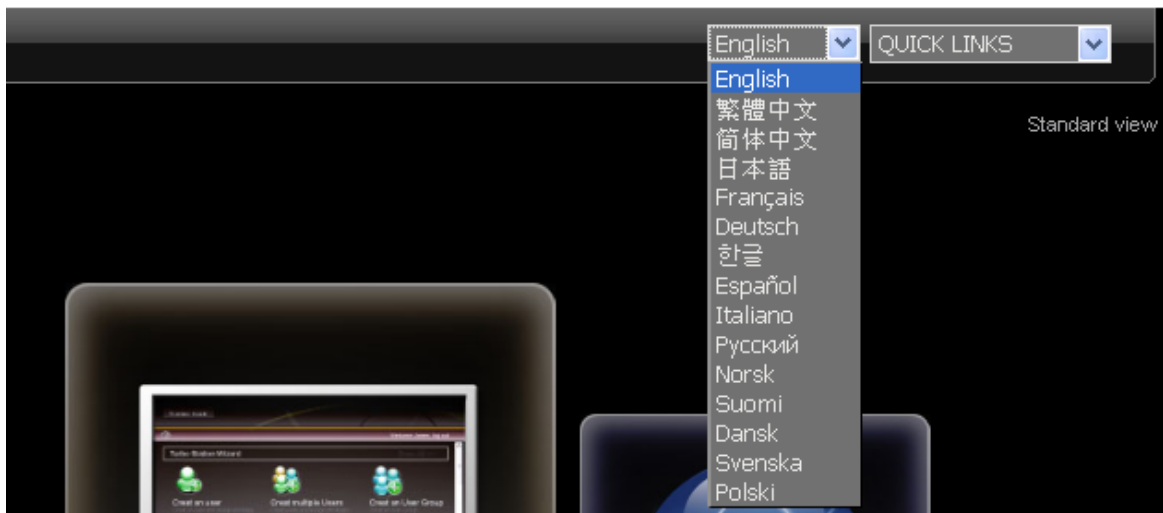
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### Connect to the NAS by web browser on Windows or Mac OS

1. You can connect to the web administration page of the NAS by the following methods:
  - a. Use Finder to find the NAS.
  - b. Open a web browser and enter `http://NAS IP:8080`

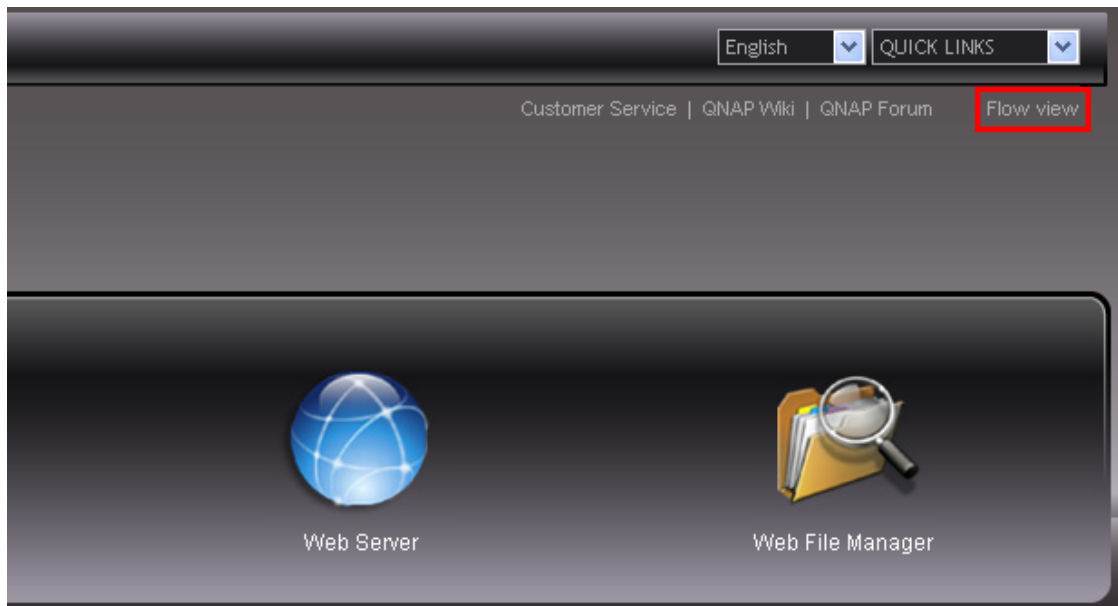
**Note:** The default NAS IP is 169.254.100.100:8080. If you have configured the NAS to use DHCP, you can use Finder to check the IP address of the NAS. Make sure the NAS and the computer that runs Finder are connected to the same subnet. If you cannot search for the NAS IP, connect the NAS to your computer directly and run Finder again.

2. Choose the display language from the drop-down menu on the login page of the NAS or after you login the NAS.



3. You can select to browse the NAS UI with Standard view or Flow view.

**Standard view**



**Flow view**



4. To configure the NAS, click 'ADMINISTRATION'. Enter the administrator name and password.

Default user name: admin  
Default password: admin

Note that if you login the administration interface with a user account without the administration right, you can only change your login password.



5. You can turn on the option 'SSL login' (Secure Sockets Layer login) to allow secure connection to the NAS.

**Note:** If your NAS is placed behind an NAT gateway and you want to access the NAS by secure login from the Internet, you must open the port 443 on your NAT and forward this port to LAN IP of the NAS.

Close | X

User Name admin

Password .....

Remember user name

Remember password

SSL login







SUBMIT CANCEL

After you login the NAS, the home page will be shown. You can find the software wizards for convenient setup of some features, links to QNAP technical support, forum, and Wiki, and the latest RSS news feeds from QNAP\*.

Home Welcome admin | Logout English




---

### Turbo Station Wizard

 <b>Create a User</b> Create a user and assign the privileges	 <b>Create Multiple Users</b> Create multiple users and assign the privileges	 <b>Create a User Group</b> Create a user group and assign the privileges
 <b>Create a Share Folder</b> Create a shared folder and assign the privileges	 <b>FTP Service</b> Set up the FTP service	 <b>Remote Replication</b> Set up the backup schedule

---

### Support and Forum

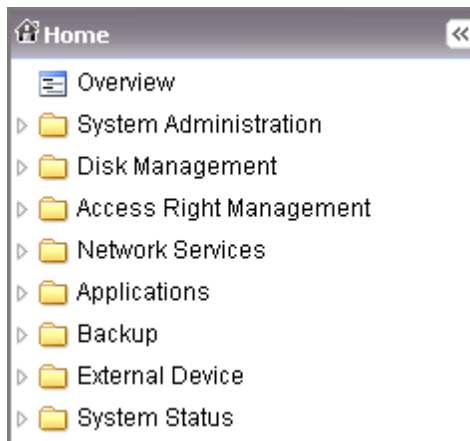
 <a href="#">Support Form</a>	 <a href="#">QNAP Forum</a>	 <a href="#">QNAP Wiki</a>
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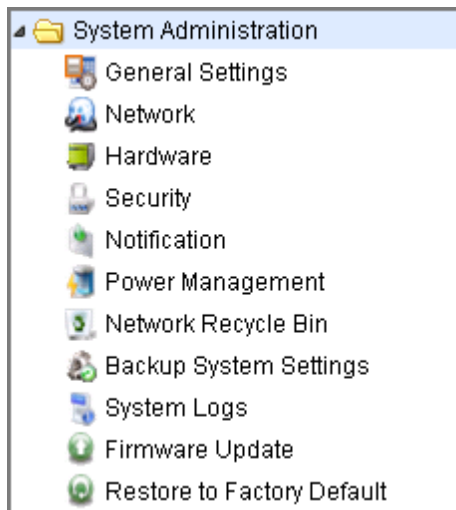
### QNAP Latest News

- [\(2010.04.28\) \[Firmware\] TS-239 Turbo NAS Official Firmware Released \(v3.2.6 Build 0423\)](#)
- [\(2010.04.28\) \[Firmware\] TS-239 Pro II Turbo NAS Official Firmware Released \(v3.2.6 Build 0423\)](#)

There are 8 main sections in the server administration.



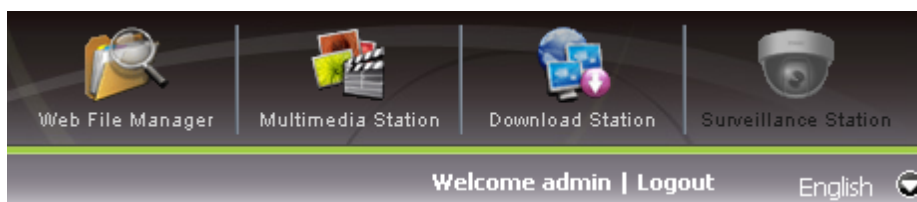
Click the triangle icon next to the section name to expand the tree and view the items listed under each section.



To use the services such as Web File Manager, Download Station, Multimedia Station, and Surveillance Station, choose the services from the drop-down menu or click the icons on the login page.



After you login the NAS, you can click the icons on top of the page to access the services.





## 2.6 System Migration

---

System migration allows existing QNAP NAS users to upgrade your NAS to another new QNAP NAS model without the need to transfer the data or reconfigure the system. You only need to install the original hard disk drives (HDD) on the new NAS following its original HDD order and restart the NAS.

Due to different hardware design, the NAS will automatically check if a firmware update is required before system migration. After the migration has finished, all the settings and data will be kept and applied to the new NAS.

The following table shows the NAS models which support system migration.

Source NAS	Destination NAS	Remarks
TS-x10/ TS-x19/ TS-x39/ 509/ 809/ SS-x39/ TS-x59	TS-x10/ TS-x19/ TS-x39/ 509/ 809/ SS-x39	Firmware update required.
TS-x10/ TS-x19/ TS-x39/ 509/ 809/ SS-x39/ TS-x59	TS-x59	Firmware update not required.

**Note:**

- The destination should contain enough drive bays to house the number of hard disk drives in the disk volume of the source NAS.
- SS-x39 series supports only 2.5-inch HDD.

<b>Destination NAS</b>	<b>Disk volume supported for system migration</b>
1-bay NAS	1-drive single disk volume
2-bay NAS	1 to 2-drive single disk volume/ JBOD/ RAID 0, 2-drive RAID 1.
4-bay NAS	1 to 4-drive single disk volume/ JBOD/ RAID 0, 2-drive RAID 1, 3 to 4-drive RAID 5, 4-drive RAID 6.
5-bay NAS	1 to 5-drive single disk volume/ JBOD/ RAID 0, 2-drive RAID 1, 3 to 5-drive RAID 5, 4 to 5-drive RAID 6.
6-bay NAS	1 to 6-drive single disk volume/ JBOD/ RAID 0, 2-drive RAID 1, 3 to 6-drive RAID 5, 4 to 6-drive RAID 6.
8-bay NAS	1 to 8-drive single disk volume/ JBOD/ RAID 0, 2-drive RAID 1, 3 to 8-drive RAID 5, 4 to 8-drive RAID 6.

Follow the steps below to perform system migration.



**Caution:** To avoid server damage or serious injuries, the system migration procedure should be performed by an authorized server manager or IT administrator.

1. Turn off the source NAS and unplug the HDD.
2. Remove the HDD from the old trays and install them to the HDD trays of the new NAS.
3. Plug the HDD to the destination NAS (new model). Make sure the HDD are installed in the original order.
4. Follow the instructions of the Quick Installation Guide (QIG) to connect the power supply and network cable(s) of the new NAS.
5. Turn on the new NAS. Login the web administration interface as an administrator (default login: admin; password: admin).
6. If you are informed to update the firmware of the new NAS, follow the instructions to download and install the firmware.
7. Click 'Start Migrating'. The NAS will restart after system migration. All the data and settings will be retained.

Some system settings will be removed after system migration due to different system design. You may need to configure the following settings again on the new NAS.

- Windows AD
- Some QPKG's need to be resintalled (e.g. XDove)

## 3. System Administration

---

You can configure general system settings, network settings, and hardware settings, update the firmware, and more in this section.

General Settings [33](#)

Network [37](#)

Hardware [48](#)

Security [51](#)

Notification [54](#)

Power Management [57](#)

Network Recycle Bin [59](#)

Backup/ Restore Settings [60](#)

System Logs [61](#)

Firmware Update [64](#)

Restore to Factory Default [69](#)

## 3.1 General Settings

---

### System Administration

Enter the name of the NAS. The server name supports maximum 14 characters and can be a combination of the alphabets, numbers, and hyphen (-). The server name does not accept the names with space, period (.), or names in pure number.

### General Settings

- SYSTEM ADMINISTRATION
- DATE AND TIME
- DAYLIGHT SAVING TIME
- LANGUAGE
- PASSWORD STRENGTH

#### System Administration

Server Name:

System Port:

Enable Secure Connection (SSL)

Port Number:

Force secure connection (SSL) only

**Note:** After enabling the "Force secure connection (SSL) only" option, the Web Administration can only be connected via https.

Assign a port for the system management. The default port is 8080. The services which use this port include: System Management, Web File Manager, Multimedia Station, and Download Station. If you are not sure about this setting, use the default port number.

#### Enable Secure Connection (SSL)

To allow the users to connect the NAS by https, turn on secure connection (SSL) and enter the port number. If you turn on the option 'Force secure connection (SSL) only', the users can only connect to the web administration page by https connection.

## Date and Time

Adjust the date, time, and time zone of the NAS according to your location. If the settings are incorrect, the following problems may occur:

- When using a web browser to access the server or save a file, the display time of the action will be incorrect.
- The time of the event log displayed will be inconsistent with the actual time when an action occurs.

### Set the server time the same as your computer time

To synchronize the server time with the time of your computer, click 'Update now' next to this option.

### Synchronize with an Internet time server automatically

You can turn on this option to synchronize the date and time of the NAS automatically with specified NTP (Network Time Protocol) server. Enter the IP address or domain name of the NTP server, for example, time.nist.gov, time.windows.com. Then enter the time interval for synchronization. This option can be used only when the NAS is connected to the Internet.

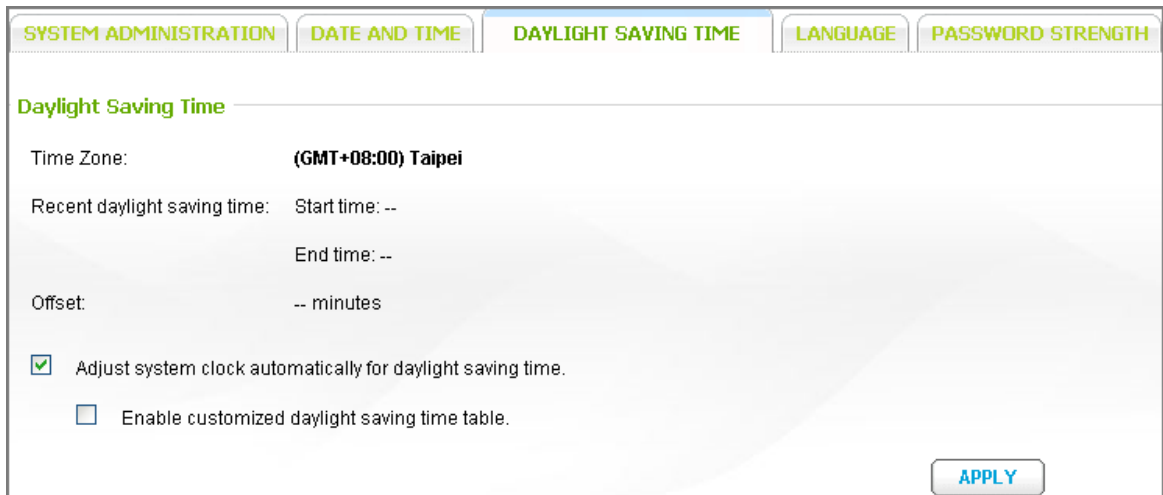
**Note:** The first time synchronization may take several minutes to complete.

The screenshot shows a web interface for configuring the Date and Time settings. At the top, there are five tabs: SYSTEM ADMINISTRATION, DATE AND TIME (selected), DAYLIGHT SAVING TIME, LANGUAGE, and PASSWORD STRENGTH. Below the tabs, the 'Date and Time' section is displayed. It includes a 'Time Zone' dropdown menu set to '(GMT+08:00) Taipei'. The 'Date/Time' section shows a date of '2010/6/8', a time of '10:29:36', and a 'Date Format' dropdown set to 'yyyy/MM/DD'. There are two 'UPDATE NOW' buttons. The first is next to the text 'Set the server time the same as your computer time'. The second is next to the text 'Synchronize with an internet time server automatically', which is preceded by an unchecked checkbox. Below this, the 'Server' field contains 'pool.ntp.org' and the 'Time Interval' is set to '1 day(s)'. An 'APPLY' button is located at the bottom right of the form.

## Daylight Saving Time

If your region adopts daylight saving time (DST), you can turn on the option 'Adjust system clock automatically for daylight saving time'. Click 'Apply'. The latest DST schedule of the time zone you select in the 'Date and Time' section will be shown. The system time will be adjusted automatically according to the DST.

Note that if your region does not adopt DST, the options on this page will not be available.



**SYSTEM ADMINISTRATION** | **DATE AND TIME** | **DAYLIGHT SAVING TIME** | LANGUAGE | PASSWORD STRENGTH

### Daylight Saving Time

Time Zone: **(GMT+08:00) Taipei**

Recent daylight saving time: Start time: --  
End time: --

Offset: -- minutes

Adjust system clock automatically for daylight saving time.  
 Enable customized daylight saving time table.

**APPLY**

To enter the daylight saving time table manually, select the option 'Enable customized daylight saving time table'. Click 'Add Daylight Saving Time Data' and enter the daylight saving time schedule. Then click 'Apply' to save the settings.



Adjust system clock automatically for daylight saving time.  
 Enable customized daylight saving time table.

**APPLY**

### Customized Daylight Saving Time Tables

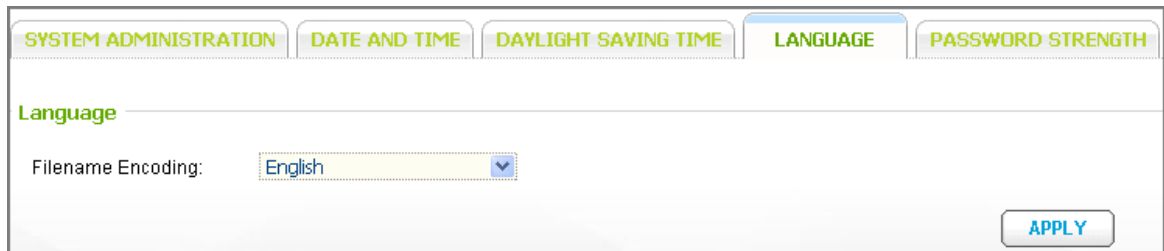
**Add Daylight Saving Time Data**

<input type="checkbox"/>	Start Time	End Time	Offset	Action
<input type="checkbox"/>				<b>Delete</b>

## Language

Select the language the NAS uses to display the files and directories.

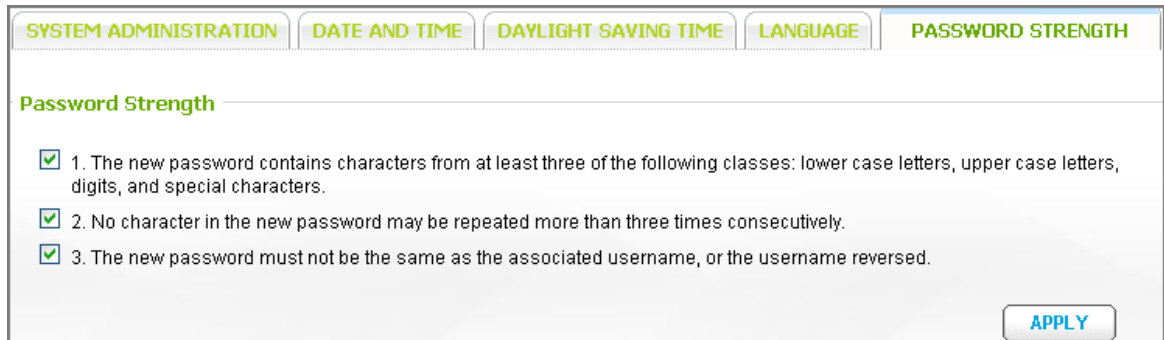
**Note:** All files and directories on the NAS will be created using Unicode encoding. If the FTP clients or the OS of your PC does not support Unicode, select the language which is the same as your OS language in order to view the files and directories on the server properly.



The screenshot shows the 'LANGUAGE' tab selected in a navigation bar. Below the tabs, the 'Language' section is visible. It contains a label 'Filename Encoding:' followed by a dropdown menu currently set to 'English'. An 'APPLY' button is located at the bottom right of the configuration area.

## Password Strength

You can specify the password rules. After applying the setting, the NAS will automatically check the validity of the password.



The screenshot shows the 'PASSWORD STRENGTH' tab selected in a navigation bar. Below the tabs, the 'Password Strength' section is visible. It contains three checked checkboxes with the following rules:

- 1. The new password contains characters from at least three of the following classes: lower case letters, upper case letters, digits, and special characters.
- 2. No character in the new password may be repeated more than three times consecutively.
- 3. The new password must not be the same as the associated username, or the username reversed.


An 'APPLY' button is located at the bottom right of the configuration area.



## 3.2 Network

### TCP/IP

#### (i) IP Address





You can configure the TCP/IP settings of the NAS on this page. Click the Edit button () to edit the network settings. For the NAS which supports two LAN ports, you can connect both network interfaces to two different switches and configure the TCP/IP settings. The NAS will acquire two IP addresses which allow the access from two different subnets. This is known as multi-IP setting\*. When using Finder to detect the NAS IP, the IP of Ethernet 1 will be shown in LAN 1 only and the IP of Ethernet 2 will be shown in LAN 2 only. To use port trunking mode for dual LAN connection, see section (iii).

\* TS-110, TS-119, TS-210, TS-219, and TS-219P provide one Giga LAN port only therefore do not support dual LAN configuration or port trunking.

### Network

**TCP / IP** | DDNS | IPV6

#### IP Address

Interface	DHCP	IP Address	Subnet Mask	Gateway	MAC Address	Speed	MTU	Link	Edit
Ethernet 1	Yes	0.0.0.0	0.0.0.0	0.0.0.0	00:08:9B:8C:BC:6C	100Mbps	1500		
Ethernet 2	Yes	0.0.0.0	0.0.0.0	0.0.0.0	00:08:9B:8C:BC:6D	100Mbps	1500		

#### Default Gateway

Use the settings from: Ethernet 1

#### Port Trunking

Port Trunking provides network load balancing and fault tolerance by combining two Ethernet interfaces into one to increase the bandwidth beyond the limits of any one single interface at the same time offers the redundancy for higher availability when both interfaces are connected to the same switch that supports 'Port Trunking'.

Enable Network Port Trunking

Select the port trunking mode from below. Please note that incompatible mode settings might cause the network interface to hang or affect the overall performance. For more information, please click [here](#).

Balance-rr (Round-Robin)

#### DNS Server:

Primary DNS Server:

Secondary DNS Server:

**TCP/IP - Property**

Network Speed: Auto-negotiation

Obtain IP address settings automatically via DHCP

Use static IP address

Fixed IP Address: 169 . 254 . 100 . 100

Subnet Mask: 255 . 255 . 0 . 0

Default Gateway: 169 . 254 . 100 . 100

Enable DHCP Server

Start IP Address: 169 . 254 . 1 . 100

End IP Address: 169 . 254 . 1 . 200

Lease Time: 1 Day 0 Hour

Step 1 of 1

APPLY CANCEL

On the TCP/IP Property page, configure the following settings:

**Network Speed**

Select the network transfer rate according to the network environment to which the NAS is connected. Select auto negotiation and the NAS will adjust the transfer rate automatically.

**Obtain the IP address settings automatically via DHCP**

If your network supports DHCP, select this option and the NAS will obtain the IP address and network settings automatically.

**Use static IP address**

To use a static IP address for network connection, enter the IP address, subnet mask, and default gateway.

**Enable DHCP Server**

If no DHCP is available on the LAN where the NAS locates, you can turn on this function to make the NAS a DHCP server. The NAS will allocate dynamic IP address to the DHCP clients on the LAN.

You can set the range of IP addresses allocated by the DHCP server and the lease time. The lease time refers to the time that an IP address is leased to the clients by the DHCP server. When the lease time expires, the client has to acquire an IP address from the DHCP server again.

**Note:**

- If there is an existing DHCP server on the LAN, do not enable this function. Otherwise, there will be IP address conflicts and network access errors.
- This option is available to Ethernet 1 only when both LAN ports of the dual LAN NAS are connected to the network.

**(ii) Default Gateway**

Select the gateway settings to use if you have connected both LAN ports to the network (dual LAN NAS models only).

### (iii) Port Trunking

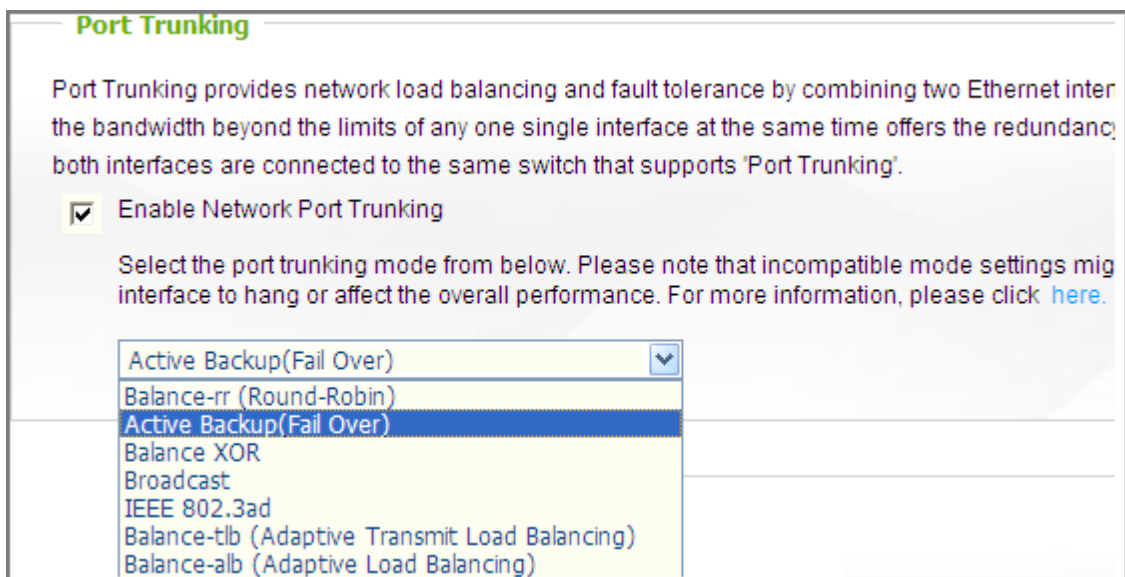
Applicable to NAS models with two LAN ports only. This feature is not supported by TS-110, TS-119, TS-210, TS-219, and TS-219P.

The NAS supports port trunking which combines two Ethernet interfaces into one to increase the bandwidth and offers load balancing and fault tolerance (also known as failover). Load balancing is a feature which distributes the workload evenly across two Ethernet interfaces for higher redundancy. Failover is the capability to switch over to a standby network interface (also known as the slave interface) when the primary network interface (also known as the master interface) does not correspond correctly to maintain high availability.

To use port trunking on the NAS, make sure both LAN ports of the NAS are connected to the same switch and you have configured the settings described in sections (i) and (ii).



Follow the steps below to configure port trunking on the NAS:

1. Select the option 'Enable Network Port Trunking'.
2. Choose a port trunking mode from the drop-down menu. The default option is Active Backup (Failover).



3. Click 'Apply'.

- The Ethernet interfaces will be combined as Ethernet 1+2. Click the Edit button to edit the network settings.

TCP / IP									
DDNS									
IPV6									
IP Address									
Interface	DHCP	IP Address	Subnet Mask	Gateway	MAC Address	Speed	MTU	Link	Edit
Ethernet 1+2	Yes	10.8.12.46	255.255.254.0	10.8.12.1	00:08:9B:8C:BC:6C	100Mbps	1500		

- After applying the settings, make sure the network cables of the two Ethernet interfaces are connected to the correct switch and the switch has been configured to support the port trunking mode selected on the NAS.

Refer to the table below about the port trunking options available on the NAS.

Field	Description	Switch Required
Balance-rr (Round-Robin)	Round-Robin mode is good for general purpose load balancing between two Ethernet interfaces. This mode transmits packets in sequential order from the first available slave through the last. Balance-rr provides load balancing and fault tolerance.	Supports static trunking. Make sure static trunking is enabled on the switch.
Active Backup	Active Backup uses only one Ethernet interface. It switches to the second Ethernet interface if the first Ethernet interface does not work properly. Only one interface in the bond is active. The bond's MAC address is only visible externally on one port (network adapter) to avoid confusing the switch. Active Backup mode provides fault tolerance.	General switches
Balance XOR	Balance XOR balances traffic by splitting up outgoing packets between the Ethernet interfaces, using the same one for each specific destination when possible. It transmits based on the selected transmit hash policy. The default policy is a simple slave count operating on Layer 2 where the source MAC address is coupled with destination MAC address. Alternate transmit policies maybe selected via the xmit_hash_policy option. Balance XOR mode provides load balancing and fault tolerance.	Supports static trunking. Make sure static trunking is enabled on the switch.
Broadcast	Broadcast sends traffic on both network interfaces. This mode provides fault tolerance.	Supports static trunking. Make sure static trunking is enabled on the switch.
IEEE 802.3ad (Dynamic Link Aggregation)	Dynamic Link Aggregation uses a complex algorithm to aggregate adapters by speed and duplex settings. It utilizes all slaves in the active aggregator according to the 802.3ad specification. Dynamic Link Aggregation mode provides load balancing and fault tolerance but requires a switch that supports IEEE 802.3ad with LACP mode properly configured.	Supports 802.3ad LACP
Balance-tlb (Adaptive Transmit Load Balancing)	Balance-tlb uses channel bonding that does not require any special switch. The outgoing traffic is distributed according to the current load on each Ethernet interface (computed relative to the speed). Incoming traffic is received by the current Ethernet interface. If the	General switches

	receiving Ethernet interface fails, the other slave takes over the MAC address of the failed receiving slave. Balance-tlb mode provides load balancing and fault tolerance.	
Balance-alb (Adaptive Load Balancing)	Balance-alb is similar to balance-tlb but also attempts to redistribute incoming (receive load balancing) for IPV4 traffic. This setup does not require any special switch support or configuration. The receive load balancing is achieved by ARP negotiation sent by the local system on their way out and overwrites the source hardware address with the unique hardware address of one of the Ethernet interfaces in the bond such that different peers use different hardware address for the server. This mode provides load balancing and fault tolerance.	General switches

#### **(iv) DNS Server**

Primary DNS Server: Enter the IP address of the primary DNS server.

Secondary DNS Server: Enter the IP address of the secondary DNS server.

##### **Note:**

- Please contact your ISP or network administrator for the IP address of the primary and the secondary DNS servers. When the NAS plays the role as a terminal and needs to perform independent connection, for example, BT download, you must enter at least one DNS server IP for proper URL connection. Otherwise, the function may not work properly.
- If you select to obtain the IP address by DHCP, there is no need to configure the primary and the secondary DNS servers. In this case, enter '0.0.0.0'.

#### **(v) Jumbo Frame Settings (MTU)**

This feature is not supported by TS-509 Pro, TS-809 Pro, and TS-809U-RP.

'Jumbo Frames' refer to the Ethernet frames that are larger than 1500 bytes. It is designed to enhance Ethernet networking throughput and reduce the CPU utilization of large file transfers by enabling more efficient larger payloads per packet.

Maximum Transmission Unit (MTU) refers to the size (in bytes) of the largest packet that a given layer of a communications protocol can transmit.

The NAS uses standard Ethernet frames: 1500 bytes by default. If your network appliances support Jumbo Frame setting, select the appropriate MTU value for your network environment. The NAS supports 4074, 7418, and 9000 bytes for MTU.

**Note:** The Jumbo Frame setting is valid in Gigabit network environment only. All the network appliances connected must enable Jumbo Frame and use the same MTU value.



## DDNS

To set up a server on the Internet and enable the users to connect to it easily, a fixed and easy-to-remember host name is often required. However, if the ISP provides only dynamic IP address, the IP address of the server will change from time to time and is difficult to recall. You can enable the DDNS service to solve the problem.

After enabling the DDNS service of the NAS, whenever the NAS restarts or the IP address is changed, the NAS will notify the DDNS provider immediately to record the new IP address. When the user tries to connect to the NAS by the host name, the DDNS will transfer the recorded IP address to the user.

The NAS supports the DDNS providers: <http://www.dyndns.com/>, <http://update.ods.org/>, <http://www.dhs.org/>, <http://www.dyns.cx/>, <http://www.3322.org/>, <http://www.no-ip.com/>.

For the information of setting up the DDNS and port forwarding on the NAS, see here [383](#).

The screenshot shows a web interface for configuring DDNS. At the top, there are three tabs: 'TCP / IP', 'DDNS' (which is selected), and 'IPV6'. Below the tabs, the 'DDNS Service' section is visible. It contains the following elements:

- A heading 'DDNS Service'.
- A sub-heading: 'After enabling DDNS Service, you can connect to this server by domain name.'
- A checked checkbox labeled 'Enable Dynamic DNS Service'.
- A dropdown menu for 'Select DDNS server:' with 'www.dyndns.com' selected.
- A text prompt: 'Enter the account information you registered with the DDNS provider'.
- Input fields for 'User Name:', 'Password:', and 'Host Name:'.
- A checkbox for 'Check the External IP Address Automatically' with a dropdown menu set to '10 minutes'.
- A label 'Current WAN IP:' followed by the value '219.85.63.13'.
- A section titled 'Recent DDNS Update Result' with four labels: 'Connection IP Last Checked:', 'Next Check for Connection IP:', 'Last DDNS Update Time:', and 'Update Server Response:'.
- An 'APPLY' button at the bottom right.

## IPv6

The NAS supports IPv6 connectivity with 'stateless' address configurations and RADVD (Router Advertisement Daemon) for IPv6, RFC 2461 to allow the hosts on the same subnet to acquire IPv6 addresses from the NAS automatically. The NAS services which support IPv6 include:

- Remote replication
- Web Server
- FTP
- iSCSI (Virtual disk drives)
- SSH (putty)

TCP / IP DDNS **IPv6**

**IP Address**

Enable IPv6

Interface	Auto Configuration	IPv6 Address	Prefix Length	Gateway	Link	Edit
-----------	--------------------	--------------	---------------	---------	------	------

**DNS Server:**

.....

.....

APPLY

To use this function, select the option 'Enable IPv6' and click 'Apply'. The NAS will restart. After the system restarts, login the IPv6 page again. The settings of the IPv6 interface will be shown. Click

the Edit button  to edit the settings.

#### **IPv6 Auto Configuration**

If you have an IPv6 enabled router on the network, select this option to allow the NAS to acquire the IPv6 address and the configurations automatically.

#### **Use static IP address**

To use a static IP address, enter the IP address (e.g. 2001:bc95:1234:5678), prefix length (e.g. 64), and the gateway address for the NAS. You may contact your ISP for the information of the prefix and the prefix length.

#### **✓ Enable Router Advertisement Daemon (radvd)**

To configure the NAS as an IPv6 host and distribute IPv6 addresses to the local clients which support IPv6, enable this option and enter the prefix and prefix length.

#### **IPv6 DNS server**

Enter the preferred DNS server in the upper field and the alternate DNS server in the lower field. You may contact your ISP or network administrator for the information. If you select IPv6 auto configuration, leave the fields as '::'.

## 3.3 Hardware

---

You can set the hardware functions of the NAS.

### Hardware

---

#### Hardware

- Enable configuration reset switch
- Enable hard disk standby mode (if no access within  Status LED will be off)
- Enable light signal alert when the free size of disk is less than the value:  MB
- Enable write cache (for EXT4)

---

#### Buzzer Control

Enable alarm buzzer

- System operations (startup, shutdown, and firmware upgrade)
- System events (error and warning)

---

#### Smart Fan Configuration

Fan Rotation Speed Settings:

- Low speed
- Medium speed
- High speed

### Enable configuration reset switch

When this function is turned on, you can press the reset button for 3 seconds to reset the administrator password and the system settings to default. The disk data will be retained.

### Enable hard disk standby mode

When this function is turned on, the HDD enters standby mode if there is no access within the specified period.

**Enable light signal alert when the free size of SATA disk is less than the value:**

The status LED flashes red and green when this function is turned on and the free space of the SATA HDD is less than the value. The range of the value is 1-51200 MB.

**Enable write cache (for EXT4)**

If the disk volume of the NAS is in EXT 4 format, you can gain better write performance by turning on this option. Note that an unexpected system shutdown may lead to incomplete data transfer when data write is in process. This option will be turned off when any of the following services is enabled: Download Station, MySQL service, user quota, and Surveillance Station. You are recommended to turn this option off if the NAS is set as a shared storage in a virtualized or clustered environment.

**Enable alarm buzzer**

You can select to turn on the alarm buzzer when system operation (startup, shutdown, and firmware upgrade) and system events (error and warning) occur.

**Smart Fan Configuration****(i) Enable smart fan (recommended)**

Select to use the default smart fan settings or define the settings manually. When the system default settings are selected, the fan rotation speed is automatically adjusted when the server temperature, CPU temperature, and hard drive temperature meet the criteria. It is recommended to enable this option.

**(ii) Set fan rotation speed manually**

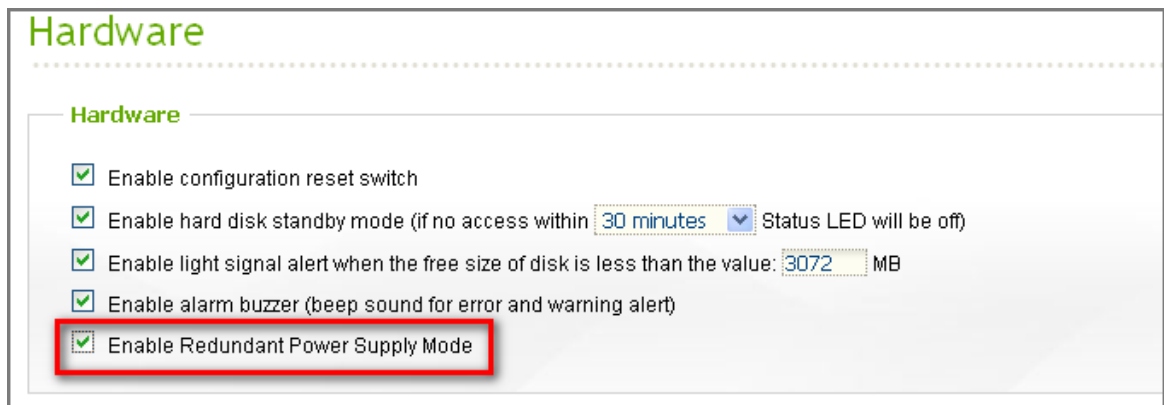
By manually setting the fan rotation speed, the fan rotates at the defined speed continuously.

**Enable warning alert for redundant power supply on the web-based interface:**

If you have installed two power supply units (PSU) on the NAS and connected them to the power sockets, both PSU will supply the power to the NAS (applied to 1U and 2U models). You can turn on redundant power supply mode in 'System Administration' > 'Hardware' to receive warning alert for the redundant power supply. The NAS will sound and record the error messages in 'System Logs' when the PSU is plugged out or does not correspond correctly.

If you have installed only one PSU on the NAS, you are suggested NOT to enable this option.

\* This function is disabled by default.



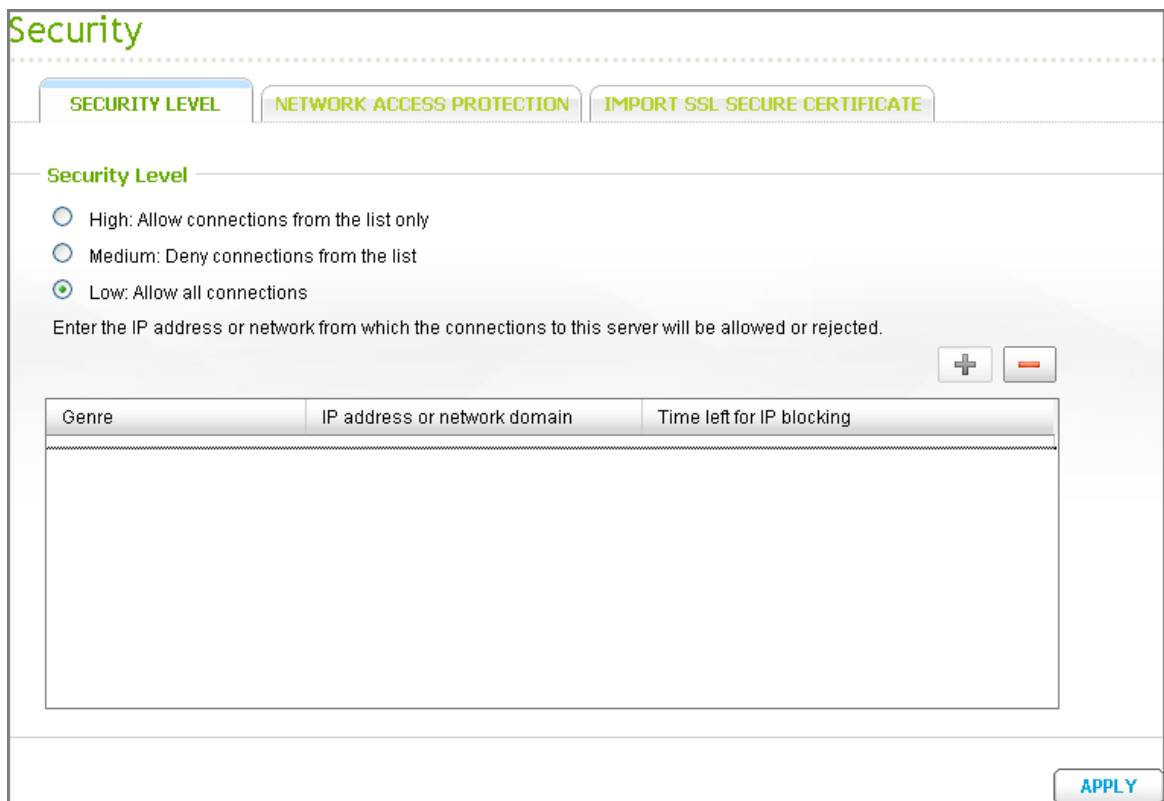
## 3.4 Security

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### Security Level

Enter the IP address or network domain from which the connections to this server are allowed or denied. When the connection of a host server is denied, all the protocols of that server are not allowed to connect to the local server.

After changing the settings, click 'Apply' to save the changes. The network services will be restarted and current connections to the server will be terminated.



The screenshot shows a web-based configuration interface for a server's security settings. The main heading is "Security" in green. Below it are three tabs: "SECURITY LEVEL" (selected), "NETWORK ACCESS PROTECTION", and "IMPORT SSL SECURE CERTIFICATE". Under the "Security Level" tab, there are three radio button options: "High: Allow connections from the list only", "Medium: Deny connections from the list", and "Low: Allow all connections" (which is selected). Below these options is a text input field with the placeholder text "Enter the IP address or network from which the connections to this server will be allowed or rejected." To the right of the input field are two buttons: a plus sign (+) and a minus sign (-). Below the input field is a table with three columns: "Genre", "IP address or network domain", and "Time left for IP blocking". The table is currently empty. At the bottom right of the interface is a blue "APPLY" button.

Genre	IP address or network domain	Time left for IP blocking
-------	------------------------------	---------------------------

## Network Access Protection

The network access protection enhances system security and prevents unwanted intrusion. You can select to block the IP for a certain period of time or forever if the IP fails to login the server from a particular connection method.

**SECURITY LEVEL**    **NETWORK ACCESS PROTECTION**    **IMPORT SSL SECURE CERTIFICATE**

---

**Network Access Protection**

Enable network access protection

SSH: In  , after unsuccessful attempts for  , block the IP for

Telnet: In  , after unsuccessful attempts for  , block the IP for

HTTP(S): In  , after unsuccessful attempts for  , block the IP for

FTP: In  , after unsuccessful attempts for  , block the IP for

SAMBA: In  , after unsuccessful attempts for  , block the IP for

AFP: In  , after unsuccessful attempts for  , block the IP for

**APPLY**



## Import SSL Secure Certificate

The Secure Socket Layer (SSL) is a protocol for encrypted communication between web servers and browsers for secure data transfer. You can upload a secure certificate issued by a trusted provider. After you have uploaded a secure certificate, you can connect to the administration interface by SSL connection and there will not be any alert or error message. The NAS supports X.509 certificate and private key only.

<b>SECURITY LEVEL</b>	<b>NETWORK ACCESS PROTECTION</b>	<b>IMPORT SSL SECURE CERTIFICATE</b>
-----------------------	----------------------------------	--------------------------------------

**Import SSL Secure Certificate**

You can upload a secure certificate issued by a trusted provider. After you have uploaded a secure certificate successfully, you can access the administration interface by SSL connection and there will not be any alert or error message.

If you upload an incorrect secure certificate, you may not be able to login the server via SSL. To resolve the problem, you can restore the secure certificate to default and access the system again.

Status: Default secure certificate being used

**Certificate:** Please enter a certificate in X.509PEM format below. [View sample](#)

**Private Key:** Please enter a certificate or private key in X.509PEM format below. [View sample](#)

**CLEAR** **UPLOAD**

## 3.5 Notification

---

### Configure SMTP Server

The NAS supports email alert to inform you of system errors and warning. To receive the alert by email, configure the SMTP server.

- SMTP Server: Enter the SMTP server name, for example, smtp.gmail.com.
- Port Number: Enter the port number for the SMTP server. The default port number is 25.
- Sender: Enter the sender information.
- Enable SMTP Authentication: When this function is turned on, the system will request the authentication of the mail server before the message is sent.
- User Name and Password: Enter the login information of your email account, for example, your Gmail login name and password.
- Use SSL/ TLS secure connection: If the SMTP server supports this function, you can turn it on.

### Notification

**CONFIGURE SMTP SERVER**   **CONFIGURE SMSC SERVER**   **ALERT NOTIFICATION**

#### Configure SMTP Server

SMTP Server:

Port Number:

Sender:

Enable SMTP Authentication

    User Name:

    Password:

Use SSL/ TLS secure connection

**APPLY**

## Configure SMS Server

You can configure SMS server settings to send SMS messages from the NAS. The default SMS service provider is Clickatell. You can add your own SMS service provider by selecting 'Add SMS Provider' from the drop-down menu.

When you select 'Add SMS service provider', enter the name of the SMS provider and the URL template text.

**Note:** You will not be able to receive the SMS properly if the URL template text entered does not follow the standard of your SMS service provider.

**CONFIGURE SMTP SERVER**    **CONFIGURE SMSC SERVER**    **ALERT NOTIFICATION**

---

### Configure SMSC Server

You can configure the SMSC settings to send instant system alerts via the SMS service provided by the SMS provider.

SMS Service Provider:   <http://www.clickatell.com>

Enable SSL Connection

SSL Port:

SMS Server Login Name:

SMS Server Login Password:

SMS Server API\_ID:

## Alert Notification

You can select to receive instant SMS or email alert when a system error or warning occurs. Enter the email address and mobile phone number to receive the alerts. Make sure you have entered the correct SMTP server and the SMSC server settings. If you do not want to receive any alerts, select 'No alert' for both settings.

For more information, see [here](#).

<b>CONFIGURE SMTP SERVER</b>	<b>CONFIGURE SMSC SERVER</b>	<b>ALERT NOTIFICATION</b>
------------------------------	------------------------------	---------------------------

---

**Alert Notification**

When a system event occurs, an alert email/SMS will be sent automatically.

Send system error alert by:

Send system warning alert by:

---

**E-mail Notification Settings**

E-mail address 1:

E-mail address 2:

Note: The SMTP server must be configured first for alert mail delivery.

---

**SMS Notification Settings**

Country Code:

Cell Phone No. 1: +93

Cell Phone No. 2: +93

Note: You must configure the SMSC server to be able to send SMS notification properly.

## 3.6 Power Management

---

You can restart or shut down the NAS, specify the behaviour of the NAS after a power recovery, and set the schedule for automatic system power on/ off/ restart on this page.

### **Restart/ Shutdown**

Restart or shut down the NAS immediately.

If you try to restart or turn off the NAS from the web-based interface or the LCD panel when a remote replication job is in process, the NAS will prompt you to ignore the running replication job or not.

Turn on the option 'Postpone the restart/shutdown schedule when replication job is in process' to allow the scheduled system restart or shutdown to be carried out after a running replication job completes. Otherwise, the NAS will ignore the running replication job and execute scheduled system restart or shutdown.

### **Wake on LAN**

Turn on this option to allow the users to power on the NAS remotely by Wake on LAN. Note that if the power connection is physically removed (in other words, the power cable is unplugged) when the NAS is turned off, Wake on LAN will not function whether or not the power supply is reconnected afterwards.

This feature is not supported by TS-110, TS-119, TS-210, TS-219, TS-219P, TS-410, TS-419P, TS-410U, and TS-419U.

### **Power resumption settings**

Configure the NAS to resume to the previous power-on or power-off status, turn on or remain off when the AC power resumes after a power outage.

## Power on/ power off/ restart schedule

You can select every day, weekdays, weekend, or any days of the week and set the time for automatic system power on, power off, or restart. Weekdays stand for Monday to Friday; weekend stands for Saturday and Sunday. Up to 15 schedules can be set.

### Power Management

---

#### Restart/ Shutdown

Execute system restart/ shutdown immediately.

---

#### Configure Wake on LAN

Enable  
 Disable

---

#### When the AC power resumes:

Resume the server to the previous power-on or power-off status.  
 Turn on the server automatically.  
 The server should remain off.

---

#### Set power on/ power off/ restart schedule

Enable schedule  
 Postpone the restart/shutdown schedule when a replication job is in progress.

Shutdown  Daily  7  0

## 3.7 Network Recycle Bin

---

### Network Recycle Bin

This function enables the files deleted on the shares of the NAS to be removed to Network Recycle Bin to reserve the files temporarily. To turn on this function, select the option 'Enable Network Recycle Bin' and click 'Apply'. The NAS will create a network share named 'Network Recycle Bin' automatically.

Note that Network Recycle Bin only supports file deletion via SAMBA and AFP.

### Empty Network Recycle Bin

To delete all the files in network recycle bin, click 'Empty Network Recycle Bin'.

### Network Recycle Bin

---

#### Network Recycle Bin

After enabling Network Recycle Bin, all the deleted files on the network folders of the NAS are moved to the "Network Recycle Bin" network folder.

Enable Network Recycle Bin

---

#### Empty Network Recycle Bin

Click **[EMPTY NETWORK RECYCLE BIN]** to delete all the files in network recycle bin.

**[EMPTY NETWORK RECYCLE BIN]**

**[APPLY]**

## 3.8 Backup/ Restore Settings

---

### Back up System Settings

To back up all the settings, including the user accounts, server name, network configuration and so on, click 'Backup' and select to open or save the setting file.

### Restore System Settings

To restore all the settings, click 'Browse' to select a previously saved setting file and click 'Restore'.

### Backup/Restore Settings

---

#### Backup System Settings

To backup all settings, including user accounts, server name and network configuration etc., click **[BACKUP]** and select to open or save the setting file.

---

#### Restore System Settings

To restore all settings, click **[Browse...]** to select a previously saved setting file and click **[RESTORE]** to confirm.

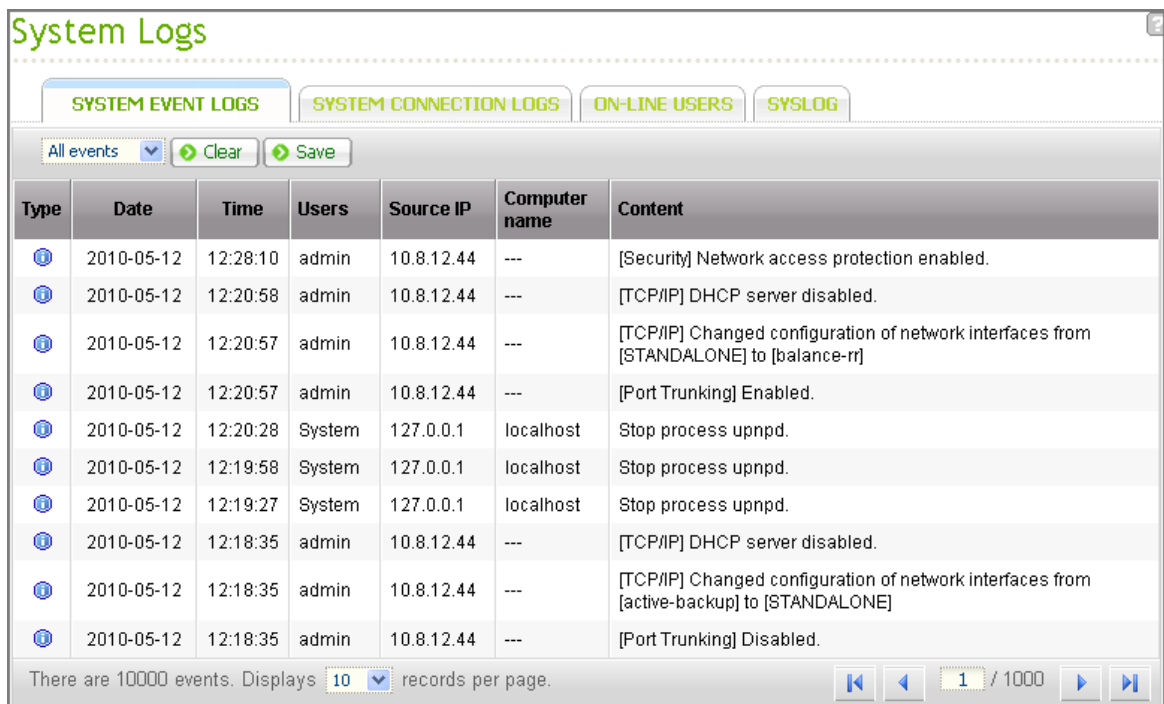


## 3.9 System Logs

### System Event Logs

The NAS can store 10,000 recent event logs, including warning, error, and information messages. If the NAS does not correspond correctly, you can refer to the event logs for troubleshooting.

**Tip:** You can right click a log and delete the record.



The screenshot displays the 'System Logs' interface. At the top, there are four tabs: 'SYSTEM EVENT LOGS' (selected), 'SYSTEM CONNECTION LOGS', 'ON-LINE USERS', and 'SYSLOG'. Below the tabs, there is a dropdown menu set to 'All events', and two buttons: 'Clear' and 'Save'. The main area contains a table with the following columns: Type, Date, Time, Users, Source IP, Computer name, and Content. The table lists 12 log entries. At the bottom, there is a status bar indicating 'There are 10000 events. Displays 10 records per page.' and navigation controls including back, forward, and page number (1 / 1000) buttons.

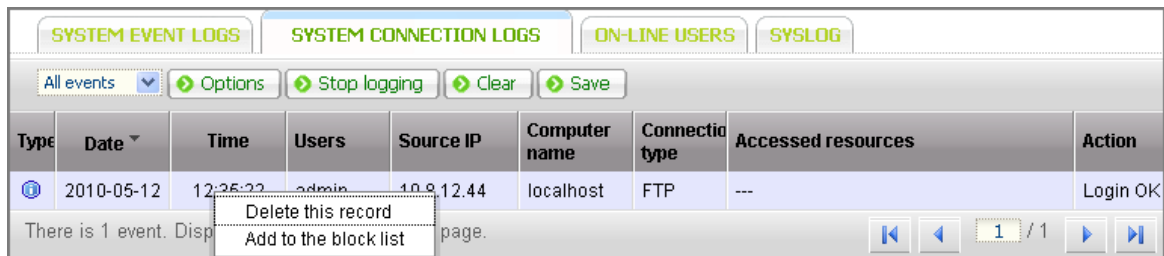
Type	Date	Time	Users	Source IP	Computer name	Content
①	2010-05-12	12:28:10	admin	10.8.12.44	---	[Security] Network access protection enabled.
①	2010-05-12	12:20:58	admin	10.8.12.44	---	[TCP/IP] DHCP server disabled.
①	2010-05-12	12:20:57	admin	10.8.12.44	---	[TCP/IP] Changed configuration of network interfaces from [STANDALONE] to [balance-rr]
①	2010-05-12	12:20:57	admin	10.8.12.44	---	[Port Trunking] Enabled.
①	2010-05-12	12:20:28	System	127.0.0.1	localhost	Stop process upnpd.
①	2010-05-12	12:19:58	System	127.0.0.1	localhost	Stop process upnpd.
①	2010-05-12	12:19:27	System	127.0.0.1	localhost	Stop process upnpd.
①	2010-05-12	12:18:35	admin	10.8.12.44	---	[TCP/IP] DHCP server disabled.
①	2010-05-12	12:18:35	admin	10.8.12.44	---	[TCP/IP] Changed configuration of network interfaces from [active-backup] to [STANDALONE]
①	2010-05-12	12:18:35	admin	10.8.12.44	---	[Port Trunking] Disabled.

## System Connection Logs

The NAS supports recording HTTP, FTP, Telnet, SSH, AFP, NFS, SAMBA, and iSCSI connections. Click 'Options' to select the connection type to be logged.

The file transfer performance can be slightly affected when this feature is turned on.

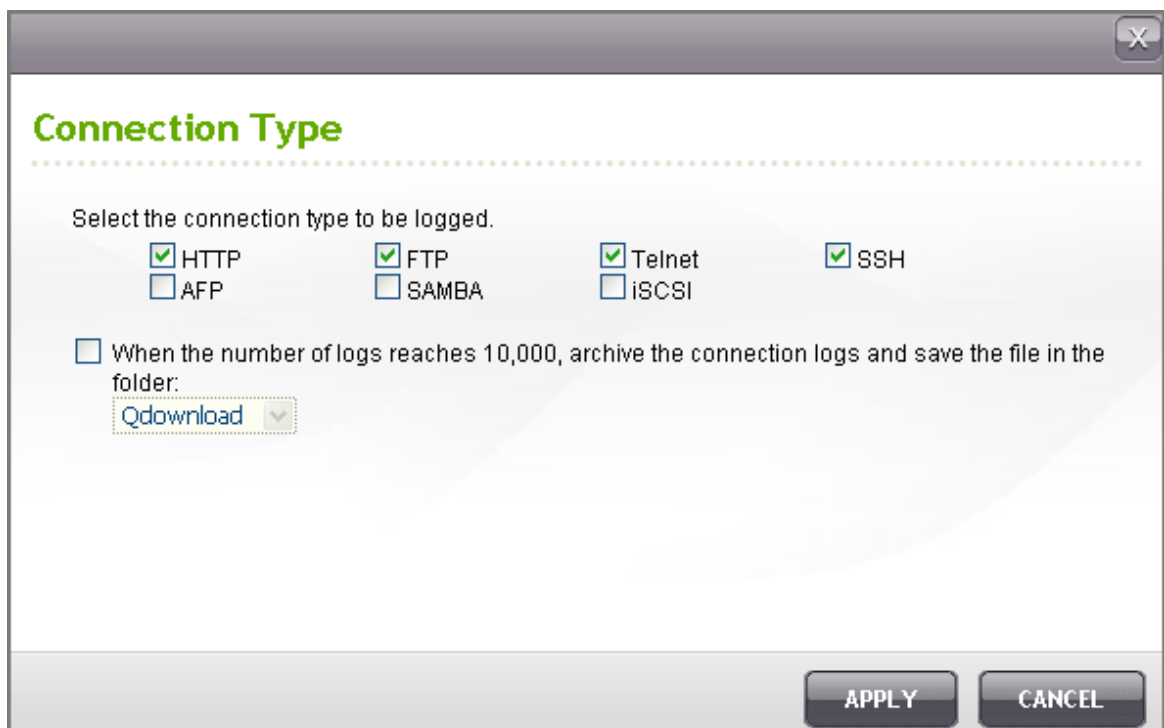
**Tip:** You can right click a log and select to delete the record or block the IP and select how long the IP should be blocked.



Type	Date	Time	Users	Source IP	Computer name	Connection type	Accessed resources	Action
ⓘ	2010-05-12	12:35:23	admin	10.9.12.44	localhost	FTP	---	Login OK

There is 1 event. Display page. 1 / 1

Archive logs: Turn on this option to archive the connection logs. The NAS generates a CSV file automatically and saves it to a specified folder when the number of logs reaches the upper limit.



**Connection Type**

Select the connection type to be logged.

HTTP     FTP     Telnet     SSH  
 AFP     SAMBA     iSCSI

When the number of logs reaches 10,000, archive the connection logs and save the file in the folder:

APPLY    CANCEL

## On-line Users

The information of the on-line users connecting to the NAS by networking services is shown on this page.

Tip: You can right click a log and select to disconnect the IP connection and block the IP.

Type	Login date	Login time	Users	Source IP	Computer name	Connection type	Accessed resources
	2010-05-12	12:34:34	rei	10.8.12.39	reinh	Samba	Qmultimedia
	2010-05-12	12:34:5				Samba	Qrecordings
	2010-05-12	12:17:5				HTTP	Administration
	2010-05-12	12:35:22	admin	10.8.12.44	---	FTP	---

There are 4 events.

## Syslog

Syslog is a standard for forwarding the log messages on an IP network. You can turn on this option to save the event logs and connection logs to a remote syslog server.

SYSTEM EVENT LOGS	SYSTEM CONNECTION LOGS	ON-LINE USERS	SYSLOG
<b>Syslog Settings</b>			
<input checked="" type="checkbox"/> Enable syslog			
You can enable this option to save the event logs and connection logs to a remote syslog server.			
Syslog Server IP: <input type="text"/>			
UDP Port: <input type="text" value="514"/>			
Select the logs to record			
<input checked="" type="checkbox"/> System Event Logs			
<input type="checkbox"/> System Connection Logs (You must enable system connection logs to use this option.)			
<input type="button" value="APPLY"/>			

## 3.10 Firmware Update

### Update Firmware by Web Administration Page

### Firmware Upgrade

**FIRMWARE UPGRADE** **LIVE UPDATE**

#### Firmware Upgrade

Current firmware version: 3.3.0 Build 0607T

Before updating system firmware, please make sure the product model and firmware version are correct. Follow the steps below to update firmware:

1. Download the release notes of the same version as the firmware from QNAP website <http://www.qnap.com/> Read the release notes carefully to make sure you need to update the firmware.
2. Before updating system firmware, back up all disk data on the server to avoid any potential data loss during system update.
3. Click the **[Browse...]** button to select the correct firmware image for system update. Click the **[UPDATE SYSTEM]** button to update the firmware.

**Note:** System update may take tens of seconds to several minutes to complete depending on the network connection status, please wait patiently. The system will inform you when system update is completed.

**Note:** If the system is running properly, you do not need to update the firmware.

Before updating the system firmware, make sure the product model and firmware version are correct. Follow the steps below to update firmware:

Step 1: Download the release notes of the firmware from the QNAP website <http://www.qnap.com/>. Read the release notes carefully to make sure you need to update the firmware.

Step 2: Download the NAS firmware and unzip the IMG file to your computer.

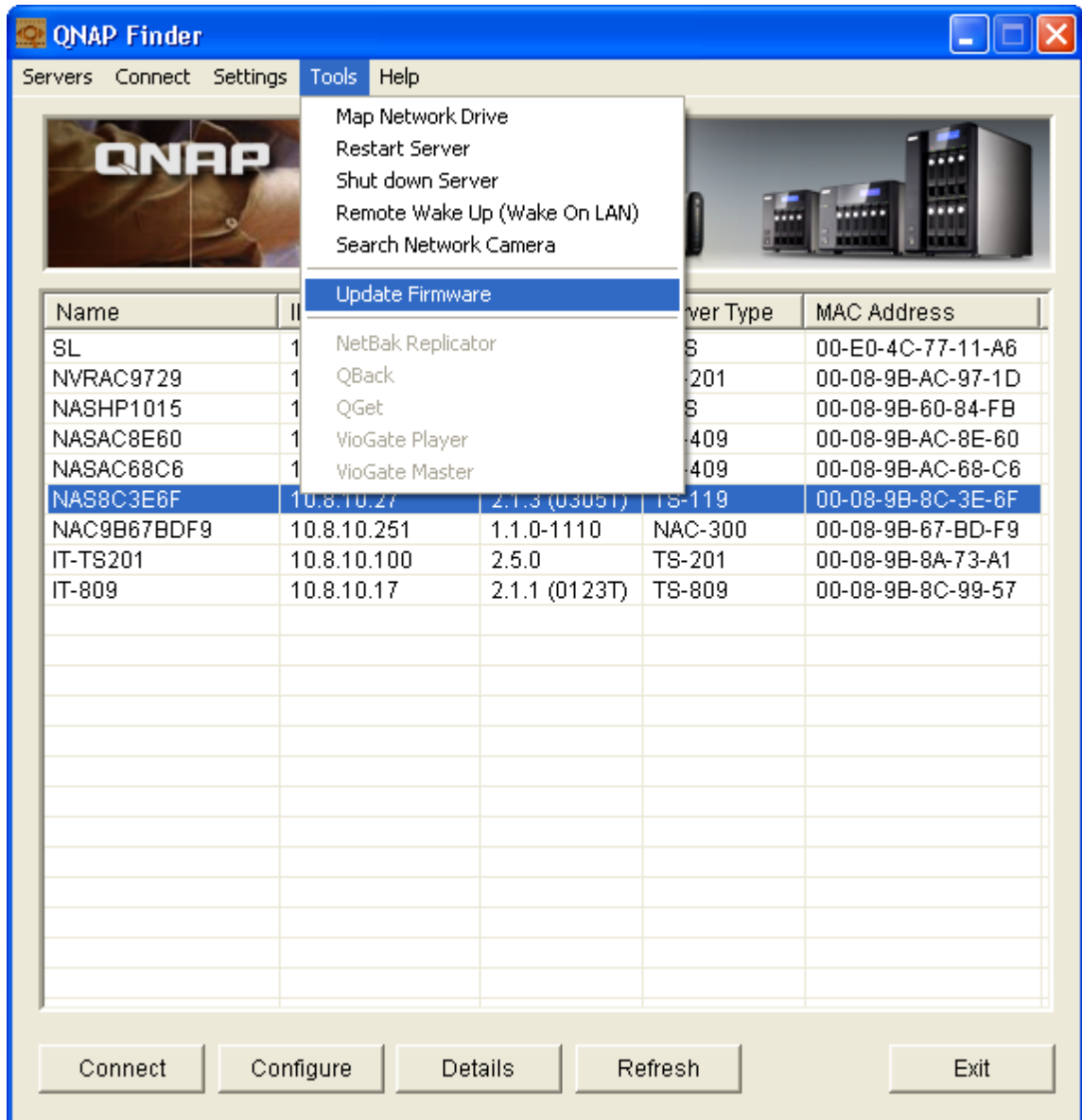
Step 3: Before updating the system firmware, back up all the disk data on the server to avoid any potential data loss during the system update.

Step 4: Click 'Browse' to select the correct firmware image for the system update. Click 'Update System' to update the firmware.

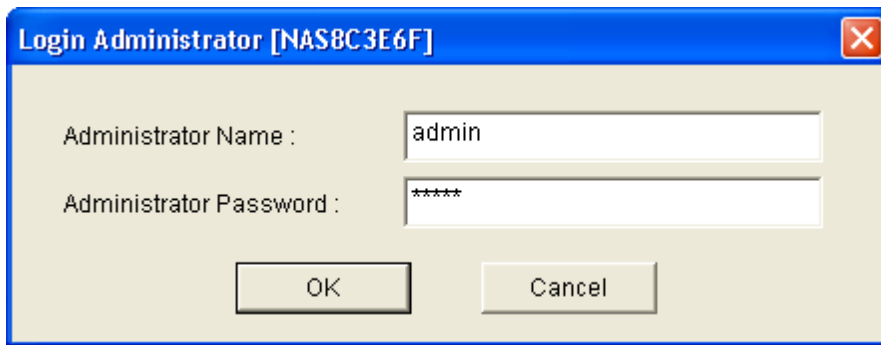
The system update may take tens of seconds to several minutes to complete depending on the network connection status. Please wait patiently. The NAS will inform you when the system update has completed.

## Update Firmware by Finder

You can update the system firmware by QNAP Finder. Select a NAS model and choose 'Update Firmware' from the 'Tools' menu.

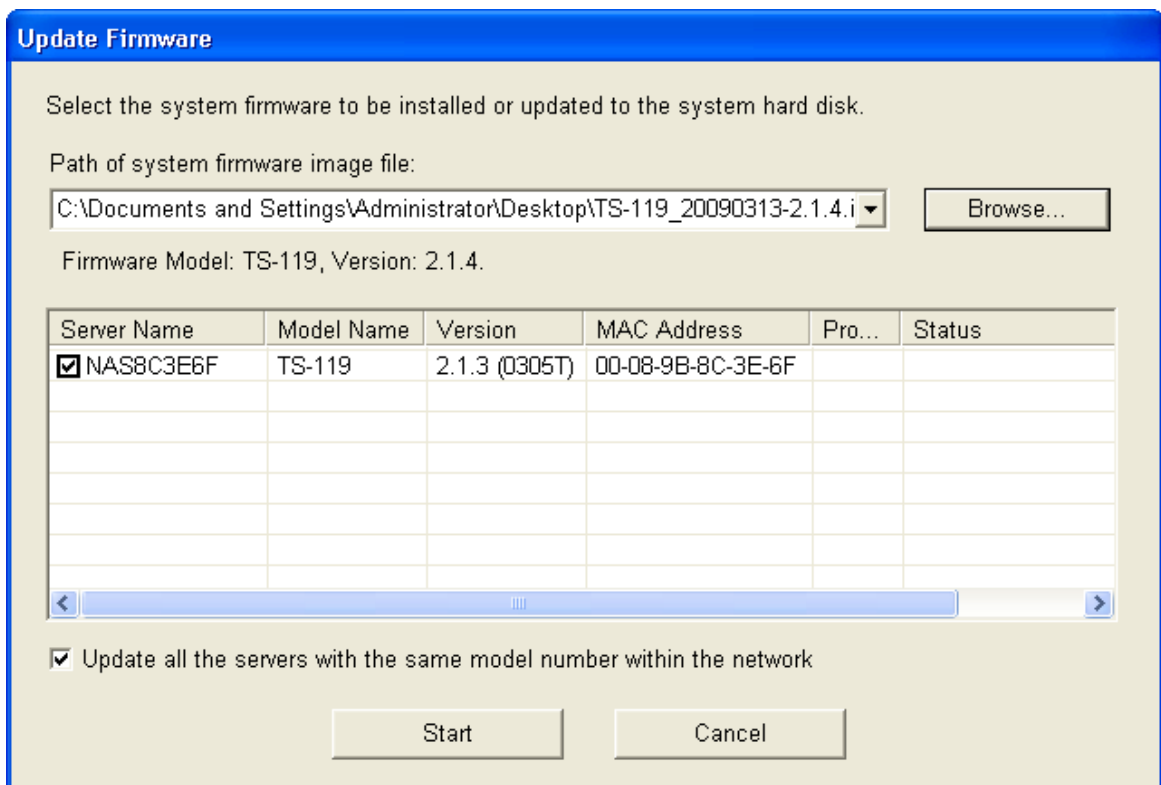


Login the NAS as a user with administrator access right.



The dialog box titled "Login Administrator [NAS8C3E6F]" has a blue header bar with a close button (X) on the right. It contains two text input fields: "Administrator Name" with the text "admin" and "Administrator Password" with masked characters "\*\*\*\*\*". Below the fields are two buttons: "OK" and "Cancel".

Browse and select the firmware for the NAS. Click 'Start' to update the system.



The dialog box titled "Update Firmware" has a blue header bar. It contains the following elements:

- Text: "Select the system firmware to be installed or updated to the system hard disk."
- Text: "Path of system firmware image file:"
- Text input field: "C:\Documents and Settings\Administrator\Desktop\TS-119\_20090313-2.1.4.i" with a dropdown arrow.
- Button: "Browse..."
- Text: "Firmware Model: TS-119, Version: 2.1.4."
- Table with 6 columns: Server Name, Model Name, Version, MAC Address, Pro..., Status.
- Table content:

Server Name	Model Name	Version	MAC Address	Pro...	Status
<input checked="" type="checkbox"/> NAS8C3E6F	TS-119	2.1.3 (0305T)	00-08-9B-8C-3E-6F		

- Text: "Update all the servers with the same model number within the network" with a checked checkbox.
- Buttons: "Start" and "Cancel".

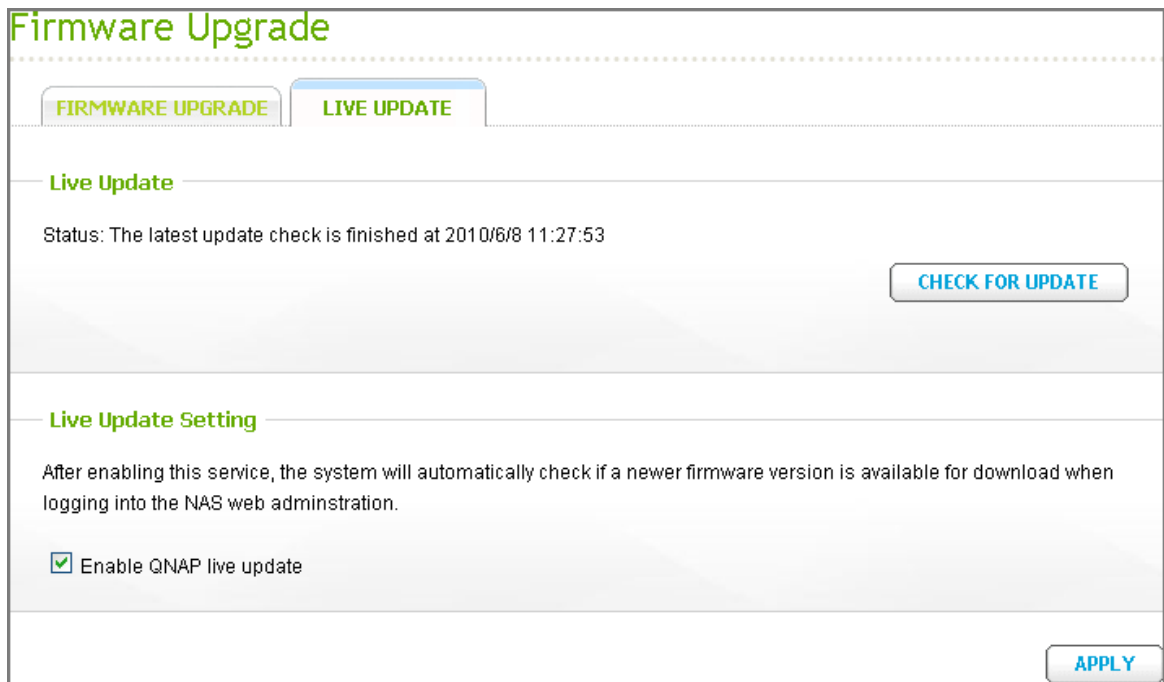
**Note:** You can use Finder to update all the servers of the same model on the same local network at the same time. Make sure you have administrator access to all the servers you want to update.

## Live Update

Select 'Enable QNAP live update' to allow the NAS to automatically check if a new firmware version is available for download from the Internet. If a new firmware is found, you will be notified after logging in the NAS as an administrator.

You can click 'CHECK FOR UPDATE' to check if any firmware update is available.

Note that the NAS must be connected to the Internet for these features to work.



The screenshot displays the 'Firmware Upgrade' web interface. At the top, there are two tabs: 'FIRMWARE UPGRADE' and 'LIVE UPDATE', with the latter being the active tab. Below the tabs, the 'Live Update' section shows a status message: 'Status: The latest update check is finished at 2010/6/8 11:27:53'. To the right of this message is a 'CHECK FOR UPDATE' button. Below this is the 'Live Update Setting' section, which contains a descriptive paragraph: 'After enabling this service, the system will automatically check if a newer firmware version is available for download when logging into the NAS web administration.' Underneath this text is a checkbox labeled 'Enable QNAP live update', which is currently checked. At the bottom right of the interface is an 'APPLY' button.



## 3.11 Restore to Factory Default

---

To reset all the settings to default, click 'RESET'. Enter the administrator password and click 'OK'.



**Caution:** When you press 'RESET' on this page, all the disk data, user accounts, network shares, and system settings are cleared and restored to default. Make sure you have backed up all the important data and system settings before resetting the NAS.

### Restore to Factory Default

---

#### Restore to Factory Default

---

To reset all settings to default, click **[RESET]**.

**Caution:** When you press **[RESET]** on this page, all drive data, user accounts, network shares and system settings are cleared and restored to default. Please make sure you have backed up all the important data and system settings before resetting the NAS.

RESET

## 4. Disk Management

---

Volume Management [\[70\]](#)

RAID Management [\[74\]](#)

HDD SMART [\[96\]](#)

Encrypted File System [\[97\]](#)

iSCSI [\[98\]](#)

Virtual Disk [\[133\]](#)

### 4.1 Volume Management

---

This page shows the model, size, and current status of the HDD on the NAS. You can format and check the HDD, and scan bad blocks on the HDD. When the HDD has been formatted, the NAS will create the following default share folders:

- Public: Share folder for file sharing by everyone.
- Qdownload/ Download\*: The default share folder for Download Station.
- Qmultimedia/ Multimedia\*: The default share folder for Multimedia Station.
- Qusb/ Usb\*: The default share folder for data copy function via the USB ports.
- Qweb/ Web\*: The default share folder for Web Server.
- Qrecordings/ Recordings\*: The default share folder for Surveillance Station.

\*The default network shares of TS-x59 Turbo NAS series are Public, Download, Multimedia, Usb, Web, and Recordings.

**Note:** The default share folders are created on the first disk volume and the directory cannot be changed.

## Volume Management



### Single Disk Volume

Create single disk volume(s).



### RAID 1 Mirroring Disk Volume

Create mirroring disk volume(s).



### RAID 0 Striping Disk Volume

Create one striping disk volume.



### JBOD Linear Disk Volume

Create one linear disk volume.

#### Current Disk Volume Configuration : Physical Disks

Disk	Model	Capacity	Status	Bad Blocks Scan	SMART Information
Drive 1	Seagate ST3160318AS CC44	149.05 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 2	Seagate ST3160318AS CC44	149.05 GB	Ready	<a href="#">SCAN NOW</a>	GOOD

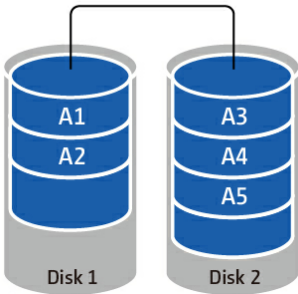
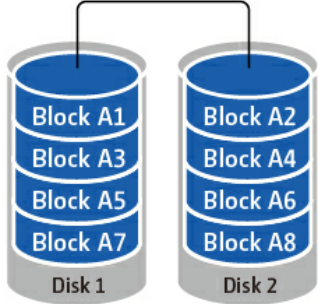
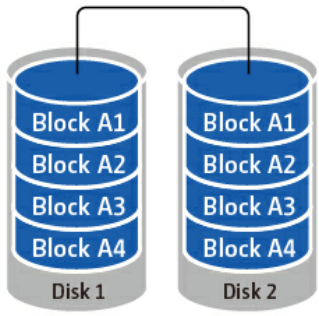
Note that if you are going to install a hard drive (new or used) which has never been installed on the NAS before, the hard drive will be formatted and partitioned automatically and all the disk data will be cleared.

#### Current Disk Volume Configuration : Logical Volumes

Volume	File System	Total Size	Free Size	Status
Mirroring Disk Volume: Drive 1 2	EXT3	145.24 GB	112.96 GB	Ready

[FORMAT NOW](#)   [CHECK NOW](#)   [REMOVE NOW](#)

Disk Configuration	Applied NAS Models
Single disk volume	All models
RAID 1, JBOD (just a bunch of disks)	2-bay models or above
RAID 5, RAID 6, RAID 5+hot spare	4-bay models or above
RAID 6+hot spare	5-bay models or above

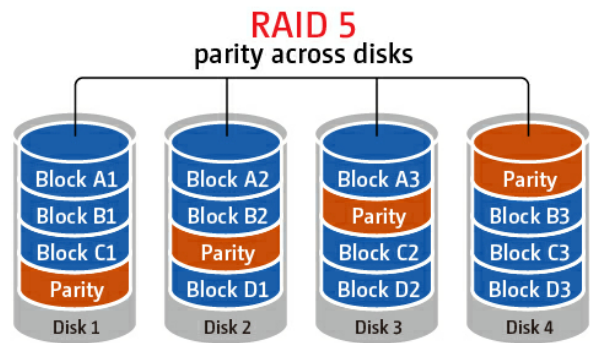
<p><b>Single Disk Volume</b></p> <p>Each HDD is used as a standalone disk. If a HDD is damaged, all the data will be lost.</p>	
<p><b>JBOD (Just a bunch of disks)</b></p> <p>JBOD is a collection of HDD that does not offer any RAID protection. The data are written to the physical disks sequentially. The total storage capacity equals to the sum of the capacity of all member HDD.</p>	<p style="text-align: center;"><b>JBOD</b></p> 
<p><b>RAID 0 Striping Disk Volume</b></p> <p>RAID 0 (striping disk) combines 2 or more HDD into one larger volume. The data is written to the HDD without any parity information and no redundancy is offered. The disk capacity equals the number of HDD in the array times the size of the smallest HDD.</p>	<p style="text-align: center;"><b>RAID 0 striping</b></p> 
<p><b>RAID 1 Mirroring Disk Volume</b></p> <p>RAID 1 duplicates the data between two HDD to provide disk mirroring. To create a RAID 1 array, a minimum of 2 HDD are required.</p>	<p style="text-align: center;"><b>RAID 1 mirroring</b></p> 

### RAID 5 Disk Volume

The data are striped across all the HDD in a RAID 5 array. The parity information is distributed and stored across each HDD. If a member HDD fails, the array enters degraded mode. After installing a new HDD to replace the failed one, the data can be rebuilt from other member drives that contain the parity information.

To create a RAID 5 disk volume, a minimum of 3 HDD are required.

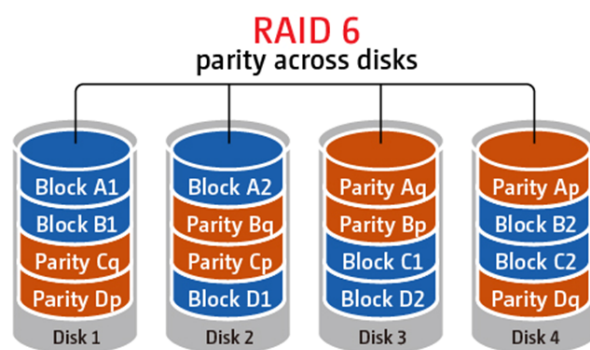
The storage capacity of a RAID 5 array equals  $(N-1)$ .  $N$  is the total number of HDD members in the array.



### RAID 6 Disk Volume

The data are striped across all the HDD in a RAID 6 array. RAID 6 differs from RAID 5 that a second set of parity information is stored across the member drives in the array. It tolerates failure of two drives HDD.

To create a RAID 6 disk volume, a minimum of 4 hard disks are required. The storage capacity of a RAID 6 array equals  $(N-2)$ .  $N$  is the total number of HDD members in the array.



## 4.2 RAID Management

---

\*Online RAID capacity expansion, online RAID level migration, and RAID recovery are not supported by one-bay NAS models and TS-210.

You can perform online RAID capacity expansion (RAID 1/ 5/ 6) and online RAID level migration (single disk/ RAID 1/ RAID 5), add a HDD member to a RAID 5 or RAID 6 configuration, configure a spare HDD (RAID 5/ 6) with the data retained, enable Bitmap, and recover a RAID configuration on this page.

### RAID Management ?

This function enables capacity expansion, RAID configuration migration or spare drive configuration with the original drive data reserved.  
**Note:** Make sure you have read the instructions carefully and you fully understand the correct operation procedure before using this function.

**Current Disk Volume Configuration**

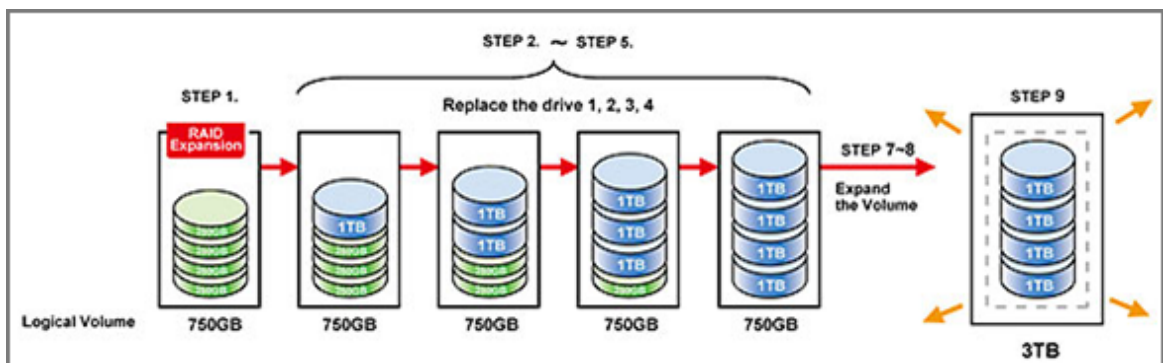
Volume	Total Size	Bitmap	Status	Description
<input type="radio"/> Mirroring Disk Volume: Drive 1 2	145.24 GB	No	Ready	The operation(s) you can execute: - Expand capacity

## Expand Capacity (Online RAID Capacity Expansion)

### Scenario

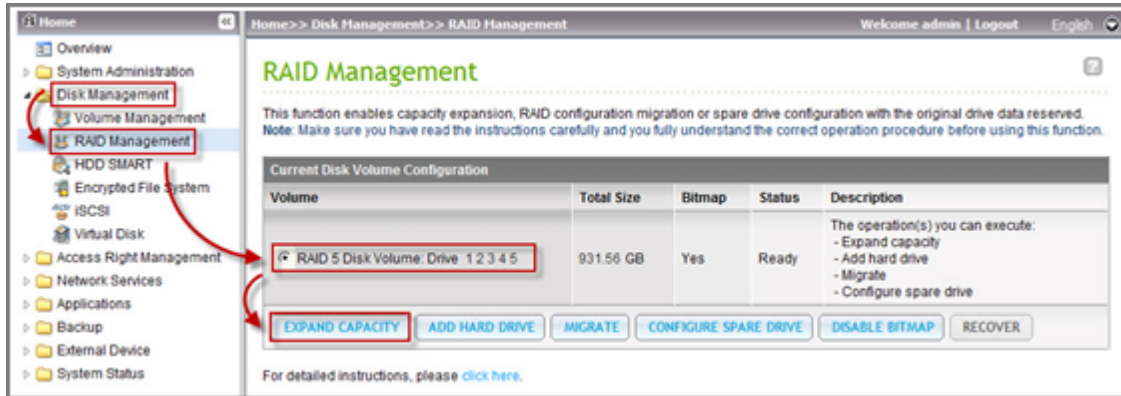
You bought four 250GB HDD for initial setup of TS-509 Pro and configured RAID 5 disk configuration with the four HDD.

A half year later, the data size of the department has largely increased to 1.5TB. In other words, the storage capacity of the NAS is running out of use. At the same time, the price of 1TB hard drives has dropped to a large extent.

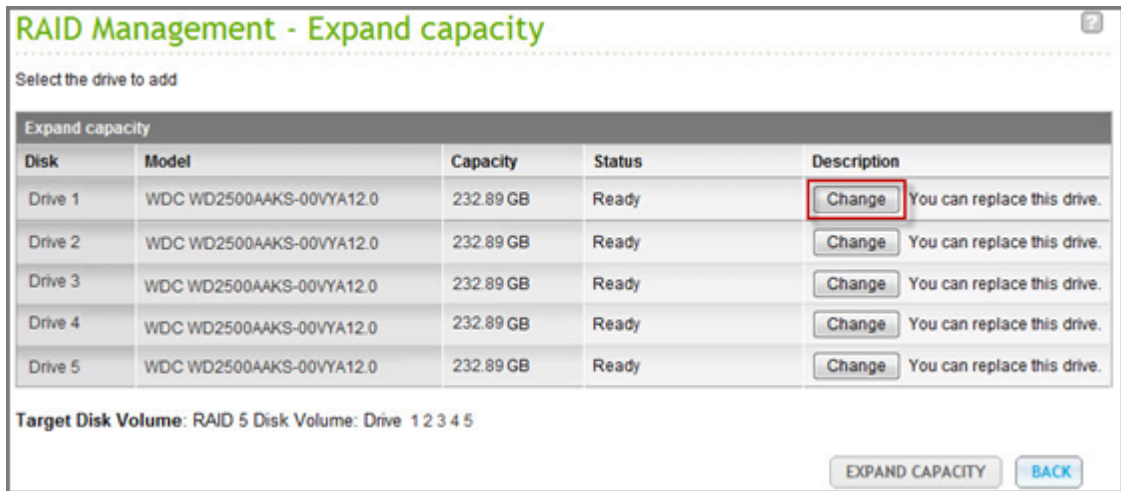


## Operation procedure

In 'Disk Management' > 'RAID Management', select the disk volume for expansion and click 'EXPAND CAPACITY'.



Click 'Change' for the first HDD to be replaced. Follow the instructions to proceed.



Tip: After replacing the HDD, the description field shows the message 'You can replace this drive'. This means you can replace the HDD to a larger one or skip this step if the HDD have been replaced already.



**Caution:** When the hard drive synchronization is in process, do NOT turn off the NAS or plug in or unplug the hard disk drives.



When the description displays 'Please remove this drive', remove the hard drive from the NAS. Wait for the NAS to beep twice after removing the hard drive.

**RAID Management - Expand capacity** ?

Select the drive to add

Expand capacity				
Disk	Model	Capacity	Status	Description
Drive 1	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	<input type="button" value="Cancel"/> <input type="button" value="Please remove the drive."/>
Drive 2	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy
Drive 3	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy
Drive 4	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy
Drive 5	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy

Target Disk Volume: RAID 5 Disk Volume: Drive 1 2 3 4 5

When the description displays 'Please insert the new drive', plug in the new HDD to the drive slot.






**RAID Management - Expand capacity** ?

Select the drive to add

Expand capacity				
Disk	Model	Capacity	Status	Description
Drive 1	--	--	No Disk	<input type="button" value="Please insert the new drive"/>
Drive 2	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy
Drive 3	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy
Drive 4	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy
Drive 5	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	No operation can be executed on this drive or the drive is busy

Target Disk Volume: RAID 5 Disk Volume: Drive 2 3 4 5

After plugging in the HDD, wait for the NAS to beep. The system starts rebuilding.

Status	Description
 Rebuilding... (0%)	No operation can be executed on this drive or the drive is busy
 Rebuilding... (0%)	No operation can be executed on this drive or the drive is busy
 Rebuilding... (0%)	No operation can be executed on this drive or the drive is busy
 Rebuilding... (0%)	No operation can be executed on this drive or the drive is busy
 Rebuilding... (0%)	No operation can be executed on this drive or the drive is busy

After rebuilding finishes, repeat the steps above to replace other HDD.

### RAID Management - Expand capacity ?

Select the drive to add

Expand capacity				
Disk	Model	Capacity	Status	Description
Drive 1	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<input type="button" value="Change"/> You can replace this drive.
Drive 2	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	<input style="border: 2px solid red;" type="button" value="Change"/> You can replace this drive.
Drive 3	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	<input type="button" value="Change"/> You can replace this drive.
Drive 4	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	<input type="button" value="Change"/> You can replace this drive.
Drive 5	WDC WD2500AAKS-00VYA12.0	232.89 GB	Ready	<input type="button" value="Change"/> You can replace this drive.

**Target Disk Volume:** RAID 5 Disk Volume: Drive 1 2 3 4 5

After changing the HDD and rebuilding completes, you can click 'EXPAND CAPACITY' to execute RAID expansion.

### RAID Management

This function enables capacity expansion, RAID configuration migration or spare drive configuration with the original drive data reserved.  
**Note:** Make sure you have read the instructions carefully and you fully understand the correct operation procedure before using this function.

Current Disk Volume Configuration

Volume	Total Size	Bitmap	Status	Description
RAID 5 Disk Volume: Drive 1 2 3 4 5	913.96 GB	Yes	Ready	The operation(s) you can execute: - Expand capacity

For detailed instructions, please [click here](#).

Click 'OK' to proceed.

The NAS beeps and starts to expand the capacity.

### RAID Management - Expand capacity

Select the drive to add

Expand capacity

Disk	Model	Capacity	Status	Description
Drive 1	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	Processing...
Drive 2	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	Processing...
Drive 3	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	Processing...
Drive 4	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	Processing...
Drive 5	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	Processing...

**Target Disk Volume:** RAID 5 Disk Volume: Drive 1 2 3 4 5 You can expand the disk volume capacity to approximately **3726 GB**

The process may take from hours to tens of hours to finish depending on the drive size. Please wait patiently for the process to finish. Do NOT turn off the power of NAS.

Current Disk Volume Configuration: Physical Disks					
Disk	Model	Capacity	Status	Bad Blocks Scan	SMART Information
Drive 1	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 2	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 3	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 4	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 5	Hitachi HD5721010KLA330 GKAO	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD

Current Disk Volume Configuration: Logical Volumes				
Volume	File System	Total Size	Free Size	Status
RAID 5 Disk Volume: Drive 1 2 3 4 5	EXT3	3726.04 GB	3315.36 GB	Ready

After RAID expansion has finished, the new capacity is shown and the status is 'Ready'. You can start to use the larger capacity. (In the example you have 3.7TB logical volume)

### RAID Management ?

This function enables capacity expansion, RAID configuration migration or spare drive configuration with the original drive data reserved.  
**Note:** Make sure you have read the instructions carefully and you fully understand the correct operation procedure before using this function.

Current Disk Volume Configuration				
Volume	Total Size	Bitmap	Status	Description
RAID 5 Disk Volume: Drive 1 2 3 4 5	3726.04 GB	Yes	Ready	The operation(s) you can execute: - Expand capacity

EXPAND CAPACITY
ADD HARD DRIVE
MIGRATE
CONFIGURE SPARE DRIVE
BITMAP
RECOVER

For detailed instructions, please [click here](#).

Tip: If the description still shows 'You can replace this hard drive' and the status of the drive volume says 'Ready', it means the RAID volume is still expandable.

## Migrate (Online RAID Level Migration)

---

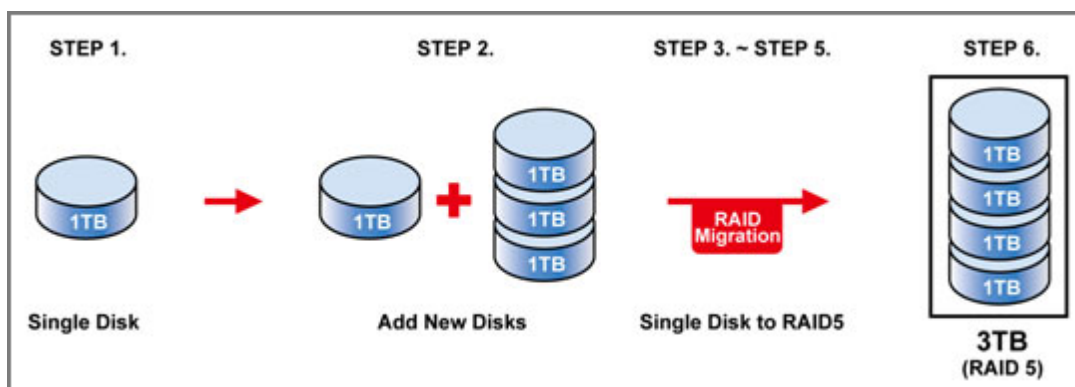
During the initial setup of TS-509 Pro, you bought a 1TB HDD and configured it as single disk. TS-509 Pro is used as a file server for data sharing among the departments.

After a half year, more and more important data are saved on TS-509 Pro. There is a rising concern for hard drive damage and data loss. Therefore, you planned to upgrade the disk configuration to RAID 5.

Using online RAID level migration, you can install one HDD for setting up TS-509 Pro and upgrade the RAID level in the future. The migration process can be done without turning off the server. All the data will be retained.

You can do the following with online RAID level migration:

- Migrate the system from single disk to RAID 1, RAID 5, or RAID 6
- Migrate the system from RAID 1 to RAID 5 or RAID 6
- Migrate the system from RAID 5 with 3 HDD to RAID 6



You need to:

- Prepare the HDD of the same or larger capacity as an existing drive in the RAID configuration.
- Execute RAID level migration (migrate the system from single disk mode to RAID 5 with 4 HDD).

Go to 'Disk Management' > 'Volume Management'. The current disk volume configuration displayed on the page is single disk (the capacity is 1TB).

Current Disk Volume Configuration: Physical Disks					
Drive 1	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 2	--	--	No Disk	<a href="#">SCAN NOW</a>	---
Drive 3	--	--	No Disk	<a href="#">SCAN NOW</a>	---
Drive 4	--	--	No Disk	<a href="#">SCAN NOW</a>	---
Drive 5	--	--	No Disk	<a href="#">SCAN NOW</a>	---

Current Disk Volume Configuration: Logical Volumes				
Volume	File System	Total Size	Free Size	Status
Single Disk: Drive 1	EXT3	931.51 GB	524.68 GB	Ready

[FORMAT NOW](#)   [CHECK NOW](#)   [REMOVE NOW](#)

Plug in the new 1TB HDDs to drive slots 2, 3, 4 and 5 of NAS. The NAS will detect the new HDDs. The status of the new HDDs is 'Unmounted'.

Current Disk Volume Configuration: Physical Disks					
Drive 1	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 2	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 3	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 4	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 5	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD

Current Disk Volume Configuration: Logical Volumes				
Volume	File System	Total Size	Free Size	Status
Single Disk: Drive 1	EXT3	931.51 GB	524.68 GB	Ready
				<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>
Single Disk: Drive 2	EXT3	--	--	Unmounted
				<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>
Single Disk: Drive 3	EXT3	--	--	Unmounted
				<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>
Single Disk: Drive 4	EXT3	--	--	Unmounted
				<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>
Single Disk: Drive 5	EXT3	--	--	Unmounted
				<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>



Go to 'Disk Management' > 'RAID Management', select the drive configuration for migration and click 'Migrate'.

The screenshot shows the QNAP RAID Management web interface. The breadcrumb path is 'Home >> Disk Management >> RAID Management'. The left sidebar contains a tree view with 'RAID Management' selected. The main content area is titled 'RAID Management' and includes a table of 'Current Disk Volume Configuration'. The table has columns for Volume, Total Size, Bitmap, Status, and Description. The first row, 'Single Disk: Drive 1', is selected and has a 'Migrate' button highlighted in red. Other drives are unmounted and have a red warning message: 'No operation can be executed for this drive configuration.' Below the table are buttons for 'EXPAND CAPACITY', 'ADD HARD DRIVE', 'MIGRATE', 'CONFIGURE SPARE DRIVE', 'BITMAP', and 'RECOVER'. The 'MIGRATE' button is highlighted with a red box and a red arrow pointing to it from the selected drive row.

Volume	Total Size	Bitmap	Status	Description
<input checked="" type="radio"/> Single Disk: Drive 1	915.42 GB	--	Ready	The operation(s) you can execute: - Migrate
<input type="radio"/> Single Disk: Drive 2	--	--	Unmounted	No operation can be executed for this drive configuration.
<input type="radio"/> Single Disk: Drive 3	--	--	Unmounted	No operation can be executed for this drive configuration.
<input type="radio"/> Single Disk: Drive 4	--	--	Unmounted	No operation can be executed for this drive configuration.
<input type="radio"/> Single Disk: Drive 5	--	--	Unmounted	No operation can be executed for this drive configuration.



Select one or more available drives and the migration method. The drive capacity after migration is shown. Click 'Migrate'.

**RAID Management - Migrate**

Select the drive to add

Migrate				
Available drive(s)	Disk	Model	Capacity	Status
<input checked="" type="checkbox"/>	Drive 2	WD1000FYPS-01ZKB02.0	931.51 GB	Ready
<input checked="" type="checkbox"/>	Drive 3	WD1000FYPS-01ZKB02.0	931.51 GB	Ready
<input checked="" type="checkbox"/>	Drive 4	WD1000FYPS-01ZKB02.0	931.51 GB	Ready
<input checked="" type="checkbox"/>	Drive 5	WD1000FYPS-01ZKB02.0	931.51 GB	Ready

Select the migration method:

- Single Disk Volume -> RAID 1 Mirroring Disk Volume
- Single Disk Volume -> RAID 5 Disk Volume
- Single Disk Volume -> RAID 6 Disk Volume

**Target Disk Volume:** Single Disk: Drive 4 The drive configuration is about to be configured as **RAID 5 Disk Volume**, The capacity is approximately **3726 GB**

**MIGRATE** **BACK**

Note that all the data on the selected HDD will be cleared. Click 'OK' to confirm.

When migration is in process, the required time and total drive capacity after migration are shown in the description field.

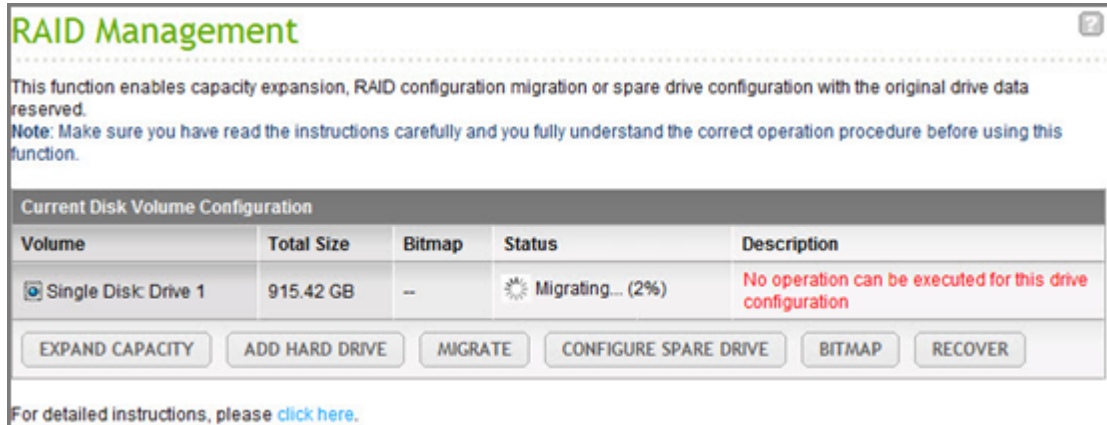
Current Disk Volume Configuration: Physical Disks					
Drive 1	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 2	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 3	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 4	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD
Drive 5	Hitachi HD5721010KLA330 GKA0	931.51 GB	Ready	<a href="#">SCAN NOW</a>	GOOD

Current Disk Volume Configuration: Logical Volumes				
Volume	File System	Total Size	Free Size	Status
Single Disk: Drive 1	EXT3	931.51 GB	524.68 GB	Ready
<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>				
Single Disk: Drive 2	EXT3	--	--	Unmounted
<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>				
Single Disk: Drive 3	EXT3	--	--	Unmounted
<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>				
Single Disk: Drive 4	EXT3	--	--	Unmounted
<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>				
Single Disk: Drive 5	EXT3	--	--	Unmounted
<a href="#">FORMAT NOW</a> <a href="#">CHECK NOW</a> <a href="#">REMOVE NOW</a>				

The NAS will enter 'Read only' mode when migration is in process during 11%–49% to assure the data of the RAID configuration will be consistent after RAID migration completes.

After migration completes, the new drive configuration is shown (RAID 5 now) and the status is Ready. You can start to use the new drive configuration.



**RAID Management**

This function enables capacity expansion, RAID configuration migration or spare drive configuration with the original drive data reserved.

**Note:** Make sure you have read the instructions carefully and you fully understand the correct operation procedure before using this function.

Current Disk Volume Configuration

Volume	Total Size	Bitmap	Status	Description
Single Disk: Drive 1	915.42 GB	--	Migrating... (2%)	No operation can be executed for this drive configuration

EXPAND CAPACITY   ADD HARD DRIVE   MIGRATE   CONFIGURE SPARE DRIVE   BITMAP   RECOVER

For detailed instructions, please [click here](#).

The process may take from hours to tens of hours to finish depending on the HDD size. You can connect to the web page of the NAS to check the status later.

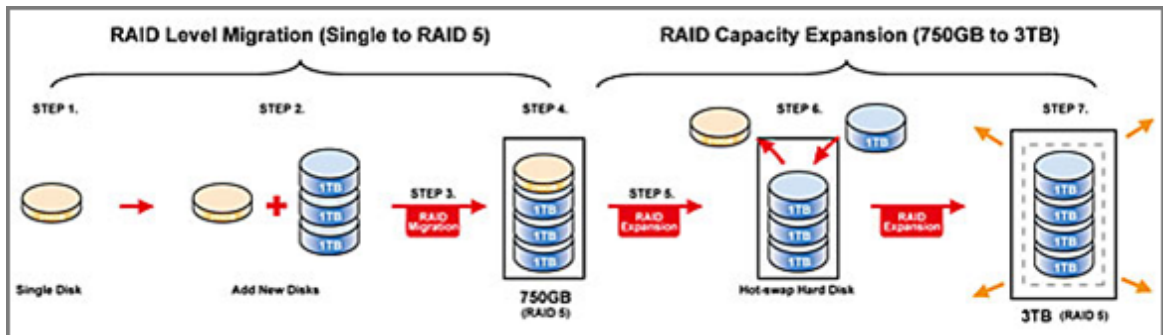
## Use Online RAID Capacity Expansion and Online RAID Level Migration

### Scenario

You had a tight schedule to set up the file server and FTP server. However, you had only one 250GB HDD. Therefore, you set up the TS-509 Pro with the single disk configuration.

The original plan was to set up a 3TB RAID 5 network data centre with TS-509 Pro.

You now planned to upgrade the disk configuration of TS-509 Pro to RAID 5 and expand the total storage capacity to 3TB with all the original data retained after the HDD are purchased.



Execute online RAID level migration to migrate the system from single disk to RAID 5. The total storage capacity will be 750GB, RAID 5 (with one 250GB HDD and three 1TB HDD, the disk usage will be 250GB\*4 for RAID 5.). You can refer to the previous step for the operation procedure.

Execute online RAID capacity expansion to replace the 250GB HDD with a new 1TB HDD, and then expand the logical volume from 750GB to 3TB of RAID 5. You can refer to the previous step for the operation procedure.

## Add hard drive

---

Follow the steps below to add a HDD member to a RAID 5 or RAID 6 disk configuration.

1. Make sure the status of the RAID 5 or RAID 6 configuration is 'Ready'.
2. Install a HDD on the NAS. If you have a HDD which has already been formatted as single disk volume on the NAS, you can add this HDD to the RAID 5 or RAID 6 configuration. You are recommended to use hard disk drives of the same storage capacity for the RAID configuration.
3. Select the RAID 5 or RAID 6 configuration on the 'RAID Management' page and click 'ADD HARD DRIVE'.
4. Select the new HDD member. The total drive capacity after adding the drive will be shown. Click 'ADD HARD DRIVE'.
5. All the data on the new HDD member will be deleted during this process. The data on the original RAID 5 or RAID 6 configuration will be retained. Click 'OK'. The NAS will beep twice.

This process may take a few hours to tens of hours to complete depending on the number and the size of the HDD. Please wait patiently for the process to finish. Do NOT turn off the NAS during this process. You can use a RAID configuration of larger capacity after the process.

## Configure Spare Drive

---

You can add a spare drive to or remove a spare drive from a RAID 5 configuration.

Follow the steps below to use this feature.

1. Make sure the status of the RAID 5 or RAID 6 configuration is 'Ready'.
2. To add a spare drive, install a HDD on the NAS. If you have a HDD which has already been formatted as single disk volume on the NAS, you can configure this HDD as the spare drive. You are recommended to use hard disk drives of the same storage capacity for the RAID configuration.
3. Select the HDD and click 'CONFIGURE SPARE DRIVE'.
4. To add a spare drive to the selected configuration, select the HDD and click 'CONFIGURE SPARE DRIVE'. All the data on the selected HDD will be deleted. Click 'OK' to proceed.
5. To remove a spare drive, unselect the spare drive and click 'CONFIGURE SPARE DRIVE'. The original data on the RAID 5 or RAID 6 disk volume will be retained. After the configuration completes, the status of the disk volume will become 'Ready'.

## Bitmap

---

Bitmap improves the time for RAID rebuilding after an unexpected error, or removing or re-adding a member HDD of the RAID configuration. If an array has a bitmap, the member HDD can be removed and re-added and only blocks changes since the removal (as recorded in the bitmap) will be re-synchronized. To use this feature, select a RAID 1, 5, or 6 disk volume and click 'ENABLE BITMAP'.

**Note:** Bitmap support is only available for RAID 1, 5, and 6.

### RAID Management ?

This function enables capacity expansion, RAID configuration migration or spare drive configuration with the original drive data reserved.  
**Note:** Make sure you have read the instructions carefully and you fully understand the correct operation procedure before using this function.

**Current Disk Volume Configuration**

Volume	Total Size	Bitmap	Status	Description
<input checked="" type="radio"/> RAID 5 Disk Volume: Drive 1 2 3	455.52 GB	No	Ready	The operation(s) you can execute: - Expand capacity

For detailed instructions, please [click here](#).

## Recover (RAID Recovery)

---

RAID Recovery: When the NAS is configured as RAID 5 (or RAID 6) and 2 (or 3) HDD are unplugged from the server accidentally, you can plug in the same HDD into the same drive slots and click 'Recover' to recover the volume status from 'Not active' to 'Degraded mode'.

If the disk volume is configured as RAID 0 or JBOD and one or more of the HDD members are disconnected, you can use this function to recover the volume status from 'Not active' to 'Normal'. The disk volume can be used normally after successful recovery.

**Note:** If the disconnected drive member is damaged, the RAID recovery function will not work.

	Standard RAID 5	QNAP RAID 5	Standard RAID 6	QNAP RAID 6
Degraded mode	N-1	N-1	N-1 & N-2	N-1 & N-2
Read Only Protection (for immediate data backup & HDD replacement)	N/A	N-1, bad blocks found in the surviving HDD of the array.	N/A	N-2, bad blocks found in the surviving HDD of the array.
RAID Recovery (RAID Status: Not Active)	N/A	If re-plugging in all original HDD to the NAS and they can be spun up, identified, accessed, and the HDD superblock is not damaged.	N/A	If re-plugging in all original HDD to the NAS and they can be spun up, identified, accessed, and the HDD superblock is not damaged).
RAID Crash	N-2	N-2 failed HDD and any of the remaining HDD cannot be spun up/ identified/ accessed.	N-3	N-3 and any of the remaining HDD cannot be spun up/ identified/ accessed.

N = Number of hard disk drives (HDD) in the array



**Further information about RAID management of the NAS:**

The NAS supports the following actions according to the number of HDD and disk configurations supported. Please refer to the following table for the details.

<b>Original Disk Configuration * No. of HDD</b>	<b>No. of New HDD</b>	<b>Action</b>	<b>New Disk Configuration * No. of HDD</b>
RAID 5 * 3	1	Add HDD member	RAID 5 * 4
RAID 5 * 3	2	Add HDD member	RAID 5 * 5
RAID 5 * 3	3	Add HDD member	RAID 5 * 6
RAID 5 * 3	4	Add HDD member	RAID 5 * 7
RAID 5 * 3	5	Add HDD member	RAID 5 * 8
RAID 5 * 4	1	Add HDD member	RAID 5 * 5
RAID 5 * 4	2	Add HDD member	RAID 5 * 6
RAID 5 * 4	3	Add HDD member	RAID 5 * 7
RAID 5 * 4	4	Add HDD member	RAID 5 * 8
RAID 5 * 5	1	Add HDD member	RAID 5 * 6
RAID 5 * 5	2	Add HDD member	RAID 5 * 7
RAID 5 * 5	3	Add HDD member	RAID 5 * 8
RAID 5 * 6	1	Add HDD member	RAID 5 * 7
RAID 5 * 6	2	Add HDD member	RAID 5 * 8
RAID 5 * 7	1	Add HDD member	RAID 5 * 8
RAID 6 * 4	1	Add HDD member	RAID 6 * 5
RAID 6 * 4	2	Add HDD member	RAID 6 * 6
RAID 6 * 4	3	Add HDD member	RAID 6 * 7
RAID 6 * 4	4	Add HDD member	RAID 6 * 8
RAID 6 * 5	1	Add HDD member	RAID 6 * 6
RAID 6 * 5	2	Add HDD member	RAID 6 * 7
RAID 6 * 5	3	Add HDD member	RAID 6 * 8
RAID 6 * 6	1	Add HDD member	RAID 6 * 7
RAID 6 * 6	2	Add HDD member	RAID 6 * 8
RAID 6 * 7	1	Add HDD member	RAID 6 * 8
RAID 1 * 2	1	Online RAID capacity expansion	RAID 1 * 2

RAID 5 * 3	1	Online RAID capacity expansion	RAID 5 * 3
RAID 5 * 4	1	Online RAID capacity expansion	RAID 5 * 4
RAID 5 * 5	1	Online RAID capacity expansion	RAID 5 * 5
RAID 5 * 6	1	Online RAID capacity expansion	RAID 5 * 6
RAID 5 * 7	1	Online RAID capacity expansion	RAID 5 * 7
RAID 5 * 8	1	Online RAID capacity expansion	RAID 5 * 8
RAID 6 * 4	1	Online RAID capacity expansion	RAID 6 * 4
RAID 6 * 5	1	Online RAID capacity expansion	RAID 6 * 5
RAID 6 * 6	1	Online RAID capacity expansion	RAID 6 * 6
RAID 6 * 7	1	Online RAID capacity expansion	RAID 6 * 7
RAID 6 * 8	1	Online RAID capacity expansion	RAID 6 * 8
Single * 1	1	Online RAID level migration	RAID 1 * 2
Single * 1	2	Online RAID level migration	RAID 5 * 3
Single * 1	3	Online RAID level migration	RAID 5 * 4
Single * 1	4	Online RAID level migration	RAID 5 * 5
Single * 1	5	Online RAID level migration	RAID 5 * 6
Single * 1	6	Online RAID level migration	RAID 5 * 7
Single * 1	7	Online RAID level migration	RAID 5 * 8
Single * 1	3	Online RAID Level Migration	RAID 6 * 4
Single * 1	4	Online RAID level migration	RAID 6 * 5
Single * 1	5	Online RAID level migration	RAID 6 * 6
Single * 1	6	Online RAID level migration	RAID 6 * 7
Single * 1	7	Online RAID level migration	RAID 6 * 8
RAID 1 * 2	1	Online RAID level migration	RAID 5 * 3

RAID 1 * 2	2	Online RAID level migration	RAID 5 * 4
RAID 1 * 2	3	Online RAID level migration	RAID 5 * 5
RAID 1 * 2	4	Online RAID level migration	RAID 5 * 6
RAID 1 * 2	5	Online RAID level migration	RAID 5 * 7
RAID 1 * 2	6	Online RAID level migration	RAID 5 * 8
RAID 1 * 2	2	Online RAID level migration	RAID 6 * 4
RAID 1 * 2	3	Online RAID level migration	RAID 6 * 5
RAID 1 * 2	4	Online RAID level migration	RAID 6 * 6
RAID 1 * 2	5	Online RAID level migration	RAID 6 * 7
RAID 1 * 2	6	Online RAID level migration	RAID 6 * 8
RAID 5 * 3	1	Online RAID level migration	RAID 6 * 4
RAID 5 * 3	2	Online RAID level migration	RAID 6 * 5
RAID 5 * 3	3	Online RAID level migration	RAID 6 * 6
RAID 5 * 3	4	Online RAID level migration	RAID 6 * 7
RAID 5 * 3	5	Online RAID level migration	RAID 6 * 8

## 4.3 HDD SMART

You can monitor the HDD health, temperature, and the usage status by HDD S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology).

You can view the following information of each HDD on the NAS.

Field	Description
Summary	Display the HDD S.M.A.R.T. summary and the latest test result.
Hard disk information	Display the HDD details, for example, model, serial number, HDD capacity.
SMART information	Display the HDD S.M.A.R.T. information. Any items that the values are lower than the threshold are regarded as abnormal.
Test	Perform quick or complete HDD S.M.A.R.T. test.
Settings	Configure temperature alarm. When the HDD temperature is over the preset values, the NAS records the error logs. You can also set the quick and complete test schedule. The latest test result is shown on the Summary page.

### HDD SMART ?

Monitor hard disk health, temperature, and usage status by the hard disk S.M.A.R.T. mechanism.

Select Hard Disk Disk 1 ▾

SUMMARY
HARD DISK INFORMATION
SMART INFORMATION
TEST
SETTINGS

**Summary**

Good

No errors were detected on the hard disk. Your hard disk should be operating properly.

**Hard Disk Model** Seagate ST3160318AS CC44

**Drive Capacity** 149.05 GB

**Hard Drive Health** Good

**Hard Drive Temperature** 36 °C ▾

**Test Time** ---

**Test Result** Not tested

## 4.4 Encrypted File System

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This feature is not supported by TS-110, TS-119, TS-210, TS-219, TS-219P, TS-410, TS-419P, TS-410U, and TS-419U.

You can manage the encrypted disk volumes on the NAS on this page. Each encrypted disk volume is locked by a particular key. The encrypted volume can be unlocked by the following methods:

- **Encryption Password:** Enter the encryption password to unlock the disk volume. The default password is 'admin'. The password must be 8-16 characters long. Symbols (! @ # \$ % ^ & \* ( ) \_ + = ?) are supported.
- **Encryption Key File:** You can upload the encryption file to the server to unlock the disk volume. The key can be downloaded from 'Encryption Key Management' page after you have unlocked the disk volume successfully.

The data encryption functions may not be available in accordance to the legislative restrictions of some countries.

Disk Volume Encryption Management <span style="float: right;">?</span>			
Volume	Total Size	Status	Action
Mirroring Disk Volume: Drive 1 2	145.24 GB	Unlocked	<a href="#">ENCRYPTION KEY MANAGEMENT</a>

## 4.5 iSCSI

---

The NAS supports built-in iSCSI service for server clustering and virtualized environments.

### iSCSI Configuration

The NAS supports built-in iSCSI service. To use this function, follow the steps below:

1. Install an iSCSI initiator on your computer (Windows PC, Mac, or Linux).
2. Enable iSCSI Target Service on the NAS and create a new iSCSI target.
3. Run the iSCSI initiator and connect to the iSCSI target (NAS).
4. After successful logon, format the iSCSI target (disk volume). You can start to use the disk volume on the NAS as a virtual drive on your computer.

In between the relationship of your computer and the storage device, your computer is called an initiator because it initiates the connection to the device, which is called a target.

**Note:** It is suggested NOT to connect to the same iSCSI target with two different clients (iSCSI initiators) at the same time, because this may lead to data damage or disk damage.

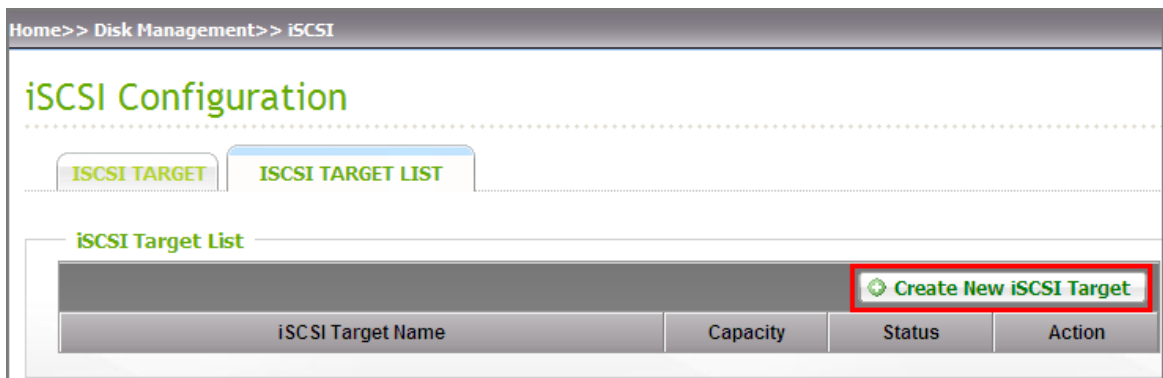
**The description below applies to non Intel-based NAS or Intel-based NAS models running firmware prior to version 3.2.0 only.**

Non Intel-based NAS refers to TS-110, TS-119, TS-210, TS-219, TS-219P, TS-410, TS-419P, TS-410U, TS-419U. Intel-based NAS refers to TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, and TS-859U-RP.

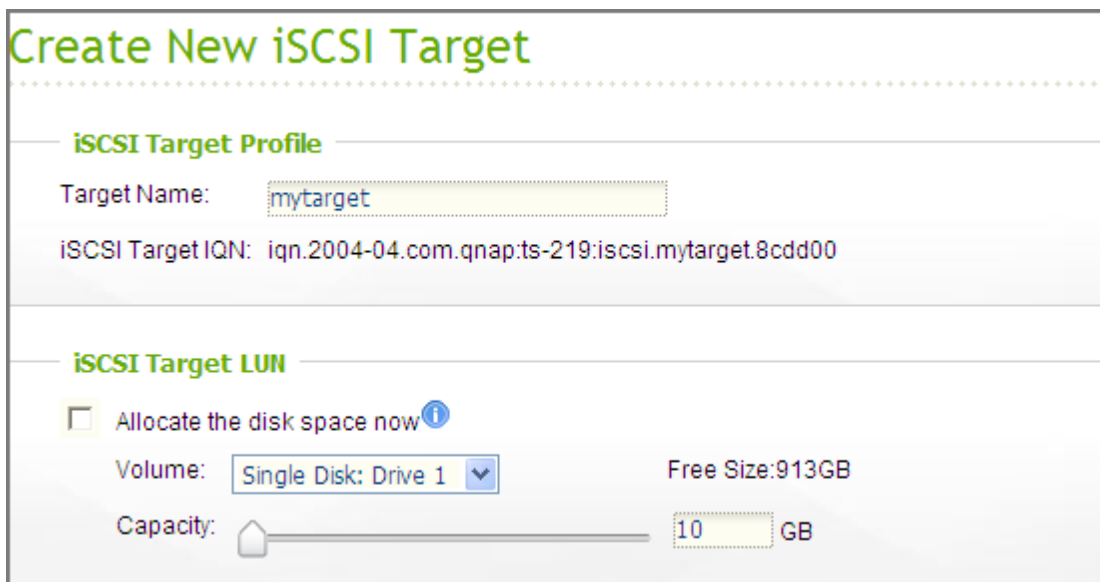
Follow the steps below to create iSCSI targets and LUN on the NAS.

A logical unit number (LUN) will be created for each iSCSI target you create. A maximum of 4 targets and 4 LUNs can be created.

Under the tab 'iSCSI TARGET LIST', click 'Create New iSCSI Target'.



Enter the information required. Specify the target name. Specify the volume on which the iSCSI target will be created on and the size of the target, also whether or not to pre-allocate the disk space.



Enter the CHAP authentication settings (optional) if your NAS is located on a public or untrusted network. If you enter the user name and password settings under 'CHAP' only, only the iSCSI target authenticates the initiator. In other words, the initiators have to enter the user name password to connect to the target.

Mutual CHAP: Turn on this option for two-way authentication between the iSCSI target and the initiator. The target authenticates the initiator using the first set of user name and password. The initiator authenticates the target using the 'Mutual CHAP' settings.

Field	User name limitation	Password limitation
Use CHAP authentication	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z</li> <li>Maximum length: 256 characters</li> </ul>	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z</li> <li>Maximum length: 12-16 characters</li> </ul>
Mutual CHAP	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z, : (colon), . (dot), and - (dash)</li> <li>Maximum length: 12-16 characters</li> </ul>	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z, : (colon), . (dot), and - (dash)</li> <li>Maximum length: 12-16 characters</li> </ul>

**Type**

None

CHAP

User Name:  (A~Z, a~z, 0~9)

Password  (A~Z, a~z, 0~9)

Re-enter Password:

Mutual CHAP

Initiator Name:  (A~Z, a~z, 0~9)

Password  (A~Z, a~z, 0~9)

Re-enter Password:

---

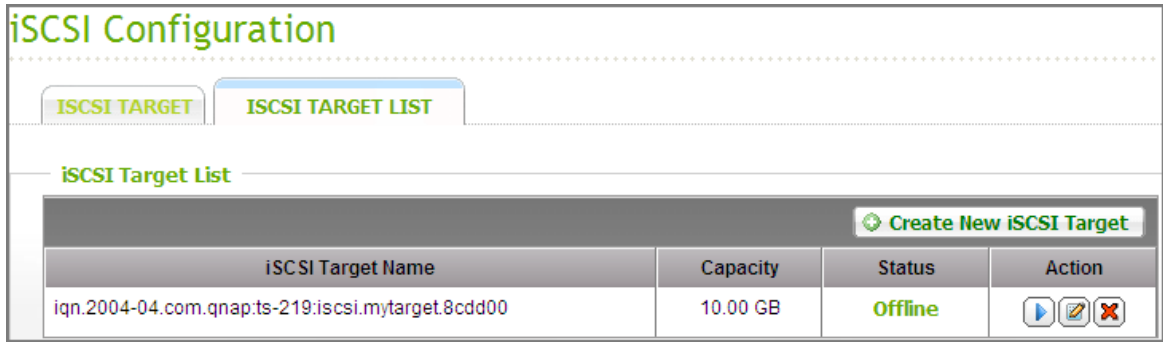
**CRC/Checksum (optional)**

Data Digest




Header Digest



Upon successful creation the iSCSI target will be shown on the iSCSI Target List.

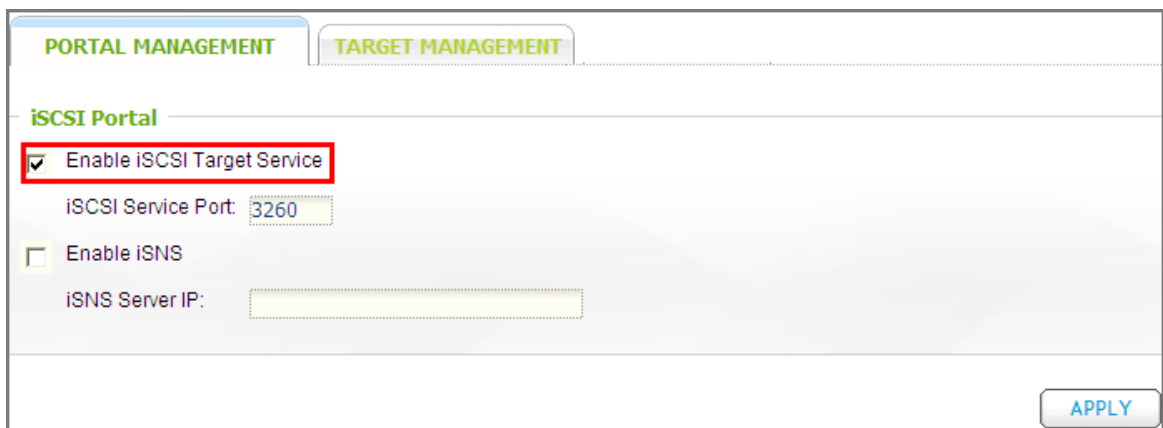


The screenshot shows the 'iSCSI Configuration' interface with the 'iSCSI TARGET LIST' tab selected. A table displays one iSCSI target with the following details:

iSCSI Target Name	Capacity	Status	Action
iqn.2004-04.com.qnap.ts-219:iscsi.mytarget.8cdd00	10.00 GB	Offline	  

A 'Create New iSCSI Target' button is visible in the top right corner of the table area.

Select the option 'Enable iSCSI Target Service' under the tab 'iSCSI TARGET' and click 'Apply'. The iSCSI target will become ready.



The screenshot shows the 'iSCSI Portal' configuration page under the 'TARGET MANAGEMENT' tab. The 'Enable iSCSI Target Service' checkbox is checked and highlighted with a red box. Other settings include:

- iSCSI Service Port: 3260
- Enable iSNS:
- iSNS Server IP:

An 'APPLY' button is located at the bottom right of the configuration area.

## iSCSI Quick Configuration Wizard

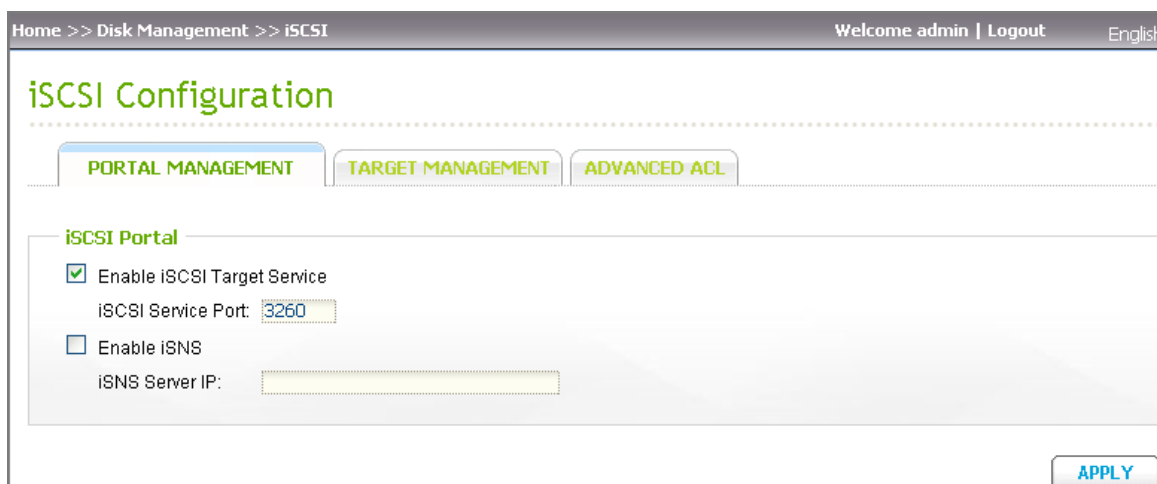
The description below applies to Intel-based NAS models running firmware version 3.2.0 or later only.

Intel-based NAS refers to TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, and TS-859U-RP.

A maximum of 256 iSCSI targets and LUNs can be created. For example, if you create 100 targets on the NAS, the maximum number of LUNs you can create is 156. Multiple LUNs can be created for each target. However, the maximum number of concurrent connections to the iSCSI targets supported by the NAS varies depending on your network infrastructure and the application performance. Too many concurrent connections may slow down the performance of the NAS.

Follow the steps below to configure the iSCSI target service on the NAS.

1. Under the 'Portal Management' tab enable iSCSI target service. Apply the settings.



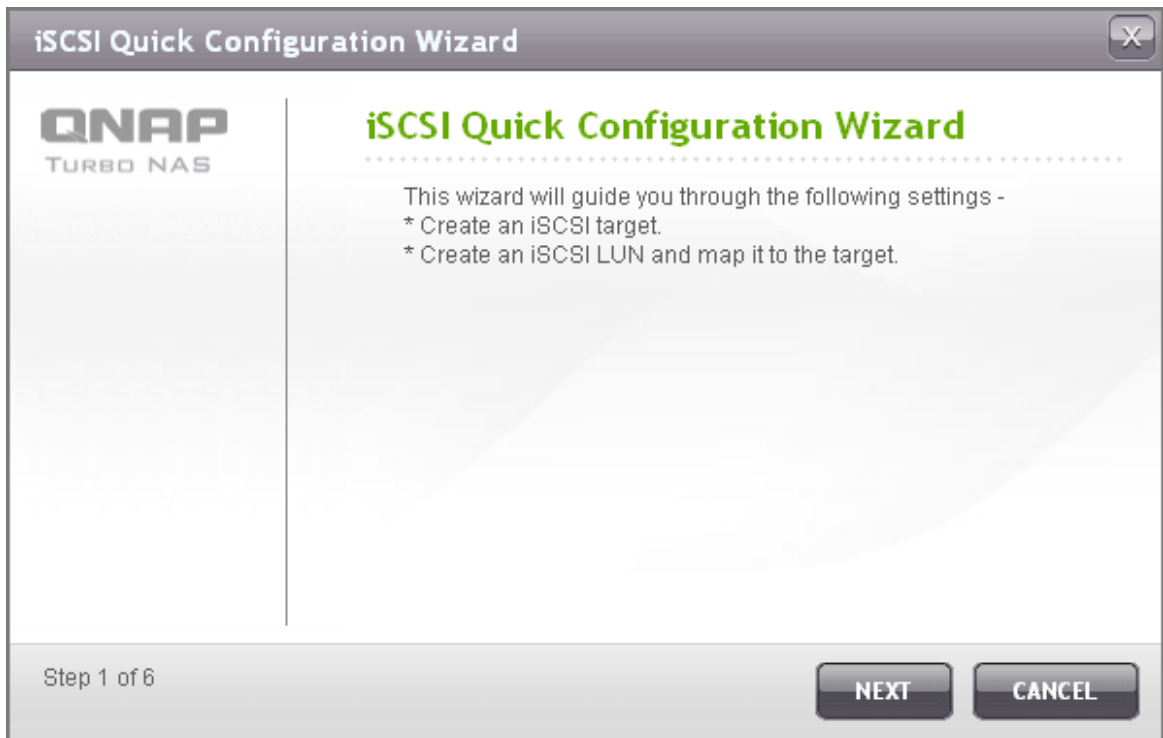
The screenshot shows the 'iSCSI Configuration' web interface. The breadcrumb navigation at the top reads 'Home >> Disk Management >> iSCSI'. The user is logged in as 'admin' and the language is set to 'English'. The main heading is 'iSCSI Configuration'. There are three tabs: 'PORTAL MANAGEMENT' (selected), 'TARGET MANAGEMENT', and 'ADVANCED ACL'. Under the 'iSCSI Portal' section, the 'Enable iSCSI Target Service' checkbox is checked, and the 'iSCSI Service Port' is set to 3260. The 'Enable iSNS' checkbox is unchecked, and the 'iSNS Server IP' field is empty. An 'APPLY' button is located at the bottom right of the configuration area.

2. Next, go to the 'Target Management' tab and create iSCSI targets on the NAS. If you have not created any iSCSI targets, the Quick Installation Wizard will show up and prompt you to create iSCSI targets and LUN (Logical unit number). Click 'OK'.

3. Select to create an iSCSI target with a mapped LUN, an iSCSI target only, or an iSCSI LUN only. Click 'Next'.



4. Create iSCSI target with a mapped LUN:  
Click 'Next'.



5. Enter the target name and target alias. You may check the options 'Data Digest' and/or 'Header Digest' (optional). These are the parameters that the iSCSI initiator will be verified when it attempts to connect to the iSCSI target.



The image shows a screenshot of the 'iSCSI Quick Configuration Wizard' window. The title bar reads 'iSCSI Quick Configuration Wizard' with a close button (X) on the right. The window is divided into two main sections. On the left, there is a logo for 'QNAP TURBO NAS'. The right section is titled 'Create New iSCSI Target' in green text. Below the title, there is a section for 'iSCSI Target Profile' with the following fields: 'Target Name' (text box containing 'target01'), 'iSCSI Target IQN' (text box containing 'iqn.2004-04.com.qnap.ts-809:iscsi.target01.8a000f'), and 'Target Alias' (text box containing 'target'). Below these fields is a section for 'CRC/Checksum (optional)' with two checkboxes: 'Data Digest' and 'Header Digest', both of which are currently unchecked. At the bottom of the window, there is a status bar that says 'Step 2 of 6' on the left and three buttons: 'BACK', 'NEXT', and 'CANCEL' on the right.

iSCSI Quick Configuration Wizard

**QNAP**  
TURBO NAS

### Create New iSCSI Target

iSCSI Target Profile

Target Name:

iSCSI Target IQN:

Target Alias:

CRC/Checksum (optional)

Data Digest

Header Digest

Step 2 of 6

BACK NEXT CANCEL

6. Enter the CHAP authentication settings. If you enter the user name and password settings under 'Use CHAP authentication' only, only the iSCSI target authenticates the initiator, i.e. the initiators have to enter the user name password settings here to access the target.

Mutual CHAP: Enable this option for two-way authentication between the iSCSI target and the initiator. The target authenticates the initiator using the first set of user name and password. The initiator authenticates the target using the 'Mutual CHAP' settings.

Field	User name limitation	Password limitation
Use CHAP authentication	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z</li> <li>Maximum length: 256 characters</li> </ul>	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z</li> <li>Maximum length: 12-16 characters</li> </ul>
Mutual CHAP	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z, : (colon), . (dot), and - (dash)</li> <li>Maximum length: 12-16 characters</li> </ul>	<ul style="list-style-type: none"> <li>The only valid characters are 0-9, a-z, A-Z, : (colon), . (dot), and - (dash)</li> <li>Maximum length: 12-16 characters</li> </ul>

**iSCSI Quick Configuration Wizard**

**QNAP TURBO NAS**

### CHAP Authentication Settings

Use CHAP authentication

User Name:

Password:

Re-enter Password:

Mutual CHAP

User Name:

Password:

Re-enter Password:

Step 3 of 6

**BACK** **NEXT** **CANCEL**

7. Create an iSCSI LUN.

An iSCSI LUN is a logical volume mapped to the iSCSI target. Select one of the following modes to allocate the disk space to the LUN:

- Thin Provisioning: Select this option to allocate the disk space in a flexible manner. You can allocate the disk space to the target anytime regardless of the current storage capacity available on the NAS. Over-allocation is allowed since the storage capacity of the NAS can be expanded by online RAID capacity expansion.
- Instant Allocation: Select this option to allocate the disk space to the LUN instantly. This option guarantees the disk space assigned to the LUN but may take more time to create the LUN.

Enter the LUN name and specify the LUN location (disk volume on the NAS). Enter the capacity for the LUN. Click 'Next'.

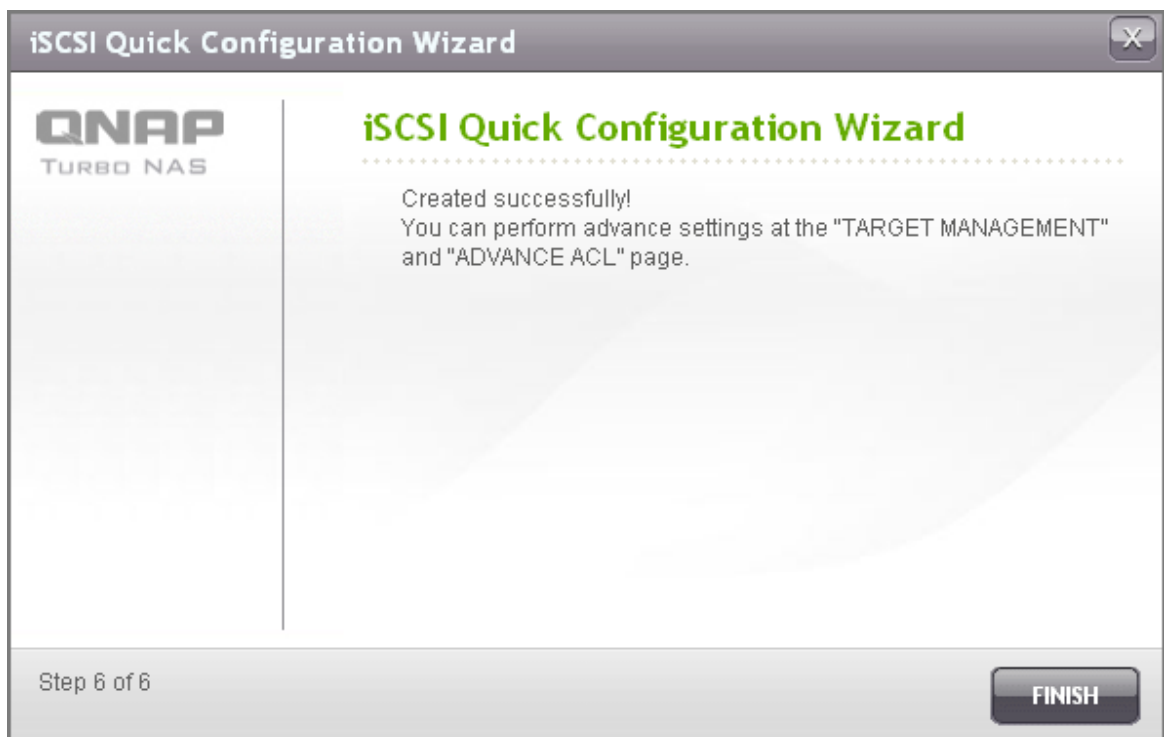


The screenshot shows the 'iSCSI Quick Configuration Wizard' window. The title bar reads 'iSCSI Quick Configuration Wizard' with a close button. On the left side, there is a logo for 'QNAP TURBO NAS'. The main content area is titled 'Create an iSCSI LUN' in green text. Below the title, there are four configuration fields: 'LUN Allocation' with radio buttons for 'Thin-Provisioning' (selected) and 'Instant Allocation' (with an info icon); 'LUN Name' with a text input field containing '001'; 'LUN Location' with a dropdown menu showing '/share/HDB\_DATA' and 'Free Size: 281.6GB'; and 'Capacity' with a slider and a text input field containing '50' GB. At the bottom left, it says 'Step 4 of 6'. At the bottom right, there are three buttons: 'BACK', 'NEXT', and 'CANCEL'.

8. Confirm the settings and click 'Next'.



9. When the target and the LUN have been created, click 'Finish'.



10. The target and LUN are shown on the list under the 'Target Management' tab.

iSCSI Target List			
	Alias (IQN)	Status	Action
	<b>01 (iqn.2004-04.com:ts-239:iscsi.target01.8cbc6c)</b> └ id:0 - 001 (1.00 GB)	Ready Enabled	    

Total: 1 | Display  entries per page.    / 1  



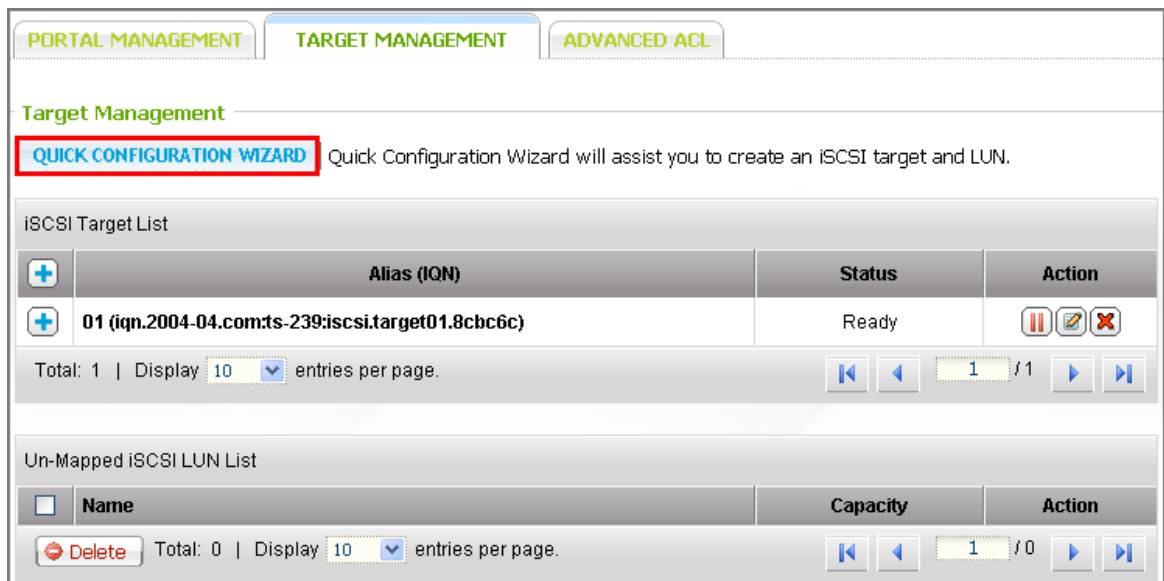
## Create more LUN for a target

The description below applies to Intel-based NAS models running firmware version 3.2.0 or later only.

Intel-based NAS refers to TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, and TS-859U-RP.

You can create multiple LUN for an iSCSI target. Follow the steps below to create more LUN for an iSCSI target.

1. Click 'Quick Configuration Wizard' under 'Target Management'.



The screenshot shows the 'Target Management' section of a web interface. At the top, there are three tabs: 'PORTAL MANAGEMENT', 'TARGET MANAGEMENT', and 'ADVANCED ACL'. Below the tabs, the 'Target Management' section is active. A red box highlights the 'QUICK CONFIGURATION WIZARD' link, which is followed by the text: 'Quick Configuration Wizard will assist you to create an iSCSI target and LUN.' Below this, there are two tables. The first table is titled 'iSCSI Target List' and contains one entry with the alias '01 (iqn.2004-04.com:ts-239:iscsi.target01.8cbc6c)' and a status of 'Ready'. The second table is titled 'Un-Mapped iSCSI LUN List' and is currently empty. Both tables have pagination controls at the bottom.

PORTAL MANAGEMENT TARGET MANAGEMENT ADVANCED ACL

Target Management

**QUICK CONFIGURATION WIZARD** Quick Configuration Wizard will assist you to create an iSCSI target and LUN.

iSCSI Target List

	Alias (IQN)	Status	Action
<input type="checkbox"/>	01 (iqn.2004-04.com:ts-239:iscsi.target01.8cbc6c)	Ready	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Total: 1 | Display 10 entries per page. 1 / 1

Un-Mapped iSCSI LUN List

<input type="checkbox"/>	Name	Capacity	Action
--------------------------	------	----------	--------

Total: 0 | Display 10 entries per page. 1 / 0

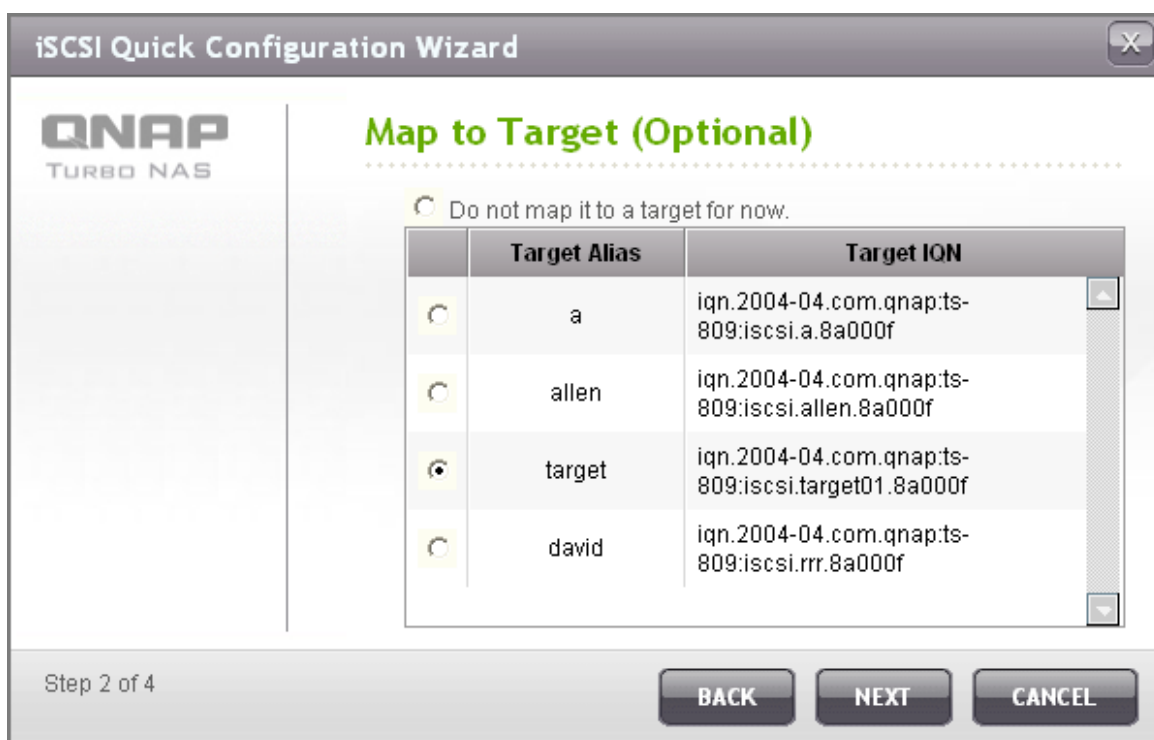
2. Select 'iSCSI LUN only' and click 'Next'.



3. Select the LUN allocation method. Enter the LUN name, select the LUN directory, and specify the capacity for the LUN. Click 'Next'.



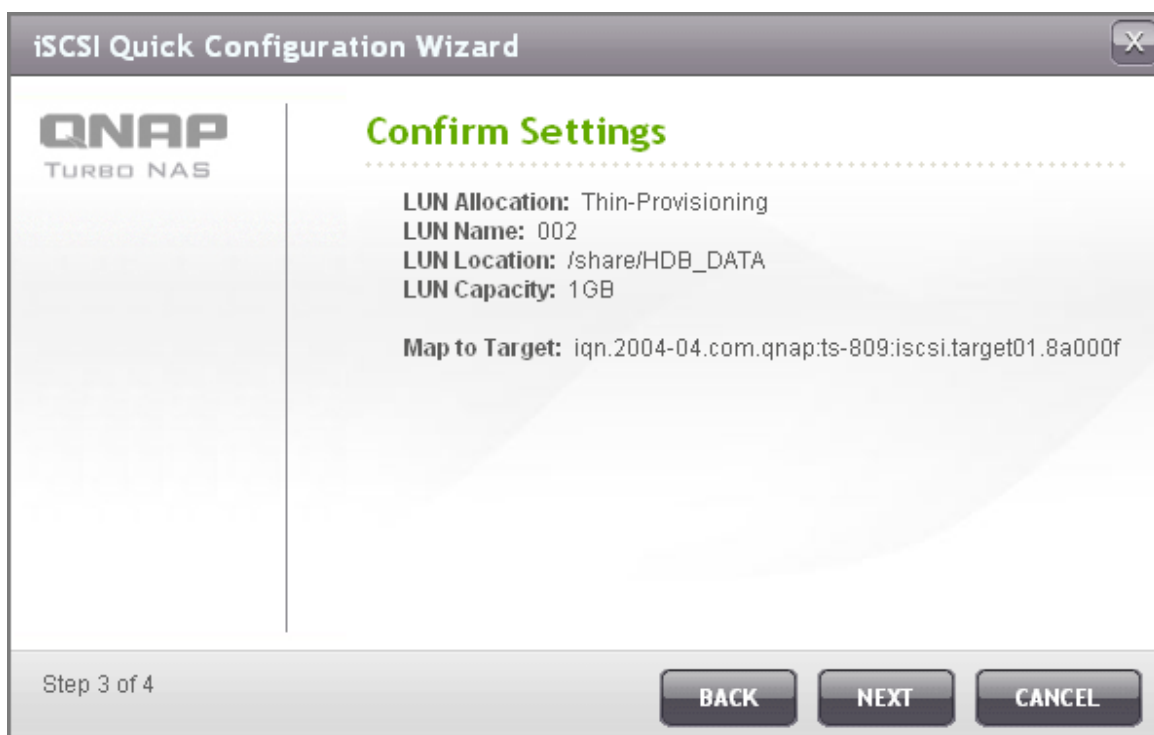
4. Select the target to map the LUN to. You can also select not to map the LUN for now.



The screenshot shows the 'iSCSI Quick Configuration Wizard' window, specifically the 'Map to Target (Optional)' step. The window title is 'iSCSI Quick Configuration Wizard' with a close button (X) in the top right corner. On the left side, there is the QNAP TURBO NAS logo. The main content area is titled 'Map to Target (Optional)' in green text. Below the title, there is a radio button labeled 'Do not map it to a target for now.' To the right of this radio button is a table with two columns: 'Target Alias' and 'Target IQN'. The table contains four rows of data. The 'target' row is selected, indicated by a radio button in the left margin. At the bottom of the window, it says 'Step 2 of 4' and has three buttons: 'BACK', 'NEXT', and 'CANCEL'.

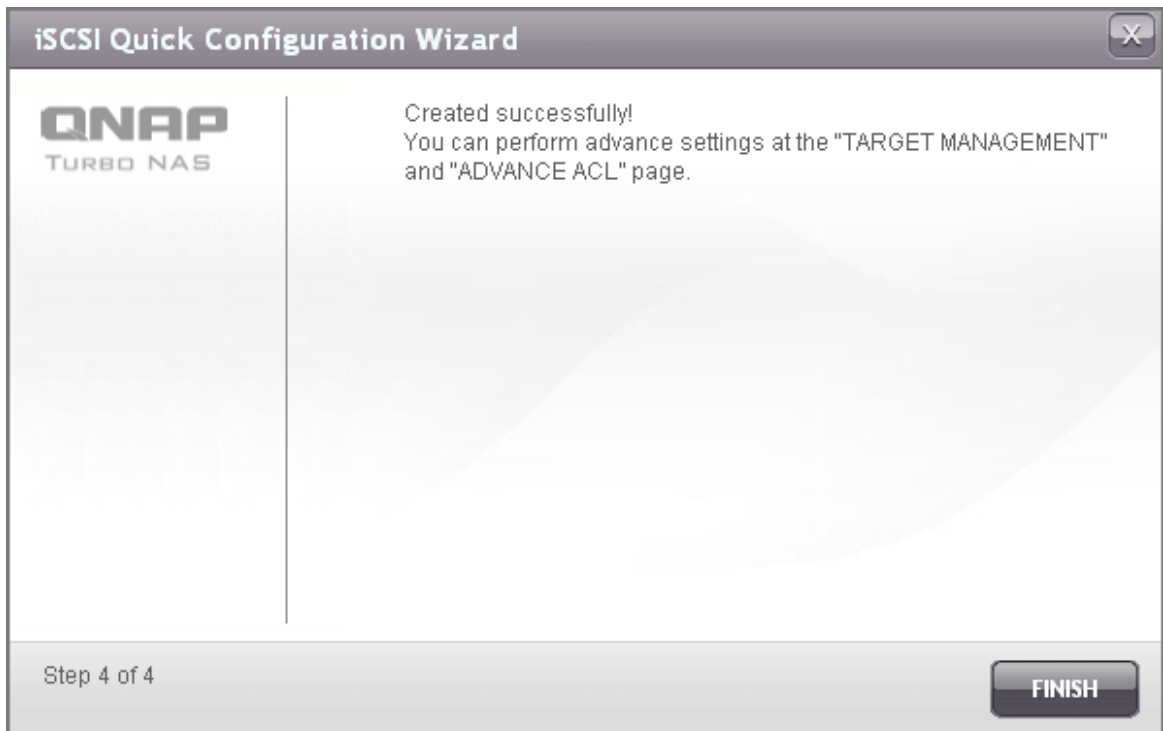
	Target Alias	Target IQN
<input type="radio"/>	a	iqn.2004-04.com.qnap:ts-809:iscsi.a.8a000f
<input type="radio"/>	allen	iqn.2004-04.com.qnap:ts-809:iscsi.allen.8a000f
<input checked="" type="radio"/>	target	iqn.2004-04.com.qnap:ts-809:iscsi.target01.8a000f
<input type="radio"/>	david	iqn.2004-04.com.qnap:ts-809:iscsi.rrr.8a000f

5. Confirm the settings and click 'Next'.

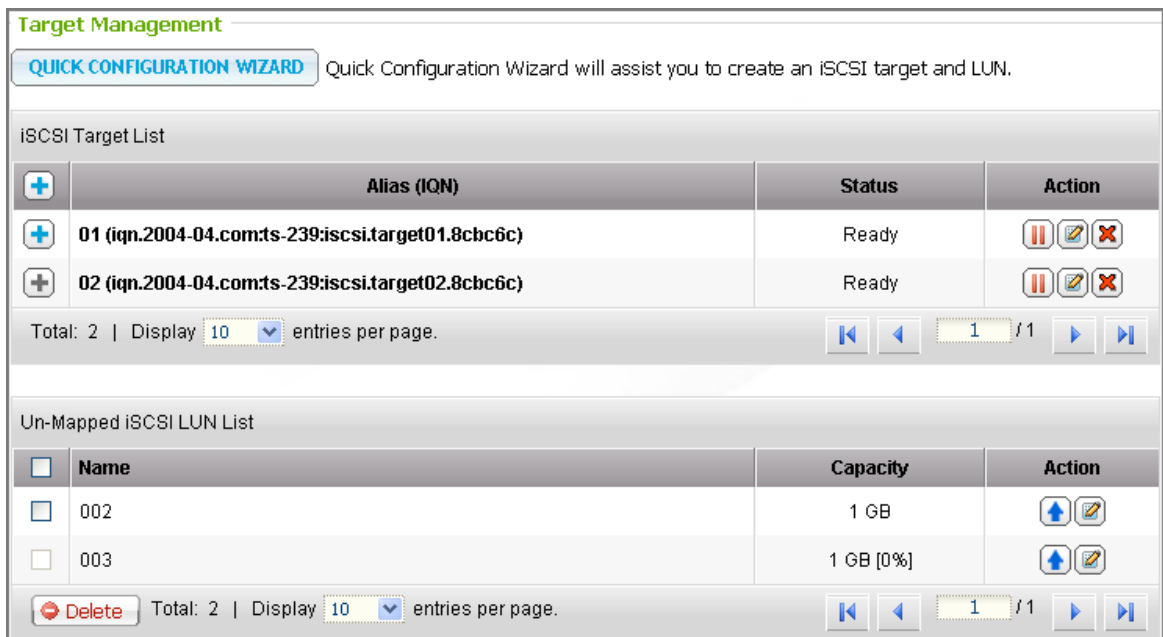


The screenshot shows the 'iSCSI Quick Configuration Wizard' window, specifically the 'Confirm Settings' step. The window title is 'iSCSI Quick Configuration Wizard' with a close button (X) in the top right corner. On the left side, there is the QNAP TURBO NAS logo. The main content area is titled 'Confirm Settings' in green text. Below the title, the following settings are listed: 'LUN Allocation: Thin-Provisioning', 'LUN Name: 002', 'LUN Location: /share/HDB\_DATA', 'LUN Capacity: 1GB', and 'Map to Target: iqn.2004-04.com.qnap:ts-809:iscsi.target01.8a000f'. At the bottom of the window, it says 'Step 3 of 4' and has three buttons: 'BACK', 'NEXT', and 'CANCEL'.










6. When the LUN has been created, click 'Finish' to exit the wizard.



7. The LUNs created can be mapped to and unmapped from the iSCSI target anytime. You can also unmap the LUN from a target and map it to another target.



<b>Item</b>	<b>Status</b>	<b>Description</b>
iSCSI target	Ready	The iSCSI target is ready but no initiator has connected to it yet.
	Connected	The iSCSI target has been connected by an initiator.
	Disconnected	The iSCSI target has been disconnected
	Offline	The iSCSI target has been deactivated and cannot be connected by the initiator.
LUN	Enabled	The LUN is active for connection and is visible to authenticated initiators.
	Disabled	The LUN is inactive and is invisible to the initiators.

Button	Description
	Deactivate a ready or connected target. Note that the connection from the initiators will be removed.
	Activate an offline target.
	Modify the target settings: target alias, CHAP information, and checksum settings. Modify the LUN settings: LUN allocation, name, disk volume directory, etc.
	Delete an iSCSI target. All the connections will be removed.
	Disable an LUN. All the connections will be removed.
	Enable an LUN.
	Unmap the LUN from the target. Note that you must disable the LUN first before unmapping the LUN. When you click this button, the LUN will be moved to 'Un-Mapped iSCSI LUN List'.
	Map the LUN to an iSCSI target. This option is only available on the 'Un-Mapped iSCSI LUN List'.
	View the connection status of an iSCSI target.

## Switch the mapping of LUN



The description below applies to Intel-based NAS models running firmware version 3.2.0 or later only.



















Intel-based NAS refers to TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, and TS-859U-RP.

Follow the steps below to switch the mapping of an LUN.

1. Select an LUN to unmap from an iSCSI target and click  (Disable).

iSCSI Target List			
	Alias (IQN)	Status	Action
	01 (iqn.2004-04.com:ts-239:iscsi.target01.8cbc6c) └ id:0 - 001 (1.00 GB)	Ready  Enabled	    

2. Next, click  (Unmap) to unmap the LUN. The LUN will appear on the Un-Mapped iSCSI LUN List. Click  (Map) to map the LUN to another target.

iSCSI Target List			
	Alias (IQN)	Status	Action
	01 (iqn.2004-04.com:ts-239:iscsi.target01.8cbc6c) └ id:0 - 001 (1.00 GB)	Ready  Disabled	     
	02 (iqn.2004-04.com:ts-239:iscsi.target02.8cbc6c)	Ready	  
Total: 2   Display <input type="text" value="10"/> entries per page. <span style="float: right;">  <input type="text" value="1"/> / 1  </span>			
Un-Mapped iSCSI LUN List			
<input type="checkbox"/>	Name	Capacity	Action
<input type="checkbox"/>	002	1 GB	 

3. Select the target to map the LUN to and click 'Apply'.



4. The LUN is mapped to the target.



After creating the iSCSI targets and LUN on the NAS, you can use the iSCSI initiator installed on your computer (Windows PC, Mac, or Linux) to connect to the iSCSI targets and LUN and use the disk volumes as the virtual drives on your computer.



## Connect to the iSCSI targets by Microsoft iSCSI initiator on Windows

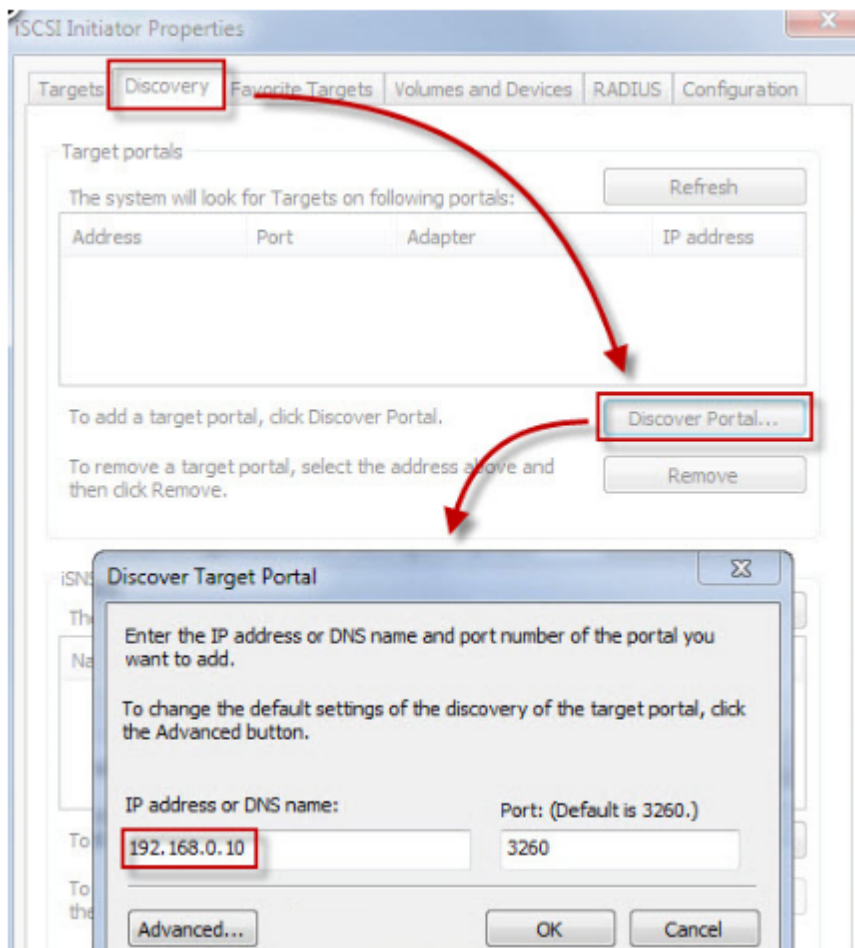
Before you start to use the iSCSI target service, make sure you have created an iSCSI target with a LUN on the NAS and installed the correct iSCSI initiator for your OS.

### iSCSI initiator on Windows

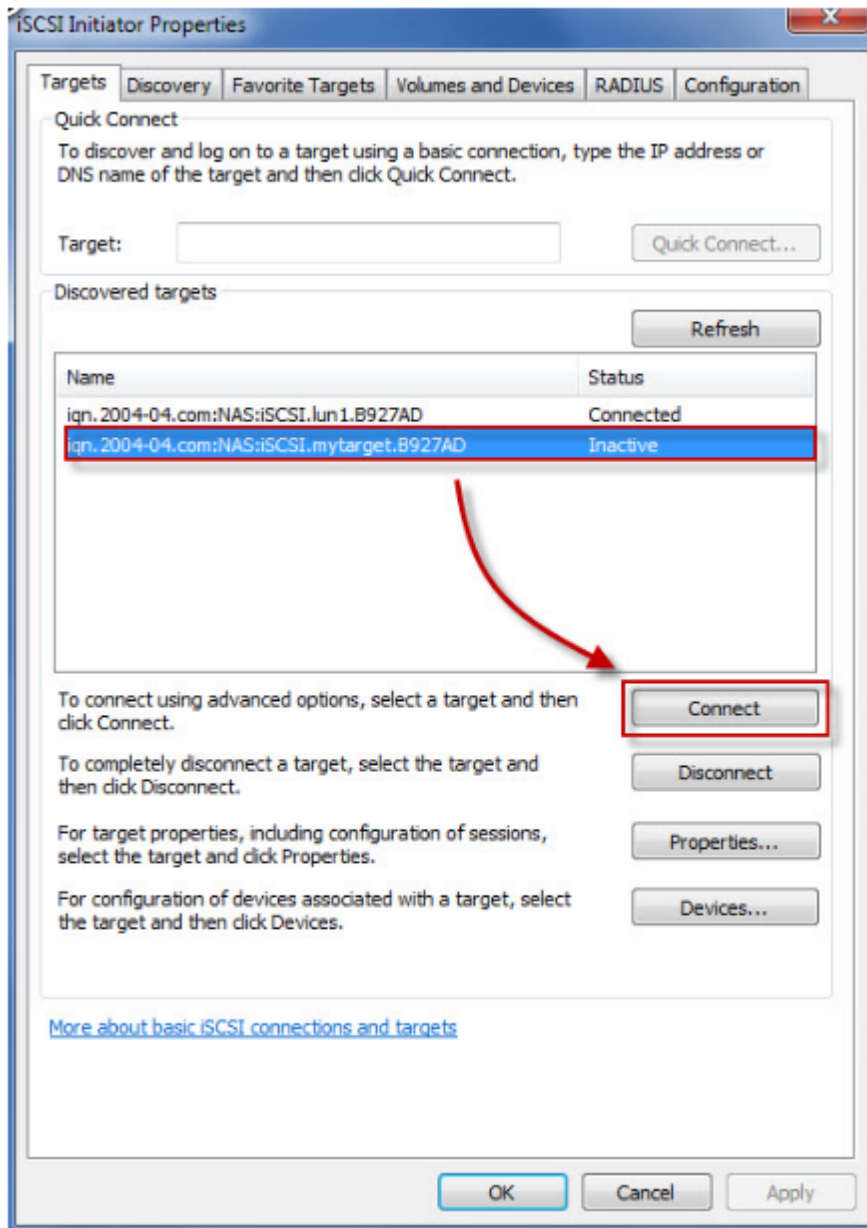
Microsoft iSCSI Software Initiator v2.07 is an official application for Windows OS 2003, XP, and 2000 to allow users to implement an external iSCSI storage array over the network. If you are using Windows Vista or Windows Server 2008, Microsoft iSCSI Software Initiator is included. For more information and the download location, visit:

<http://www.microsoft.com/downloads/details.aspx?familyid=12cb3c1a-15d6-4585-b385-befd1319f825&displaylang=en>

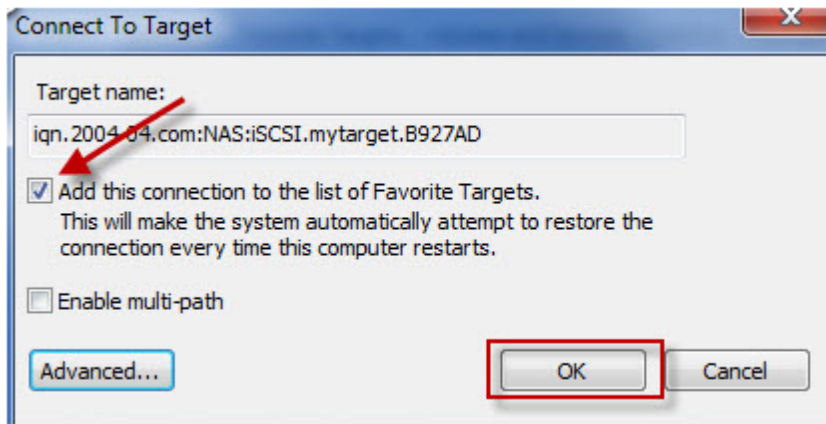
Start iSCSI initiator from 'Control Panel' > 'Administrative Tools'. Under the 'Discovery' tab click 'Add Portal'. Enter the NAS IP and the port number for the iSCSI service.



The available iSCSI targets and their status will then be shown under the 'Targets' tab. Select the target you wish to connect then click 'Connect'.



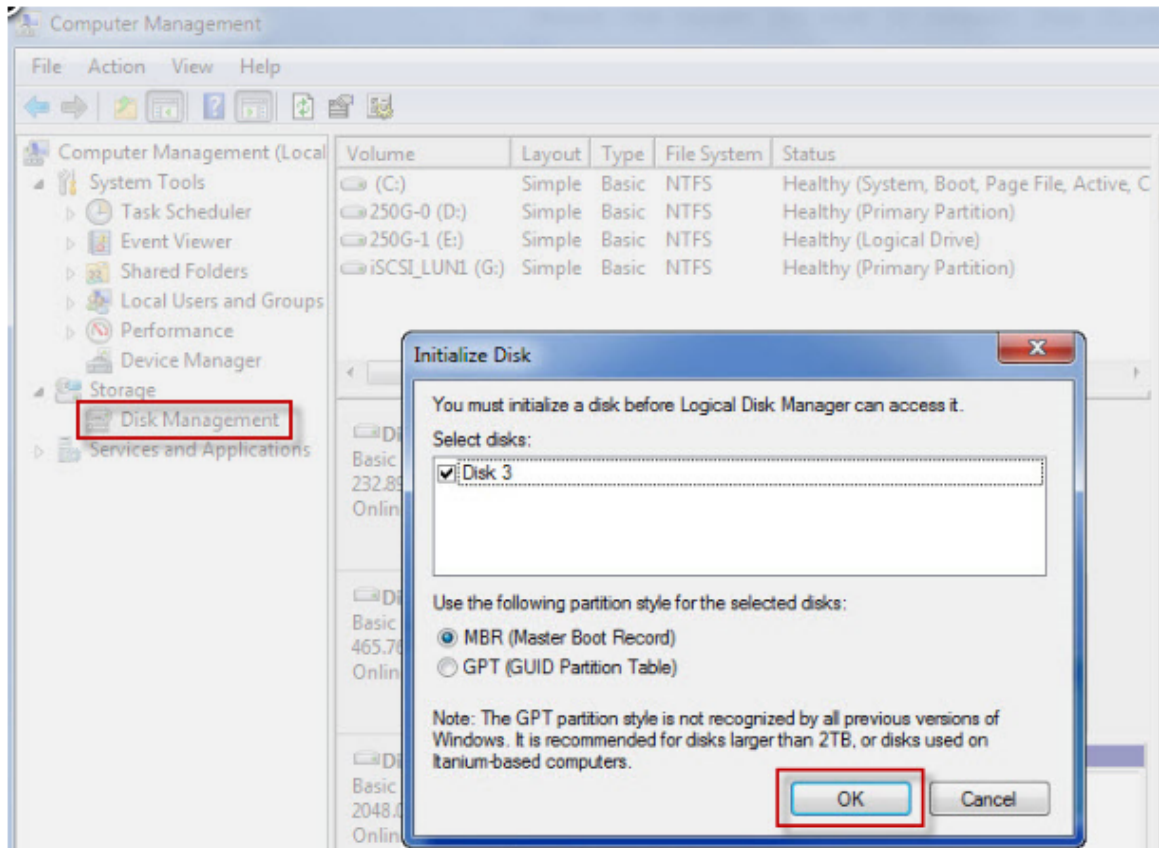
You may click 'Advanced' to specify the logon information if you have configured the authentication otherwise simply click 'OK' to continue.



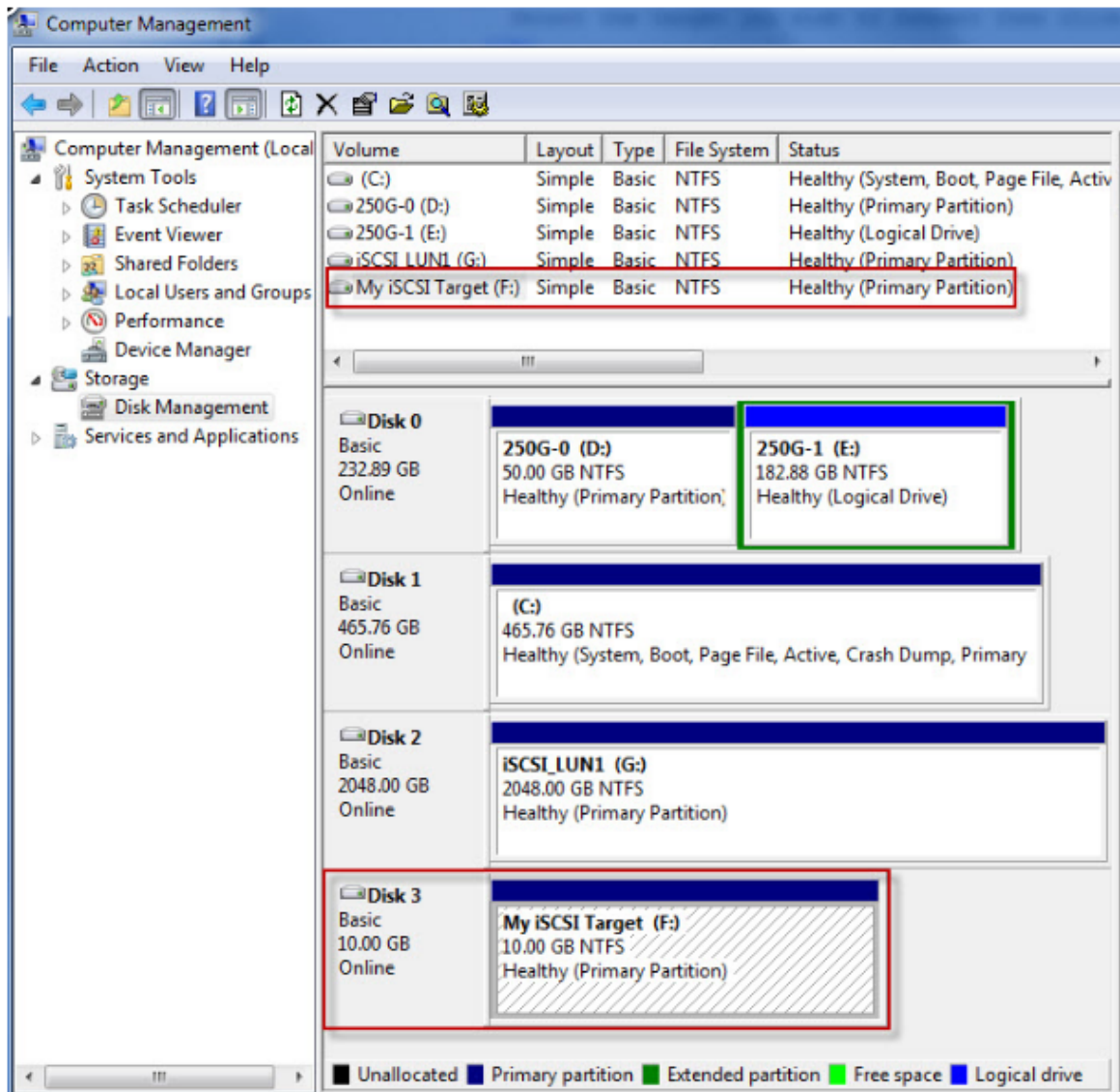
Upon successful logon, the status of the target now shows 'Connected'.

Name	Status
iqn.2004-04.com:NAS:iSCSI.lun1.B927AD	Connected
iqn.2004-04.com:NAS:iSCSI.mytarget.B927AD	Connected

After the target has been connected Windows will detect its presence and treat it as if there was a new hard disk drive has been added which needs to be initialized and formatted before we can use it. Right-click 'My Computer' > 'Manage' to open the 'Computer Management' window then go to 'Disk Management' and a window should pop-up automatically asking whether you want to initialize the newly found hard drive. Click 'OK' then format this drive as normally you would when adding a new disk.



After disk initialization and formatting, the new drive is attached to your PC. You can now use this iSCSI target as a regular disk partition.



## Connect to the iSCSI targets by Xtend SAN iSCSI Initiator on Mac OS

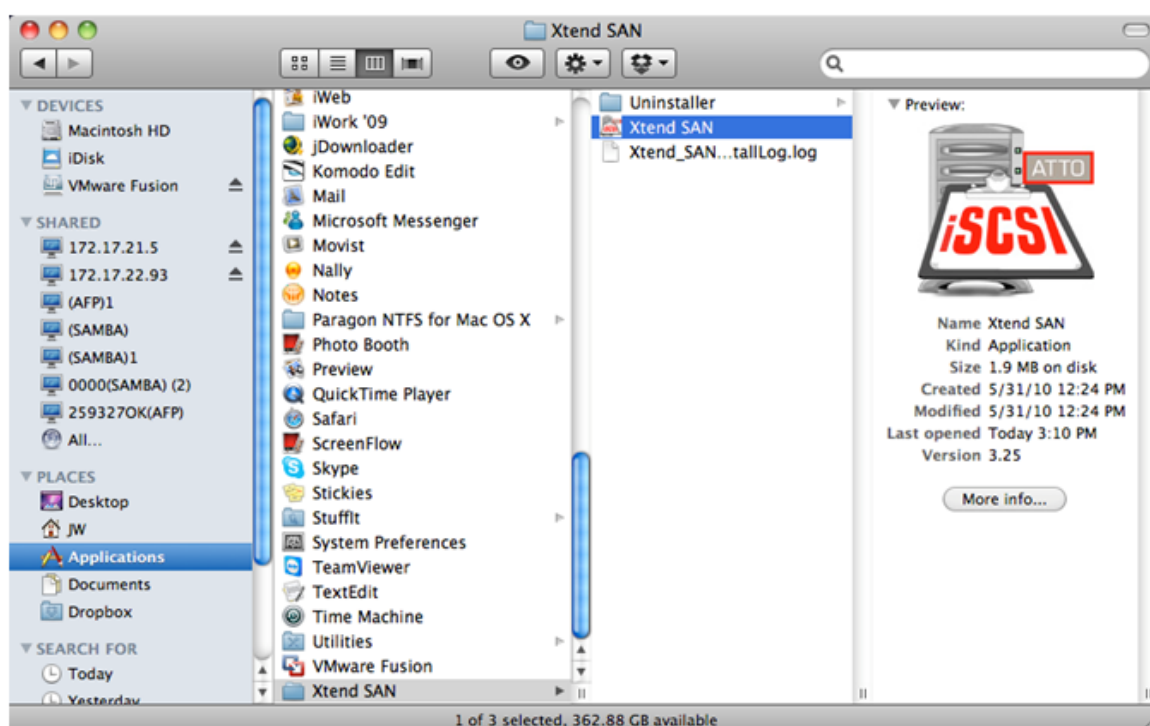
This section shows you how to use Xtend SAN iSCSI Initiator on Mac OS to add the iSCSI target (QNAP NAS) as an extra partition. Before you start to use the iSCSI target service, make sure you have created an iSCSI target with a LUN on the NAS and installed the correct iSCSI initiator for your OS.

### About Xtend SAN iSCSI initiator

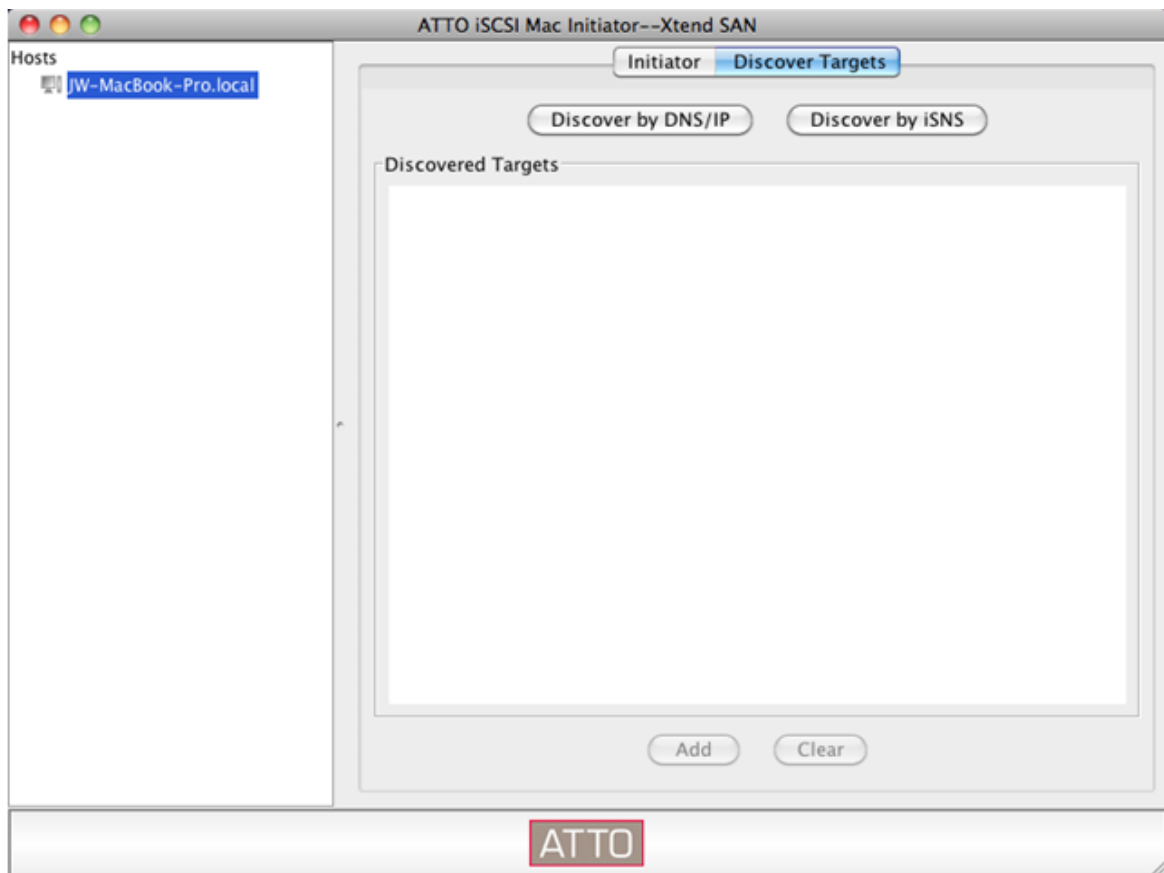
ATTO's Xtend SAN iSCSI Initiator for Mac OS X allows Mac users to utilize and benefit from iSCSI. It is compatible with Mac OS X 10.4.x to 10.6.x. For more information, please visit:

<http://www.attotech.com/products/product.php?sku=INIT-MAC0-001>

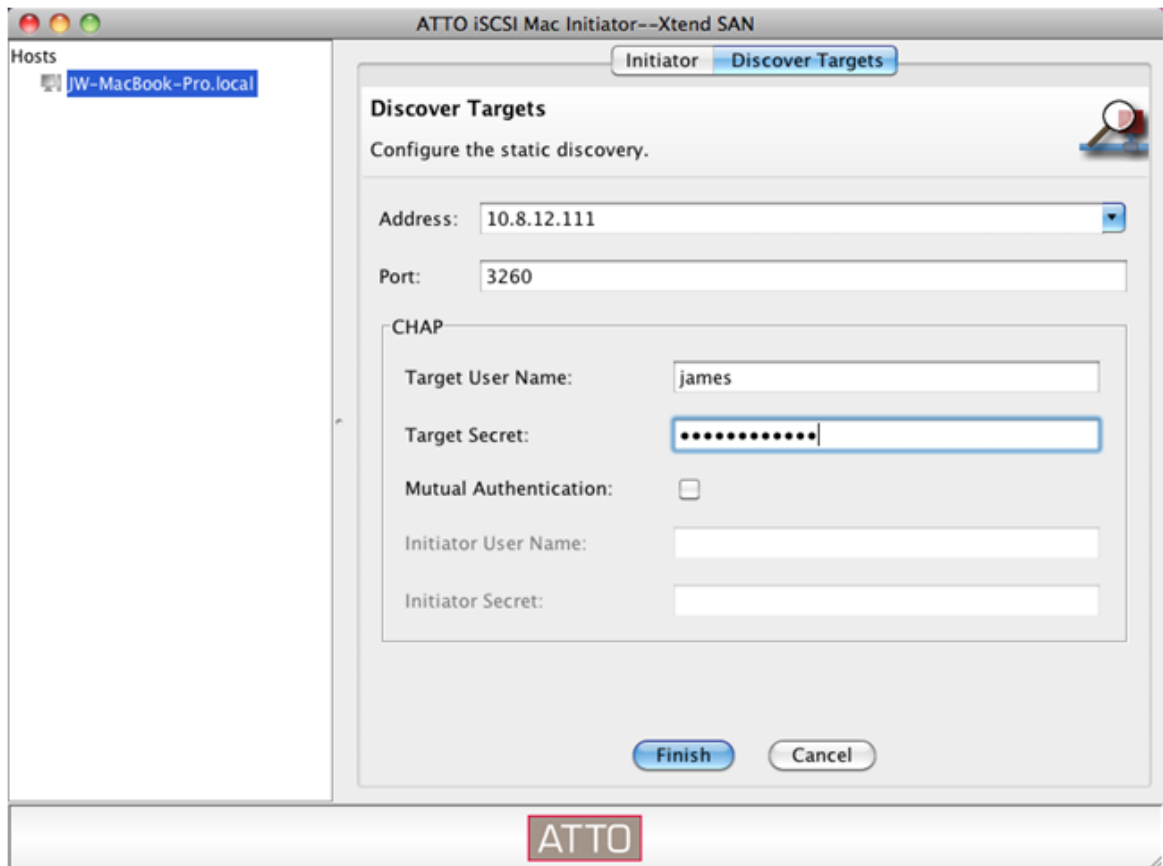
After installing Xtend SAN iSCSI initiator, you can find it in 'Applications'.



Click the 'Discover Targets' tab, you can either choose 'Discover by DNS/IP' or 'Discover by iSNS' according to the network topology. In this example, we will use the IP address to discover the iSCSI targets.

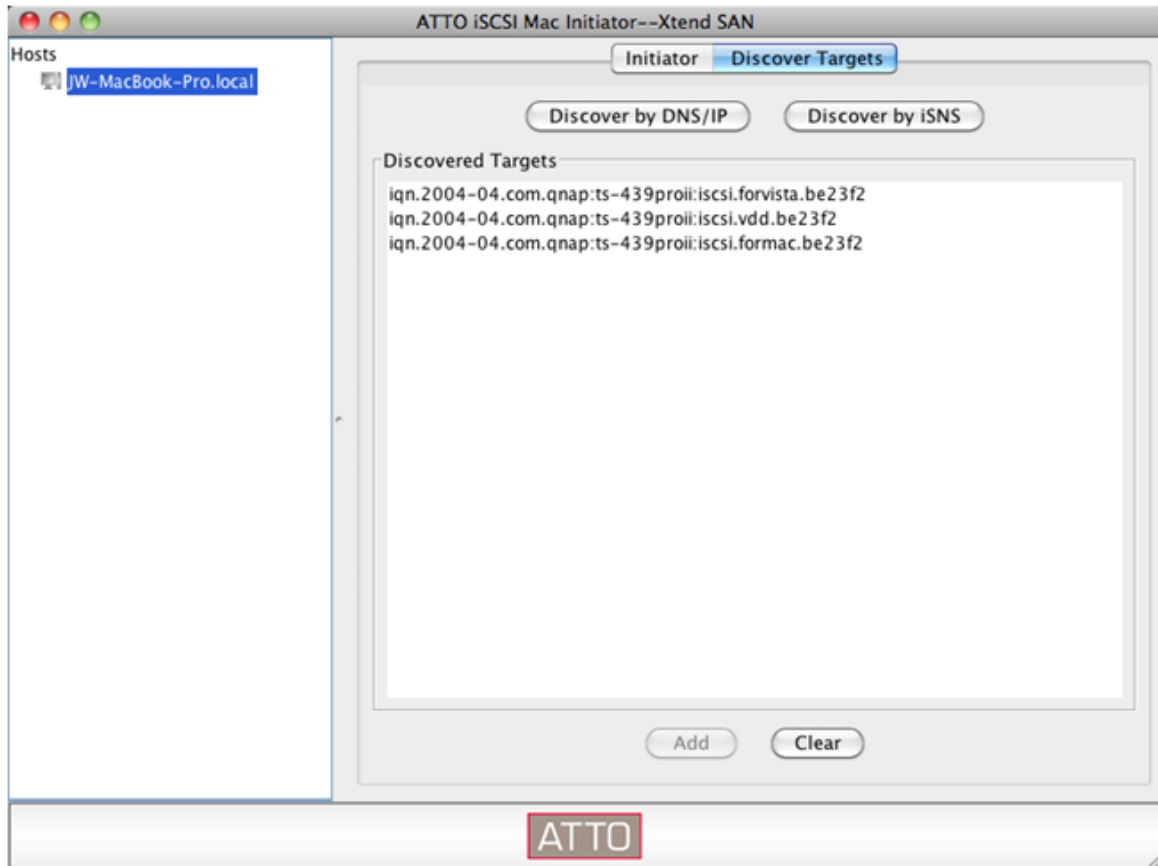


Follow the screen instructions and enter the server address, iSCSI target port number (default: 3260), and CHAP information (if applicable). Click 'Finish' to retrieve the target list after all the data have been entered correctly.

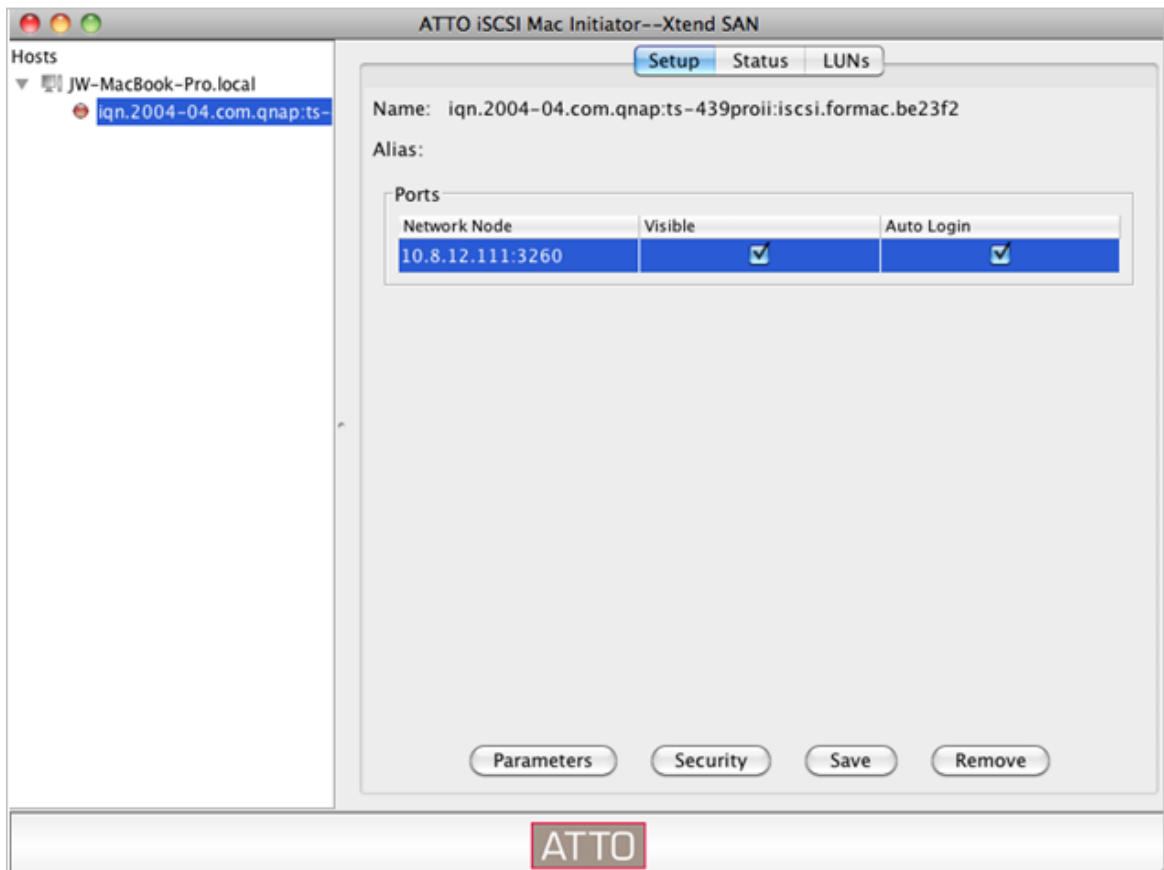




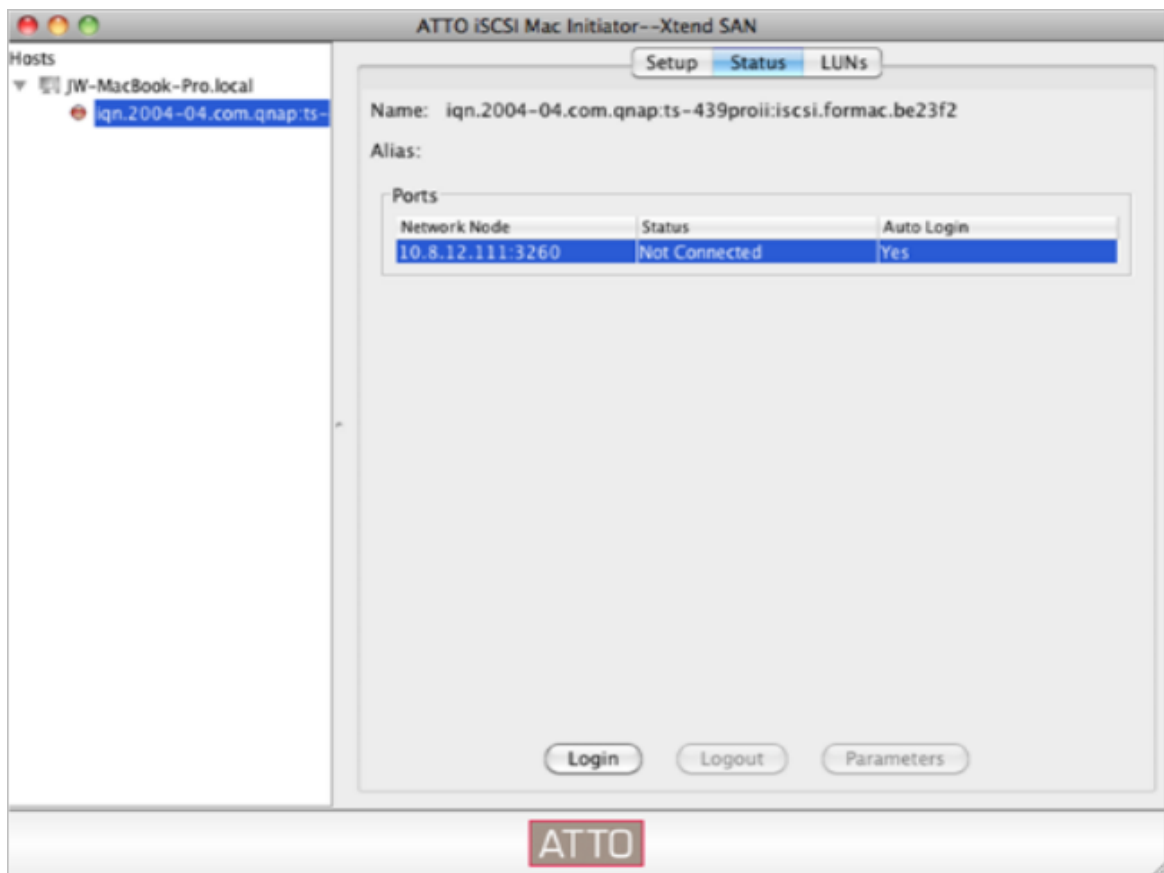
All the available iSCSI targets on the NAS will be shown. Select the target you would like to connect and click 'Add'.



You can configure the connection properties of the selected iSCSI target in the 'Setup' tab.



Click the 'Status' tab, select the target to connect. Then click 'Login' to proceed.



The first time you logon to the iSCSI target, a popup message will be shown to remind you the disk is not initialized. Click 'Initialize...' to format the disk. You can also open the 'Disk Utilities' application to do the initialization.



You can now use the iSCSI target as an external drive on your Mac.



## Connect to the iSCSI targets by Open-iSCSI Initiator on Ubuntu Linux

This section shows you how to use Linux Open-iSCSI Initiator on Ubuntu to add the iSCSI target (QNAP NAS) as an extra partition. Before you start to use the iSCSI target service, make sure you have created an iSCSI target with a LUN on the NAS and installed the correct iSCSI initiator for your OS.

### About Linux Open-iSCSI Initiator

The Linux Open-iSCSI Initiator is a built-in package in Ubuntu 8.04 LTS (or later). You can connect to an iSCSI volume at a shell prompt with just a few commands. More information about Ubuntu is available at <http://www.ubuntu.com/> and for information and download location of Open-iSCSI, please visit: <http://www.open-iscsi.org/>

### Before you start

Install the open-iscsi package. The package is also known as the Linux Open-iSCSI Initiator.

```
# sudo apt-get install open-iscsi
```

Now follow the steps below to connect to an iSCSI target (QNAP NAS) with Linux Open-iSCSI Initiator.

You may need to modify the iscsid.conf for CHAP logon information, such as node.session.auth.username & node.session.auth.password.

```
# vi /etc/iscsi/iscsid.conf
```

Save and close the file, then restart the open-iscsi service.

```
# /etc/init.d/open-iscsi restart
```

Discover the iSCSI targets on a specific host (the QNAP NAS in this example), for example, 10.8.12.31 with default port 3260.

```
# iscsiadm -m discovery -t sendtargets -p 10.8.12.31:3260
```

Check the available iSCSI node(s) to connect.

```
# iscsiadm -m node
```

\*\* You can delete the node(s) you don't want to connect to when the service is on with the following command:

```
# iscsiadm -m node --op delete --targetname THE_TARGET_IQN
```

Restart open-iscsi to login all the available nodes.

```
# /etc/init.d/open-iscsi restart
```

You should be able to see the login message as below: Login session [iface: default, target: iqn.2004-04.com:NAS:iSCSI.ForUbuntu.B9281B, portal: 10.8.12.31,3260] [ OK ]

Check the device status with dmesg.

```
# dmesg | tail
```

Enter the following command to create a partition, /dev/sdb is the device name.

```
# fdisk /dev/sdb
```

Format the partition.

```
# mkfs.ext3 /dev/sdb1
```

Mount the file system.

```
# mkdir /mnt/iscsi
```

```
# mount /dev/sdb1 /mnt/iscsi/
```

You can test the I/O speed using the following command.

```
# hdparm -tT /dev/sdb1
```

Below are some 'iscsiadm' related commands.

Discover the targets on the host:

```
# iscsiadm -m discovery --type sendtargets --portal HOST_IP
```

Login a target:

```
# iscsiadm -m node --targetname THE_TARGET_IQN --login
```

Logout a target:

```
# iscsiadm -m node --targetname THE_TARGET_IQN --logout
```

Delete a Target:

```
# iscsiadm -m node --op delete --targetname THE_TARGET_IQN
```

## ADVANCED ACL

The description below applies to Intel-based NAS models running firmware version 3.2.0 or later only.

Intel-based NAS refers to TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, and TS-859U-RP.

You can create LUN masking policy to configure the permission of the iSCSI initiators which attempt to access the LUN mapped to the iSCSI targets on the NAS. To use this feature, click 'Add a Policy' under 'ADVANCED ACL'.

The screenshot shows the 'ADVANCED ACL' section of a management interface. It features three tabs: 'PORTAL MANAGEMENT', 'TARGET MANAGEMENT', and 'ADVANCED ACL' (which is highlighted with a red box). Below the tabs is the 'LUN Masking' section, which includes a descriptive paragraph and a table of LUN Masking Policies. The table has columns for 'Policy Name', 'IQN', and 'Action'. There is one entry, 'Default Policy', with an edit icon in the 'Action' column. Below the table are navigation controls, including a 'Delete' button, a 'Total: 1' indicator, a 'Display 10' dropdown menu, and a '1 / 1' page indicator with navigation arrows.

**PORTAL MANAGEMENT** **TARGET MANAGEMENT** **ADVANCED ACL**

### LUN Masking

A connected iSCSI initiator is authenticated by Target ACL and LUN Masking in order to access the iSCSI LUNs mapped to the iSCSI targets on the NAS. (For detailed instructions, please click [here](#))

LUN Masking Policy List Add a Policy

<input type="checkbox"/>	Policy Name	IQN	Action
<input type="checkbox"/>	Default Policy		

Delete Total: 1 | Display 10 entries per page. 1 / 1

Enter the policy name, the initiator IQN, and assign the access right for each LUN created on the NAS.

- Read-only: The connected initiator can only read the data from the LUN.
- Read/Write: The connected initiator has read and write access right to the LUN.
- Deny Access: The LUN is invisible to the connected initiator.

### Add a Policy

Define the LUN Masking policy for the initiator you input below.


Policy Name:

Initiator IQN:

Name	Read Only	Read/Write	Deny Access
000	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
001	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
002	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
abb	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

**APPLY**




If no LUN masking policy is specified for a connected iSCSI initiator, the default policy will be applied. The system default policy allows read and write access from all the connected iSCSI initiators. You can click  (Edit) on the LUN masking list to edit the default policy.

**Note:** Make sure you have created at least one LUN on the NAS before editing the default LUN policy.

**LUN Masking**

A connected iSCSI initiator is authenticated by Target ACL and LUN Masking in order to access the iSCSI LUNs mapped to the iSCSI targets on the NAS. (For detailed instructions, please click [here](#))

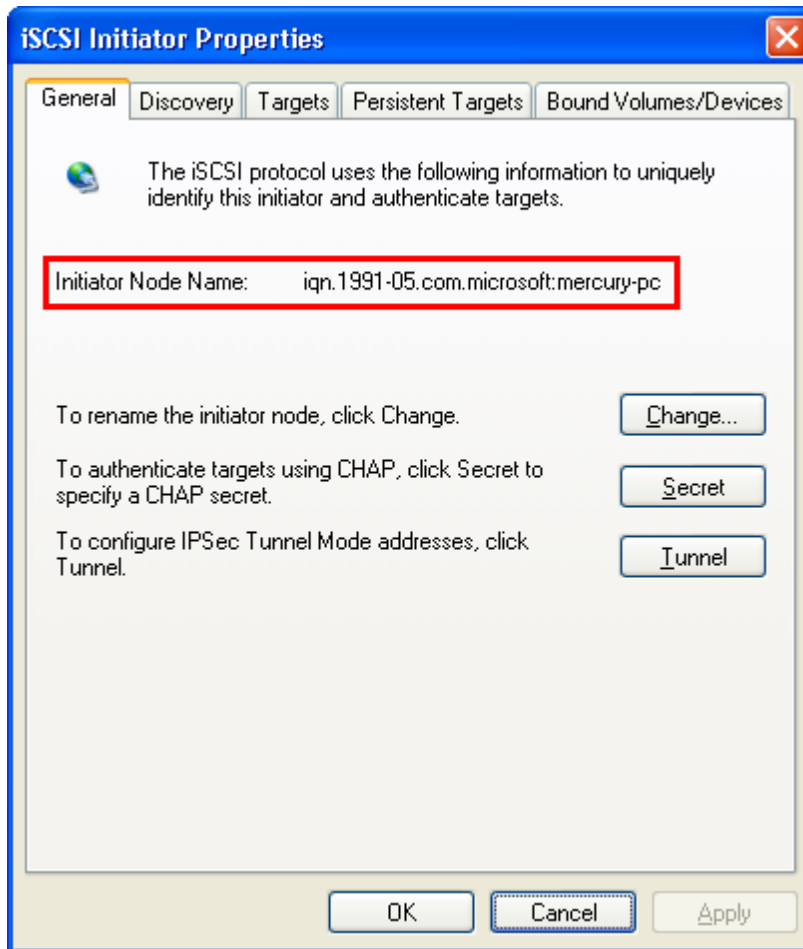
LUN Masking Policy List [Add a Policy](#)

<input type="checkbox"/>	Policy Name	IQN	Action
<input type="checkbox"/>	Default Policy		

[Delete](#) Total: 1 | Display: 10 entries per page. 1 / 1

Hint: How do I find the initiator IQN?

Start Microsoft iSCSI initiator and click 'General'. You can find the IQN of the initiator as shown below.



## 4.6 Virtual Disk

---

You can use this function to add the iSCSI targets of other QNAP NAS or storage servers to the NAS as the virtual disks for storage capacity expansion. The NAS supports maximum 8 virtual disks.



To add a virtual disk to the NAS, make sure an iSCSI target has been created. Click 'Add Virtual Disk'.



Enter the target server IP and port number (default: 3260). Click 'Get Remote Disk'. If authentication is required, enter the user name and the password. Then, click 'Apply'.

**Add Virtual Disk**

**Add Virtual Disk**

Target Server IP: 10 . 8 . 10 . 39 Port : 3260

**GET REMOTE DISK**


Remote Disk Device: iqn.2004-04.com.qnap:SS-839;iSCSI.test.AABB1A

Authentication

User Name:




Password:

**APPLY** **CANCEL**

Click  to format the virtual disk.

**Virtual Disk**

[Add Virtual Disk](#)

<input type="checkbox"/>	Name	File System	Total Size	Free Size	Status	Action
<input type="checkbox"/>	VirtualDisk1	Unknown	1024 MB	0 MB	Unmounted	  

[Delete](#)

When the status of the virtual disk is 'Ready', you can start to use the virtual disk as a disk volume of the NAS.

## 5. Access Right Management

---

The files on the NAS can be shared among multiple users. For easier management and better control of users' access right, you have to organize the users, user groups, and their access right control.

Users<sup>13</sup>

User Groups<sup>14</sup>

Share Folders<sup>14</sup>

Quota<sup>16</sup>

### 5.1 Users

---

The NAS has created the following users by default:

- admin  
By default, the administrator 'admin' has access right to the system administration and cannot be deleted.
- guest  
This is a built-in user and will not be displayed on the 'User Management' page. A guest does not belong to any user group. The login password is 'guest'.
- anonymous  
This is a built-in user and will not be shown on the 'User Management' page. When you connect to the server by FTP, you can use this name to login.

The number of users you can create on the NAS varies according to the NAS models. See the table below for more details:

Maximum number of users	NAS models
1,024	TS-110, TS-210
2,048	TS-119, TS-219, TS-219P, TS-410
4,096	TS-419P, TS-410U, TS-419U, TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, TS-859U-RP



## Import User

---

You can import multiple user accounts to the NAS with this feature. To import multiple users, follow the steps below:

1. Click 'Import Users'.



2. Select the option 'Overwrite duplicate users' if you want to replace the existing users.

3. Select the file of users and click 'Next'.



4. A list of imported users will be shown. Abnormal or incorrect entries will be skipped. Click 'Next'.

### Import Users X

Import User Preview

User Name	Password	Quota	Group Name	Status
test	test	2000	test	--
user01	user01	2000	test	--
user02	user02	2000	test	--
user03	user03	No limit	test	--
user04	user04	2000	test	--
user05	user05	2000	test	--
--	user06	2000	test	Please enter User Name.
user07	user07	2000	test	--

Step 2 of 3

BACK
NEXT
CANCEL

5. The imported user accounts will be shown.

### Users

Local Users 

Import Users
Create a New User
Create Multiple Users

	User Name	Quota	Action
<input type="checkbox"/>	admin	--	
<input type="checkbox"/>	test	--	
<input type="checkbox"/>	user01	--	
<input type="checkbox"/>	user02	--	
<input type="checkbox"/>	user03	--	
<input type="checkbox"/>	user04	--	
<input type="checkbox"/>	user05	--	

Delete
Total: 7 | Display  entries per page.

⏪
⏩
1 / 1

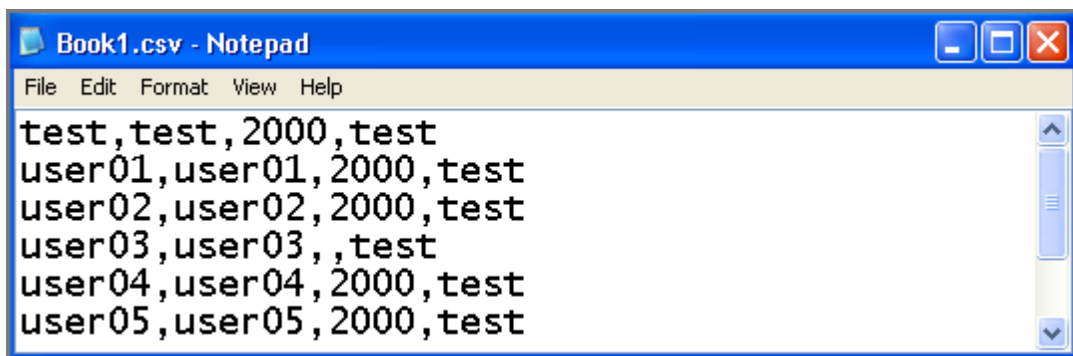


The NAS supports importing user accounts from txt or CSV files. To create a list of user accounts with these file types, follow the steps below.

**txt**

1. Open a new file with a text editor.
2. Enter a user's information in the following order and separate them by `;`: Username, Password, Quota (MB), Group Name
3. Go to the next line and repeat the previous step to create another user account. Each line indicates one user's information.
4. Save the file in UTF-8 encoding if it contains double-byte characters.

An example is shown as below. Note that if the quota is left empty, the user will have no limit in using the disk space of the NAS.



### CSV (Excel)

1. Open a new file with Excel.
2. Enter a user's information in the same row in the following order:
  - Column A: Username
  - Column B: Password
  - Column C: Quota(MB)
  - Column D: Group name
3. Go to the next row and repeat the previous step to create another user account. Each row indicates one user's information. Save the file in CSV format.
4. Open the CSV file with Notepad and save it in UTF-8 encoding if it contains double-byte characters.

An example is shown as below:

	A	B	C	D
1	test	test	2000	test
2	user01	user01	2000	test
3	user02	user02	2000	test
4	user03	user03		test
5	user04	user04	2000	test
6	user05	user05	2000	test

## 5.2 User Groups

A user group is a collection of users with the same access right to the files or folders. The NAS has created the following user groups by default:

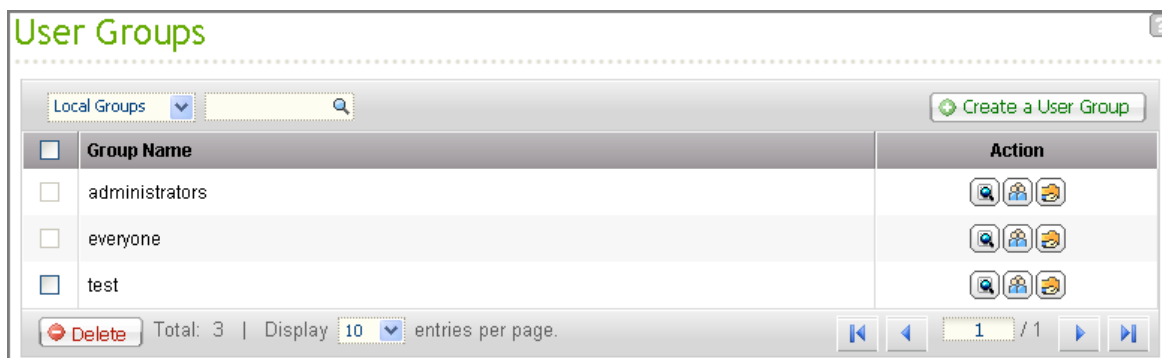
- administrators  
All the members in this group have the administration right of the NAS. You cannot delete this group.
- everyone  
All the registered users belong to everyone group. You cannot delete this group.

The number of user groups you can create on the NAS varies according to the NAS models. See the table below for more details:

Maximum number of user groups	NAS models
128	TS-110, TS-210
256	TS-119, TS-219, TS-219P, TS-410
512	TS-419P, TS-410U, TS-419U, TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, TS-859U-RP

A group name must not exceed 256 characters. It is case-insensitive and supports double-byte characters, such as Chinese, Japanese, and Korean, except the following ones:

' / \ [ ] : ; | = , + \* ? < > ` `



## 5.3 Share Folders

### Share Folders

You can create different network share folders for various types of files, and assign different access rights to the users or user groups.

The number of share folders you can create on the NAS varies according to the NAS models. See the table below for more details:

Maximum number of share folders	NAS models
256	TS-110, TS-119, TS-210, TS-219, TS-219P, TS-410
512	TS-419P, TS-410U, TS-419U, TS-239 Pro, TS-239 Pro II, TS-259 Pro, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, TS-859U-RP

On the share folder list, you can view the current data size, number of sub-folders and files created in the network share, and the folder status (hidden or not).

The screenshot displays the 'Share Folders' management interface. At the top, there are three tabs: 'SHARE FOLDERS' (selected), 'ISO SHARE FOLDERS', and 'FOLDER AGGREGATION'. Below the tabs is a search bar labeled 'Shares' and two buttons: 'New Share Folder' and 'Restore Default Network Shares'. The main area contains a table with the following data:

<input type="checkbox"/>	Folder Name	Size	Folders	Files	Hidden	Action
<input type="checkbox"/>	Download	29.58 MB	28	33	No	
<input type="checkbox"/>	Multimedia	19.87 GB	346	3994	No	
<input type="checkbox"/>	Network Recycle Bin 1	13.45 KB	4	2	No	
<input type="checkbox"/>	Public	5.49 GB	1446	16459	No	
<input type="checkbox"/>	Recordings	25.45 KB	19	2	No	
<input type="checkbox"/>	Usb	13.45 KB	4	2	No	
<input type="checkbox"/>	Web	21.06 MB	86	1076	No	
<input checked="" type="checkbox"/>	root	170.08 GB	2973	64813	No	

At the bottom of the interface, there is a 'Delete' button, a status bar showing 'Total: 8 | Display 10 entries per page.', and navigation controls including a page number '1 / 1' and arrows for navigation.

To create a share folder, click 'New Share Folder'.

<input type="checkbox"/>	Folder Name	Size	Folders	Files	Hidden	Action
<input type="checkbox"/>	Download	29.58 MB	28	33	No	
<input type="checkbox"/>	Multimedia	19.87 GB	346	3994	No	
<input type="checkbox"/>	Network Recycle Bin 1	13.45 KB	4	2	No	
<input type="checkbox"/>	Public	5.49 GB	1446	16459	No	
<input type="checkbox"/>	Recordings	25.45 KB	19	2	No	
<input type="checkbox"/>	Usb	13.45 KB	4	2	No	
<input type="checkbox"/>	Web	21.06 MB	86	1076	No	
<input checked="" type="checkbox"/>	root	170.08 GB	2973	64813	No	

Shares

Total: 8 | Display  entries per page.    / 1

Click 'Next'.

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## Create a Share Folder

This wizard guides you through the following settings:

- Share Folder Settings
- Privilege

To continue, click **Next**. To exit, click **Cancel**.

Step 1 of 7

Enter the share folder settings.

- Folder name: Enter the share folder name. The share folder name does not support ' / \ [ ] : ; | = , + \* ? < > ` `
- Hide Folder: Select to hide the folder or not in Microsoft Networking. When a folder is hidden, you have to enter the complete directory \\NAS\_IP\folder\_name to access the folder.
- Lock file (oplocks): Opportunistic locking is a Windows mechanism for the client to place an opportunistic lock (oplock) on a file residing on a server in order to cache the data locally for improved performance. Oplocks is enabled by default for everyday usage. For networks that require multiple users concurrently accessing the same file such as a database, oplocks should be disabled.
- Path: Specify the path of the folder or select to let the NAS specify the path automatically.
- Description: Enter an optional description of the folder.

**Create A Share Folder**

**QNAP**  
TURBO NAS

### Share Folder Settings

**Folder Name:** test ✓

**Disk Volume:** Mirroring Disk Volume: Drive 1 2 ▼

**Hide Folder:**  Yes  No ⓘ

**Lock file (oplocks):**  Yes  No

**Path:**  Specify path automatically  
 Enter path manually

**Description:**

Step 2 of 7

BACK NEXT CANCEL

Select the way you want to specify the access right to the folder and specify the guest access right.

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### Privilege

You can select one of the following methods to configure the user access right to the network share folder:

- Full access (Grant full access right for everyone)
- By User
- By User Group
- Only the system administrator (admin) has full access. General users have **Read Only** access.

Guest Access Right:

- Deny Access
- Read only
- Read/Write

Step 3 of 7

BACK NEXT CANCEL

If you select to specify the access right by user or user group, you can select to grant read only, read/write, or deny access to the users or user groups.

**Create A Share Folder**

Access Control (By User)

Total: 7

User Name	Read only	Read/Write	Deny Access
admin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
user01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
user02	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
user03	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
user04	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
user05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Step 4 of 7

BACK NEXT CANCEL



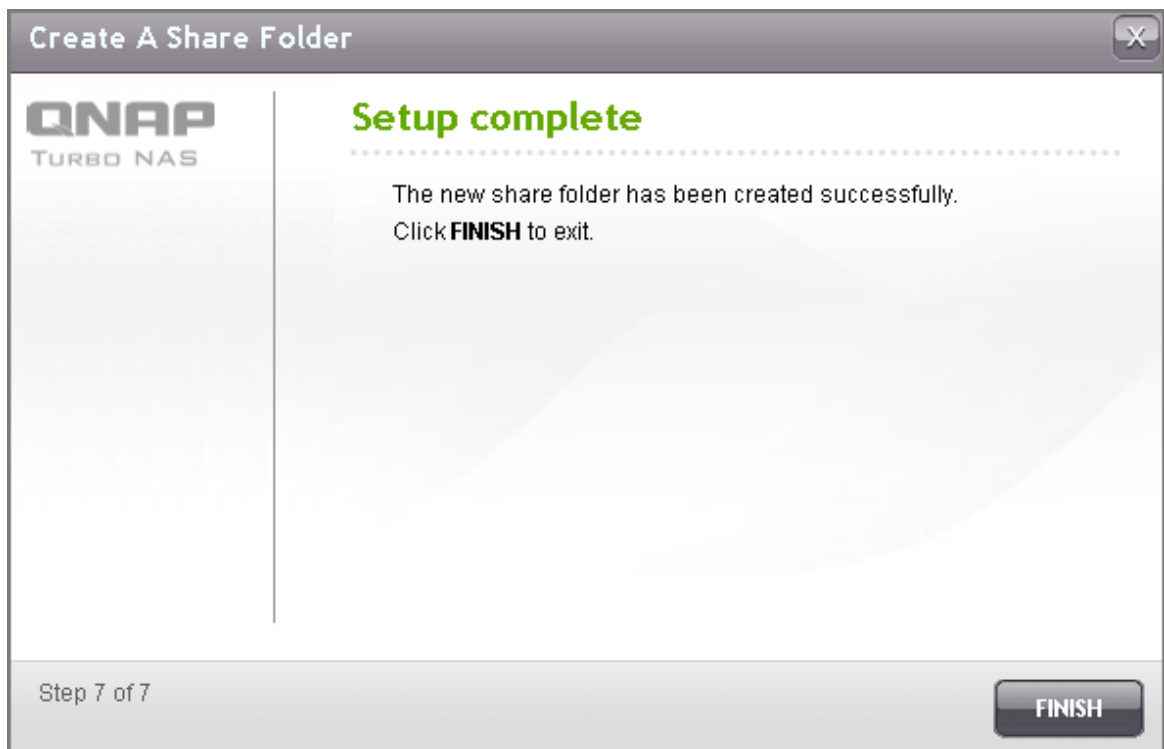
Confirm the settings and click 'Next'.

The image shows a 'Create A Share Folder' dialog box for QNAP Turbo NAS. The window title is 'Create A Share Folder' and it has a close button (X) in the top right corner. On the left side, there is the QNAP logo and the text 'TURBO NAS'. The main area is titled 'Confirm Settings' in green text, followed by a dotted line. Below this, the following settings are listed:

<b>Folder Name:</b>	test
<b>Hide Folder:</b>	No
<b>Lock file (oplocks):</b>	Yes
<b>Path:</b>	Mirroring Disk Volume: Drive 1 2 /test
<b>Description:</b>	---
<b>Access right:</b>	By User
<b>Access User/User Group:</b>	admin, test, user02, user03, user04, user05 ...

At the bottom left, it says 'Step 6 of 7'. At the bottom right, there are three buttons: 'BACK', 'NEXT', and 'CANCEL'.

Click 'Finish' to complete the setup.



To delete a share folder, select the folder checkbox and click 'Delete'. You can select the option 'Also delete the data in these folder(s)' to delete the folder and the files in it. If you select not to delete the folder data, the data will be retained in the NAS. You can create a folder of the same name again to access the data.

The screenshot shows a web interface for managing share folders. At the top, there are three tabs: 'SHARE FOLDERS' (selected), 'ISO SHARE FOLDERS', and 'FOLDER AGGREGATION'. Below the tabs, there are buttons for 'Share Folder' and 'Restore Default Network Shares'. A confirmation dialog box is open in the center, asking 'All the selected share folder(s) will be removed. Are you sure?' with an option to 'Also delete the data in these folder(s)'. The dialog has 'OK' and 'CANCEL' buttons. In the background, a table lists share folders with columns for 'Files', 'Hidden', and 'Action'. The 'root' folder is selected, and a 'Delete' button is highlighted in red at the bottom left. The bottom status bar shows 'Total: 8 | Display 10 entries per page.' and navigation controls.

Files	Hidden	Action
33	No	[Icons]
3994	No	[Icons]
2	No	[Icons]
16459	No	[Icons]
25.45 KB	19	2
13.45 KB	4	2
21.06 MB	86	1076
170.08 GB	2973	64813

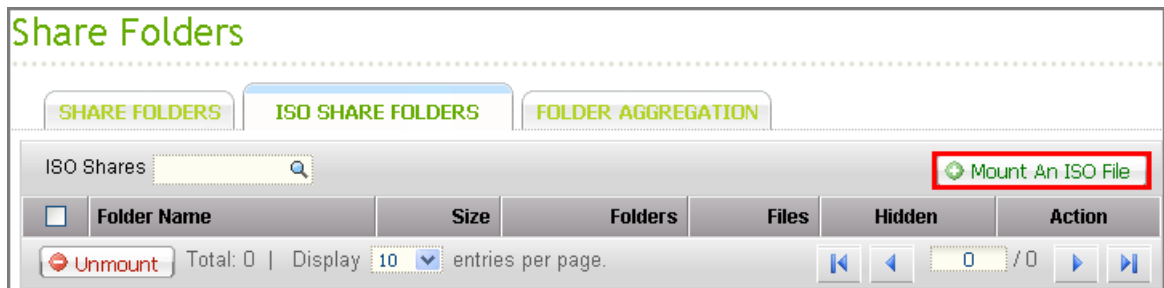
## ISO Share Folders

You can mount the ISO image files on the NAS as ISO share folders and access the contents without disc burning. The NAS supports mounting up to 256 ISO share folders.

\*TS-110, TS-119, TS-210, TS-219, TS-219P, and TS-410 support maximum 256 network share folders only (including 6 default network share folders). The maximum number of ISO image files supported by these models is less than 256 (256 minus 6 default share folders minus number of network recycle bin folders).

Follow the steps below to mount an ISO file on the NAS by the web interface.

1. Login the NAS as an administrator. Go to 'Share Folders' > 'ISO SHARE FOLDERS'. Click 'Mount An ISO File'.



2. Select an ISO image file on the NAS. Click 'Next'.



3. The image file will be mounted as a share folder of the NAS. Enter the folder name.

Create An ISO Share Folder X

---

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TURBO NAS

### ISO Share Folder Settings

**Folder Name:**



**Hide Folder:**  Yes  No i

**Description:**

Step 2 of 7

- Specify the access rights of the NAS users or user groups to the share folder. You can also select 'Deny Access' or 'Read only' for the guest access right. Click 'Next'.

### Create An ISO Share Folder

## Privilege

You can select one of the following methods to configure the user access right to the network share folder:

- Grant read-only access right for administrators only
- By User
- By User Group

Guest Access Right:

- Deny Access
- Read only

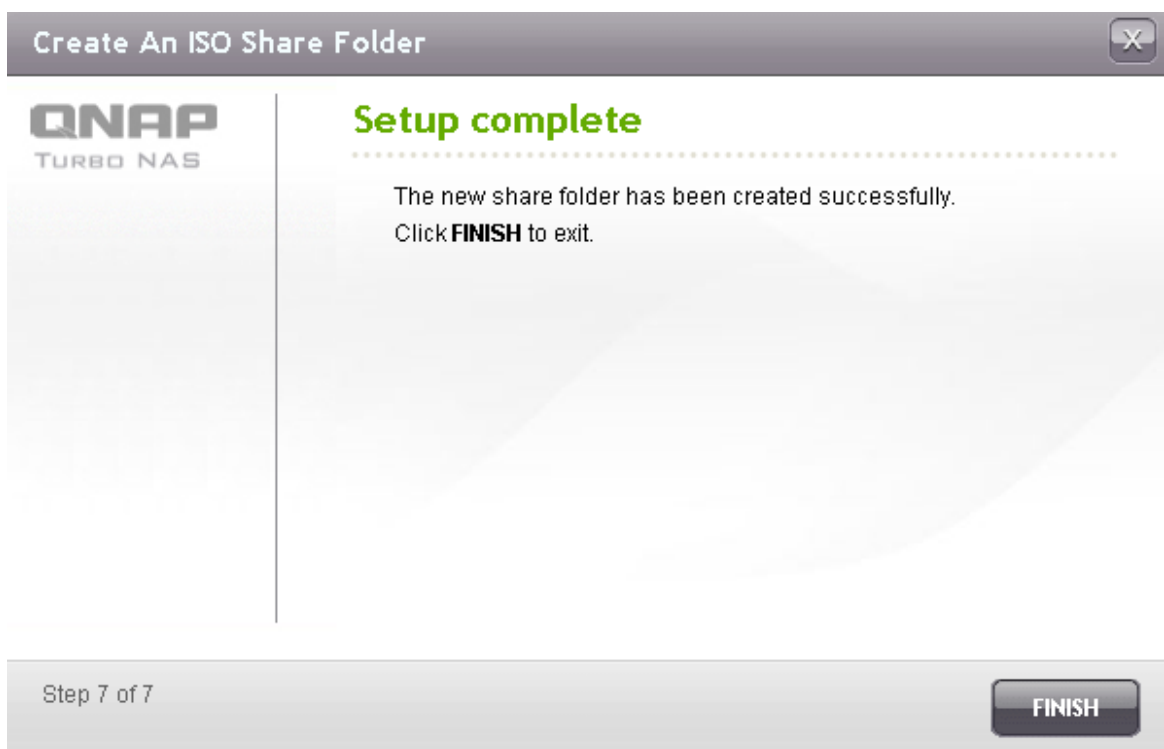
Step 3 of 7

**BACK** **NEXT** **CANCEL**

5. Confirm the settings and click 'Next'.



6. Click 'Finish'.



7. After mounting the image file, you can specify the access rights of the users over different network protocols such as SMB, AFP, NFS, and WebDAV by clicking the icons in the 'Action' column.

The screenshot shows a web interface for managing ISO shares. At the top, there are three tabs: 'SHARE FOLDERS', 'ISO SHARE FOLDERS' (which is active), and 'FOLDER AGGREGATION'. Below the tabs is a search bar labeled 'ISO Shares' and a 'Mount An ISO File' button. A table lists the shares with the following data:

<input type="checkbox"/>	Folder Name	Size	Folders	Files	Hidden	Action
<input type="checkbox"/>	NAS	429.94 MB	37	638	No	

At the bottom of the table, there is an 'Unmount' button, a 'Total: 1' indicator, a 'Display 10 entries per page' dropdown, and pagination controls showing '1 / 1'.

The NAS supports mounting ISO image files by Web File Manager, see here [214](#) for more information.



## Folder Aggregation

You can aggregate the share folders on Microsoft network as a portal folder on the NAS and let the NAS users access the share folders through your NAS. Up to 10 share folders can be linked to a portal folder.

**Note:** This function is supported only in Microsoft networking service.

To use this function, follow the steps below.

1. Enable folder aggregation.

**Folder Aggregation**

Enable Folder Aggregation

Enable this function will allow you to aggregate all shared folders in local network into a " portal folder " in your NAS.

Folder Aggregation is for Microsoft Network/ Samba Service ONLY.

[APPLY](#)

**Folder Aggregation List**

[Create A Portal Folder](#) [Import/ Export Folder Tree](#)

<input type="checkbox"/>	Portal Folder Name	Action
<a href="#">Delete</a>		

2. Click 'Create A Portal Folder'.

**Folder Aggregation List**

[Create A Portal Folder](#) [Import/ Export Folder Tree](#)

<input type="checkbox"/>	Portal Folder Name	Action
<a href="#">Delete</a>		

3. Enter the portal folder name. Select to hide the folder or not, and enter an optional comment for the portal folder.

Create A Portal Folder ✕

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TURBO NAS

## Create A Portal Folder


Folder Name:  ✓

Hide Folder:  Yes  No ⓘ

Comment:

Step 1 of 1

**APPLY** **CANCEL**

- Click  (Link Configuration) and enter the remote folder settings. Make sure the share folders are open for public access.

**Note:** If there is permission control on the share folders, you need to join the NAS and the remote servers to the same AD domain.

**Folder Aggregation List**

<input type="checkbox"/>	Portal Folder Name	Action
<input type="checkbox"/>	Shares	<input type="button" value="Edit"/> <input type="button" value="Link Configuration"/>

**Remote Folder Link** X

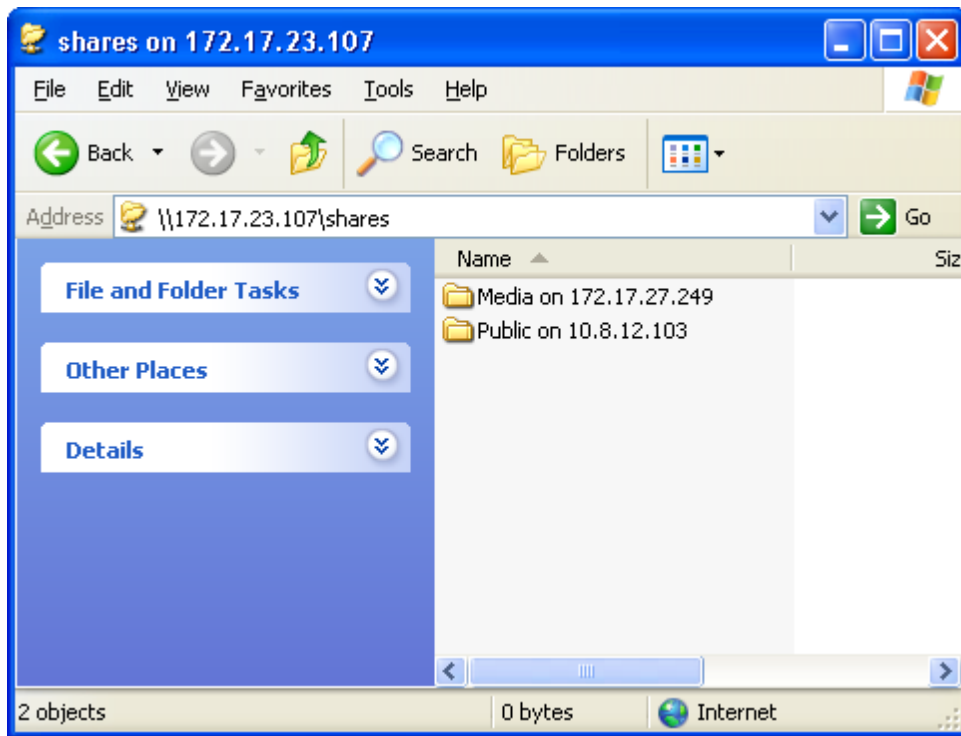
Remote Folder Link

Portal Folder Name: Shares

Link	Name	Host Name	Remote Share Folder
1	Public on 10.8.12.103	10.8.12.103	Public
2	dia on 172.17.27.249	172.17.27.249	Media
3			
4			
5			
6			
7			
8			
9			
10			

Step 1 of 1

5. Upon successful connection, you can connect to the remote folders through the NAS.



## 5.4 Quota

To allocate the disk volume efficiently, you can specify the quota that can be used by each user. When this function is enabled and a user has reached the disk quota, the user cannot upload any data to the server anymore. By default, no limitations are set for the users. You can modify the following options:

- Enable quota for all users
- Quota size on each disk volume

### Quota

Enable quota for all users

Quota size on the disk  MB

**Note:** Individual user quota size can be changed in [Users · Quota Settings \[Users\]](#)

[APPLY](#)

After applying the changes, the quota settings will be shown. Click 'GENERATE' to generate a quota settings file in CSV format. After the file has been generated, click 'DOWNLOAD' to save it to your specified location.

Local Users

Mirroring Disk Volume: Drive 1 2

Users	Quota Size	Used Size	Status
admin	--	167 MB	No size limitation
test	1.95 GB	0 MB	Available1.95 GB
user01	1.95 GB	0 MB	Available1.95 GB
user02	1.95 GB	0 MB	Available1.95 GB
user03	1.95 GB	0 MB	Available1.95 GB
user04	1.95 GB	0 MB	Available1.95 GB
user05	1.95 GB	0 MB	Available1.95 GB
guest	1.95 GB	0 MB	Available1.95 GB

Total: 8 | Display  entries per page.    / 1

[GENERATE](#) [DOWNLOAD](#)

Note: 2010\_05\_12\_Local\_User\_Quota\_Volume1.csv is ready to be downloaded.

## 6. Network Services

---

Microsoft Networking [163](#)  
Apple Networking [170](#)  
NFS Service [177](#)  
FTP Service [180](#)  
Telnet/ SSH [182](#)  
SNMP Settings [183](#)  
Web Server [185](#)  
Network Service Discovery [212](#)

## 6.1 Microsoft Networking

---

Enable file service for Microsoft networking: If you are using Microsoft Windows, turn on this option so that you can access the files on the network share folders. Assign a workgroup name.

### Microsoft Networking

**MICROSOFT NETWORKING**    **ADVANCED OPTIONS**

**Microsoft Networking**

Enable file service for Microsoft networking

Standalone Server

Server Description (Optional):

Workgroup:

AD Domain Member (For detailed instructions, please [click here](#))

Server Description (Optional):

Domain NetBIOS Name:

AD Server Name:

Domain:

Organization Unit (Optional):

Domain Administrator Username:

Domain Administrator Password:

**APPLY**

### **Standalone Server**

Use local users for user authentication.

### **AD Domain Member**

The NAS supports Windows AD (Active Directory) to provide quick and direct import of the user accounts to the existing AD server available on your network. This function helps you save the time and effort on creating the user accounts and passwords and lowers the IT maintenance cost by automatic configuration procedure.

- **Server Description**  
Describe the NAS for the users to identify the server. To use the NAS on the Microsoft Windows OS, you must enable Microsoft Network Services.
- **Workgroup**  
Specify the workgroup the NAS belongs to. The workgroup is a computer group unit on Microsoft Windows network for network sharing.
- **AD Server Name**  
Enter the name of the AD server when the AD domain is selected for authentication.
- **Domain Name**  
The name of Microsoft domain. When you select AD domain, you must enter the domain name, the login user name, and the password.



## **Join QNAP NAS to Windows Server 2003/ 2008 Active Directory**

Active Directory is a Microsoft directory used in Windows environments to centrally store, share, and manage the information and resources on your network. It is a hierarchical data centre which centrally holds the information of the users, user groups, and the computers for secure access management.

The NAS supports Active Directory (AD). By joining the NAS to the Active Directory, all the user accounts of the AD server will be imported to the NAS automatically. The AD users can use the same set of user name and password to login the NAS

If you are using Active Directory with Windows Server 2008 R2, you must update the NAS firmware to V3.2.0 or above to join the NAS to the AD.

Follow the steps below to join the QNAP NAS to the Windows Active Directory.

1. Login the NAS as an administrator. Go to 'System Administration' > 'General Settings' > 'Date and Time'. Set the date and time of the NAS, which must be consistent with the time of the AD server. The maximum time difference allowed is 5 minutes.

2. Go to 'System Administration' > 'Network' > 'TCP/IP'. Set the IP of the primary DNS server as the IP of the Active Directory server that contains the DNS service. It must be the IP of the DNS server that is used for your Active Directory. If you use an external DNS server, you will not be able to join the domain.

Home >> System Administration >> Network Welcome admin | Logout English

### IP Address

Interface	DHCP	IP Address	Subnet Mask	Gateway	MAC Address	Speed	MTU	Link	Edit
Ethernet 1+2	Yes	10.8.12.46	255.255.254.0	10.8.12.1	00:08:9B:8C:BC:6C	100Mbps	1500		

### Default Gateway

Use the settings from: Ethernet 1+2

### Port Trunking

Port Trunking provides network load balancing and fault tolerance by combining two Ethernet interfaces into one to increase the bandwidth beyond the limits of any one single interface at the same time offers the redundancy for higher availability when both interfaces are connected to the same switch that supports 'Port Trunking'.

Enable Network Port Trunking

Select the port trunking mode from below. Please note that incompatible mode settings might cause the network interface to hang or affect the overall performance. For more information, please click [here](#).

Balance-rr (Round-Robin)

### DNS Server:

Primary DNS Server: 10 .8 .2 .11

Secondary DNS Server: 10 .8 .2 .9

3. Go to 'Network Services' > 'Microsoft Networking'. Enable AD Domain Member, and enter the AD domain information.

Home >> Network Services >> Microsoft Networking Welcome admin | Logout English

## Microsoft Networking

**MICROSOFT NETWORKING** **ADVANCED OPTIONS**

**Microsoft Networking**

Enable file service for Microsoft networking

Standalone Server

Server Description (Optional):

Workgroup:

AD Domain Member (For detailed instructions, please [click here](#))

Server Description (Optional):

Domain NetBIOS Name:

AD Server Name:

Domain:

Organization Unit (Optional):

Domain Administrator Username:

Domain Administrator Password:

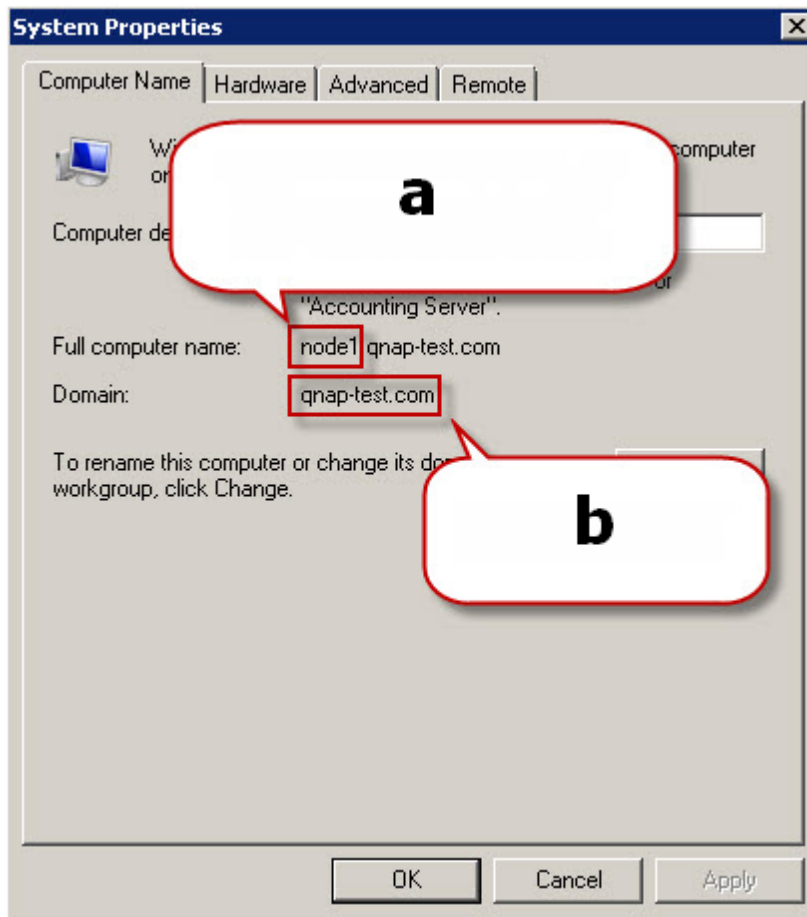
**APPLY**

**Note:**

- Enter a fully qualified AD domain name, for example, qnap-test.com
- The AD user entered here must have the administrator access right to the AD domain.
- WINS Support: If you are using a WINS server on your network and your workstation is configured to use that WINS server for name resolution, you must set up your WINS server IP on the NAS (use the specified WINS server).

## Windows 2003

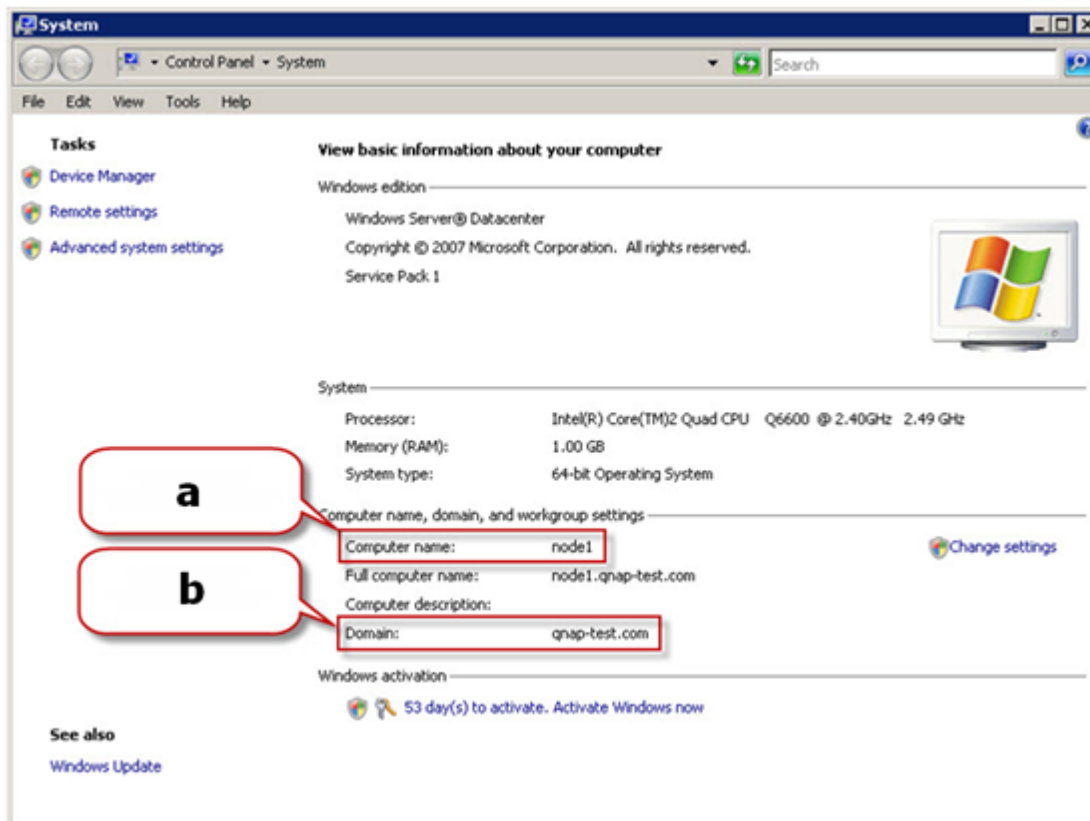
You may check the AD server name and AD domain name in 'System Properties'.



- In Windows 2003 servers, the AD server name is 'node1' NOT 'node1.qnap-test.com'.
- The domain name remains the same.

## Windows Server 2008

You may check the AD server name and domain name in 'Control Panel' > 'System'.



- a. This is your AD server name.
- b. This is your domain name.

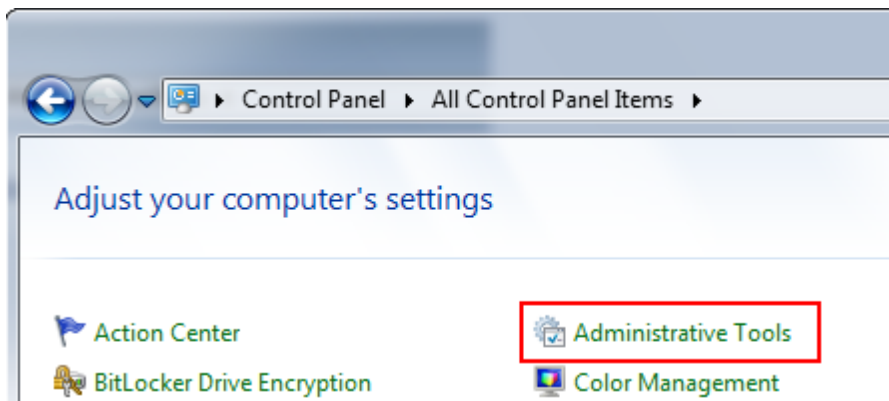
### Note:

- After joining the NAS to the Active Directory, the local NAS users who have access right to the AD server should use 'NASname\username' to login; the AD users should use their own user names to login the AD server.
- The local NAS users and the AD users (with username as domain name + username) are allowed to login the NAS (firmware version 3.2.0 or above) via AFP, FTP, Web File Manager, and WebDAV. However, if the firmware version of the NAS is earlier than 3.2.0, only the local NAS users are allowed to login the NAS by Web File Manager and WebDAV.
- For TS-109/209/409/509 series NAS, if the AD domain is based on Windows 2008 Server, the NAS firmware must be updated to version 2.1.2 or above.

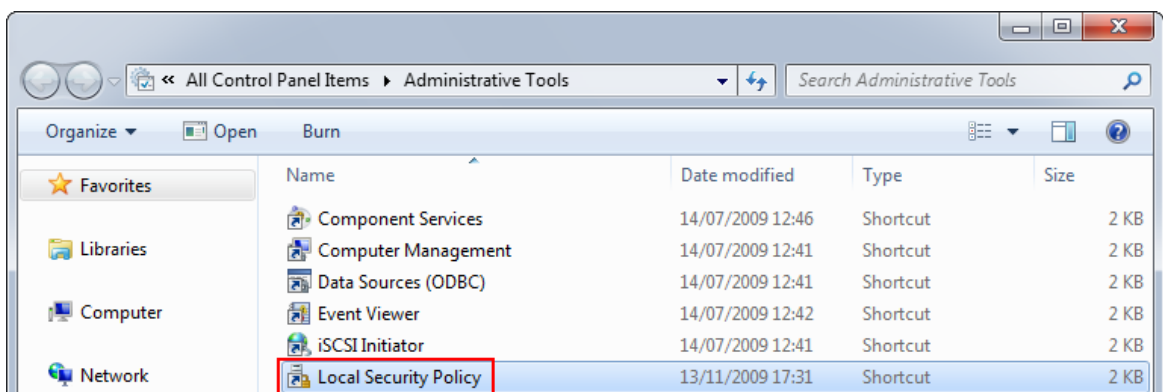
## Windows 7

If you are using a Windows 7 PC which is not a member of an Active Directory, while your NAS is an AD domain member and its firmware version is earlier than v3.2.0, change your PC settings as shown below to allow your PC to connect to the NAS.

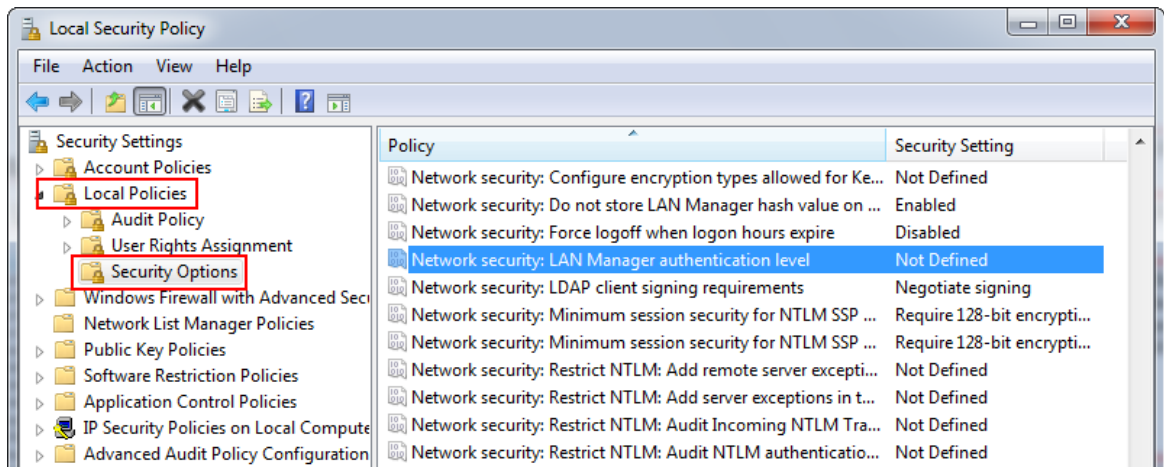
- a. Go to 'Control Panel' > 'Administrative Tools'.



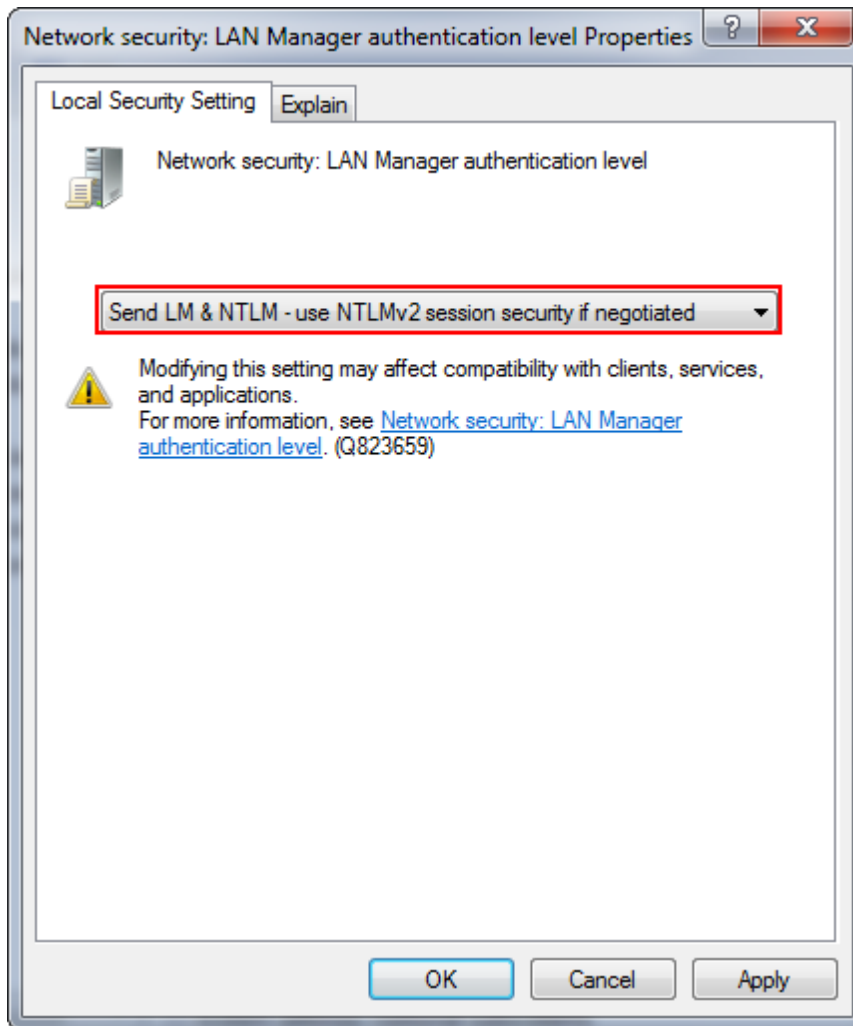
- b. Click 'Local Security Policy'.



- c. Go to 'Local Policies' > 'Security Options'. Select 'Network security: LAN Manager authentication level'.



- d. Select the 'Local Security Setting' tab, and select 'Send LM & NTLM – use NTLMv2 session security if negotiated' from the list. Then click 'OK'.

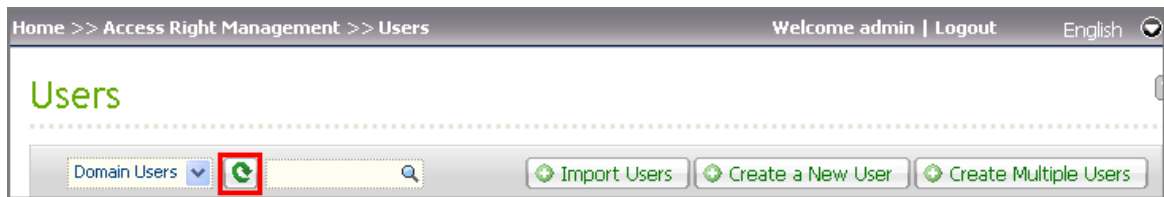




## Verify the settings

To verify that the NAS has been joined to the Active Directory successfully, go to 'Access Right Management' > 'Users' and 'User Groups'. A list of users and user groups will be shown on the 'Domain Users' and 'Domain Groups' lists respectively.

If you have created new users or user groups in the domain, you can click the reload button next to 'Domain Users' drop-down menu in 'Access Right Management' > 'Users' or 'Domain Groups' drop-down menu in 'Access Right Management' > 'User Groups'. This will reload the user and user group lists from the Active Directory to the NAS. The user permission settings will be synchronized in real time with the domain controller.



## Advanced Options

**MICROSOFT NETWORKING**    **ADVANCED OPTIONS**

**Advanced Options**

- Enable WINS server
- Use the specified WINS server
- WINS server IP address:    0    0    0    0
- Local Master Browser
- Allow only NTLMv2 authentication.
- Name Resolve Priority: **DNS only** ▼
- Login style: DOMAIN\USERNAME instead of DOMAIN+USERNAME for FTP, AFP, & Web File Manager
- Automatically register in DNS

**APPLY**

### WINS server

If the local network has a WINS server installed, specify the IP address. The NAS will automatically register its name and IP address with WINS service. If you have a WINS server on your network and want to use this server, enter the WINS server IP. Do not turn on this option if you are not sure about the settings.

### Local Domain Master

A Domain Master Browser is responsible for collecting and recording resources and services available for each PC on the network or a workgroup of Windows. When you find the waiting time for connecting to the Network Neighborhood/ My Network Places too long, it may be caused by failure of an existing master browser or a missing master browser on the network. If there is no master browser on your network, select the option 'Domain Master' to configure the NAS as the master browser. Do not turn on this option if you are not sure about the settings.

### Allow only NTLMv2 authentication

NTLMv2 stands for NT LAN Manager version 2. When this option is turned on, login to the shared folders by Microsoft Networking will be allowed only with NTLMv2 authentication. If the option is turned off, NTLM (NT LAN Manager) will be used by default and NTLMv2 can be negotiated by the client. The default setting is disabled.

### **Name resolution priority**

You can select to use DNS server or WINS server to resolve client host names from IP addresses. When you set up your NAS to use a WINS server or to be a WINS server, you can choose to use DNS or WINS first for name resolution. When WINS is enabled, the default setting is 'Try WINS then DNS'. Otherwise, DNS will be used for name resolution by default.

Login style: DOMAIN\USERNAME instead of DOMAIN+USERNAME for FTP, AFP, and Web File Manager  
In an Active Directory environment, the default login formats for the domain users are:

Windows shares: domain\username

FTP: domain+username

Web File Manager: domain+username

AFP: domain+username

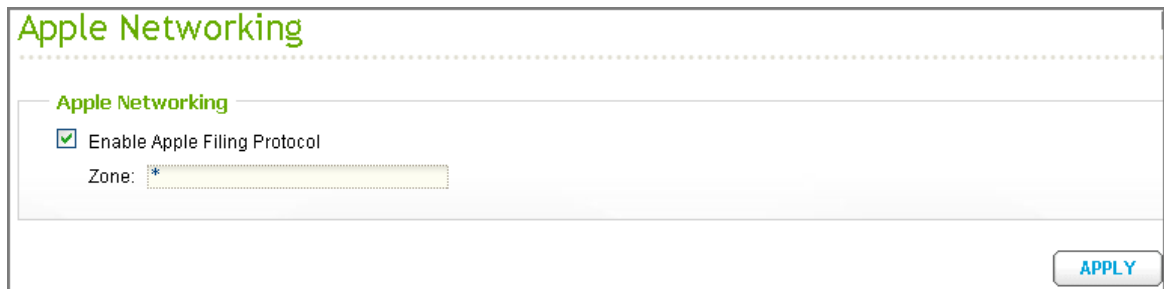
When you turn on this option, the users can use the same login name format (domain\username) to connect to the NAS via AFP, FTP, and Web File Manager.

**Automatically register in DNS:** When this option is turned on and the NAS is joined to an Active Directory, the NAS will register itself automatically in the domain DNS server. This will create a DNS host entry for the NAS in the DNS server. If the NAS IP is changed, the NAS will automatically update the new IP in the DNS server.

## 6.2 Apple Networking

---

To connect to the NAS from Mac, enable Apple Filing Protocol. If your AppleTalk network uses extended networks and is assigned with multiple zones, assign a zone name to the NAS. If you do not want to assign a network zone, enter an asterisk (\*) to use the default setting. This setting is disabled by default.



Apple Networking

Apple Networking

Enable Apple Filing Protocol

Zone: \*

APPLY

## 6.3 NFS Service

To connect to the NAS from Linux, enable NFS service.

### NFS Service

---

**NFS Service**

Enable NFS Service

You can set the allowed domain name and the access authority in Share Folder Management.  
[Click here to set the NFS access right of the network share.](#)

**APPLY**

To configure the NFS access right to the share folders on the NAS, go to 'Access Right Management' > 'Share Folders'. Click the NFS button on the 'Action' column.

Home >> Access Right Management >> Share Folders Welcome admin | Logout English

### Share Folders

---

SHARE FOLDERS
FOLDER AGGREGATION

Shares  New Share Folder Restore Default Network Shares

<input type="checkbox"/>	Folder Name	Size	Folders	Files	Hidden	Action
<input type="checkbox"/>	Network Recycle Bin 1	4 KB	0	0	No	<b>NFS</b>
<input type="checkbox"/>	Public	732.1 MB	20	5302	No	<b>NFS</b>
<input type="checkbox"/>	Qdownload	571.74 KB	6	6	No	NFS
<input type="checkbox"/>	Qmultimedia	31.2 GB	4137	33966	No	NFS
<input type="checkbox"/>	Qrecordings	4 KB	0	0	No	NFS
<input type="checkbox"/>	Qusb	4 KB	0	0	No	NFS
<input type="checkbox"/>	Qweb	18.03 MB	813	6079	No	NFS
<input checked="" type="checkbox"/>	rei	28.18 GB	1442	21613	Yes	NFS
<input checked="" type="checkbox"/>	root	73.13 GB	6434	67256	No	NFS

Delete Total: 9 | Display  entries per page. 1 / 1

Specify the access right to the network share. If you select 'No limit' or 'Read only', you can specify the IP address or domains that are allowed to connect to the share folder by NFS.

- No limit: Allow users to create, read, write, and delete files or folders in the network share and any subdirectories.
- Read only: Allow users to read files in the network share and any subdirectories but they are not allowed to write, create, or delete any files.
- Deny access: Deny all access to the network share.

**QNAP**  
TURBO NAS

### NFS Access Control

You can set the NFS access right of the network share.

**Network Share Name:** Public

**Access Right:** No limit

**Allowed IP Address or Domain:** 10.8.12.12

Note: Please make sure the format you enter is correct. An incorrect format can lead to access error.

Step 1 of 1

APPLY CANCEL

### Connect to the NAS by NFS

On Linux, run the following command:

```
mount -t nfs <NAS IP>:/<Network Share Name> <Directory to Mount>
```

For example, if the IP address of your NAS is 192.168.0.1 and you want to link the network share folder 'public' under the /mnt/pub directory, use the following command:

```
mount -t nfs 192.168.0.1:/public /mnt/pub
```

**Note:** You must login as the 'root' user to initiate the above command.

Login as the user ID you define, you can use the mounted directory to connect to your shared files.

## 6.4 FTP Service

When you turn on FTP service, you can specify the port number and the maximum number of users that are allowed to connect to the NAS by FTP at the same time.

### FTP Service

---

#### General

Enable FTP Service

Protocol Type:  FTP (standard)  
 FTP with SSL/TLS (Explicit)

Port Number:

Unicode Support:  Yes  No

Enable Anonymous:  Yes  No

**Note:** If your FTP client does not support Unicode, please select "No" for Unicode Support and select a supported filename encoding from [\[Filename Encoding\]](#) under [General Settings] so that the folders and files on FTP can be properly shown.

---

#### Connection

Maximum Number of all FTP connections:

Maximum Number of Connections For a Single Account:

Enable FTP transfer limitation

Maximum upload rate (KB/s):  KB/s

Maximum download rate (KB/s):  KB/s

---

#### Advanced

Passive FTP Port Range:  Use the default port range (55536 - 56559)  
 Define port range:  -

Respond with external IP address for passive FTP connection request

External IP address:

To use the FTP service of the NAS, enable this function. Open an IE browser and enter ftp://NAS IP. Enter the user name and the password to login the FTP service.

### Protocol Type

Select to use standard FTP connection or SSL/TLS encrypted FTP. Select the correct protocol type in your client FTP software to ensure successful connection.



**Unicode Support**

Turn on or off the Unicode support. The default setting is No. If your FTP client does not support Unicode, you are recommended to turn off this option and select the language you specify in 'General Settings' > 'Language' so that the file and folder names can be correctly shown. If your FTP client supports Unicode, enable Unicode support for both your client and the NAS.

**Anonymous Login**

You can turn on this option to allow anonymous access to the NAS by FTP. The users can connect to the files and folders which are open for public access. If this option is turned off, the users must enter an authorized user name and password to connect to the server.

**Passive FTP Port Range**

You can use the default port range (55536-56559) or specify a port range larger than 1023. When using this function, make sure you have opened the ports on your router or firewall.

**FTP Transfer Limitation**

Specify the maximum number of FTP connections, maximum connections of a single user account and the maximum upload/ download rates of a single connection.

**Respond with external IP address for passive FTP connection request**

When passive FTP connection is in use, the FTP server (NAS) is behind a router, and a remote computer cannot connect to the FTP server over the WAN, enable this function. When this option is turned on, the NAS replies the IP address you specify or automatically detects the external IP address so that the remote computer is able to connect to the FTP server.

## 6.5 Telnet/ SSH

---

You can turn on this option to connect to the NAS by Telnet or SSH encrypted connection (only the 'admin' account can login remotely). You can use Telnet or SSH connection clients, for example, putty for connection. Make sure you have opened the ports you specified on your router or firewall.

To use SFTP (known as SSH File Transfer Protocol or Secure File Transfer Protocol), make sure you have turned on the option 'Allow SSH connection'.

### Telnet / SSH

---

**Telnet / SSH**

After enabling this option, you can access this server via Telnet or SSH connection. (Only the account admin can login remotely)

Allow Telnet connection  
Port Number:

Allow SSH connection  
Port Number:

Enable SFTP

[APPLY](#)

## 6.6 SNMP Settings

---

You can enable SNMP (Simple Network Management Protocol) service on the NAS and enter the trap address of the SNMP management stations (SNMP manager), for example, PC with SNMP software installed. When an event, warning, or error occurs on the NAS, the NAS (SNMP agent) reports the real-time alert to the SNMP management stations.

The fields are described as below:

Field	Description
SNMP Trap Level	Select the information to be sent to the SNMP management stations.
Trap Address	The IP address of the SNMP manager. You can specify maximum 3 trap addresses.
SNMP MIB (Management Information Base)	The MIB is a type of database in ASCII text format used to manage the NAS in the SNMP network. The SNMP manager uses the MIB to determine the values or understand the messages sent from the agent (NAS) within the network. You can download the MIB and view it with any word processor or text editor.
Community (SNMP V1/V2)	An SNMP community string is a text string that acts as a password. It is used to authenticate messages that are sent between the management station and the NAS. The community string is included in every packet that is transmitted between the SNMP manager and the SNMP agent.
SNMP V3	The NAS supports SNMP version 3. You can specify the authentication and privacy settings if available.

## SNMP Settings

### SNMP

After enabling this service, the NAS will be able to report information via SNMP to the managing systems.

Enable SNMP Service

Port Number:

SNMP Trap Level:  Information  Warning  Error

Trap Address 1:

Trap Address 2:

Trap Address 3:

SNMP Version:

Community:

APPLY

### SNMP MIB

To install the MIB to your managing systems, click **[Download]**.

DOWNLOAD

## 6.7 Web Server

The NAS enables you to upload the web pages and manage your own website easily by Web Server. It also supports Joomla!, PHP and MySQL/ SQLite for you to establish an interactive website.

### Web Server

**WEB SERVER**   **VIRTUAL HOST**

---

#### Web Server

After enabling this function, you can upload the webpage files to "Web" network share to publish your website.

Enable Web Server ⓘ

Port Number:

register\_globals:  On  Off

Enable Secure Connection (SSL)

Port Number:

Enable WebDAV

Show service link on the login page

After enabling this service, click the following link to enter to Web Server.

<http://10.8.12.46:80/>

**APPLY**

---

#### php.ini Maintenance

php.ini Maintenance

The file **php.ini** is the system configuration file of Web Server. After enabling this function, you can edit, upload or restore this file. It is recommended to use the system default setting.

To use Web Server, follow the steps below.

1. Enable the service and enter the port number. The default number is 80.
2. Configure other settings:
  - Configure register\_globals  
Select to enable or disable register\_globals. The setting is disabled by default. When the web program prompts you to enable php register\_globals, enable this option. However, for system security concern, it is recommended to turn this option off.
  - php.ini Maintenance  
Select the option 'php.ini Maintenance' and choose to upload, edit or restore php.ini.


**Note:** To use PHP mail(), go to 'System Administration' > 'Notification' > 'Configure SMTP Server' and configure the SMTP server settings.

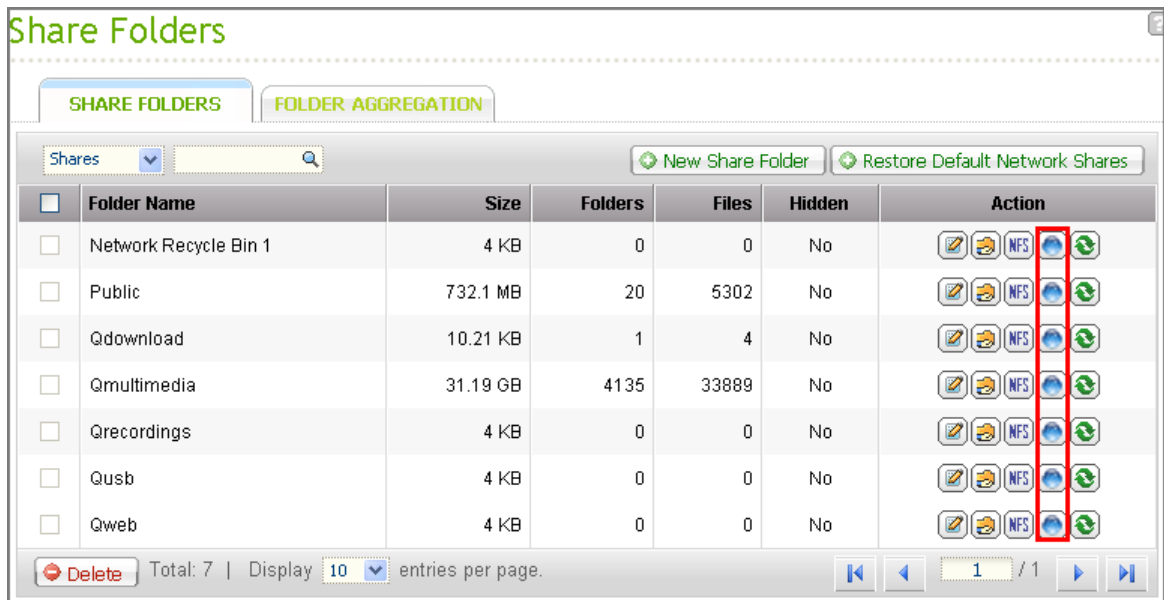
- Secure Connection (SSL)  
Enter the port number for SSL connection.
3. Upload the HTML files to the share folder (Qweb/ Web) on the NAS. The file index.html, index.htm or index.php will be the home path of your web page.
  4. You can access the web page you upload by entering http://NAS IP/ in the web browser. Note that when Web Server is enabled, you have to enter http://NAS IP:8080 in your web browser to access the login page of the NAS.

## WebDAV

WebDAV (Web-based Distributed Authoring and Versioning) is a set of extensions to the HTTP(S) protocol that allows the users to edit and manage the files collaboratively on the remote World Wide Web servers. After turning on this function, you can map the share folders of your NAS as the network drives of a remote PC over the Internet. To edit the access right settings, go to 'Access Right Management' > 'Share Folders' page.

To map a share folder on the NAS as a network drive of your PC, turn on WebDAV and follow the steps below.

Go to 'Access Right Management' > 'Share Folders' > 'Share Folder'. Click the 'WebDAV Access Control' button  in the 'Action' column, and set the WebDAV access right of the users to the share folders.



The screenshot displays the 'Share Folders' management interface. At the top, there are tabs for 'SHARE FOLDERS' and 'FOLDER AGGREGATION'. Below the tabs, there is a search bar and two buttons: 'New Share Folder' and 'Restore Default Network Shares'. The main area contains a table with the following columns: Folder Name, Size, Folders, Files, Hidden, and Action. The table lists several folders, including 'Network Recycle Bin 1', 'Public', 'Qdownload', 'Qmultimedia', 'Qrecordings', 'Qusb', and 'Qweb'. A red box highlights the 'WebDAV Access Control' icon in the Action column for the 'Public' folder.

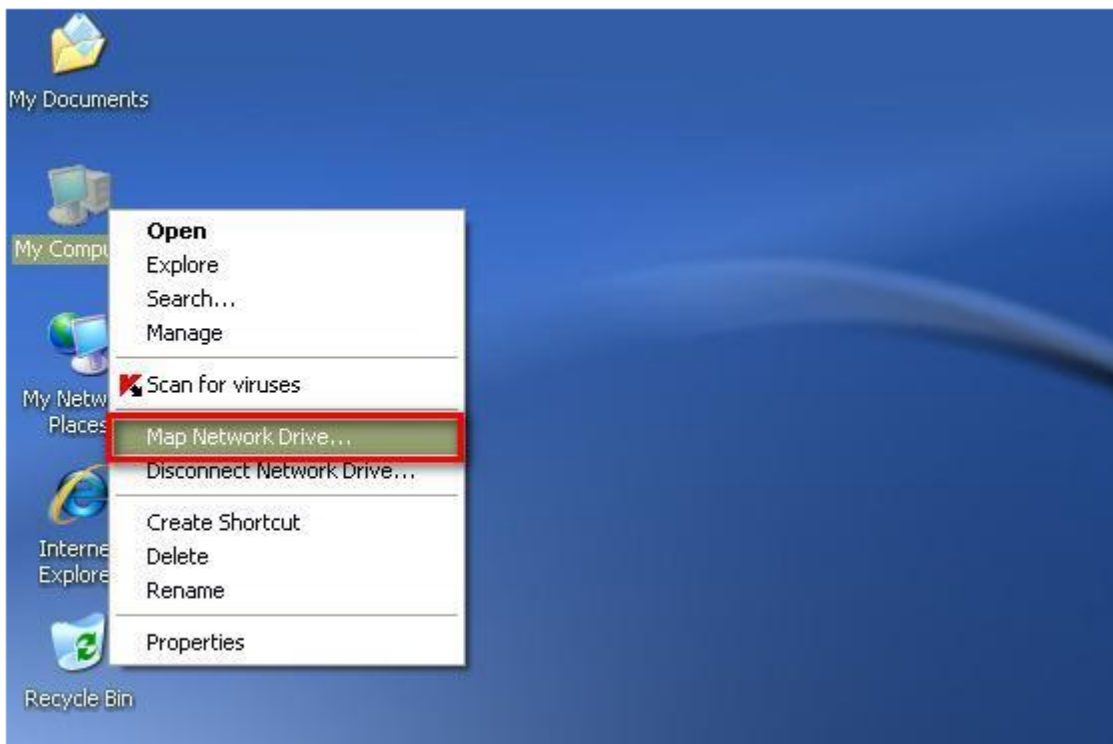
<input type="checkbox"/>	Folder Name	Size	Folders	Files	Hidden	Action
<input type="checkbox"/>	Network Recycle Bin 1	4 KB	0	0	No	NFS
<input type="checkbox"/>	Public	732.1 MB	20	5302	No	NFS
<input type="checkbox"/>	Qdownload	10.21 KB	1	4	No	NFS
<input type="checkbox"/>	Qmultimedia	31.19 GB	4135	33889	No	NFS
<input type="checkbox"/>	Qrecordings	4 KB	0	0	No	NFS
<input type="checkbox"/>	Qusb	4 KB	0	0	No	NFS
<input type="checkbox"/>	Qweb	4 KB	0	0	No	NFS

At the bottom of the interface, there is a 'Delete' button, a 'Total: 7' indicator, a 'Display 10 entries per page' dropdown, and navigation buttons.

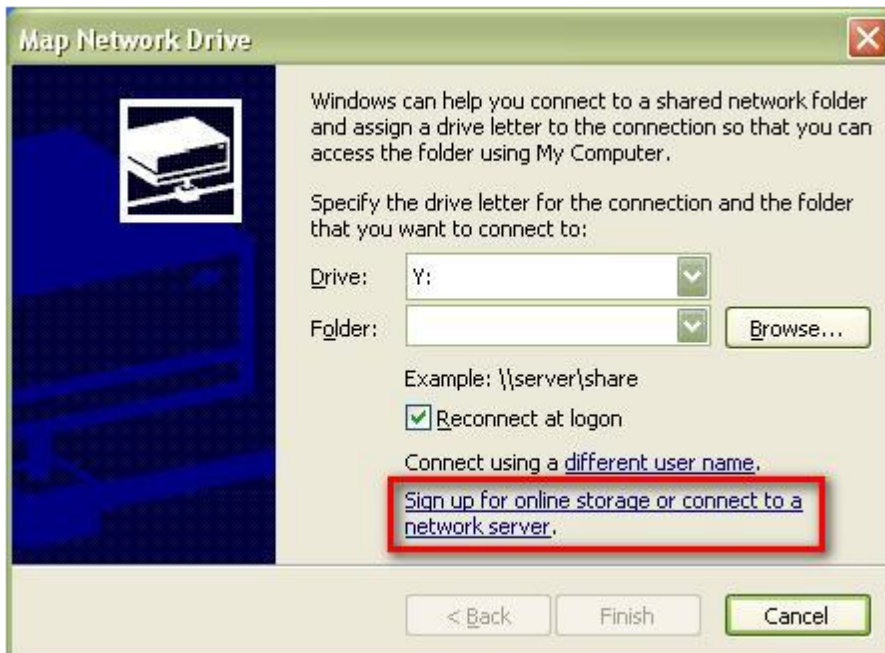
Next, mount the network share folders of the NAS as the network shares on your operating systems by WebDAV.

## Windows XP:

1. Right click 'My Computer' and select 'Map Network Drive...'

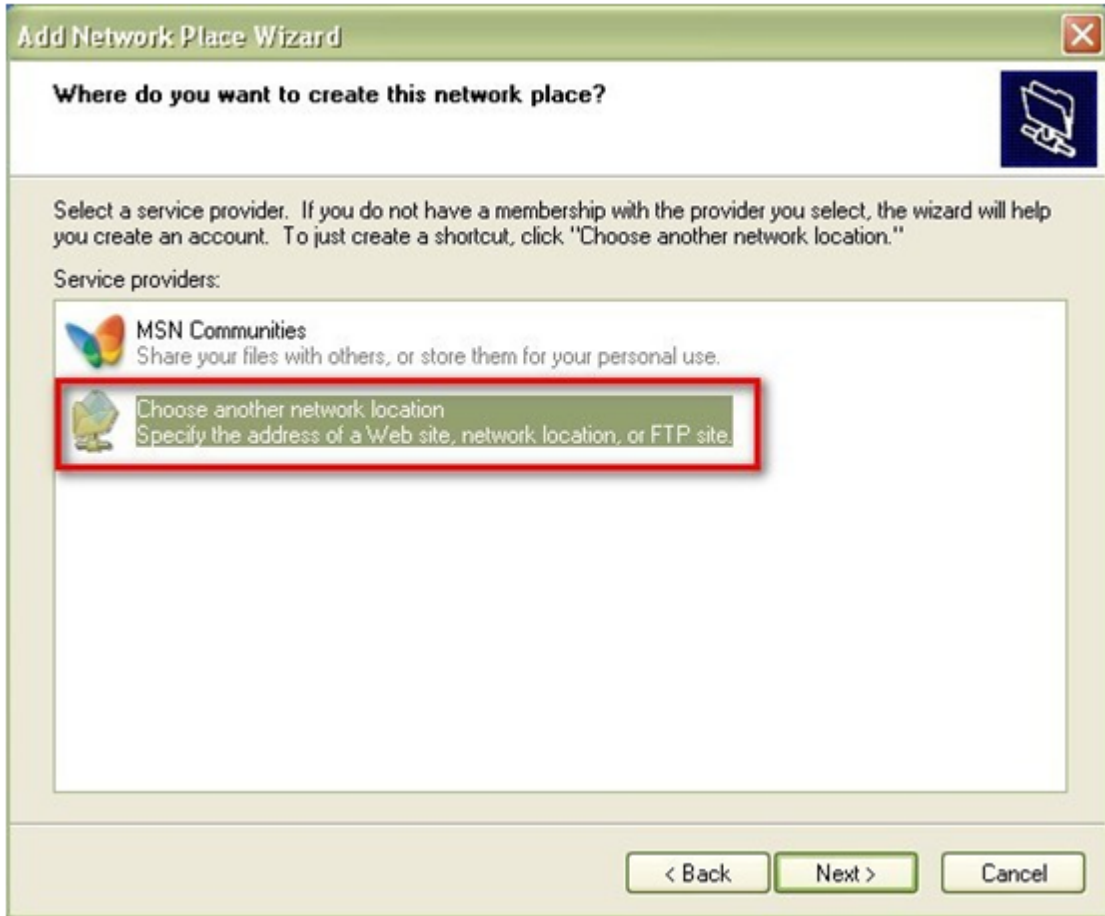


2. Click 'Sign up for online storage or connect to a network server'.



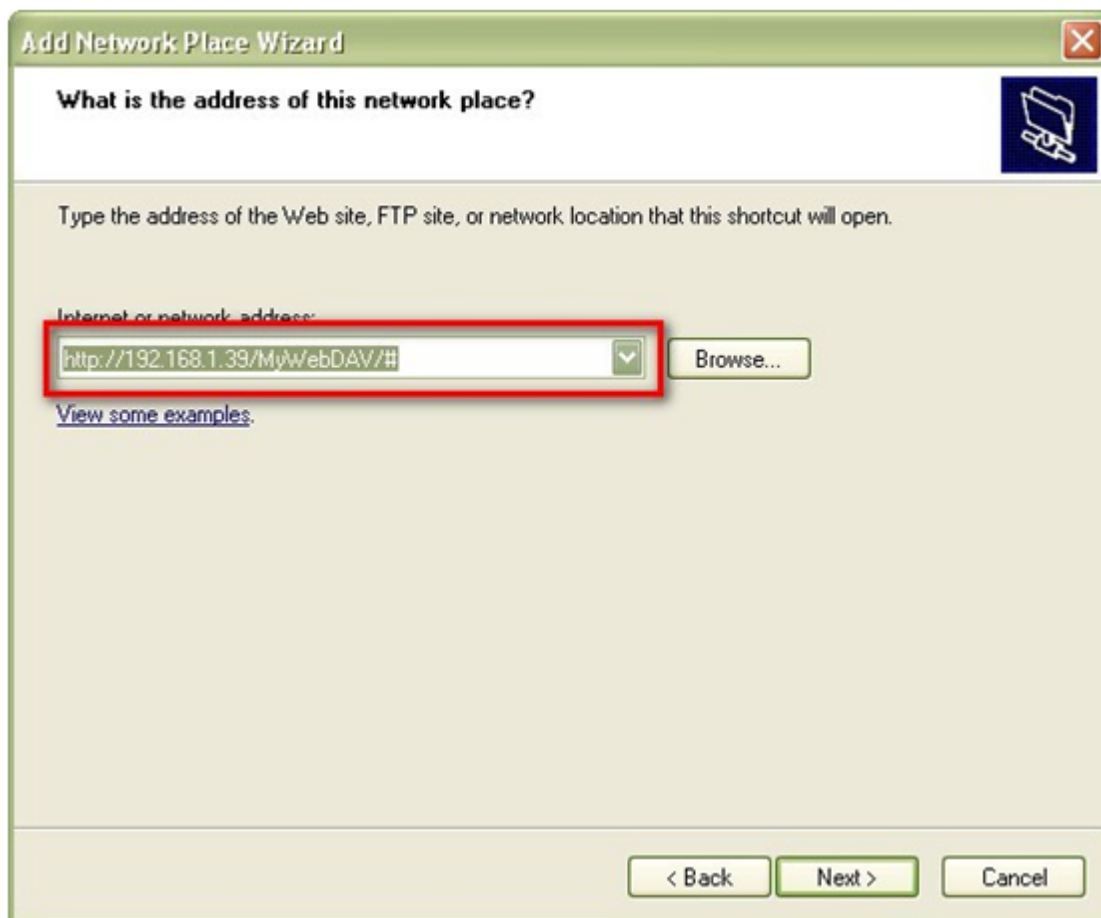


3. Select 'Choose another network location'.



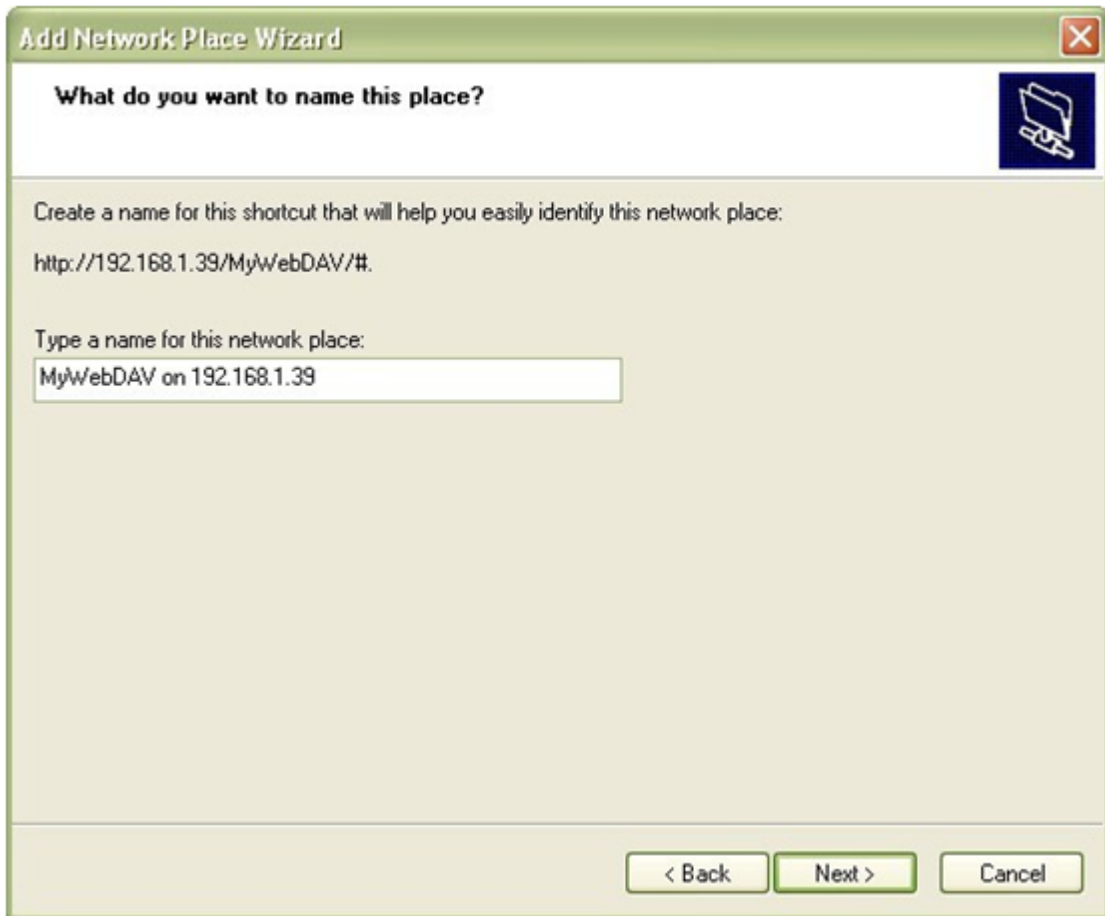
4. Enter the URL of your NAS with the share folder name. Note that you should put a '#' key at the end of the URL. Click 'Next'.

Format: `http://NAS_IP_or_HOST_NAME/SHARE_FOLDER_NAME/#`



5. Enter the user name and password which has the WebDAV access right to connect to the share folder.

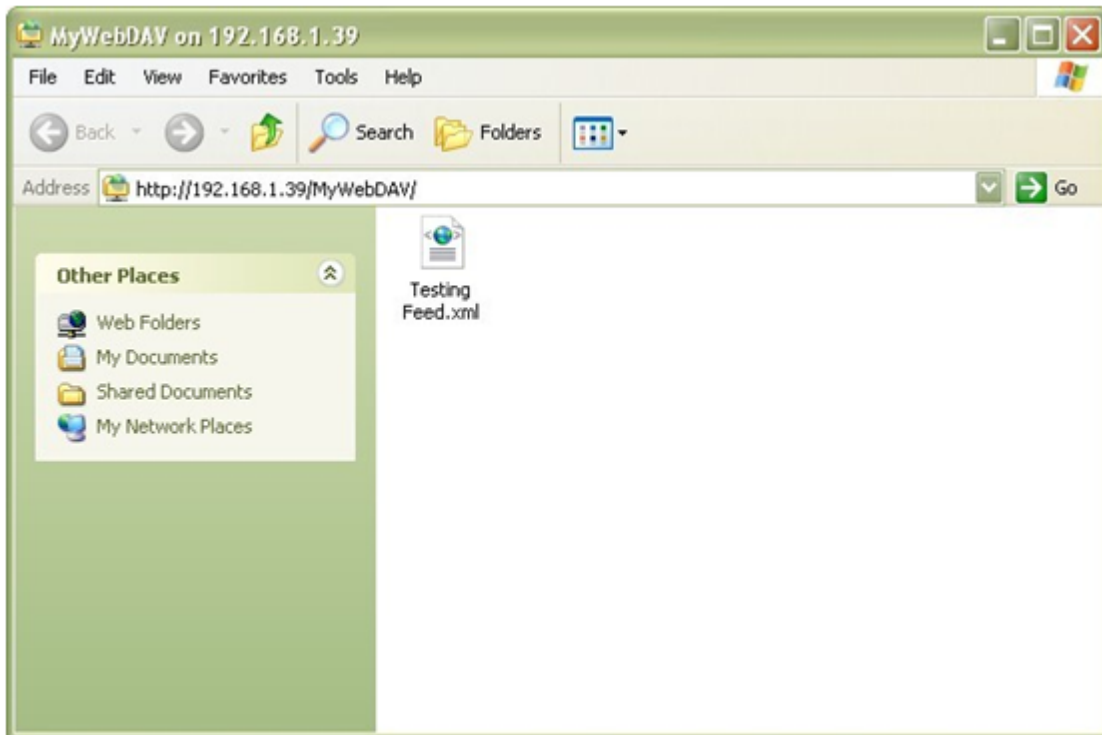
6. Type a name for this network place.



7. The network place has been created and is ready to be used.



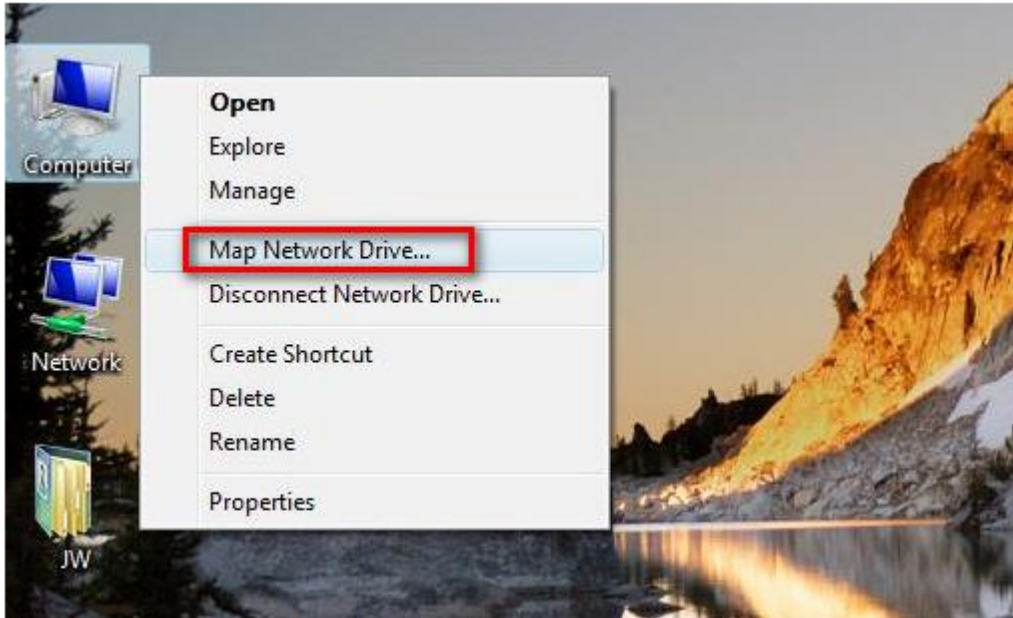
8. Now you can connect to this share folder anytime through WebDAV. A shortcut has also been created in 'My Network Places'.



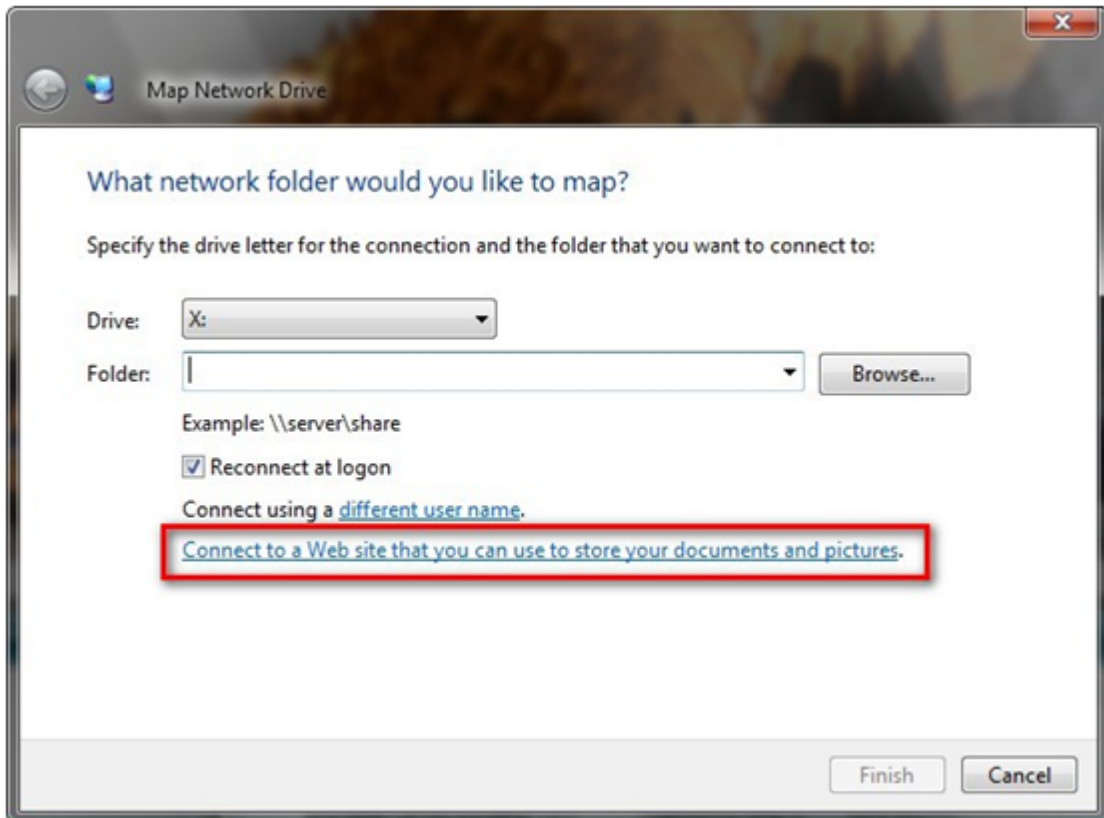
## Windows Vista

If you are using Windows Vista, you might need to install the 'Software Update for Web Folders (KB907306)'. This update is for 32-bit Windows OS only. <http://www.microsoft.com/downloads/details.aspx?FamilyId=17c36612-632e-4c04-9382-987622ed1d64&displaylang=en>

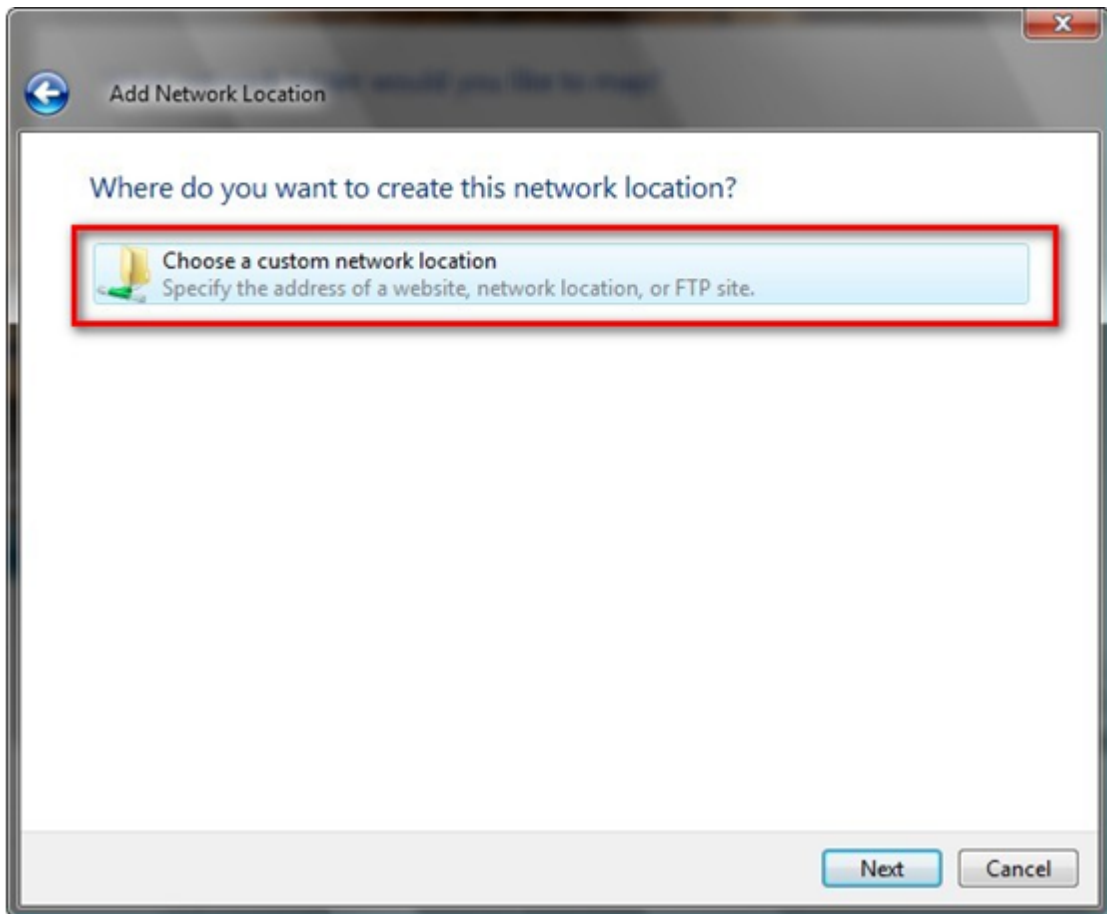
1. Right click 'Computer' and select 'Map Network Drive...'



2. Click 'Connect to a Web site that you can use to store your documents and pictures'.

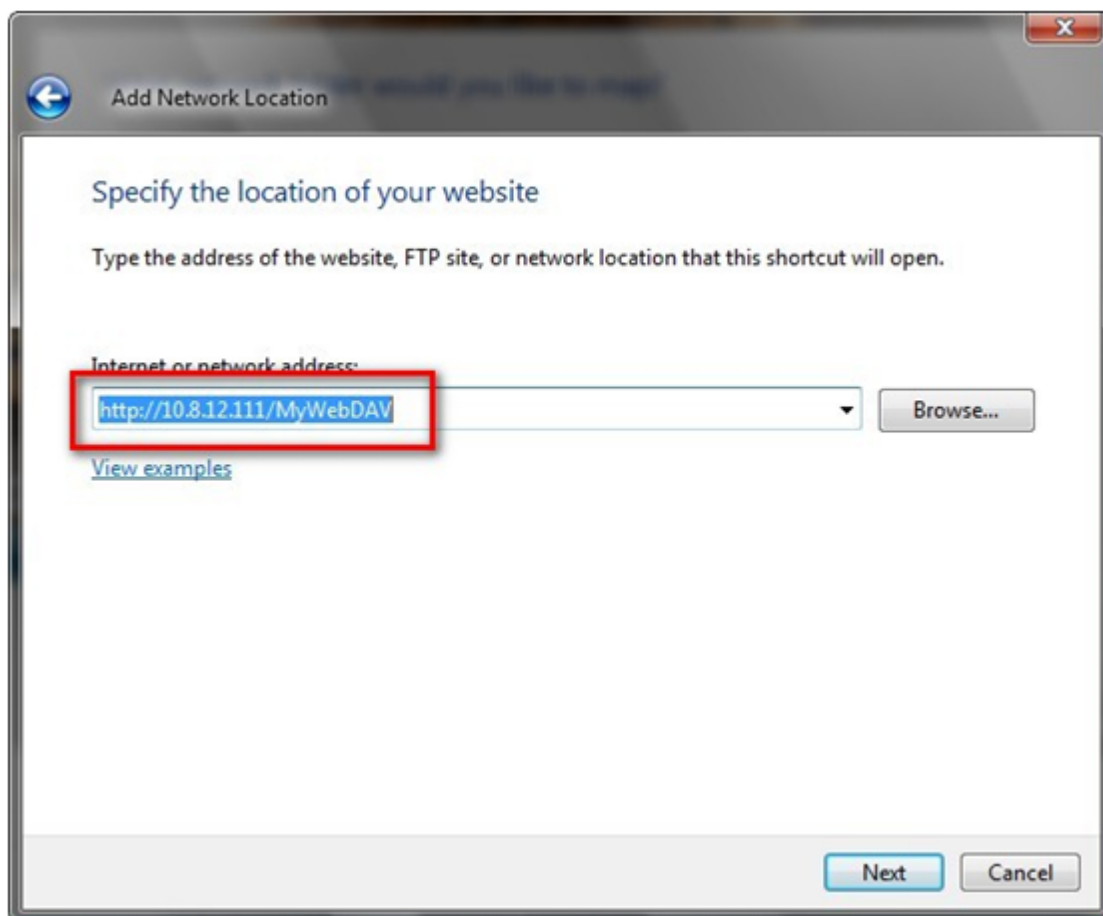


3. Select 'Choose a custom network location'.



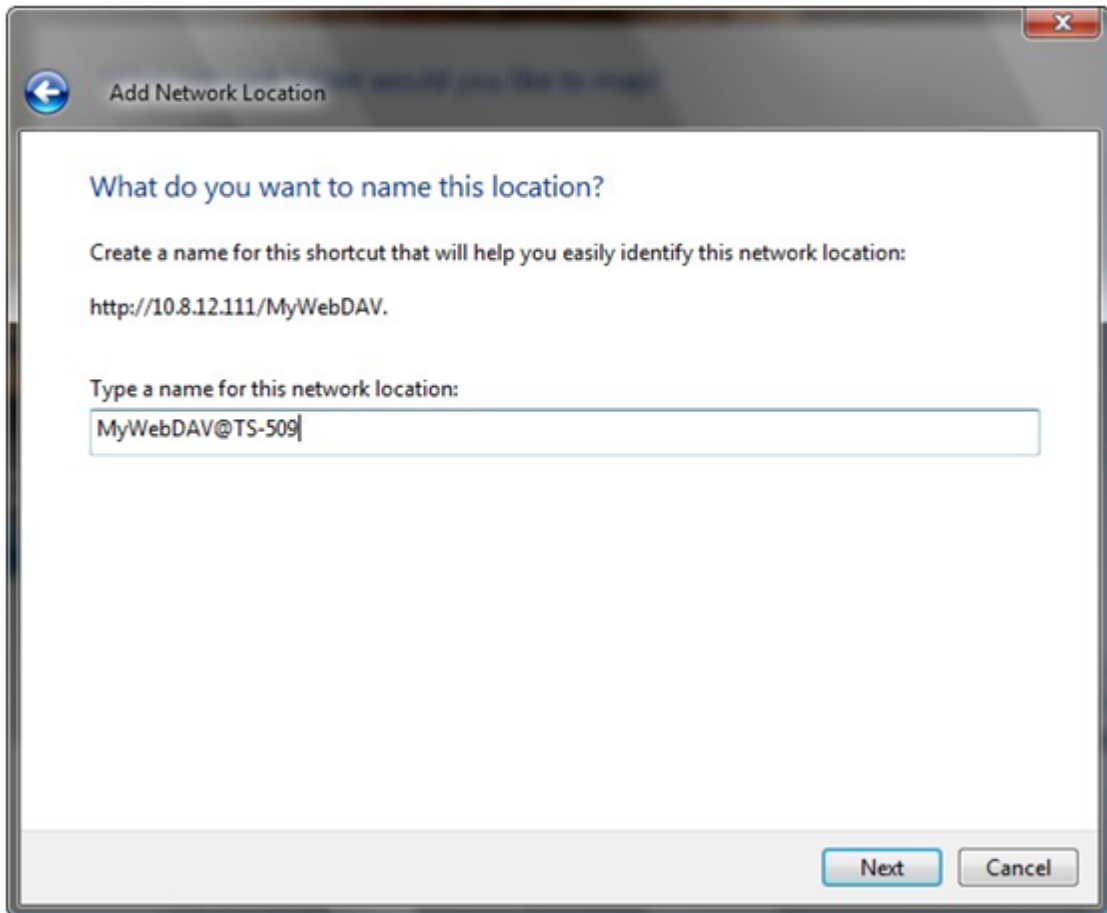


4. Enter the URL of your NAS with the share folder name.  
Format: `http://NAS_IP_or_HOST_NAME/SHARE_FOLDER_NAME`

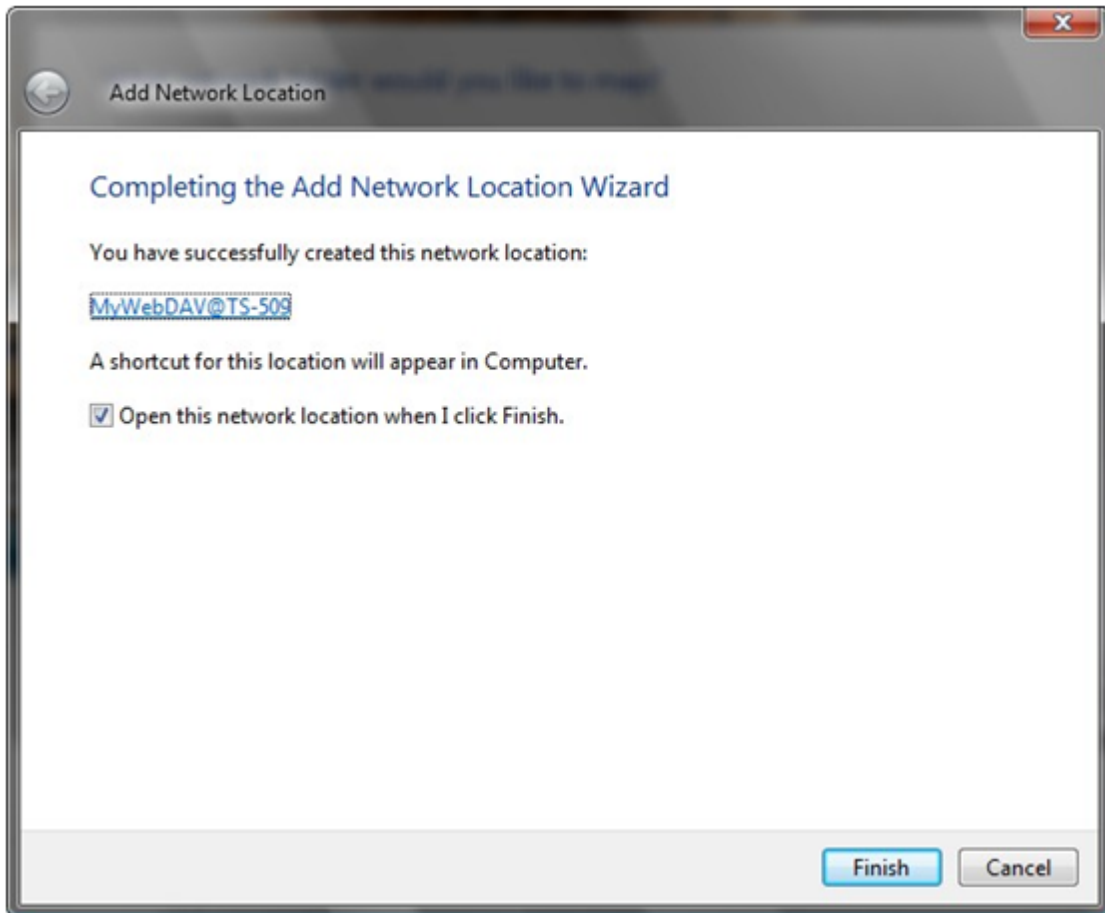


5. Enter the user name and password which has the WebDAV access right to connect to this share folder.

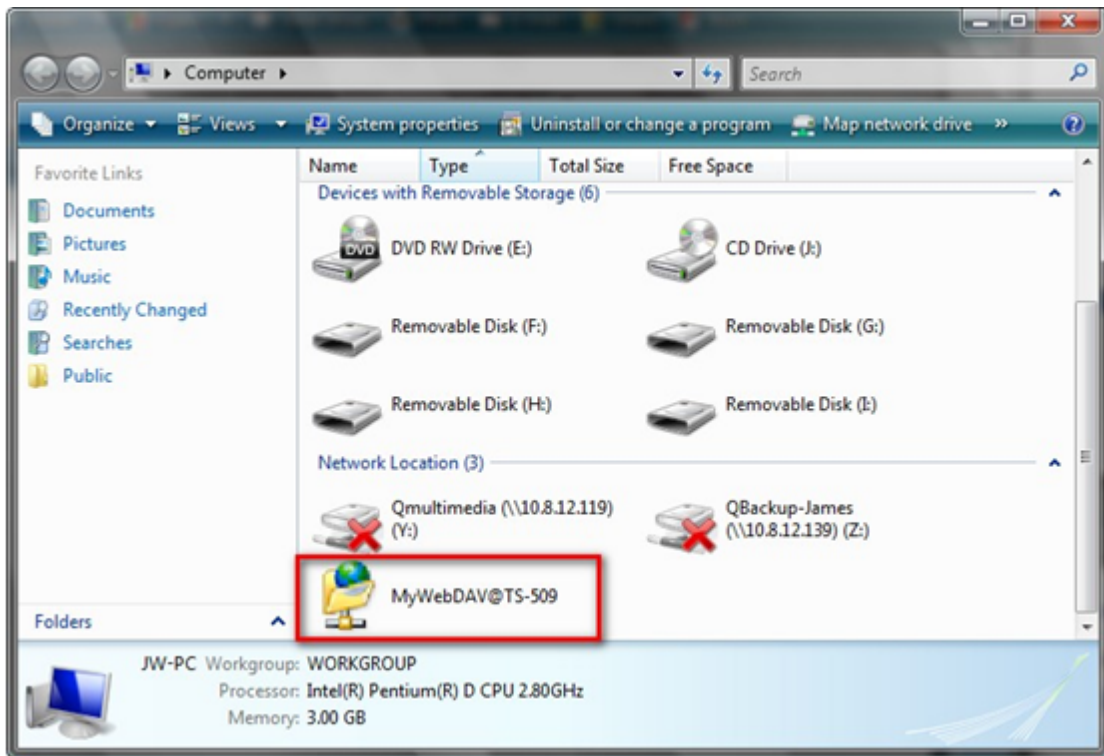
6. Type a name for this network location.



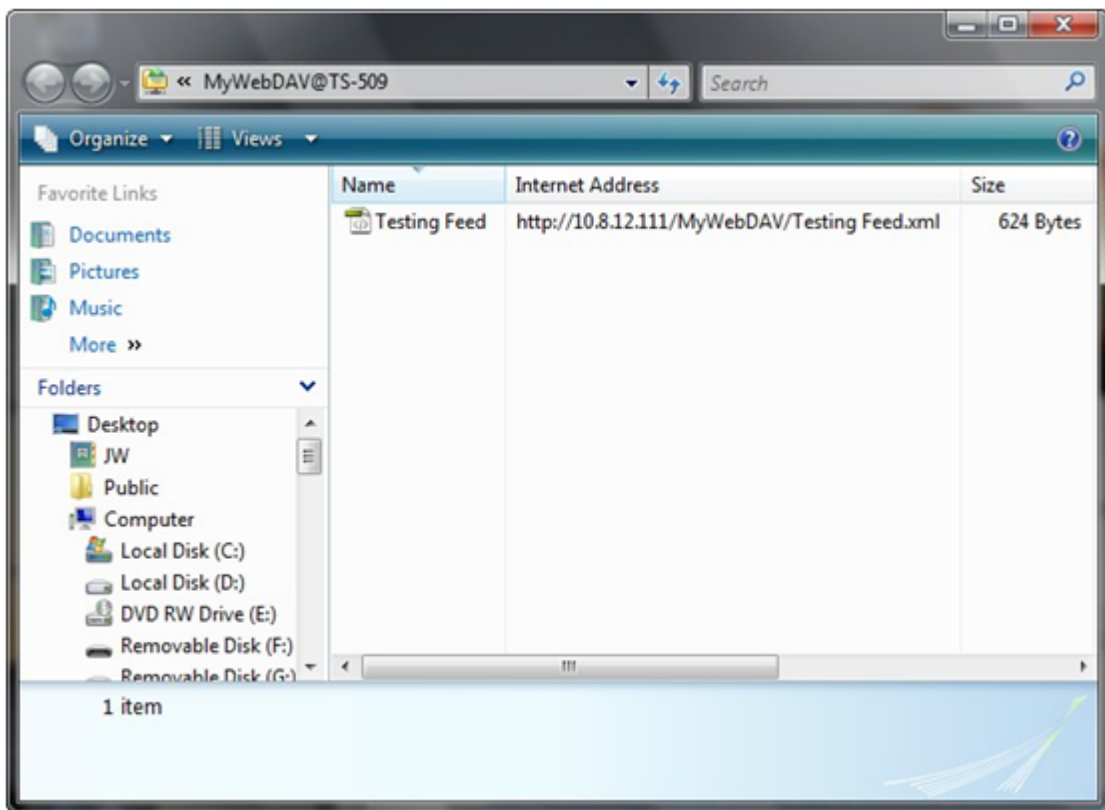
7. The Web folder has been successfully created.



8. You can locate the web folder in the 'Network Location' section in 'Computer'.



9. You can connect to the share folder though this link via HTTP/WebDAV.



## Mac OS X

Follow the steps below to connect to your NAS via WebDAV on Mac OS X.

Client Operating System: Mac OS X Snow Leopard (10.6.1)

1. Open 'Finder' > 'Connect to Server', and enter the URL of the share folder.

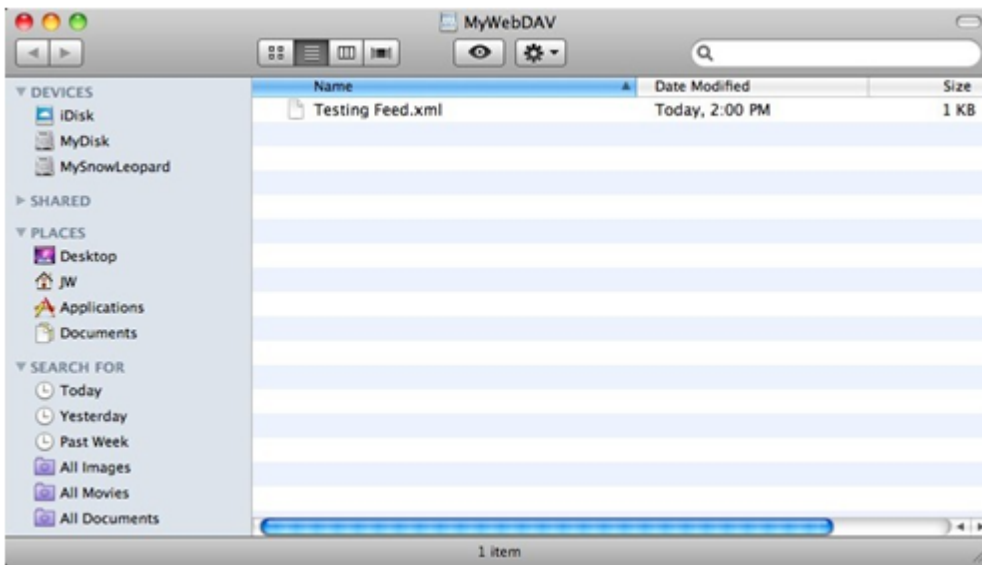
Format: `http://NAS_IP_or_HOST_NAME/SHARE_FOLDER_NAME`



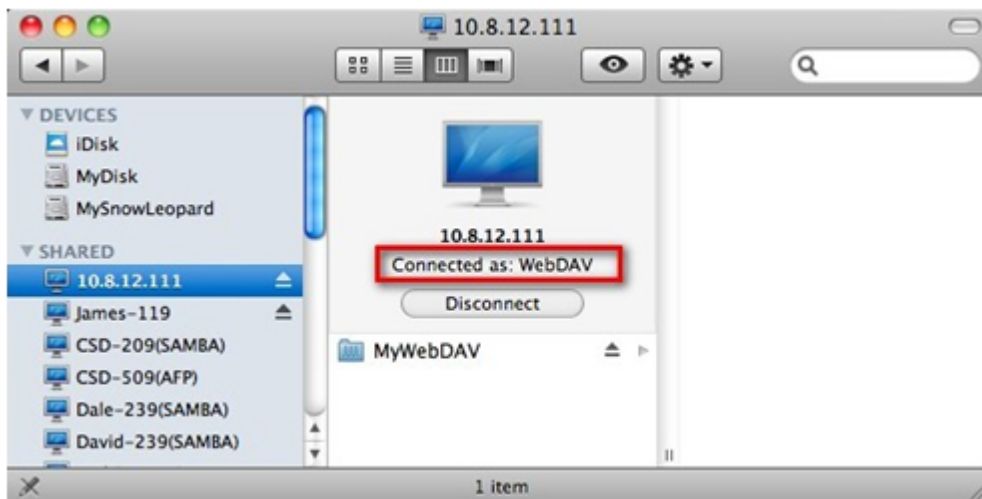
2. Enter the user name and password which has the WebDAV access right to connect to this share folder.



3. You can connect to the share folder through this link via HTTP/WebDAV.



4. You can also find the mount point in the 'SHARED' category in Finder and make it one of the login items.



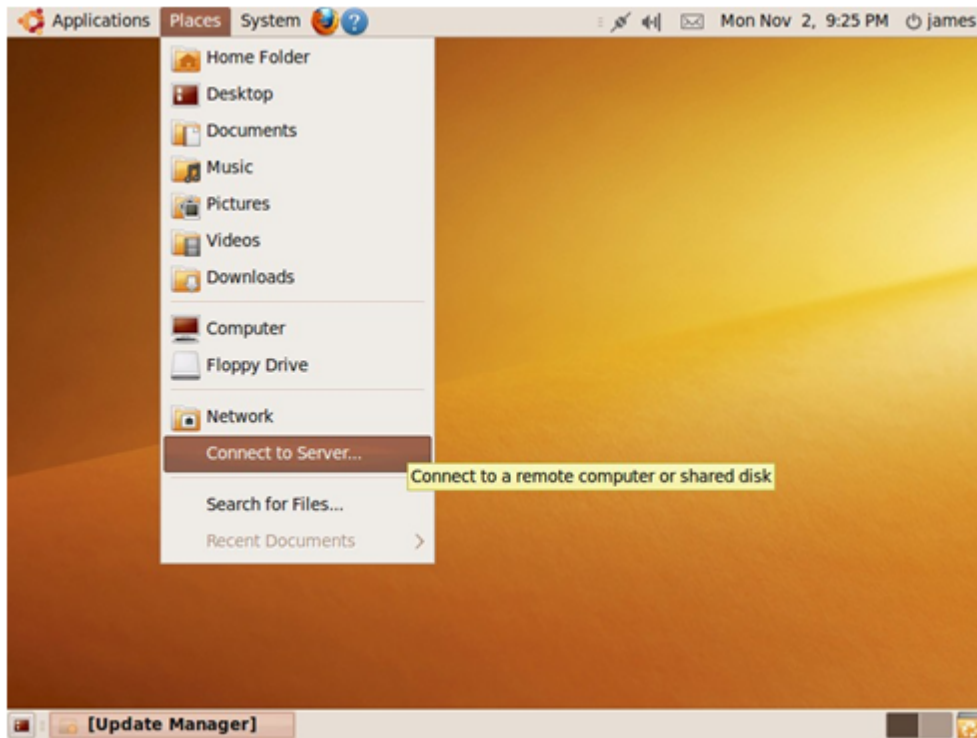
Note that the instructions above are based on Mac OS X 10.6, and can be applied to 10.4 or later.

## Ubuntu

Follow the steps below to connect to your NAS via WebDAV on Ubuntu.

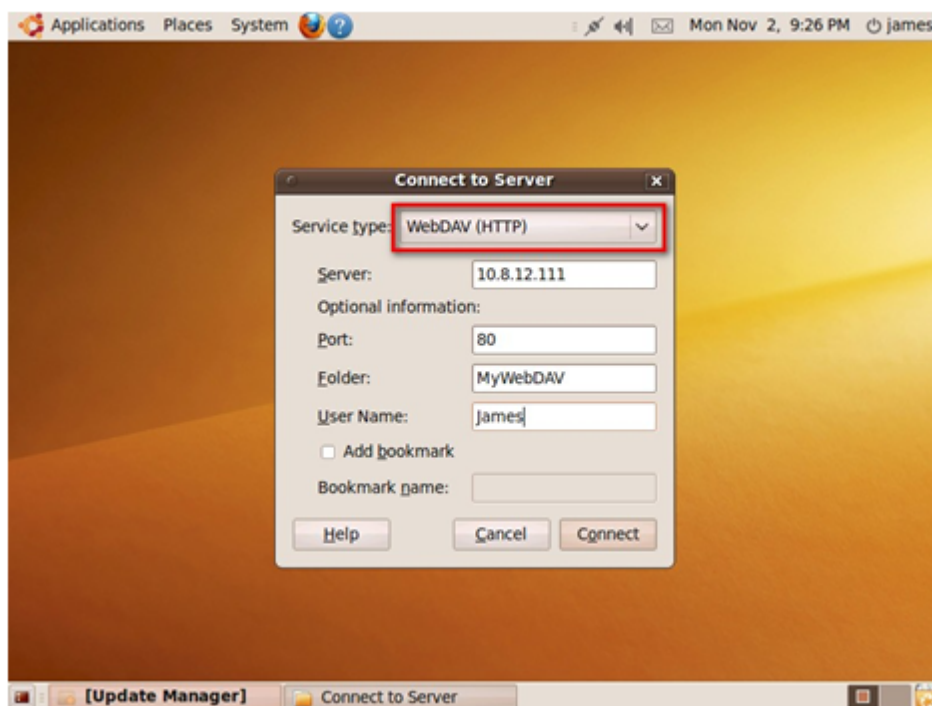
Client Operating System: Ubuntu 9.10 Desktop

1. Open 'Places' > 'Connect to Server...'

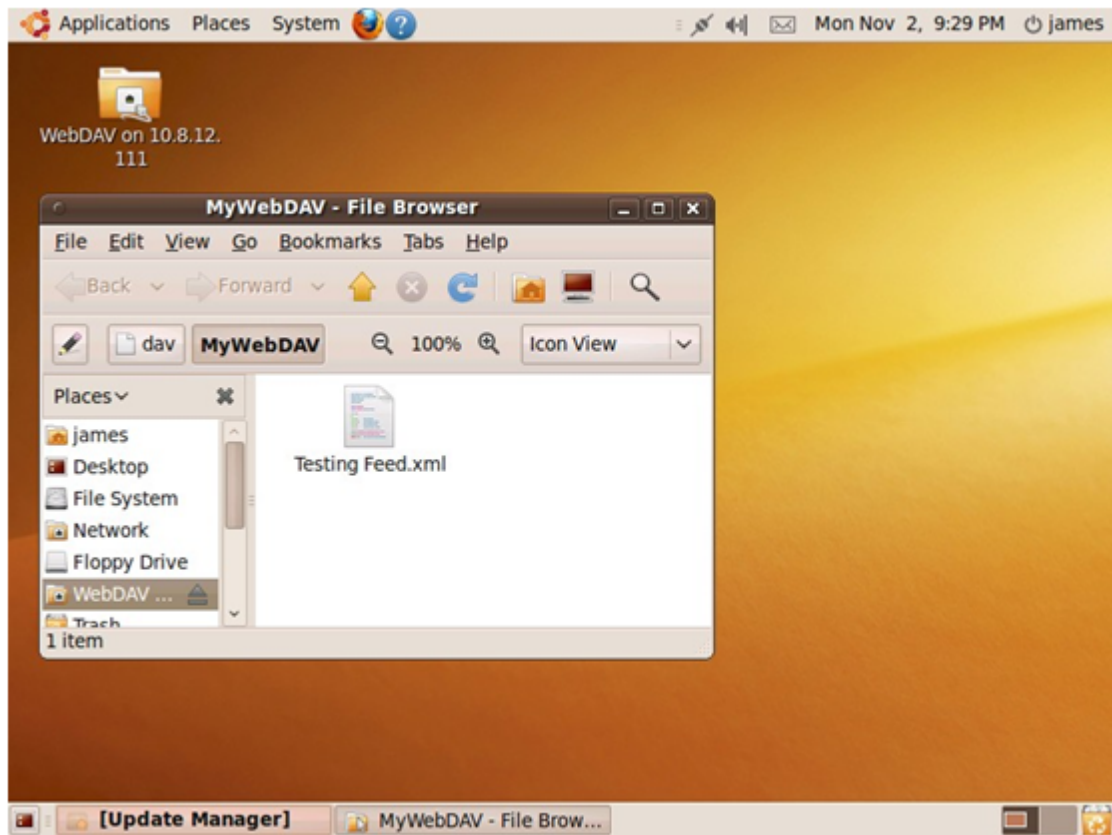




2. Select 'WebDAV (HTTP)' or 'Secure WebDAV (HTTPS)' for the Service type according to your NAS settings and enter your host information. Enter the user name and password which has the WebDAV access right to connect to this share folder. Click 'Connect' to initialize the connection.



3. This WebDAV connection has been established successfully, a linked folder will be created on the desktop automatically.



## MySQL Management

You may install phpMyAdmin software and save the program files in the 'Web' share folder of the NAS. You can change the folder name and connect to the database by entering the URL in the browser.

**Note:** The default user name of MySQL is 'root'. The password is 'admin'. Please change your root password immediately after logging in to the phpMyAdmin management interface.

## SQLite Management

Follow the steps below or refer to the INSTALL file in the downloaded SQLiteManager-\*.tar.gz? to install SQLiteManager.

- (1) Unpack your downloaded file SQLiteManager-\*.tar.gz.
- (2) Upload the unpacked folder SQLiteManager-\* to \\NAS IP\Web\ or \\NASIP\Qweb.
- (3) Open your web browser and go to [http://NAS IP/SQLiteManager-\\*/](http://NAS IP/SQLiteManager-*/).

?: The symbol '\*' refers to the version number of SQLiteManager.

## 6.7.1 Virtual Host

---

Virtual host is a web server technique that provides the capability to host more than one domain (website) on one physical host offers a cost-effective solution for personal and small business with such need. You can host multiple websites (maximum 32) on the NAS with this feature.

In this tutorial we will use the information provided in the table below as the reference guide.

Host name	WAN/ LAN IP and port	Document root	Demo web application
site1.mysite.com	WAN IP: 111.222.333.444 LAN IP: 10.8.12.45 (NAS)	/Qweb/ site1_mysite	Joomla!
site2.mysite.com	Port: 80 (NAS)	/Qweb/ site2_mysite	WordPress
www.mysite2.com		/Qweb/ www_mysite2	phpBB3

Before you start, make sure you have checked the following items:

- Web Server  
Enable Web Server in 'Network Services' > 'Web Server'.
- DNS records  
The host name must point to the WAN IP of your NAS and you can normally configure this from your DNS service providers.
- Port forwarding  
If the web server listens on port 80 you need to configure port forwarding on your router to allow inbound traffic from port 80 to the LAN IP (10.8.12.45) of your NAS.
- SSL certificate import  
If you are going to enable SSL connection for the website and intend to use your own trusted SSL certificates you may import the certificate from within the administration backend under 'System Administration' > 'Security' > 'Import SSL Secure Certificate'.

Follow the steps below to use virtual host.

1. Select 'Enable Virtual Host' and click 'Apply'.
2. Click 'Create New Virtual Host'.

**WEB SERVER**    **VIRTUAL HOST**

**Virtual Host**

After enabling this function, you can create multiple websites by uploading Web files to each folder.

Enable Virtual Host


**APPLY**

**Create New Virtual Host**

<input type="checkbox"/>	Host Name	Folder Name	Protocol	Port	Action
<input type="checkbox"/>					<b>Delete</b>

3. Enter the host name and specify the folder (under Web or Qweb) where the web files will be uploaded to.
4. Specify the protocol (HTTP or HTTPS) for connection. If you select HTTPS, make sure the option 'Enable Secure Connection (SSL)' in Web Server has been turned on.
5. Specify the port number for connection.
6. Click 'Apply'.
7. Continue to enter the information for the rest of the sites you want to host on the NAS.

Modify Virtual Host
✕



## Modify Virtual Host

---

**Host Name:**

**Folder Name:**

**Protocol:**  HTTP  HTTPS

**Port:**

Step 1 of 1

APPLY
CANCEL

WEB SERVER
VIRTUAL HOST

**Virtual Host**

After enabling this function, you can create multiple websites by uploading Web files to each folder.

Enable Virtual Host

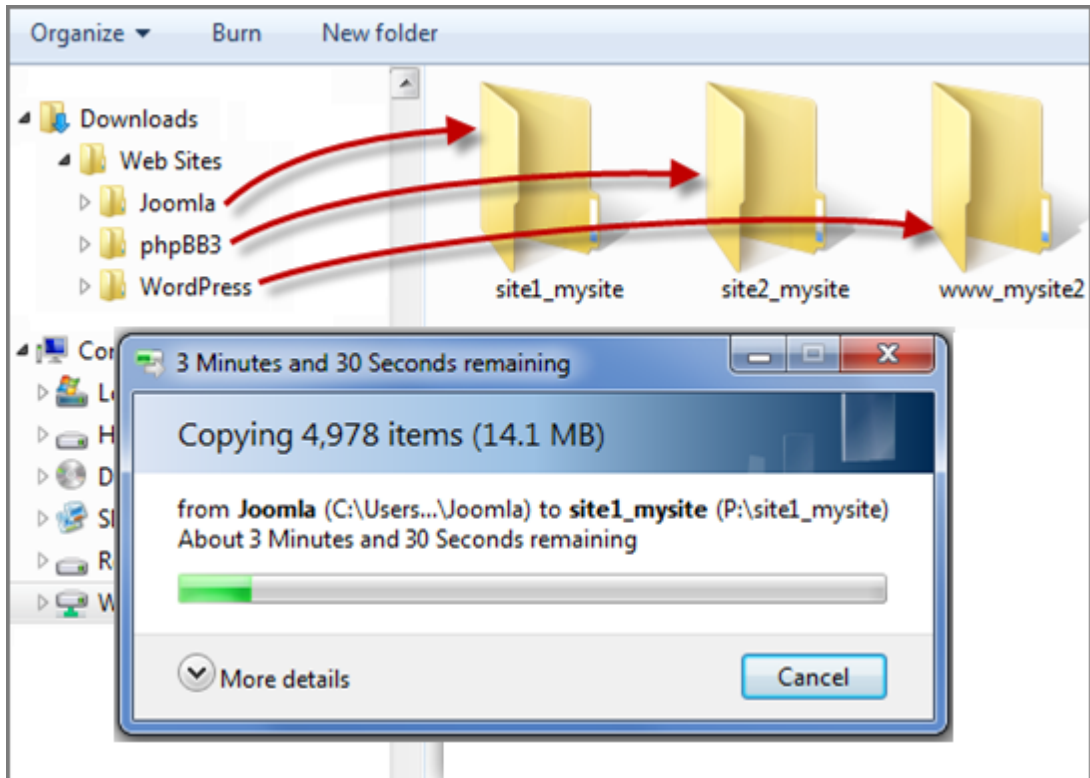
APPLY

+ Create New Virtual Host

	Host Name	Folder Name	Protocol	Port	Action
<input type="checkbox"/>	site1.mysite.com	/Qweb/site1_mysite	HTTP	80	
<input type="checkbox"/>	site2_mysite.com	/Qweb/site2_mysite	HTTP	80	
<input type="checkbox"/>	www.mysite2.com	/Qweb/www_mysite2	HTTP	80	

- Delete

8. Create a folder for each website (site1\_mysite, site2\_mysite, and www\_mysite2) and start transferring the website files to the corresponding folders.



Once the files transfers complete point your web browser to the websites by `http://NAS_host_name` or `https://NAS_host_name` according to your settings. In this example, the URLs are:

`http://site1.mysite.com`

`http://site2.mysite.com`

`http://www.mysite2.com`

You should see the Joomla!, phpBB3, and WordPress web pages respectively.

## 6.8 Network Service Discovery

---

### UPnP Discovery Service

When a UPnP device is added to the network, the UPnP discovery protocol allows the device to advertise its services to the control points on the network.

By enabling UPnP Discovery Service, the NAS can be discovered by any operating systems that support UPnP.

The screenshot shows a web interface for configuring network services. At the top, the title "Network Service Discovery" is displayed in green. Below the title, there are two tabs: "UPNP DISCOVERY SERVICE" (which is selected and highlighted in blue) and "BONJOUR". Under the "UPNP DISCOVERY SERVICE" tab, the heading "UPnP Discovery Service" is shown. Below this heading, a descriptive text states: "After enabling this service, your NAS can be discovered by any operating systems that support UPnP." A checkbox labeled "Enable UPnP Service" is checked. In the bottom right corner of the configuration area, there is an "APPLY" button.



## Bonjour

By broadcasting the network service(s) with Bonjour, your Mac will automatically discover the network services, such as FTP, running on the NAS without the need to enter the IP addresses or configure the DNS servers.

**Note:** You have to activate the services on their setup pages and then turn them on in this section so that the NAS will advertise this service with Bonjour.

**UPNP DISCOVERY SERVICE**    **BONJOUR**

---

**Bonjour**

Before broadcasting the following services through Bonjour, please DO NOT forget to enable these services first.

- Web Administration  
Service Name:
- SAMBA (Server Message Block over TCP/IP)  
Service Name:
- AFP (Apple File Protocol over TCP/IP)  
Service Name:
- SSH  
Service Name:
- FTP (File Transfer Protocol)  
Service Name:
- HTTPS (Secure web server)  
Service Name:
- UPNP (DLNA media server)  
Service Name:
- QMobile for iPhone/iPod Touch.  
Service Name:

## 7. Web File Manager

---

To connect to the files on the NAS by a web browser, enable Web File Manager. If the NAS is connected to the Internet and uses a valid IP address, you can connect to the NAS by web browser from anywhere.

To use Web File Manager, go to 'Applications' > 'Web File Manager'. Enable the service.



Web File Manager

Web File Manager

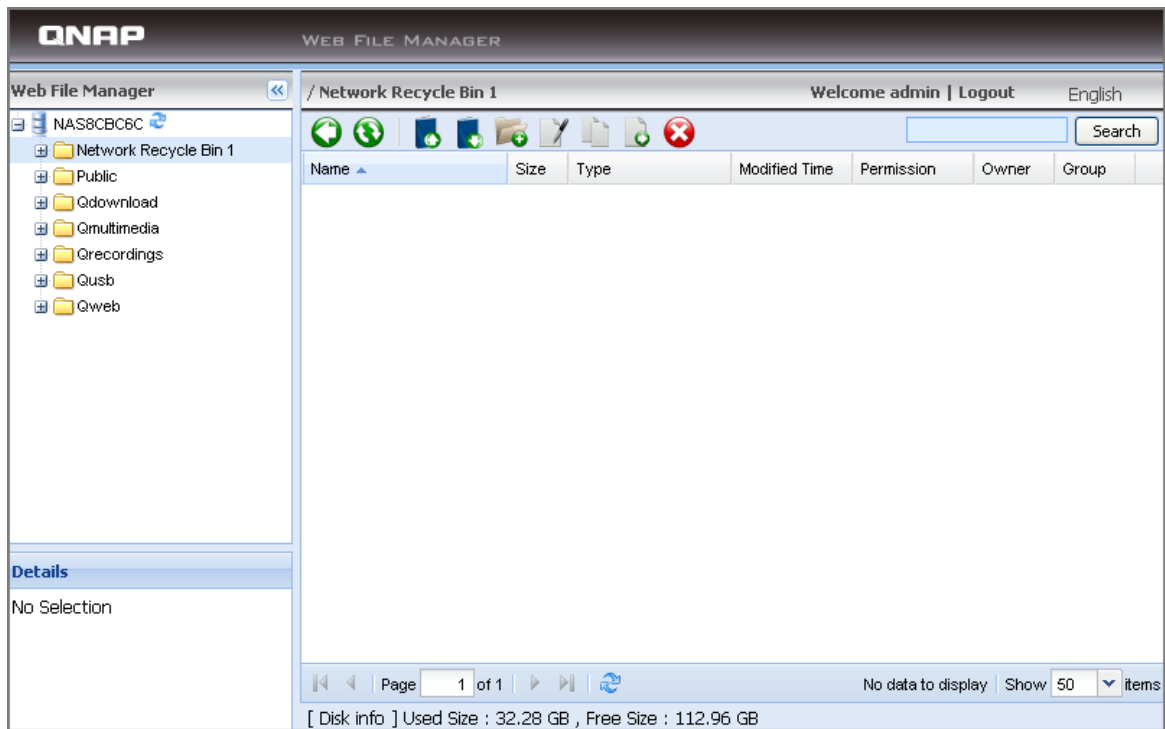
- Enable Web File Manager
- Show service link on the login page

APPLY

Click 'Web File Manager' on the top or on the login page of the NAS to connect to the Web File Manager. If you login the service from the login page of the NAS, you are required to enter the user name and password.


**Note:** Make sure a network share has been created before using Web File Manager.

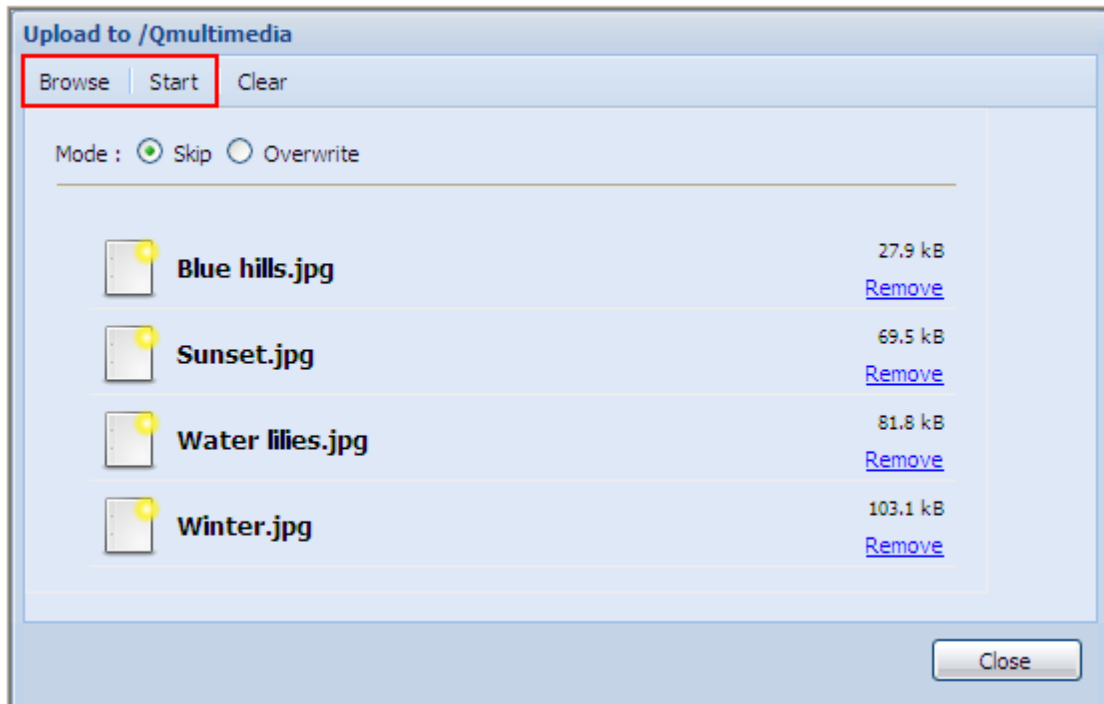
You can organize the network share folders of the NAS. With Web File Manager, you can upload, download, rename, move, copy, or delete the files and folders in the network shares.



## Upload file


To use this feature, install Adobe Flash plugin for your web browser.

- i. Open the folder to upload file to. Click .
- ii. Click 'Browse' to select the file(s).
- iii. Select to skip or overwrite existing file in the folder.




- iv. Click 'Start'.


## Download file

- i. Select a file or folder to download.
- ii. Right click the mouse and select 'Download' or click  to download the file.


## Create folder

- i. Select a network share or folder in which you want to create a new folder.
- ii. Click  (Create Folder).
- iii. Enter the name of the new folder and click 'OK'.


### **Rename file or folder**

- i. Select a file or folder to rename.
- ii. Click  (Rename).
- iii. Enter the new file or folder name and click 'OK'.


### **Copy files or folders**

- i. Select the files or folders to copy.
- ii. Click  (Copy).
- iii. Select the destination folder.
- iv. Select to skip or overwrite the existing file in the destination folder. Click 'OK'.

### **Move files or folders**

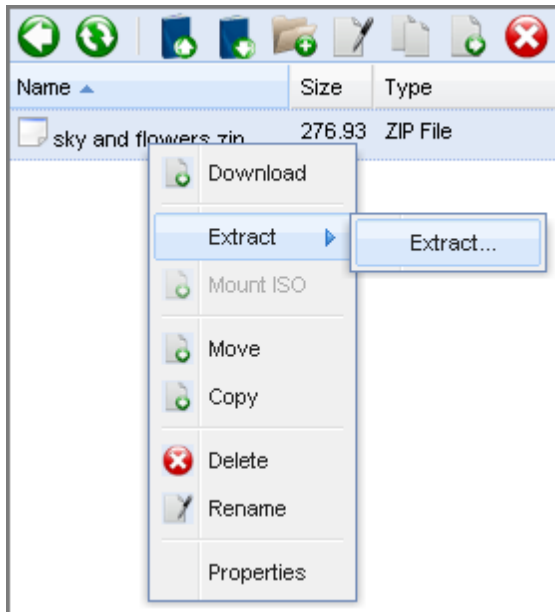
- i. Select the files or folders to move.
- ii. Click  (Move).
- iii. Select the destination folder.
- iv. Select to skip or overwrite the existing file in the destination folder. Click 'OK'.

### **Delete file or folder**

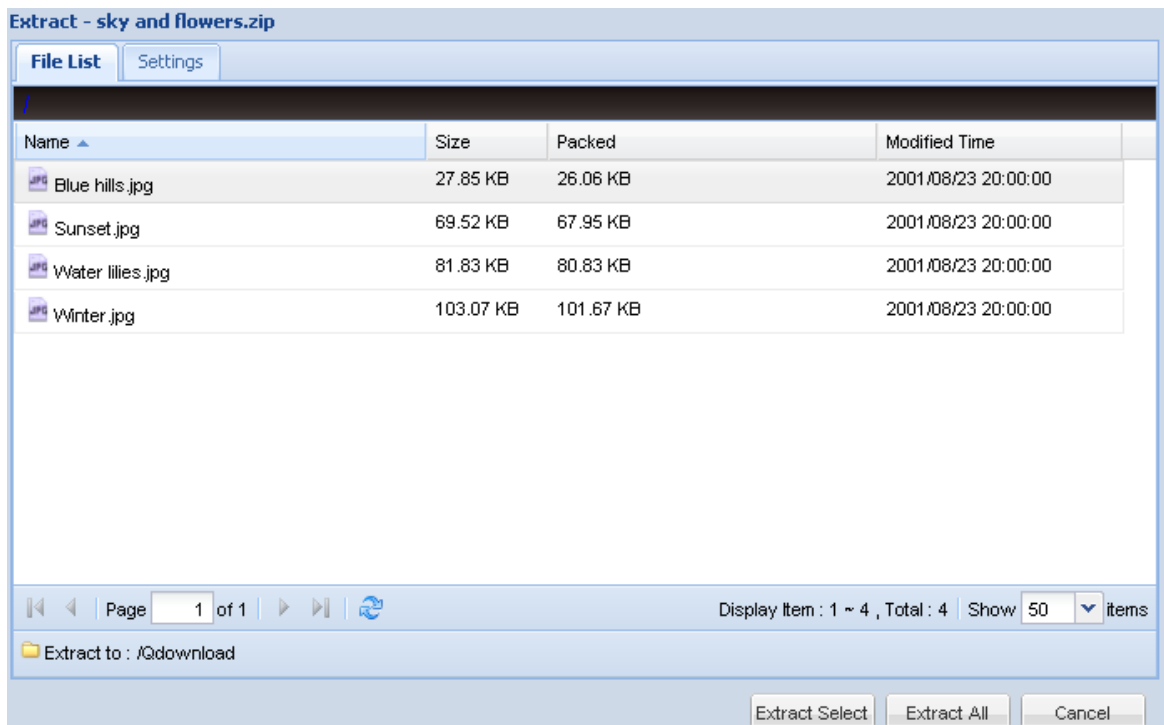
- i. Select a file or folder to delete.
- ii. Click  (Delete) on the toolbar.
- iii. Confirm to delete the file or folder.

## Extract files

- i. To extract a zipped file on the NAS, right click the zipped file and select 'Extract'.



- ii. Select the files to extract and configure the extraction settings.



## Files/ Folders Search

Web File Manager supports smart search of files, sub-folders, and folders on the NAS. You can search a file or folder by all or part of the file or folder name, or by the file extension, for example, AVI, MP3.

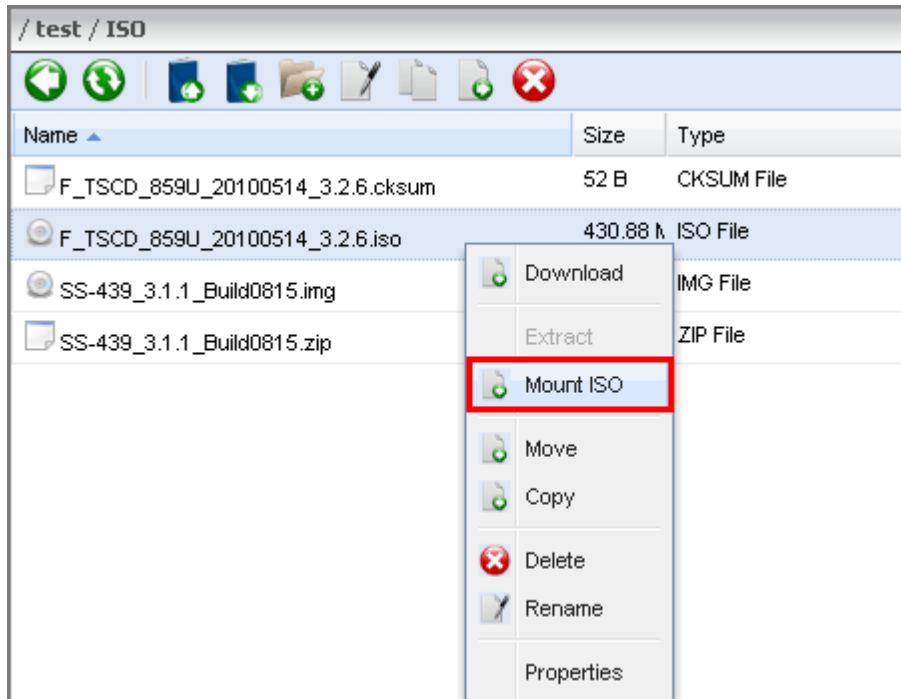
The screenshot displays the QNAP Web File Manager interface. The left sidebar shows a tree view of the file system with 'Qmultimedia / video' selected. The main area shows a search results table for the folder '22'. A search bar at the top right contains the text '22' and a 'Search' button. The table lists various AVI files with their names, sizes, types, modified times, permissions, owners, and groups. The status bar at the bottom indicates the disk usage: [ Disk info ] Used Size : 22.95 GB , Free Size : 122.28 GB.

Name	Size	Type	Modified Time	Permission	Owner	Group
22		Folder	2010.05/17 19:04:46	777 (rwxrwxrwx)	admin	administrators
2010-05-05 22-00-07~22-01-09.avi	1.96 MB	AVI File	2010.05/17 15:27:12	644 (rw-r--r--)	httpdusr	everyone
2010-05-05 22-00-07~22-01-09.AVI	1.96 MB	AVI File	2010.05/05 22:01:09	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-01-09~22-02-10.avi	2 MB	AVI File	2010.05/05 22:02:11	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-02-10~22-03-11.avi	2 MB	AVI File	2010.05/05 22:03:12	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-03-11~22-04-00.avi	1.56 MB	AVI File	2010.05/05 22:04:01	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-04-00~22-05-02.avi	1.92 MB	AVI File	2010.05/05 22:05:02	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-05-02~22-06-03.avi	1.94 MB	AVI File	2010.05/05 22:06:03	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-06-03~22-07-05.avi	1.9 MB	AVI File	2010.05/05 22:07:05	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-07-05~22-08-06.avi	1.93 MB	AVI File	2010.05/05 22:08:07	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-08-06~22-09-07.avi	1.89 MB	AVI File	2010.05/05 22:09:08	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-09-07~22-10-08.avi	1.86 MB	AVI File	2010.05/05 22:10:09	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-10-08~22-11-11.avi	1.9 MB	AVI File	2010.05/05 22:11:11	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-11-11~22-12-00.avi	1.49 MB	AVI File	2010.05/05 22:12:00	666 (rw-rw-rw-)	admin	administrators
2010-05-05 22-12-00~22-13-01.avi	1.88 MB	AVI File	2010.05/05 22:13:02	666 (rw-rw-rw-)	admin	administrators

## Mount ISO Shares

To mount an ISO file on the NAS as a share folder, follow the steps below.

Locate the ISO file on the NAS. Right click the file and select 'Mount ISO'.



Enter the share folder name and click 'OK'.

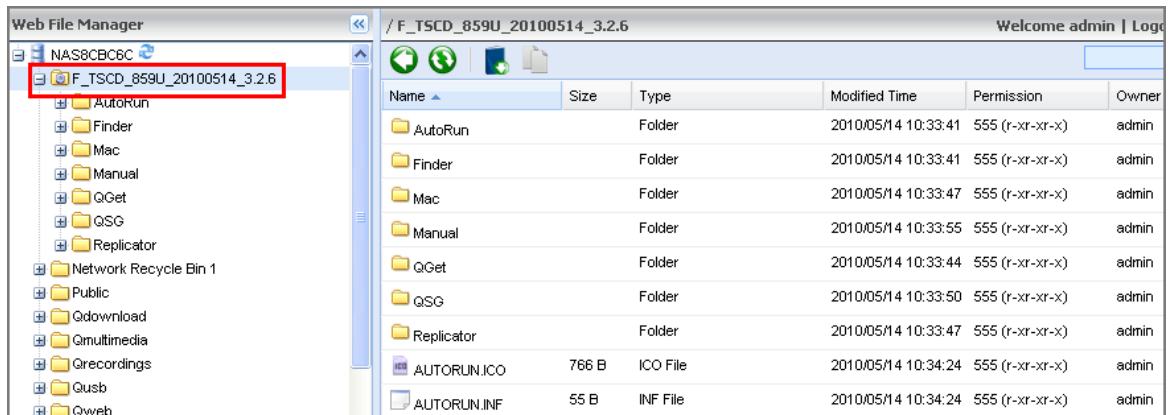


Click 'OK' to confirm.

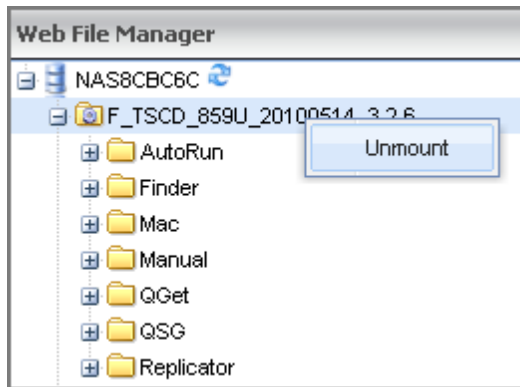




The ISO share folder will appear on the share folder list. You can access the contents of the ISO image file. You can login the NAS web interface with an administrator account and specify the access rights of the users in 'Access Right Management' > 'Share Folders' > 'ISO Share Folders'.



To unmount the share folder, right click the folder name and select 'Unmount'. Click 'Yes' to confirm and then click 'OK' to unmount.



## 8. Multimedia Station

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Multimedia Station is a web-based application which lets you play your photos, music, and videos on the NAS by a web browser. You can also share the multimedia files with your friends and publish photos to popular social networking sites such as Facebook, Plurk, Twitter, Blogger, and so on.

To use Multimedia Station, follow the steps below.

1. Go to 'Network Services' > 'Web Server'. Turn on the web server feature. To allow access to Multimedia Station by HTTPS, turn on the option 'Enable Secure Connection (SSL)'.
2. Go to 'Applications' > 'Multimedia Station'. Enable the service. Next, go to the web page of Multimedia Station by [http://NAS\\_IP:80/MSV2/](http://NAS_IP:80/MSV2/) or [https://NAS\\_IP:8081/MSV2/](https://NAS_IP:8081/MSV2/) (secure connection). The port number may be different according to your own settings.

### Multimedia Station

---

**Multimedia Station**

Enable Multimedia Station

Show service link on the login page

After enabling this service, you may click one of the following links to enter Multimedia Station.

<http://10.8.12.46:80/MSV2/>

<https://10.8.12.46:8081/MSV2/>

Rescan media library

Daily start time:  :

**APPLY**

---

**Reset admin password**

Password :

Verify Password :

**OK**

3. The first time you connect to Multimedia Station, enter a new password for the 'admin' account. Then click 'Submit'. If you have created user accounts for the previous version of Multimedia Station, you may select 'Keep existing user accounts' to reserve the user accounts. Note that the user accounts (including admin) of Multimedia Station are different from the system user accounts on the NAS. For security concern, you are highly suggested to set a different password for admin. The password must be 1 to 16 characters long. It can only contain A-Z, a-z, 0-9, -, !, @, #, \$, %, \_.

## Welcome

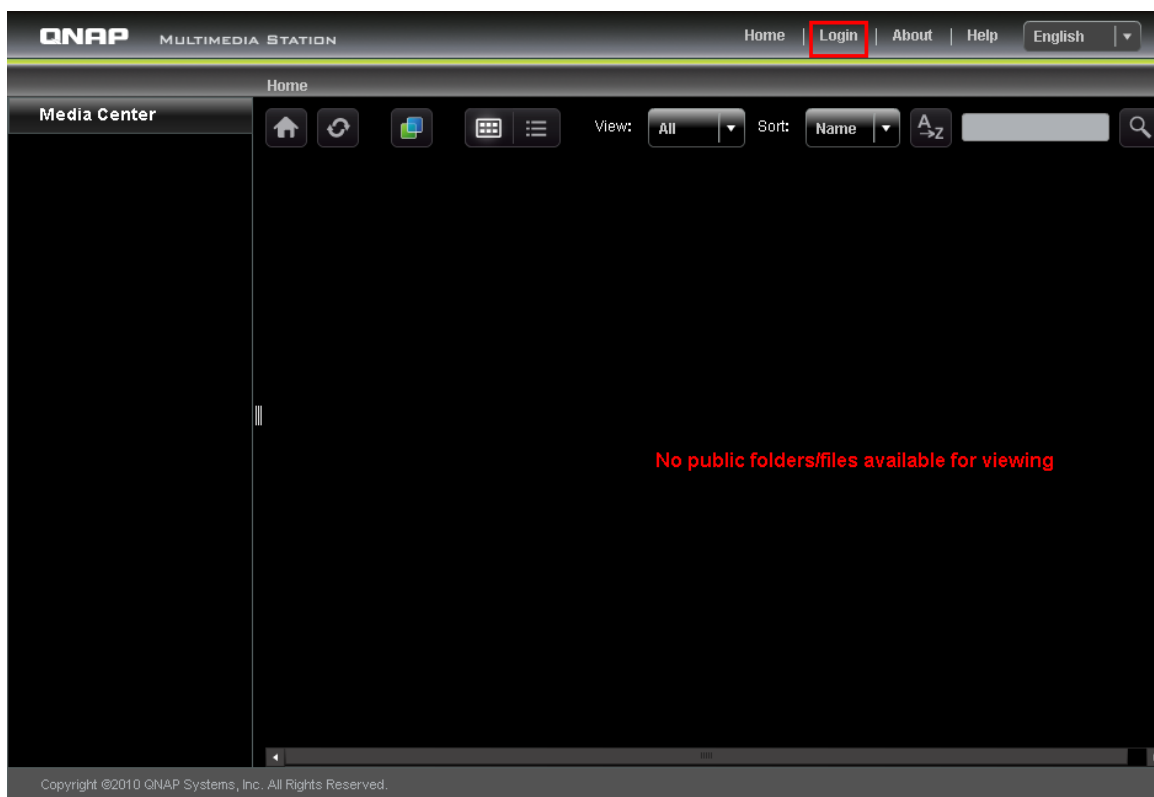
Welcome to Multimedia Station v2. Please enter the new password for the "admin" account and select the option "Keep existing user accounts" to reserve the user accounts and the access right settings of the previous version of Multimedia Station.

Note that the user accounts (including "admin") of Multimedia Station are different from the system user accounts. For security concern, it is suggested to set a different password for "admin".

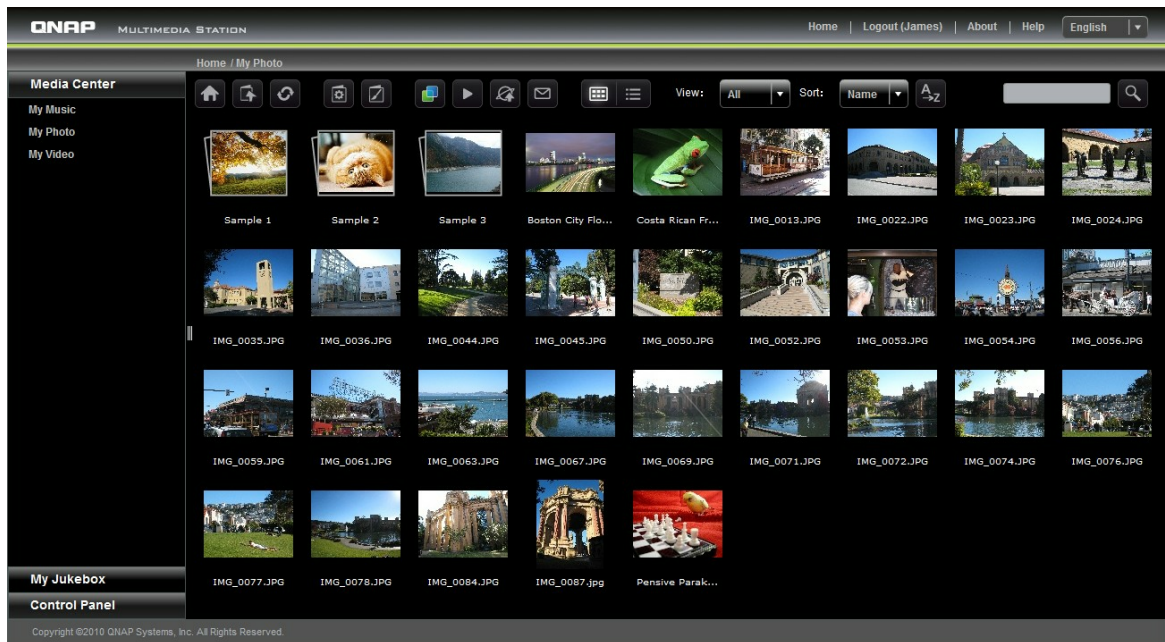
New password :

Verify password :

4. When the page of Multimedia Station is shown, click 'Login'. Enter the user name with access right to this service and the password. If you login as the administrator (admin), you can create new users and configure other advanced settings.



Multimedia Station consists of Media Center, My Jukebox, and Control Panel.



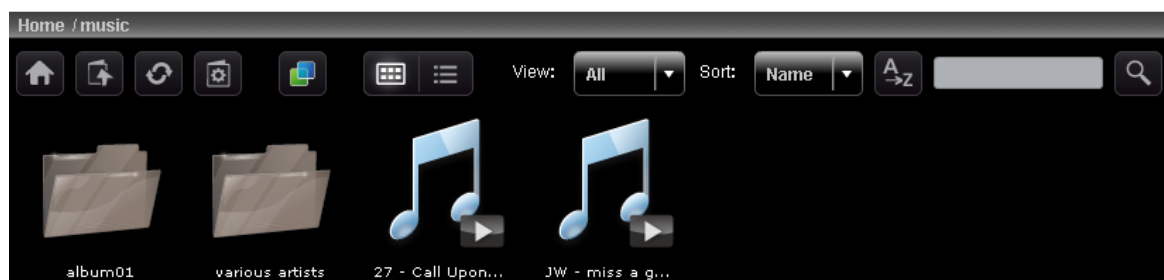
## Media Center











---




The folders and multimedia files of the default network share (Qmultimedia/ Multimedia) of Multimedia Station are shown in Media Center. You can view or play the multimedia contents (images, videos, and audio files) on the NAS on the web browser over LAN or WAN.

### Supported file format

Type	File format
Audio	MP3
Image	JPG/JPEG, GIF, PNG (Animation will not be shown for animated GIF files)
Video	Playback: FLV, MPEG-4 Video (H.264 + AAC) Transcode: AVI, MP4, M4V, MPG, MPEG, RM, RMVB, WMV (Files will be converted into FLV)



	<p>Home</p> <p>Return to the home directory of Multimedia Station</p>
	<p>Parent Directory</p> <p>Return to the parent directory</p>
	<p>Refresh</p> <p>Refresh current directory</p>
	<p>Manage Album*</p> <p>You can: 1. Create new album under the current directory and 2. Add new files to this album by copying or uploading files to this directory.</p>
	<p>Set Album Cover*</p> <p>You can set up the album cover for each album/ directory by specifying one photo in this album/ directory.</p>
	<p>Cooliris</p> <p>Browse your photos in 3-dimensional way with Cooliris. You need to install the Cooliris plug-in for your browser first.</p>
	<p>Slide Show</p> <p>Start slide show. You can set up the photo frame, background music, and animation in the slide show mode.</p>
	<p>Publish*</p> <p>Publish the chosen photos (max. 5 photos) to popular social networking sites. It now supports: Twitter, Facebook, MySpace, Plurk, Windows Live, and Blogger. Note that the album must be set to public (Control Panel &gt; Set Folder Public) before it can be published, and Multimedia Station must be accessible from the Internet. It is suggested to set up the DDNS for the NAS before using this feature.</p>
	<p>E-mail*</p> <p>Send photos (max. 5 photos) to friends by e-mails. Note that you have to set up the SMTP server in the NAS administration console before using this feature.</p>
	<p>Thumbnails</p> <p>You can browse the files in thumbnail view. This is the default view in Multimedia Station.</p>

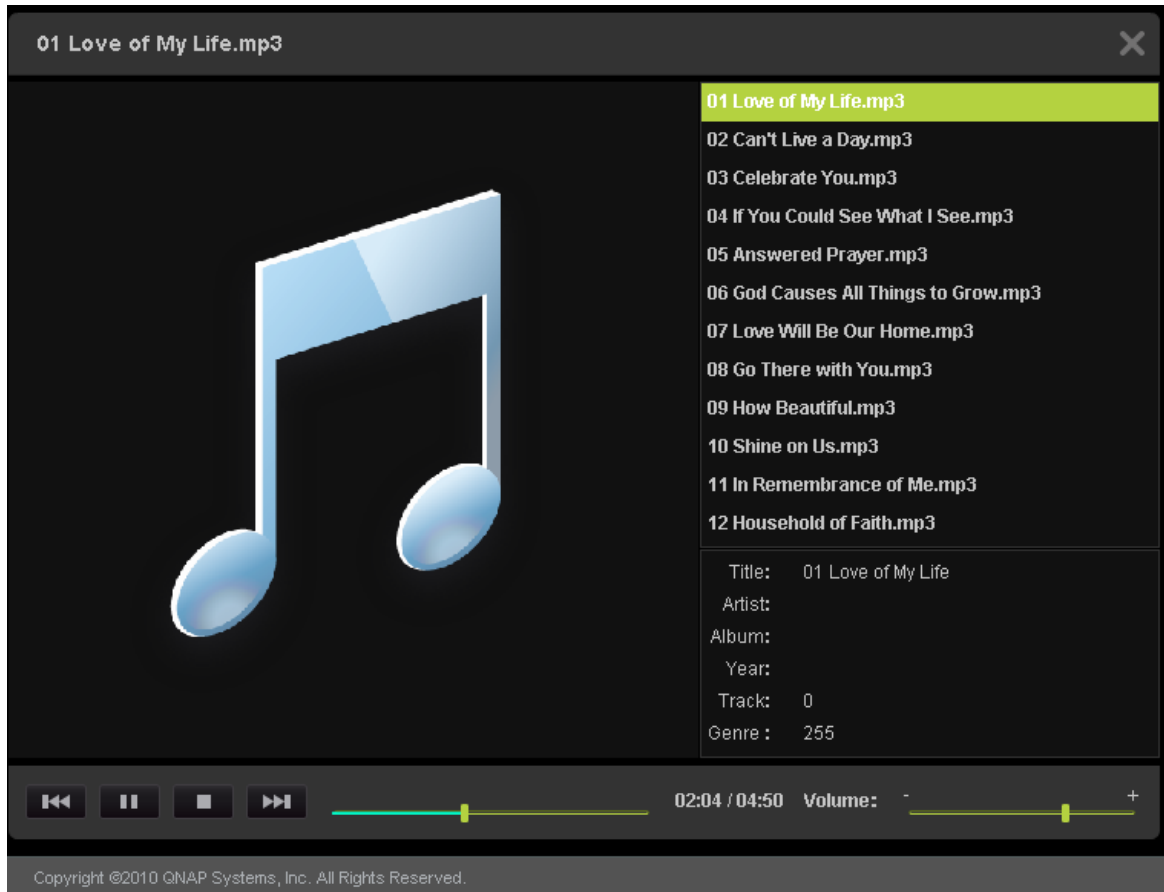
	<p>Details</p> <p>You can browse the files in detailed view. It supports the following functions: Open, Rename, Delete, Download, and Full Image View.</p>
	<p>Sort</p> <p>You can choose to sort files alphabetically in ascending or descending order.</p>
	<p>Search</p> <p>You can search files by this function. Note that it only supports search within the current directory.</p>

\*Options that can be operated by administrators only.



## Play music

The NAS supports playing music files on the web browser. Simply click a file (MP3) on the web page, the NAS will start playing it. If you click a music file in a folder, all other supported music files in the folder will also be shown in the playlist and played. Click 'X' to exit the playback page.



The screenshot displays a music player interface with a dark theme. At the top, the title bar shows "01 Love of My Life.mp3" and a close button (X). The main area is split into two sections: a large blue 3D musical note icon on the left and a playlist on the right. The playlist lists 12 tracks, with the first track, "01 Love of My Life.mp3", highlighted in green. Below the playlist, a metadata section shows the following information:

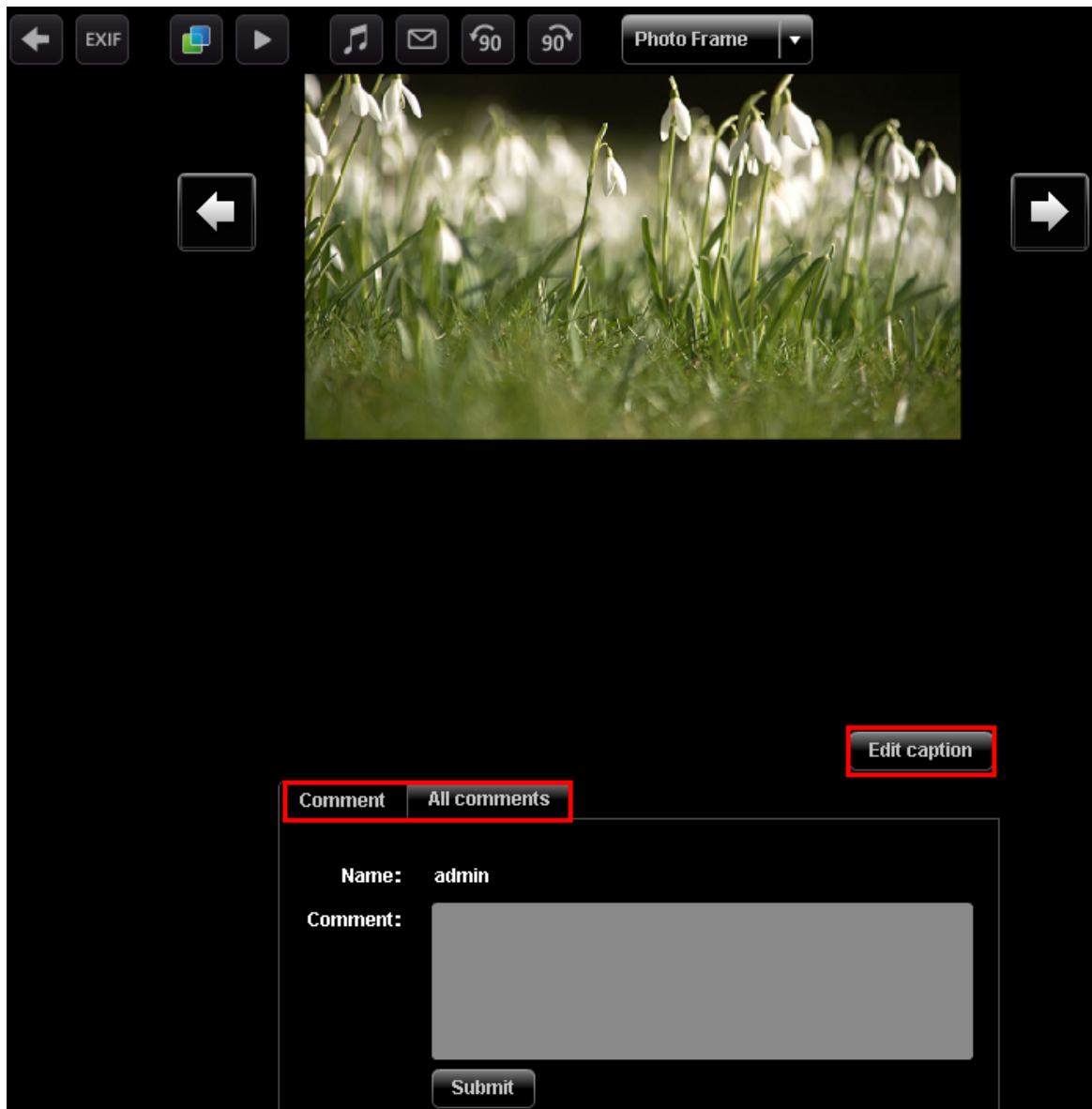
Title:	01 Love of My Life
Artist:	
Album:	
Year:	
Track:	0
Genre :	255

At the bottom, there is a playback control bar with buttons for previous, play/pause, stop, and next. A progress bar shows the current time as 02:04 / 04:50. To the right of the progress bar is a volume control slider with minus and plus signs. At the very bottom, a copyright notice reads: "Copyright ©2010 QNAP Systems, Inc. All Rights Reserved."

## View image files

When viewing an image file, you can click 'EXIF' to view the detailed information such as file name, size, date, and aperture. To add a caption for the file, click 'Edit caption' and enter the description. The description must not exceed 512 characters.

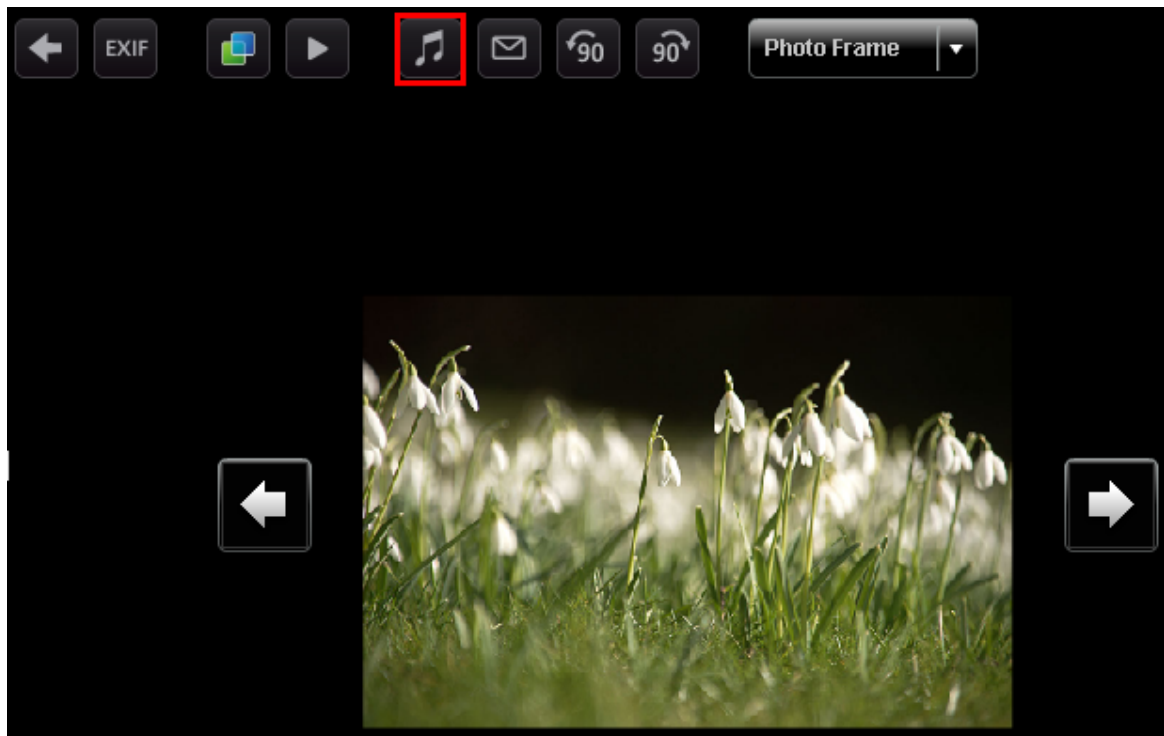
You can also submit your comments on the image file and view the comments from other users on 'All comments'. Each comment cannot exceed 128 characters.



## Set background music

To set the background music of an image file or a folder of image files, make sure you have created a playlist in 'Control Panel' > 'Playlist Editor' (to be introduced later) in Multimedia Station.


Open an image file in Media Center and click .

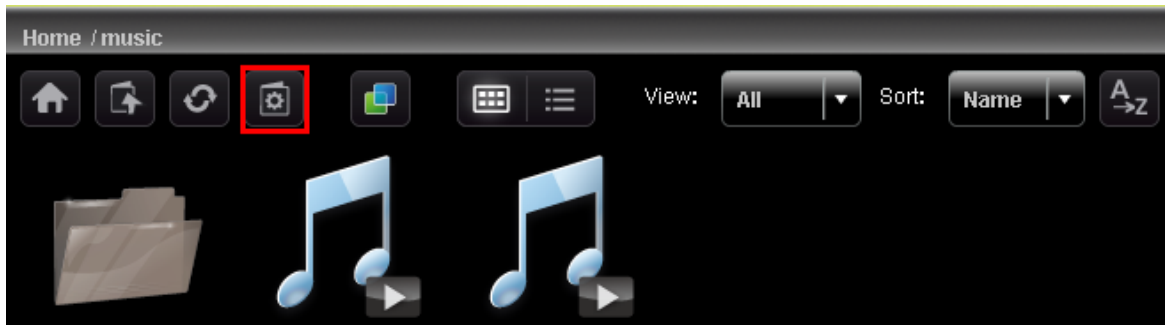


Select the playlist and click 'Save'. To remove the background music, you can select 'No music'.



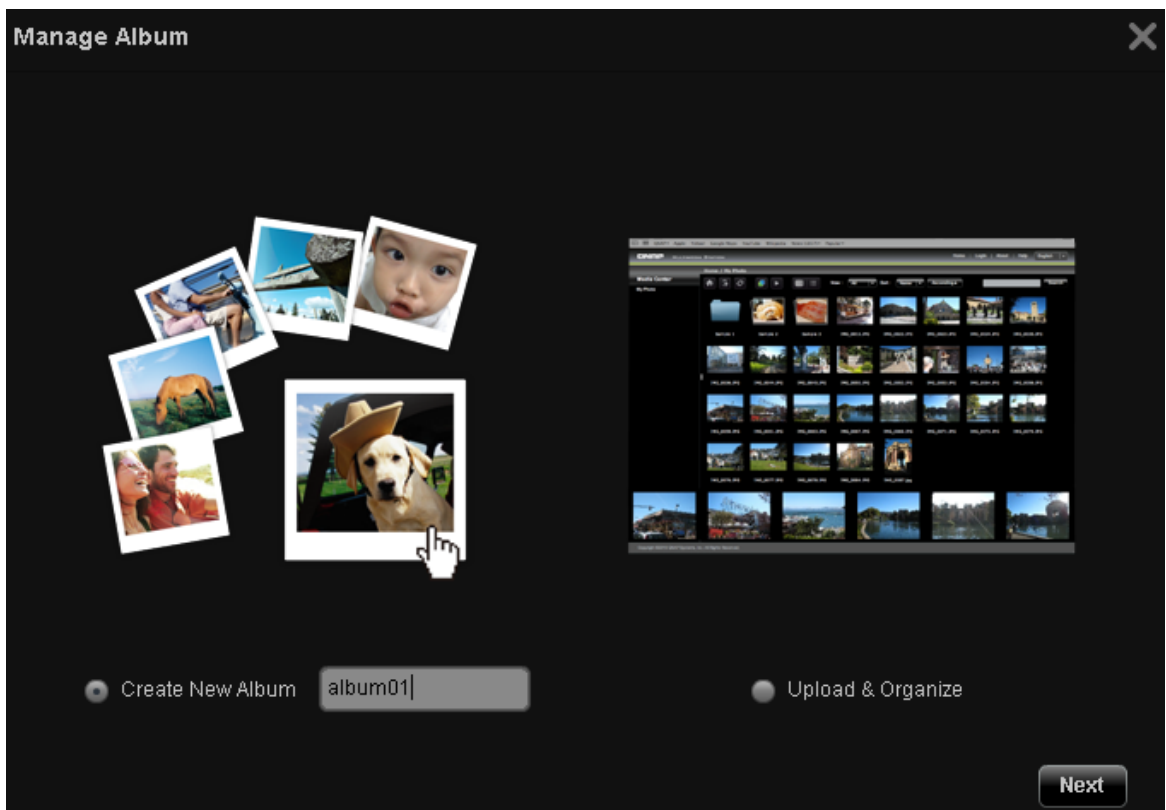
## Create album

To create an album (folder) by the web-based interface on Multimedia Station, locate the directory in Media Center. Click  (Create Album).

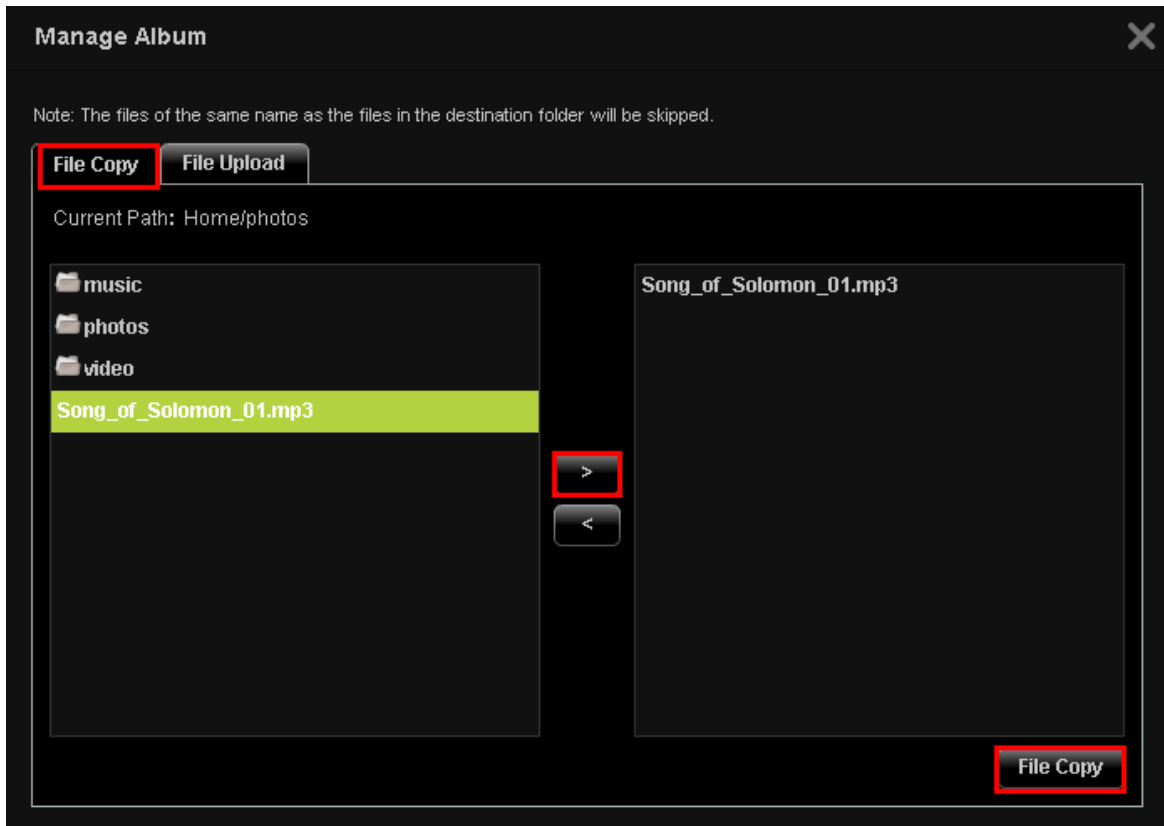


Select 'Create New Album' and enter the album name. Click 'Next'.

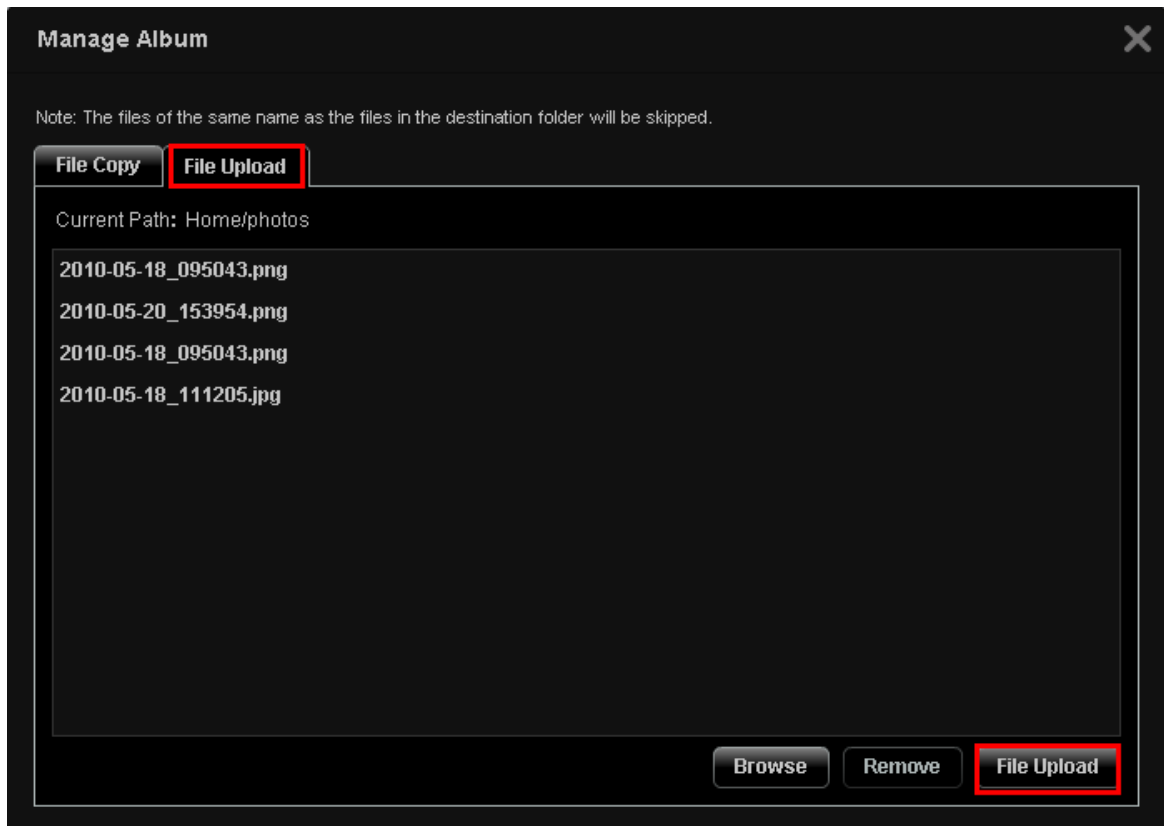
The album name must be 1 to 64 characters long, and cannot contain | \ : ? " < > \*




To copy the files from other location in Media center to the album, select 'File Copy', choose the files to copy and click >. Then click 'File Copy' to start copying the files.

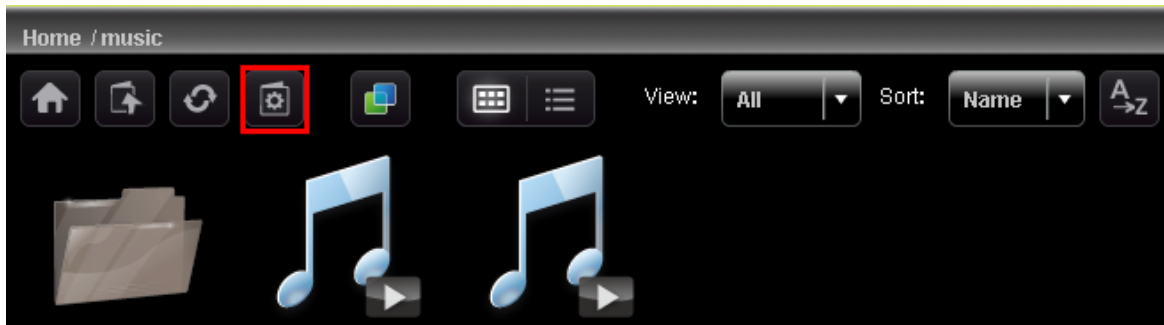


To upload files to the album, click 'Browse' to select the files and click 'File Upload'.

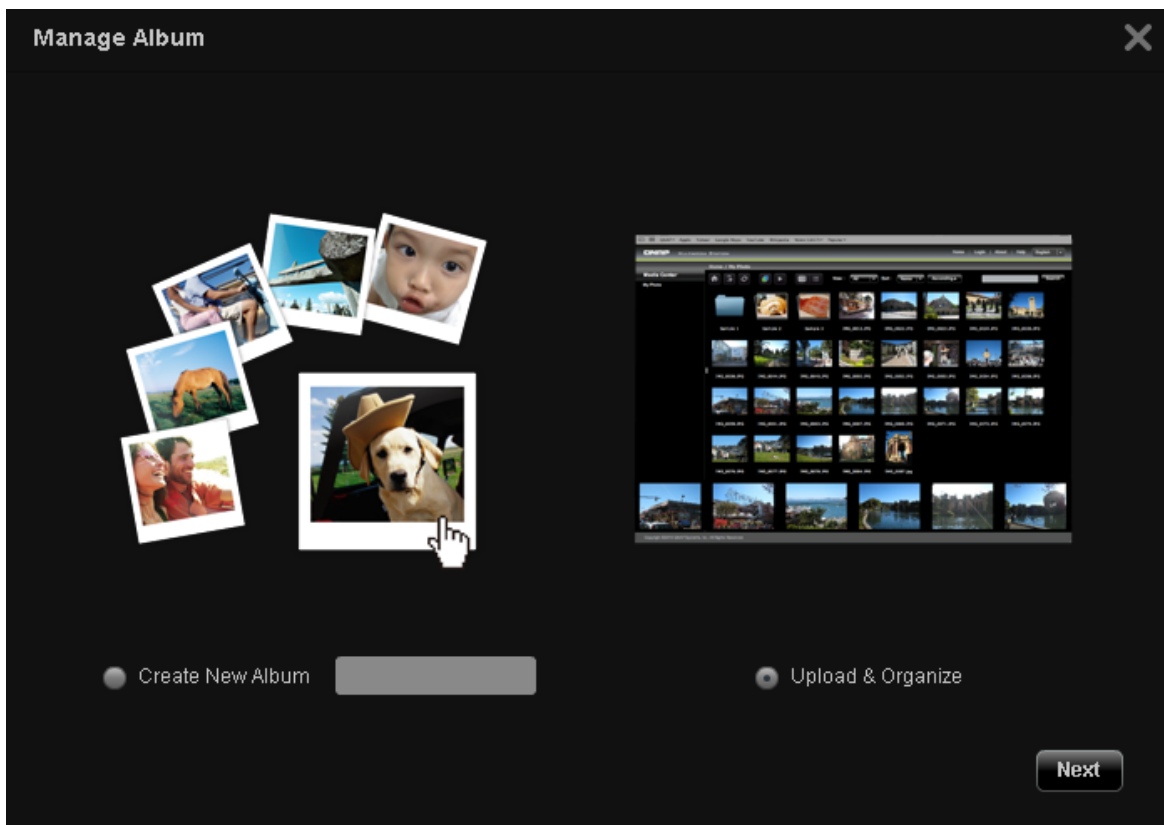


## Manage album

To manage an album (folder) by the web-based interface on Multimedia Station, locate the directory in Media Center. Click  (Create Album).

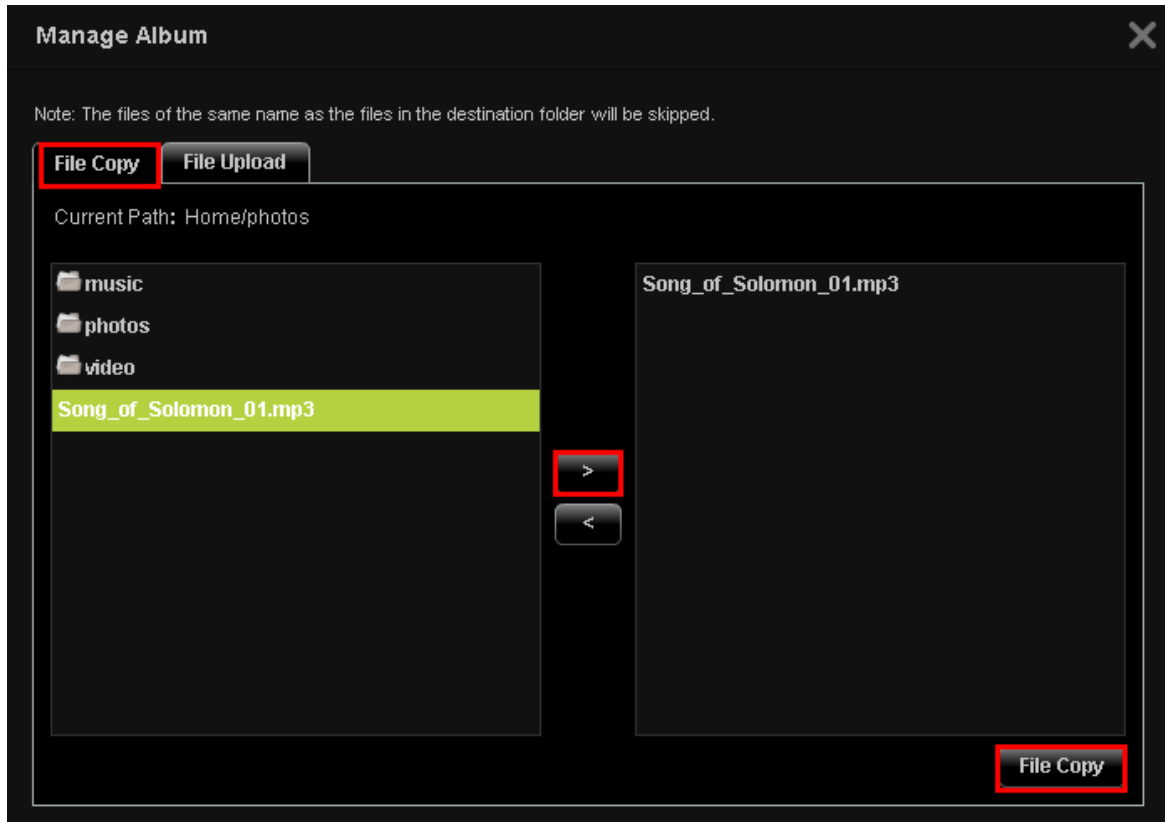



Select 'Upload & Organize' and click 'Next'.

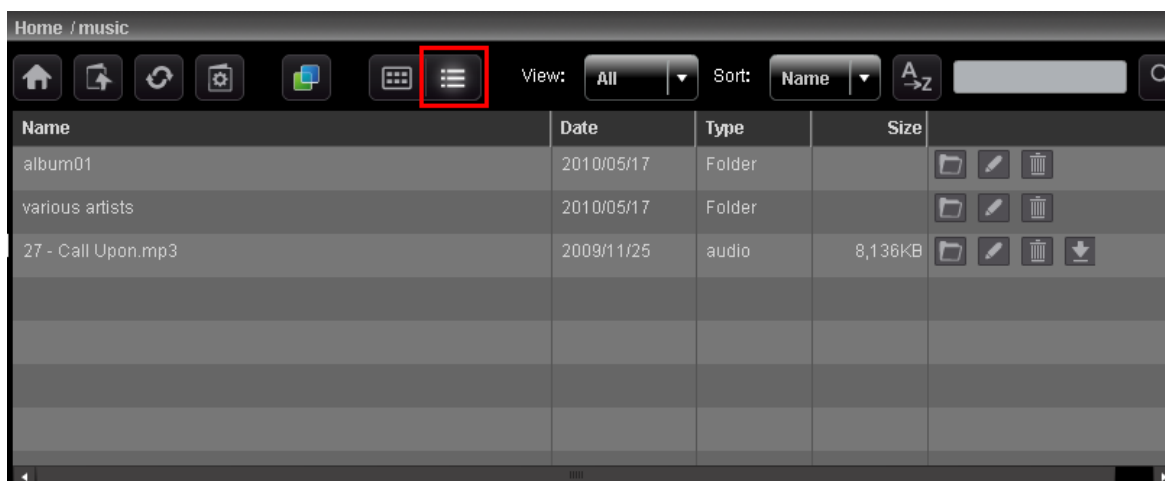





To copy the files from other location in Media center to the album, select 'File Copy', choose the files to copy and click >. Then click 'File Copy' to start copying the files. To upload files to the album, click 'Browse' to select the files and click 'File Upload'.

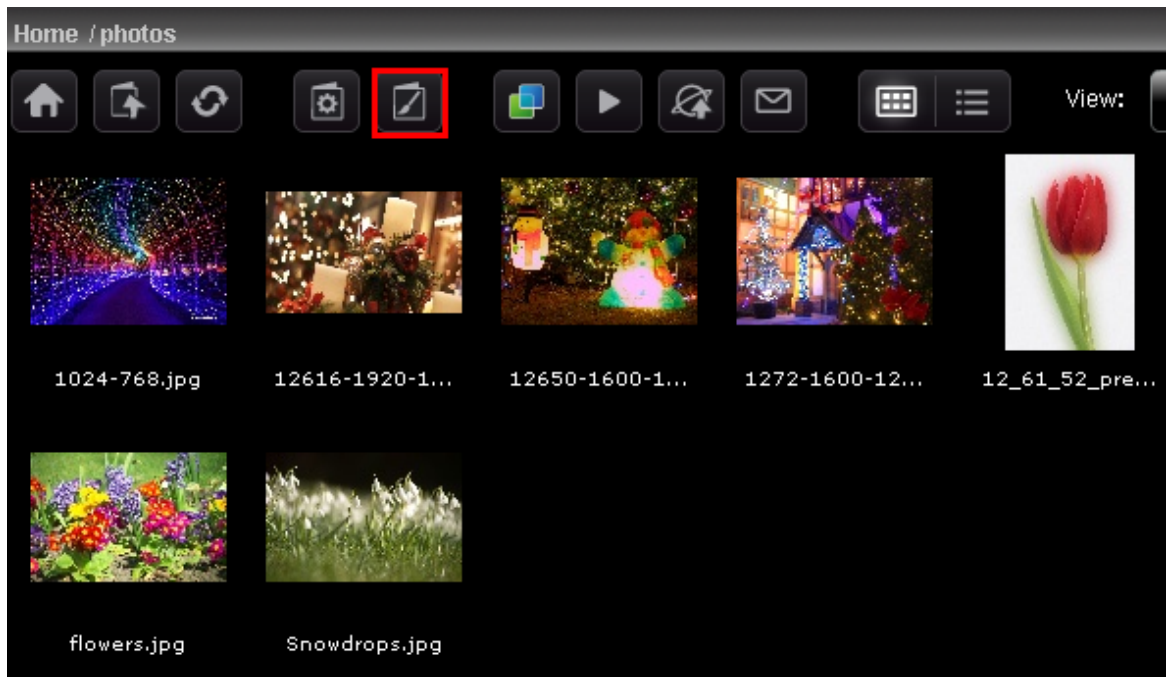


You can click  to browse the multimedia contents in details and click the icons to open, rename, delete, or download the files or folders.

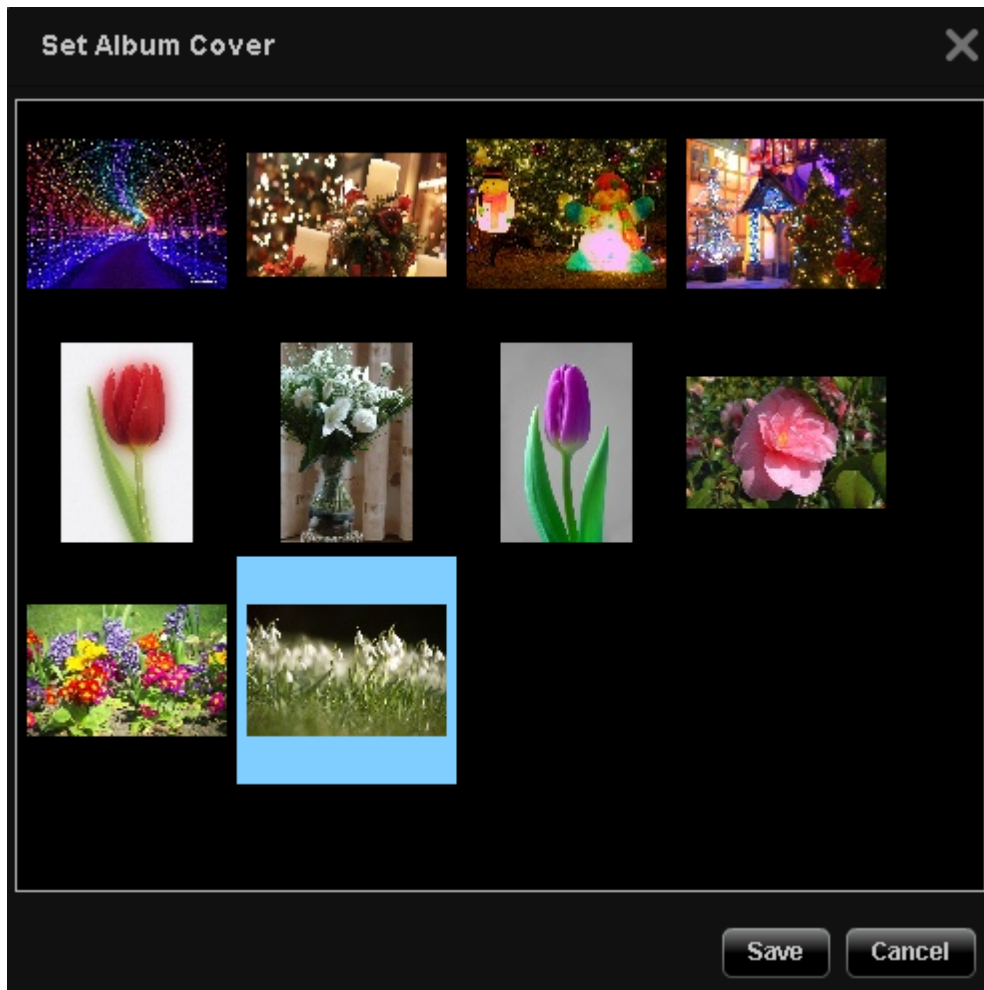


## Set album cover



To set an image file as the album cover, click .

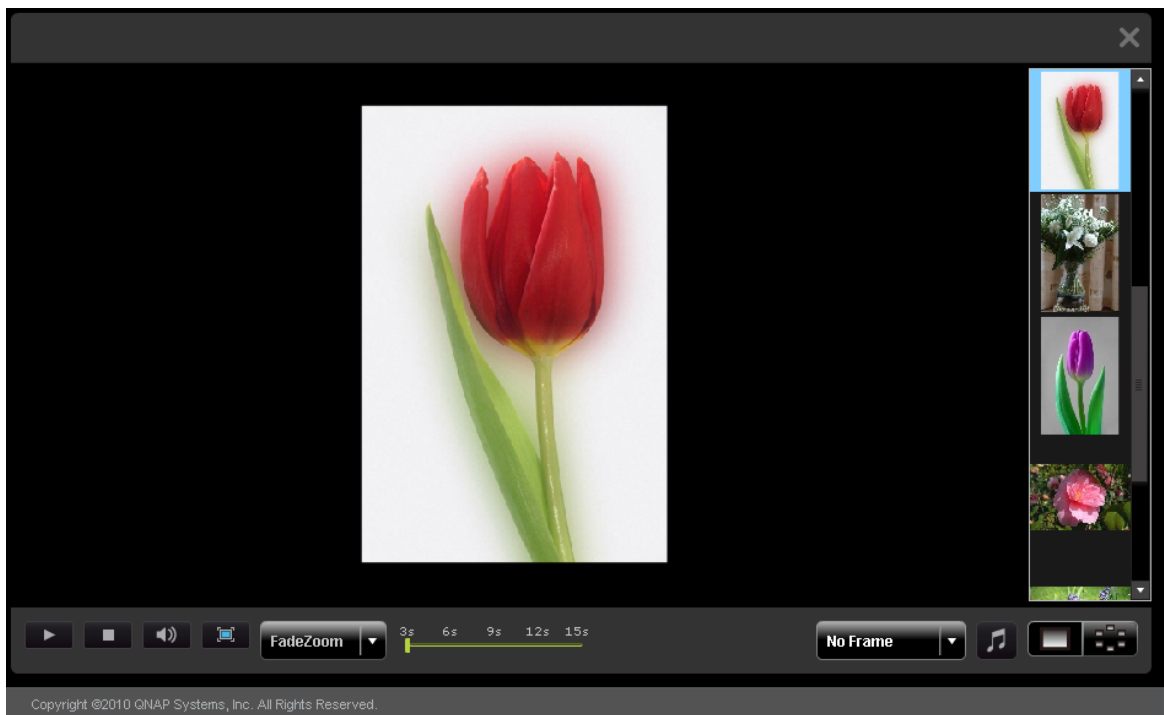


Select the image file and click 'Save'.




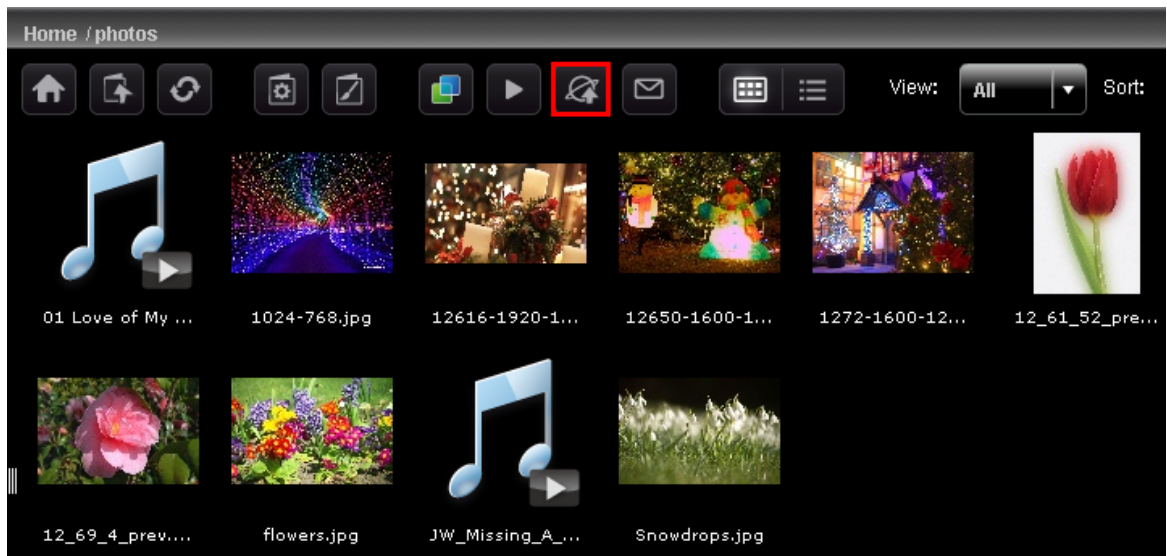
## Slide Show

Click  to view multiple image files in slide show. Select the playback speed (3s/ 6s/ 9s/ 15s) and the slide show effect (for full screen display) from the drop-down menu. You can also select the photo frame for displaying the image file. To view the image files in 3-dimensional (3D) display, click .



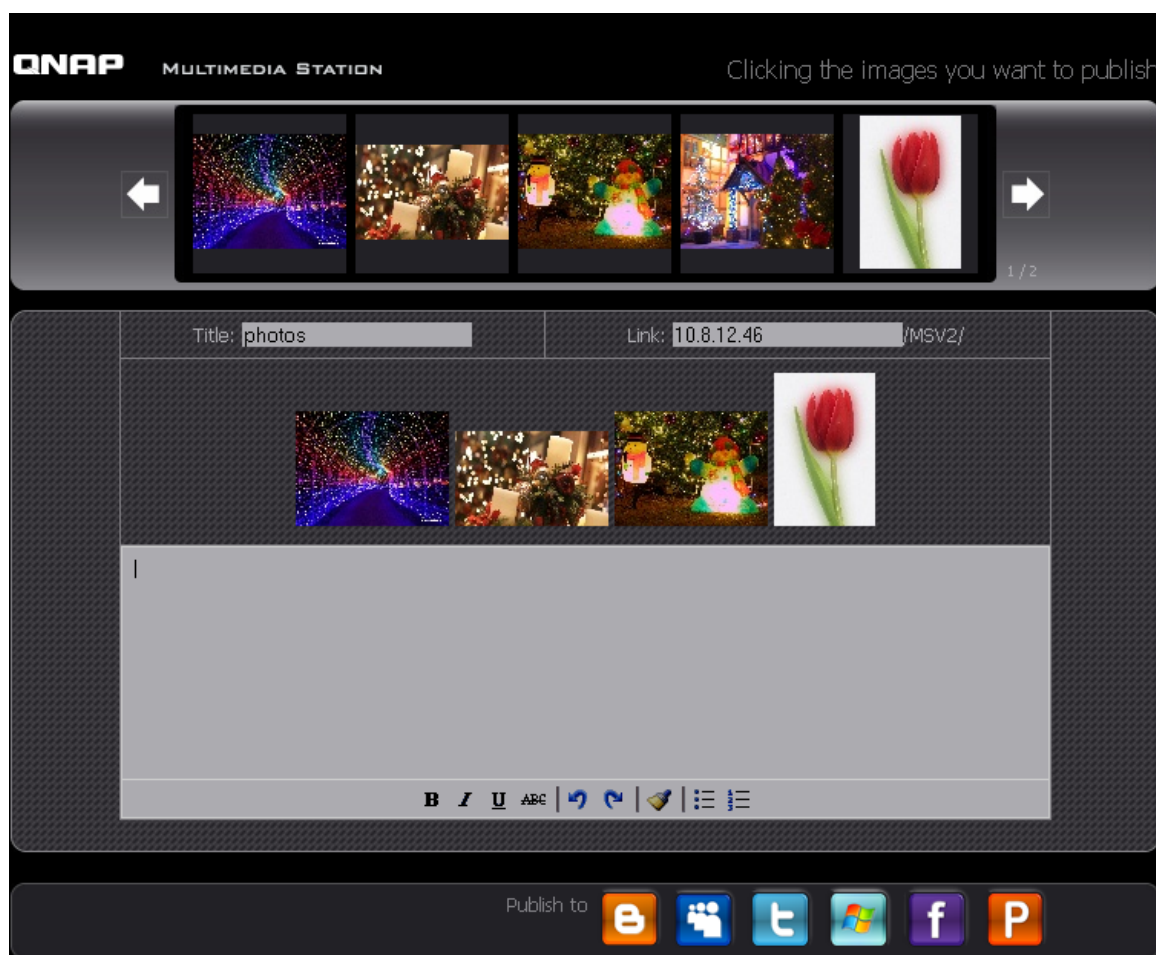
## Publish image files

You can publish the image files on Multimedia Station to social networking sites such as Facebook and Twitter. Click .



Select the image files to publish. You can publish maximum 5 photos at a time. Enter the title and description. Then select the website to publish the files to and enter the login information of the website. Note that the album must be set to public (Control Panel > Set Folder Public) before it can be published, and Multimedia Station must be accessible from the Internet. It is suggested to set up the DDNS for the NAS before using this feature.

Field	Limitation
Title	Maximum number of characters: 256
Link (the IP address or host name of the NAS)	Support alphanumeric characters, dot (.), and slash (/) only Maximum number of characters: 256
Description	Maximum number of characters: 1024



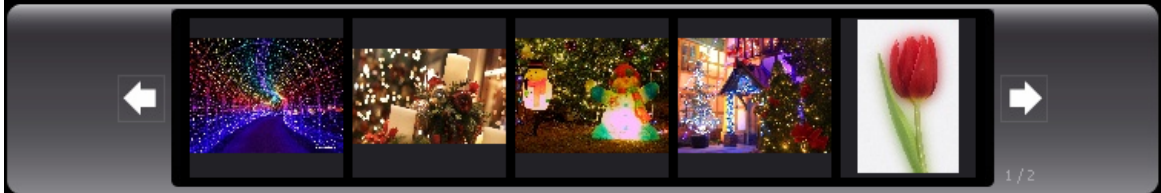
## Email image files

To email the image files, make sure SMTP server settings have been correctly configured on the

NAS. Click .

Enter the information and click 'Send'.

Field	Limitation
Subject	Maximum number of characters: 128
My Name	The name only supports alphabets (A-Z and a-z), numbers (0-9), dash (-), and underscore (_)
My Email	Maximum number of characters: 128
Friend's Name	Maximum number of characters: 128
Friend's Email	Maximum number of characters: 128
Message	Maximum number of characters: 1024



### Selected Images

Subject:

My Name:

My Email:

Friend's Name:

Friend's Email:

You can post your personal message here.

Message:

Send



## Play video

The NAS supports playing video files on the web browser. Simply click a video file on the web page, the NAS will start playing it. If you click a video file in a folder, all other supported video files in the folder will also be shown in the playlist and played. Click 'X' to exit the playback page.



## Transcode video

If the video files are in AVI, M4V, MPG/MPEG, RM/RMVB, WMV formats, you need to transcode the file in order to play it on Multimedia Station properly. A video file which can be transcoded is shown with an icon like below in thumbnail view.

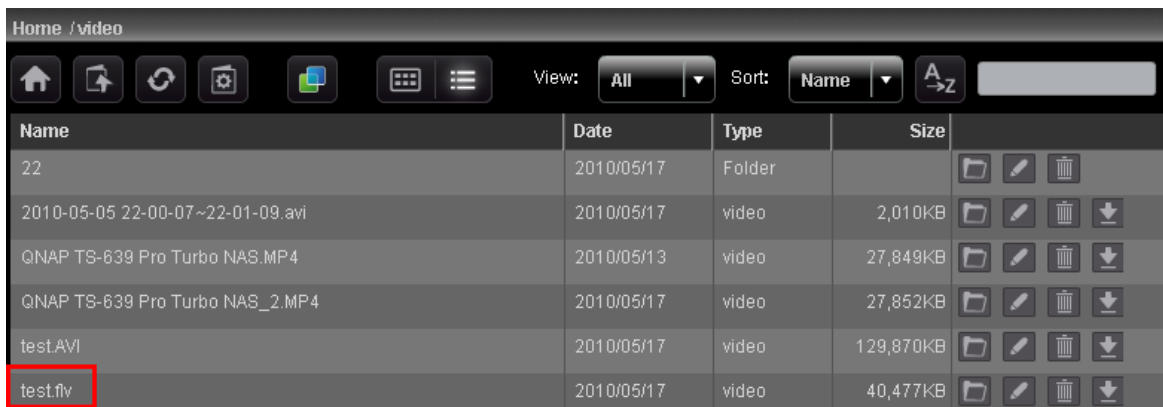

























Click the icon and confirm to perform video transcoding. Wait patiently when transcoding is in process.



The video will be converted into FLV format. You can then play it on your web browser. Only administrators are allowed to transcode a video.

QNAP does not guarantee all video formats or codecs are supported. You are highly recommended to convert the video files into the formats that Multimedia Station supports before uploading the files to the NAS.



Name	Date	Type	Size	
22	2010/05/17	Folder		  
2010-05-05 22-00-07~22-01-09.avi	2010/05/17	video	2,010KB	   
QNAP TS-639 Pro Turbo NAS.MP4	2010/05/13	video	27,849KB	   
QNAP TS-639 Pro Turbo NAS_2.MP4	2010/05/17	video	27,852KB	   
test.AVI	2010/05/17	video	129,870KB	   
test.flv	2010/05/17	video	40,477KB	   

## **My Jukebox**

---

You can create playlists of music files and play them in My Jukebox. The album art and its information will be read from the ID3 tag automatically if applicable.

To create or edit your own playlist for My Jukebox, go to 'Control Panel' > 'Playlist Editor'. Note that only the administrators can edit the playlists. The playlists in My Jukebox will be shared with all the users of Multimedia Station.



Enter the user information. The user name only supports alphabets (A-Z and a-z), numbers (0-9), dash (-), and underscore (\_). The user name cannot exceed 32 characters.

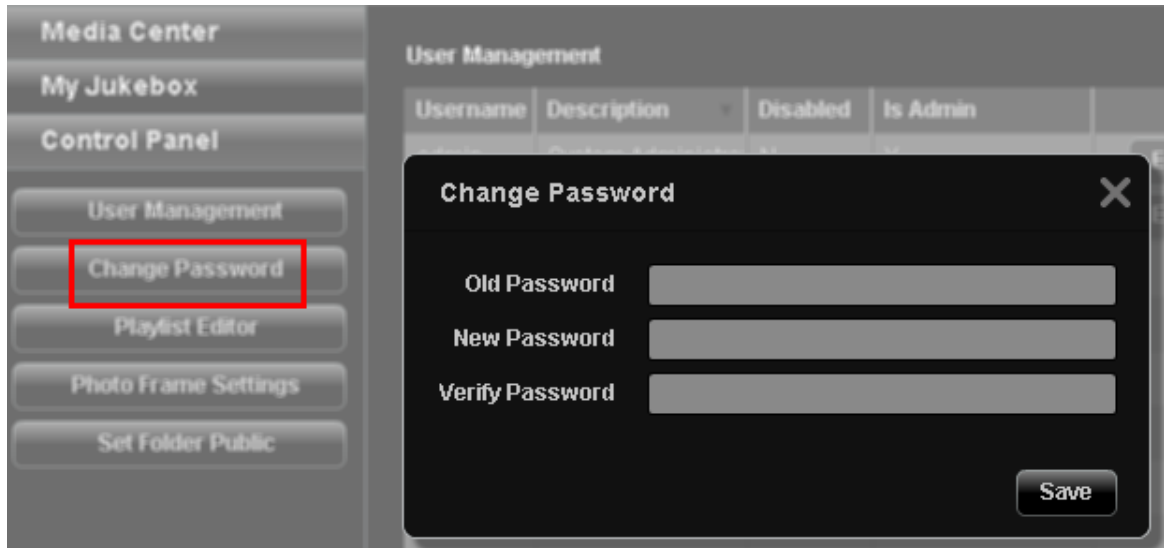
Specify whether or not the user is an administrator and the folders that the user can or cannot access. Click 'Save'. Note that the password must be 1 to 16 characters long. It can only contain A-Z, a-z, 0-9, -, !, @, #, \$, %, \_.

The users are shown on the list. You can edit the user information, delete the user, or change the login password. Note that the default account 'admin' cannot be deleted.

User Management						
Username	Description	Disabled	Is Admin			
admin	System Administra	N	Y	Edit User		
test		N	N	Edit User	Delete User	Change Password

## Change Password

You can change the administrator password in this section. The password must be 1 to 16 characters long. The password can only contain A-Z, a-z, 0-9, -, !, @, #, \$, %, \_.



## Playlist Editor

To create a playlist, enter Playlist Editor. Select an existing playlist from the drop down menu or click 'Add' to create a playlist.

Next, select the music files from the left column (folders on Multimedia Station) and click > to add the files to the playlist. Click 'Save' and then 'Close'.

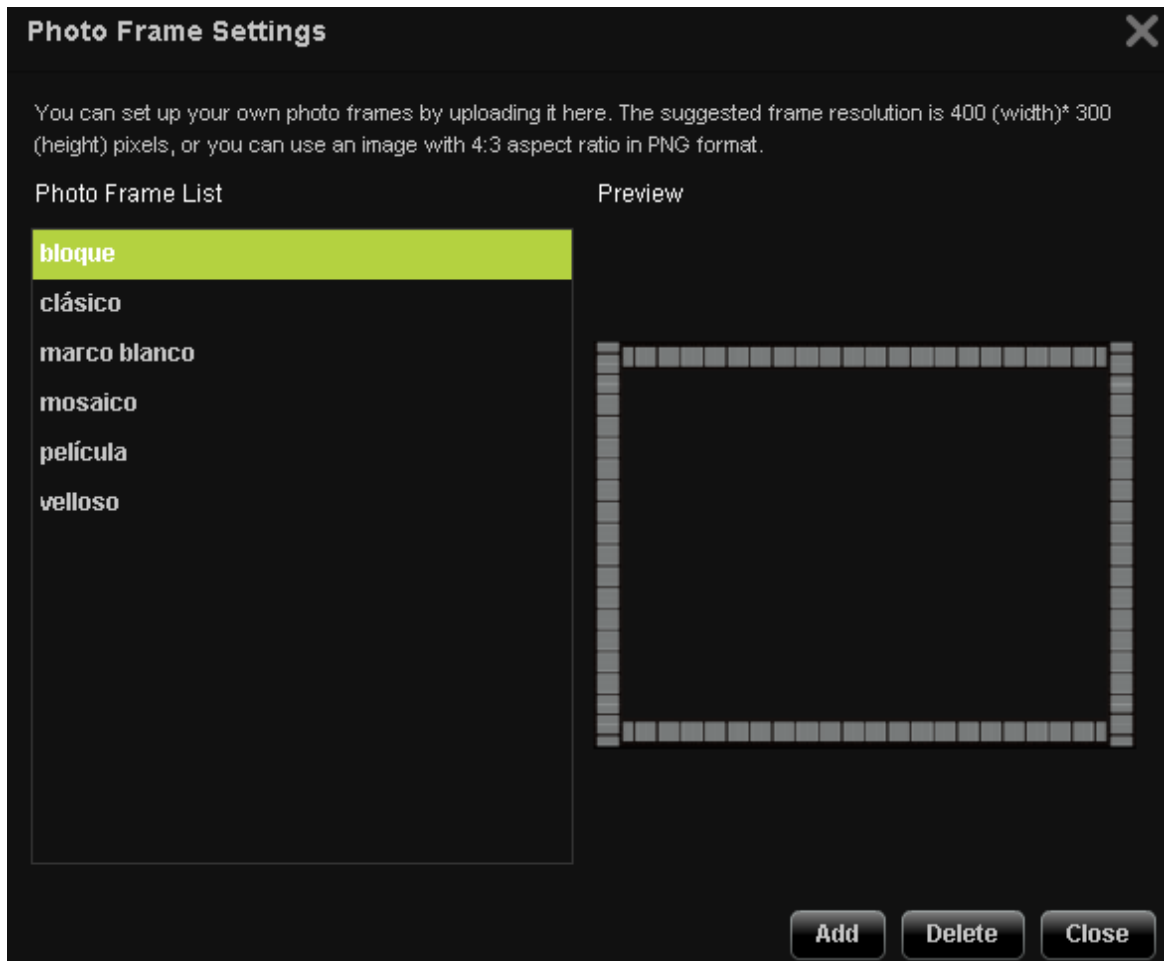
After creating the playlist, you can play it in My Jukebox.

Maximum number of characters in a playlist	24
Maximum number of songs in a playlist	512
Maximum number of playlists	128



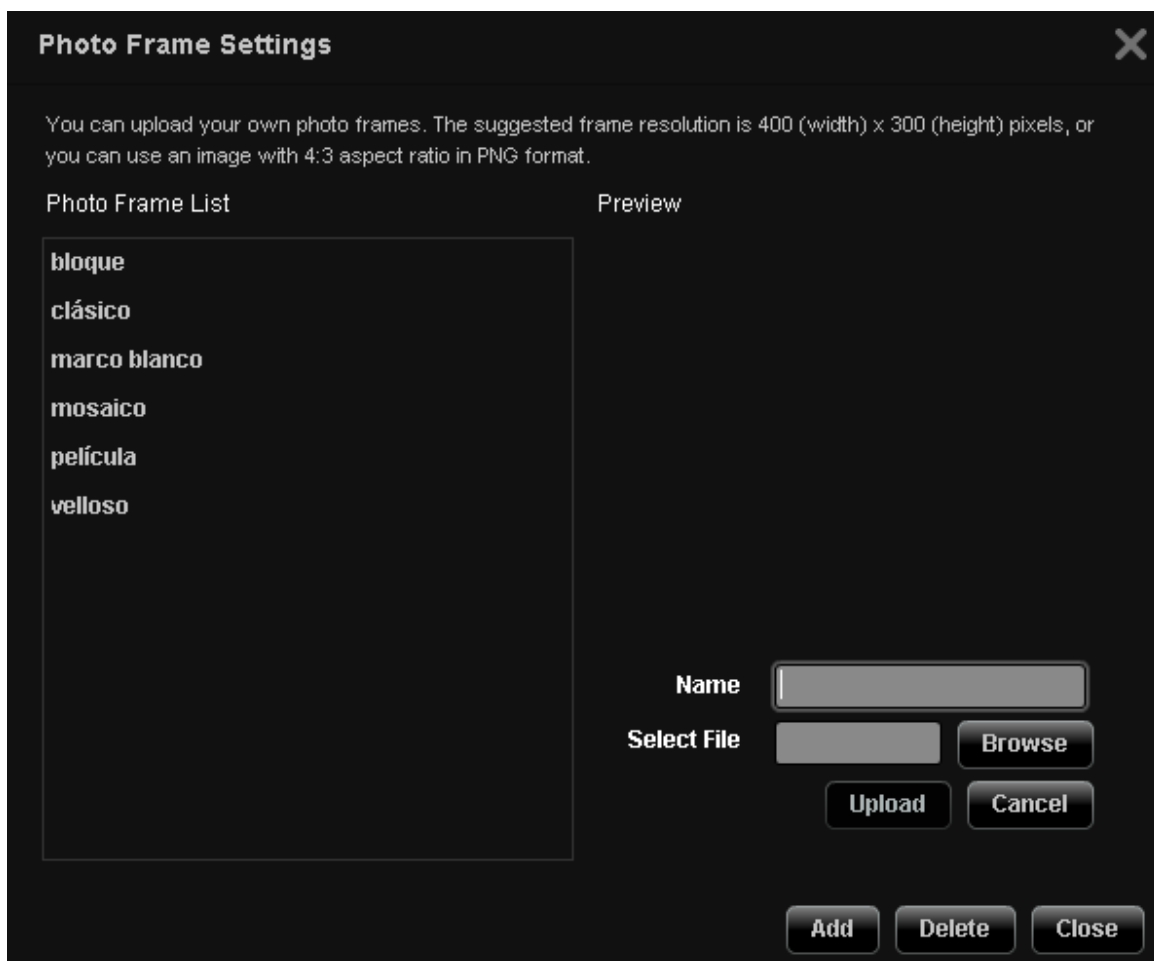
## Photo Frame Settings

You can upload your photo frames for viewing the image files. The suggested resolution is 400 (width) x 300 (height) pixels, or you can use an image with 4:3 aspect ratio. The supported format is PNG. To add a photo frame, click 'Add' and upload the file.



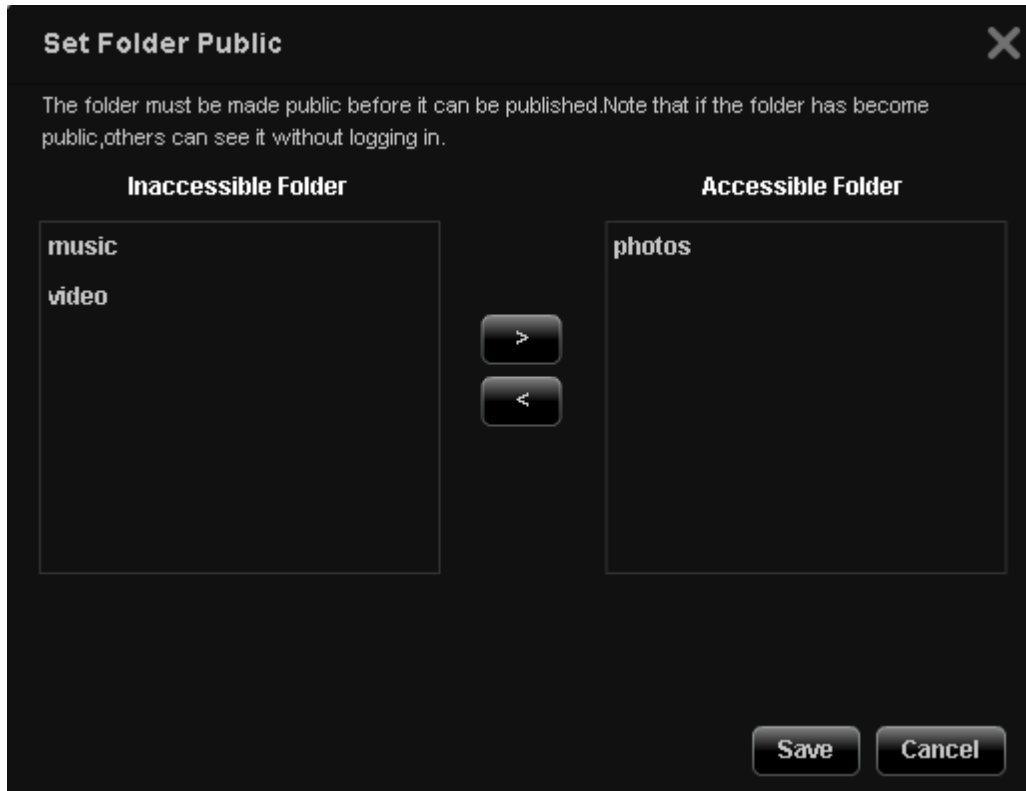


The name of a photo frame must be 1 to 16 characters long. The maximum number of photo frames Multimedia Station supports is 64 (including the system default photo frames). Note that the system default photo frames cannot be deleted.



## Set Folder Public

To publish the image files to the Web, you have to make the folder public. Select the folder to allow public access and click >. Then click 'Save'. Note that the public folders will be seen and accessed by anyone without logging in Multimedia Station.



## 8.1 QMobile

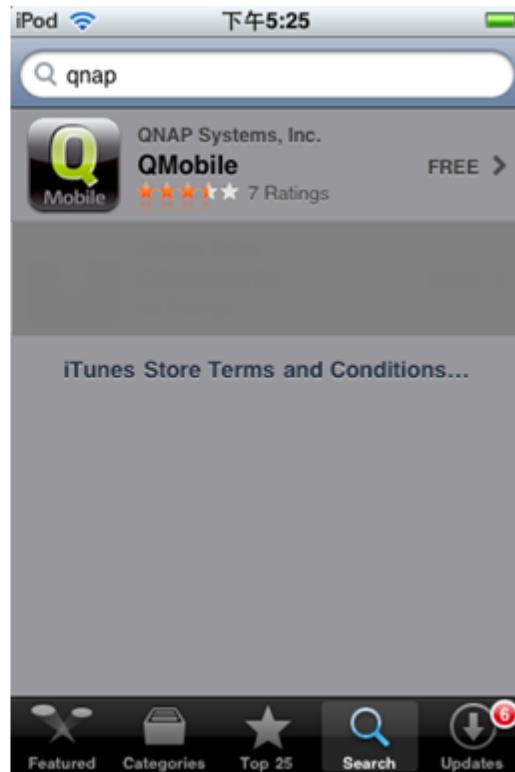
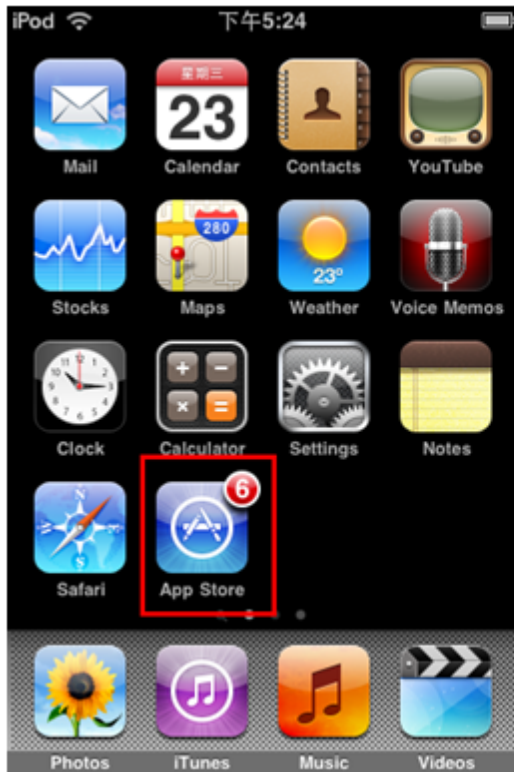
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QMobile is an application dedicated to iPhone, iPod Touch, and iPad users. You can browse and play the multimedia files stored on QNAP NAS, upload photos to the NAS or download your favorite multimedia files to your iPhone/ iPod Touch/ iPad and play them offline. It also provides auto-synchronization feature upon every connection.

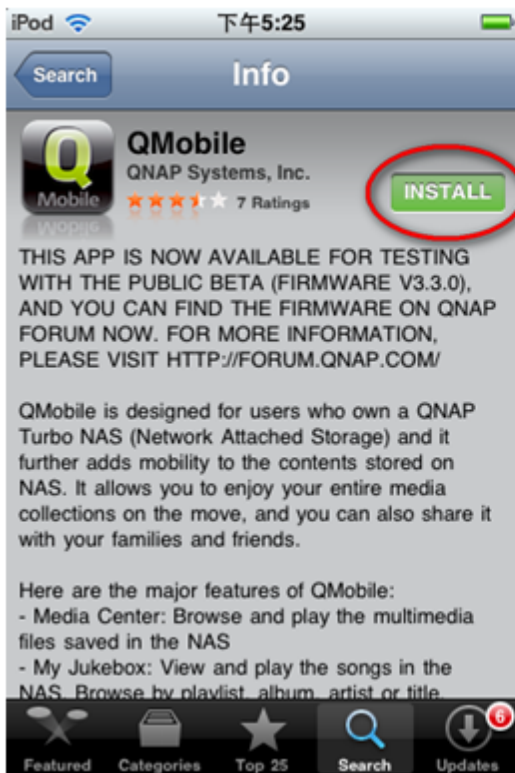
**Note:** QMobile is applicable to QNAP Turbo NAS running firmware version 3.3.0 or later. Make sure you have enabled Multimedia Station and Web Server, and configure the shared contents to allow QMobile to access the multimedia files on the NAS. The user accounts created on the NAS and the Multimedia Station are independent of one another. Please make sure you access Multimedia Station using an authorized user account.

## Install QMobile

Download QMobile from App Store.



After installation, QMobile will be shown on the screen.

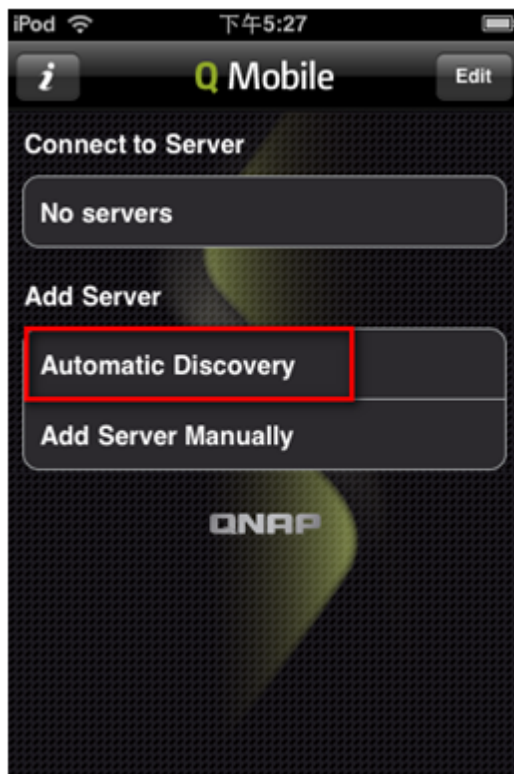


### Configure NAS settings on iPhone/iPod/iPad

Launch QMobile App and add a QNAP NAS. You can add the NAS to QMobile by 'Automatic Discovery' or 'Add Server Manually'.



## Automatic Discovery



**Note:** This feature is only available after you have enabled 'QMobile for iPhone/iPod Touch' on the NAS under 'Network Services' > 'Network Service Discovery' > 'Bonjour'.

### Bonjour

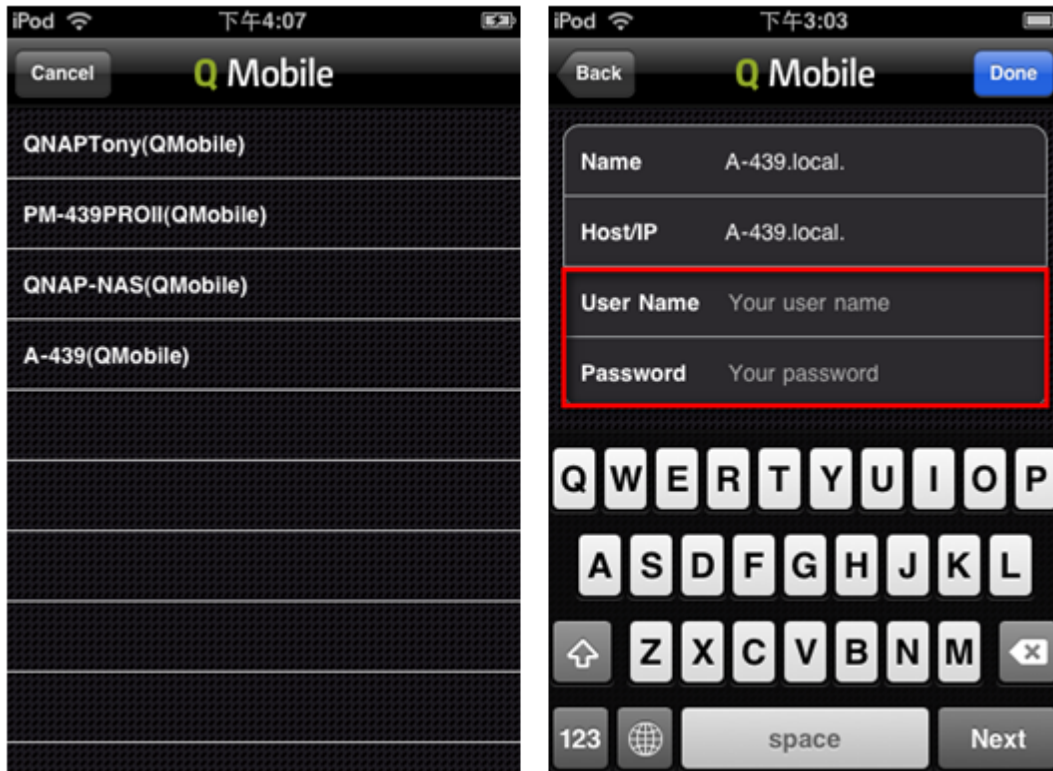
Before broadcasting the following services through Bonjour, please DO NOT forget to enable these services first.

- Web Administration  
Service Name:
- SAMBA (Server Message Block over TCP/IP)  
Service Name:
- AFP (Apple File Protocol over TCP/IP)  
Service Name:
- SSH  
Service Name:
- FTP (File Transfer Protocol)  
Service Name:
- HTTPS (Secure web server)  
Service Name:
- UPNP (DLNA media server)  
Service Name:
- QMobile for iPhone/iPod Touch.  
Service Name:

**APPLY**



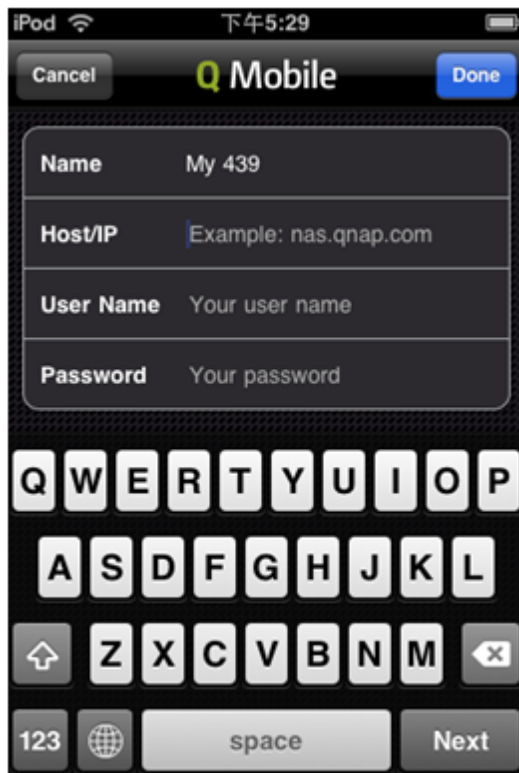
QMobile will find all the NAS servers which have enabled Bonjour on the local network. Select the NAS and login with your user name and password.



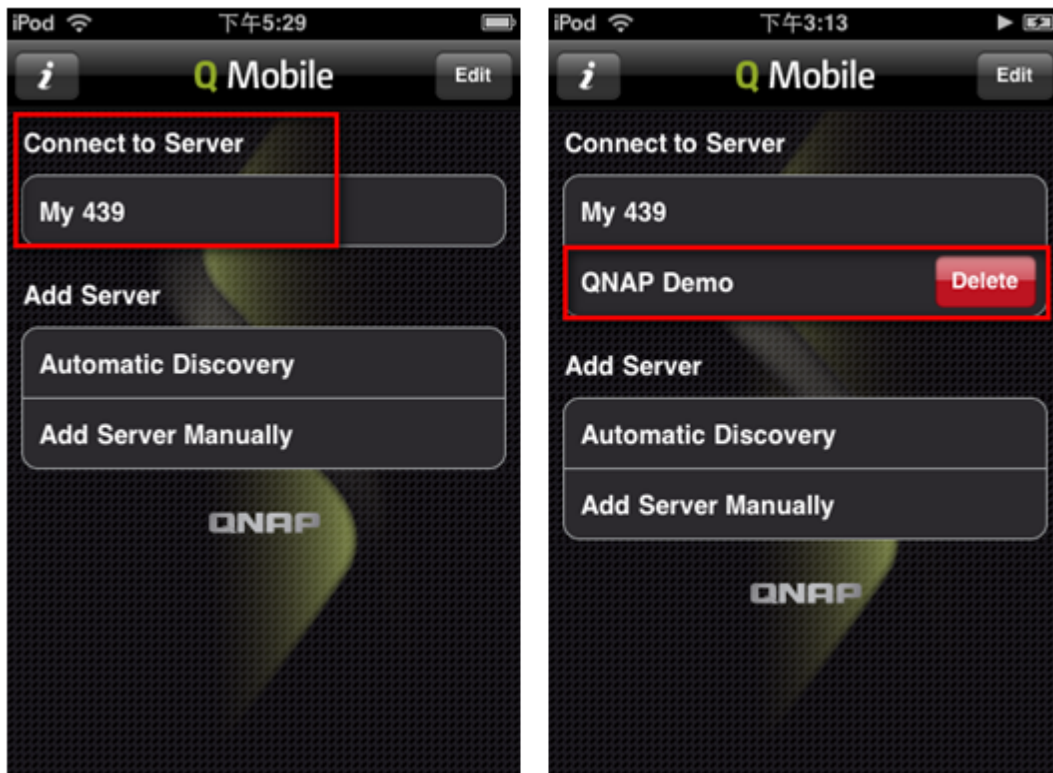
## Add Server Manually



Enter the name, host/IP, user name and password of the NAS.



Touch the NAS you wish to connect. Or you may swipe the NAS which you want to delete.



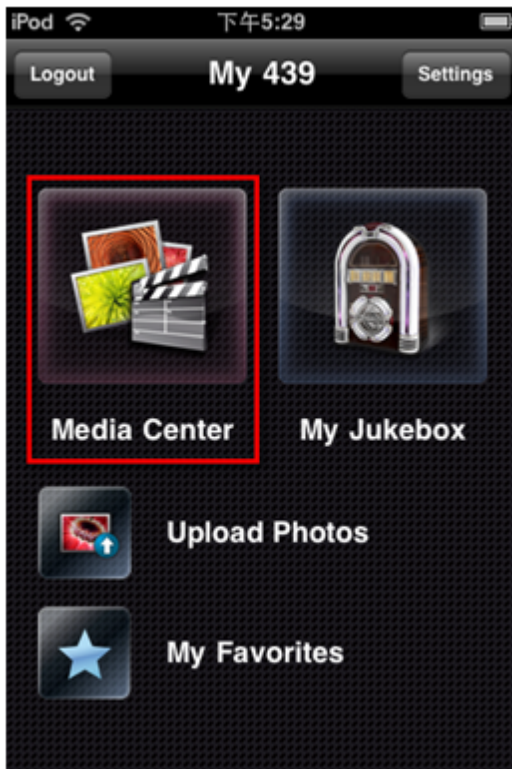
## Use QMobile to manage your media center on the NAS

### 1. Media Center

You may view and play the multimedia files saved on Multimedia Station of your NAS.

Note: QMobile can only play the files supported by iPhone/iPod Touch.

Connect to the NAS and touch the Media Center icon.



You can browse the multimedia files under 'Qmultimedia/Multimedia' default share folder or you may choose the specific photo, music or video files by clicking the corresponding icon at the bottom.

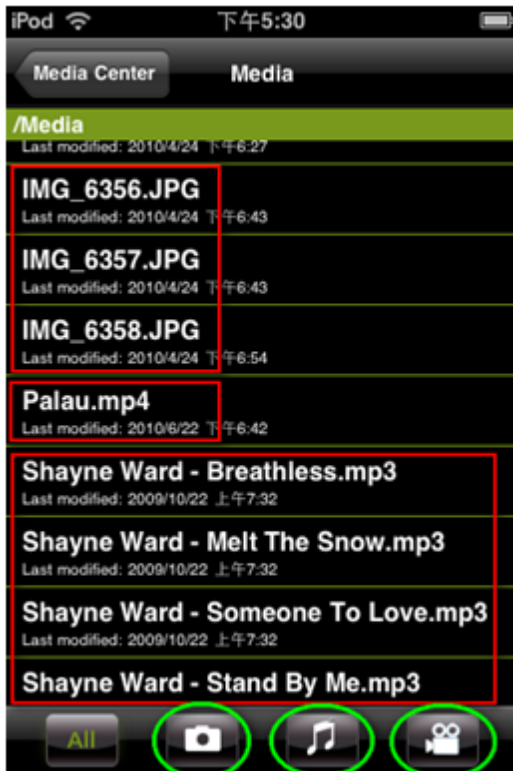
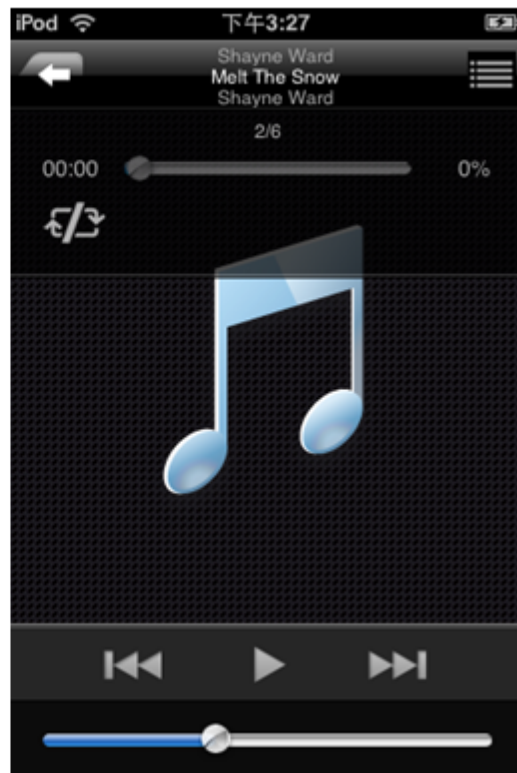
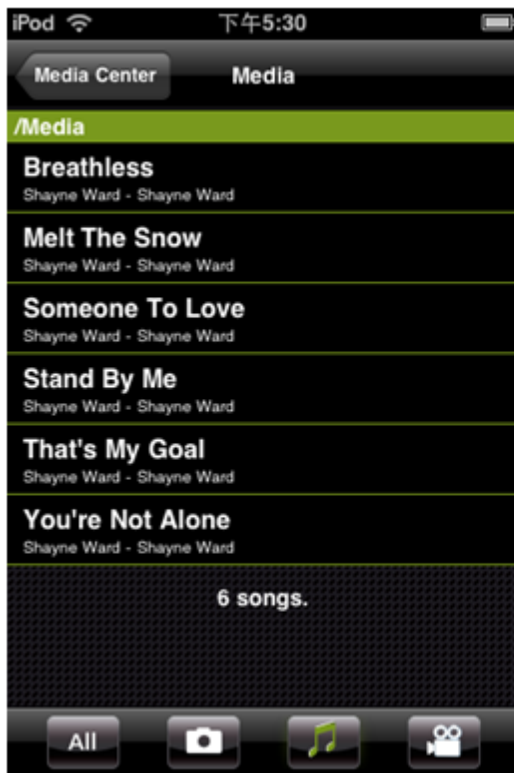


Photo view

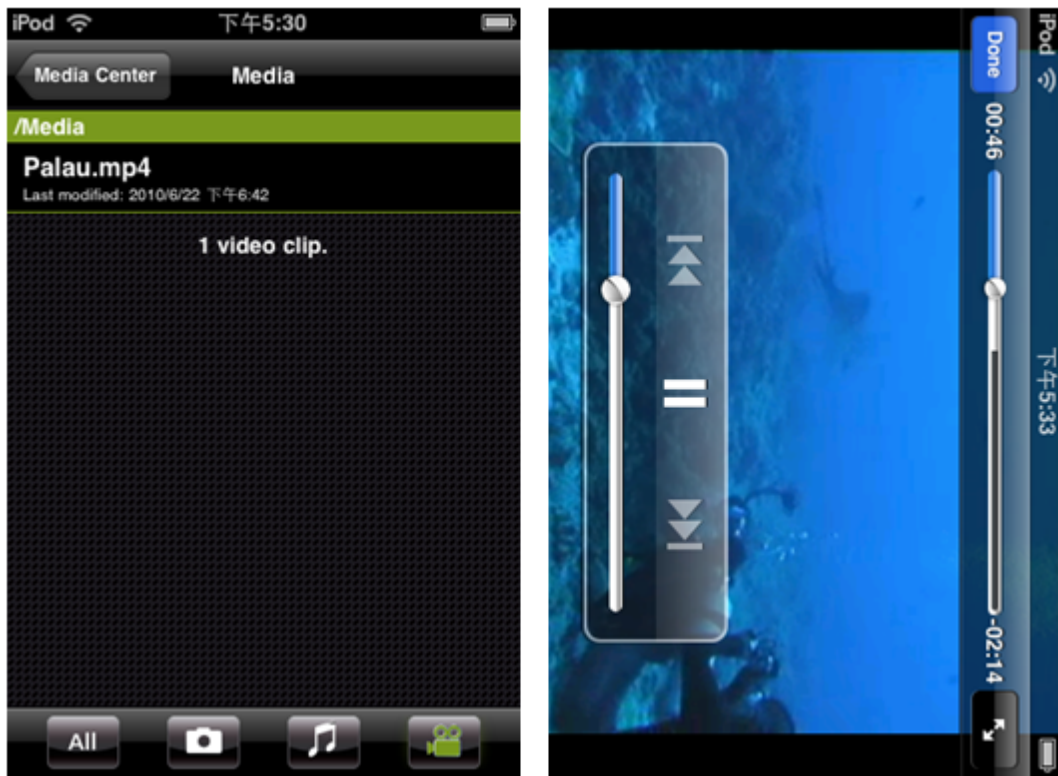


Music view





Video view



## 2. Upload Photos

You may upload the photo files on your iPhone to the NAS directly through QMobile. Select the file



source of iPhone by clicking  and select the file destination of the NAS by clicking .

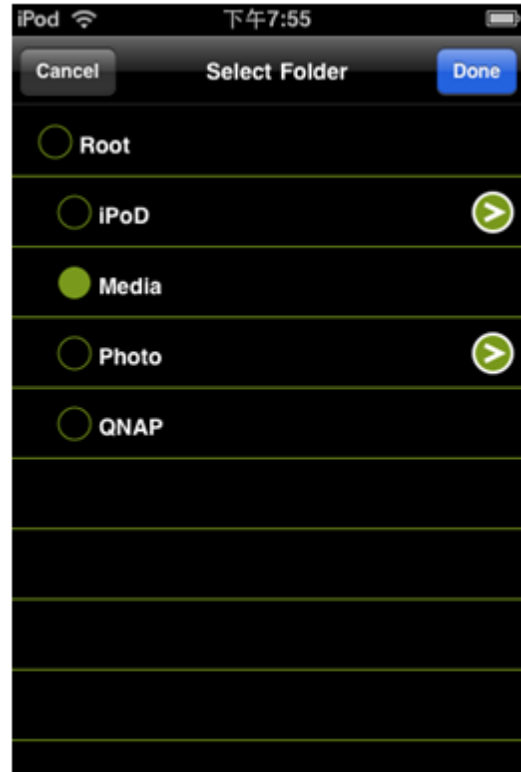


Photo Source: Choose the file from 'Saved Photos' or 'Photo Library' on iPhone.

Photo destination: Choose the Root folder ('Qmultimedia/Multimedia' folder of NAS) or the sub-folder to save the files.

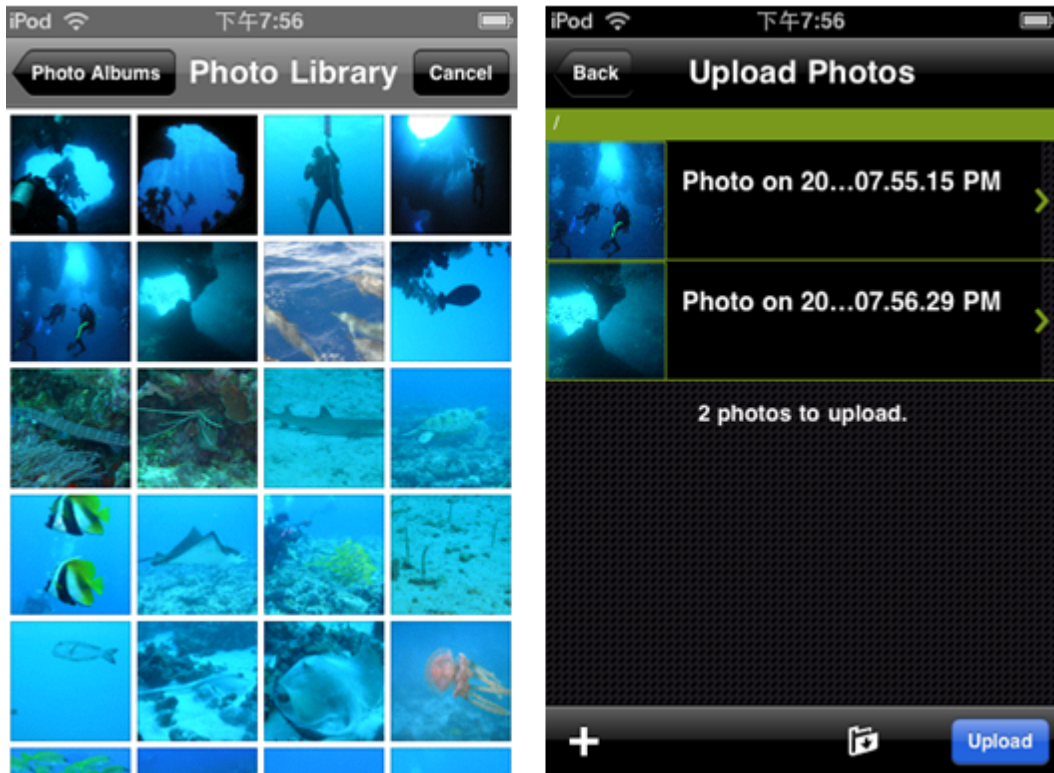


(Photo source)



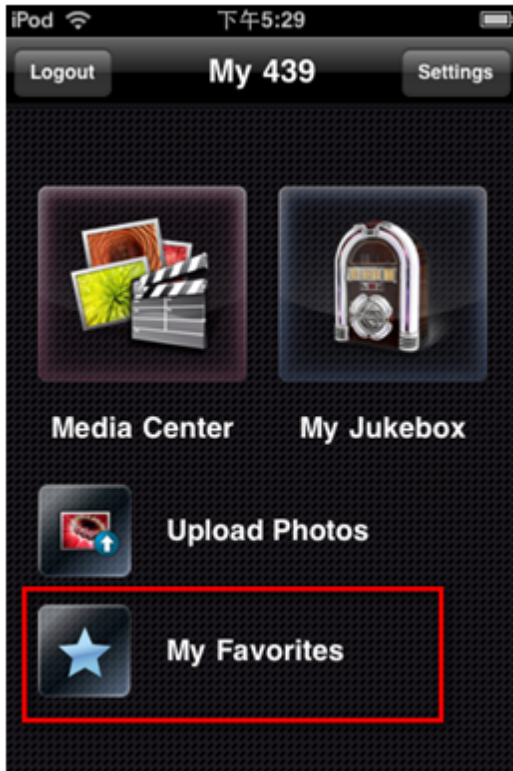
(Photo destination)

Select the photos and touch the 'Upload' icon to upload the photos.

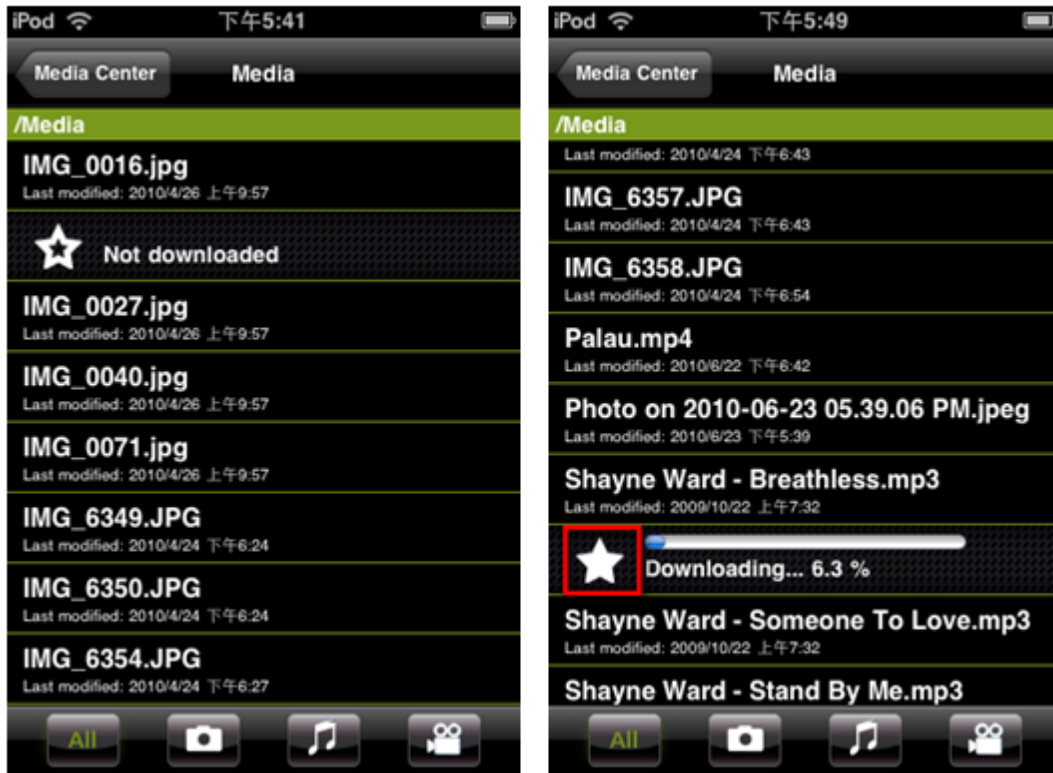


### 3. My Favorites

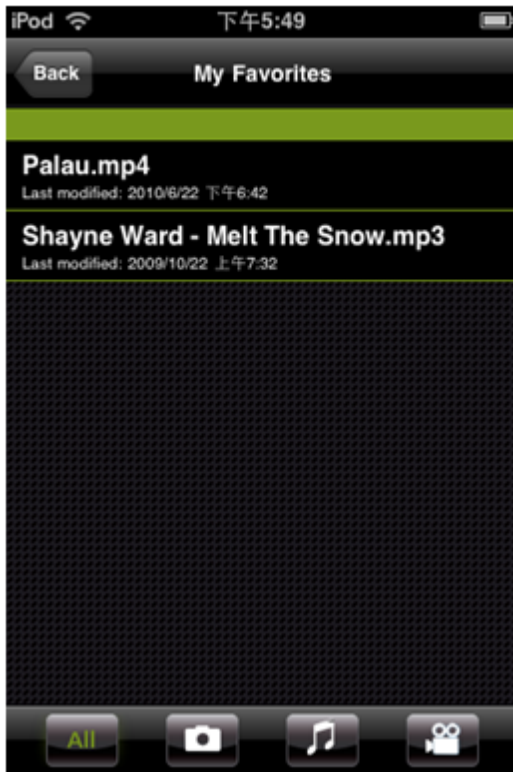
You may download the multimedia files from the NAS to your iPhone under 'My Favorites' and play them offline.



From Media Center, swipe the file and touch the star sign to start to download it.  
(Files that have never been downloaded will be shown as 'Not downloaded'.)



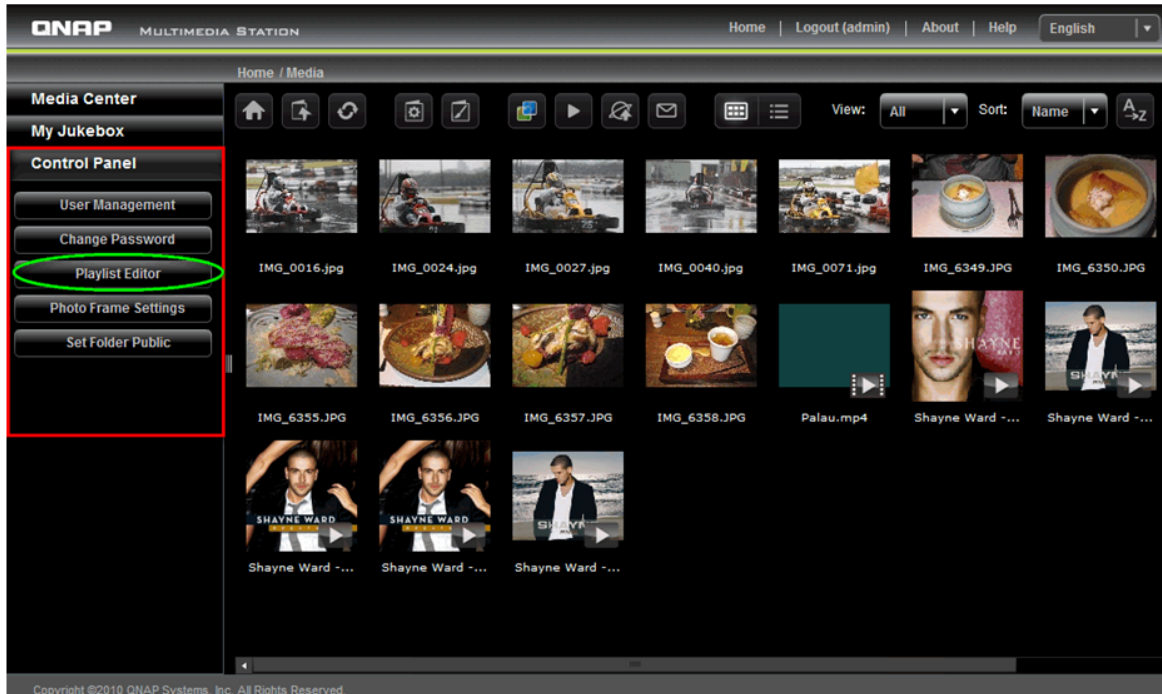
Downloaded files will be shown in 'My Favorites'. QMobile will check if the source of the downloaded files have been updated or deleted from the NAS upon every new connection to the NAS. You can select to synchronize the changes with the NAS.



#### 4. My Jukebox

You may view, stream and play the playlists configured on Multimedia Station.

Login Multimedia Station as an administrator. Select 'Control Panel' > 'Playlist Editor'.

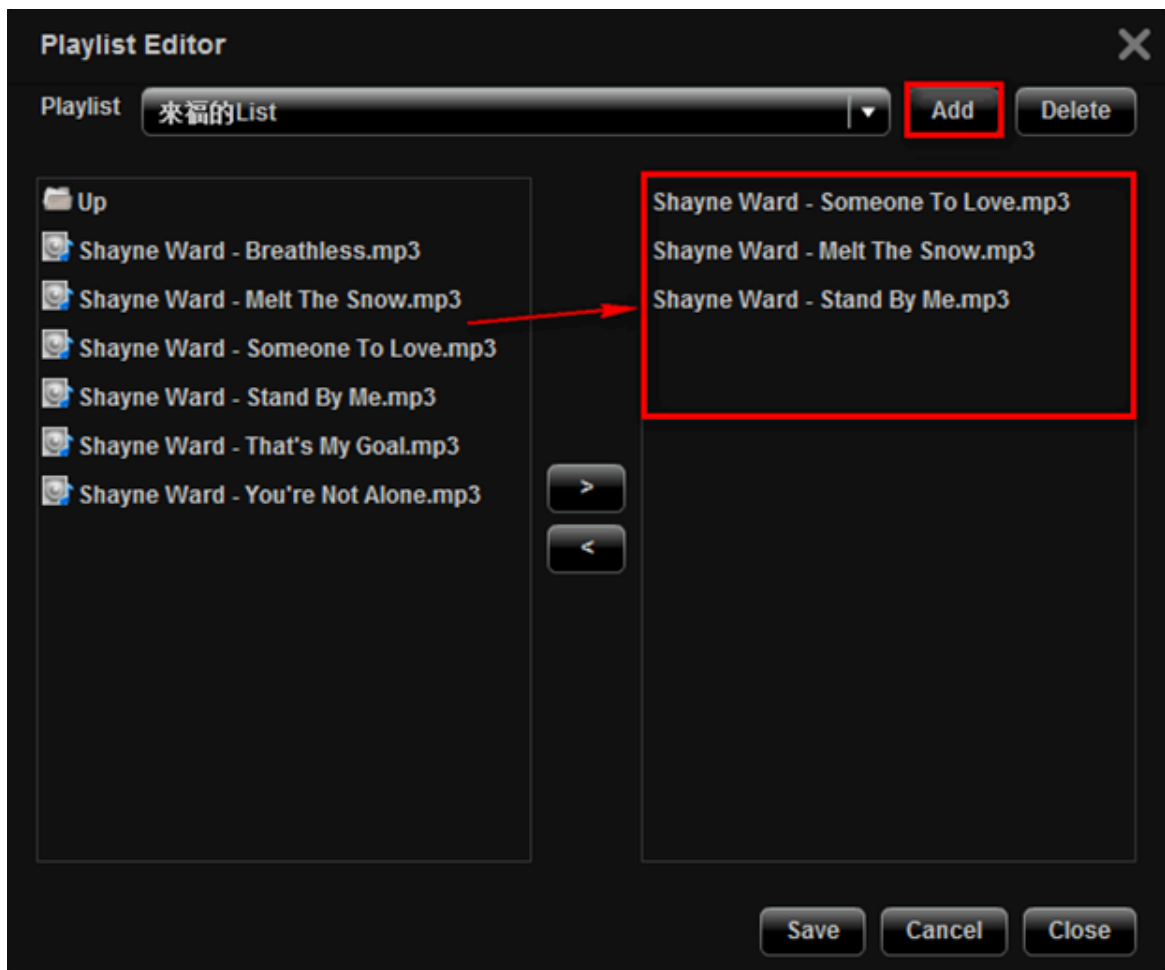




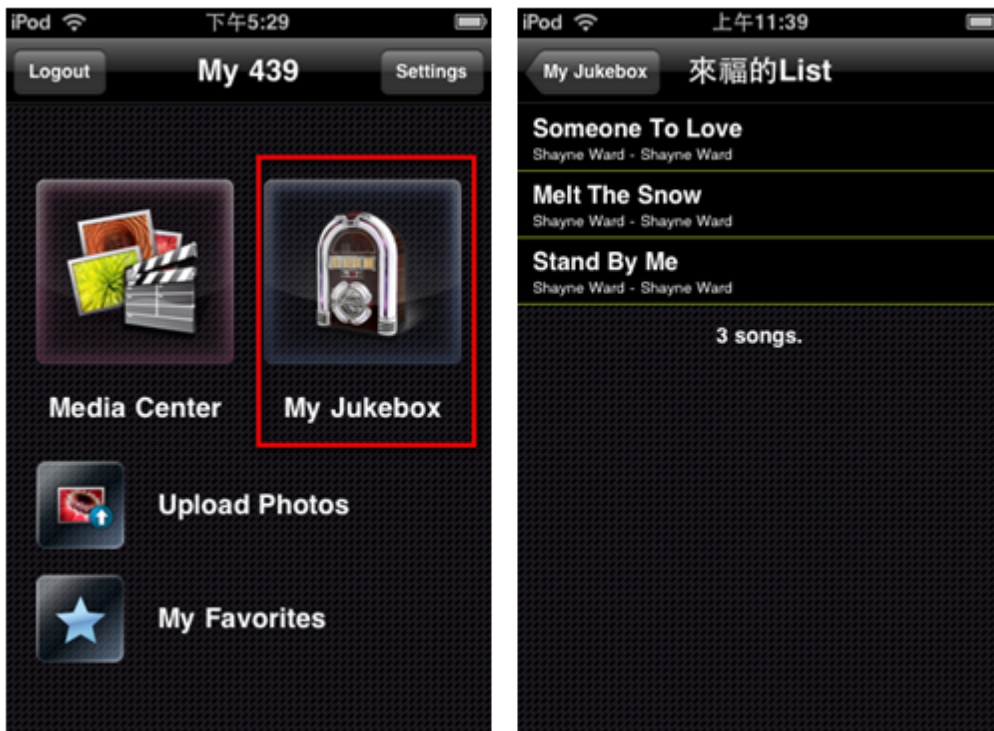
Click 'Add' to create a Playlist. Enter the playlist name and click 'Save'.



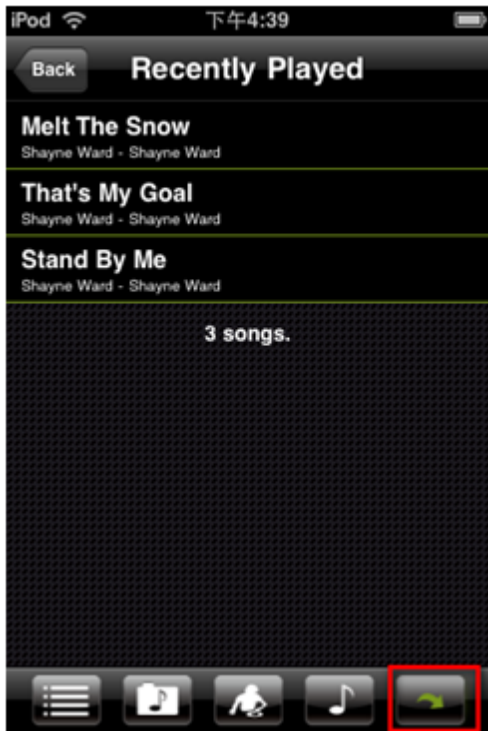
Select the playlist from the drop-down menu and then choose the music files to add to the playlist and click '>'. Click 'Save' to save the playlist.



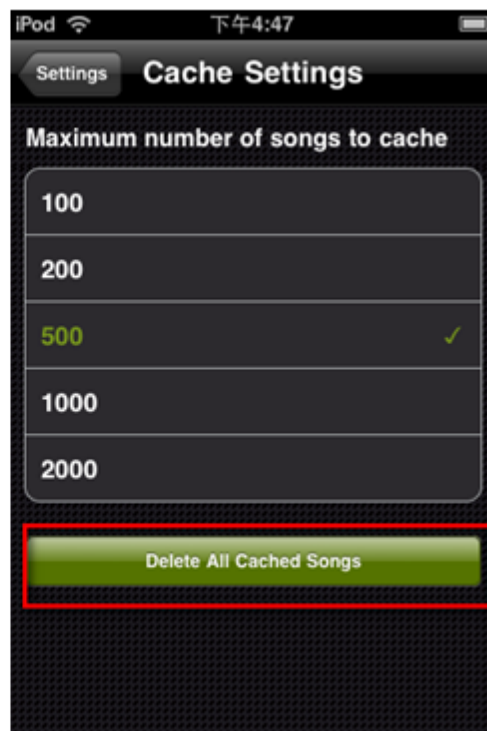
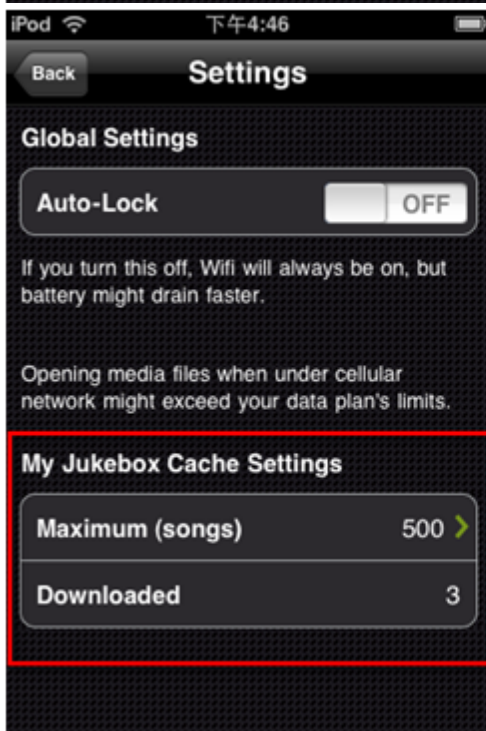
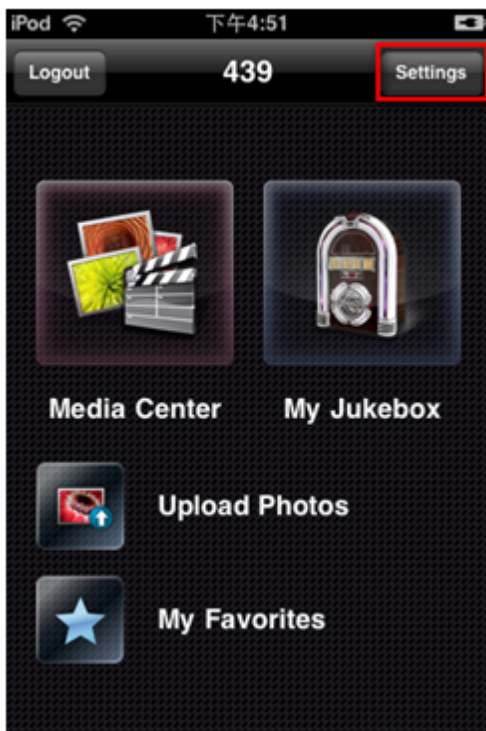
You can play the playlists created on the NAS by 'My Jukebox' on iPhone.



Once the audio file has been streamed completely, it will be saved in the cache in 'Recently Played'.



You can edit the cache settings under 'Settings'.



## 9. Download Station

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The NAS supports BT, HTTP, and FTP download. You can add download task to the NAS and let the server finish downloading independent of PC.



**Important:** Please be warned against illegal downloading of copyrighted materials. The Download Station functionality is provided for downloading authorized files only. Downloading or distribution of unauthorized materials may result in severe civil and criminal penalty. Users are subject to the restrictions of the copyright laws and should accept all the consequences.

1. Go to 'Applications' > 'Download Station'. Enable the service.

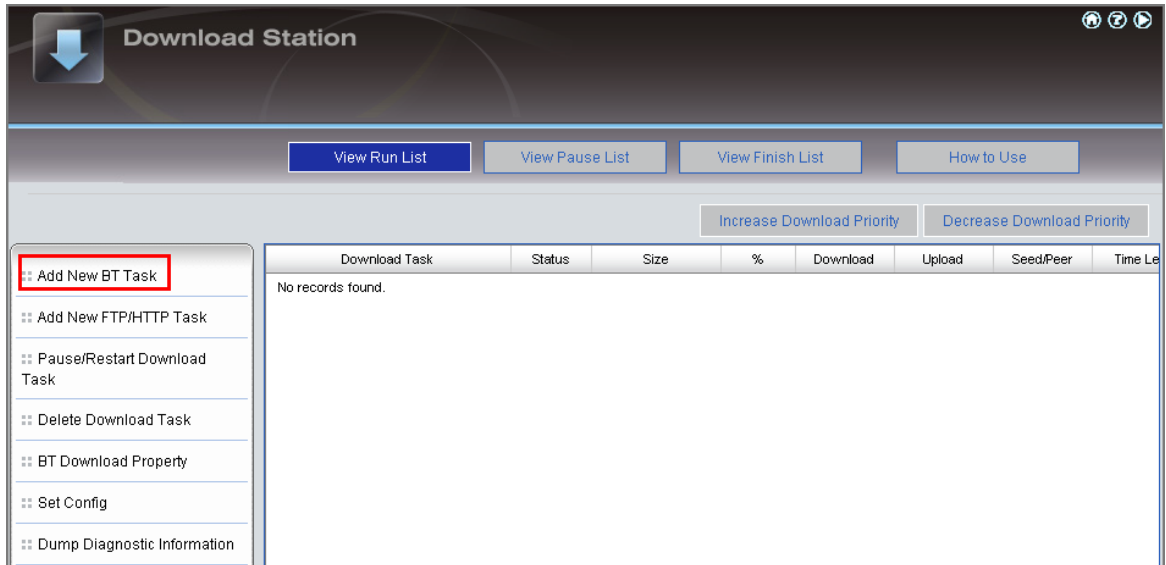


The screenshot shows the 'Download Station' configuration page. At the top, the title 'Download Station' is displayed in green. Below the title, there is a section with the heading 'Download Station'. Inside this section, there are two checkboxes: 'Enable Download Station' which is checked, and 'Show service link on the login page' which is unchecked. In the bottom right corner of the configuration area, there is a blue button labeled 'APPLY'.

2. Click 'Download Station' on the top or on the login page of the NAS to connect to the Download Station. If you login the service from the login page of the NAS, you are required to enter the user name and password.
3. Select 'Add new BT task' or 'Add new FTP/HTTP task'.

## Add a new BT task

Click 'Add new BT task' on the left and upload a torrent file. You can download the legal torrent files from the Internet. There are websites that provide legally shared torrents, for example [www.legaltorrents.com](http://www.legaltorrents.com). Please download the torrent files to your local disk and then upload them to the NAS.

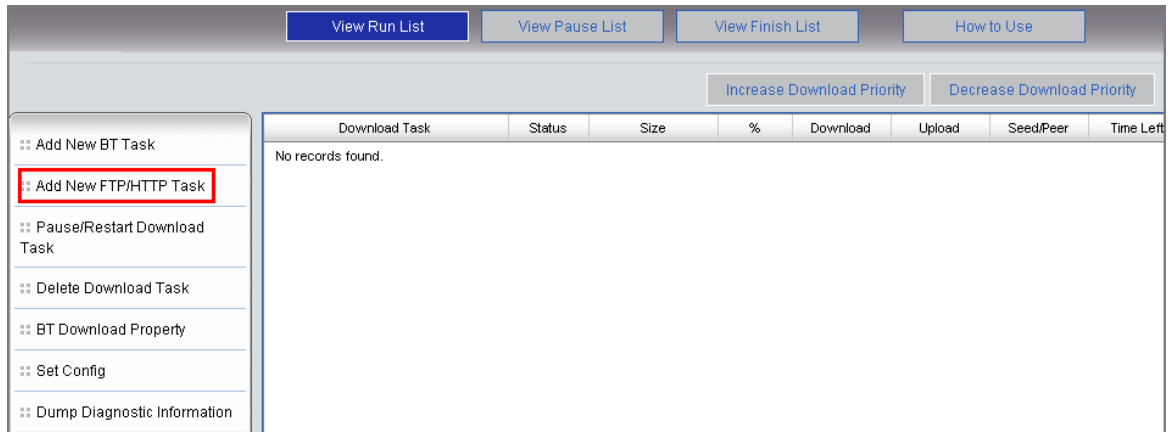


The screenshot shows the 'Download Station' web interface. On the left sidebar, the 'Add New BT Task' option is highlighted with a red box. The main content area features a table with the following columns: Download Task, Status, Size, %, Download, Upload, Seed/Peer, and Time Left. The table is currently empty, displaying 'No records found.'

## Add a new FTP/HTTP task

To run an FTP download task, click 'Add new FTP/HTTP task'. Enter the FTP URL of the download task and select the share folder to save the files. Enter the user name and password to login the FTP server (if necessary). Then click 'OK' to start downloading.

To run an HTTP download task, click 'Add new FTP/HTTP task'. Enter the HTTP URL of the download task and select the share folder to save the files. Then click 'OK' to start downloading.



The screenshot shows a software interface with a menu on the left and a table on the right. The menu items are:

- :: Add New BT Task
- :: Add New FTP/HTTP Task (highlighted with a red box)
- :: Pause/Restart Download Task
- :: Delete Download Task
- :: BT Download Property
- :: Set Config
- :: Dump Diagnostic Information

At the top of the interface, there are buttons for 'View Run List', 'View Pause List', 'View Finish List', and 'How to Use'. Below these are buttons for 'Increase Download Priority' and 'Decrease Download Priority'.

The table on the right has the following columns: Download Task, Status, Size, %, Download, Upload, Seed/Peer, and Time Left. The table is currently empty, displaying 'No records found.'



4. After uploading a download task, the task will appear on the 'View Run List'.

The screenshot shows the 'View Run List' interface. At the top, there are buttons for 'View Run List', 'View Pause List', 'View Finish List', and 'How to Use'. Below these are buttons for 'Increase Download Priority' and 'Decrease Download Priority'. On the left side, there is a menu with options: 'Add New BT Task', 'Add New FTP/HTTP Task', 'Pause/Restart Download Task', 'Delete Download Task', 'BT Download Property', 'Set Config', and 'Dump Diagnostic Information'. The main area contains a table with the following data:

Download Task	Status	Size	%	Download	Upload	Seed/Peer	Time Left
abceeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/0	99:99:99

5. You can select a download task and click 'BT download property' to enable or disable the DHT public network and configure the sharing time after the download completes.

This screenshot is identical to the previous one, but the 'BT Download Property' option in the left-hand menu is highlighted with a red rectangular box.

**Note:** If the sharing time (larger than 0 hr) is set for a download task, the download task will be moved to the 'Finish List' after the download completes and the sharing time ends.

- Click 'Set Config' and enter the number of the maximum tasks you want to download at the same time (Default number: 3).  
Enter the maximum download rate (default value is 0, which means unlimited).  
Enter the maximum upload rate (default value is 0, which means unlimited).  
Enter the port range for Download Station (default range is 6881-6999).  
Check UPnP NAT port forwarding to enable automatically port forwarding on UPnP supported gateway (default is not checked).

The screenshot shows a BitTorrent client interface. At the top right, there are two buttons: 'Increase Download Priority' and 'Decrease Download Priority'. Below them is a table with the following columns: Download Task, Status, Size, %, Download, Upload, Seed/Peer, and Time Left. The table contains one row with the following data: 'abceeeeee.torrent', 'RUN', '540.37 MB', '0.0', '0.0 KB/s', '0.0 KB/s', '0/0', and '99:99:99'. On the left side, there is a sidebar menu with several options: 'Add New BT Task', 'Add New FTP/HTTP Task', 'Pause/Restart Download Task', 'Delete Download Task', 'BT Download Property', 'Set Config' (highlighted with a red box), and 'Dump Diagnostic Information'.

Download Task	Status	Size	%	Download	Upload	Seed/Peer	Time Left
abceeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/0	99:99:99

### Protocol Encryption

Some Internet Service Providers (ISP) block or throttle BitTorrent connections for the high bandwidth it generates. By turning on 'Protocol Encryption' your connections will not be distinguished by these ISPs as BitTorrent connections therefore are unable to block or throttle them and causing slow connections or even no connections. However some ISPs are starting to be able to identify these connections even if they were encrypted so users are suggested to consider switching to an ISP that does not perform BitTorrent traffic throttling or blocking.

You can set the download schedule in 'Download time settings'. Select 'Continuous download' to download the files continuously. To specify the download schedule, select 'Daily download time' and enter the start and end time. If the end time value is smaller than the start time, the end time will be treated as the time on the next day.

- To stop a running download task, select the task in View Run list and click 'Pause/ Restart download task'. You can view tasks that are paused or finished in View Pause List and View Finish List respectively. To restart a paused task, select the task in View Pause List and click 'Pause/ Restart download task'.

<ul style="list-style-type: none"> <li>:: Add New BT Task</li> <li>:: Add New FTP/HTTP Task</li> <li><b>:: Pause/Restart Download Task</b></li> <li>:: Delete Download Task</li> <li>:: BT Download Property</li> <li>:: Set Config</li> <li>:: Dump Diagnostic Information</li> </ul>	Download Task	Status	Size	%	Download	Upload	Seed/Peer	Time Left
	abceeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/0	99:99:99

- You can also increase or decrease the task priority by clicking 'Increase download priority' and 'Decrease download priority' when there are multiple download tasks.


<ul style="list-style-type: none"> <li>:: Add New BT Task</li> <li>:: Add New FTP/HTTP Task</li> <li>:: Pause/Restart Download Task</li> <li>:: Delete Download Task</li> <li>:: BT Download Property</li> <li>:: Set Config</li> <li>:: Dump Diagnostic Information</li> </ul>	Download Task	Status	Size	%	Download	Upload	Seed/Peer	Time Left
	abceeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/1	99:99:99
	cdceeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/1	99:99:99

- To delete a running, paused, or finished task, select the task and click 'Delete download task'. You can select to remove the download task only and retain the downloaded files, or remove the task and downloaded files.

		Increase Download Priority		Decrease Download Priority			
Download Task	Status	Size	%	Download	Upload	Seed/Peer	Time Left
abceeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/1	99:99:99
cdceeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/1	99:99:99

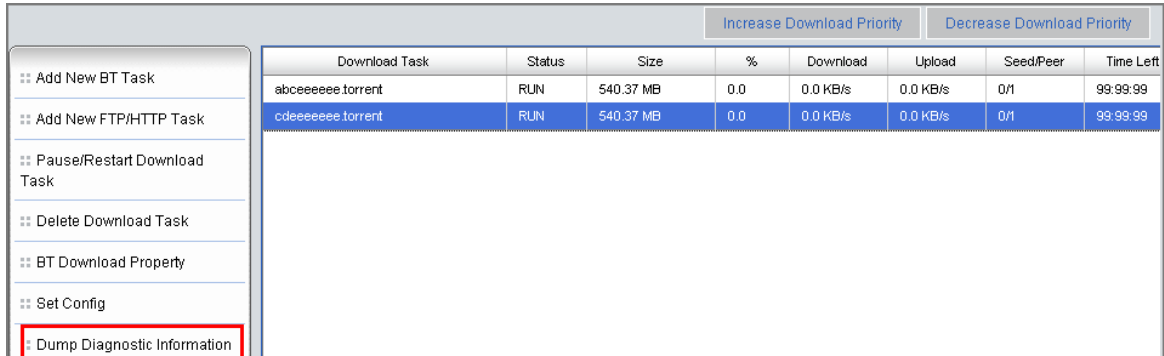
  

:: Add New BT Task
:: Add New FTP/HTTP Task
:: Pause/Restart Download Task
<b>Delete Download Task</b>
:: BT Download Property
:: Set Config
:: Dump Diagnostic Information

- To logout Download Station, click  on the top right hand corner.
- To connect to the folders you have downloaded, go to the share folder Qdownload/ Download of the NAS.

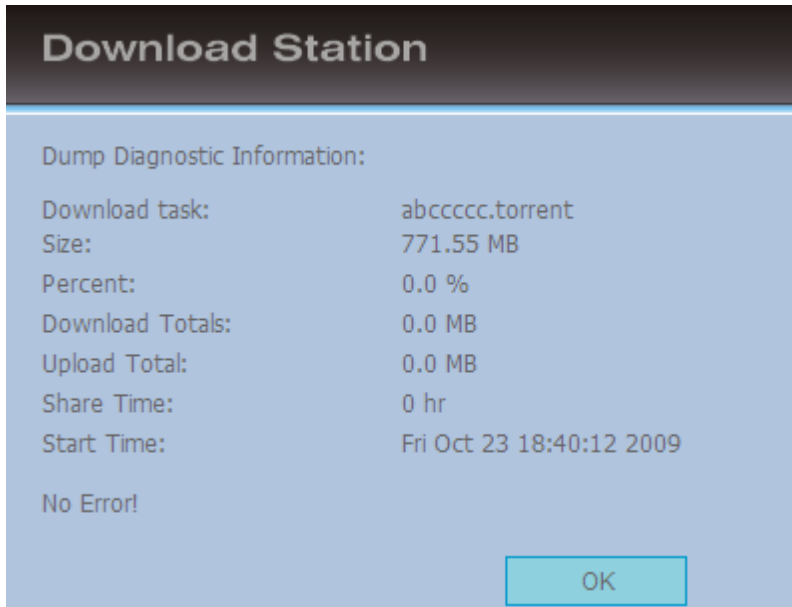
## Dump Diagnostic Information

To view the diagnostic details of a download task, select a task on the list and click 'Dump Diagnostic Information'.



The screenshot shows the main interface of the Download Station. On the left is a sidebar with several menu items. The 'Dump Diagnostic Information' item is highlighted with a red border. On the right is a table with columns: Download Task, Status, Size, %, Download, Upload, Seed/Peer, and Time Left. Two tasks are listed: 'abceeeee.torrent' and 'cdeeeeee.torrent', both in 'RUN' status with a size of 540.37 MB and 0.0% completion.

Download Task	Status	Size	%	Download	Upload	Seed/Peer	Time Left
abceeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/1	99:99:99
cdeeeeee.torrent	RUN	540.37 MB	0.0	0.0 KB/s	0.0 KB/s	0/1	99:99:99



The screenshot shows a dialog box titled 'Download Station'. It displays the 'Dump Diagnostic Information' for a selected task. The information includes the task name, size, percent completion, download and upload totals, share time, and start time. The status is 'No Error!'.

**Download Station**

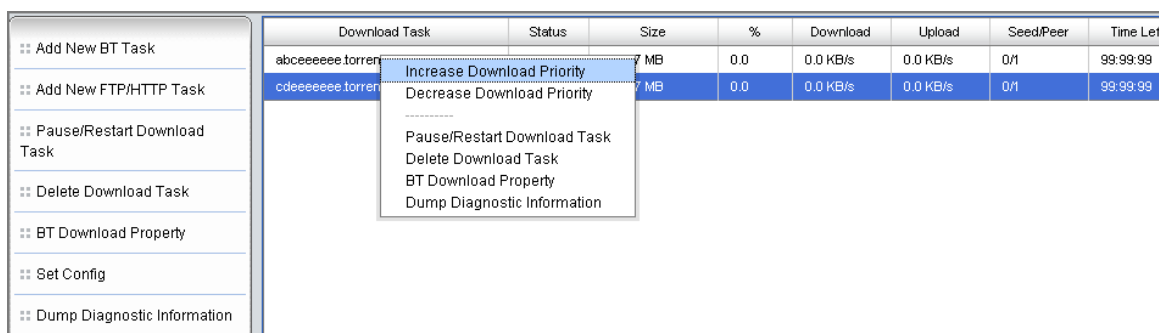
Dump Diagnostic Information:

Download task: abccccc.torrent  
Size: 771.55 MB  
Percent: 0.0 %  
Download Totals: 0.0 MB  
Upload Total: 0.0 MB  
Share Time: 0 hr  
Start Time: Fri Oct 23 18:40:12 2009

No Error!

OK

You can right click the download task to configure the download settings.



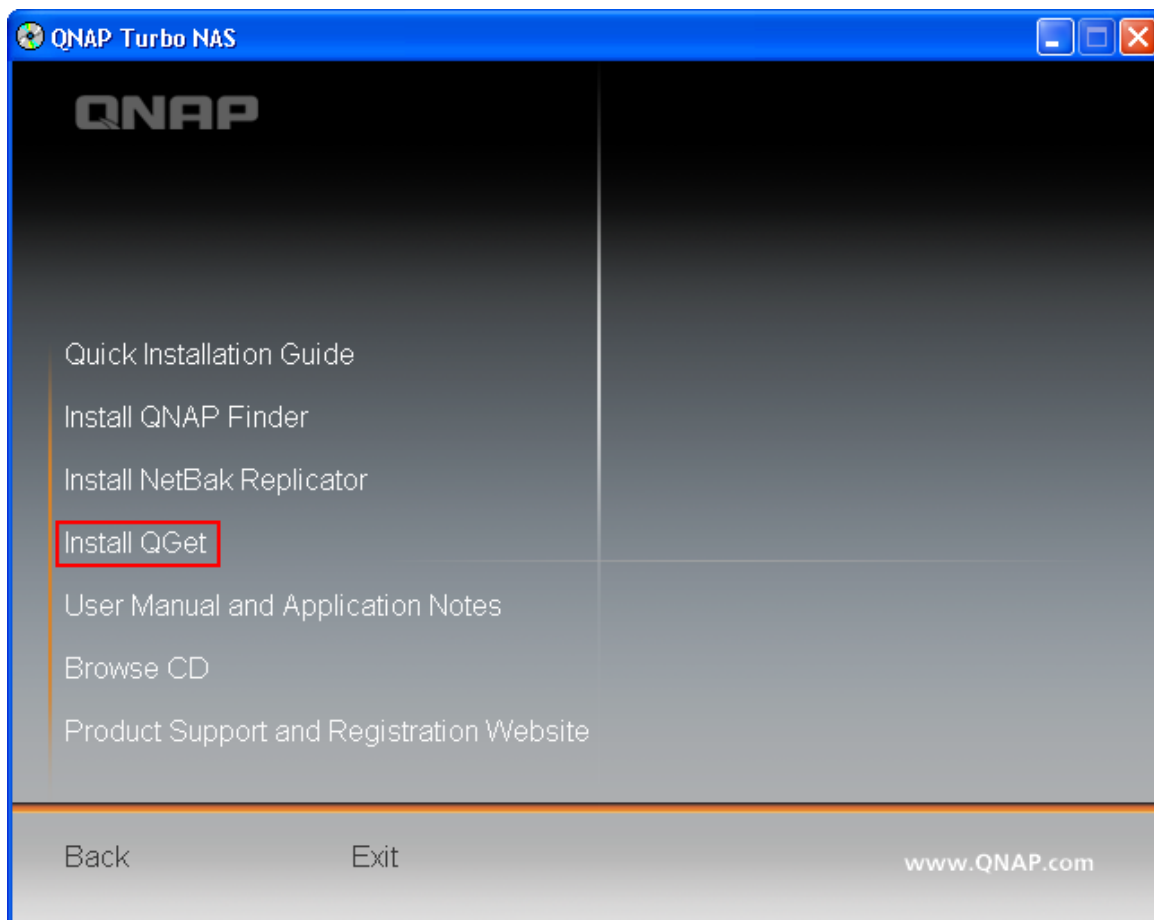
The common reasons for slow BT download rate or download error are as below:

1. The torrent file has expired, the peers have stopped sharing this file, or there is error in the file.
2. The NAS has configured to use fixed IP but DNS server is not configured, or DNS server fails.
3. Set the maximum number of simultaneous downloads as 3-5 for the best download rate.
4. The NAS is located behind NAT router. The port settings have led to slow BT download rate or no response. You may try the following means to solve the problem:
  - a. Open the BitTorrent port range on NAT router manually. Forward these ports to the LAN IP of the NAS.
  - b. The new NAS firmware supports UPnP NAT port forwarding. If your NAT router supports UPnP, enable this function on the NAT. Then enable UPnP NAT port forwarding of the NAS. The BT download rate should be enhanced.

## Use Download Software QGet

QGet is a powerful management utility for maintaining the BT, HTTP and FTP download tasks of multiple NAS servers via LAN or WAN. By using QGet, you no longer need to login the Download Station web interface of multiple servers and manage the settings one by one. Simply install QGet on any computer running Windows 2000/ XP/ Vista/ Windows 7 or Mac, you can manage the download tasks of all your NAS servers.

1. Install QGet from the product CD-ROM disc.



2. Follow the instructions to install QGet.

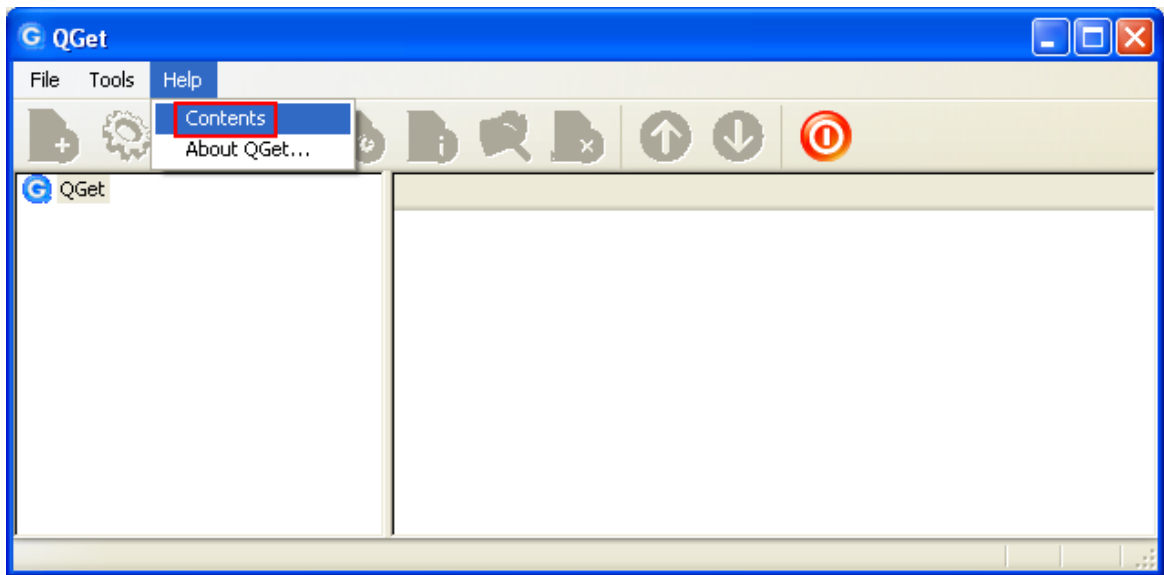


3. Run QGet from the installed location.





4. For the details of using QGet, see the online help.



## 10. Surveillance Station

---

You monitor and record the live video of maximum 2-4 IP cameras available on the network (LAN or WAN) with Surveillance Station.

Maximum number of IP cameras	NAS models
2	TS-110, TS-119, TS-210, TS-219, TS-219P, TS-239 Pro, TS-239 Pro II, TS-259 Pro
4	TS-410, TS-419P, TS-410U, TS-419U, SS-439 Pro, TS-439 Pro, TS-439 Pro II, TS-439U-SP/RP, TS-459 Pro, TS-459U-SP/RP, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, TS-859U-RP

**Note:** To use this feature on TS-x39/509/809 series, please update the system firmware with the image file enclosed in the product CD or download the latest system firmware.

Home >> Applications >> Surveillance Station Welcome admin | Logout English

### Surveillance Station

**Surveillance Station**

- Enable Surveillance Station
  - Show service link on the login page

[APPLY](#)

Click 'Surveillance Station' on the top or on the login page of the NAS to connect to Surveillance Station. If you login the service from the login page of the NAS, you are required to enter the user name and password.

**Note:** The Surveillance Station is only supported on IE browser 6.0 or later.

To set up your network surveillance system by the NAS, follow the steps below:

1. Plan your home network topology
2. Set up the IP cameras
3. Configure the camera settings on the NAS
4. Configure your NAT router (for remote monitoring over the Internet)

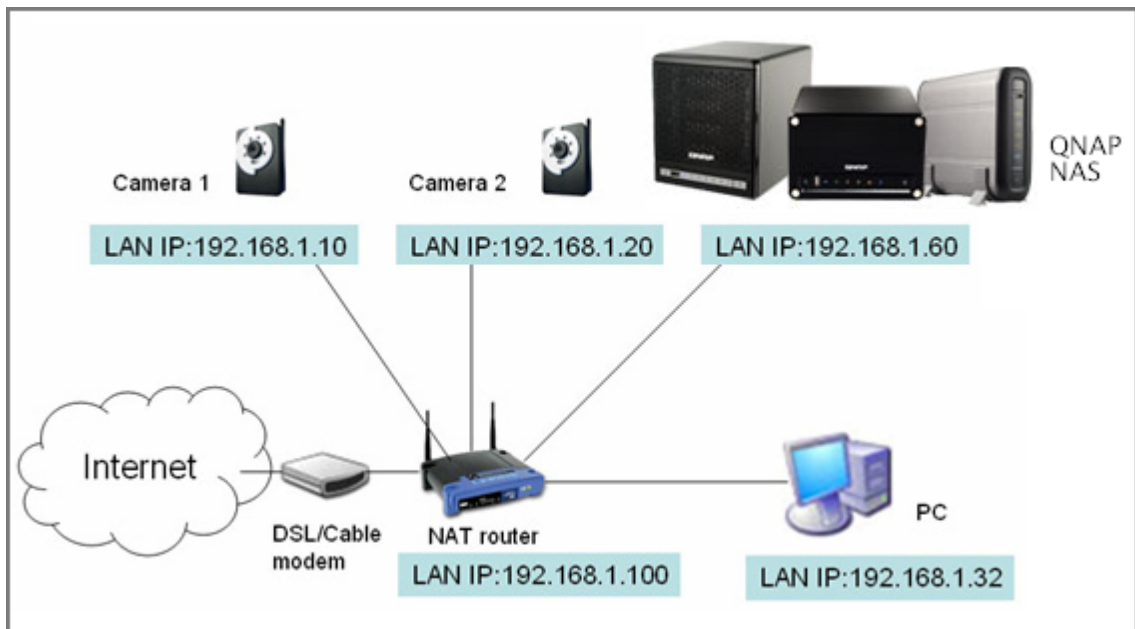
### Plan your home network topology

Write down your plan of the home network before setting up the surveillance system. Consider the following when doing so:

- i. The IP address of the NAS
- ii. The IP address of the IP cameras

Your computer, the NAS, and the IP cameras should be connected to the same router on the LAN. Assign fixed IP addresses to the NAS and the IP cameras. For example,

- The LAN IP of the home router: 192.168.1.100
- Camera 1 IP: 192.168.1.10 (fixed IP)
- Camera 2 IP: 192.168.1.20 (fixed IP)
- NAS IP: 192.168.1.60 (fixed IP)



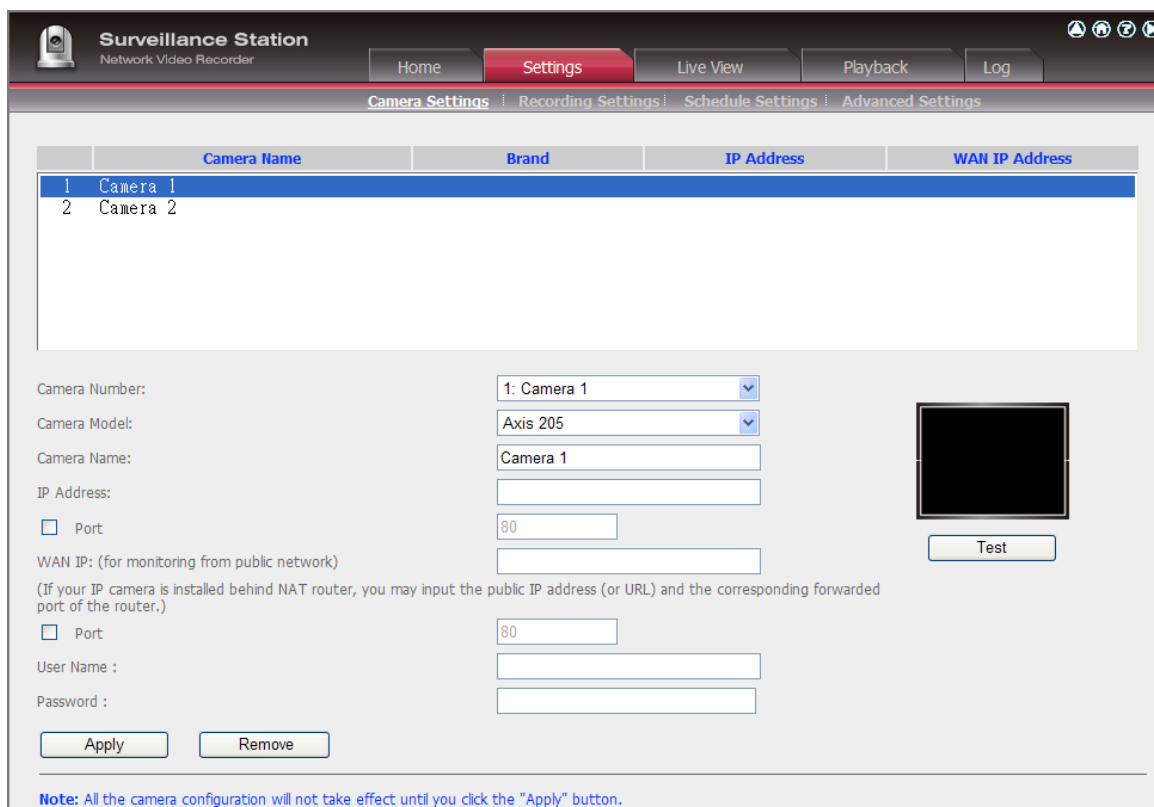
### Set up the IP cameras

In this example, two IP cameras will be installed. Connect the IP cameras to your home network. Then set the IP address of the cameras so that they are in the same LAN as the computer. Login the configuration page of the Camera 1 by IE browser. Enter the IP address of the first IP camera as 192.168.1.10. The default gateway should be set as the LAN IP of the router (192.168.1.100 in this example). Then configure the IP address of the second IP camera as 192.168.1.20. Some IP cameras provide a utility for IP configuration. You may refer to the user manual of the cameras for further details.

\* Please refer to <http://www.qnap.com/> for the supported network camera list.

### Configure the camera settings on the NAS

Login the Surveillance Station by the IE browser to configure the IP cameras. Go to 'Settings' > 'Camera Settings'. Enter the IP camera information, for example, name, model, and IP address.



The screenshot shows the 'Surveillance Station' interface with the 'Settings' tab selected. Under 'Camera Settings', there is a table with the following data:

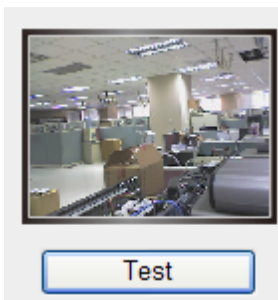
Camera Name	Brand	IP Address	WAN IP Address
1 Camera 1			
2 Camera 2			

Below the table, the configuration fields for 'Camera 1' are visible:

- Camera Number: 1: Camera 1 (dropdown)
- Camera Model: Axis 205 (dropdown)
- Camera Name: Camera 1 (text input)
- IP Address: (text input)
- Port: 80 (text input)
- WAN IP: (for monitoring from public network) (text input)
- (If your IP camera is installed behind NAT router, you may input the public IP address (or URL) and the corresponding forwarded port of the router.)
- Port: 80 (text input)
- User Name: (text input)
- Password: (text input)

Buttons: 'Apply' and 'Remove' are located at the bottom left. A 'Test' button is located to the right of the IP Address field. A 'Note' at the bottom states: 'All the camera configuration will not take effect until you click the "Apply" button.'

Click 'Test' on the right to ensure the connection to the IP camera is successful.



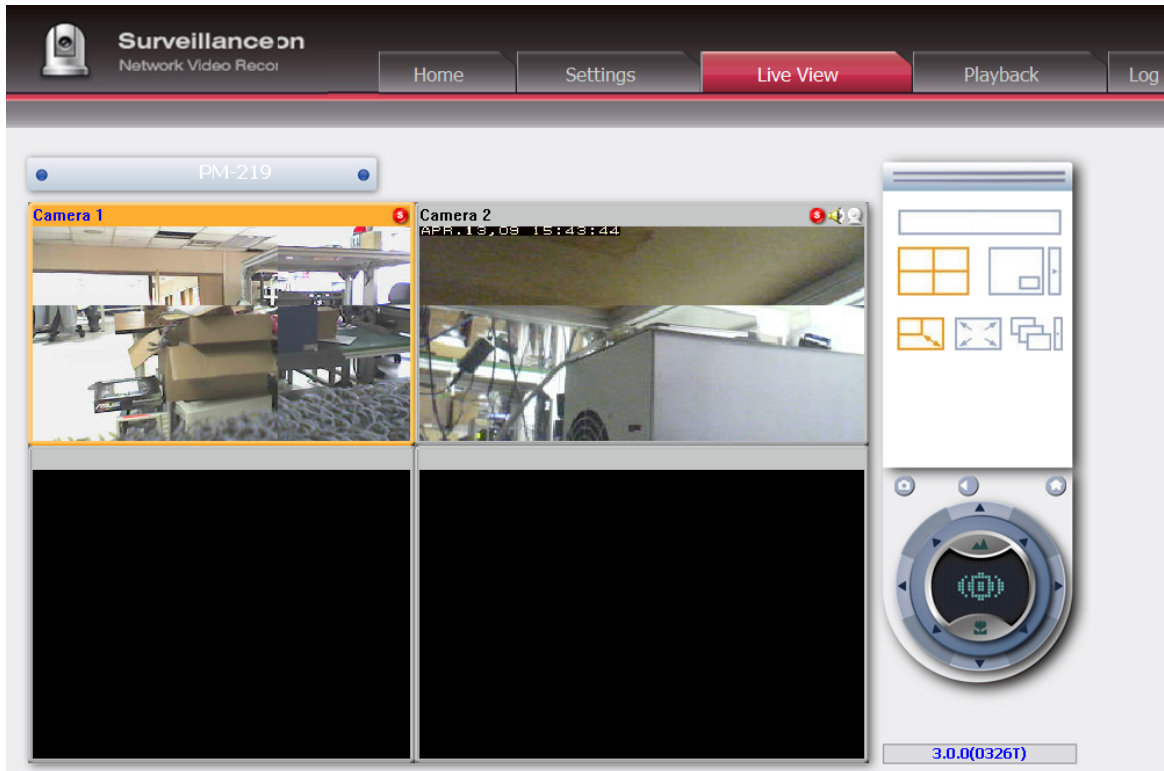
If your IP camera supports audio recording, you may enable the option on the 'Recording Settings' page. Click 'Apply' to save the changes.

Camera Number:	2: Camera 2
Video Compression:	Motion JPEG
Resolution:	QVGA
Frame Rate:	20
Quality:	Normal
<input checked="" type="checkbox"/> Enable audio recording on this camera	
Estimated Storage Space for Recording: 6760 GB	
<input type="button" value="Apply"/>	

Configure the settings of IP camera 2 following the above steps.

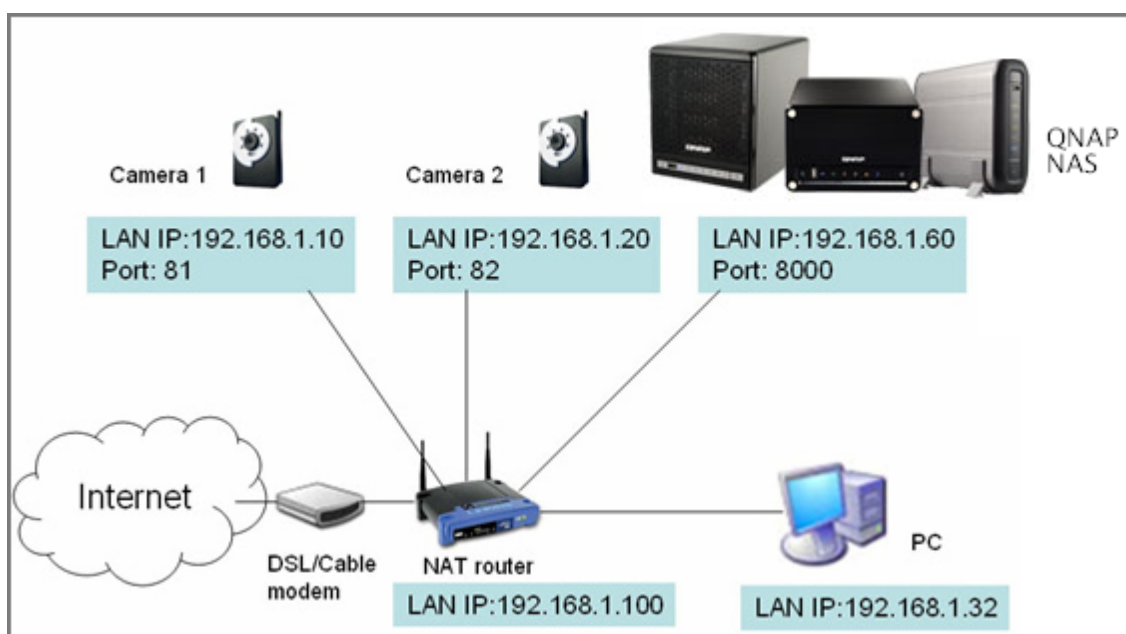
After you have added the network cameras to the NAS, go to the 'Live View' page. The first time you connect to this page by the IE browser, you have to install the ActiveX control in order to view the images of IP camera 1 and IP camera 2. You can start to use the monitoring and recording functions of the Surveillance Station.

To use other functions such as motion detection recording, scheduled recording, and video playback, see the online help.



### Configure your NAT router (for remote monitoring over the Internet)

To view the monitoring video and connect to the NAS remotely, you need to change the network settings by forwarding different ports to the corresponding LAN IP on your NAT router.




### Change the port settings of the NAS and the IP cameras

The default HTTP port of NAS is 8080. In this example, the port is changed to 8000. Therefore, you have to connect to the NAS via `http://NAS IP:8000` after applying the settings.

Then login the network settings page of the IP cameras. Change the HTTP port of IP camera 1 from 80 to 81. Then change the port of IP camera 2 from 80 to 82.

Next, login the Surveillance Station. Go to 'Settings' > 'Camera Settings'. Enter the port numbers of IP camera 1 and IP camera 2 as 192.168.1.10 port 81 and 192.168.1.20 port 82 respectively. Enter the login name and the password for both IP cameras.

Besides, enter the WAN IP address (or your domain address on the public network, for example, MyNAS.dyndns.org) and the port on the WAN for the connection from the Internet. After finishing the settings, click 'Test' to verify the connection.

Camera Number:	1: Camera 1	 <input type="button" value="Test"/>
Camera Model:	iPUX ICS 1003/1013	
Camera Name:	Camera 1	
IP Address:	192.168.1.10	
<input checked="" type="checkbox"/> Port	81	
WAN IP: (for monitoring from public network)	myNAS.dyndns.org	
(If your IP camera is installed behind NAT router, you may input the public IP address (or URL) and the corresponding forwarded port of the router.)		
<input checked="" type="checkbox"/> Port	81	
User Name :	administrator	
Password :	•••••	
<input type="button" value="Apply"/> <input type="button" value="Remove"/>		
<p><b>Note:</b> All the camera configuration will not take effect until you click the "Apply" button.</p>		

Go to the configuration page of your router and configure the port forwarding as below:

- Forward port 8000 to the LAN IP of the NAS: 192.168.1.60
- Forward port 81 to the LAN IP of IP camera 1: 192.168.1.10
- Forward port 82 to the LAN IP of IP camera 2: 192.168.1.20

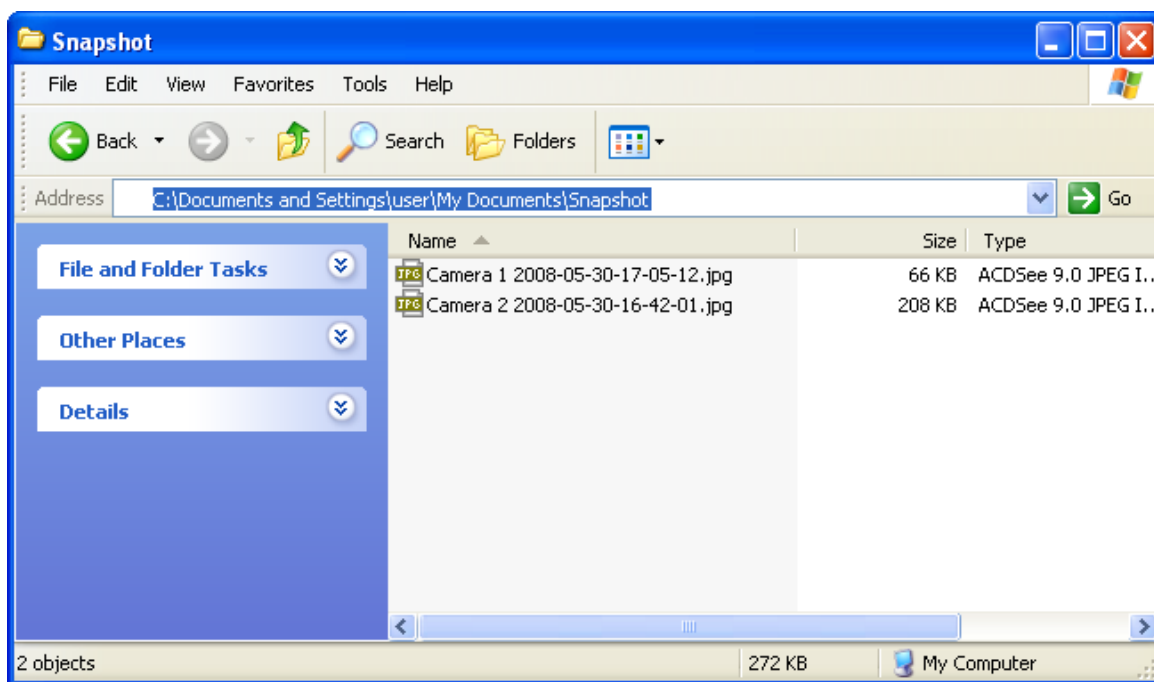
**Note:** When you change the port settings, make sure remote access is allowed. For example, if your office network blocks the port 8000, you will not be able to connect to your NAS from the office.

After you have configured the port forwarding and the router settings, you can start to use the Surveillance Station for remote monitoring over the Internet.



## Connect to the snapshots and video recordings of Surveillance Station

All the snapshots are saved in 'My Documents' > 'Snapshot' (Windows XP) in your computer. If you are using Windows 7 or Vista, the default directory is 'Documents' > 'Snapshot'.



The video recordings will be saved in \\NASIP\Qrecordings or \\NASIP\Recordings. The general recordings are saved in the folder 'record\_nvr' and the alarm recordings are saved in the folder 'record\_nvr\_alarm'.

# 11. iTunes Service

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## General

The MP3 files on the Qmultimedia/ Multimedia folder of the NAS can be shared to iTunes by this service. All the computers with iTunes installed on LAN are able to find, browse, and play the shared music files on the NAS.

To use the iTunes service, make sure you have installed the iTunes program on your computer. Enable this service. Then upload the music files to the Qmultimedia/ Multimedia folder of the NAS.

**iTunes Service**

**GENERAL** | SMART PLAYLIST

**iTunes Service**

After iTunes service is enabled, all iTunes clients in the same subnet can play the music files in the "Multimedia" folder on the server.

Enable iTunes Service

Password required: [.....]

Please select the label encoding of the music files. Select the correct encoding to display the label information correctly. Please select English for non-Asian languages.

Label encoding: [Chinese-Traditional ▼]

**APPLY**

Password required: To allow the users to connect to the data only by entering the correct password, select this option and enter the password.

## Smart Playlist

Click 'Smart Playlist' to enter the smart playlist page. You can define the playlist rules to categorize the songs into different playlists. If there is no song that matches the rules on the playlist, the iTunes client will not show the playlist. For detailed operation, refer to the online help.

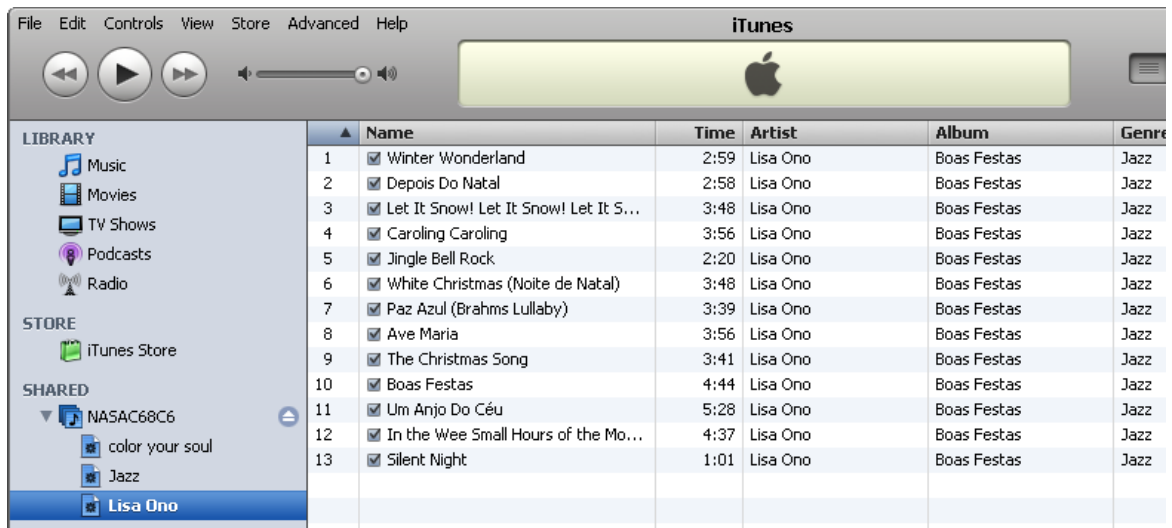


## Locate the service in iTunes

Connect your PC and Turbo NAS to the same LAN and start iTunes on your PC. You should see an entry (your NAS name generally) shown under 'SHARED' on the left panel of iTunes interface. Click the NAS name and it will bring up a list of all the music files stored under Qmultimedia (or Multimedia) share folder and they are ready for playing right away.



Click the triangle icon next to the NAS name. The smart playlists defined earlier will be shown. The songs are categorized accordingly. You can start to use iTunes to play the music on your NAS.



**Note:** You can download the latest iTunes software from official Apple website <http://www.apple.com/>.

## 12. UPnP Media Server

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The NAS is built-in with TwonkyMedia, DLNA compatible UPnP media server. Enable this function and the NAS will share particular music, photos, or video files to the DLNA network. You can use DLNA compatible digital media players to play the multimedia files on the NAS on your TV or acoustic sound system.

To use UPnP Media Server, enable this function and click the following link (<http://NAS IP:9000/>) to enter the configuration page of the UPnP Media Server.



UPnP Media Server

UPnP Media Server

Enable UPnP Media Server

After enabling this service, click the following link to enter UPnP Media Server configuration page.

<http://10.8.12.46:9000/>

APPLY

Click the link <http://NAS IP:9000/>. Go to 'TwonkyMedia Settings' > 'Basic Setup' to configure the basic server settings.

The contents on the Qmultimedia or Multimedia folder of the NAS will be shared to the digital media players by default. You can go to 'Basic Setup' > 'Sharing' > 'Content Locations' to change the share folder or add more share folders.

After configuring the settings, you can upload MP3, photos, or video files to the specified share folders on the NAS.

**Note:** If you upload multimedia files to the default share folder but the files are not shown on Media Player, click 'Rescan content directories' or 'Restart server' on the Media Server configuration page.

For the information of setting up the UPnP media server of the NAS for media playing, see here [400](#).

**About UPnP and DLNA**

Universal Plug and Play (UPnP) is a set of computer network protocols promulgated by the UPnP Forum. The purpose of UPnP is to allow the devices to connect seamlessly and to simplify the implementation of the networks at home and in the corporate environment. UPnP achieves this by defining and publishing UPnP device control protocols built upon open, Internet-based communication standards.

The term UPnP is gleaned from Plug-and-play, a technology for dynamically attaching devices to a computer directly.

The Digital Living Network Alliance (DLNA) is an alliance of a number of consumer electronics, mobile and personal computer manufacturers. Its aim is to establish a home network in which the electronic devices from all companies are compatible with each other under an open standard. The alliance also tries to promote the idea of digital home by establishing DLNA certification standard. All DLNA certified products connected to the home network can be connected to seamlessly to enable the consumers to enjoy the digital life conveniently.

## 13. MySQL Server

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**Note:** To use this feature on the TS-x39/509/809 series, please update the system firmware with the image file enclosed in the product CD or download the latest system firmware from <http://www.qnap.com/>.

You can enable MySQL Server as the website database.

### Enable TCP/IP Networking

You can enable this option to configure MySQL server of the NAS as a database server of another web server in remote site through Internet connection. When you disable this option, your MySQL server will only be configured as local database server for the web server of the NAS.

After enabling remote connection, assign a port for the remote connection service of MySQL server. The default port is 3306.

After the first-time installation of the NAS, a folder phpMyAdmin is created in the Qweb/ Web network folder. You can enter <http://NAS IP/phpMyAdmin/> in the web browser to enter the phpMyAdmin page and manage the MySQL database.

**Note:**

- Do not delete the phpMyAdmin folder. You can rename this folder but the link on the MySQL server page will not be updated. To connect to the renamed folder, you can enter the link <http://NAS IP/renamed folder> in the web browser.
- The phpMyAdmin folder is created after the first-time installation. When you update the firmware, the folder remains unchanged.

## Database Maintenance

- Reset root password: Execute this function to reset the password of MySQL root as 'admin'.
- Re-initialize database: Execute this function to delete all the data on MySQL database.

For the information of hosting a phpBB forum on the NAS, see here<sup>[409]</sup>.

### MySQL Server

---

#### MySQL Server

You can enable MySQL server as the website database.

Enable MySQL Server  
Enable this option to allow remote connection of MySQL server.

Enable TCP/IP Networking  
Port Number:

**Note:** You can install the phpMyAdmin package to manage your MySQL server. To install the phpMyAdmin, please click [here](#).

---

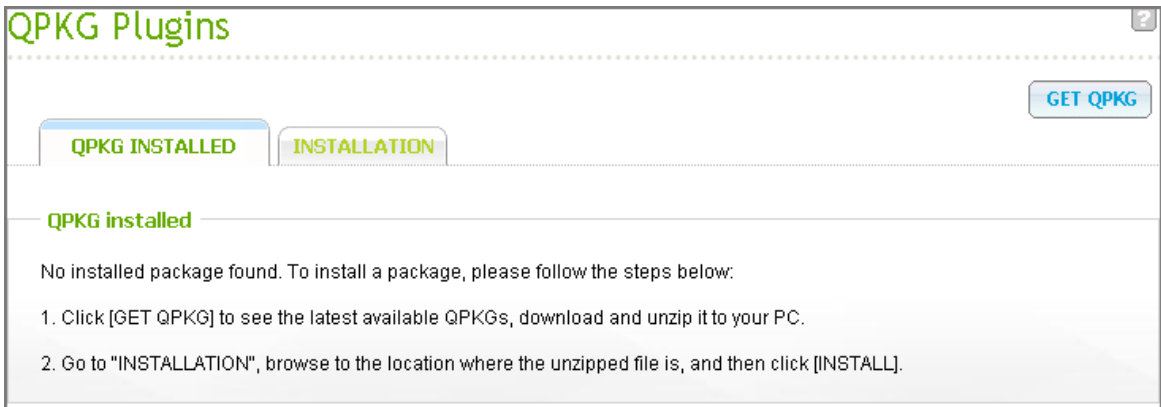
#### Database Maintenance

You can reset the database password or re-initialize the database.



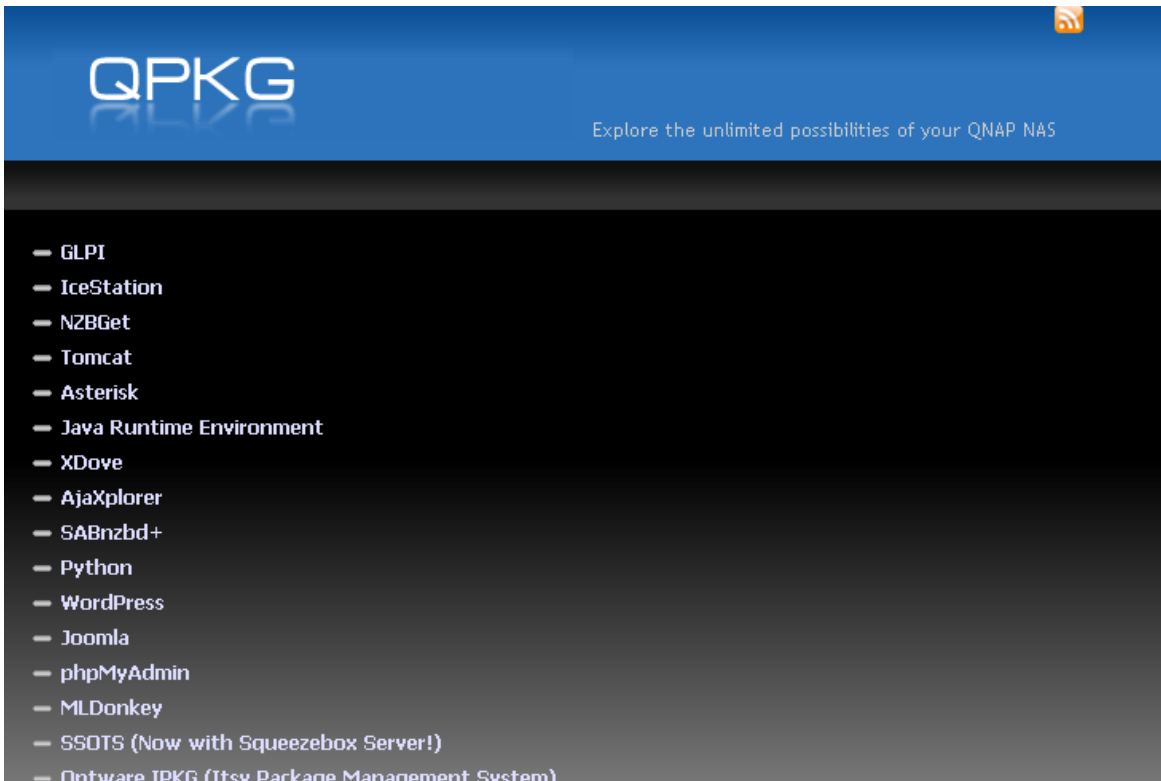
## 14. QPKG Plugins

You can install the QPKG packages to add more functions to the NAS. Click 'GET QPKG'.



The screenshot shows the 'QPKG Plugins' interface. At the top, there is a 'GET QPKG' button. Below it, there are two tabs: 'QPKG INSTALLED' (which is active) and 'INSTALLATION'. Under the 'QPKG installed' tab, the text reads: 'No installed package found. To install a package, please follow the steps below:'. The steps are: 1. Click [GET QPKG] to see the latest available QPKG's, download and unzip it to your PC. 2. Go to "INSTALLATION", browse to the location where the unzipped file is, and then click [INSTALL].

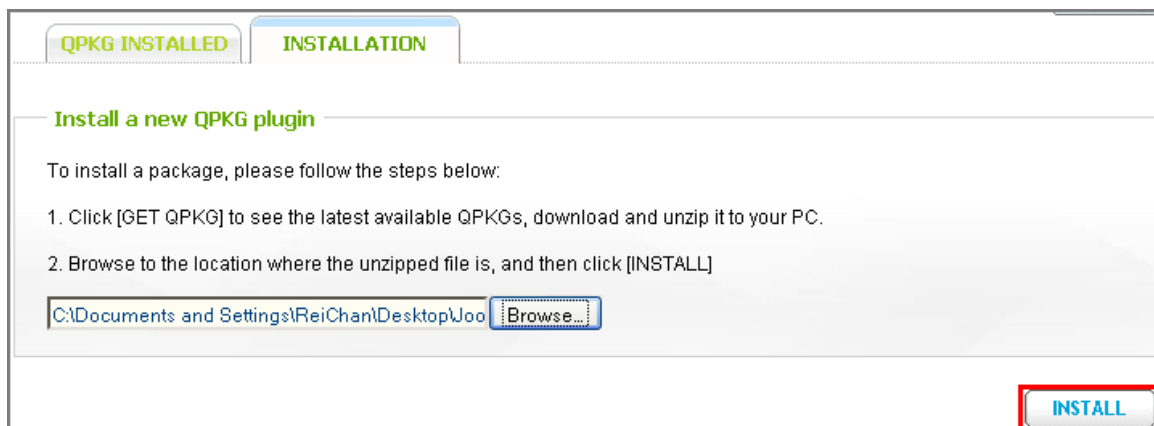
Before you install the packages, make sure the files are correct, read the instructions carefully, and back up all the important data on the NAS. Download the package you want to install on the NAS to your computer.



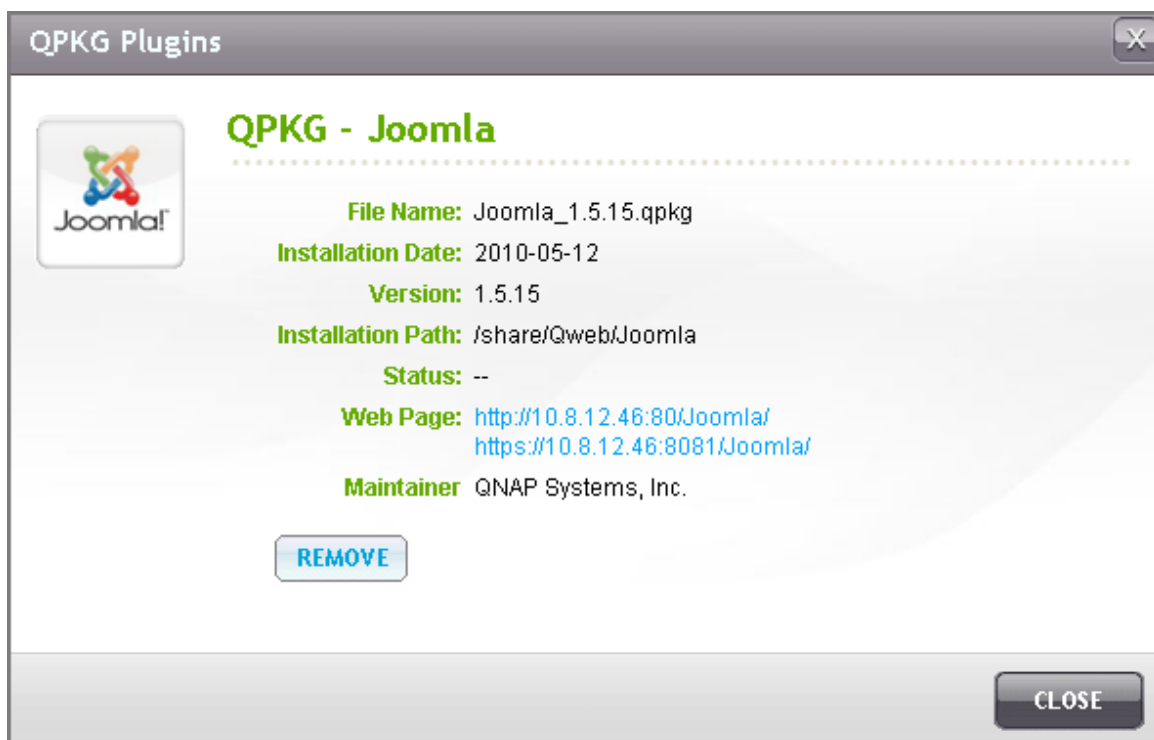
The screenshot shows the QPKG interface. At the top, there is a blue header with the 'QPKG' logo and the text 'Explore the unlimited possibilities of your QNAP NAS'. Below the header, there is a list of available packages:

- GLPI
- IceStation
- NZBGet
- Tomcat
- Asterisk
- Java Runtime Environment
- XDove
- AjaXplorer
- SABnzbd+
- Python
- WordPress
- Joomla
- phpMyAdmin
- MLDonkey
- SSOTS (Now with Squeezebox Server!)
- Ontware IPKG (Itsy Package Management System)

Before installing the QPKG package, unzip the downloaded file. To install the QPKG, browse to select the correct QPKG file and click 'INSTALL'.



After uploading the QPKG packages, the details are shown. Click the link to connect to the web page of the installed package and start to configure the settings. To remove the package from the NAS, click 'REMOVE'.



## 15. Backup

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External Drive [317](#)

USB One Touch Copy [313](#)

Remote Replication [316](#)

Time Machine [327](#)

### 15.1 External Drive

---

You can back up the local drive data to an external storage device. Select to execute instant, automatic, or scheduled backup, and configure the settings.

- Backup Now: To back up the data to the external storage device immediately.
- Schedule Backup: To back up the data by schedule. You can select the weekday and time to execute the backup.
- Auto-backup: To execute the backup automatically once the storage device is connected to the NAS.

Copy Options:

You can select 'Copy' to copy the files from the NAS to the external device. Select 'Synchronize' to synchronize the data between the NAS and the external storage device. Any differentiated files on the external device will be deleted.

**Note:** During data copy or synchronization, identical files on both sides will not be copied. If there are files in the same name but different in size or modified dates on the NAS and the external device, the files on the external device will be overwritten.

## External Drive

### Back up to an external storage device

Back up the local disk data to an external storage device. You can select instant, automatic, or schedule backup.

#### Available shares

- Network Recycle Bin 1
- Qdownload
- Qmultimedia
- Qrecordings
- Qusb
- Qweb
- rei



#### Shares to back up

- Public

Back up to an External Storage Device: **USBDisk1** The drive is ready.

Free Size/Total Size: **1899 MB / 1900 MB**

Backup Method: **Backup Now** Execute backup immediately.

Copy options: **Synchronize** **WARNING! Files are copied from the source to the destination. Extra files on the destination will be deleted, files of the same names will be overwritten by the source. Source data will remain unchanged.**

Current Backup Status: No backup operations.

Last Backup Time:

Last Backup Result:

APPLY

## 15.2 USB One Touch Copy

---

This feature is not supported by TS-809U-RP.

You can configure the behaviour of the USB one touch copy button on this page. The following three functions are available:

Options	Description
Copy from the front USB storage to a directory of the internal HDD of the NAS	<ol style="list-style-type: none"><li>1. Create directory: A new directory will be created on the destination and the source data will be copied to this directory. The new directory will be named as the backup date (YYYYMMDD). If there are two or more backups on the same day, the directory will be named with YYYYMMDD-1, YYYYMMDD-2... and so on.</li><li>2. Copy: Back up data to the destination share folder. If the same file exists, the destination file will be overwritten.</li><li>3. Synchronize: Back up data to the destination share folder and clear the redundant files. If the same file exists, the destination file will be overwritten.</li></ol>
Copy to the front USB storage from a directory of the internal HDD of the NAS	<ol style="list-style-type: none"><li>1. Copy: Back up data to the destination share folder. If the same file exists, the destination file will be overwritten.</li><li>2. Synchronize: Back up data to the destination share folder and clear the redundant files. If the same file exists, the destination file will be overwritten.</li></ol>
Disable the one touch copy button	Select this option to disable the copy button.

**Note:** If there are multiple partitions on the source storage device, a new folder will be created for each partition on the destination as the backup folder. The backup folder will be named with the backup date and the partition number, *YYYYMMDD-1* for partition 1, *YYYYMMDD-2* for partition 2... and so on. If the source storage device contains only one partition, the backup folder will be named as *YYYYMMDD* only.

## USB One Touch Copy

### USB One Touch Copy

Configure the function of the USB one touch copy button.

- Copy from the front USB storage device to the  directory of the internal disk.
- Copy to the front USB storage device from the  directory of the internal disk.  
Backup method:  **WARNING! Files are copied from the source to the destination. Extra files on the destination will be deleted, files of the same names will be overwritten by the source. Source data will remain unchanged.**
- Disable one touch copy button

**Note:** The USB LED blinks when data backup to an external device is in process. The USB one touch copy button will be disabled temporarily. If you press the button during the data transfer process, the server will beep thrice to alert you the button is disabled. Please wait for the backup to finish and the USB LED to stop flashing, and then use the USB one touch copy button again.

APPLY

### Data copy by front USB port

The NAS supports instant data copy backup from the external USB device to the NAS or the other way round by the front one touch copy button. To use this function, follow the steps below:

1. Make sure a HDD is installed and formatted on the NAS. The default network share Qusb/ Usb has been created.
2. Turn on the NAS.
3. Configure the behaviour of the Copy button on 'Backup' > 'USB one touch copy' page.
4. Connect the USB device, for example, digital camera or flash, to the front USB port of the NAS.
5. Press the Copy button once. The data will be copied according to your settings on the NAS.

**Note:** Incremental backup is used for this feature. After the first time data backup, the NAS only copies the changed files since the last backup.



**Caution:** Files are copied from the source to the destination. Extra files on the destination will be deleted; files of the same names will be overwritten by the source. Source data will remain unchanged.

## 15.3 Remote Replication

---

### Remote Replication

You can use this option to back up the folders and sub-folders on the NAS to another QNAP NAS or Rsync server over LAN or the Internet.

The maximum number of remote replication jobs supported is 64.

- Port Number: Specify a port number for remote replication. The default port number is 873.

**Note:** If this server connects to the Internet through a router, make sure the specified port for remote replication is opened on the router.

- Enable backup from a remote server to the local host: Select this option to allow the remote server to back up data to the local host via remote replication.
- Allow remote Rsync server to back up data to NAS: Enable this option to allow a remote Rsync server to back up the data to the NAS by remote replication.



## Remote Replication



REMOTE REPLICATION

AMAZON S3

### Remote Replication

By using this function, you can back up the data on the local server to a remote server of the same NAS series, and also allow backup from remote server to the local server.

Port Number:

Enable backup from a remote server to the local host

Allow remote Rsync server to back up data to NAS

User Name:

Password:

APPLY

### Current Jobs

Option

Create New Replicating Job



Job Name

Schedule

Status

Action

Delete

Follow the steps below to create a remote replication job for backup from the NAS to another QNAP NAS.


1. Click 'Create New Replicating Job' to create a new task.

#### Current Jobs



<input type="checkbox"/>	Job Name	Schedule	Status	Action
--------------------------	----------	----------	--------	--------

2. Select the server type and enter the job name.



**Remote Replication Wizard**

This wizard helps you create a remote replication job. Enter the name of the remote replication job and click **Next**.

**Server type:** NAS server

**Remote Replication Job Name:** backup

Step 1 of 7



NEXT CANCEL

3. Enter the IP address or domain name (if any) of the remote server, the port number of the remote server, the user name and password with write access to the remote server. Click 'Test' to check if the connection is successful or not.

**Note:**

- To use remote replication, enable Microsoft Networking service, make sure the destination network share and directory have been created, and the user name and password are valid to login the destination folder.
- The share folder name (network share or directory) is case-sensitive.

### Remote Replication

## Remote Destination

Name or IP address of the remote server:

Port Number:

User Name:

Password:

Remote Host Testing:

Step 2 of 7

4. Enter the destination path. The share folder name (network share or directory) is case-sensitive.

The screenshot shows a window titled "Remote Replication" with a close button in the top right corner. On the left side, there is a vertical sidebar with the "QNAP TURBO NAS" logo. The main area is titled "Remote Destination" in green text, followed by a dotted line separator. Below this, there are two fields: "Destination Path" with the value "/Public" entered in a text box, and "Remain Capacity" with the value "96.42 GB". At the bottom of the window, there is a grey bar containing the text "Step 3 of 7" on the left and three buttons labeled "BACK", "NEXT", and "CANCEL" on the right.

5. Enter the source path. You can select to back up the whole network share and a folder in the share.



The screenshot shows the 'Remote Replication' window for QNAP Turbo NAS. The title bar reads 'Remote Replication' with a close button. On the left is the QNAP logo and 'TURBO NAS'. The main heading is 'Local Source'. Below it, the 'Local Path' is set to '/Public' in a text box. A note below the text box says '( e.g. /ShareFolder/Directory )'. At the bottom, it indicates 'Step 4 of 7' and has three buttons: 'BACK', 'NEXT', and 'CANCEL'.

6. Define the replication schedule.

The screenshot shows the 'Remote Replication' window for QNAP Turbo NAS. The title bar reads 'Remote Replication' with a close button. On the left is the QNAP logo and 'TURBO NAS'. The main heading is 'Replication Schedule'. Below it, under 'Select schedule:', there are four radio button options: 'Replicate Now', 'Daily', 'Weekly', and 'Monthly'. The 'Monthly' option is selected. To the right of these options are three dropdown menus: the first is set to 'Monday', the second to '01', and the third to '00'. Below these is a 'Time' label followed by two more dropdown menus, both set to '00'. At the bottom, it indicates 'Step 5 of 7' and has three buttons: 'BACK', 'NEXT', and 'CANCEL'.

7. Set other options for the remote replication job.
- Enable encryption: Select this option to execute encrypted remote replication. Note that you must turn on 'Allow SSH connection' in 'Network Services > Telnet/ SSH' and specify the same port number for SSH and encrypted remote replication.
  - Activate file compression: Turn on this option to allow file compression during the data transfer process. This option is recommended for low bandwidth environment or remote replication over WAN.
  - Stop network file services while replicating: Stop all connections to the NAS via Samba (SMB), AFP, and FTP when remote replication is in process.
  - Perform incremental replication: When this option is turned on, after the first-time replication, the NAS will only back up the files that have been changed since the last backup. The files of the same name, size, and modified time will not be copied again. You are recommended to turn on this option for the replication job which will be executed for more than once in order to shorten the backup time.
  - Delete extra files on remote destination: Select the option to synchronize the source data with the destination data (one-way synchronization). Extra files on the destination will be deleted. Source data will remain unchanged.
  - Handle sparse files efficiently: A sparse file is a type of computer file that contains large blocks of zero-byte data. Turn on this option may reduce the time required for remote replication.

### Remote Replication

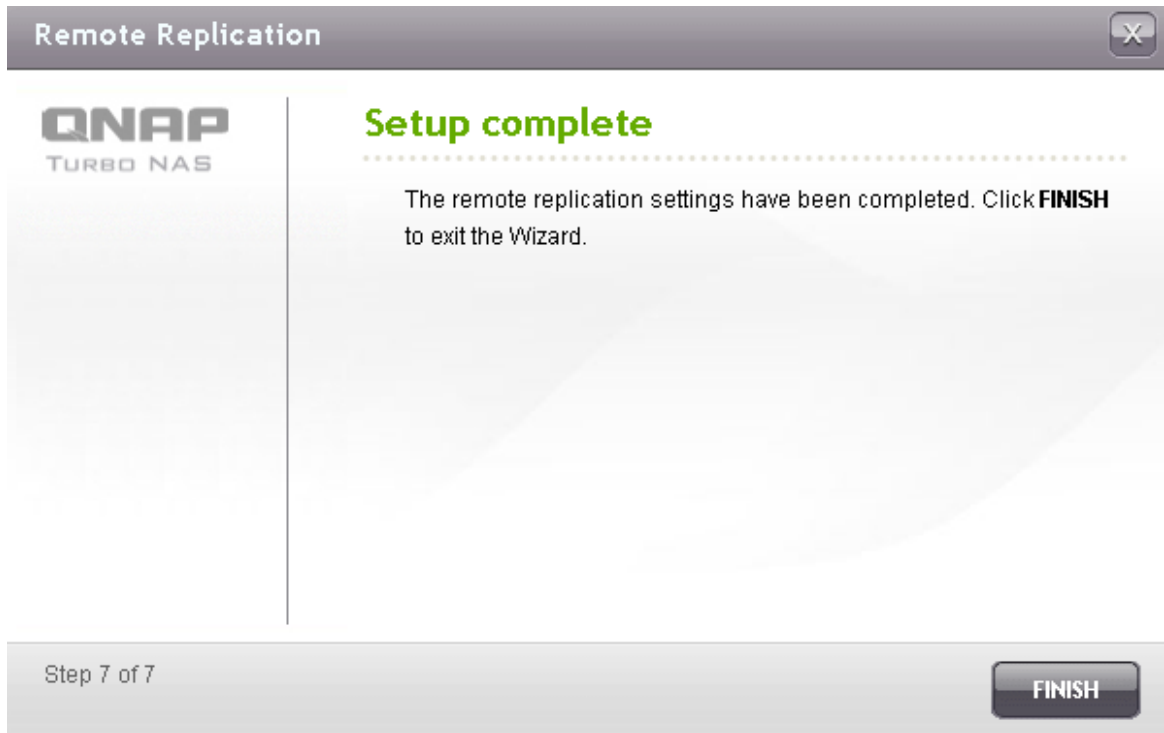
  


## Replication Options

- Enable encryption, port number:
- (Note: You have to enable SSH connection on the remote host, and use the "admin" account to execute the encrypted replication job. Besides, the port number must be the same as the SSH port of the remote host.)**
- Activate file compression
- Stop network file services while replicating
- Perform incremental replication
- Delete extra files on remote destination
- Handle sparse files efficiently

Step 6 of 7

8. Then click 'Finish'. The job will be executed according to your schedule. Note that the job is recursive. Do not turn off the local NAS and the remote server when remote replication is running.



### How to create a remote replication job for an entire disk volume?

To back up an entire disk volume by remote replication, create a new share folder (for example, root) as the root directory which contains all the share folders in the same volume, and specify the path to '/'. Then create a remote replication job to copy this share folder (root). All the share folders and sub-folders will be replicated.

**Share Folder Property**

**Share Folder Property**

**Network Share Name:** root

**Disk Volume:** Mirroring Disk Volume: Drive 1 2

**Hide Network Drive:**  Yes  No

**Lock file (oplocks):**  Yes  No

**Path:** /

**Comment (optional):**

Enable write-only access on FTP connection

Step 1 of 1

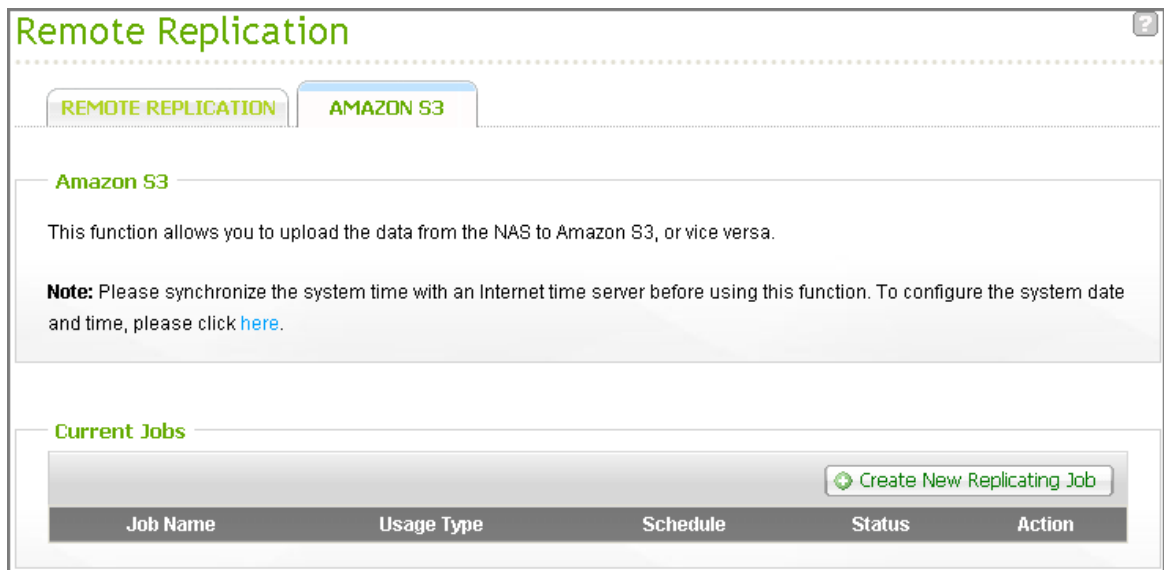
APPLY CANCEL



## Amazon S3

Amazon S3 (Simple Storage Service) is an online storage web service offered by AWS (Amazon Web Services). It provides a simple web services interface that can be used to store and retrieve the data from anywhere on the web. With Amazon S3, you can upload the data from your NAS to Amazon S3 or download the data from Amazon S3 to your NAS.

Note that you need to register an AWS account from <http://aws.amazon.com/> and pay for the service. After signing up for an account, you need to create at least one bucket (root folder) on Amazon S3 by an Amazon S3 application. We recommend the Mozilla Firefox add-on 'S3Fox' for beginners.

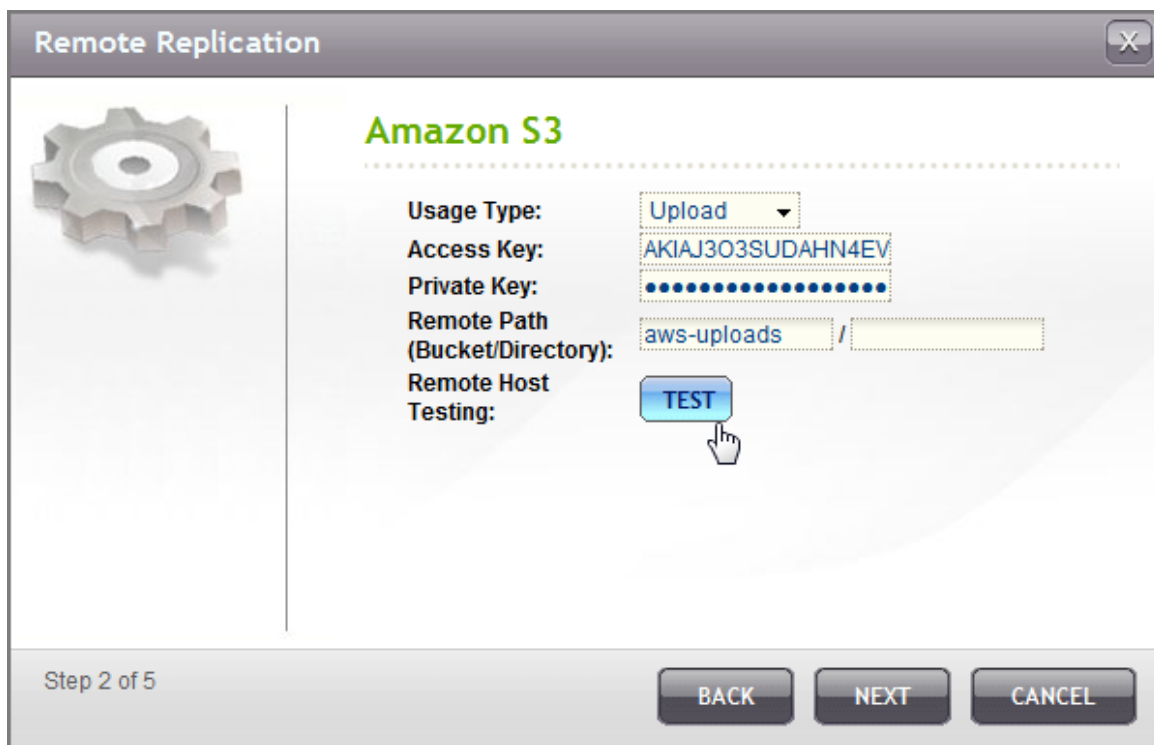


The screenshot shows a web interface titled "Remote Replication" with a help icon in the top right corner. There are two tabs: "REMOTE REPLICATION" and "AMAZON S3", with the latter being the active tab. Below the tabs, the "Amazon S3" section is highlighted. It contains a description: "This function allows you to upload the data from the NAS to Amazon S3, or vice versa." Below this is a note: "Note: Please synchronize the system time with an Internet time server before using this function. To configure the system date and time, please click [here](#)." At the bottom of the section, there is a "Current Jobs" header and a "Create New Replicating Job" button. Below the button is a table with the following columns: Job Name, Usage Type, Schedule, Status, and Action.

Job Name	Usage Type	Schedule	Status	Action
----------	------------	----------	--------	--------

After setting up the Amazon S3 account, follow the steps below to back up the data to or retrieve the data from Amazon S3 using the NAS.

1. Click 'Create New Replicating Job'.
2. Enter the remote replication job name.
3. Select the usage type: 'Upload' or 'Download' and enter other settings. A bucket is the root directory on Amazon S3. You can test the connection to the remote host testing by clicking 'TEST'. Other settings are optional.



The screenshot shows a window titled "Remote Replication" with a close button in the top right corner. On the left side, there is a gear icon. The main content area is titled "Amazon S3" in green text. Below this title, there are several configuration fields:

- Usage Type:** A dropdown menu with "Upload" selected.
- Access Key:** A text field containing "AKIAJ3O3SUDAHN4EV".
- Private Key:** A text field containing a series of blue dots.
- Remote Path (Bucket/Directory):** A text field containing "aws-uploads" followed by a slash and an empty field.
- Remote Host Testing:** A blue button labeled "TEST" with a mouse cursor pointing to it.

At the bottom left of the window, it says "Step 2 of 5". At the bottom right, there are three buttons: "BACK", "NEXT", and "CANCEL".

4. Specify the local directory on the NAS for replication.
5. Enter the replication schedule.
6. Click 'Finish'. The replication job will be executed according to your schedule.

## 15.4 Time Machine

You can enable Time Machine support to use the NAS as a backup destination of multiple Mac by the Time Machine feature on OS X.

### Time Machine

**TIME MACHINE SUPPORT**   **MANAGE BACKUP**

#### Time Machine support

After enabling the Time Machine function , you can use the NAS as one of the Mac OS X Time Machine backup destinations.

Enable Time Machine support

Display Name: TMBBackup

User Name: TimeMachine

Password:

Volume:  Free Size:103GB

Capacity:  GB

**Note:** When using the Time Machine function, AFP service will be enabled automatically. Note that all the Time Machine users share the same network share for this function.

**APPLY**

To use this function, follow the steps below.

Configure the settings on the NAS:

1. Enable Time Machine support.

**Time Machine**

**TIME MACHINE SUPPORT** | **MANAGE BACKUP**

**Time Machine support**

After enabling the Time Machine function , you can use the NAS as one of the Mac OS X Time Machine backup destinations.

Enable Time Machine support

Display Name: TMBBackup

User Name: TimeMachine

Password: [masked]

Volume: Mirroring Disk Volume: Drive 1 2 Free Size:103GB

Capacity: 0 GB

**Note:** When using the Time Machine function, AFP service will be enabled automatically. Note that all the Time Machine users share the same network share for this function.

**APPLY**

2. Enter the Time Machine password. The password is empty by default.
3. Select a volume on the NAS as the backup destination.
4. Enter the storage capacity that Time Machine backup is allowed to use.
5. Click 'Apply' to save the settings.

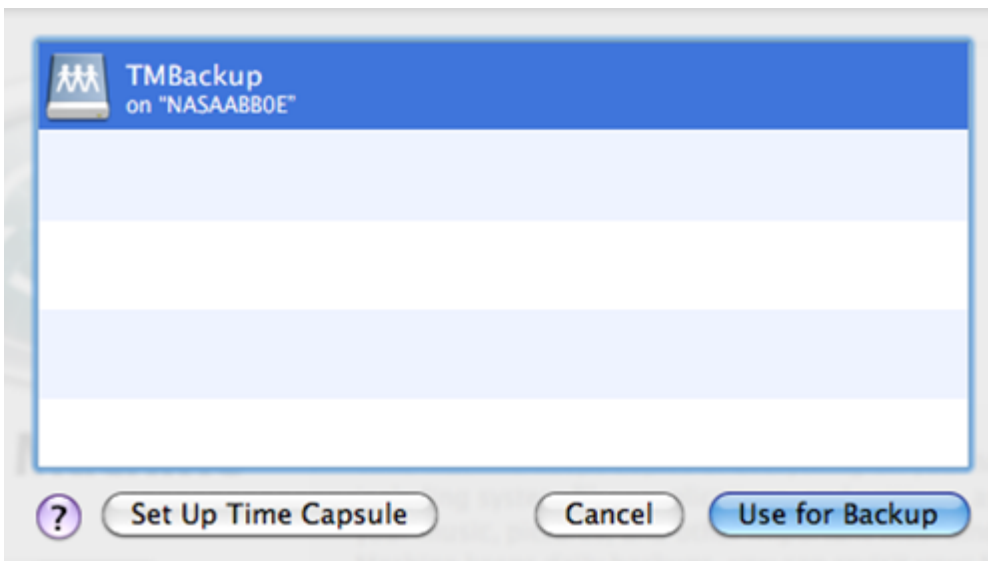
All the Time Machine users share the same network share for this function.

Configure the backup settings on Mac:

1. Open Time Machine on your Mac and click 'Select Backup Disk'.



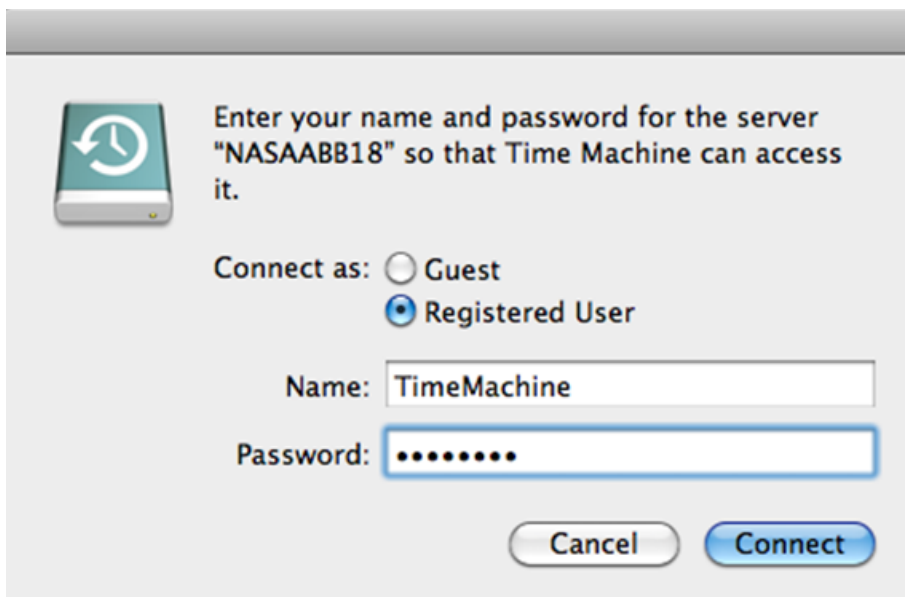
2. Select the TMBBackup on your NAS from the list and click 'Use for Backup'.



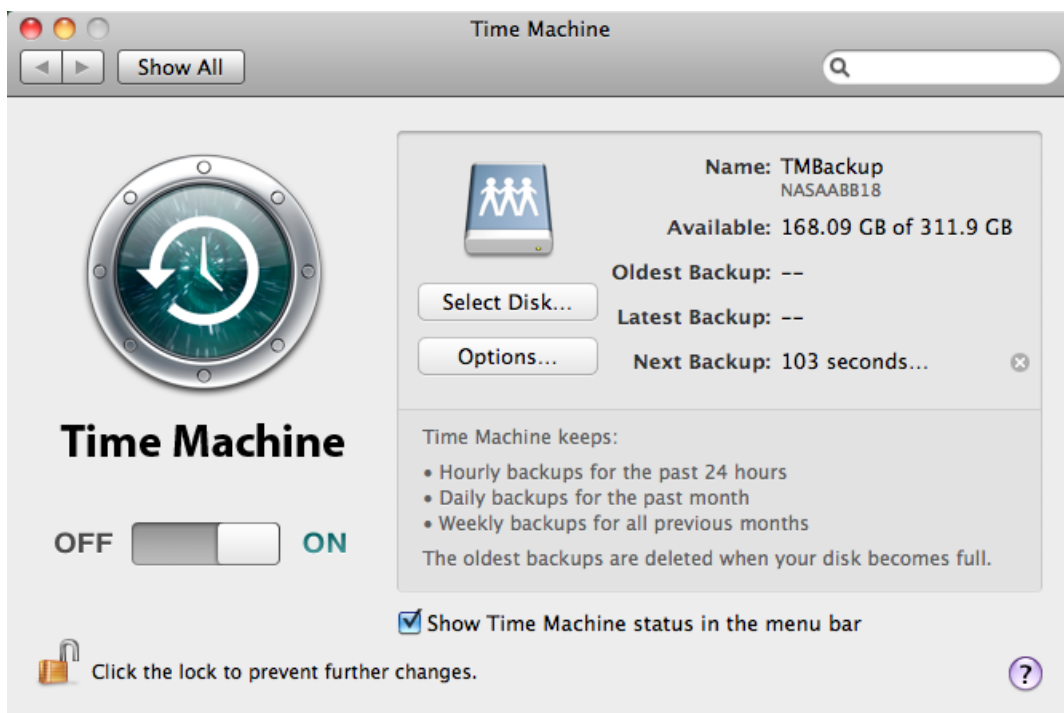
3. Enter the user name and password to login the QNAP NAS. Then click 'Connect'.

Registered user name: TimeMachine

Password: The password you have configured on the NAS. It is empty by default.



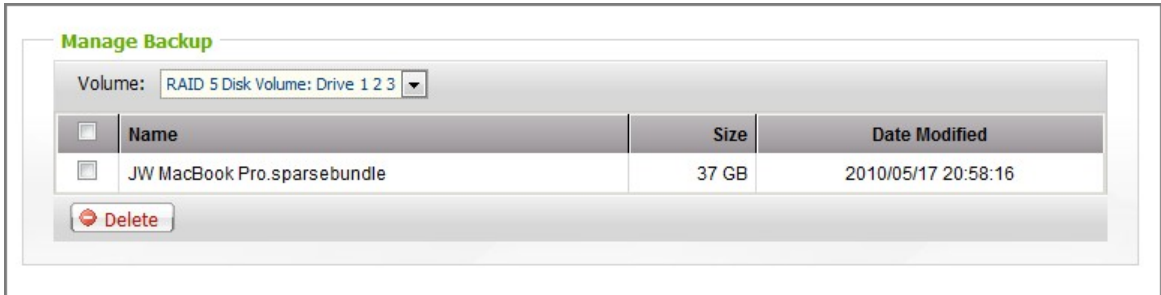
4. Upon successful connection, the Time Machine is switched 'ON'. The available space for backup is shown and the backup will start in 120 seconds.



The first time backup may take more time according to the data size on Mac. To recover the data to the Mac OS, see the tutorial on <http://www.apple.com/>.

## Manage Backup

You can manage the existing backup on this page.



The screenshot shows a web interface titled "Manage Backup". At the top, there is a "Volume:" label followed by a dropdown menu showing "RAID 5 Disk Volume: Drive 1 2 3". Below this is a table with three columns: "Name", "Size", and "Date Modified". The table contains one row with the following data:

	Name	Size	Date Modified
<input type="checkbox"/>	JW MacBook Pro.sparsebundle	37 GB	2010/05/17 20:58:16

Below the table is a "Delete" button with a trash icon.

Volume: Display Time Machine backup tasks stored in the volume.

Name: The name of the Time Machine backup (the sparse bundle disk image which was created by Time Machine).

Size: Size of this Time Machine backup.

Date Modified: Last modified date of this Time Machine backup.

Delete: Delete the selected Time Machine backup.

## 16. External Device

---

External Storage Device [332](#)

USB Printer [333](#)

UPS Settings [349](#)

### 16.1 External Storage Device

---

The NAS supports USB disks and thumb drives for extended storage. Connect the USB device to the USB port of the NAS, when the device is successfully detected, the details are shown on this page.

It may take tens of seconds for the NAS server to detect the external USB device successfully. Please wait patiently.

You can format the external drive as FAT32, NTFS, EXT3, or HFS+ (Mac only). Select the option from the drop-down menu next to 'Format As' and click 'FORMAT NOW'. All the data will be cleared.

### External Storage Device ?

---

**External Storage Device**

<div style="border: 1px solid gray; padding: 2px;">USBDisk1</div>	<b>Manufacturer:</b> USB2.0
	<b>Model:</b> Flash Disk
	<b>Device Type:</b> USB 2.0
	<b>Total / Free size:</b> 1.86 GB / 1.85 GB
	<b>File System:</b> FAT
	<b>Status:</b> <span style="color: green;">Ready</span>
<b>Format As:</b> <span style="border: 1px solid gray; padding: 2px;">HFS+</span>	<input type="button" value="FORMAT NOW"/>
<b>Eject:</b>	<input type="button" value="REMOVE DISK PARTITION"/>
	<input type="button" value="REMOVE DEVICE"/>

To remove the hardware device, please click [Remove device]. When the system does not show the device anymore, you can remove it safely.

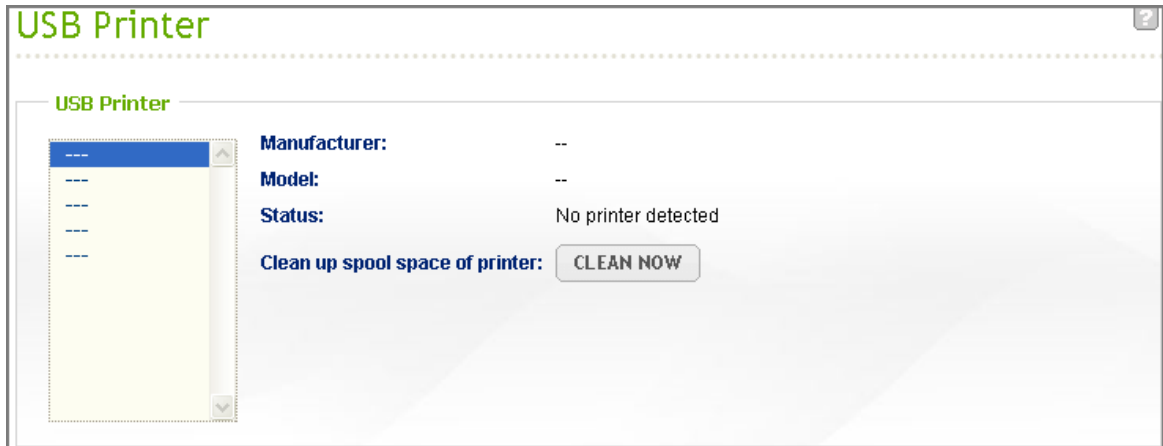
**Note:** Do NOT unplug the device when it is in use to protect the device.



## 16.2 USB Printer

---

To provide printer sharing function for the network users, you can simply connect a USB printer to the USB port of the NAS. The NAS detects the printer automatically. Up to 3 printers are supported.



**Note:**

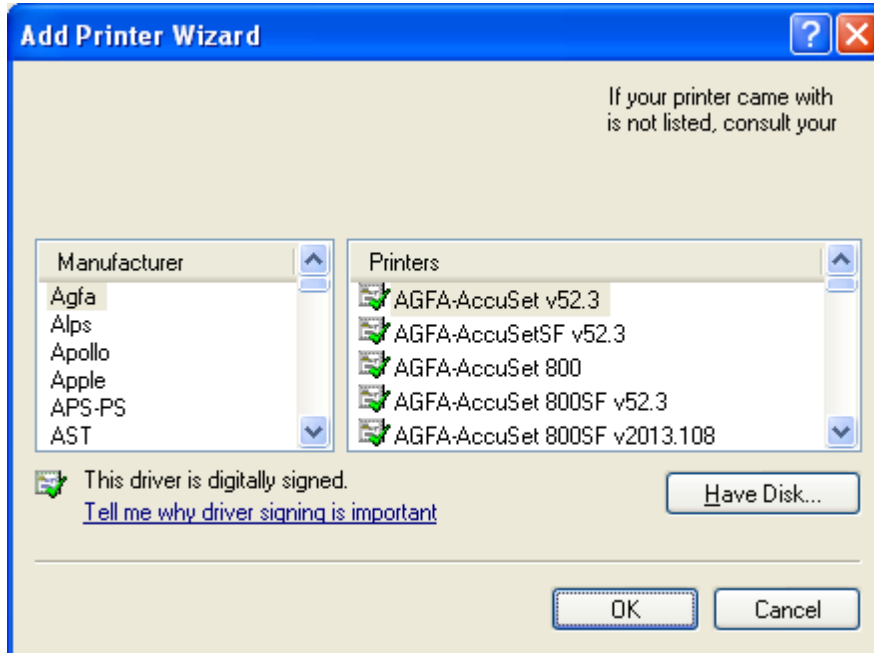
- Please connect a USB printer to the NAS after the software configuration is completed.
- The NAS does not support multifunction printer.
- For the information of the supported USB printer models, please visit <http://www.qnap.com/>

## 16.2.1 Windows XP Users

---

### Method 1

1. Enter \\NAS IP in Windows Explorer.
2. A printer icon is shown as a network share on the server. Double click the icon.
3. Install the printer driver.



4. When finished, you can start to use the network printer service of the NAS.

## **Method 2**

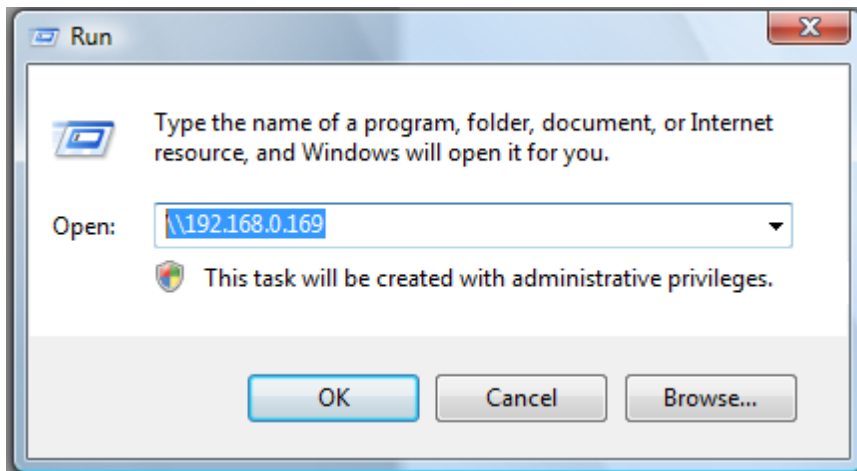
The following configuration method has been verified on Windows XP only:

1. Open 'Printers and Faxes'.
2. Delete the existing network printer (if any).
3. Right click the blank area in the Printers and Faxes window. Select 'Server Properties'.
4. Click the 'Ports' tab and delete the ports configured for the previous network printer (if any).
5. Restart your PC.
6. Open Printers and Faxes.
7. Click 'Add a printer' and click 'Next'.
8. Select 'Local printer attached to this computer'. Click 'Next'.
9. Click 'Create a new port' and select 'Local Port' from the drop-down menu. Click 'Next'.
10. Enter the port name. The format is \\NAS IP\NAS namepr, for example, NAS IP= 192.168.1.1, NAS name= myNAS, the link is \\192.168.1.1\myNASpr.
11. Install the printer driver.
12. Print a test page.

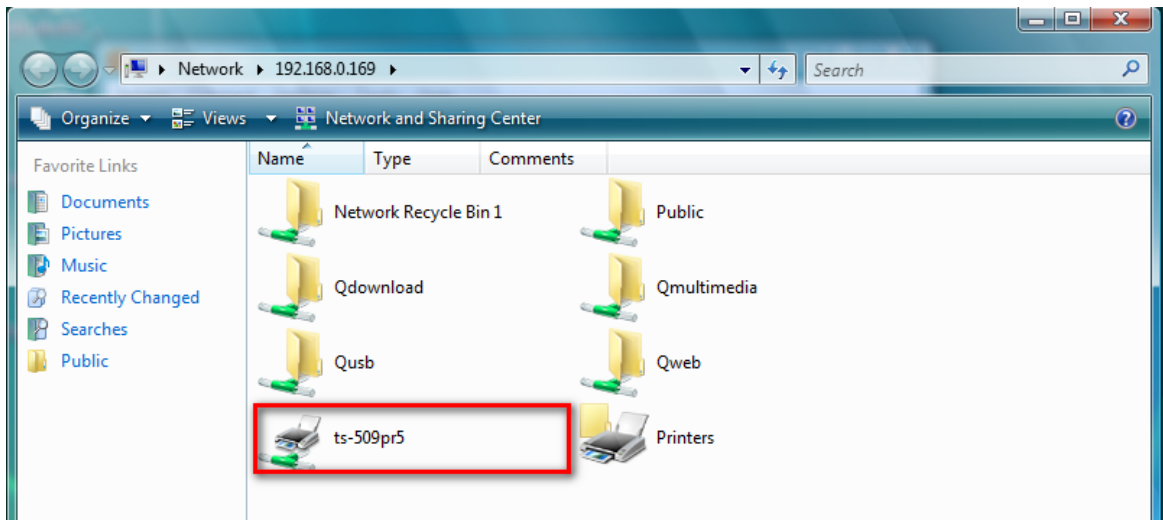
## 16.2.2 Windows Vista/ Windows 7 Users

---

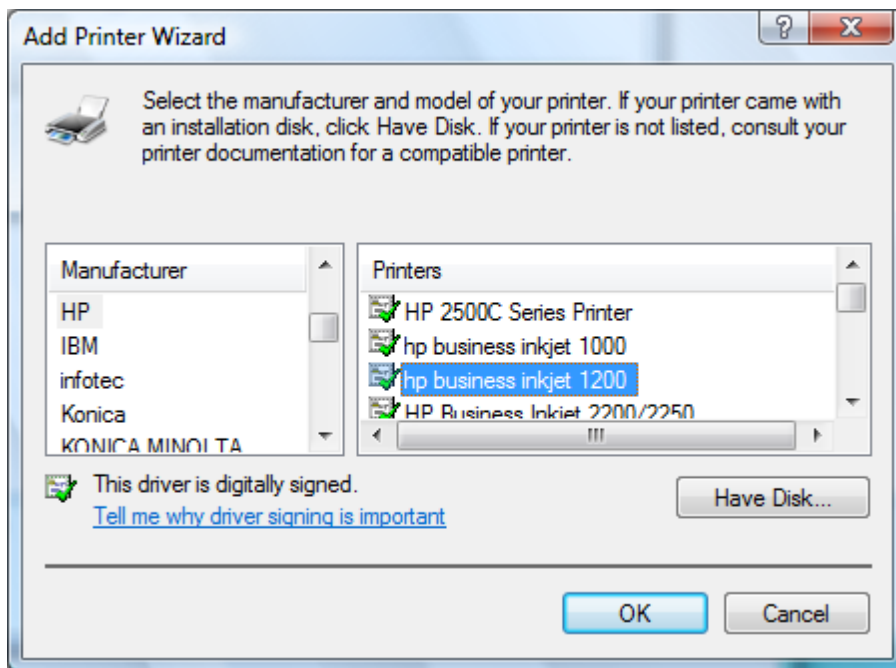
1. On the Run menu, enter \\NAS IP.



2. Find the network printer icon and double click it.



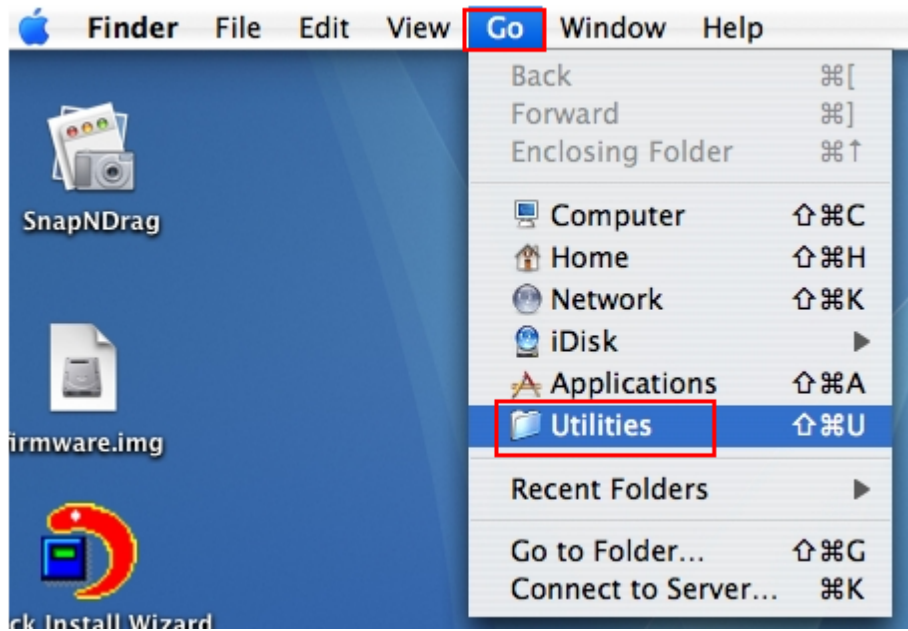
3. Install the correct printer driver.



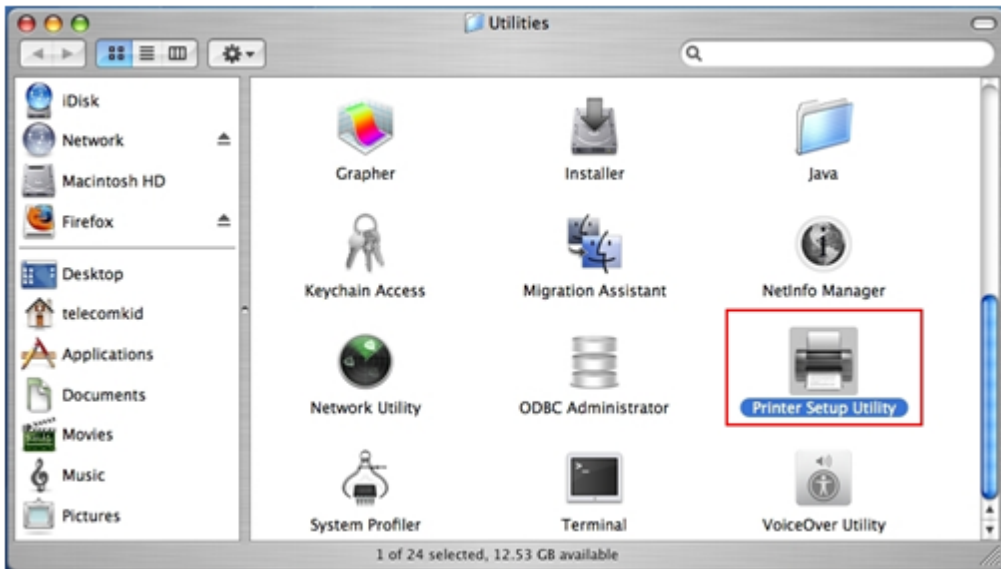
4. When finished, print a test page to verify the printer is ready to use.

### 16.2.3 Mac OS X 10.4

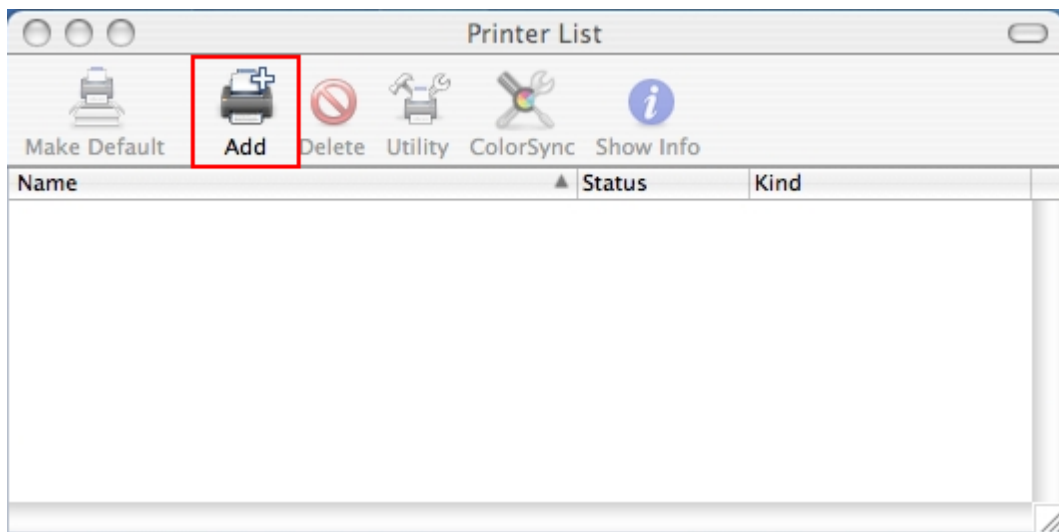
1. On the toolbar, click 'Go/ Utilities'.



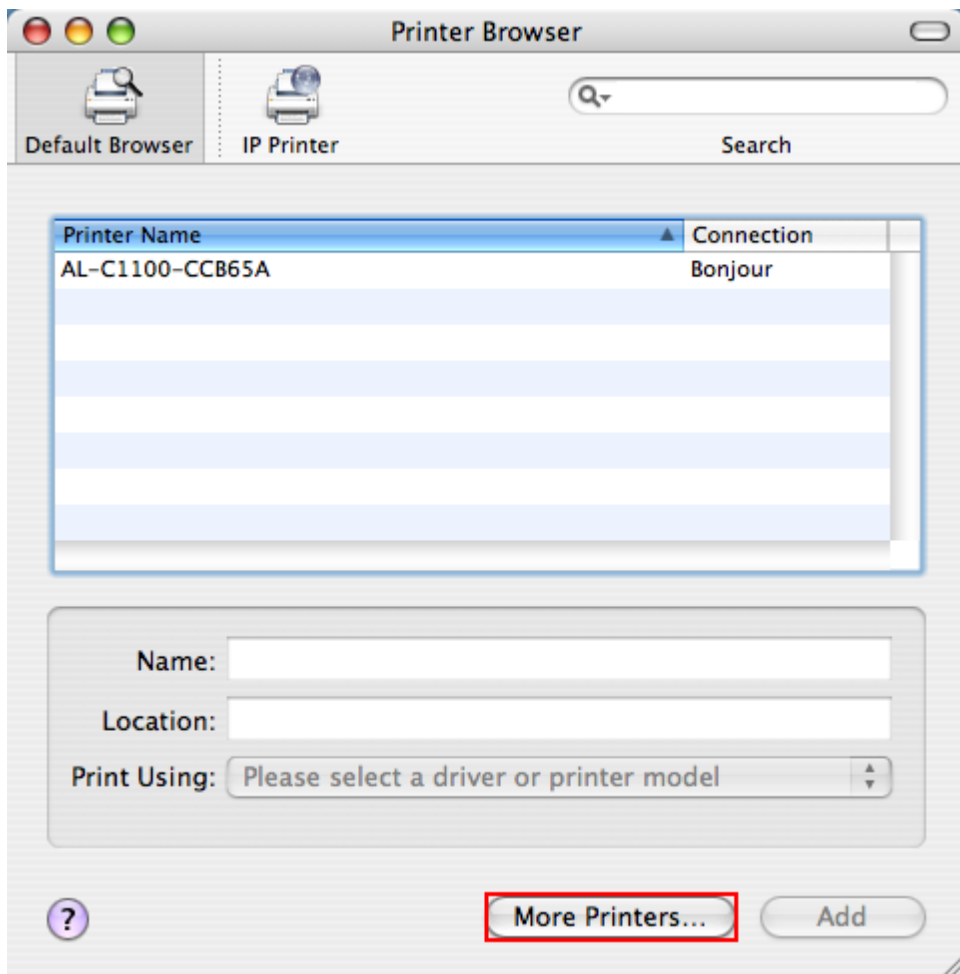
2. Click 'Printer Setup Utility'.



3. Click 'Add'.

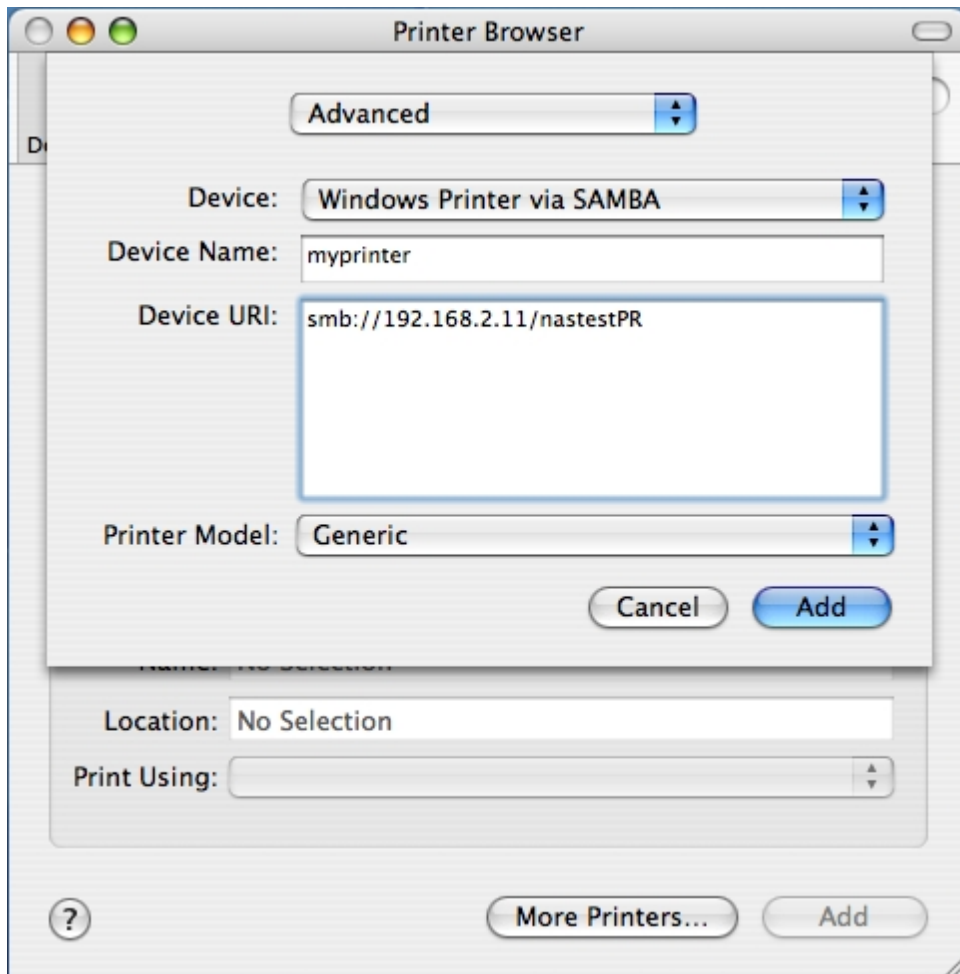


4. Press and hold the 'alt' key  on the keyboard and click 'More Printers' concurrently.



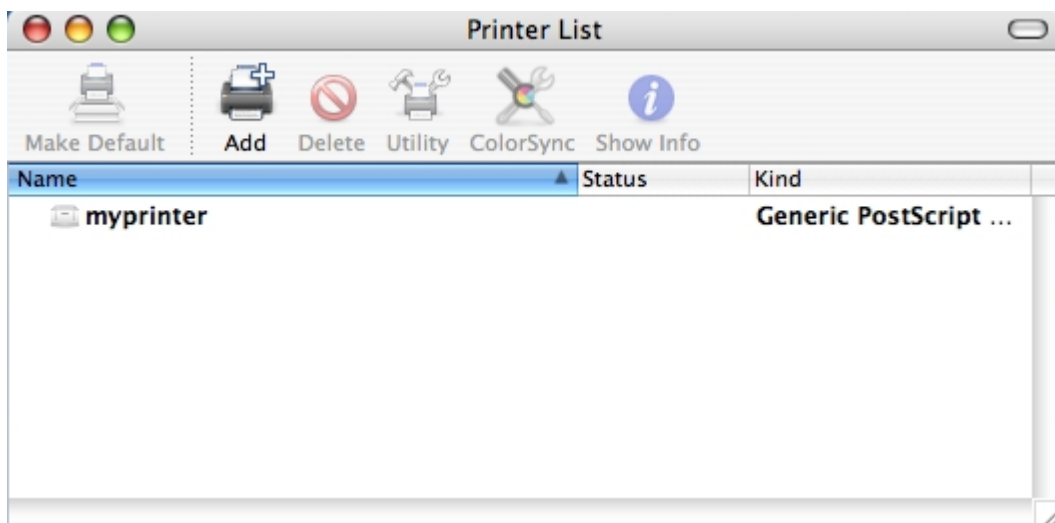


5. In the pop up window:
  - a. Select 'Advanced'\*.
  - b. Select 'Windows Printer with SAMBA'.
  - c. Enter the printer name.
  - d. Enter the printer URI, the format is smb://NAS IP/printer name. The printer name is found on the 'Device Configuration' > 'USB Printer page'.
  - e. Select 'Generic' for Printer Model.
  - f. Click 'Add'.



\*Note that you must hold and press the 'alt' key and click 'More Printers' at the same time to view the Advanced printer settings. Otherwise, this option does not appear.

6. The printer appears on the printer list. It is ready to use.



**Note:** The network printer service of the NAS supports Postscript printer on Mac OS only.

## 16.2.4 Mac OS X 10.5

---

If you are using Mac OS X 10.5, follow the steps below to configure the printer function of the NAS.

1. Make sure your printer is connected to the NAS and the printer information is displayed correctly on the 'USB Printer' page.



2. Go to 'Network Services' > 'Microsoft Networking'. Enter a workgroup name for the NAS. You will need this information later.

Home >> Network Services >> Microsoft Networking Welcome admin | Logout English

## Microsoft Networking

**MICROSOFT NETWORKING**    **ADVANCED OPTIONS**

### Microsoft Networking

Enable file service for Microsoft networking

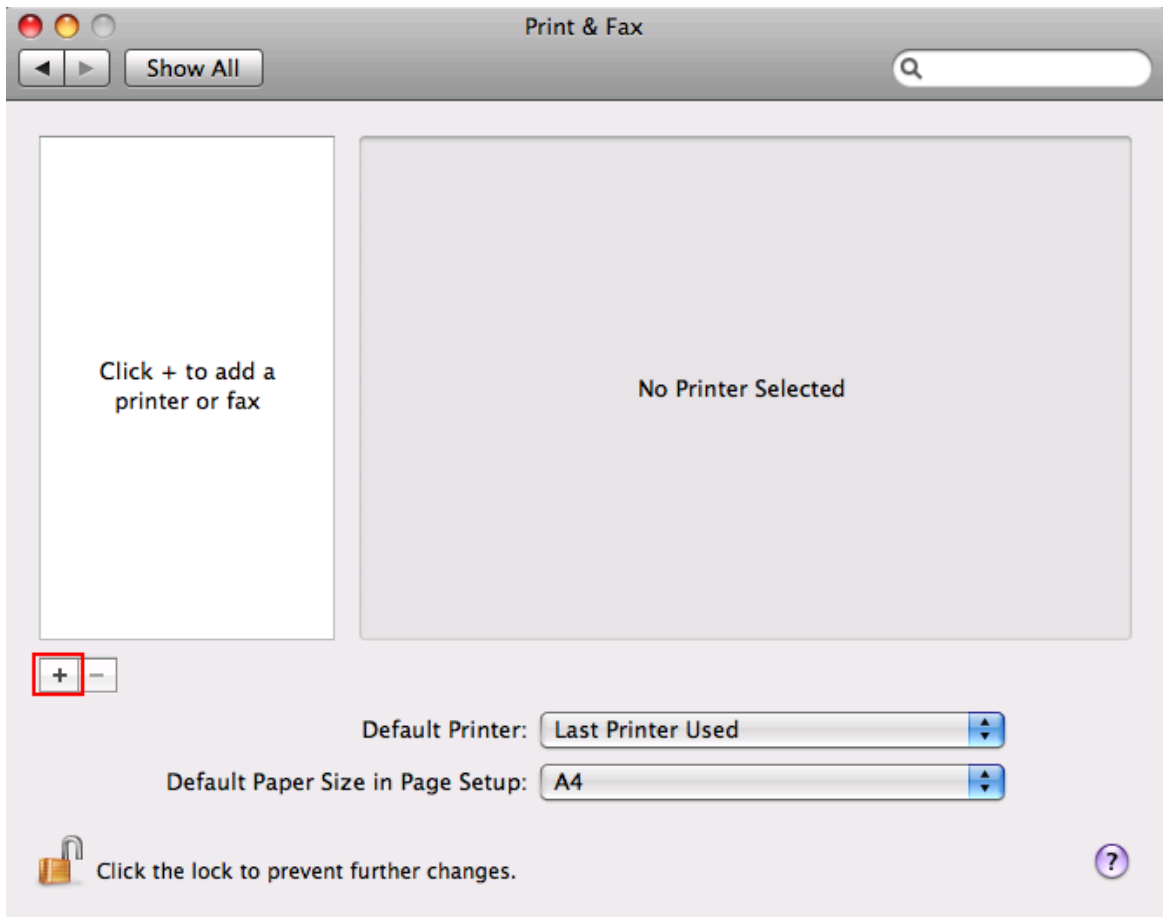
- Standalone Server
  - Server Description (Optional):
  - Workgroup:**
- AD Domain Member (For detailed instructions, please [click here](#))
  - Server Description (Optional):
  - Domain NetBIOS Name:
  - AD Server Name:
  - Domain:
  - Organization Unit (Optional):
  - Domain Administrator Username:
  - Domain Administrator Password:

**APPLY**

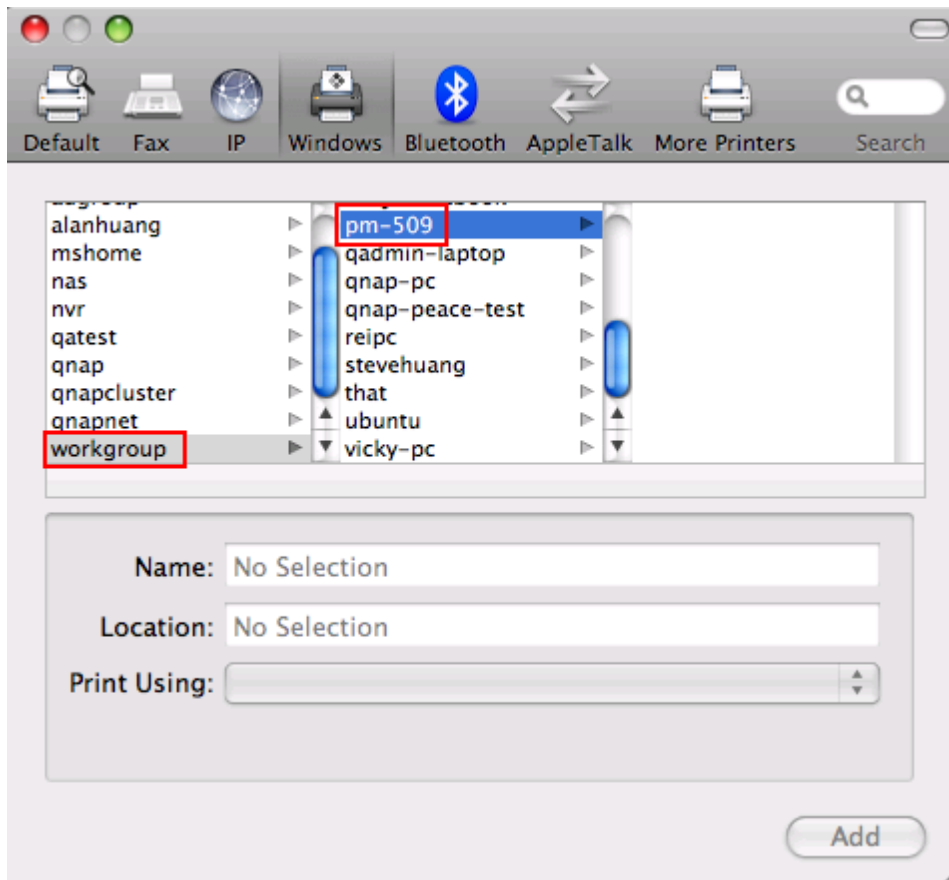
3. Go to 'Print & Fax' on your Mac.



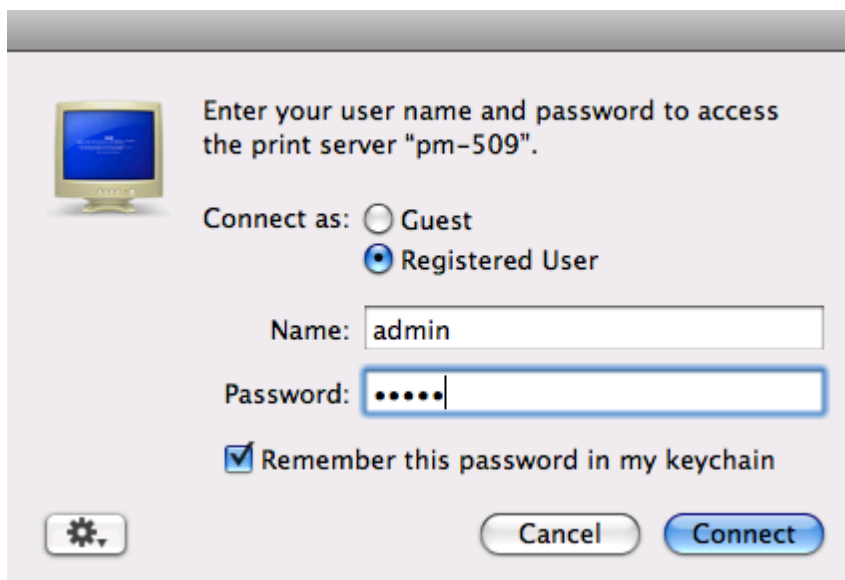
4. Click + to add a printer.



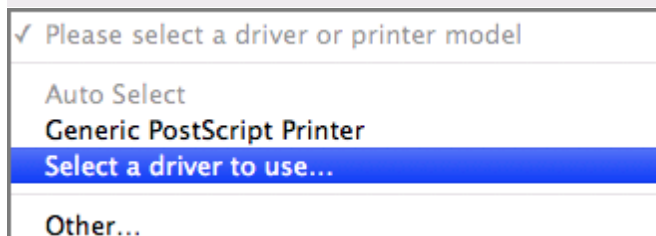
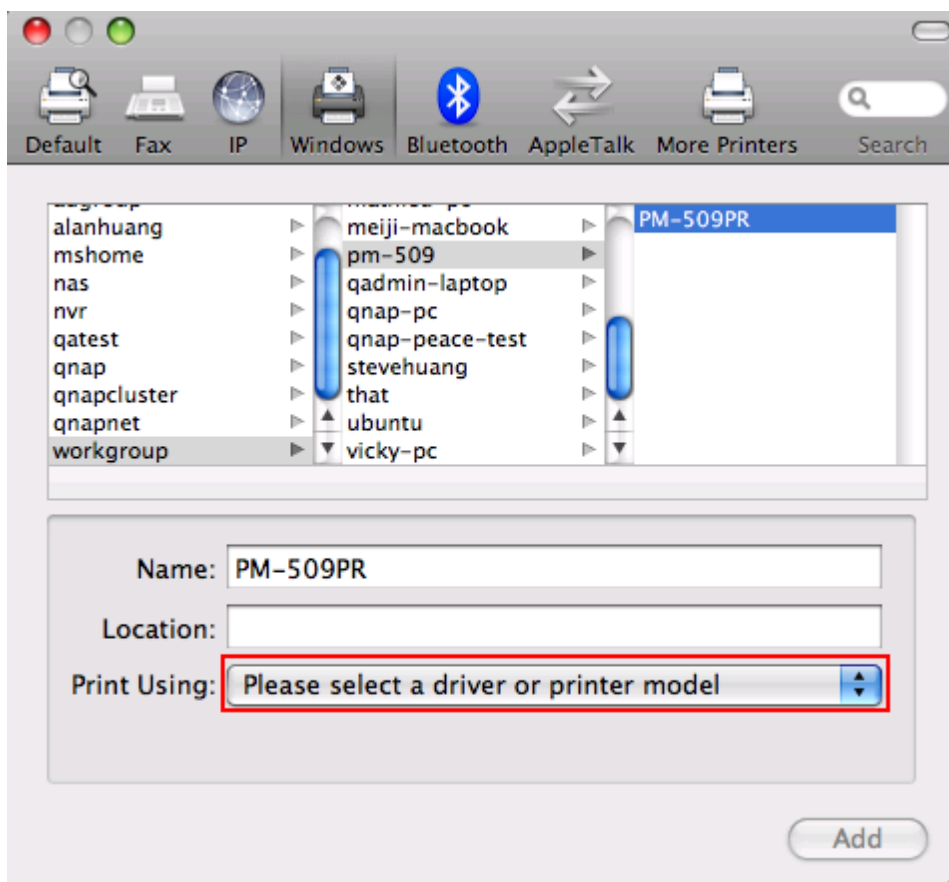
5. Select the NAS workgroup and find the printer name.



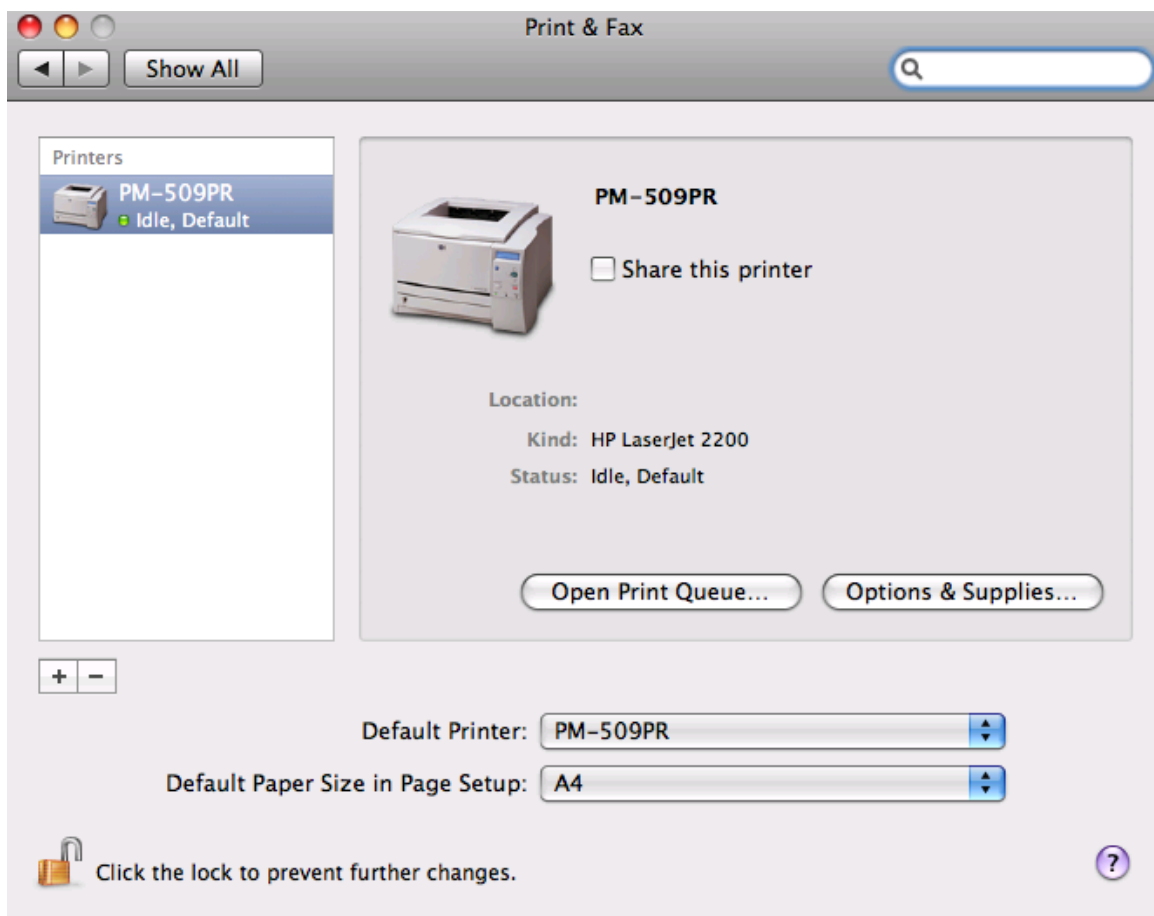
6. Enter the user name and password to login the printer server on the NAS.



7. Select the printer driver.



8. After installing the printer driver correctly, you can start to use the printer.





## 16.3 UPS Settings

By enabling the UPS (Uninterruptible Power Supply) support, you can protect your NAS from abnormal system shutdown caused by power disruption. In the event of a power failure the NAS will shut down automatically or enter auto-protection mode by probing the power status of the connected UPS unit.

### UPS Settings

---

#### UPS Settings

Enable UPS Support

After the AC power fails for  minute(s), turn off the server.

After the AC power fails for  minute(s), the system will enter the 'auto-protection' mode. When the power restores, the system automatically resumes to its previous state.

Protocol:

IP Address of Network UPS Server:  .  .  .

---

#### UPS Information

<b>UPS Brand:</b>	--
<b>UPS Model:</b>	--
<b>AC Power Status:</b>	--
<b>Battery Capacity:</b>	--
<b>Estimated Protection Time:</b>	--

## **Standalone mode - USB**

To operate under USB standalone mode, follow the steps below:

1. Plug in the USB cable on the UPS to the NAS.
2. Select the option 'Enable UPS Support'.
3. Choose between whether the NAS will shut down or enter auto-protection mode after AC power fails. Specify the time in minutes that the NAS should wait before executing the option you have selected. After the NAS enters auto-protection mode, the NAS resumes the previous operation status when the power restores.
4. Click 'Apply' to confirm.

## **Standalone mode - SNMP**

To operate under SNMP standalone mode, follow the steps below:

1. Make sure the NAS is connected to the same physical network as the SNMP-based UPS.
2. Select the option 'Enable UPS Support'.
3. Choose between whether the NAS will shut down or enter auto-protection mode after AC power fails. Specify the time in minutes that the NAS should wait before executing the option you have selected. After the NAS enters auto-protection mode, the NAS resumes the previous operation status when the power restores.
4. Select 'SNMP' from the 'Protocol' drop down menu.
5. Enter the IP address of the SNMP-based UPS.
6. Click 'Apply' to confirm.

## Network master mode

A network UPS master is responsible for communicating with network UPS slaves on the same physical network about critical power status. To set up your NAS with UPS as network master mode, plug in the USB cable on the UPS to the NAS and follow the steps below:

1. Make sure the NAS is connected to the same physical network as the network UPS slaves.
2. Select the option 'Enable UPS Support'.
3. Choose between whether the NAS will shut down or enter auto-protection mode after AC power fails. Specify the time in minutes that the NAS should wait before executing the option you have selected. After the NAS enters auto-protection mode, the NAS resumes the previous operation status when the power restores.
4. Click 'Enable network UPS master'. This option appears only when your NAS is connected to the UPS by a USB cable.
5. Enter the 'IP address' of other network UPS slaves to be notified in the event of power failure.
6. Click 'Apply' to confirm and continue the setup for the NAS systems which operate in network slave mode below.

## Network slave mode

A network UPS slave communicates with network UPS master to receive the UPS status. To set up your NAS with UPS as network slave mode, follow the steps below:

1. Make sure the NAS is connected to the same physical network as the network UPS master.
2. Select the option 'Enable UPS Support'.
3. Choose between whether the NAS will shut down or enter auto-protection mode after AC power fails. Specify the time in minutes that the NAS should wait before executing the option you have selected. After the NAS enters auto-protection mode, the NAS resumes the previous operation status when the power restores.
4. Select 'USB slave mode' from the 'Protocol' drop down menu.
5. Enter the IP address of the network UPS master.
6. Click 'Apply' to confirm.

**Note:** To allow your UPS device to send SNMP alerts to the QNAP NAS in case of power loss, you may have to enter the IP address of the NAS in the configuration page of the UPS device.

## Behaviour of the UPS feature of the NAS:

In case of power loss and power recovery, the events will be logged in the 'System Event Logs'.

During a power loss, the NAS will wait for the specified time you enter in the 'UPS Settings' before powering off or entering auto-protection mode.

If the power restores before the end of the waiting time, the NAS will remain in operation and cancel its power-off or auto-protection action.

Once the power restores:

- If the NAS is in auto-protection mode, it will resume to normal operation.
- If the NAS is powered off, it will remain off.

### Difference between auto-protection mode and power-off mode

Mode	Advantage	Disadvantage
Auto-protection mode	The NAS resumes after power recovery.	If the power outage lasts until the UPS is turned off, the NAS may suffer from abnormal shutdown.
Power-off mode	The NAS will be shut down properly.	The NAS will remain off after the power recovery. Manual power on of the server is required.

If the power restores after the NAS has been shut down and before the UPS device is powered off, you may power on the NAS by Wake on LAN\* (if your NAS and UPS device both support Wake on LAN and Wake on LAN is enabled on the NAS).

\*Wake on LAN is not supported by TS-110, TS-119, TS-210, TS-219, TS-219P, TS-410, TS-419P, TS-410U, and TS-419U.

If the power restores after both the NAS and the UPS have been shut down, the NAS will react according to the settings in 'System Administration' > 'Power Management'.

## Power Management

### Restart/ Shutdown

Execute system restart/ shutdown immediately.

RESTART

SHUTDOWN

### Configure Wake on LAN

- Enable
- Disable

### When the AC power resumes:

- Resume the server to the previous power-on or power-off status.
- Turn on the server automatically.
- The server should remain off.

### Set power on/ power off/ restart schedule

Enable schedule

Postpone the restart/shutdown schedule when a replication job is in progress.

Shutdown    Daily    7    0    + -

APPLY

# 17. System Status

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System Information [\[354\]](#)

System Service [\[354\]](#)

Resource Monitor [\[354\]](#)

## 17.1 System Information

---

You can view the system information such as CPU usage and memory on this page.

### System Information

---

**System Information**

<b>Server Name</b>	NAS8CBC6C
<b>Firmware Version</b>	3.3.0 Build 0511T
<b>System Up Time</b>	0 Day 5 Hour 4 Minute(s)
<b>Serial Number</b>	--

**Port Status**

Port No.	Port Status	IP Address	MAC Address	Packets Received	Packets Sent	Error Packets
Ethernet 1	Up	10.8.12.46	00:08:9b:8c:bc:6c	4632495	6226069	0
Ethernet 2	Up	10.8.12.46	00:08:9b:8c:bc:6d	4558312	6220406	0

**Hardware Information**

<b>CPU Usage</b>	24.2 %
<b>Total Memory</b>	1007.8 MB
<b>Free Memory</b>	821.1 MB
<b>CPU Temperature</b>	50°C/122°F
<b>System Temperature</b>	45°C/113°F
<b>HDD 1 Temperature</b>	38°C/100°F
<b>HDD 2 Temperature</b>	35°C/95°F
<b>System Fan Speed</b>	1147

## 17.2 System Service

You can view the current network settings and status of the NAS in this section.

### System Service

**System Service**

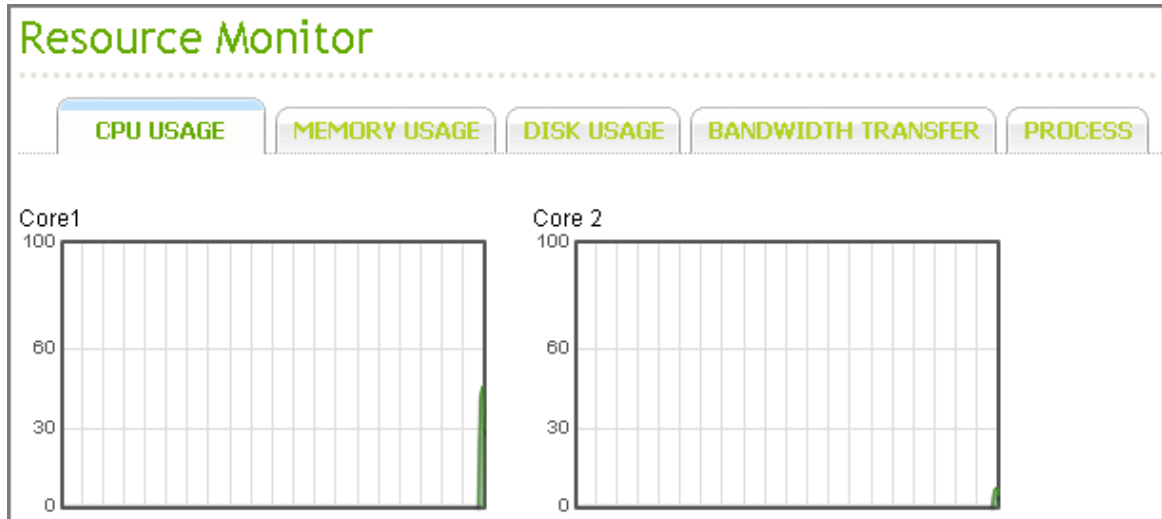
Microsoft Networking	
Enabled	<input checked="" type="checkbox"/>
Server Type	Standalone Server
Workgroup	NAS
Enable WINS server	<input type="checkbox"/>
Enable Local Master Browser	<input checked="" type="checkbox"/>
Apple Networking	
Enabled	<input type="checkbox"/>
Apple Zone Name	*
Unix/Linux NFS	
Enabled	<input type="checkbox"/>
Web File Manager	
Enabled	<input checked="" type="checkbox"/>
FTP Service	
Enabled	<input checked="" type="checkbox"/>
Port	21
Maximum Connections	30
System Port Management	
Port	8080

Multimedia Station	
Enable Multimedia Station	<input checked="" type="checkbox"/>
Enable iTunes Service	<input type="checkbox"/>
Enable UPnP Media Server	<input type="checkbox"/>
Download Station	
Enabled	<input checked="" type="checkbox"/>
Web Server	
Enabled	<input checked="" type="checkbox"/>
Port	80
register_globals	<input type="checkbox"/>
DDNS Service	
Enabled	<input type="checkbox"/>
MySQL Server	
Enabled	<input type="checkbox"/>
Enable TCP/IP Networking	<input type="checkbox"/>
Surveillance Station	
Enabled	<input type="checkbox"/>

## 17.3 Resource Monitor

You can view the CPU usage, disk usage, and bandwidth transfer statistics of the NAS on this page.

CPU Usage: This tab shows the CPU usage of the NAS.

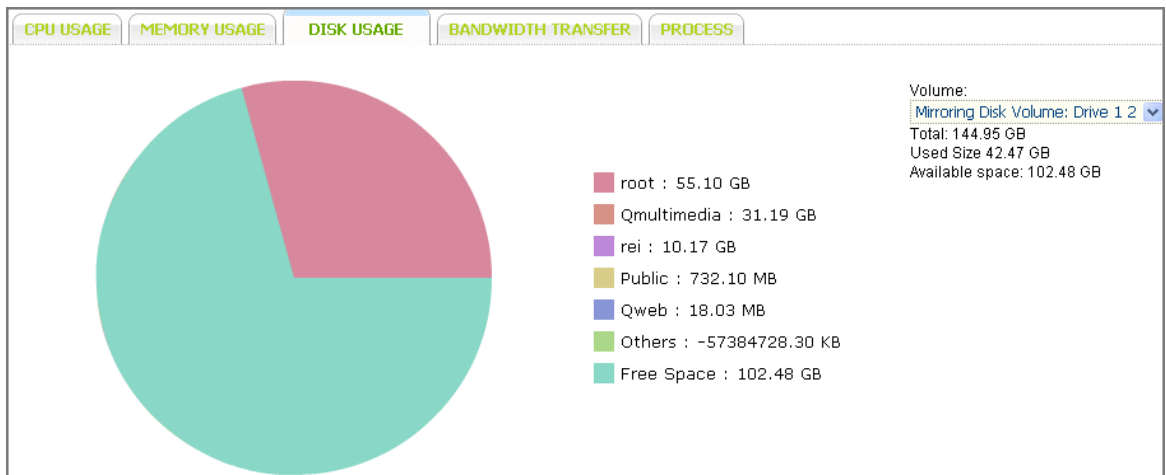


Memory Usage: This tab shows the memory usage of the NAS by real-time dynamic graph.

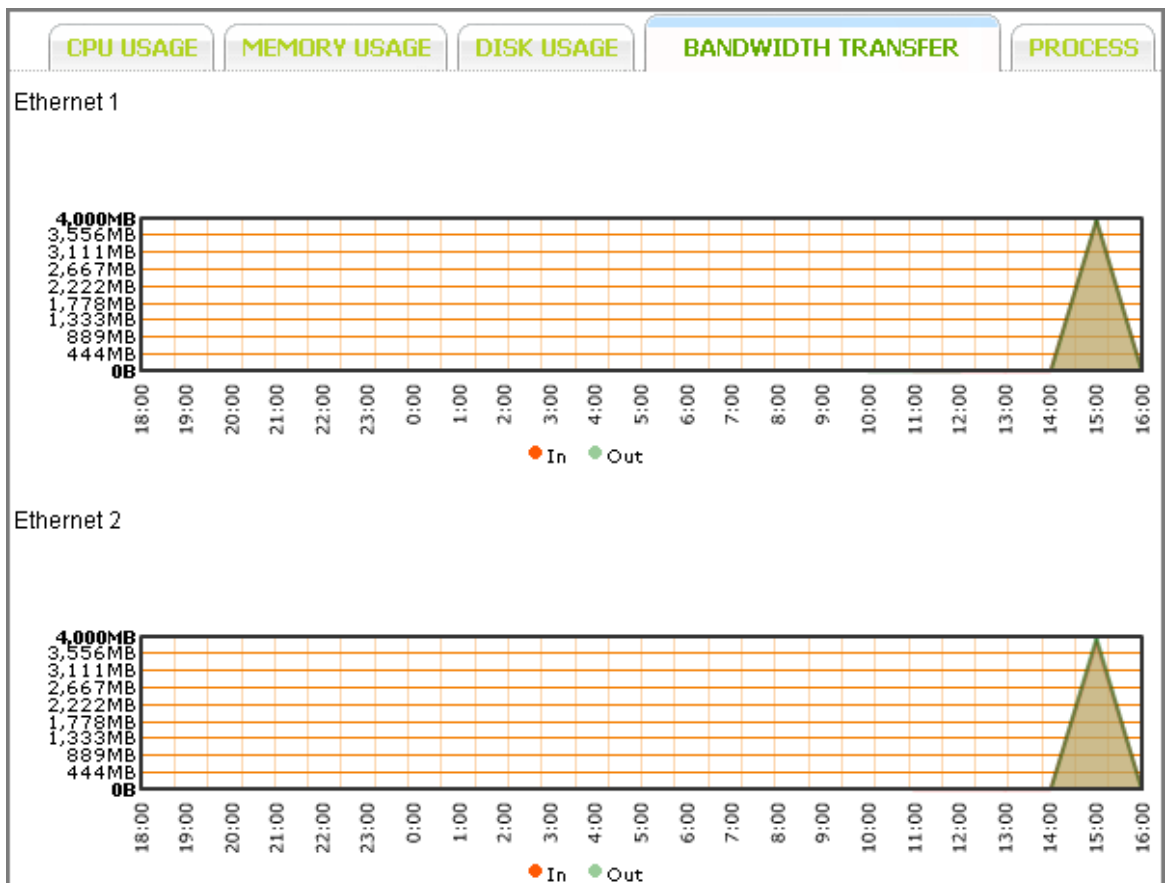




Disk Usage: This tab shows the disk space usage of each disk volume and its share folders.



Bandwidth Transfer: This tab provides information about bandwidth transfer of each available LAN port of the NAS.



Process: This tab shows information about the processes running on the NAS.

CPU USAGE	MEMORY USAGE	DISK USAGE	BANDWIDTH TRANSFER	PROCESS																																																																																
				<table border="1"> <thead> <tr> <th>Process Name</th> <th>Users</th> <th>PID</th> <th>CPU Usage</th> <th>Memory</th> </tr> </thead> <tbody> <tr> <td>smbd</td> <td>admin</td> <td>11566</td> <td>17.4%</td> <td>5900 K</td> </tr> <tr> <td>kcryptd</td> <td>admin</td> <td>2397</td> <td>12.6%</td> <td>0 K</td> </tr> <tr> <td>top</td> <td>admin</td> <td>14495</td> <td>2.9%</td> <td>824 K</td> </tr> <tr> <td>bcclient</td> <td>admin</td> <td>4667</td> <td>0.9%</td> <td>1088 K</td> </tr> <tr> <td>simple_client</td> <td>admin</td> <td>17346</td> <td>0.9%</td> <td>3668 K</td> </tr> <tr> <td>init</td> <td>admin</td> <td>1</td> <td>0</td> <td>464 K</td> </tr> <tr> <td>daemon_mgr</td> <td>admin</td> <td>1404</td> <td>0</td> <td>776 K</td> </tr> <tr> <td>hotswap</td> <td>admin</td> <td>1418</td> <td>0</td> <td>852 K</td> </tr> <tr> <td>q/Watcodogd: keeping alive ever</td> <td>admin</td> <td>1576</td> <td>0</td> <td>468 K</td> </tr> <tr> <td>modagent</td> <td>admin</td> <td>1979</td> <td>0</td> <td>396 K</td> </tr> <tr> <td>qsmartd</td> <td>admin</td> <td>2475</td> <td>0</td> <td>704 K</td> </tr> <tr> <td>dhcpcd</td> <td>admin</td> <td>3150</td> <td>0</td> <td>204 K</td> </tr> <tr> <td>mDNSResponderPosix</td> <td>admin</td> <td>3246</td> <td>0</td> <td>548 K</td> </tr> <tr> <td>upnpd</td> <td>admin</td> <td>3374</td> <td>0</td> <td>1304 K</td> </tr> <tr> <td>_httpd_</td> <td>admin</td> <td>3537</td> <td>0</td> <td>1560 K</td> </tr> </tbody> </table>	Process Name	Users	PID	CPU Usage	Memory	smbd	admin	11566	17.4%	5900 K	kcryptd	admin	2397	12.6%	0 K	top	admin	14495	2.9%	824 K	bcclient	admin	4667	0.9%	1088 K	simple_client	admin	17346	0.9%	3668 K	init	admin	1	0	464 K	daemon_mgr	admin	1404	0	776 K	hotswap	admin	1418	0	852 K	q/Watcodogd: keeping alive ever	admin	1576	0	468 K	modagent	admin	1979	0	396 K	qsmartd	admin	2475	0	704 K	dhcpcd	admin	3150	0	204 K	mDNSResponderPosix	admin	3246	0	548 K	upnpd	admin	3374	0	1304 K	_httpd_	admin	3537	0	1560 K
Process Name	Users	PID	CPU Usage	Memory																																																																																
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_httpd_	admin	3537	0	1560 K																																																																																

## 18. Use the LCD Panel

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This feature is only provided by TS-439 Pro, TS-439 Pro II, TS-459 Pro, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, and TS-859U-RP.

You can use the LCD panel to perform disk configuration and view the system information.

When the NAS has started up, you will be able to view the server name and IP address:

N	A	S	5	F	4	D	E	3						
1	6	9	.	2	5	4	.	1	0	0	.	1	0	0

For the first time installation, the LCD panel shows the number of HDD detected and the IP address. You may select to configure the HDD.

Number of HDD detected	Default disk configuration	Available disk configuration options*
1	Single	Single
2	RAID 1	Single -> JBOD ->RAID 0 -> RAID 1
3	RAID 5	Single -> JBOD -> RAID 0 -> RAID 5
4 or above	RAID 5	Single ->JBOD -> RAID 0 -> RAID 5 -> RAID 6

\*Press the 'Select' button to choose the option, and press the 'Enter' button to confirm.

For example, when you turn on the NAS with 5 HDD installed, the LCD panel shows:

C	o	n	f	i	g	.		D	i	s	k	s	?		
→	R	A	I	D	5										

You can press the 'Select' button to browse more options, for example, RAID 6.

Press the 'Enter' button and the following message shows. Press the 'Select' button to select 'Yes' to confirm.

C	h	o	o	s	e		R	A	I	D	5	?			
→	Y	e	s			N	o								

When you execute RAID 1, RAID 5, or RAID 6 configuration, the system will initialize the HDD, create the RAID device, format the RAID device, and mount it as a volume on the NAS. The progress will be shown on the LCD panel. When it reaches 100%, you can connect to the RAID volume, for example, create share folders and upload files to the folders on the NAS. In the meantime, to make sure the stripes and blocks in all the RAID component devices are ready, the NAS will execute RAID synchronization and the progress will be shown on 'Disk Management' > 'Volume Management' page. The synchronization rate is around 30-60 MB/s (vary by HDD models, system resource usage, etc.)

**Note:** If a member drive of the RAID configuration was lost during the synchronization, the RAID device will enter degraded mode. The volume data is still accessible. If you add a new member drive to the device, it will start to rebuild. You can check the status on the 'Volume Management' page.

To encrypt the disk volume\*, select 'Yes' when the LCD panel shows <Encrypt Volume?>. The default encryption password is 'admin'. To change the password, login the web-based administration interface of the NAS with an administrator account and change the settings in 'Device Configuration' > 'Disk volume Encryption Management'.

E	n	c	r	y	p	t		V	o	l	u	m	e	?	
→	Y	e	s			N	o								

When the configuration is finished, the server name and IP address will be shown. If the NAS fails to create the disk volume, the following message will be shown.

C	r	e	a	t	i	n	g	.	.	.					
R	A	I	D	5		F	a	i	l	e	d				

\*This feature is not supported by TS-110, TS-119, TS-210, TS-219, TS-219P, TS-410, TS-419P, TS-410U, and TS-419U.

The data encryption functions may not be available in accordance to the legislative restrictions of some countries.

## **View system information by the LCD panel**

When the LCD panel shows the server name and IP address, you may press the 'Enter' button to enter the Main Menu. The Main Menu consists of the following items:

1. TCP/IP
2. Physical disk
3. Volume
4. System
5. Shut down
6. Reboot
7. Password
8. Back

## **TCP/ IP**

In TCP/ IP, you can view the following options:

1. LAN IP Address
2. LAN Subnet Mask
3. LAN Gateway
4. LAN PRI. DNS
5. LAN SEC. DNS
6. Enter Network Settings
  - Network Settings – DHCP
  - Network Settings – Static IP\*
  - Network Settings – BACK
7. Back to Main Menu

**\* In Network Settings – Static IP, you can configure the IP address, subnet mask, gateway, and DNS of LAN 1 and LAN 2.**

## Physical disk

In Physical disk, you can view the following options:

1. Disk Info
2. Back to Main Menu

The disk info shows the temperature and the capacity of the HDD.

D	i	s	k	:	1	T	e	m	p	:	5	0	°	C
S	i	z	e	:	2	3	2	G	B					

## Volume

This section shows the HDD configuration of the NAS. The first line shows the RAID configuration and storage capacity; the second line shows the member drive number of the configuration.

R	A	I	D	5						7	5	0	G	B
D	r	i	v	e		1	2	3	4					

If there is more than one volume, press the 'Select' button to view the information. The following table shows the description of the LCD messages for RAID 5 configuration.

LCD Display	Drive configuration
RAID5+S	RAID5+spare
RAID5 (D)	RAID 5 degraded mode
RAID 5 (B)	RAID 5 rebuilding
RAID 5 (S)	RAID 5 re-synchronizing
RAID 5 (U)	RAID 5 is unmounted
RAID 5 (X)	RAID 5 non-activated

## System

This section shows the system temperature and the rotation speed of the system fan.

C	P	U		T	e	m	p	:		5	0	°	C		
S	y	s		T	e	m	p	:		5	5	°	C		

S	y	s		F	a	n	:	8	6	5	R	P	M		

## Shut down

Use this option to turn off the NAS. Press the 'Select' button to select 'Yes'. Then press the 'Enter' button to confirm.

## Reboot

Use this option to restart the NAS. Press the 'Select' button to select 'Yes'. Then press the 'Enter' button to confirm.

## Password

The default password of the LCD panel is blank. Enter this option to change the password of the LCD panel. Select 'Yes' to continue.

C	h	a	n	g	e		P	a	s	s	w	o	r	d	
				Y	e	s	→	N	o						

You may enter a password of maximum 8 numeric characters (0-9). When the cursor moves to 'OK', press the 'Enter' button. Verify the password to confirm the changes.

N	e	w		P	a	s	s	w	o	r	d	:			
														O	K

## Back

Select this option to return to the main menu.



## System Messages

When the NAS encounters system error, an error message will be shown on the LCD panel. Press the 'Enter' button to view the message. Press the 'Enter' button again to view the next message.

S y s t e m   E r r o r !  
P l s .   C h e c k   L o g s

System Message	Description
Sys. Fan Failed	The system fan failed
Sys. Overheat	The system overheat
HDD Overheat	The HDD overheat
CPU Overheat	The CPU overheat
Network Lost	Both LAN 1 and LAN 2 are disconnected in Failover or Load-balancing mode
LAN1 Lost	LAN 1 is disconnected
LAN2 Lost	LAN 2 is disconnected
HDD Failure	The HDD fails
Vol1 Full	The volume is full
HDD Ejected	The HDD is ejected
Vol1 Degraded	The volume is in degraded mode
Vol1 Unmounted	The volume is unmounted
Vol1 Nonactivate	The volume is not activated

## 19. NetBak Replicator

---

NetBak Replicator is a powerful program installed in the user's system (Windows OS only) for data backup. You can back up any files or folders on the local PC to the share folders on the NAS over LAN or WAN.

### Main Functions

#### 1. Backup

- Instant Backup

Select the files and folders on the local PC and back up the files to the network share folders on the NAS immediately.

- File Filter

Select particular file types to be excluded from backup. The NAS will filter all the specified file types when backing up the data.

- Schedule

Specify a schedule for backing up the data, for example, 12:00 every day or 05:00 every Saturday.

- Monitor

When this option is enabled, the system will upload all the files or folders to the server instantly for backup when the files or folders are modified.

#### 2. Restore

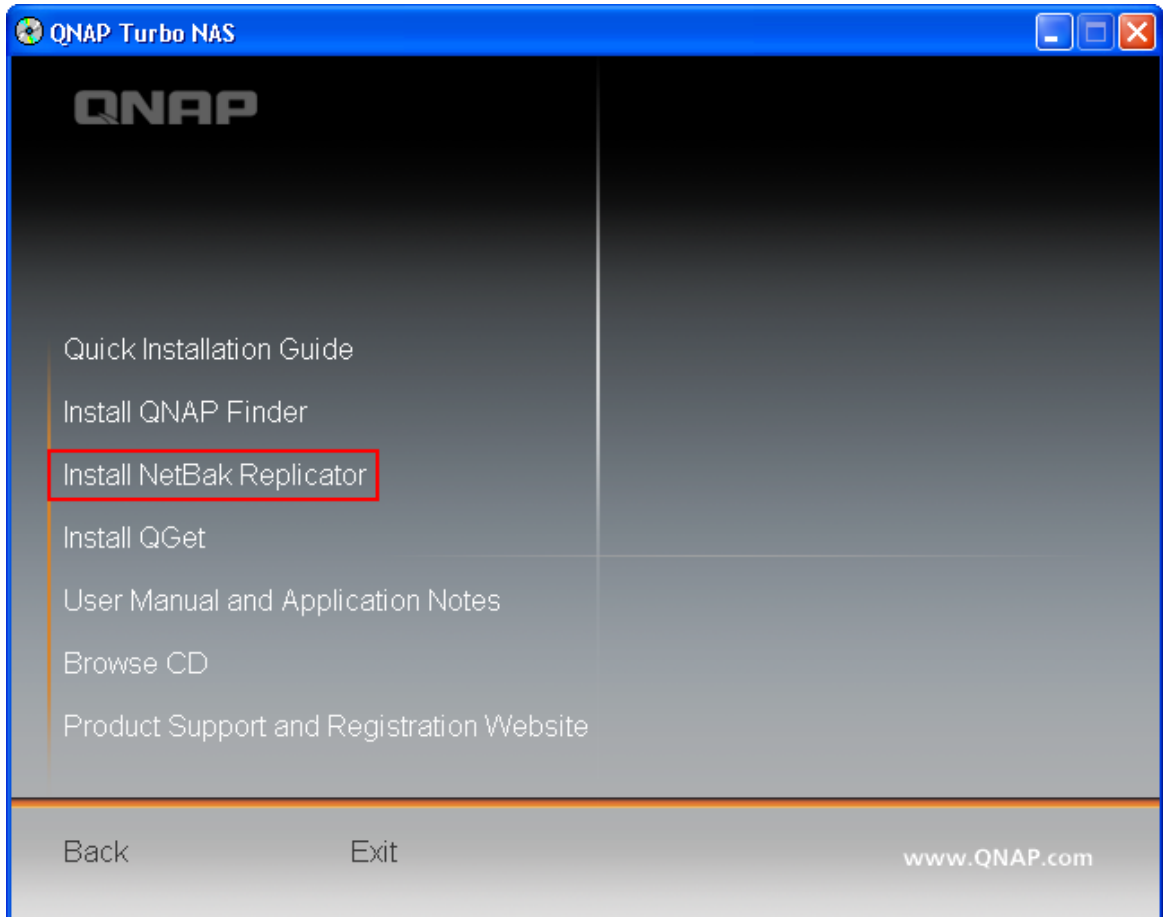
Select this option to restore the backup data to the original location of the file or to a new directory.

#### 3. Log

Enable this option to record the events of NetBak Replicator, such as the time when NetBak Replicator starts and terminates.

## Install NetBak Replicator

1. Run the NAS CD-ROM disc. Select 'Install NetBak Replicator'.



2. Follow the instructions to install NetBak Replicator.




3. Upon successful installation, a shortcut icon will be shown on the Desktop. Double click the icon to run NetBak Replicator.

## Use NetBak Replicator

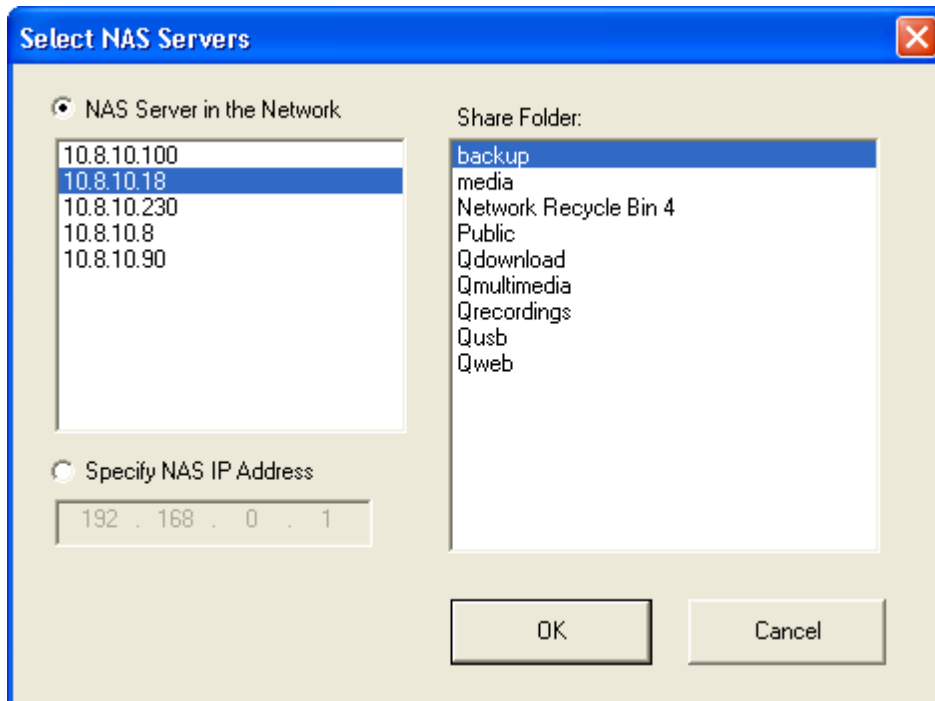
1. Before using NetBak Replicator, login the web administration page of the NAS and go to 'Access Right Management' > 'Share Folders' to create a share folder for backup. Make sure the share folder is open for everyone access or you login the share folder with an authorized account by NetBak Replicator.



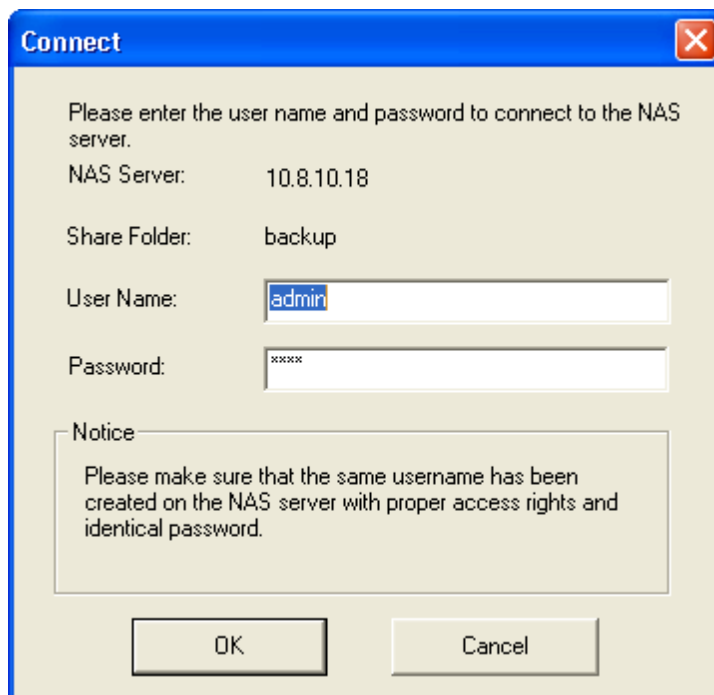
2. Run NetBak Replicator. Click . All the NAS on the local network and their share folders will be displayed.



- When the following window appears, all the NAS on the LAN will appear on the left list. Select a server and a share folder on the right. NetBak Replicator also supports backup over WAN, enter the IP address of the NAS for data backup directly and select a share folder. Then click 'OK'.










- Enter the user name and password to login the server.



5. You can start the backup procedure upon successful connection to the NAS.

### Description of the buttons on NetBak Replicator

	Open Configuration: Open a previously saved configuration file of NetBak Replicator.
	Save Configuration: Save the current settings on NetBak Replicator. The file will be named as *.rpr
	Select All: Select all the options.
	Clear All: Unselect all the options.
	Select My Document: Select all the folders in My Document.
	Open NAS Backup Folder: This button allows the users to find out where the files were backed up, and check or manage the archived files manually.
	Advanced Backup: Advanced Backup allows the power users to back up a single folder with more advanced options.

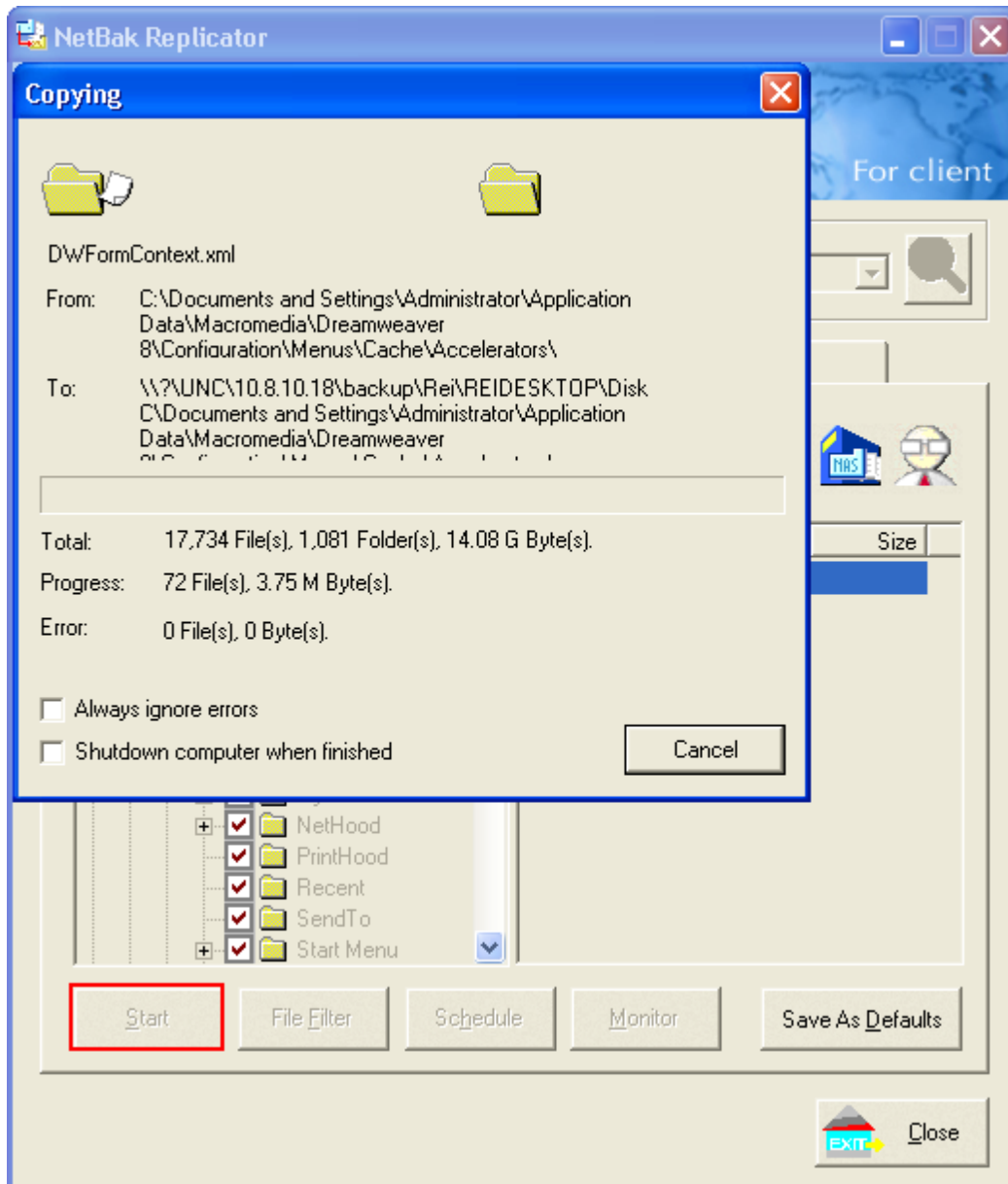
## Backup

Select the files and folders for backup.



## Start

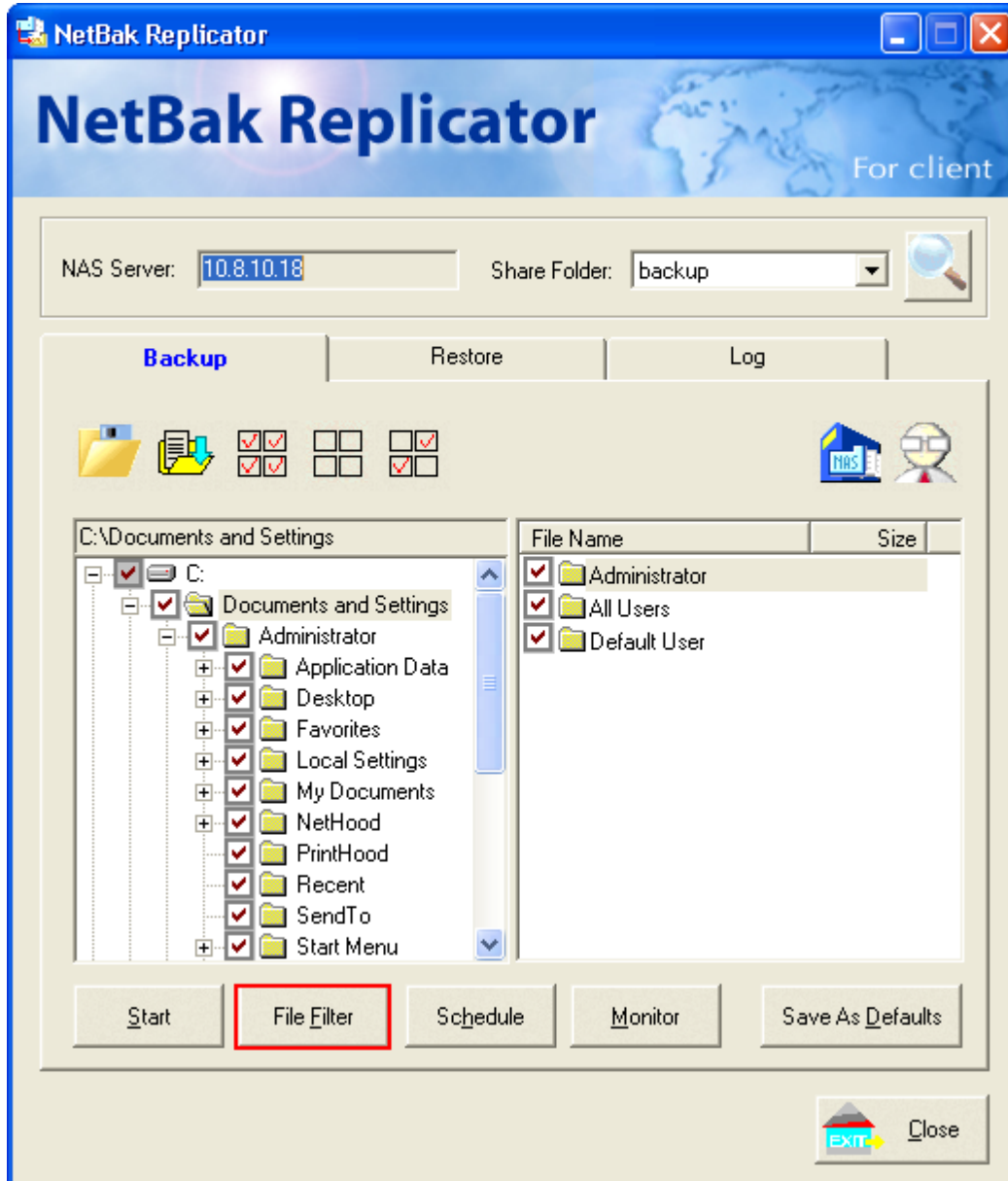
When you have selected the files for backup to the NAS, click 'Start'. The program will start to copy the files to the specified share folder on the NAS.

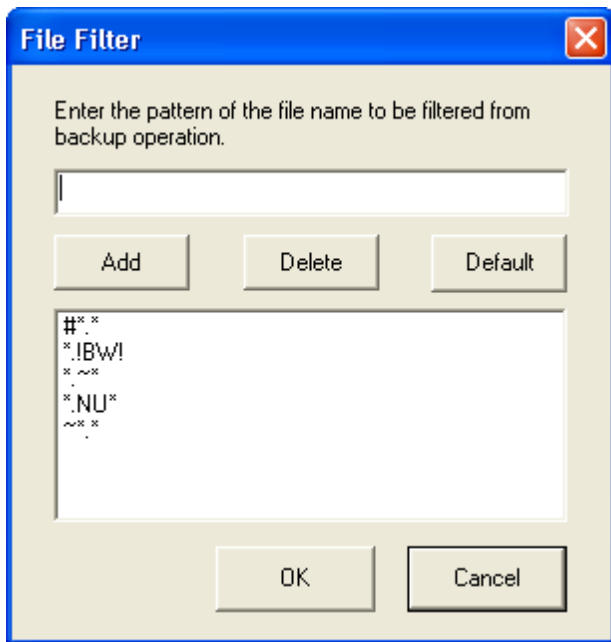




## File Filter

Click 'File Filter' on NetBak Replicator to select file format to be skipped from backup. Then click 'OK'.

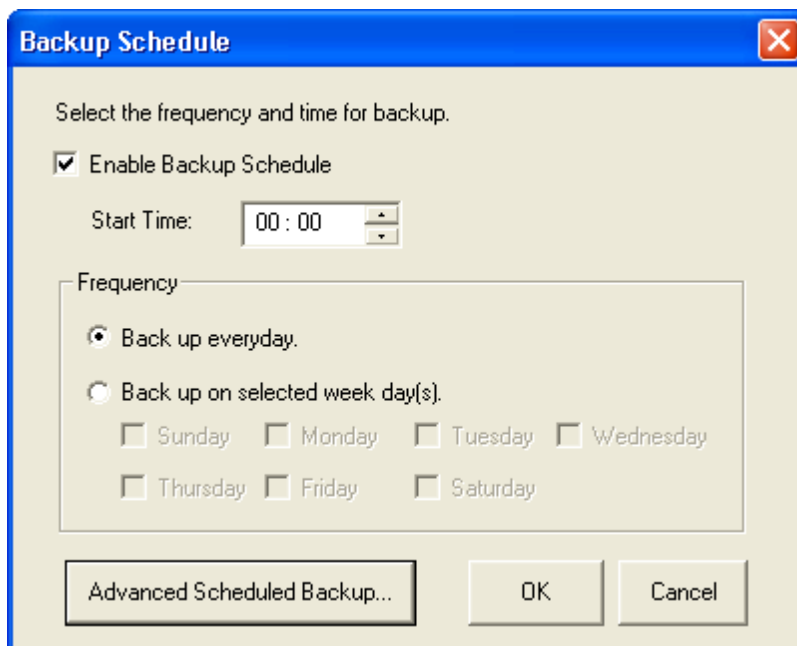





## Schedule

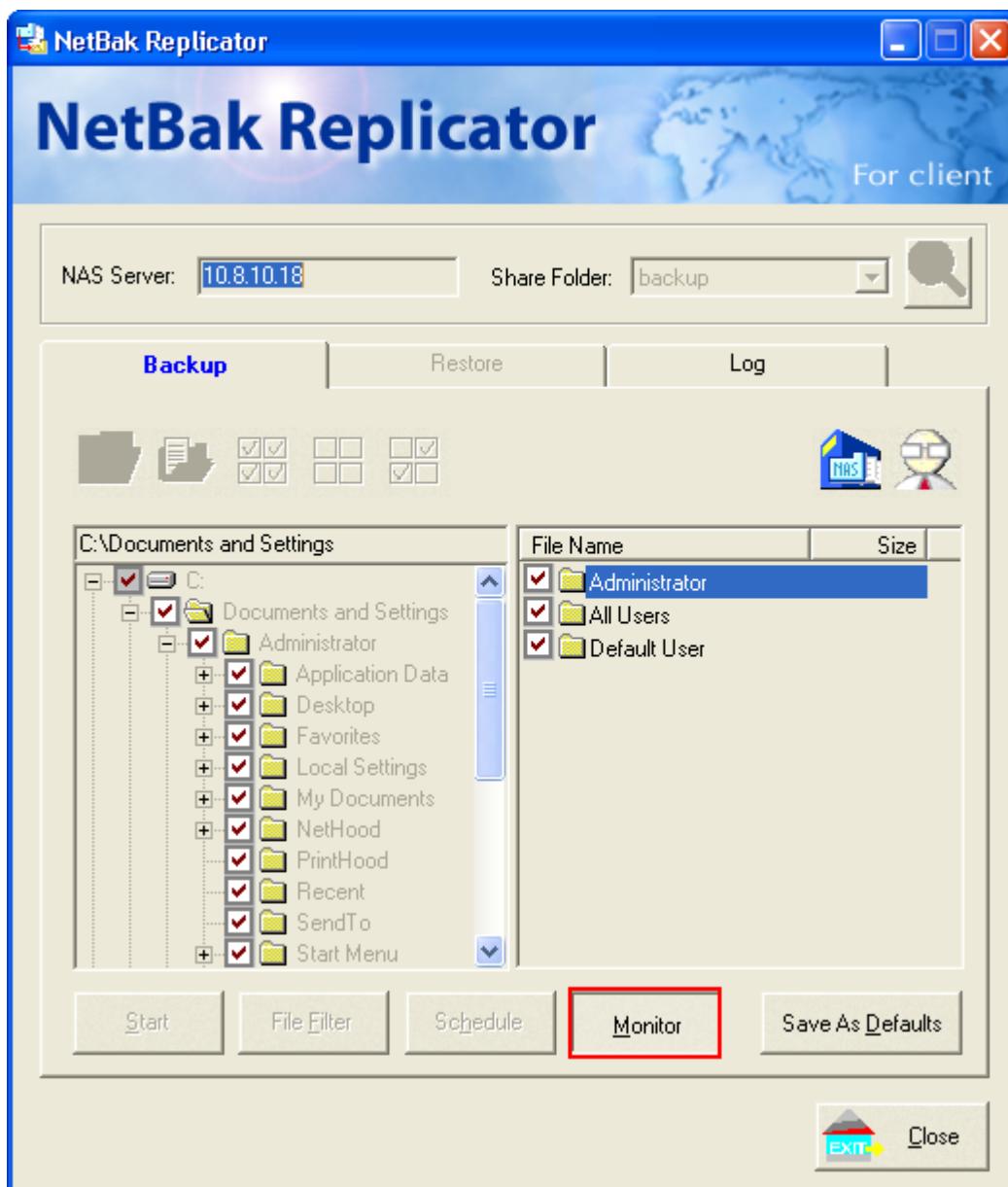
Click 'Schedule' on the main page of NetBak Replicator. Then select the option 'Enable Backup Schedule' and select the frequency and time for backup. Click 'OK' to confirm.





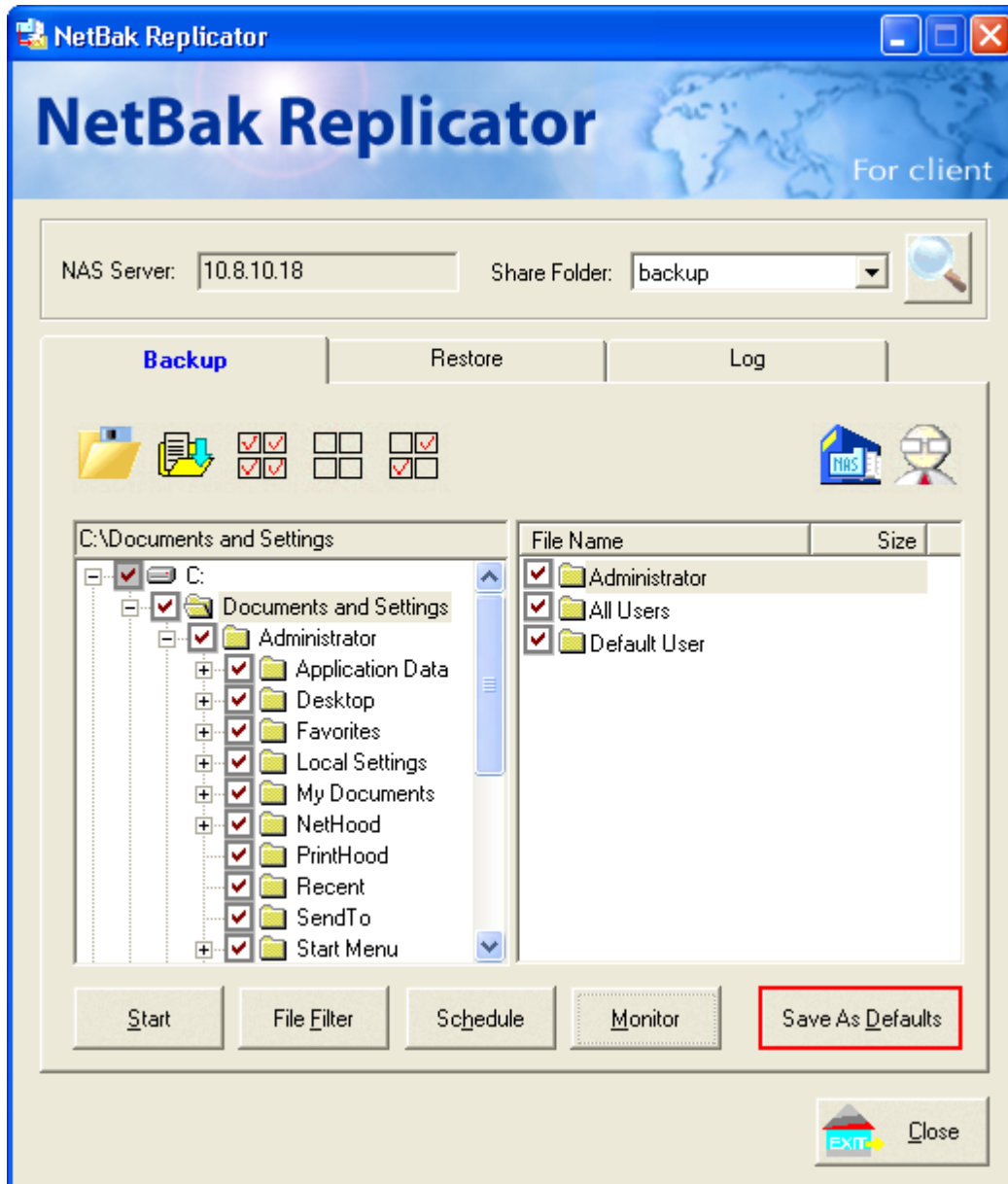
## Monitor

Select a folder for monitoring. When this option is enabled, all the new and modified files on the PC will be copied to the NAS instantly. Other files will be gray and cannot be selected. Click 'Monitor' again to stop monitoring. An icon  will appear on task bar of Windows when monitoring is in process.



## Initialize Configuration



Click 'Save As Defaults' to save the current settings of NetBak Replicator as the defaults. When you login again, the program will load the default settings automatically. You can also select to load the utility automatically when Windows starts.

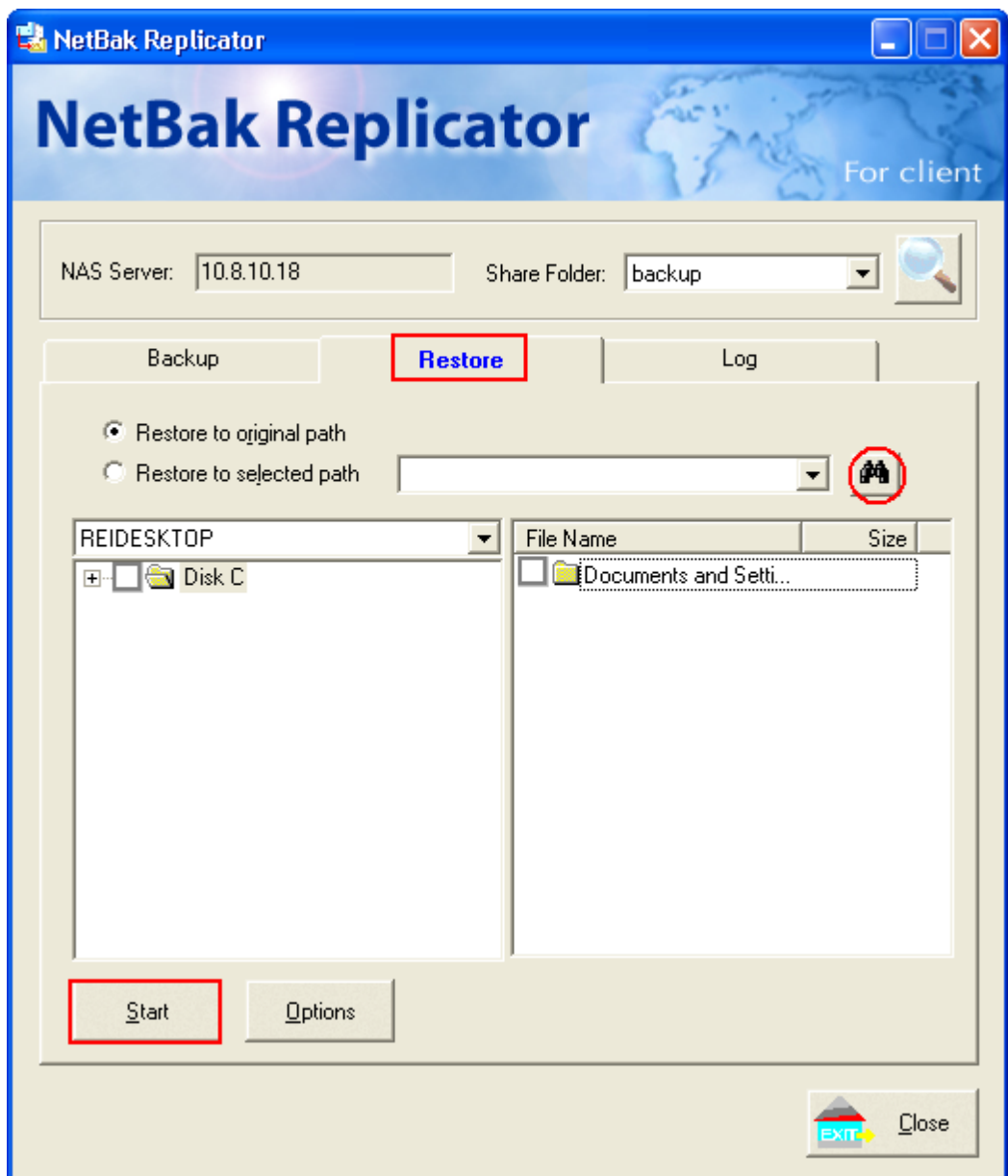


## Restore

Follow the steps below to restore the files from the NAS to your PC.



- a. Click  to select the NAS and the share folder (the restore source).
- b. Click the 'Restore' tab on NetBak Replicator.
- c. Select to restore the data to the original path or click  to specify the restore location manually.
- d. Select the files and folders to restore.
- e. Click 'Start'.





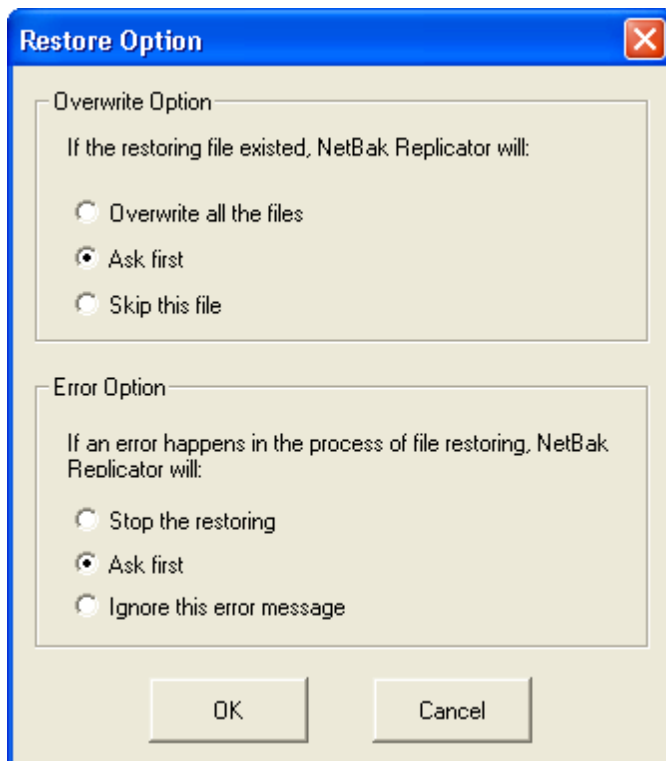
Options: Select the behaviour of NetBak Replicator if the restored file exists on the destination and when an error occurs during the process.

If the restoring file existed, NetBak Replicator will:

- Overwrite all the files
- Ask first
- Skip this file

If an error happens in the process of file restoring, NetBak Replicator will:

- Stop the restoring
- Ask first
- Ignore this error message



## Log

- Save As...: To save all the logs on NetBak Replicator, click this button. All the logs will be saved as a text file.
- Clear All: Click this button to clear all the logs.
- Option: Select the type of logs to be recorded? 'Record all logs' or 'Record error logs only'.



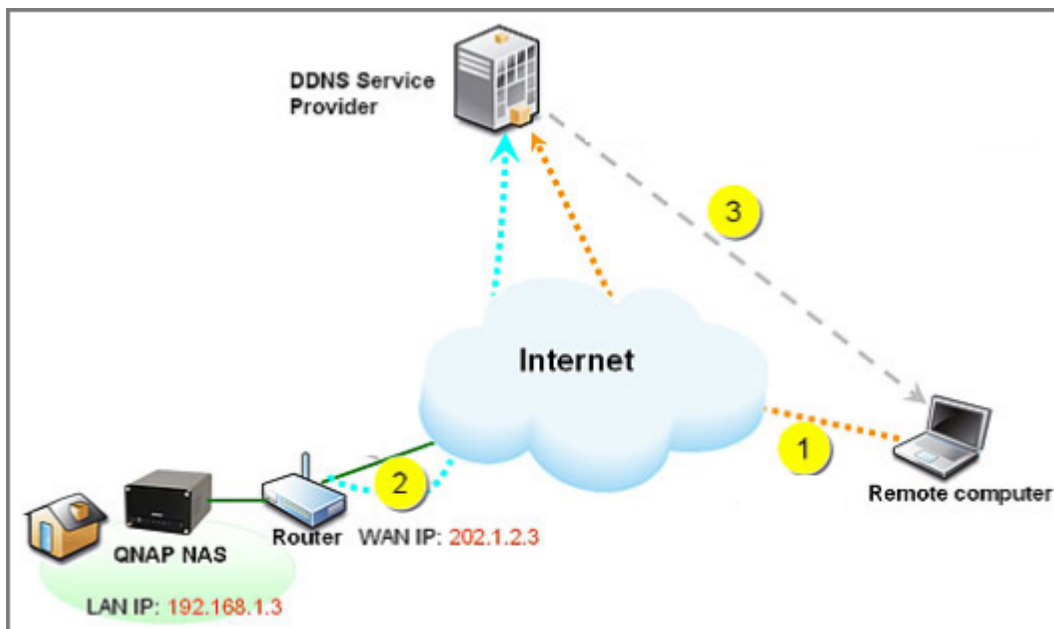
## 20. Connect to QNAP NAS from the Internet (DDNS Service)

---

### Register DDNS and set port forwarding on the NAS

To connect to your NAS at home or office from the Internet, you can enter the IP address of the NAS in a web browser providing that a fixed public IP is assigned to the NAS. However, most users may have installed their NAS behind a NAT router and they are using a dynamic IP for Internet connection. It is inconvenient to memorize an IP address such as 202.193.126.45 and to inform every user of the IP address whenever a new one is assigned by the ISP. You can register a free DDNS account and set up the information on your NAS so that the users can connect to the NAS with an easy-to-remember host name that you specify.

### DDNS usage scenario



1. The user connects to the NAS by the URL <http://qnapqnap.dyndns.org>.
2. The NAS detects the WAN IP has changed and the DDNS client sends the WAN IP to the DDNS service provider.
3. The DDNS service provider receives the information and assigns the new IP to the DDNS host name (qnapqnap.dyndns.org).

## Register a free DDNS account

To register a DDNS account, refer to the steps below. We will be using the DDNS service provided by DynDNS (<http://www.dyndns.com/>) in this example. QNAP NAS currently supports the following DDNS providers:

<http://www.dyndns.com/>

<http://update.ods.org/>

<http://www.dhs.org/>

<http://www.dyns.cx/>

<http://www.3322.org/>

<http://www.no-ip.com/>

Visit <http://www.dyndns.com/> and click 'Create Account' to register an account.

The screenshot shows the DynDNS website interface. At the top left is the DynDNS logo. To the right of the logo are input fields for 'User:' and 'Pass:', followed by a 'Login' button. Below these are links for 'Lost Password?' and 'Create Account' (the latter is highlighted with a red box). A yellow navigation bar contains links for 'About', 'Services', 'Account', 'Support', and 'News'. The main content area features a large banner on the left with the text 'PUT SOME SPRING IN YOUR SERVER' and 'DynDNS now offers Virtual Servers', accompanied by a yellow coiled spring graphic and a 'Learn more...' button. On the right side of the banner area, there are sections for 'New to DynDNS?' (with a 'Take a tour and see what we do' link), 'DNS Services' (with a link to 'DNS for static and dynamic IP address'), and 'MailHop Services' (with a link to 'Ensure reliable email delivery'). Below these is a search bar with a 'Search' button. A 'News' section below the banner displays a headline: 'Dynamic Network Services Inc. Releases MailHop 2.0'. At the bottom of the page, there are four columns of links: 'Resources' (What is DNS?, DNS Tools, Home Solutions, Business Solutions), 'Services' (DNS Hosting, Free Dynamic DNS, Email Relay, Domain Names), 'Support' (24/7 Premier Support, DNS Update API, Update Clients, Updater for Windows), and 'About DynDNS' (Company Facts, Technologies, DNS Inc. Jobs, Contacts). The footer contains the text '© 1998-2008 Dynamic Network Services, Inc. - Legal Notices - Contacts'.

Complete the form to create your free account.

## Create Your DynDNS Account

Please complete the form to create your free DynDNS Account.

### - User Information

Username:	<input type="text" value="qnopqnop"/>	
Email Address:	<input type="text" value="██████@qnop.com"/>	Instructions to activate your account will be sent to the email address provided.
Confirm Email Address:	<input type="text" value="██████@qnop.com"/>	
Password:	<input type="password" value="●●●●"/>	Your password needs to be more than 5 characters and cannot be the same as your username. Do not choose a password that is a common word, or can otherwise be easily guessed.
Confirm Password:	<input type="password" value="●●●●"/>	

### - About You (optional)

Providing this information will help us to better understand our customers, and tailor future offerings more accurately to your needs. Thanks for your help!

How did you hear about us:	<input type="text" value="—"/>	We <a href="#">do not sell</a> your account information to anyone, including your email address.
Details:	<input type="text"/>	

After you have created an account, a confirmation mail will be sent to your email address.

## Account Created

Your account, `qnopqnop`, has been created. Directions for activating your account have been sent to your email address:

`██████████` To complete registration, please follow the directions you receive within 48 hours.

You should receive the confirmation email within a few minutes. Please make certain that your spam filtering allows messages from `support@dyndns.com` to be delivered. If you have not received this email within an hour or so, request a [password reset](#). Following the instructions in the password reset email will also confirm your new account.

Thanks for using DynDNS!

After confirming the registration, login the DDNS service.

## Login

Account Login

Username:  Password:

The account summary is shown.

The screenshot shows the DynDNS user interface. At the top left is the DynDNS logo. On the top right, it says "Logged In User: qnapqnap" with links for "My Services", "My Cart", and "Log Out". A yellow navigation bar contains "About", "Services", "Account", "Support", and "News". On the left is a sidebar with "My Account", "My Services", "Account Settings", "Billing", "My Cart Items", and a "Search" box. The main content area is titled "Account Summary for qnapqnap" and is divided into three columns: "My Services" (with a gear icon and a list of links like "My Zones", "Add Zone Services", etc.), "Billing" (with a dollar sign icon and links like "View Shopping Cart", "Active Services", etc.), and "Account Settings" (with a mail icon and links like "Change Email Address", "Change Password", etc.). At the bottom, there is a copyright notice: "© 1998-2008 Dynamic Network Services, Inc. - Legal Notices - Contacts".

Go to 'Services' > 'Dynamic DNS'.

The screenshot shows the DynDNS website interface. At the top, there is a navigation bar with 'About', 'Services' (highlighted with a red box), 'Account', 'Support', and 'News'. Below the navigation bar is a sidebar menu with options like 'DNS Services', 'Domain Registration', 'SSL Certificates', 'MailHop Services', 'Network Monitoring', 'Spring Server™', 'URL Forwarding', 'Pricing', and 'My Cart'. The main content area is titled 'Services' and contains a paragraph describing the company's offerings, including free technical support. Below this is a section for 'DNS Services' with four columns: 'Dynamic DNS' (highlighted with a red box), 'Custom DNS', 'Recursive DNS', and 'Secondary DNS'. Each column includes an icon and a brief description of the service.

Click 'Get Started' to create a host.

The screenshot shows the 'Dynamic DNS' page. The title 'Dynamic DNS' is at the top. Below it is a paragraph explaining that Dynamic DNS (DDNS) allows users to create a hostname that points to a dynamic IP address. A 'Get Started' button is highlighted with a red box. Below the button is a 'Manage Hosts' button. To the right is a 'Screenshot' section showing a preview of the host management interface. Below the buttons is a section titled 'Capabilities and Features' with a bulleted list of features:

- Get five (5) hostnames in [88 available domains](#) for free.
- Create wildcard CNAME *\*.yourhost.dyndns.org* for *yourhost.dyndns.org*.
- Forward web requests or mark host offline for maintenance or downtime.
- Configure MX records for flexible mail routing.
- Update host using [ddns update clients](#) for a wide variety of platforms.
- Modify DNS TTL values for fast propagation or reliable static IP caching.
- Deliver your DNS records to 5 DNS servers in 5 tier-1 datacenters around the globe.
- Query volume up to 648,000 queries/month

Below the list is a paragraph stating that their free industry-leading e-mail support is ready to help users set up their dynamic or static DNS, remotely connect to their machine, and run a mail server. It also mentions other premium features available with their [Account Upgrade](#) service.

Enter the settings to create a new host.

Tip: The 'IP Address' refers to your current WAN IP. You may check the information from <http://www.ip-lookup.net/>. In most of the cases, it is useful for you to know your public IP address when you are behind an NAT router.

## Add New Hostname

[Host Services](#)

Note: You currently don't have Account Upgrades in your account. You cannot use some of our Host Service features. Please consider buying Account upgrade that make this form full-functional and will add several other features. [Learn More...](#)

Hostname:  .    
Wildcard:  Yes, alias \*\*.hostna  
Service Type:  Host with IP address  
 WebHop Redirect  
 Offline Hostname  
IP Address:   
[Use auto detected IP a](#)  
TTL value is 60 second  
Mail Routing:  Yes, let me configur

- homelinux.net
- doestexist.com
- doestexist.org
- dontexist.com
- dontexist.net
- dontexist.org
- dvrdns.org
- dyn-o-seur.com
- dynelias.com
- dynelias.net
- dynelias.org
- dyndns.biz
- dyndns.info
- dyndns.org**
- dyndns.tv
- dyndns.ws
- endofinternet.net
- endofinternet.org
- endoftheinternet.org
- ftpaccess.cc
- game-host.org

A new host is created.

## Host Services

[Add New Hostname](#) - [Host Update Logs](#)

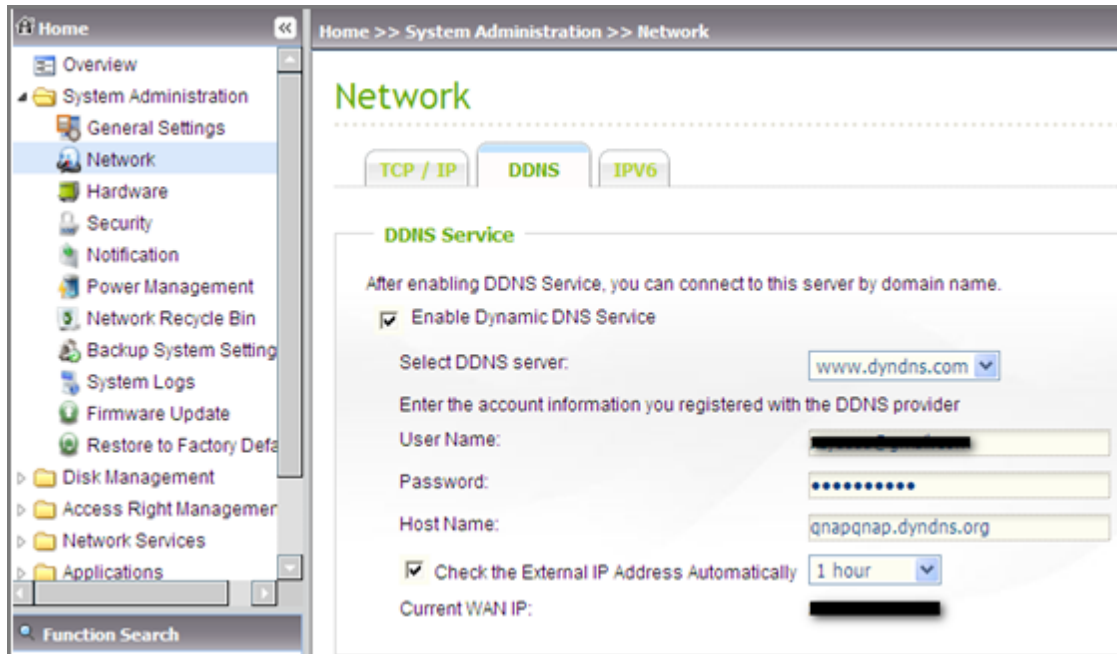
Hostname [qnapqnap.dyndns.org](#) created.

Hostname	Service	Details	Last Updated
<a href="#">qnapqnap.dyndns.org</a>	Host	219.85.63.13	Sep. 05, 2008 3:53 AM



Login your QNAP NAS and go to 'System Administration' > 'Network' > 'DDNS'. Enter the DDNS settings. Schedule the NAS to update the DDNS record periodically.

Check the External IP Address Automatically: Turn on this option if your NAS is located behind a gateway. The NAS checks the external (WAN) IP automatically and if the IP address is changed, the NAS will inform the DDNS provider automatically to ensure it can be connected by the host name.



After you have finished the settings, you can connect to the NAS using the host name (qnapqnap.dyndns.org).

## Port Forwarding

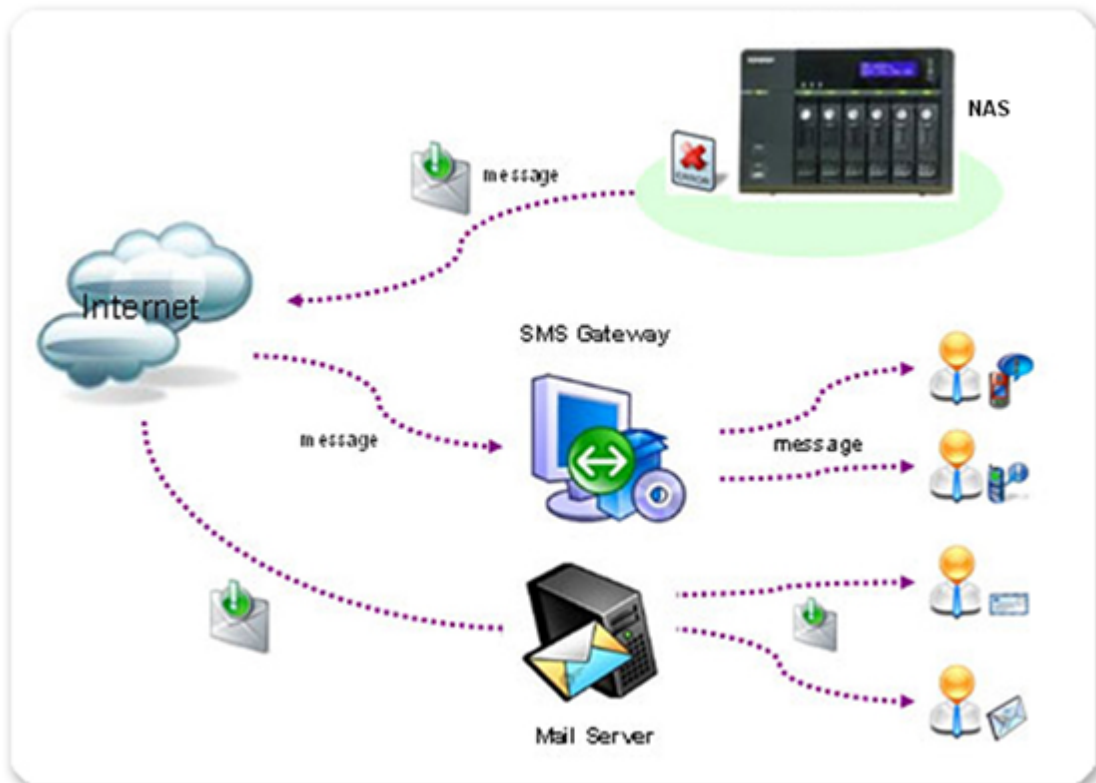
If your NAS is located behind an NAT router, you need to open the ports of some services on the NAT router and forward these ports to the fixed LAN IP of the NAS so that you can connect to the services correctly from the Internet. This function is available on most routers in the market and is often known as 'Port Forwarding', 'NAT Server', or 'Virtual Server'. For example, to connect to the administration interface of NAS series, you need to open port 8080.

<b>Current open service ports on QNAP NAS</b>	
<b>NAS Services</b>	<b>Default Port</b>
Web-based system management	8080 (All models, TS-101/201 with firmware v2.3.0 or later)
Web-based system management	6000 (TS-100/101/201 firmware prior to v2.1.1)
FTP	21
Passive FTP	55536–56559
Web Server	80
Download Station (BitTorrent download)	6881–6999
Remote replication (Rsync)	873
Telnet	13131
SSH	22
SSL	443
SMTP	25
Samba	445
MySQL	3306
TwonkyMedia	9000

## 21. Set SMS and Email Alert

QNAP NAS supports SMS and email alert to inform the users of system error or warning. SMS is the abbreviation of Short Message Service which is known for the mobile text message service. By subscribing with the SMS service providers you are able to set up QNAP NAS to send SMS to the designated mobile phones in the event of system warning or errors. This demonstration shows you how to set up both the SMS and email alert on your NAS. See below for the usage diagram.

\*TS-109/ 209/ 409/ 409U series only support email alert.



## Sign up and set up an SMS service account

Clickatell will be used in this example. Go to Clickatell website <http://www.clickatell.com/login.php>. Under 'New Customers' select 'Clickatell Central (API)'.

**New Customers**

If you do not already have an account, take a moment to create one. You will benefit from:

- A user-friendly administration interface
- Free registration and no license fees
- 24/7 Service & Support
- Web based account accessible from anywhere
- Multiple payment options

Product Selection:

Please Select Product ▼

- Please Select Product
- Clickatell Central (API)
- Communicator
- Messenger-Pro
- Clickatell Affiliates
- Clickatell Wholesale

Fill out your personal information then click 'Continue'. Make sure you have carefully read the Terms and Conditions of the SMS service provider and that you agree to all the terms and regulations.

**Complete our simple registrations process below to test our gateway and obtain your free test credits.**

\* Indicates all fields that are required.

### Step 1 of 4 - Select Product

Select one of the products below which you would like to register for:

Clickatell Central ?       Communicator ?

### Step 2 of 4 - Account Setup

Select a country specific or international account type, based on your requirements for SMS traffic delivery destinations.

**International Coverage Account:** ?      **Local Coverage Account:** ?

INTERNATIONAL       USA       UK       SA

---

\* Create Username:       Security Code:   
\* Create Password:       \*Enter Security Code:

### Step 3 of 4 - Personal Information

\*First Name:       \* Country:

\* Last Name:       \* Mobile Number:

\* Email Address:  ← (e.g. sample@domain.com)

Personal Use Only

\* Company:

---

Emails sent to me must be in  Text format or  HTML format

I would like to receive: Clickatell News, Balance Notifications, Promotions

\* I accept Clickatell's [Terms and Conditions](#)

Security & Privacy

Upon successful registration you should receive an email containing the account activation link. You may now check your inbox to complete your account activation. By following the activation link you will be brought to the login screen as the image show below. Enter the password and click 'Login'.

**My Account Login**

**Customer Login**

Existing Clickatell account holders can select their product and login below. Note, username & password are CASE sensitive.

Select Product: Clickatell Central (API) ▼

Username: qnap

ClientID: CAH605

Password: ●●●●●●●●

Login

[Lost password?](#)

Next you will need to verify your mobile number by entering an activation code sent by Clickatell after you enter your mobile phone number and click 'SEND ACTIVATION CODE'.

**Verify your Mobile Number**

For security reasons you are required to verify your mobile number in order to make your first credit purchase and send non-test SMS messages.

Your activation code will be sent to 886987654321 **SEND ACTIVATION CODE**

If this is not your number, please retype your mobile number in the box above and click the "Send Activation Code" button.

Enter your activation code here:  **VERIFY NOW**

While still logged in with Clickatell, go to 'Manage my Products' and select 'HTTP' from 'My Connections' dropdown menu.

Central Home My Settings Manage my Products Billing Message Reports Help

**Manage my Products**

[My Connections](#)  
Converters  
Two-Way Messaging

**Application Forms**

Two-Way Messaging  
SA Shortcode MO  
Namibia Shortcode  
USA Shortcode  
USA Shortcode MFS  
UK Shortcode  
Canada Shortcode  
Clickatell ICM

**Test Message in Message Box**

Please Note that Clickatell pre-populates all test credits with a standard test message. Once you have purchased Clickatell credits, the test message will be removed and you will be able to send personalized text messages.

[Buy SMS Credits](#)

**My Connections:**

Add Connection

Add Connection

**HTTP**

SMTP

FTP

XML

COM

SMPP

SOAP

[Add connection](#)

Set up the 'HTTP API' by entering the minimum required information, the 'Name', 'Dial Prefix', and 'Callback Type' as the image shown below. Click 'Submit' once done.

**HTTP API**

This product provides an interface between your applications and the Messaging Gateway. It is a lower level connectivity option, but offers the most functionality and flexibility for the Developer and Systems Integrator. With the API you can set up alert-based SMS delivery from your server, deliver information to your mobile sales staff and keep in contact with your customers. This product is intended for machine-generated to User messaging.

**Add HTTP API - Bold Items Required**

**Name:** TS-639-Pro

IP Lock Down:

**Dial Prefix:** Taiwan (886)

**Callback Type:** HTTP GET

Callback Url:

Callback Username:

Callback Password:

**NOTE:** submission of this form will delete any session\_id currently valid for this api\_id. Any application using this session\_id will have to re-authenticate.

[Submit](#)

You should now obtain an 'API ID' that is required before using the SMS service. Write this down somewhere as we will need it for the setup in the NAS administration in the next step.

<u>Name</u>	<u>Type</u>	<u>API ID</u> ✓	<u>Dialing Code</u>
<a href="#">TS-639-Pro</a>	HTTP	3176048	886 Taiwan

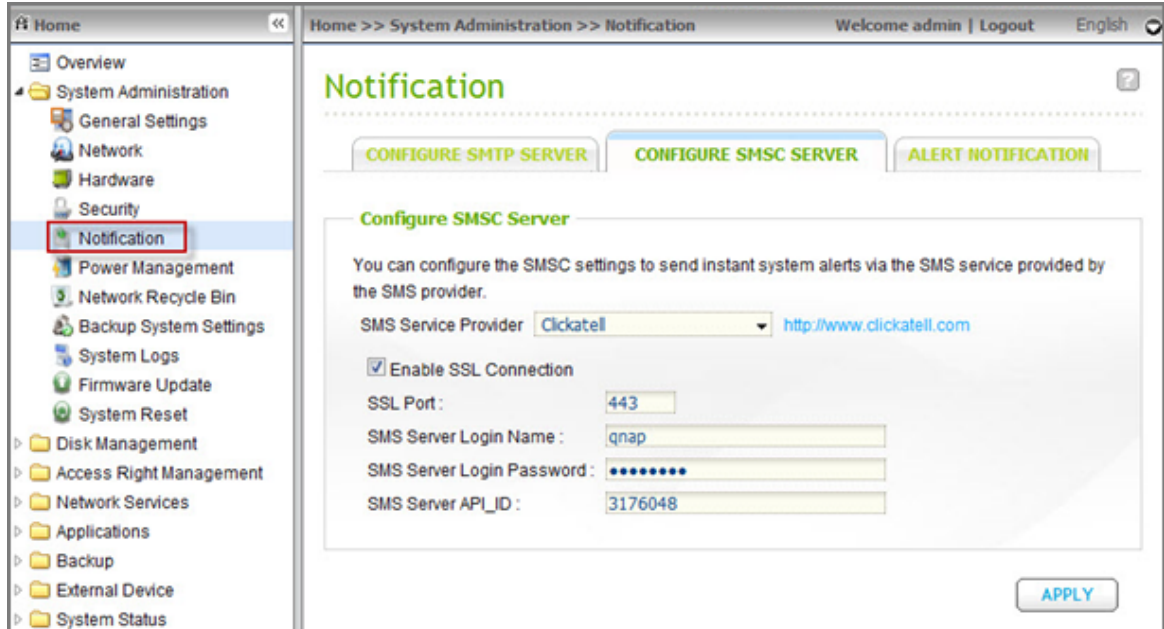
1 to 1 of 1

Up to this point you have completed the account registration and mobile number verifications with Clickatell and have successfully obtained an 'API ID'. You may now proceed to the next step.



## Set the SMSC settings and SMS alert on the NAS

Go to 'System Administration' > 'Notification' > 'Configure SMSC server' and enter the information we got from the previous step to configure the SMSC server.



The screenshot displays the QNAP System Administration web interface. The left sidebar shows a navigation menu with 'Notification' highlighted and circled in red. The main content area is titled 'Notification' and contains three tabs: 'CONFIGURE SMTP SERVER', 'CONFIGURE SMSC SERVER', and 'ALERT NOTIFICATION'. The 'CONFIGURE SMSC SERVER' tab is active, showing the following configuration options:

- Configure SMSC Server**
- You can configure the SMSC settings to send instant system alerts via the SMS service provided by the SMS provider.
- SMS Service Provider: Clickatell (dropdown menu) <http://www.clickatell.com>
- Enable SSL Connection
- SSL Port: 443
- SMS Server Login Name: qnap
- SMS Server Login Password: ●●●●●●
- SMS Server API\_ID: 3176048
-

Next go to 'System Administration' > 'Notification' > 'Alert Notification' and enter your mobile number.

Home >> System Administration >> Notification

## Notification

[CONFIGURE SMTP SERVER](#) [CONFIGURE SMSC SERVER](#) **[ALERT NOTIFICATION](#)**

### Alert Notification

When a system event occurs, an alert email/SMS will be sent automatically.

Send system error alert by:

Send system warning alert by:

### E-mail Notification Settings

E-mail address 1:

E-mail address 2:

[SEND A TEST E-MAIL](#)

Note: The SMTP server must be configured first for alert mail delivery.

### SMS Notification Settings

Country Code:

Cell Phone No. 1: +886

Cell Phone No. 2: +886

[SEND A TEST SMS MESSAGE](#)

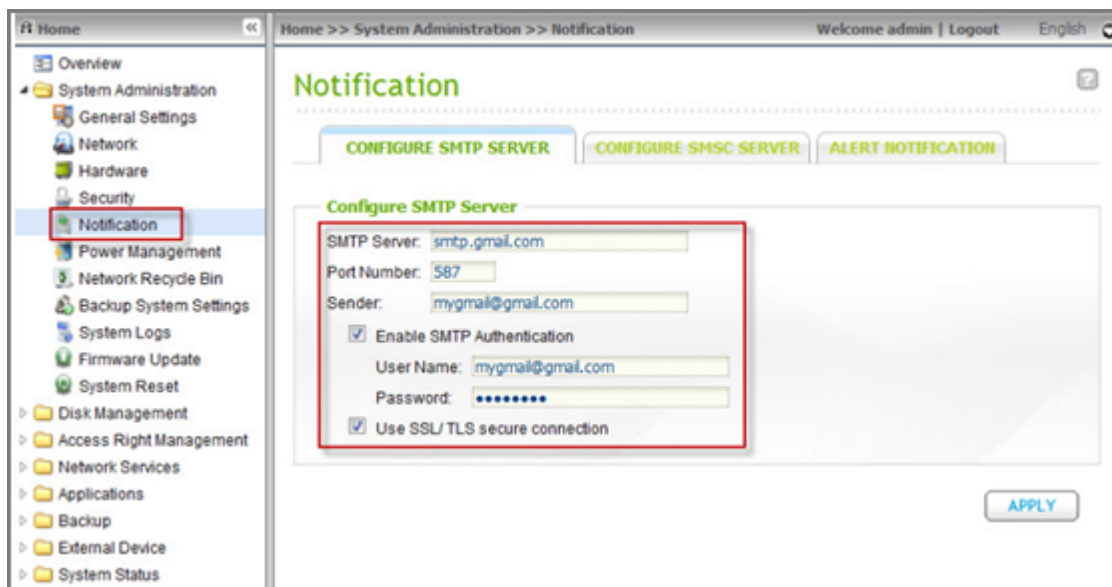
Note: You must configure the SMSC server to be able to send SMS notification property.

[APPLY](#)

Congratulations! It is all set up and now you may want to test if you have configured the SMS notification properly by clicking 'SEND A TEST SMS MESSAGE'. If nothing goes wrong you should be able to receive it in less than 10 seconds.

## Set the SMTP server and email alert

Go to 'System Administration' > 'Notification' > 'Configure SMTP server' and enter a valid SMTP information. We will use Gmail as the SMTP service provider in this example.

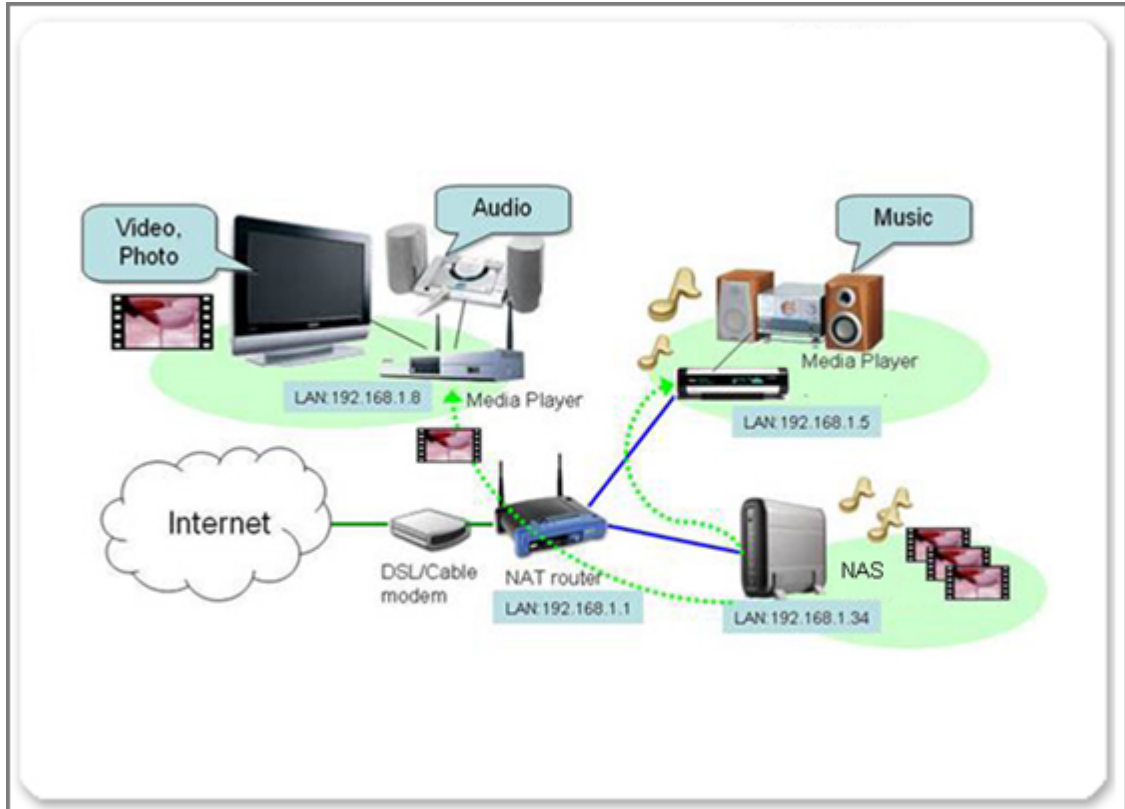


Next go to 'System Administration' > 'Notification' > 'Alert Notification' and enter your email address and specify whether you want to receive system warning alerts too besides the system error alerts. You can test if the email sending process works by clicking 'SEND A TEST E-MAIL'.

Now no matter if you are out at work or away from home you will still be notified of any NAS error and warning right away by either an SMS sent to your mobile or an email and be able to act in case of any unexpected events.

## 22. Set up UPnP Media Server for Media Playing

This section shows you how to set up the UPnP media server on QNAP NAS to share the multimedia files to the media player on the local network and play them in your home entertainment system.



### Enable UPnP Media Server

Go to 'Applications' > 'UPnP Media Server' and select the option 'Enabled UPnP Media Server' and click 'Apply'. The UPnP Media Server function is now ready.



## Set up TwonkyMedia Server

The TwonkyMedia version shown in this example is 4.4.2. The actual version the NAS supports may vary from time to time without notice.

Point your browser to 'http://NAS IP:9000/', you will enter TwonkyMedia configuration page. You can specify the locations of the contents you would like to share in your home network under the 'Content Locations'. Simply type in the path to the contents on your QNAP NAS (default folder is Qmultimedia or Multimedia). In the example, we added an extra share /Qdownload.

**MediaServer** TwonkyMedia Conf  
Version 4.4.2

Basic Setup  
First steps  
Sharing  
Clients/Security  
Internet Radio

Advanced Setup  
External Applications  
Naming  
Music tree  
Picture tree  
Video tree  
Miscellaneous

Support  
Troubleshooting  
FAQ

© TwonkyVision GmbH  
2003, 2006).  
All rights reserved

Save Changes Cancel Rescan content directories

**Content Locations:**

<input checked="" type="checkbox"/>	/Qmultimedia	All content types	Browse
<input checked="" type="checkbox"/>	/Qdownload	All content types	Browse
<input checked="" type="checkbox"/>		All content types Music-only Pictures-only Video-only	Browse

Add new content directory

Directories where the server shall scan for content. Each directory can be linked to a content type. The default is All content types. Sharing can be temporarily disabled by unchecking the directory.

Rescan in minutes: 1

This option specifies the rescan behavior of the server. If set to 0, automatic rescans are disabled. A positive value between rescans of content directories in minutes. -1 enables the server to watch content directories automatically without the need for rescans.

For ease of browsing if you have a large amount of media contents, you can configure the navigation tree for your photos, videos, and music. You can sort your media contents on the TV easily.



When you have completed the configuration, make sure you have clicked the button 'Save Changes' to save the settings.

You can now move the MP3, images, and videos to the Qmultimedia or Multimedia folder or any custom folders you added via Windows mapped drives or FTP to the NAS for your media player.

## Set up the connection of media player

### About physical wiring

We use a high definition (HD) media player with QNAP NAS as this example. The media player is used to receive the streamed multimedia file sent by your UPnP media server on the NAS, then transcode these files to your TV or Hi-Fi system. Because of the limited cable length of these interfaces, normally you have to place your media player near your TV and Hi-Fi system.



### About TCP/IP settings

Connect your media player to the LAN at your home and set to acquire the IP address by DHCP. (Most of the media players are defined as DHCP client, which obtains an IP address automatically from the network.)



### **Connect the video and audio output of the media player to your TV**

The media player may provide different video and audio interfaces, such as Composite video/audio output, S-Video for video output, S/PDIF digital audio, or HDMI interface which can carry both video and audio signals.



#### **Example 1 (Buffalo LinkTheater)**

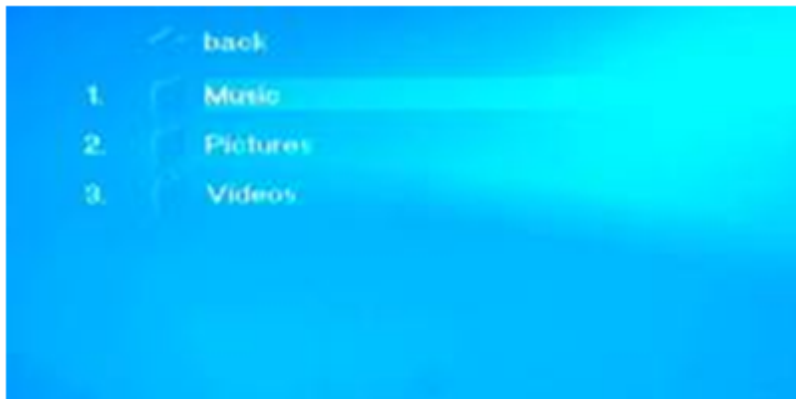
In this example, the video out and audio out cables are connected to the TV. You can also connect audio out to your stereo acoustic system.



Turn on the TV that is connected to the media player, you can select the options available by the remote control of the media player. The media player will find the NAS on the network. The NAS name will be displayed on the screen.



You will find the photos, video, and music shared by the specified folder on the NAS. You can use the remote control of the media player to select and play the files.



Example 2 (ZyXEL's DMA-1000W)

ZyXEL DMA-1000W is one of the models which are based on SigmaDesigns' platform.



If your TV provides an HDMI interface, both audio and video signals can be carried by the single cable. Simply connect your media player to your TV by an HDMI cable.



If your TV does not provide an HDMI interface, you can connect an S-Video cable to your TV for video output, and connect Composite left/right audio interface for audio output. If you look for higher quality of music playing, you can use an S/PDIF cable to connect the media player to your Hi-Fi system.



Turn on and switch your TV to the correct interface (HDMI or S-Video). Use the remote control of the media player to enter the 'Server' page, the media player detects the NAS automatically. You can now play the multimedia files or listen to the Internet radio from the NAS.

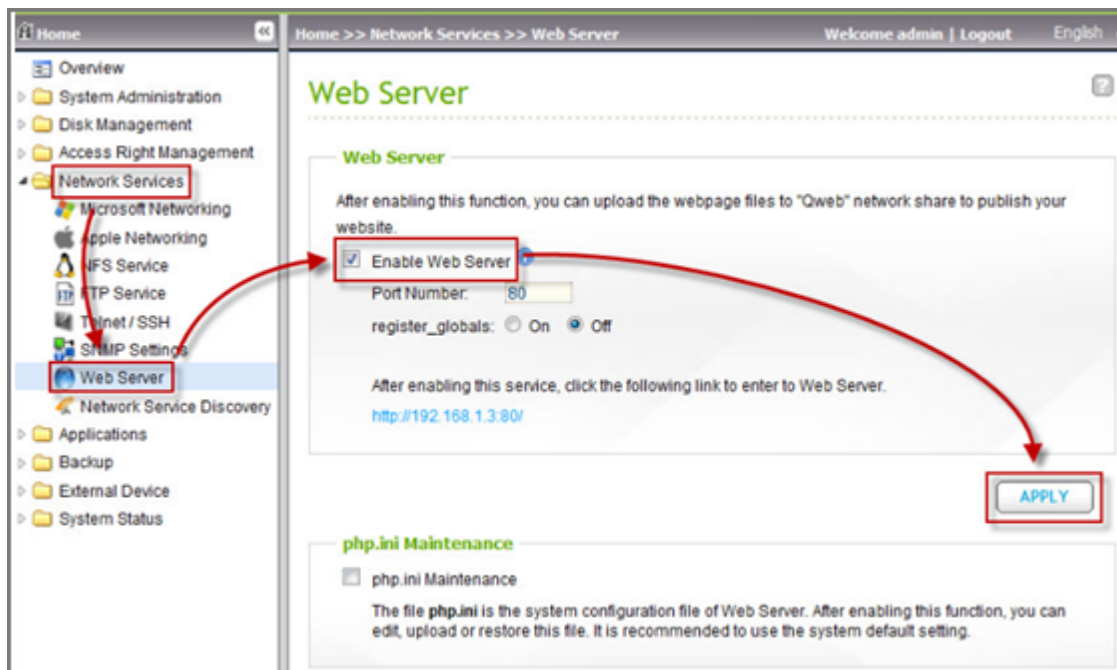


## 23. Host a Forum with phpBB on QNAP NAS

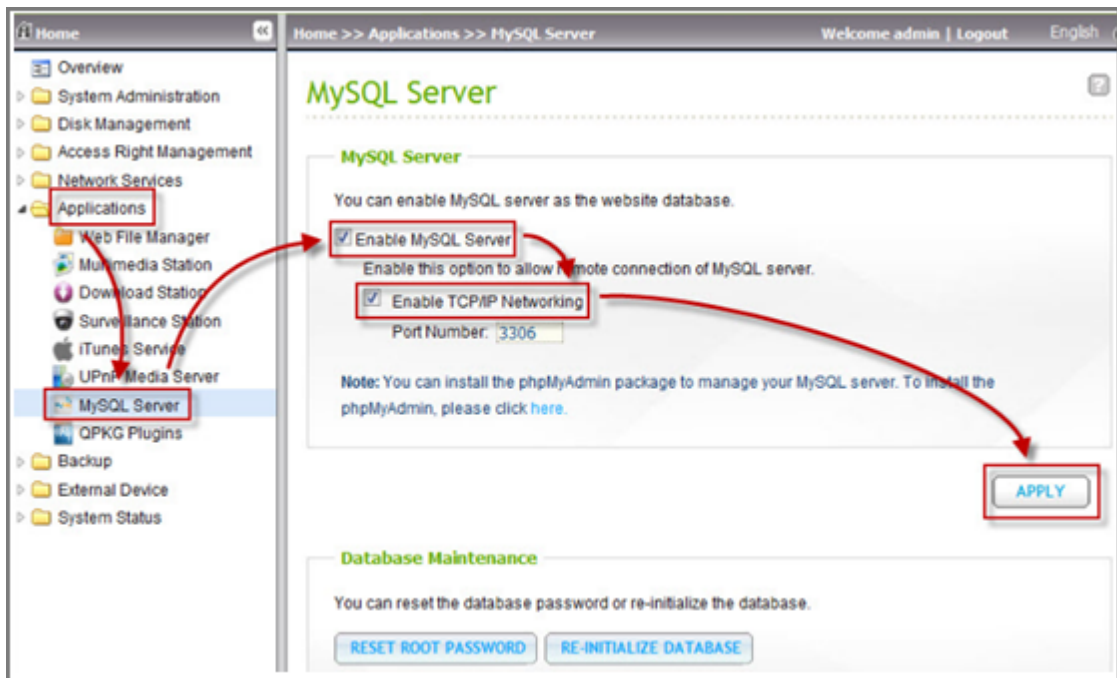
This section shows you how to host a forum with the popular open source forum software phpBB on QNAP NAS.

### Activate the web server and MySQL database server

Login the administration page of the NAS and go to 'Network Services' > 'Web Server'. Select the option 'Enable Web server' and click 'Apply'.



Next go to 'Applications' > 'MySQL Server' and select both 'Enable MySQL Server' and 'Enable TCP/IP Networking' then click 'Apply'.



## Create a database for phpBB3 in phpMyAdmin

Prior to installing phpBB3, create a new database for it and we will use phpMyAdmin to create the database so install phpMyAdmin QPKG if you do not have it running on your NAS yet. Once installed point your browser to <http://NAS-IP/phpMyAdmin/> and enter the user name and password to login (default user name and password is root/admin). You can also select your preferred language.



Once in, enter the database name 'phpbb3' in the field says 'Create new database' and choose a default encoding language you prefer (UTF-8 for best compatibility) then click 'Create'. Then, proceed to the next step.






## Start the phpBB3 web-based installation

Download the phpbb3 source archive from <http://www.phpbb.com/downloads/olympus.php> and download the [Full Package] one and unzip it to your Qweb or Web share folder.


**[ Full Package ]**

Contains entire phpBB3 source and english language files.

Best suited for new installations.

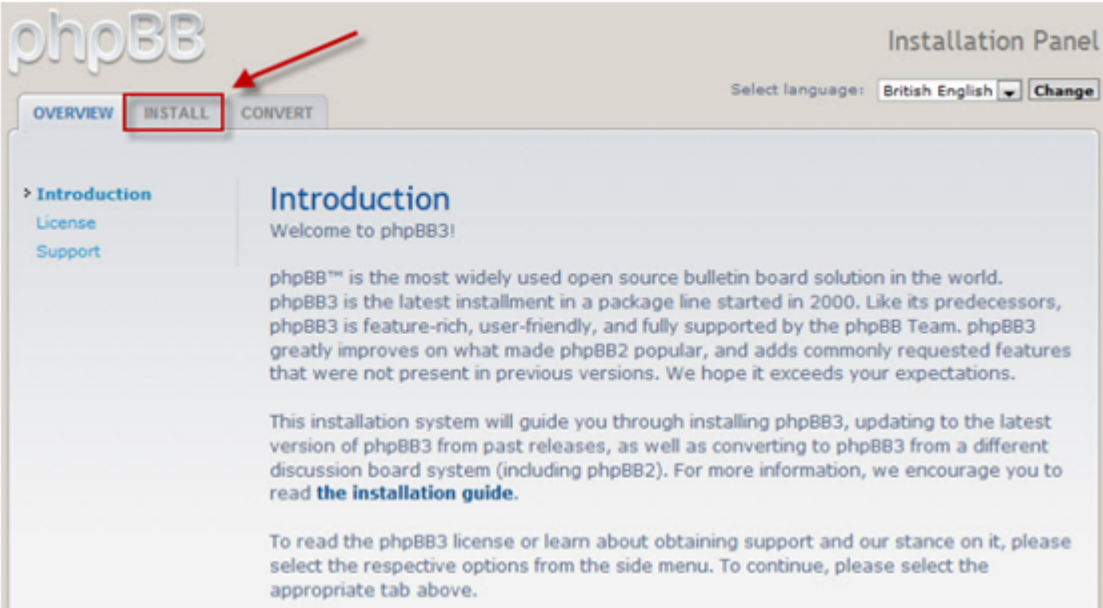
 [Download phpBB 3.0.5 \(zip\)](#)

Size: 2.22 MiB  
md5sum: 69c4ec3f1495e518c6b8a5dac8543ab4

 [Download phpBB 3.0.5 \(bz2\)](#)

Size: 1.43 MiB  
md5sum: 734b8f9c2390d5cc8c971cfc29da185

Point your browser to 'http://NAS-IP/phpBB3' and you should see the phpBB3 web-based installation page like below. Click 'INSTALL' tab to start.



The screenshot shows the phpBB3 Installation Panel. At the top left is the phpBB logo. On the right, it says "Installation Panel" and "Select language: British English" with a "Change" button. Below the logo are three tabs: "OVERVIEW", "INSTALL" (highlighted with a red box and a red arrow), and "CONVERT". The main content area has a left sidebar with links for "Introduction", "License", and "Support". The main content area has a heading "Introduction" and the text "Welcome to phpBB3!". Below this is a paragraph describing phpBB3 as the most widely used open source bulletin board solution. Another paragraph explains that the installation system will guide through installing phpBB3, updating to the latest version, or converting from a different system. A final paragraph instructs the user to read the license or learn about support from the side menu.



Click 'Proceed to next step'.

The screenshot shows the phpBB3 Installation Panel. At the top left is the 'phpBB' logo, and at the top right is the title 'Installation Panel'. Below the logo are three tabs: 'OVERVIEW', 'INSTALL' (which is highlighted), and 'CONVERT'. To the right of the tabs is a language selection dropdown set to 'British English' with a 'Change' button next to it. On the left side, there is a navigation menu with the following items: '> Introduction' (highlighted), 'Requirements', 'Database settings', 'Administrator details', 'Configuration file', 'Advanced settings', 'Create database tables', and 'Final stage'. The main content area is titled 'Welcome to Installation' and contains the following text: 'With this option, it is possible to install phpBB3 onto your server. In order to proceed, you will need your database settings. If you do not know your database settings, please contact your host and ask for them. You will not be able to continue without them. You need:'. This is followed by a bulleted list: '• The Database Type - the database you will be using.', '• The Database server hostname or DSN - the address of the database server.', '• The Database server port - the port of the database server (most of the time this is not needed).', '• The Database name - the name of the database on the server.', and '• The Database username and Database password - the login data to access the database.'. Below this is a 'Note' about SQLite installation. Then, it says 'phpBB3 supports the following databases:' followed by another bulleted list: '• MySQL 3.23 or above (MySQLi supported)', '• PostgreSQL 7.3+', '• SQLite 2.8.2+', '• Firebird 2.0+', '• MS SQL Server 2000 or above (directly or via ODBC)', and '• Oracle'. The final sentence reads 'Only those databases supported on your server will be displayed.' At the bottom center, there is a button labeled 'Proceed to next step' which is highlighted with a red rectangular border. A red arrow points from the right side of the page towards this button.

The installation compatibility page will be shown. In most of the cases your current web server should be compatible with the requirements so click 'Start install' to go the next step.

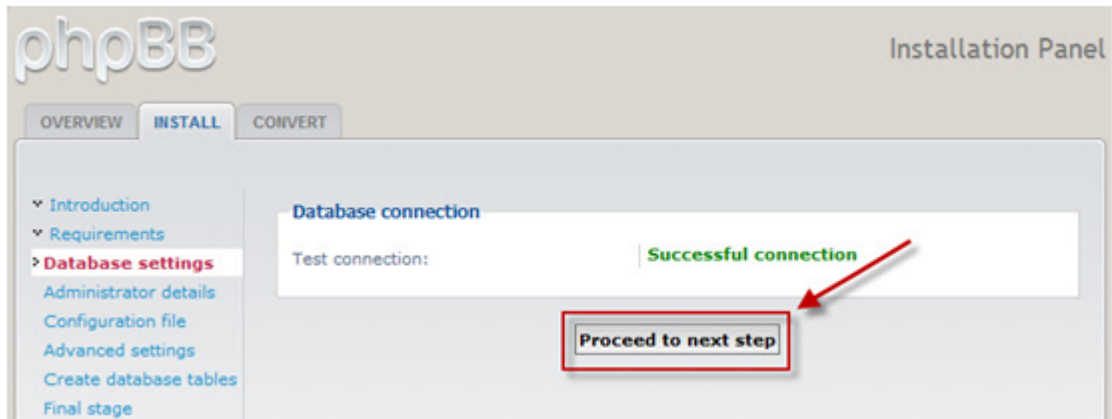
Fill up the fields with your MySQL information including the host name, database name, database username, and database password then click 'Proceed to next step' to continue.

The screenshot shows the 'phpBB Installation Panel' with the 'INSTALL' tab selected. On the left, a navigation menu includes 'Introduction', 'Requirements', 'Database settings' (highlighted), 'Administrator details', 'Configuration file', 'Advanced settings', 'Create database tables', and 'Final stage'. The main content area is titled 'Database configuration' and contains the following fields:

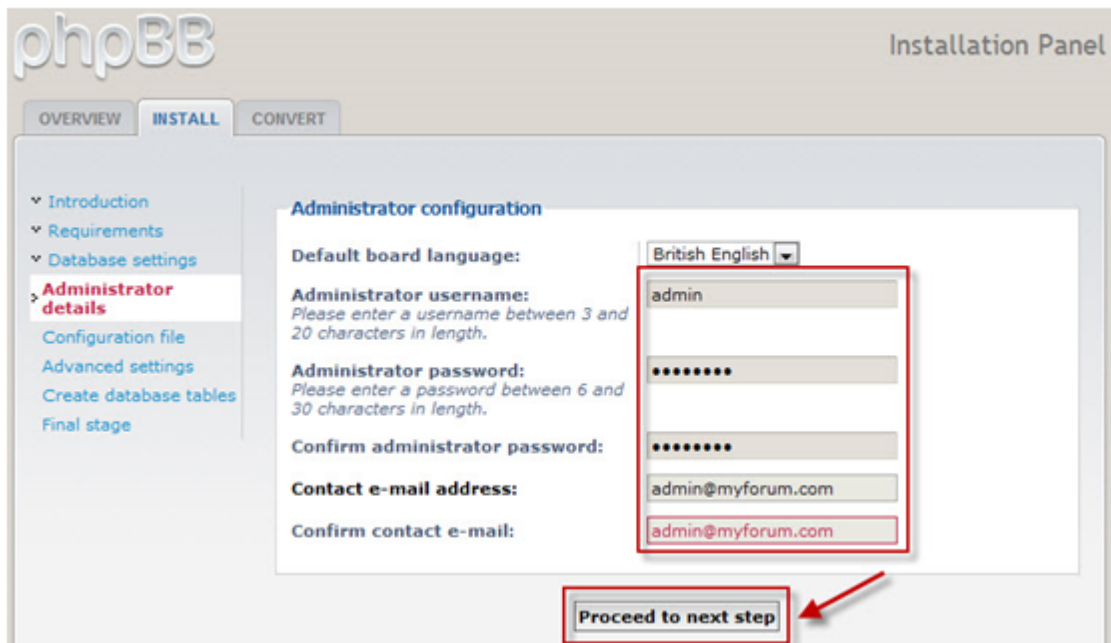
- Database type:** A dropdown menu set to 'MySQL'.
- Database server hostname or DSN:** A text input field containing '127.0.0.1'. Below it is a note: 'DSN stands for Data Source Name and is relevant only for ODBC installs.'
- Database server port:** An empty text input field. Below it is a note: 'Leave this blank unless you know the server operates on a non-standard port.'
- Database name:** A text input field containing 'phpbb3'.
- Database username:** A text input field containing 'root'.
- Database password:** A text input field with masked characters '.....'.
- Prefix for tables in database:** A text input field containing 'phpbb\_'.

At the bottom of the form, a button labeled 'Proceed to next step' is highlighted with a red rectangular box, and a red arrow points to it from the right.

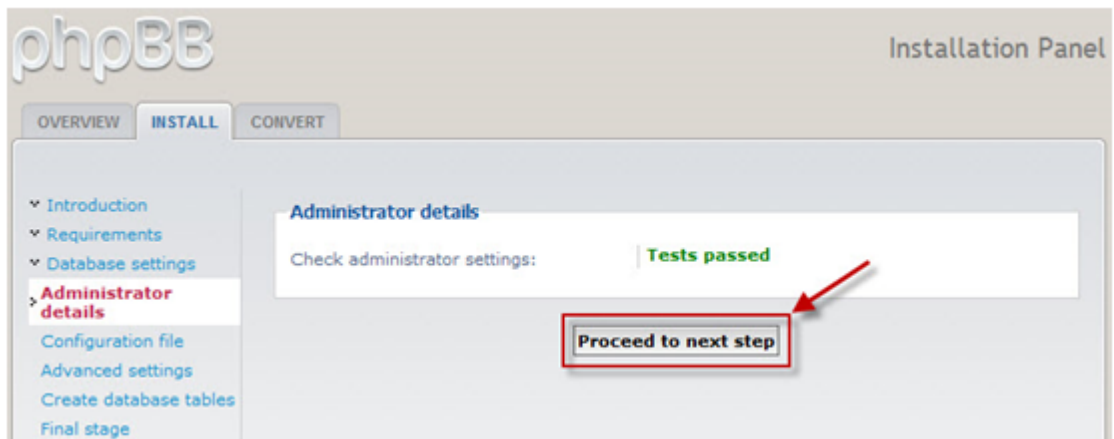
You should see 'Successful connection' if your MySQL server is running and the database 'phpbb3' we created earlier is present. Click 'Proceed to next step'.



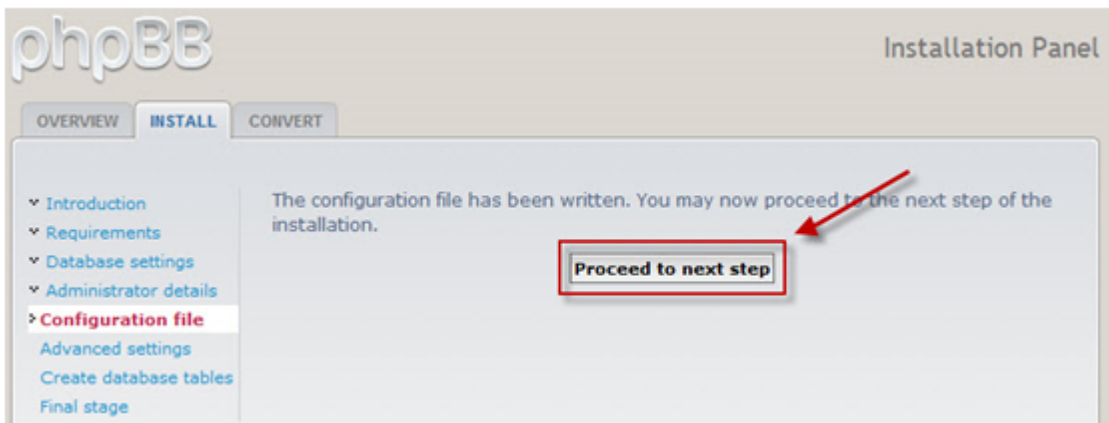
Specify the phpBB3 administrator username and password as well as a valid email address. Once done, click 'Proceed to next step'.



You should see 'Tests passed' and click 'Proceed to next step'.



phpBB3 writes all the settings information to a configuration file (config.php) at this stage. Click 'Proceed to next step'.



Specify advanced settings if you wish then click 'Proceed to next step'.

The screenshot shows the 'phpBB Installation Panel' with the 'INSTALL' tab selected. The left sidebar contains a navigation menu with 'Advanced settings' highlighted. The main content area is titled 'E-mail settings' and 'Server URL settings'. The 'E-mail settings' section includes options for enabling board-wide e-mails, using an SMTP server, and entering SMTP details. The 'Server URL settings' section includes options for cookie security, forcing server URL settings, and entering server protocol, domain name, server port, and script path. A red arrow points to the 'Proceed to next step' button at the bottom of the form.

**phpBB** Installation Panel

OVERVIEW **INSTALL** CONVERT

Introduction  
Requirements  
Database settings  
Administrator details  
Configuration file  
**Advanced settings**  
Create database tables  
Final stage

The settings on this page are only necessary to set if you know that you require something different from the default. If you are unsure, just proceed to the next page, as these settings can be altered from the Administration Control Panel later.

### E-mail settings

**Enable board-wide e-mails:**  
If this is set to disabled no e-mails will be sent by the board at all.  
 Enabled  Disabled

**Use SMTP server for e-mail:**  
Select "Yes" if you want or have to send e-mail via a named server instead of the local mail function.  
 Yes  No

**SMTP server address:**

**Authentication method for SMTP:**

**SMTP username:**

**SMTP password:**

### Server URL settings

**Cookie secure:**  
If your server is running via SSL set this to enabled else leave as disabled. Having this enabled and not running via SSL will result in server errors during redirects.  
 Enabled  Disabled

**Force server URL settings:**  
If set to yes the server settings defined here will be used in favour of the automatically determined values.  
 Yes  No

**Server protocol:**  
This is used as the server protocol if these settings are forced. If empty or not forced the protocol is determined by the cookie secure settings (http:// or https://).

**Domain name:**  
The domain name this board runs from (for example: www.example.com).

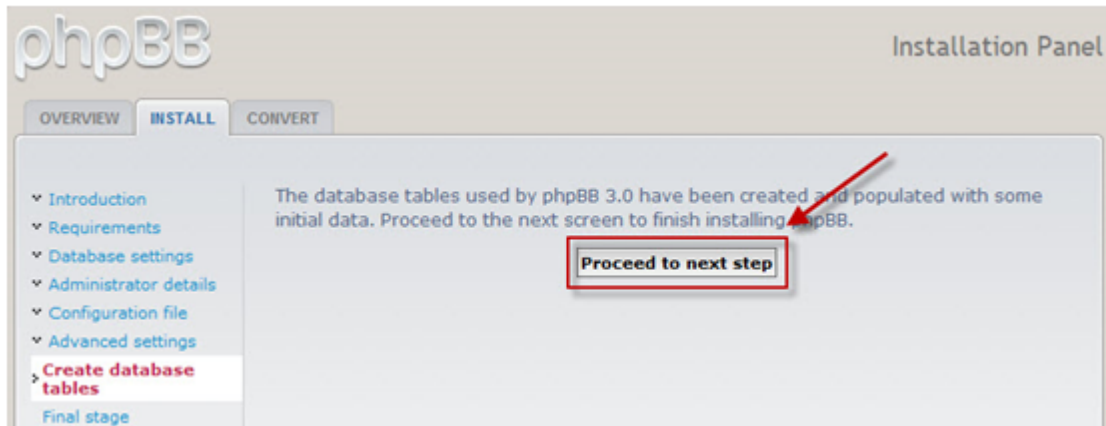
**Server port:**  
The port your server is running on, usually 80, only change if different.

**Script path:**  
The path where phpBB is located relative to the domain name, e.g. /phpBB3.

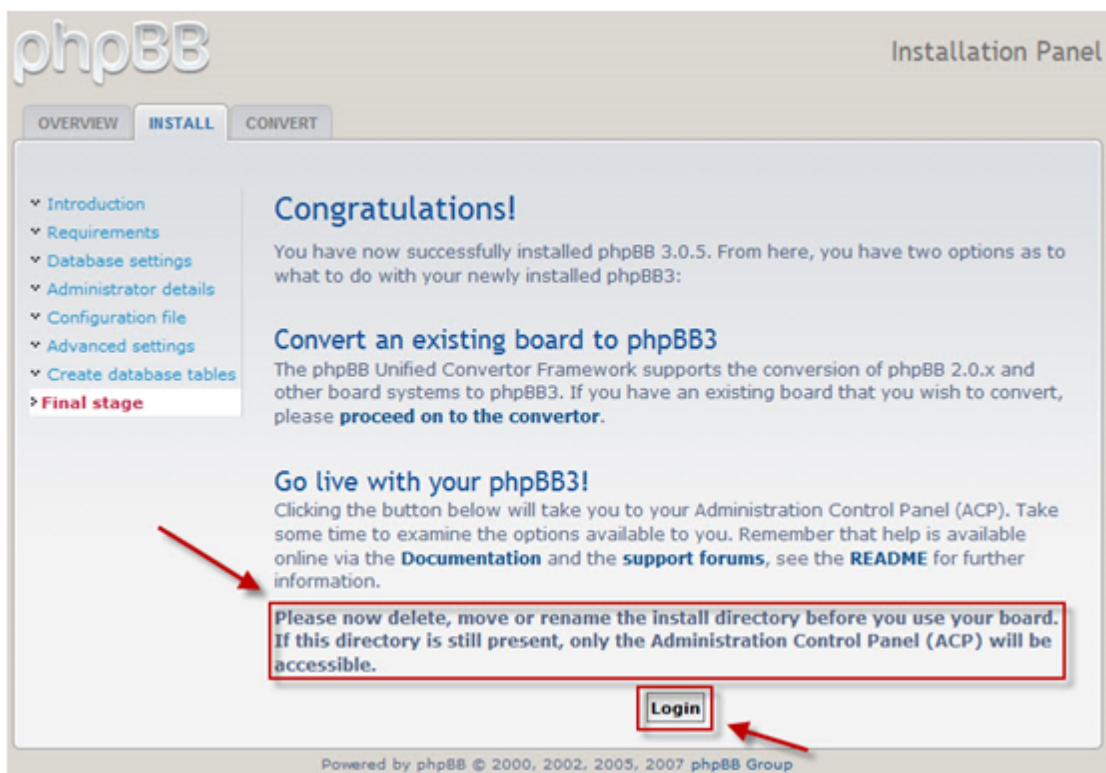
**Proceed to next step**

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phpBB3 creates all the database tables and populates some initial data at this stage. Click 'Proceed to next step'.



Now there is one more thing you need to do is that you have to delete the installation folder located under the phpBB3 folder. Once deleted you can click 'Login' to enter the administration page of phpBB3.



This is the phpBB3 Administration Control Panel where you can perform all administrative tasks.

**phpBB** Administration Control Panel  
Admin index • Board index

GENERAL FORUMS POSTING USERS AND GROUPS PERMISSIONS STYLES MAINTENANCE SYSTEM

You are logged in as: **admin** [ Logout ]  
[ ACP Logout ]

**QUICK ACCESS**

- Manage users
- Manage groups
- Manage forums
- Moderator log
- Spiders/Robots
- PHP information

**BOARD CONFIGURATION**

- Attachment settings
- Board settings
- Board features
- Avatar settings
- Private message settings
- Post settings
- Signature settings
- User registration settings
- Visual confirmation settings

**CLIENT COMMUNICATION**

- Authentication
- E-mail settings
- Jabber settings

**SERVER CONFIGURATION**

- Cookie settings
- Server settings
- Security settings
- Load settings
- Search settings

**Welcome to phpBB**

Thank you for choosing phpBB as your board solution. This screen will give you a quick overview of all the various statistics of your board. The links on the left hand side of this screen allow you to control every aspect of your board experience. Each page will have instructions on how to use the tools.

**Board statistics**

STATISTIC	VALUE	STATISTIC	VALUE
Number of posts:	1	Posts per day:	1
Number of topics:	1	Topics per day:	1
Number of users:	1	Users per day:	1
Number of attachments:	0	Attachments per day:	0.00
Board started:	Tue Jun 30, 2009 4:14 pm	Avatar directory size:	0 Bytes
Database size:	262.62 KIB	Size of posted attachments:	0 Bytes
Database server:	MySQL 5.0.67-log	GZip compression:	OFF
Board version:	3.0.5	Orphan attachments:	0

**Resynchronise or reset statistics**

**Reset most users ever online**

**Reset board's start date**

**Resynchronise statistics**   
Recalculates the total number of posts, topics, users and files.

**Resynchronise post counts**   
Only existing posts will be taken into consideration. Pruned posts will not be counted.

**Resynchronise dotted topics**   
First unmarks all topics and then correctly marks topics that have seen any activity during the past six months.

**Purge the cache**   
Purges all cache related items, this includes any cached template files or queries.

**Logged administrator actions**

This gives an overview of the last five actions carried out by board administrators. A full copy of the log can be viewed from the appropriate menu item or following the link below. [» View administrator log](#)

USERNAME	USER IP	TIME	ACTION
<b>admin</b>	192.168.1.2	Tue Jun 30, 2009 4:14 pm	Installed phpBB 3.0.5

**Inactive users**

This is a list of the last 10 registered users who have inactive accounts. A full list is available from the appropriate menu item or by following the link below from where you can activate, delete or remind (by sending an e-mail) these users if you wish.



This is the front page of your freshly installed phpBB3 forum. Start sending out forum invitations to establish your online community.

**phpBB** yourdomain.com  
creating communities A short text to describe your forum

Search... Search  
Advanced search



---

[Board index](#) v A ^

[User Control Panel](#) (0 new messages) • [View your posts](#) [FAQ](#) [Members](#) [Logout](#) [ admin ]

It is currently Tue Jun 30, 2009 4:17 pm Last visit was: Tue Jun 30, 2009 4:14 pm  
[ Moderator Control Panel ]

[View unanswered posts](#) • [View new posts](#) • [View active topics](#) [Mark forums read](#)

YOUR FIRST CATEGORY	TOPICS	POSTS	LAST POST
 <b>Your first forum</b> Description of your first forum.	1	1	by <b>admin</b>  Tue Jun 30, 2009 4:14 pm

---

**WHO IS ONLINE**

In total there are **2** users online :: 1 registered, 0 hidden and 1 guest (based on users active over the past 5 minutes)  
Most users ever online was **2** on Tue Jun 30, 2009 4:17 pm

Registered users: **admin**  
Legend: *Administrators*, *Global moderators*

---

**STATISTICS**

Total posts **1** • Total topics **1** • Total members **1** • Our newest member **admin**

---

[Board index](#) [The team](#) • [Delete all board cookies](#) • All times are UTC

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[Administration Control Panel](#)



## 24. NAS Maintenance Settings

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Restart/ Shut down Server [422](#)

Reset Administrator Password and Network Settings [424](#)

System Temperature Protection [426](#)

Troubleshooting-Abnormal RAID Operation [427](#)

## 24.1 Restart/ Shut down Server

Follow the steps below to restart or shut down the NAS.

1. Login the NAS as an administrator. Go to 'System Administration' > 'Power Management'.
2. Click 'Restart' to reboot the server or 'Shut Down' to turn off the server.

You can also press the power button for 1.5 seconds\* to turn off the NAS. To force shut down the NAS, press the power button for more than 5 seconds. The server beeps once and shuts down immediately.

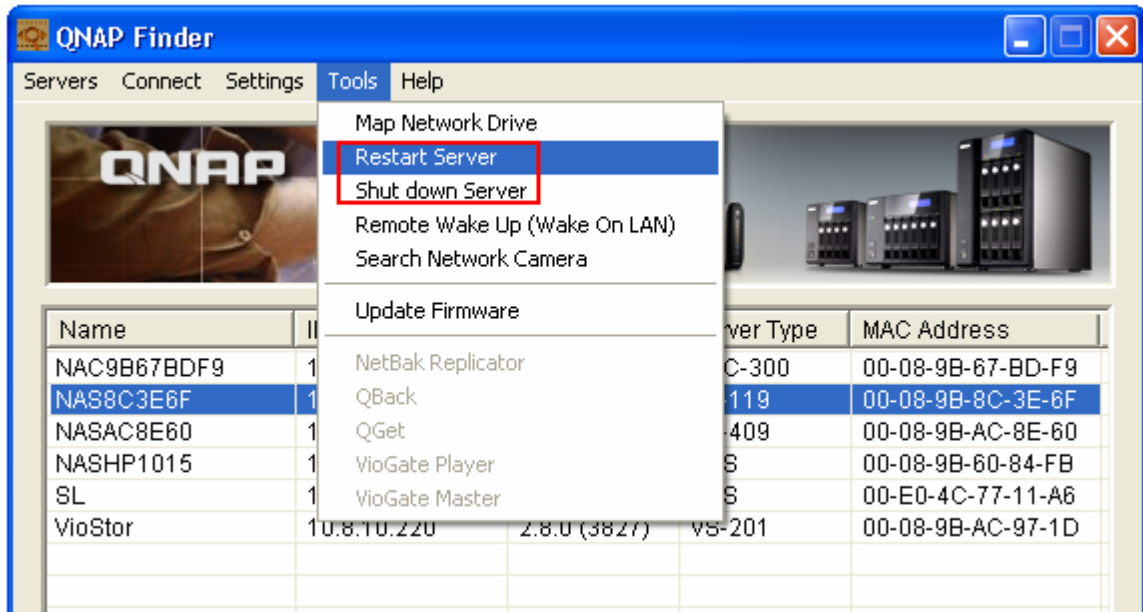
\*To turn off TS-109I/II, TS-109 Pro I/II, TS-209 I/II, TS-209 Pro I/II, TS-409/ TS-409 Pro/ TS-409U, press the power button for 4 seconds.

The screenshot shows the 'Power Management' web interface. At the top, there is a breadcrumb trail: 'Home >> System Administration >> Power Management'. On the right, it says 'Welcome admin | Logout' and 'English'. The main heading is 'Power Management'. Below this, there are several sections:

- Restart/ Shutdown**: A section with the instruction 'Execute system restart/ shutdown immediately.' and two buttons: 'RESTART' and 'SHUTDOWN'.
- Configure Wake on LAN**: A section with two radio buttons: 'Enable' and 'Disable'. 'Disable' is selected.
- When the AC power resumes:**: A section with three radio buttons: 'Resume the server to the previous power-on or power-off status.' (selected), 'Turn on the server automatically.', and 'The server should remain off.'
- Set power on/ power off/ restart schedule**: A section with a checkbox 'Enable schedule' (unchecked). Below it is a checkbox 'Postpone the restart/shutdown schedule when a replication job is in progress.' (unchecked). At the bottom of this section, there is a dropdown menu set to 'Shutdown', followed by 'Daily', '7', and '0', with '+' and '-' buttons for adjustment.

An 'APPLY' button is located at the bottom right of the interface.

You can use the Finder to restart or shut down the server. You must have an administrator account to perform this action.



## 24.2 Reset Administrator Password and Network Settings

**Note:** To reset the NAS by the reset button, the option 'Enable configuration reset switch' in 'System Administration' > 'Hardware' must be activated.

Home >> System Administration >> Hardware Welcome admin | Logout English

### Hardware

---

**Hardware**

- Enable configuration reset switch
- Enable hard disk standby mode (if no access within  Status LED will be off)
- Enable light signal alert when the free size of disk is less than the value:  MB
- Enable write cache (for EXT4)

**Buzzer Control**

Enable alarm buzzer

- System operations (booting, firmware upgrade)
- System events (Error and warning alert)

**Smart Fan Configuration**

Fan Rotation Speed Settings:

- Low speed
- Medium speed
- High speed

[APPLY](#)

System	Basic system reset (1 beep)	Advanced system reset (2 beeps)
All NAS models	Press the reset button for 3 sec	Press the reset button for 10 sec

**Basic system reset (3 sec)**

When you press the reset button for 3 seconds, a beep sound will be heard. The following settings will be reset to default:

- System administration password: admin
- TCP/ IP configuration: Obtain IP address settings automatically via DHCP
- TCP/ IP configuration: Disable Jumbo Frame
- TCP/ IP configuration: If Port trunking is enabled (dual LAN models only), the port trunking mode will be reset to 'Active Backup (Failover)'.
- System port: 8080 (system service port)
- Security level: Low (Allow all connections)
- LCD panel password: (blank)\*

\*This feature is only provided by TS-439 Pro, TS-439 Pro II, TS-459 Pro, TS-509 Pro, TS-559 Pro, TS-639 Pro, TS-659 Pro, SS-839 Pro, TS-859 Pro, TS-809 Pro, TS-809U-RP, and TS-859U-RP.

**Advanced system reset (10 sec)**

When you press the reset button for 10 seconds, you will hear two beeps at the third and the tenth seconds. The NAS will reset all the system settings to default as it does by the web-based system reset in 'Administration' > 'Restore to Factory Default' except all the data are reserved. The settings such as the users, user groups, and the network share folders you previously created will be cleared. To retrieve the old data after the advanced system reset, you may create the same network share folders on the NAS and the data will be accessible again.

## 24.3 System Temperature Protection

---

The NAS shuts down automatically for hardware protection when any of the following criteria is met:

- The system temperature exceeds 70°C (158°F)
- The CPU temperature exceeds 85°C (185°F)
- The HDD temperature exceeds 65°C (149°F)\*

\* Note that when the temperature of any HDD on the NAS exceeds 65°C (149°F), the NAS waits for the standby time (configured in 'System Administration' > 'Hardware') and another 10 minutes and will shut down automatically. For example, if you have configured the NAS to enter the standby mode after idling for 5 minutes, the NAS shuts down automatically when the temperature of any HDD exceeds 65°C (149°F) continuously after 15 (5+10) minutes.

## 24.4 Troubleshooting-Abnormal RAID Operation

---

If the RAID configuration of your NAS is found abnormal or there are error messages, please try the following solutions:

**Note:** You must back up the important data on the NAS first to avoid any potential data loss.

1. Check that the RAID rebuilding has failed:
  - a. LED: The Status LED of NAS flashes in red.
  - b. On the 'Disk Management' > 'Volume Management' page, the status of the disk volume configuration is 'In degraded mode'.

2. Find out the HDD that causes the RAID rebuilding failure.

You can go to 'System Administration' > 'System Logs' page to search for the following error message and find out which HDD causes the error.

Error occurred while accessing Drive X.

Drive X has been removed.

X refers to the number of hard drive slot.

3. Troubleshooting

After plugging in the new HDD (for example, HDD 1), drive rebuilding will start. If the drive configuration fails again due to read/write error of the HDD in the rebuilding process, identify which HDD causes the error and follow the steps below to solve the problems.

Situation 1: The error is caused by the newly plugged in HDD.

If the newly plugged in HDD (for example, HDD 1) causes the rebuilding error, please unplug HDD 1 and plug in another new HDD to start RAID rebuilding.

Situation 2: The error is caused by an existing HDD (for example, HDD 2) in the RAID configuration.

If the RAID configuration is RAID 1, you can do either one of the following:

- a. Back up the HDD data to another storage device. Then reinstall and set up the NAS.
- b. Format the newly plugged in HDD (for example, HDD 1) as a single drive. Then back up the data on the NAS to this drive (HDD 1) via Web File Manager. Unplug the HDD with errors (for example, HDD 2). After that, insert a new HDD to NAS to replace the fault drive, and execute RAID 1 migration.

When the RAID configuration is RAID 5 or 6: The RAID configuration is changed to degraded mode (read-only). It is recommended that you back up the data and run system installation and configuration again.



**Caution:** When plugging in or unplugging a HDD, please strictly adhere to the following rules to avoid abnormal system operation or data damage.

- Plug in only one HDD to NAS or unplug only one HDD from NAS at one time.
- After plugging in or unplugging a HDD, wait for about ten seconds or longer until you hear two beeps from the NAS. Then unplug or plug in the next HDD.



## 25. GNU GENERAL PUBLIC LICENSE

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Version 3, 29 June 2007

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