



Network Attached Storage

TS-401T Turbo Server

User Manual

TS-401T Turbo Server

User Manual (Version: 1.0)



©Copyright 2005. QNAP Systems, Inc. All Rights Reserved.
September 8, 2005

LIMITED WARRANTY




In no event shall the liability of QNAP Systems, Inc. (QNAP) exceed the price paid for the product from direct, indirect, special, incidental, or consequential software, or its documentation. QNAP offers no refunds for its products. QNAP makes no warranty or representation, expressed, implied, or statutory, with respect to its products or the contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose. QNAP reserves the right to revise or update its products, software, or documentation without obligation to notify any individual or entity.









CAUTION

1. Back up your system periodically to avoid any potential data loss. QNAP disclaims any responsibility of all sorts of data loss or recovery.
2. Should you return any components of TS-401T Turbo Server 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.

Table of Contents

Chapter 1	Overview of TS-401T	7
1.1	Introduction	7
1.2	Package Contents	7
1.3	System Overview	8
Chapter 2	Install TS-401T	9
2.1	Install Hard Disk	9
2.2	Hard Disk Recommendation List	13
2.3	Connect TS-401T to Office Network	14
Chapter 3	Use LCD Panel	16
Chapter 4	Quick Install Wizard	20
Chapter 5	Use Services of TS-401T	28
5.1	File Server	28
5.2	FTP Server	28
5.3	Backup Server	29
5.4	Network Printer Service	29
Chapter 6	Administer TS-401T	30
6.1	Access Administration Page	31
6.2	Server Administration	33
6.3	Quick Configuration 	34
6.4	System Settings 	40
6.4.1	Server Name	40
6.4.2	Date & Time	41
6.4.3	Language Setting	43
6.4.4	View System Settings	43
6.5	Network Settings 	44
6.5.1	TCP/ IP Configuration	44
6.5.2	Microsoft Networking	50
6.5.3	Apple Network	52
6.5.4	Linux (NFS) Service	52
6.5.5	Web Service	53
6.5.6	FTP Service	53

6.5.7	Network Printer Service	54
6.5.8	View Network Settings	57
6.6	Disk Configuration 	59
6.6.1	Create Disk Volume	59
6.6.2	Delete Disk Volume.....	61
6.6.3	Examine Disk Volume.....	62
6.6.4	Format Disk Volume.....	63
6.6.5	View Disk & Volume Status	63
6.7	User Management 	64
6.7.1	Users.....	64
6.7.2	User Groups.....	66
6.7.3	Quota	71
6.8	Network Share Management 	73
6.8.1	Create	74
6.8.2	Property.....	75
6.8.3	Access Control	75
6.8.4	Delete.....	76
6.9	System Tools 	77
6.9.1	SNMP Settings	77
6.9.2	Alert Notification.....	78
6.9.3	Restart/ Shutdown.....	78
6.9.4	Hardware Settings	79
6.9.5	UPS.....	80
6.9.6	System Update.....	82
6.9.7	Change Logo.....	84
6.9.8	Remote Replication	85
6.9.9	Anti-virus Configuration.....	88
6.9.10	Backup/ Restore/ Reset Settings.....	94
6.9.11	USB CD/ DVD Backup/ Restore	95
6.10	Statistics & Logs 	99
6.10.1	Active Users.....	99
6.10.2	Event Logs	99
6.10.3	DHCP Logs.....	99

Chapter 7	Access TS-401T	100
7.1	By Microsoft Windows	100
7.2	By Apple MAC OS	102
7.3	By Linux OS.....	108
7.4	By Web Browser	108
7.5	By File Transfer Protocol (FTP).....	109
Chapter 8	NetBak Replicator 	112
Chapter 9	TS-401T Maintenance	126
9.1	Restart/ Shut down Server.....	126
9.2	Reset Administrator Password and Network Settings	127
5.1	Disk Failure or Malfunction	128
5.2	Power Outage or Abnormal Shutdown.....	128
Appendix A	Web File Manager.....	129
Appendix B	Configuring AD Authentication	134
Appendix C	Messages of Hard Disk and Disk Configuration Status.....	144

Chapter 1 Overview of TS-401T

1.1 Introduction

Thank you for choosing TS-401T Turbo Server. This product has the following key features:

- Simple installation, 5-min configuration and user-friendly management interface for SMB users.
- High speed SATA HDD, supports hotswap, maximum capacity up to 1.6TB.
- Dual Gigabit ports for load balance, fail over and standalone settings.
- Double USB 2.0 ports for network printer sharing & UPS.
- LCD panel for instant display of IP address and important system info; IP settings can be configured directly without access to PC.
- Built-in anti-virus mechanism. Simply enter activation code to enable anti-virus function without extra installation. Supports instant online virus scan to protect data (optional).
- Supports hot redundant power supply to increase system reliability (optional).
- Provides various practical backup mechanisms.
 - ✓ Professional remote replication to remote NAS
 - ✓ USB 2.0 interface for CD/DVD data burning
 - ✓ Provides backup software for Windows users, instant/scheduled backup can be performed without IT professional

1.2 Package Contents

Your TS-401T package contains:

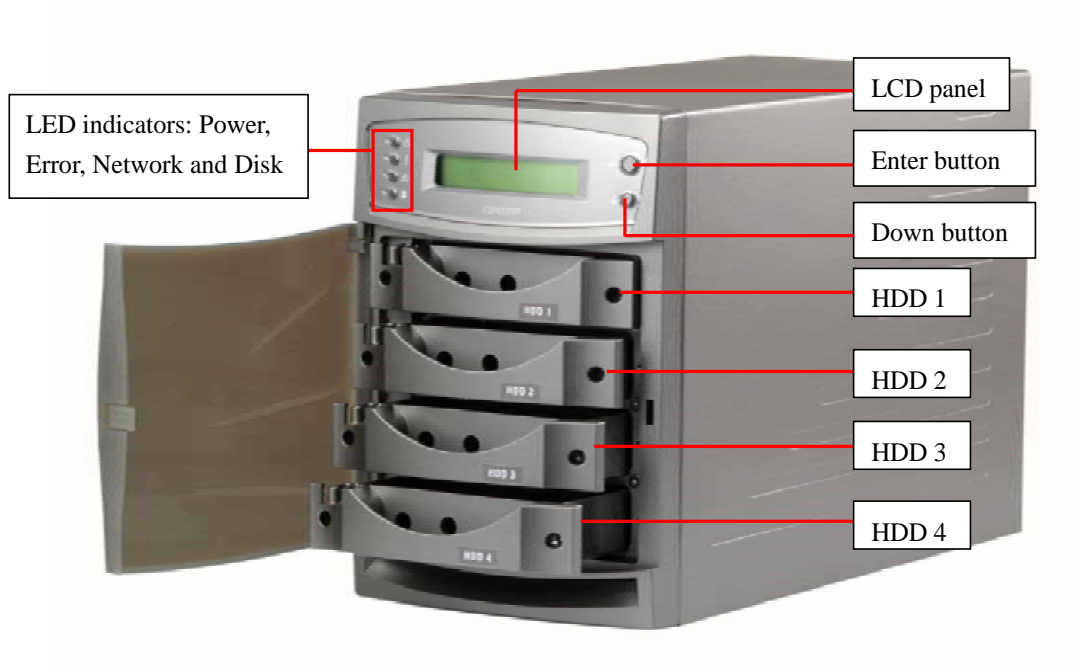
- ✓ TS-401T Turbo Server
- ✓ Power cord
- ✓ CD-ROM (user manual, Quick Install Wizard and software inclusive)
- ✓ Quick Installation Guide
- ✓ Ethernet cable x 2
- ✓ Flat head screws x 16



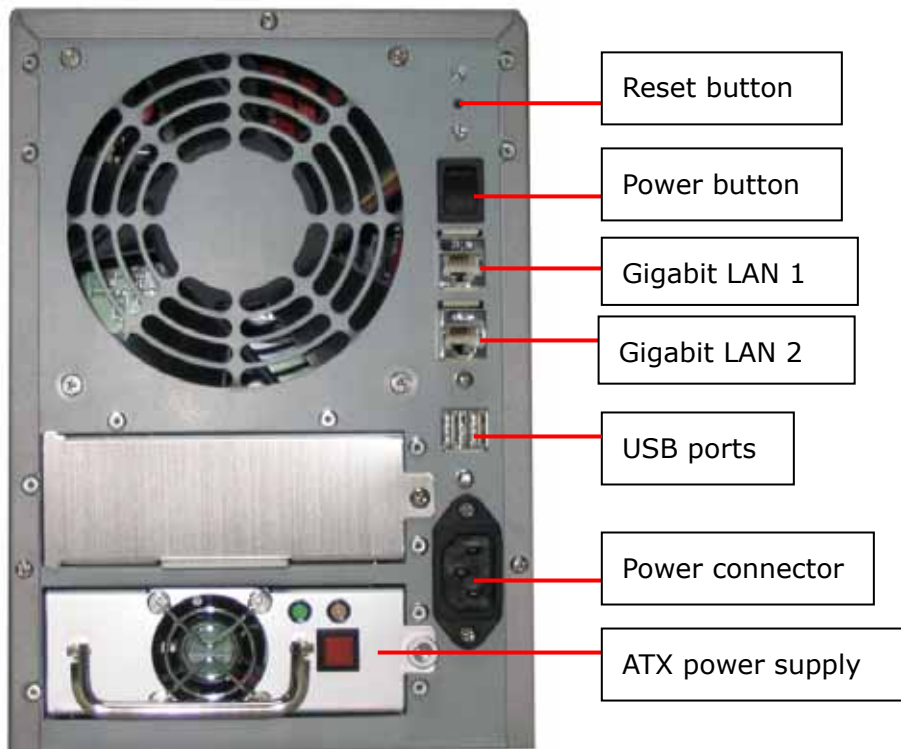
Important Notice: Please back up your disk data periodically to avoid data loss due to improper operation or disk failure of TS-401T. QNAP is not responsible for any data loss or recovery.

1.3 System Overview

Front View



Rear View



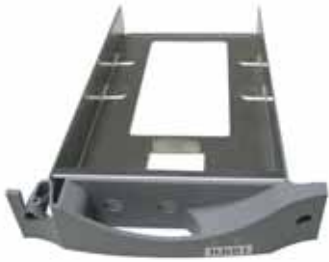
Chapter 2 Install TS-401T

2.1 Install Hard Disk

Components:



1 TS-401T



2 HDD tray x 4
(included in TS-401T)



3 3.5" SATA hard disk (optional)



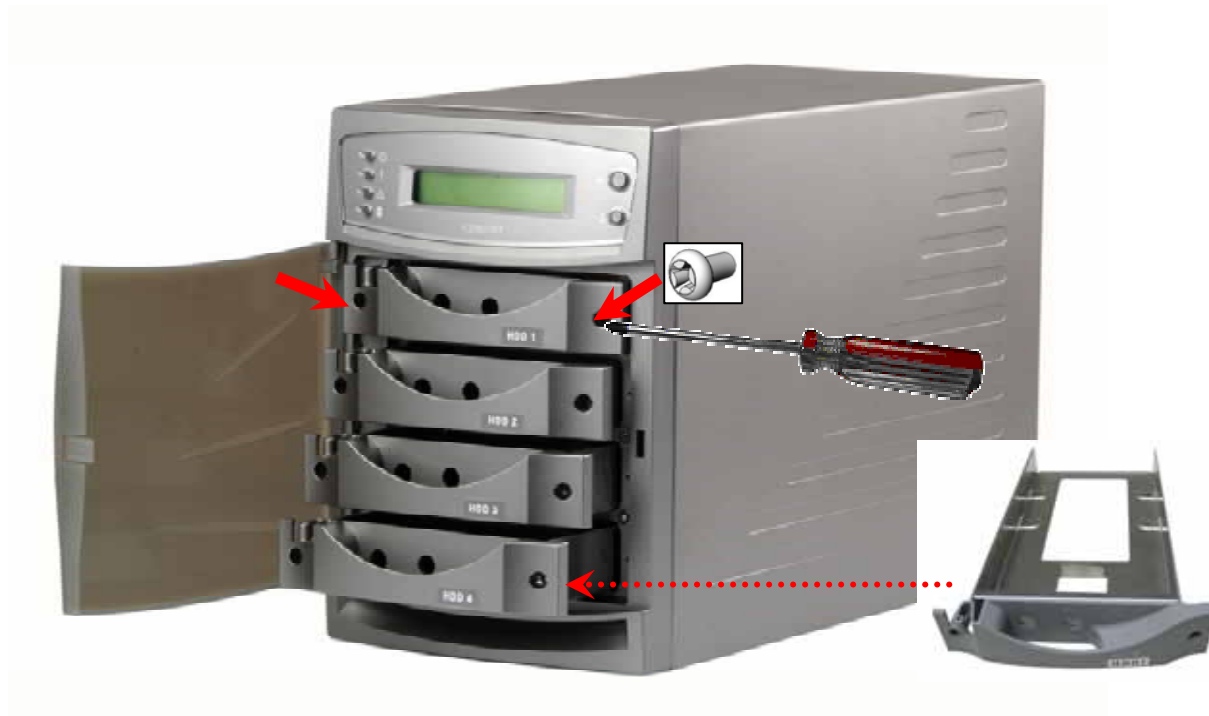
4 Flat head screw
(included in TS-401T)



5 Screw driver (not included)

Hard Disk Installation Procedure

1. Unfasten the round head screws and take out the disk trays from TS-401T.



2. Place a hard disk in a hard disk tray.



It is highly recommended that you install disks of the same brand and same size on TS-401T. The server may function improperly if disks of different brands and size are installed. Please refer to Chapter 2.2 for hard disk recommendation list.

3. Turn around the disk tray. Make sure the hard disk screw holes match the holes of the disk tray. Fasten the flat head screws to lock the disk as indicated below.



4. When finished, open the tray cover of TS-401T and insert the disk to the server. Push the disk towards the end until it is locked. Note that all disks should be inserted in order from top to bottom (HDD1~HDD4).



5. Fasten the tray with round head screws.



Note: You can install 1~4 hard disks depending on the type of disk configuration you select for TS-401T. If less than 4 disks are installed and the server is turned on, the system will beep continuously. In such case, please go to Hardware Settings in System Tools (refer to Chapter 6.9.4) and disable the buzzer. You can then continue to use TS-401T.

2.2 Hard Disk Recommendation List

The following HDD models are verified by QNAP that are compatible with TS-401T. It is recommended to use the same brand and same size listed here for TS-401T if more than one hard disk is installed. Other HDD brands that are not tested by QNAP may or may not work properly with TS-401T. For more updated compatible hard disk information, please visit QNAP website at www.qnap.com.tw.

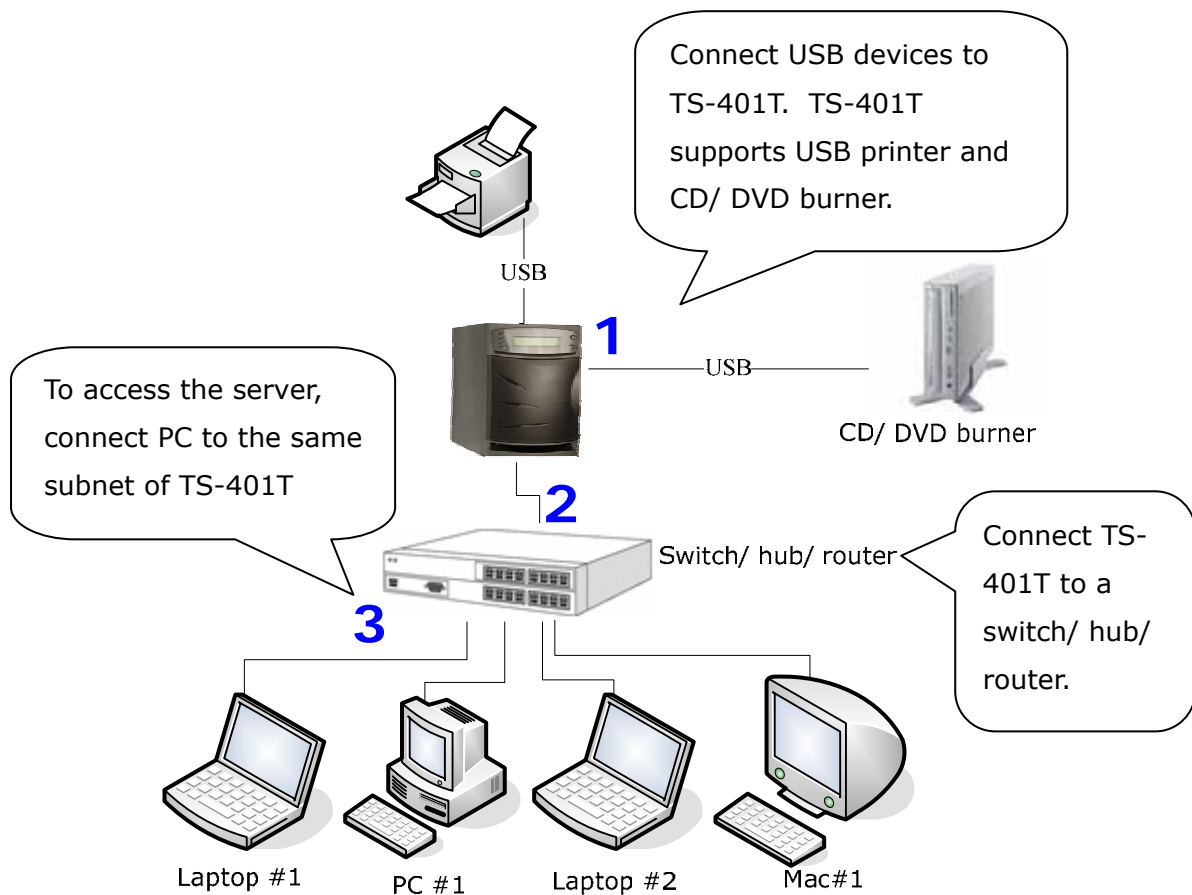


QNAP disclaims any responsibility for product damage/ malfunction or data loss/ recovery due to misuse or improper installation of hard disks in any occasions for any reasons.

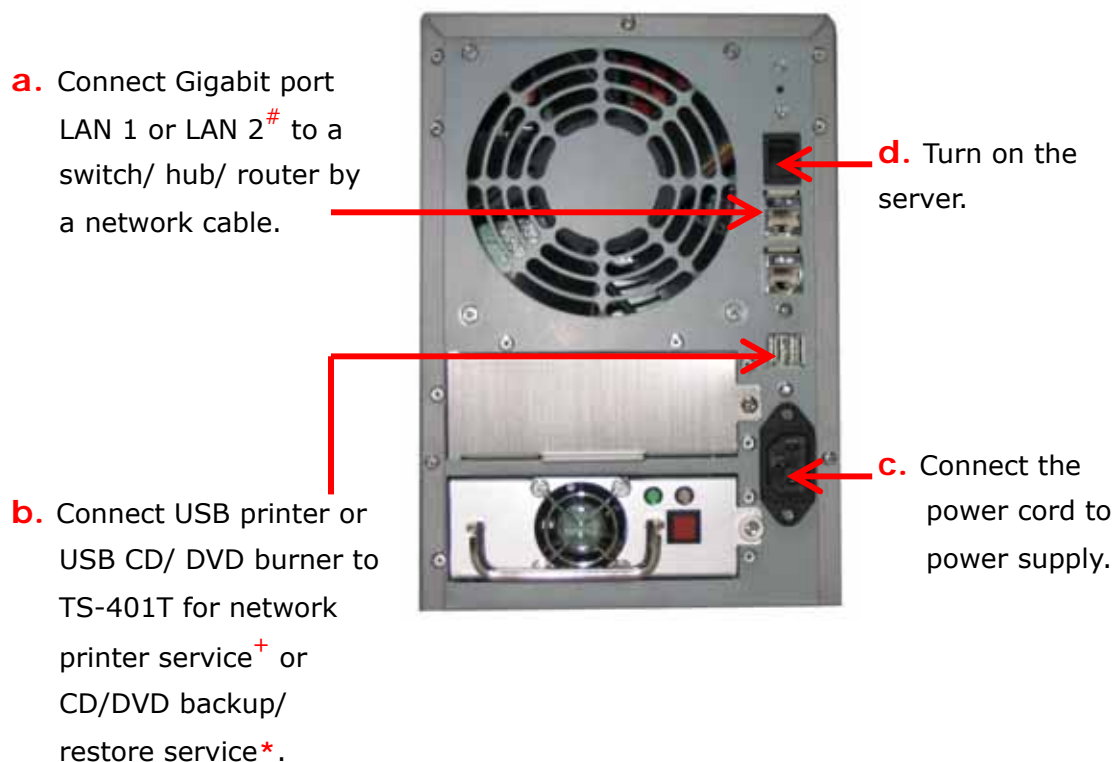
Brand	Model Name	Interface	Capacity (GB)	Rotational Speed (RPM)	Buffer Size (MB)
Seagate	Barracuda 7200.8 SATA NCQ	SATA 1.5Gb/s	400	7200	8
	Barracuda 7200.8 SATA NCQ	SATA 1.5Gb/s	300	7200	8
	Barracuda 7200.8 SATA NCQ	SATA 1.5Gb/s	250	7200	8
	Barracuda 7200.7 SATA NCQ	SATA 1.5Gb/s	160	7200	8
	Barracuda 7200.7 SATA NCQ	SATA 1.5Gb/s	120	7200	8
Maxtor	DiamondMax 10	SATAII 150Mb/s	300	7200	16
	MaXLine Plus II	SATA 150Mb/s	250	7200	8
	DiamondMax 10	SATAII 150Mb/s	200	7200	8
	DiamondMax 10	SATA 150Mb/s	120	7200	8
Hitachi	Deskstar 7K250	SATA 1.5Gb/s	250	7200	8
Western Digital	WD Caviar® SE Serial ATA	SATA 1.5Gb/s	160	7200	8

2.3 Connect TS-401T to Office Network

When connecting TS-401T to office network, it is recommended to install TS-401T in LAN with DHCP server. You can use any PC in the same subnet to connect the server by IE browser. TS-401T supports printer sharing which allows users in the local network to use printing service. You may also connect TS-401T to a CD/DVD burner for data backup and restore.



To install TS-401T in office network, please follow the steps below.



[#] To use fail over or load balance function, please connect both LAN 1 and LAN 2 to switch/ hub/ router. For further details, please refer to Chapter 6.5.1.

⁺ Network printer service is supported in Windows OS only.

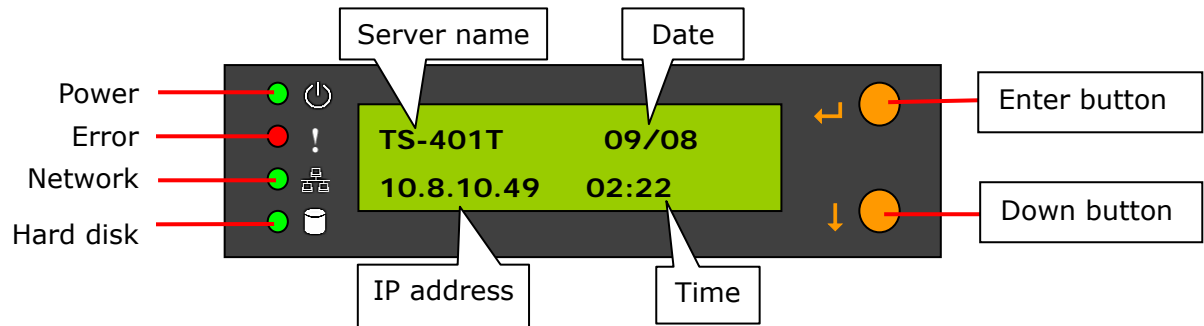
^{*} Optional step. You can skip this step if you are not using printer and CD/DVD backup/restore service.



Note: To connect TS-401T to a PC, please use a network cable to connect the PC to LAN 1 or LAN 2 of TS-401T. Connect the power supply and turn on the server. For further details about accessing TS-401T, please refer to Chapter 6.

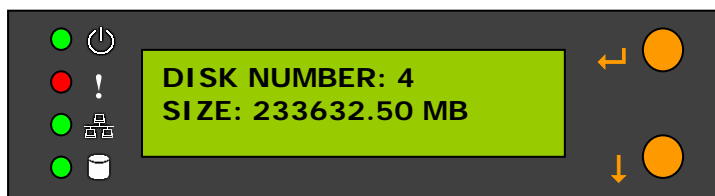
Chapter 3 Use LCD Panel

When TS-401T is turned on, the server name, IP address, date, and time will be shown.

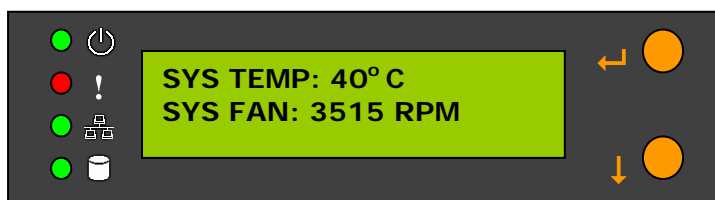


Check System Information

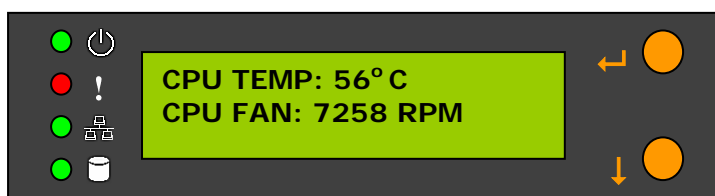
1. Press Down button to view disk information, i.e. number of disks and disk size. Note that the disk size displayed is the total size of all installed disks but may not be the actual disk size you can use. If you configure the disks as RAID 1 disk volume, your actual disk size you can use is smaller than the displayed disk size on the panel.



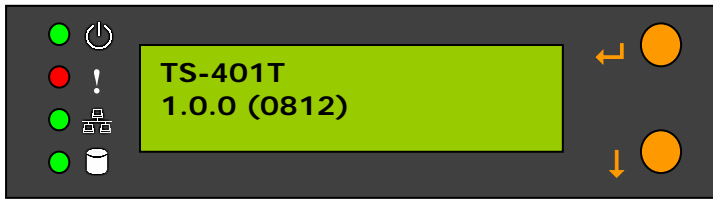
2. Press Down button again to view system temperature and system fan speed.



3. Press Down button again to view CPU temperature and CPU fan speed.

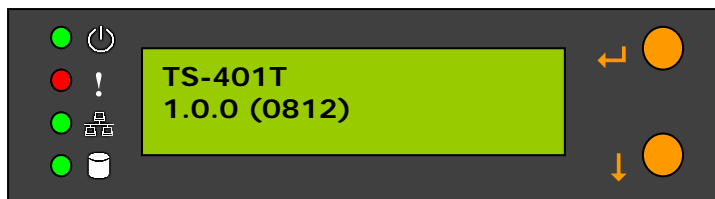


4. Press Down button again to view model number and version information.

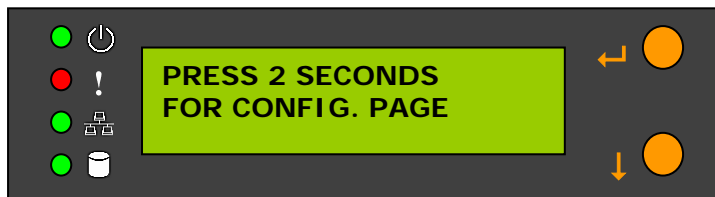


System Setting Function

1. Press Enter button for two seconds to enter configuration page.



2. Press Down button to select an item: NETWORK SETTINGS, POWER DOWN, REBOOT SYSTEM, and EXIT.



Network Settings

Enter NETWORK SETTINGS configuration page and press Down button to select one of the following options. The one marked with * means it is being used for connection.

- DHCP
DHCP will obtain IP address automatically.
- STATIC IP
Press Enter button to select STATIC IP. Then configure the IP address.
 - i. SET STATIC IP
Press Down button to enter 0~255 and press Enter button to set the next number for the IP address.
 - ii. SET NETMASK
Follow the above procedure to set the netmask address.
 - iii. SET GATEWAY
Follow the above procedure to set the gateway address.
 - iv. SELECT STATIC IP
Press Down button to select YES or NO. When YES is selected, you will be asked to restart the system.
- EXIT
To return to the previous menu.

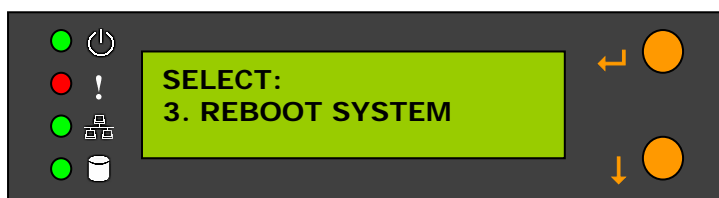
POWER DOWN

Press Down button to select POWER DOWN and press Enter button to confirm shutting down TS-401T.



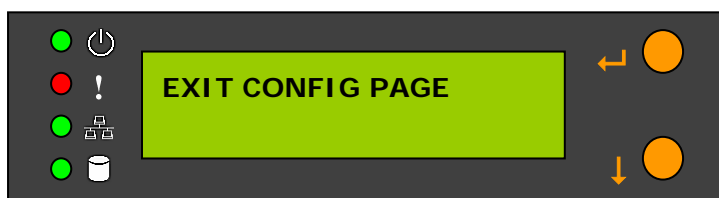
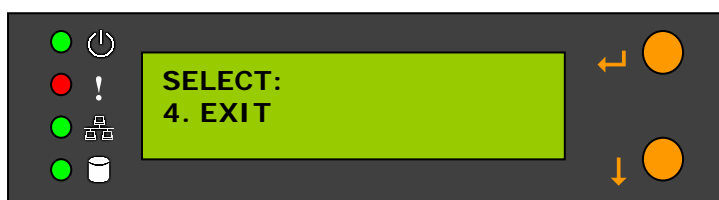
REBOOT SYSTEM

Press Down button to select REBOOT SYSTEM and press Enter button to confirm restarting the system.



Exit Configuration Page (EXIT)

Press Enter button and select EXIT, then press the button again to confirm exiting the configuration page.



Chapter 4 Quick Install Wizard

Quick Install Wizard enables you to search for all available TS-401T within the local network, and view the server name, IP address, and workgroup etc. You can also configure the disk name, date and time, etc. via Quick Install Wizard.

To use Quick Install Wizard, run TS-401T CD-ROM in your PC and install the program.



Run Quick Install shortcut on the desktop, the following screen will be shown.

The screenshot shows the 'Quick Install Wizard' window with the QNAP logo. A table displays the following data:

Name	IP Address	Workgroup	Version
NAS72AA8C	10.8.12.38	NAS	1.0.0

Callouts identify the following elements:

- Name of server (points to 'NAS72AA8C')
- IP address of server (points to '10.8.12.38')
- Windows workgroup joined by server (points to 'NAS')
- System version (points to '1.0.0')
- Buttons: Configure, Details, Map Drive, Refresh, Help, Exit.

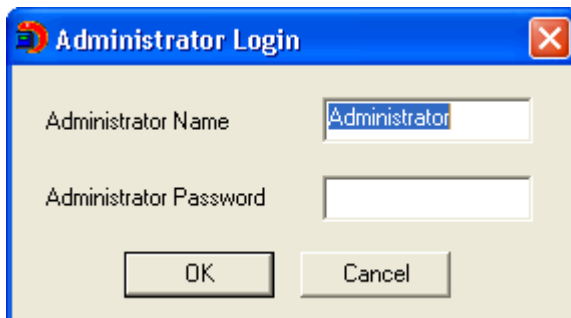
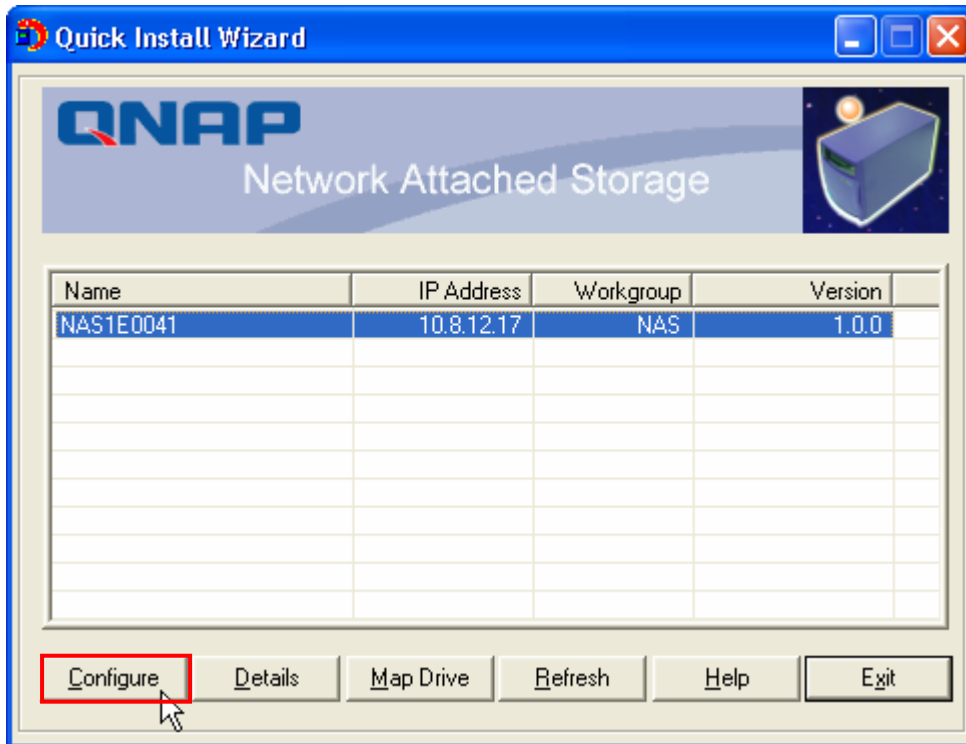
Descriptions for the buttons:

- Configure: Configure the server name, time and network settings
- Details: View the details of selected server
- Map Drive: Map network drive for the server
- Refresh: Refresh the search results within the network
- Help: Help
- Exit: Exit the program

Operation

1. Configure TS-401T

Select a TS-401T displayed on Quick Install Wizard and click **Configure**.
Enter the administrator password.



Upon successful login, the following screen will appear. Enter the configuration values and click OK.

Basic Configuration

System

Name:

Date (mm/dd/yyyy): / /

Time (hh:mm:ss): : :

TCP/IP

Obtain the IP address automatically (DHCP)

Use Fixed IP Address

IP Address: . . .

Subnet Mask: . . .


Gateway: . . .

Set the name, date and time for TS-401T. The length cannot exceed 14 characters.

The system will obtain IP address automatically.

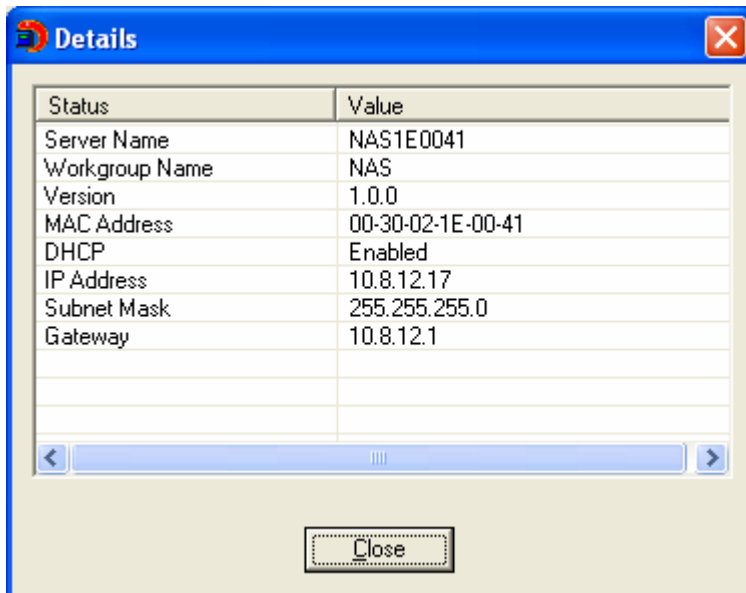
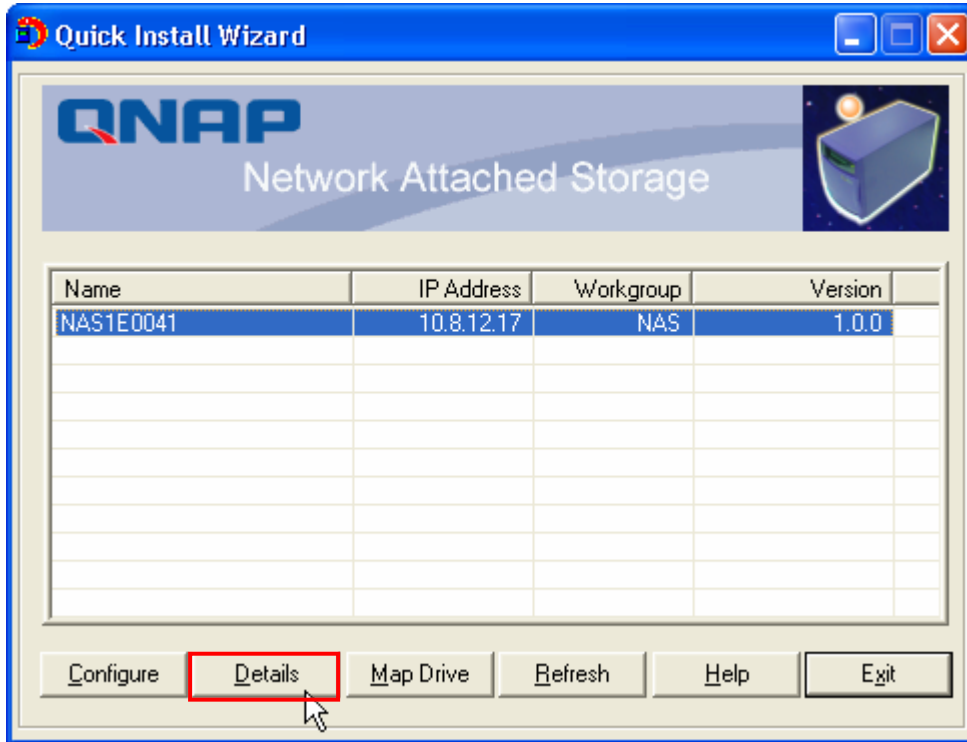
To use fixed IP address for connection, enter the IP address, subnet mask and gateway for the server.

For further configuration of the system, please login the administration page of TS-401T via web browser.

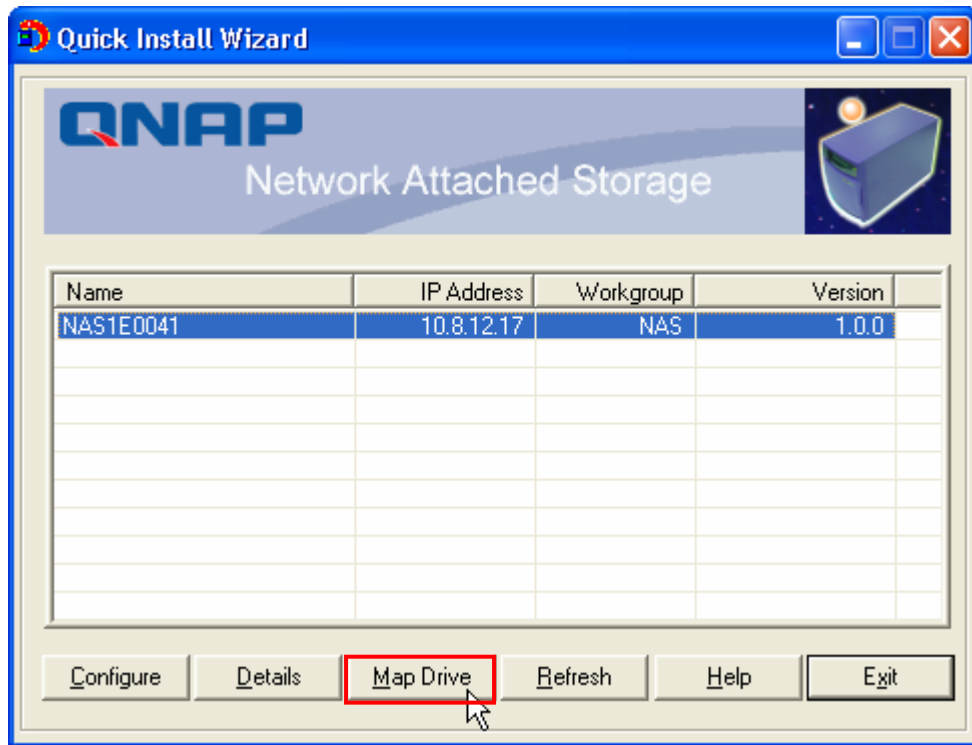
 **Note:** You may have to restart TS-401T after changing the network configuration.

2. View TS-401T details

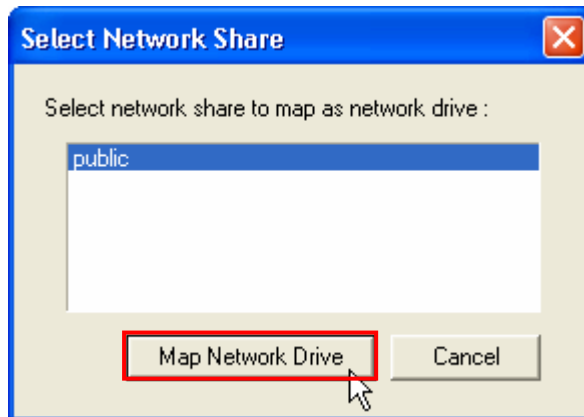
Select a TS-401T available on Quick Install Wizard and click **Details**. The following screen will be shown:

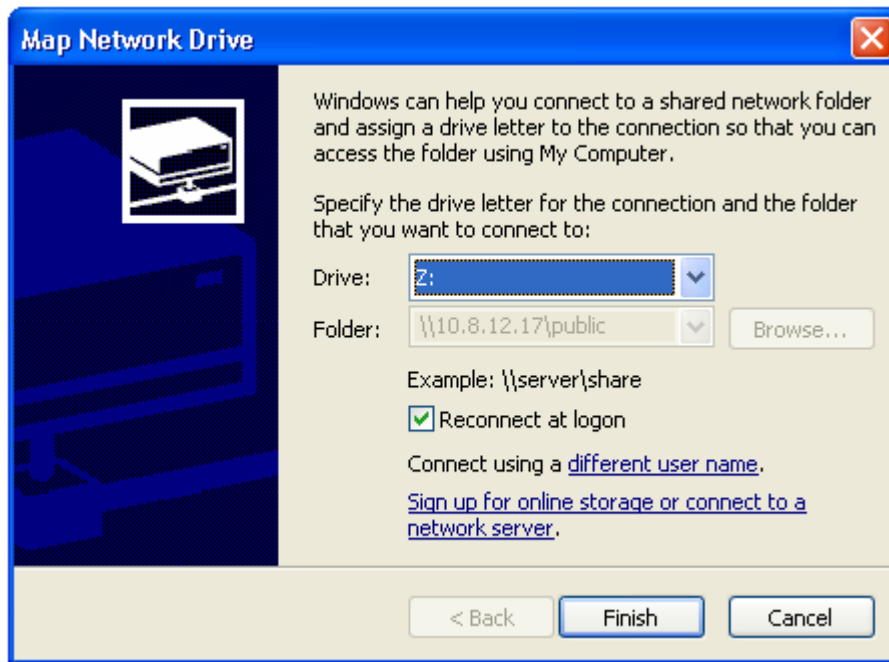


3. Map drive
 - a. Select a TS-401T and click **Map Drive**.

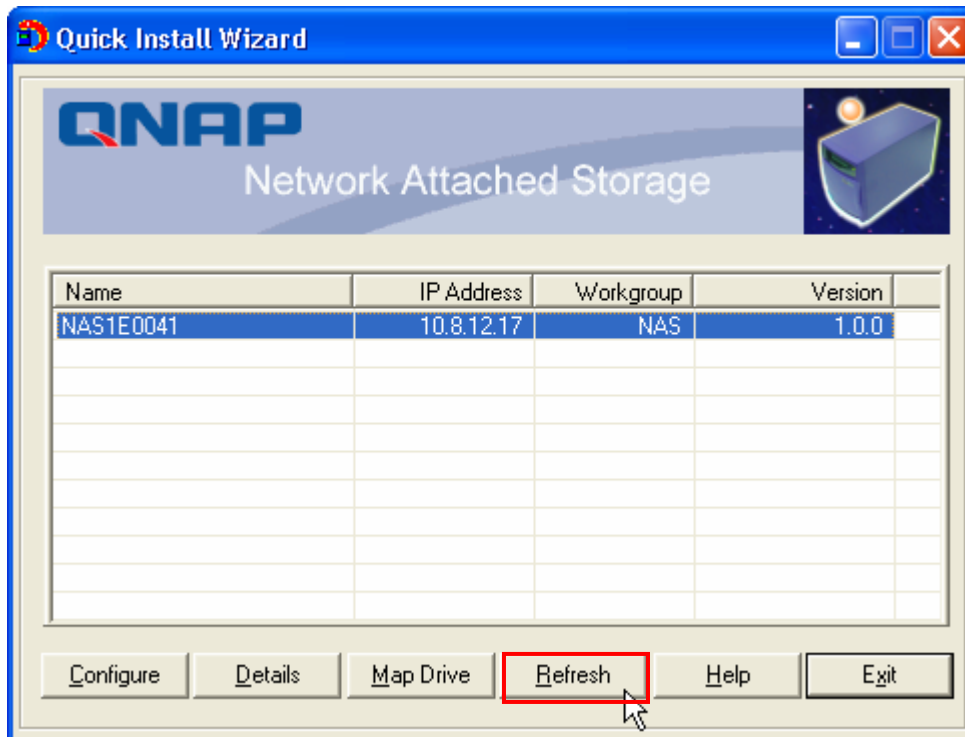


- b. Select the correct network share and click **Map Network Drive**. Then select the drive letter for the connection.



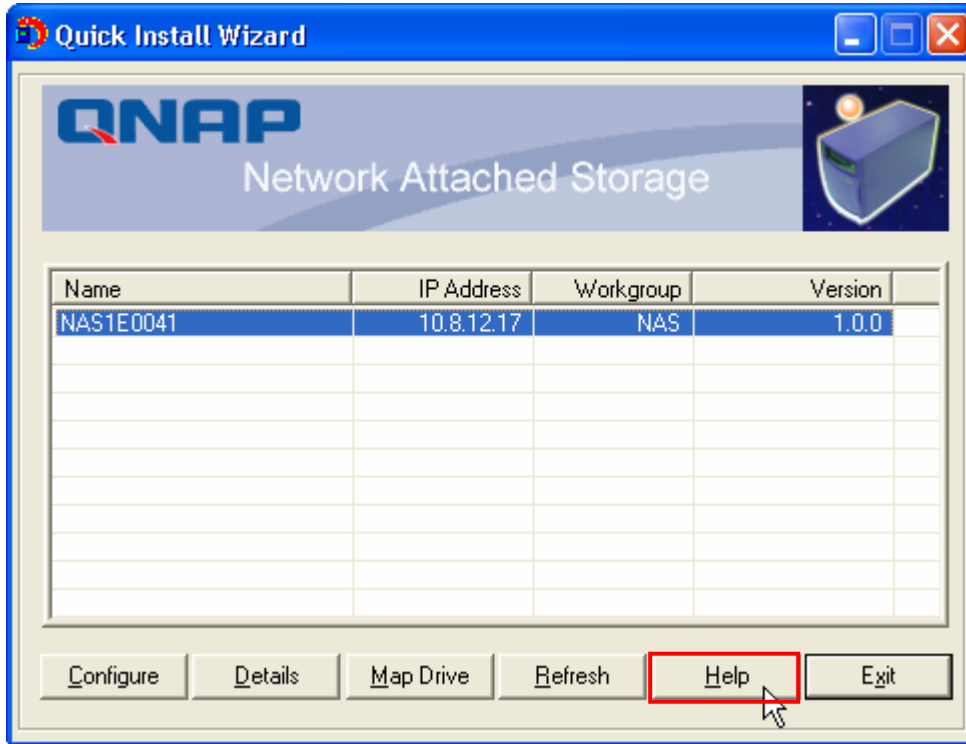


- c. Enter the user name and password for the network drive.
- 4. Search for all available TS-401T again.
To refresh the search results, click **Refresh** to display all available servers within the network.



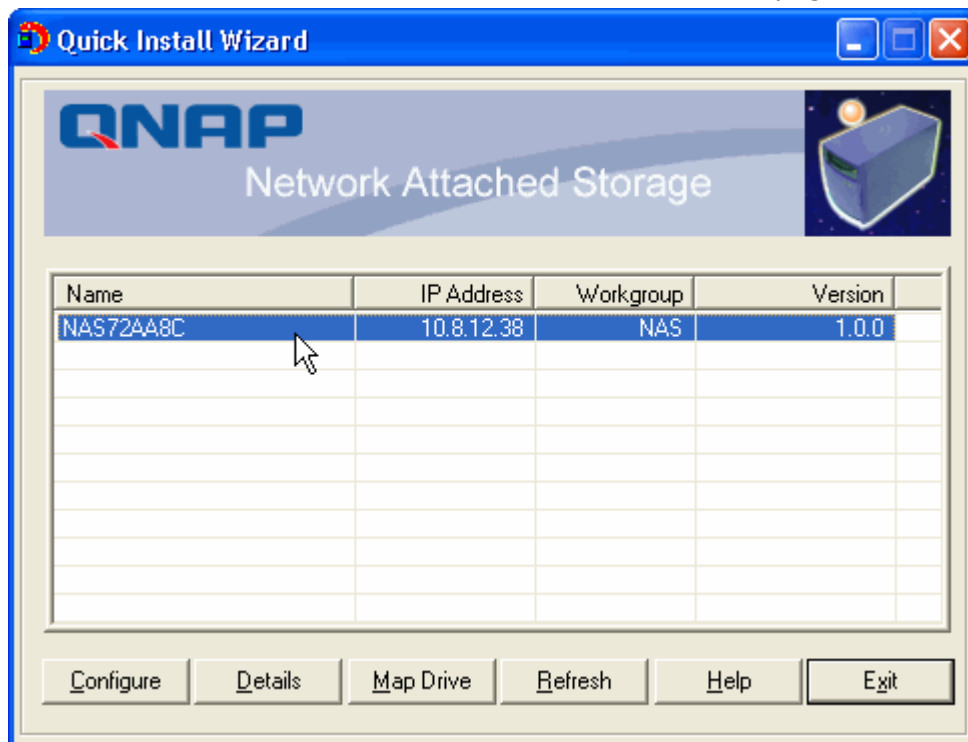
5. Help

If you have any enquiries about Quick Install Wizard when using the program, you can click the **Help** button to view the help text.



6. Enter the homepage of TS-401T

Double click on TS-401T to enter the administration page.



Chapter 5 Use Services of TS-401T

TS-401T provides the following powerful services and applications

5.1 File Server

You can make use of the following means to access and share the folders of TS-401T easily:

- a. By Quick Install Wizard: By the Map Drive function of Quick Install Wizard, you can configure the share folders on TS-401T as a drive of your PC quickly. For further information, please refer to Chapter 4.
- b. By samba: TS-401T supports Microsoft®, MAC and Linux(NFS) OS for data sharing to enable you to share data across different platforms, please refer to Chapter 7.1-7.3.
- c. By Web File Manager: TS-401T provides a simple-to-use web administration interface for you to access share folders, upload and download files from TS-401T, please refer to Chapter Appendix A.

5.2 FTP Server

TS-401T supports FTP file transfer. You can use the following methods to access share files by FTP:

- a. By IE browser or
- b. By Web File Manager

For further information, please refer to Chapter 7.5.

5.3 Backup Server

TS-401T provides versatile backup mechanisms to help you back up or restore disk data completely to enhance more efficient and secure system management. The backup/ restore applications are listed below:

a. NetBak Replicator

NetBak Replicator is a powerful backup software dedicated to Windows® users. You can back up your PC data to TS-401T easily by the user-friendly interface. Please refer to Chapter 8.

b. Remote Replication

Remote replication is a built-in backup feature of TS-401T. You can set up instant or scheduled backup to replicate the data of TS-401T to another NAS server. Please refer to Chapter 6.9.8.

c. USB CD/DVD Restore/ Backup

You can connect USB CD/DVD burner to the high speed USB 2.0 transfer interface of TS-401T and enjoy data backup and restore functions to and from TS-401T and CD/DVD. Please refer to Chapter 6.9.11.

5.4 Network Printer Service

TS-401T provides Windows® users with the exclusive network printer service. You can connect USB printer to TS-401T and enable network printer sharing function. Please refer to Chapter 5.4.

Chapter 6 Administer TS-401T

When you have installed TS-401T and connected it to the network or PC, you can manage the server via web browser. It is recommended to use Microsoft Internet Explorer 6.0 or above to access TS-401T.



Note: Windows 98 supports Internet Explorer 6.0 or above only.

TS-401T Network Configuration for the First Time of Use

By factory default, TS-401T will search the network via DHCP (Dynamic Host Configuration Protocol) to detect IP address settings automatically. If your network does not support DHCP protocol, TS-401T will use the default settings as below:

IP Address: 192.168.0.1
Subnet Mask: 255.255.255.0

When TS-401T boots up, the LCD panel will display current IP address settings. If your network does not support DHCP protocol, you must configure your TS-401T to proper LAN settings before using it for the first time. If you are not sure about the LAN settings, please contact your network administrator.

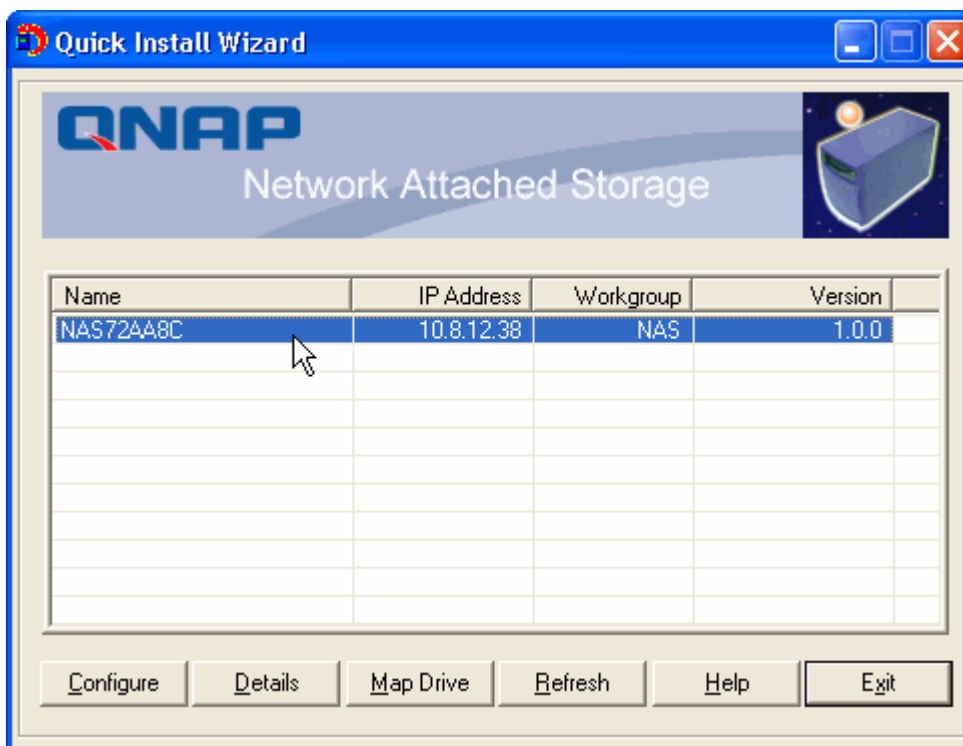
You can change the network settings of TS-401T by the following ways:

1. Use the LCD panel to change the network settings. For more information, please refer to Chapter 3. OR
2. Use Quick Install Wizard in the CD-ROM to change the network settings. For more information, please refer to Chapter 4.

6.1 Access Administration Page

You can access TS-401T administration page by the following means:

3. Launch the web browser. Enter the IP address of TS-401T to access the administration page. You can check the IP address of TS-401T on the LCD panel (see Chapter 3). OR
4. Install and Quick Installation Wizard (see Chapter 4). Search for TS-401T in the network and double click the server name on the list.



5. When the administration page is shown, click **Administration**.



6. Enter the user name and password to login.

Default user name: **administrator**

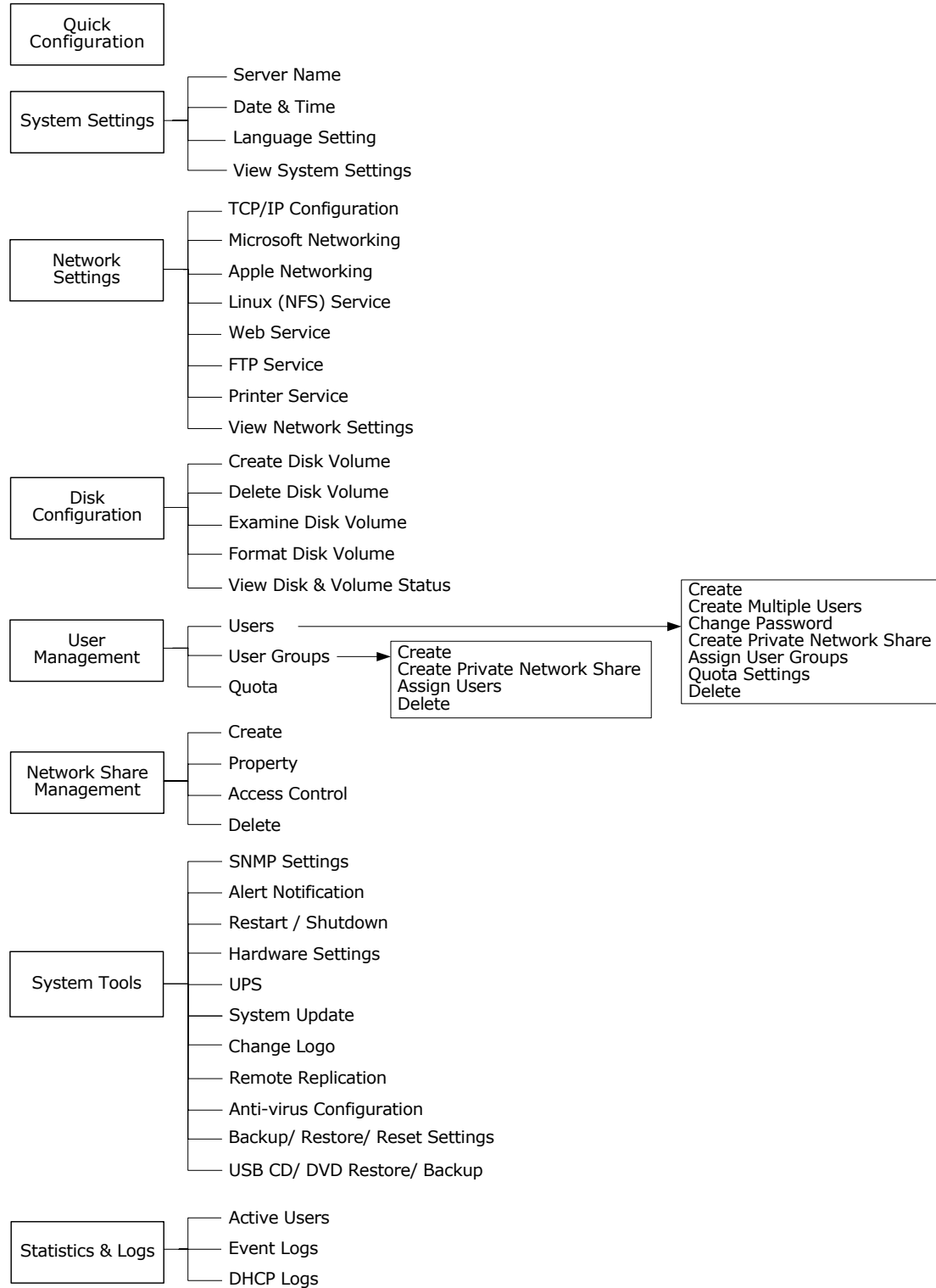
Password: **admin**

The first time you login TS-401T, Quick Configuration page will be shown. Please refer to 6.3 Quick Configuration for more details.


To connect TS-401T by MAC, open a web browser in MAC and enter the IP address of TS-401T. Login the server and continue the software configuration. Please use the built-in browser in MAC-Safari for browsing.


6.2 Server Administration


There are eight main sections in server administration:




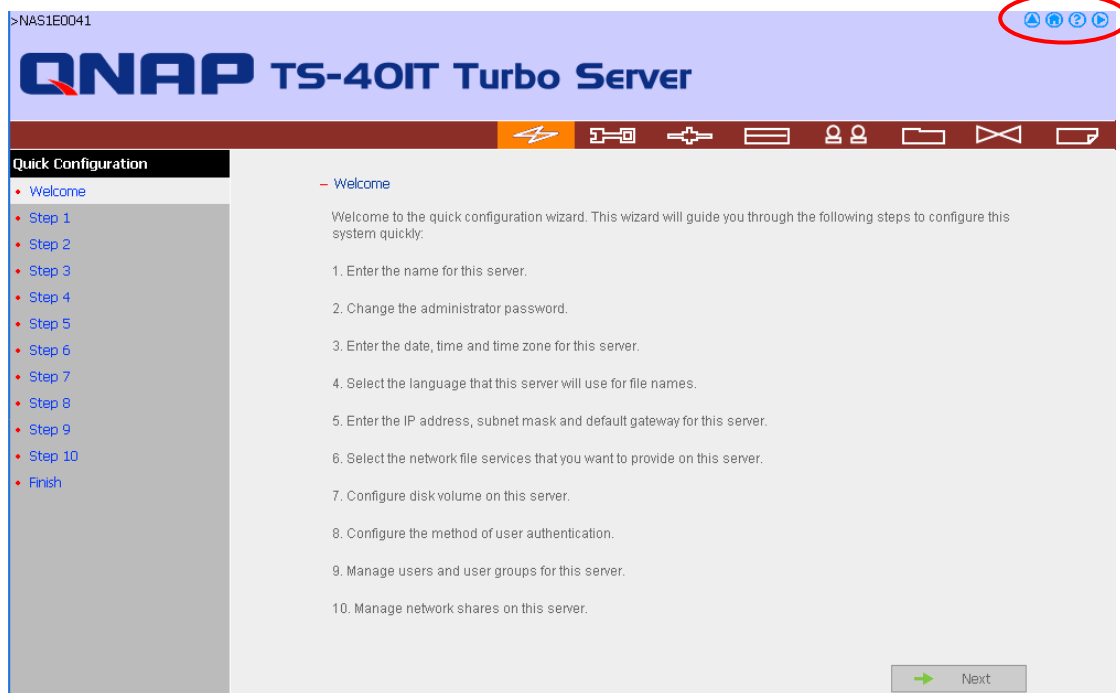
6.3 Quick Configuration

Please follow the step-by-step guide in Quick Configuration to complete the settings of TS-401T. If you have any questions during web administration, please click the help button  on the top right hand corner of the page. Other buttons are described as below:

: Return to previous page

: Return to home page

: Logout system



>NAS1E0041

QNAP TS-401T Turbo Server

Quick Configuration

- Welcome
- Step 1
- Step 2
- Step 3
- Step 4
- Step 5
- Step 6
- Step 7
- Step 8
- Step 9
- Step 10
- Finish

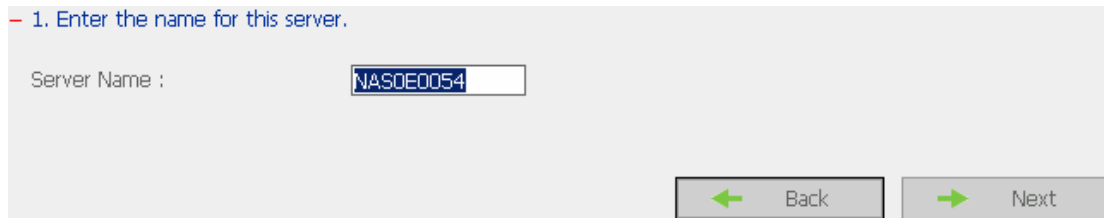
Welcome

Welcome to the quick configuration wizard. This wizard will guide you through the following steps to configure this system quickly.

1. Enter the name for this server.
2. Change the administrator password.
3. Enter the date, time and time zone for this server.
4. Select the language that this server will use for file names.
5. Enter the IP address, subnet mask and default gateway for this server.
6. Select the network file services that you want to provide on this server.
7. Configure disk volume on this server.
8. Configure the method of user authentication.
9. Manage users and user groups for this server.
10. Manage network shares on this server.

[Next](#)

Step 1. Enter the server name.



1. Enter the name for this server.

Server Name :

[Back](#) [Next](#)

Step 2. Change the administrator password or select to use the original password.

- 2. Change the administrator password.

Password :

Verify Password :

Use the original password

Note: If you select "Use the original password", the administrator password will not be changed.

Step 3. Enter the date, time and select the time zone for the server.

- 3. Enter the date, time and time zone for this server.

Time Zone :

Current date and time:

Change the server's time and date as below:

Date: , (mm dd, yyyy)

Time: : : (hh:mm:ss)

Step 4. Select the language the server uses to display files and directories. The default setting is **English**.

- 4. Select the language that this server will use for file names.

Language:

- Chinese-Simplified
- Chinese-Traditional
- Cyrillic
- Greek
- Icelandic
- Japanese
- Korean
- Slavic/Latin 2
- English**
- Western Europe/Latin 1

Step 5. Enter the IP address, subnet mask and default gateway for the server.
Select network interface configuration: fail over or load balance.

- 5. Enter the IP address, subnet mask and default gateway for this server.

Obtain TCP/IP settings automatically via DHCP

Use the following settings

IP Address: . . .

Subnet Mask: . . .

Default Gateway: . . .

Configuration of Network Interfaces Fail Over Load Balance

Note: If you don't need a default gateway for this server, please enter "0.0.0.0".

Step 6. Select the network file services to provide on the server.

- 6. Select the network file services you want to provide on this server.

Enable File Service for Microsoft Networking

Enable AppleTalk File Service for Apple Networking

Enable Linux (NFS) Service

Enable Web File Manager


Enable FTP Service

Step 7. Configure disk volume on the server.


- 7. Configure disk volume on this server.

You can click on the disk volume you want to configure on the **New Disk Volume Configuration** list. The **Current Disk Volume Configuration** list shows the current disk volume configuration of this server.

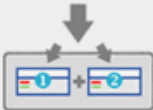
New Disk Volume Configuration




Single Disk Volume
Create single disk volume(s).



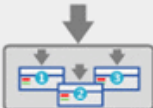
RAID 1 Mirroring Disk Volume
Create mirroring disk volume (s).



RAID 0 Striping Disk Volume
Create one striping disk volume.



Linear Disk Volume
Create one linear disk volume.



RAID 5 Disk Volume
Create one RAID 5 disk volume.

Current Disk Volume Configuration

Volume	Total Size	Free Size	Status
Striping Disk Volume: Drive 1 2	304685.00 MB	296874.00 MB	Ready

← Back
→ Next

Step 8. Configure the method of user authentication. Please refer to Chapter 6.5.2 for further information.

- 8. Configure the method of user authentication.

Enable file service for Microsoft networking

Standalone Server
 NT Domain Member
 AD Domain Member

Server Description:

Workgroup:

AD Server Name:

Domain Name:

Domain Username:

Password:

← Back
→ Next

Step 9. Manage users and user groups of this server.

- 9. Manage users of this server.

To add a user, enter the user information in the following fields, then click Add. To remove an existing user, click on the user name on the left list and click Remove. You can remove multiple users at a time.

Andrew Bella Cynthia Derek administrator	<input type="button" value="← Add"/>	User Name <input type="text"/>
	<input type="button" value="Remove →"/>	Password <input type="text"/>
		Verify Password <input type="text"/>

Note: For increased security, password should be at least 6 characters.

- 9.1 Set user groups of this server.

To add a user group, enter the group name in the box below. Select the user(s) to add to the group from the list on the right, then click Add. To remove a user group, select the group name on the left list, and click Remove. You can remove multiple user groups at a time.

administrators everyone	<input type="button" value="← Add"/>	User Group Name <input type="text"/>
	<input type="button" value="Remove →"/>	Andrew Bella Cynthia Derek administrator

You can choose one or more users to add into the user group from the above field.

Step 10. Manage network shares on this server.

- 10. Manage network shares on this server.

To add a network share, enter the network share information in the fields on the right below, then click Add. To remove an existing network share, select the network share on the left list, and click Remove.

NAS0E0036PR public	<input type="button" value="Add"/>	Network Share Name <input type="text"/>
	<input type="button" value="Remove"/>	Volume Striping Disk Volume: Drive12
		Comment <input type="text"/>

Step 11. Finish. It may take several to tens of minutes to complete Quick Configuration, depending on your system settings.

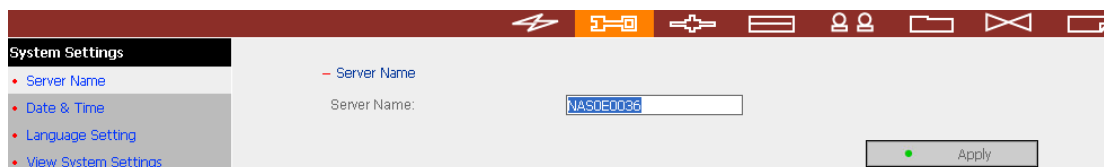
- Finish

Congratulations. You have finished all the steps for Quick Configuration.

To start using the server, click Finish. Or you can click Back to make more changes to the settings.

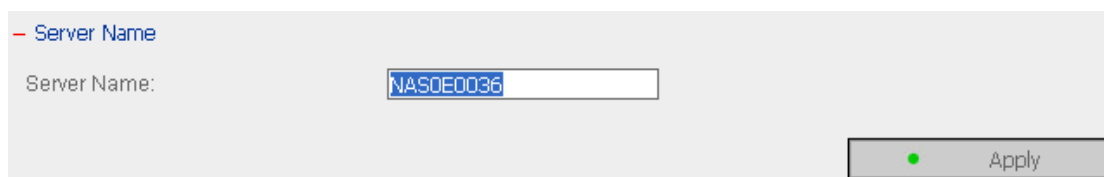
6.4 System Settings

Basic system settings include the server name, date, time, and view system settings.



6.4.1 Server Name

Enter the name of TS-401T. The server name can be 14 characters long at maximum, which can contain alphabets, numbers and hyphen (-). The server does not accept names with space, period (.), or names in pure numbers.



6.4.2 Date & Time

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

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

- Adjust the date, time and time zone of this server

Time Zone: (GMT+08:00) Taipei

Current date and time: 2005 / 8 / 10 PM 05 : 48 : 31

Change date and time manually

Date: January , (mm dd, yyyy)

Time: : : AM (hh:mm:ss)

Configure NTP server or client setting

Use the specified NTP server

IP Address of NTP Server: time.windows.com Test (Status: --)

Time Interval: 60 minute(s)

Enable NTP server

NTP Server #1: Test (Status: --)

NTP Server #2: Test (Status: --)

NTP Server #3: Test (Status: --)

Apply

✓ **NTP Server**

You can enable or use specified NTP (Network Time Protocol) server to update the date and time of the system automatically. To enable NTP server, please enable **Configure NTP server or client setting** and enter the IP address or domain name of the NTP server, e.g. time.nist.gov, time.windows.com in **Use the specified NTP server** field. Then enter the time interval for adjusting the time (minimum value is 1 minute and maximum value is 99 days).

Configure NTP server or client setting

Use the specified NTP server

IP Address of NTP Server (Status: --)

Time Interval

To enable multiple NTP servers, you can select **Enable NTP server** and enter the IP address or domain name of the servers. You can enter 3 NTP servers at maximum. If the system fails to connect to the first NTP server, it will try to connect the second one automatically, so on so forth.

You can click **Test** to try to connect to the NTP server. If there is no specified IP address for the NTP server, the system will refer to internal clock for date and time settings.

Enable NTP server

NTP Server #1 (Status: --)

NTP Server #2 (Status: --)


NTP Server #3 (Status: --)



Note: The first time you enable NTP server, it may take several minutes for time synchronization before the time is correctly adjusted.

6.4.3 Language Setting

Select the language TS-401T uses to display files and directories.



Note: All files and directories on TS-401T will be created using Unicode encoding. If your FTP clients or PC does not support Unicode, e.g. Windows® 95, 98, ME OS is used, select the language your PC supports here in order to view the files and directories on the server properly.

- Language Setting

Language: English ▼

Chinese-Simplified

Chinese-Traditional

Cyrillic

English

Greek

Icelandic

Japanese

Korean

Slavic/Latin 2

Western Europe/Latin 1

● Apply

6.4.4 View System Settings

You can view all current system settings, e.g. server name, on this page.

- View System Settings

Server Name	
Server Name	NAS1E0041

Date & Time	
Date	October 22, 2005
Time	12:33:4 PM
Time Zone	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London

Language	
Code Page	English (437)

System Information	
Version	1.0.0 Build 1004

➔ OK

6.5 Network Settings



6.5.1 TCP/ IP Configuration

The screenshot shows a window titled "Network Settings" with a sidebar on the left containing a list of services: TCP/IP Configuration, Microsoft Networking, Apple Networking, NFS Service, NetWare Service, Web Service, FTP Service, Network Printer Service, and View Network Settings. The main area is titled "TCP/IP Configuration" and includes options for "Configuration of Network Interfaces" (Fail Over, Load Balance, Standalone) and "Network Speed" (auto-negotiat). A "Fail Over" sub-panel is active, showing options for "Obtain IP address settings automatically via DHCP" (selected) and "Use static IP address". The static IP fields are: Fixed IP Address (172.17.28.126), Subnet Mask (255.255.254.0), and Default Gateway (0.0.0.0). DNS settings include Primary DNS Server (10.8.2.11) and Secondary DNS Server (0.0.0.0). A section for "Enable DHCP Server" is also present with fields for Start IP Address (172.17.10.100), End IP Address (172.17.10.200), Lease Time (1 Day(s) 0 Hour(s)), and DNS servers (0.0.0.0).

Configuration of Network Interfaces

✓ Fail Over (Default)

The system supports the configuration of multiple network interfaces, which enables you to perform Fail Over or Load Balance functions. Fail over ensures server availability to the network. If the primary port is disconnected due to a hardware or cable problem, the secondary port will replace its network identity. If the failed port resumes the network connection, it will also resume the role as the primary interface.

Fail Over

Obtain IP address settings automatically via DHCP

Use static IP address

Fixed IP Address 172 . 17 . 28 . 126

Subnet Mask 255 . 255 . 254 . 0

Default Gateway 0 . 0 . 0 . 0

Primary DNS Server 10 . 8 . 2 . 11

Secondary DNS Server 0 . 0 . 0 . 0

Enable DHCP Server

Start IP Address 172 . 17 . 10 . 100

End IP Address 172 . 17 . 10 . 200

Lease Time 1 Day(s) 0 Hour(s)

Primary DNS Server 0 . 0 . 0 . 0

Secondary DNS Server 0 . 0 . 0 . 0

✓ **Load Balance**

In load balance* mode, the transmission load is distributed among aggregated network ports.

Load Balance

Obtain IP address settings automatically via DHCP

Use static IP address

Fixed IP Address 172 . 17 . 28 . 126

Subnet Mask 255 . 255 . 254 . 0

Default Gateway 0 . 0 . 0 . 0

Primary DNS Server 10 . 8 . 2 . 11

Secondary DNS Server 0 . 0 . 0 . 0

Enable DHCP Server

Start IP Address 172 . 17 . 10 . 100

End IP Address 172 . 17 . 10 . 200

Lease Time 1 Day(s) 0 Hour(s)

Primary DNS Server 0 . 0 . 0 . 0

Secondary DNS Server 0 . 0 . 0 . 0

* An intelligent software adaptive agent will repeatedly analyze the traffic flow from the server and distribute the packets based on the destination address. Load balance can only occur on Layer 3 routing protocols (IP or NCP IPX). Multicast/Broadcast and non-routing protocols, such as NetBEUI and Microsoft IPX, are transmitted over the primary port.

✓ **Standalone**

Standalone settings enable each port to have a unique IP, which allows users on different network areas to share one TS-401T and maintain their independence from one another in the network. When using this mode, fail over cannot be used and only LAN 1 can be configured as DHCP server.

LAN Configuration

Configuration of Network Interfaces Fail Over Load Balance Standalone

Network Speed auto-negotiat

LAN1 LAN2

Obtain IP address settings automatically via DHCP

Use static IP address

Fixed IP Address 192 . 168 . 0 . 1

Subnet Mask 255 . 255 . 255 . 0

Default Gateway 0 . 0 . 0 . 0

Primary DNS Server 0 . 0 . 0 . 0

Secondary DNS Server 0 . 0 . 0 . 0

Enable DHCP Server

Start IP Address 192 . 168 . 0 . 100

End IP Address 192 . 168 . 0 . 200

Lease Time 1 Day(s) 0 Hour(s)

Primary DNS Server 0 . 0 . 0 . 0

Secondary DNS Server 0 . 0 . 0 . 0

LAN1 LAN2

Obtain IP address settings automatically via DHCP

Use static IP address

Fixed IP Address 192 . 168 . 0 . 1

Subnet Mask 255 . 255 . 255 . 0

Default Gateway 0 . 0 . 0 . 0

Network Speed

Network speed settings provide an advanced option for configuring network speed. You can select auto-negotiation (default), 10 Mbps, 100 Mbps, or 1000 Mbps. It is recommended to use the default setting that the server will determine network speed automatically.



A screenshot of a web interface showing a dropdown menu for 'Network Speed'. The menu is open, displaying four options: 'auto-negotiation' (highlighted in blue), '10', '100', and '1000'. The 'Network Speed' label is visible to the left of the dropdown.

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

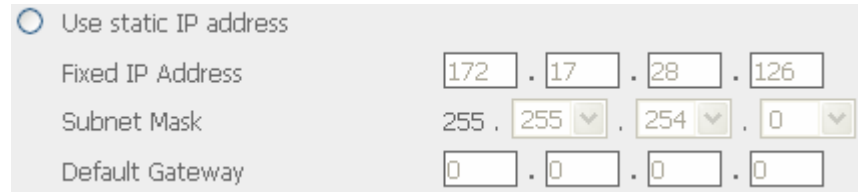
If your network supports DHCP, TS-401T will automatically use DHCP protocol to retrieve the IP address and related information.



A screenshot of a radio button option labeled 'Obtain IP address settings automatically via DHCP'. The radio button is selected, indicated by a green dot.

- **Use static IP address**

To use fixed IP address for network connection, enter fixed IP address, subnet mask and default gateway.



A screenshot of a web interface showing the 'Use static IP address' option selected with a radio button. Below this, there are three rows of input fields for network configuration:

- Fixed IP Address: 172 . 17 . 28 . 126
- Subnet Mask: 255 . 255 . 254 . 0
- Default Gateway: 0 . 0 . 0 . 0

Primary DNS Server: Enter the IP address of primary DNS server that provides DNS service for TS-401T in external network.

Secondary DNS Server: Enter the IP address of secondary DNS server that provides DNS service for TS-401T in external network.

Primary DNS Server	<input type="text" value="10"/>	.	<input type="text" value="8"/>	.	<input type="text" value="2"/>	.	<input type="text" value="11"/>
Secondary DNS Server	<input type="text" value="0"/>	.	<input type="text" value="0"/>	.	<input type="text" value="0"/>	.	<input type="text" value="0"/>

You can also configure the following settings:

✓ **Enable DHCP server**

If there is no DHCP server on your network, you can enable this option to provide IP address settings to the clients.

Start IP address

The first IP address to be dynamically allocated for DHCP service.

End IP address

The last IP address to be dynamically allocated for DHCP service.

Lease time

Define the lease time for the dynamic IP address.

Primary DNS server

When the system allocates an IP address to your computer, the primary DNS server address is also specified to it.

Secondary DNS Server

When the system allocates an IP address to your computer, the secondary DNS server address is also specified to it.

<input type="checkbox"/> Enable DHCP Server	
Start IP Address	<input type="text" value="172"/> . <input type="text" value="17"/> . <input type="text" value="10"/> . <input type="text" value="100"/>
End IP Address	<input type="text" value="172"/> . <input type="text" value="17"/> . <input type="text" value="10"/> . <input type="text" value="200"/>
Lease Time	<input type="text" value="1"/> Day(s) <input type="text" value="0"/> Hour(s)
Primary DNS Server	<input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="0"/>
Secondary DNS Server	<input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="0"/>

6.5.2 Microsoft Networking

Microsoft Networking

Enable file service for Microsoft networking

Standalone Server

NT Domain Member

AD Domain Member

Server Description:

Workgroup:

AD Server Name:

Domain Name:

Domain Username:

Password:

Enable WINS server

Use the specified WINS server

WINS server IP address:

Domain Master

Enable file service for Microsoft networking: If you are using Microsoft Windows, enable this service to access the files on network share folders. Assign a workgroup name.

✓ **Standalone Server**

Use local users for user authentication.

✓ **NT Domain Member**

Use Microsoft NT domain for user authentication.

✓ **AD Domain Member**

TS-401T supports Windows 2003 AD (Active Directory) to provide quick and direct import of user accounts to the existing AD server available in your network. This function helps you to save time and effort on creating user accounts and passwords and lowers IT maintenance cost by automatic configuration procedure.

- **Server Description:** Describe TS-401T for users to identify the server. To use TS-401T on the Microsoft Windows OS, you must enable Microsoft

Network Services.

- **Workgroup:** Specify the workgroup TS-401T belongs to. The workgroup is a computer group unit in Microsoft Windows network for network sharing.
- **AD Server Name:** Enter the name of the AD server when AD domain is selected for authentication.
- **Domain Name:** Microsoft domain name. Enter the domain name when you select NT domain or AD domain.

✓ **WINS server**

If the local network has a WINS server installed, specify the IP address. TS-401T will automatically register its name and IP address with WINS service. If you do not want to enable WINS server support, or you do not have a WINS server on your network, enter **0.0.0.0** in the field for WINS server IP address.

Enable WINS server

Use the specified WINS server

WINS server IP address . . .

✓ **Domain Master**

There is a unique Domain Master Browser for collecting and recording resources and services available for each PC in the network or workgroup of Windows. When a domain master browser (Windows NT/ 200x/ XP PC) exists already in the network, there is no need to configure TS-401T as the domain master.

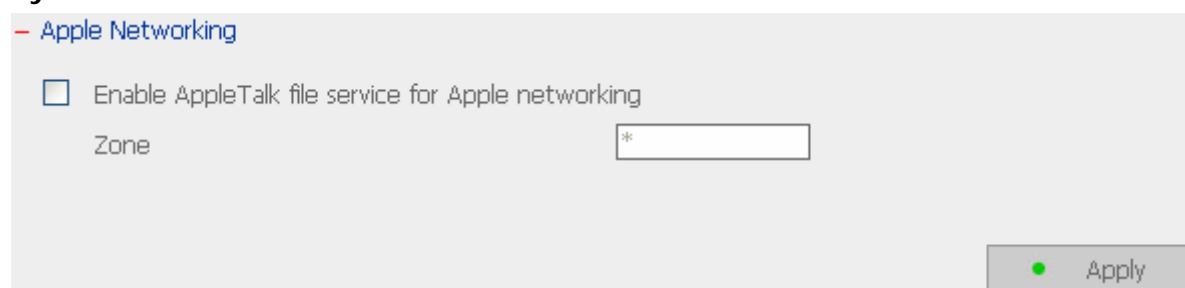
When you find the waiting time for accessing Network Neighborhood too long, it may due to failure of an existing master browser, or there is no master browser available. If the reason is the latter one, you can check the box Domain Master in this section to configure TS-401T as the master browser to enhance the speed of accessing information on Network Neighborhood.

Domain Master

6.5.3 Apple Network

To use TS-401T on Apple MAC operating system, enable AppleTalk network support.

If your AppleTalk network uses extended networks, and is assigned with multiple zones, assign a zone name to TS-401T. 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

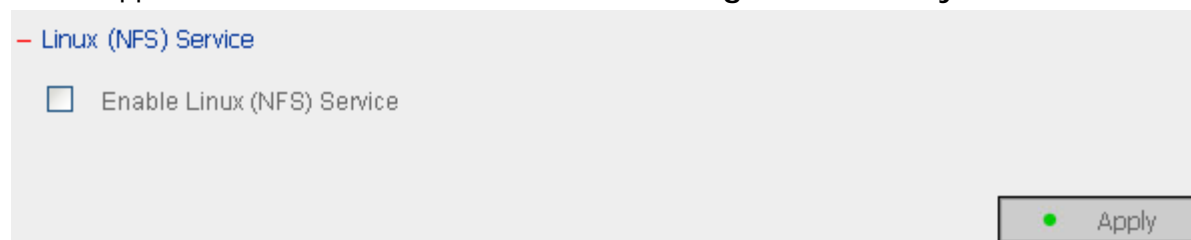
Enable AppleTalk file service for Apple networking

Zone

Apply

6.5.4 Linux (NFS) Service

To use TS-401T on Linux OS computer or server, enable Linux (NFS) service. TS-401T supports NFS version 2.0 and 3.0. **This setting is disabled by default.**



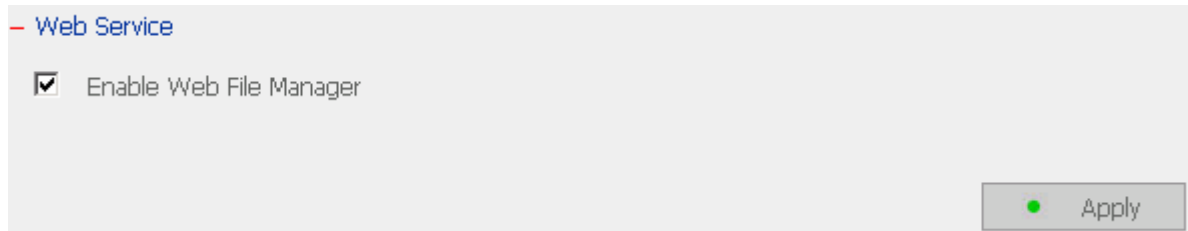
- Linux (NFS) Service

Enable Linux (NFS) Service

Apply

6.5.5 Web Service

To access files on TS-401T via web browser, enable Web File Manager. If TS-401T is connected to the Internet and uses a valid IP address, you can access files on the server by web browser from anywhere.



– Web Service

Enable Web File Manager

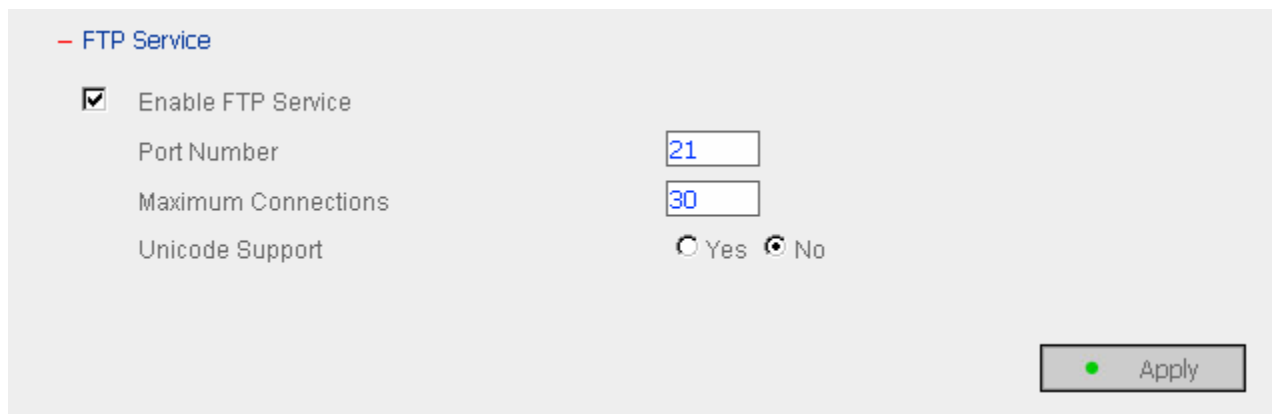
Apply

6.5.6 FTP Service

Select whether to enable/disable Unicode Support. The default setting is **No**. If your FTP client does not support Unicode, e.g. Windows® 95, 98, ME OS is used, select a supported language setting in “System Settings—Language Setting” page so that the folders and files on FTP can be properly shown (please refer to Chapter 6.4.3).



Note: The language of file names on share folder should match the language setting here for proper display.



– FTP Service

Enable FTP Service

Port Number

Maximum Connections

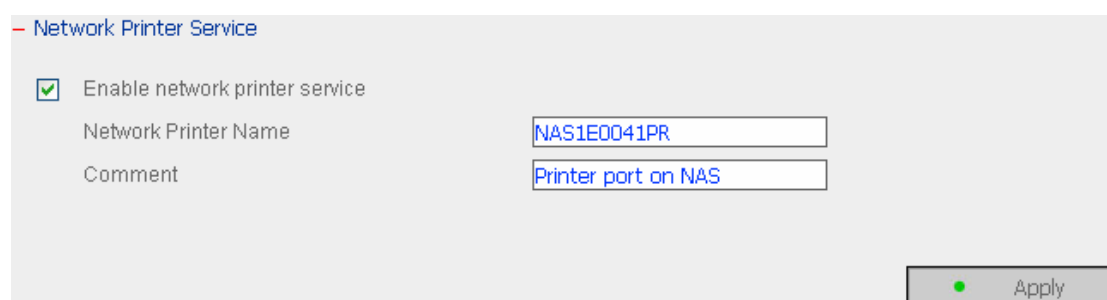
Unicode Support Yes No

Apply

6.5.7 Network Printer Service

TS-401T provides network printer service. You can configure a USB printer as the network printer via TS-401T. **Make sure at least one hard disk of TS-401T is formatted before enabling this function.** The system will use HDD 1 for printer sharing service by default. If the HDD 1 fails, HDD 2 will be in use, so on so forth.

To use this function, connect the server to a USB printer, and then click "Enable network printer service". Enter the printer name and description (optional) and click **Apply**.



- Network Printer Service

Enable network printer service

Network Printer Name

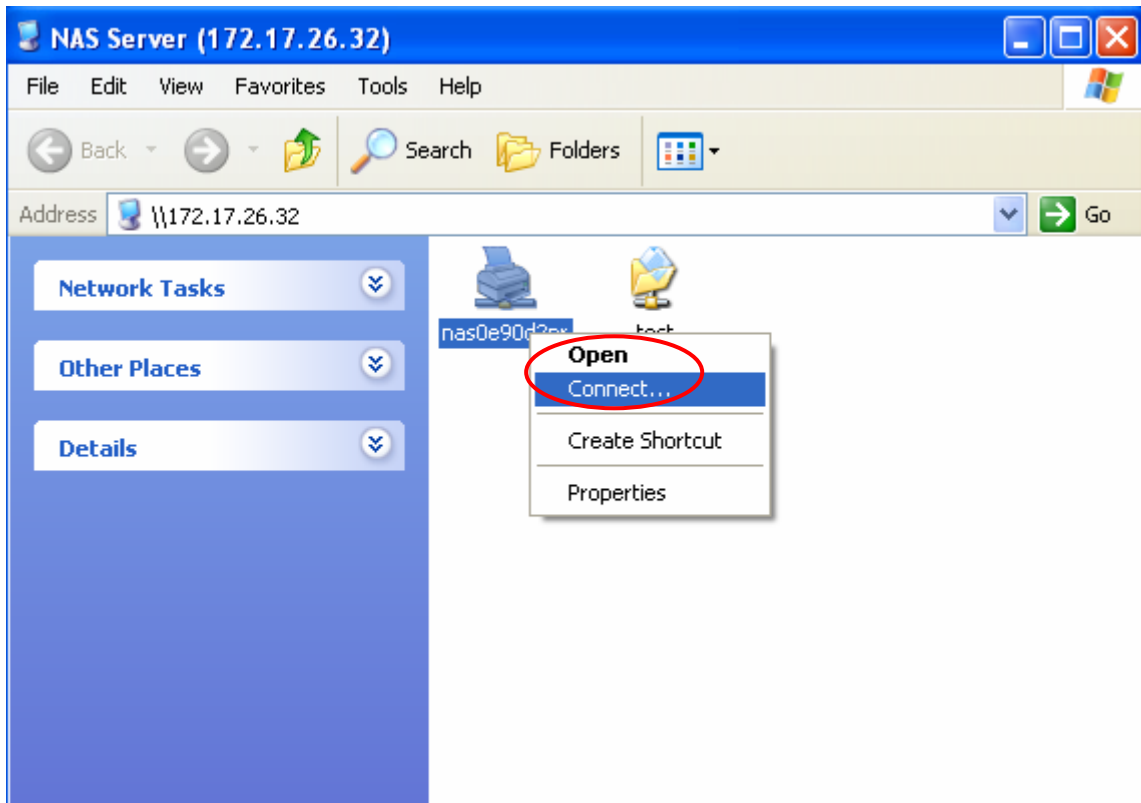
Comment



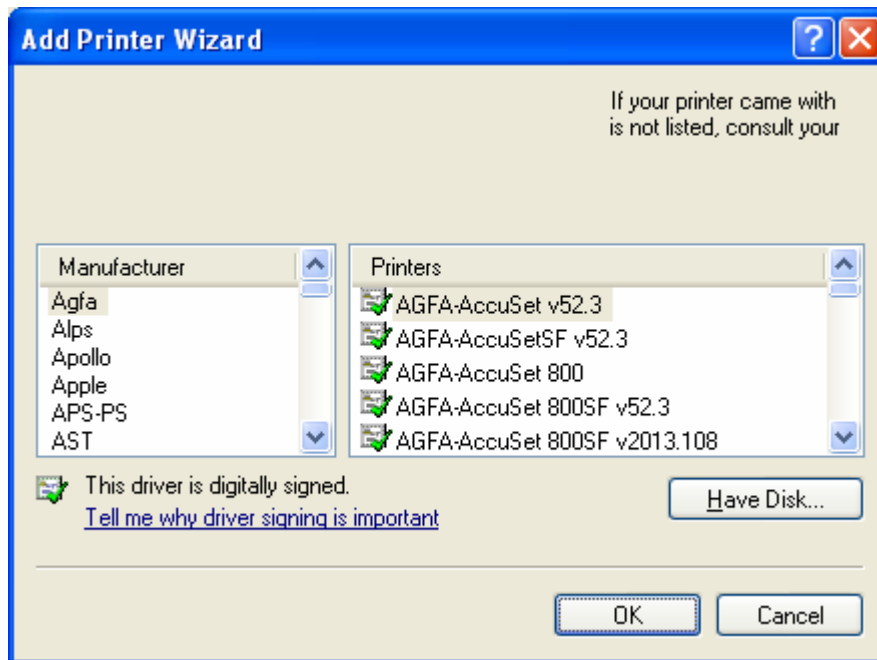
Note: Network printer service is supported in Windows OS only.

Printer Settings on Client Side

1. Connect a USB printer to TS-401T.
2. After correctly enabling a USB printer on TS-401T, a printer icon should be shown in the share folder of the server. Right click the printer icon and click **Open** or **Connect**.



3. Install the printer driver.



4. When finished, you can start to use network printer service.

6.5.8 View Network Settings

You can view current network settings and status in this section.

View Network Settings

Network	Network File Services	Miscellaneous
Connection Type		
Connection Type	DHCP	
IP Address	10.8.10.126	
Subnet Mask	255.255.255.0	
Default Gateway	10.8.10.1	
MAC Address	00:30:02:0E:00:30	
Connection Status	Ready	
Configuration of Network Interfaces	Fail Over	
DHCP Service		
Enabled	No	
Address Range	172.17.10.100 - 172.17.10.200	
Lease Time	1 Day(s) 0 Hour(s)	

Close

- View Network Settings

Network	Network File Services	Miscellaneous
---------	-----------------------	---------------

Microsoft Networking

Enabled	Yes
Server Type	Standalone Server
Workgroup	NAS
WINS server Enabled	No
Domain Master Enabled	No

Apple Networking

Enabled	No
Apple Zone Name	*

Linux (NFS) Service

Enabled	No
---------	----

Web File Manager

Enabled	Yes
---------	-----

FTP Service

Enabled	Yes
Port Number	21
Max Connections	30
Unicode Support	Yes

- Close

- View Network Settings

Network	Network File Services	Miscellaneous
---------	-----------------------	---------------

Printer Service

Enabled	Yes
Printer Name	NAS0E0036PR
Printer Comment	USB port on NAS

- Close

6.6 Disk Configuration

In the section, you can create, delete, examine and format disk volume, as well as view disk and volume status of TS-401T.

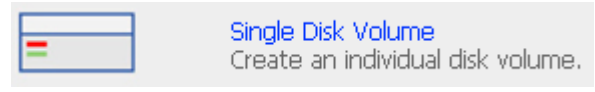


6.6.1 Create Disk Volume

TS-401T can accommodate four disks at maximum. You can set the disk volume to the following configurations by clicking on the icons on Create Disk Volume page:

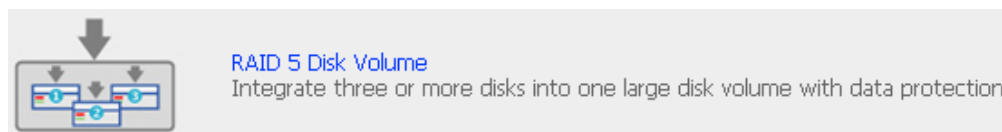
a. **Single Disk Volume**

You can create an individual disk volume. In case of disk crash, all data will be lost.



b. **RAID 5 Disk Volume**

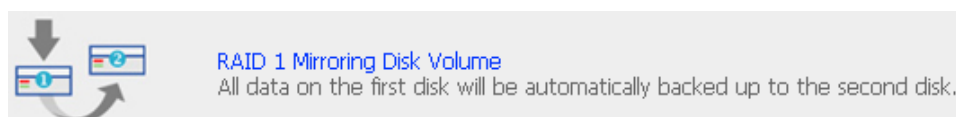
Three or more hard disks can be integrated to form RAID 5 disk volume. Data will be distributed and stored among the disks. If a disk fails, you can replace a new disk with the damaged one, and the system will restore the data to the new disk. You can also use three disks for RAID 5 and a fourth disk as a backup disk. If a disk of RAID 5 volume is damaged, the spare disk can replace that damaged disk, which enhances server stability and efficiency.



Note: When configuring RAID 5 disk volume, at least 3 disks are required.

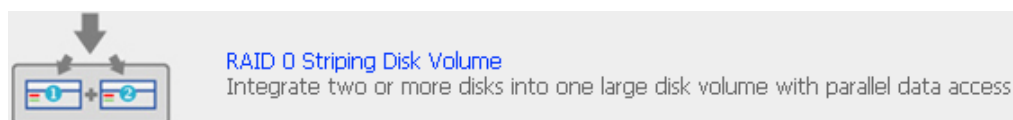
c. **RAID 1 Mirroring Disk Volume**

Mirroring Disk protects your data by automatically backing up the contents of one disk onto the second disk of a mirrored pair. This protects your data if one of the disks fails. However, the storing capacity is equal to a single disk, as the second disk is used to automatically back up the first one.



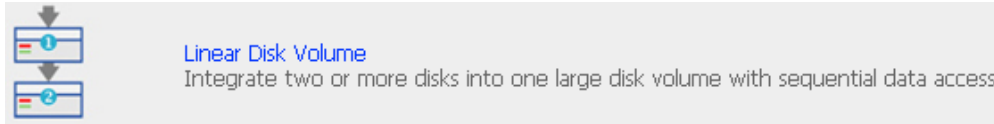
d. **RAID 0 Striping Disk Volume**

Striping disk combines two or more disks into one larger disk. It offers the fastest disk access but does not have any protection of your data if the striped array fails. The disk capacity equals the number of disks in the array times the size of the smallest disk.



e. **Linear Disk Volume**

You can combine two or more disks into one larger disk. Files will be saved on physical disks sequentially but does not have a disk failure file protection function. The overall capacity of linear disk is the sum of all disks.



6.6.2 Delete Disk Volume

To delete a disk volume, select the disk volume to remove and click OK.

- Delete Disk Volume

Please select the disk volume you want to remove and click OK.
Warning: All data and network shares on the disk volume you select will be deleted. The connection of all active users on this volume will be terminated.
Note: To view all shares and active users on the volume you have selected, click Show Shares.

Volume	Total Size	Free Size	Status
<input checked="" type="radio"/> RAID 5 Disk Volume: Drive 1 2 3 4	233632.50 MB	224784.51 MB	Ready

OK Cancel Show Shares

6.6.3 Examine Disk Volume

To examine a disk volume, select the disk volume to examine and click OK. You can check the **Fix errors** box and the server will fix errors automatically during disk checking.

– Examine Disk Volume

Please select the disk volume you want to examine and click OK. You can check the Fix errors option to resolve errors automatically.
Warning: All active users on this disk volume will be terminated.
Note: To view all shares and active users on the volume you have selected, click Show Shares.

Volume	Total Size	Free Size	Status
<input checked="" type="radio"/> RAID 5 Disk Volume: Drive 1 2 3 4	233632.50 MB	224784.51 MB	Ready

Fix errors

✓ Disk Volume Operation Report

After click OK on Examine Disk Volume page, a page like below will display to show the current status and information of disk volume operation.

– Disk Volume Operation Report

Operation Type	Format Disk Volume
Source Disk Volume	Mirroring Disk Volume: Drive 1 2
Target Disk Volume	--
Snapshot Settings	Disabled
Status	Formatting...
Result	--
Comment	This operation may take several minutes to hours, depending on the disk capacity.


Note: This page will automatically refresh every 5 seconds. Click Close to exit this page. You can choose to view the operation result later on the View Disk & Volume Status page.


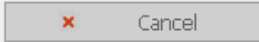
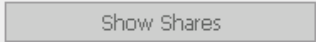
6.6.4 Format Disk Volume

To format disk volume, select the disk volume to format and click OK.

– Format Disk Volume

Please select the disk volume you want to format and click OK.
Warning: All data and network shares on the disk volume you select will be deleted. The connection of all active users on this volume will be terminated.
Note: To view all shares and active users on the volume you have selected, click Show Shares.

Volume	Total Size	Free Size	Status
 RAID 5 Disk Volume: Drive 1 2 3 4	233632.50 MB	224784.51 MB	Ready

6.6.5 View Disk & Volume Status

You can view details of physical disks and logical volumes in the section.

– Physical Disks

Disk	Model	Capacity	Status
Drive 1	Maxtor 6Y120L0	117246.94MB	Ready
Drive 2	Maxtor 6Y120L0	117246.94MB	Ready
Drive 3	Maxtor 6Y120L0	117246.94MB	Ready
Drive 4	Maxtor 6Y120L0	117246.94MB	Ready

– Logical Volumes

Volume	Total Size	Free Size	Status
Striping Disk Volume: Drive 1 2 3 4	467878.12 MB	460403.27 MB	Ready

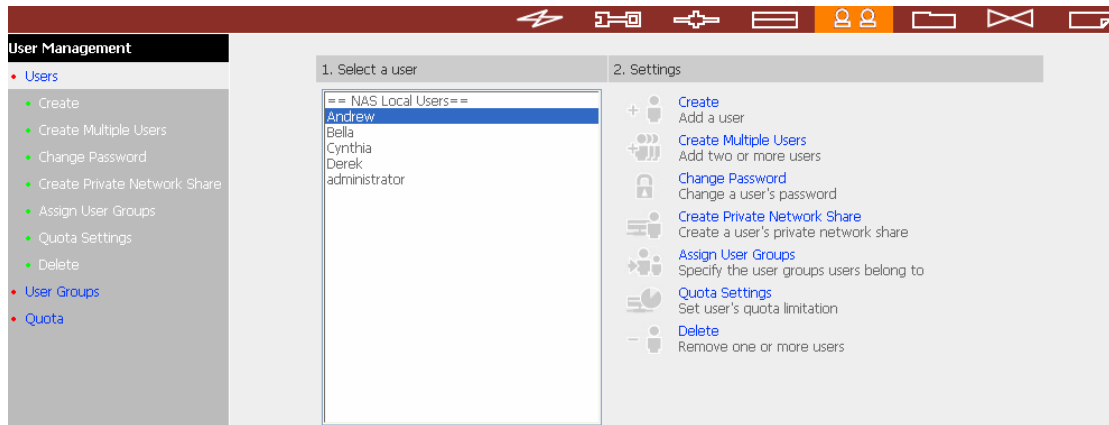


Note: When configuring disk volume, make sure there are no active users connecting to TS-401T to avoid any potential damage to the disks. You can check all currently active users in Statistics & Logs—Active Users (refer to Chapter 6.10.1) and inform those users to logout before configuring disk volume.

6.7 User Management



The files on TS-401T can be shared among multiple users. For easier management and better control of users' access right, you have to organize users, user groups and their access right control.



6.7.1 Users

The system has created the following users by default:

① Administrator

By default, administrator has access to system administration and cannot be deleted.

② Guest

This is a built-in user and will not be displayed on User Management page. When you use a non-registered user name to login, the server will recognize the user as a guest and will allow limited access. A guest does not belong to any user group.

③ Anonymous

This is a built-in user and will not be displayed on User Management page. When you connect to the server by FTP service, you can use this name to login as a guest.

512 users can be created at maximum (including system default users). You can create a new user according to your needs. The following information is required to create a new user:

✓ **User name**

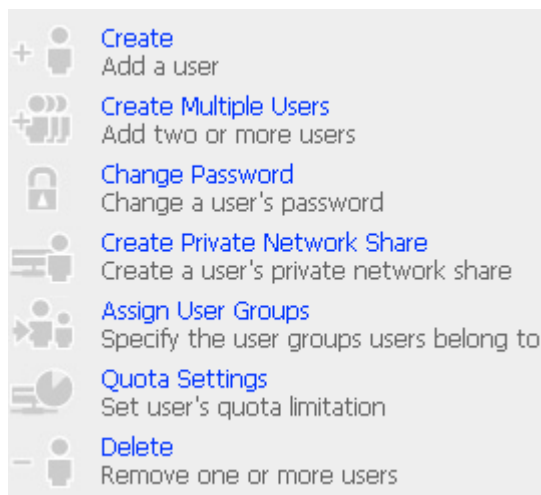
The user name must not exceed 32 characters. It is case-insensitive and can contain double-byte characters, such as Chinese, Japanese, and Korean except:

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

✓ **Password**

The password is case-sensitive and can be 16 characters long at maximum. It is recommended to use a password of at least 6 characters.

You can perform the following settings for users:



6.7.2 User Groups

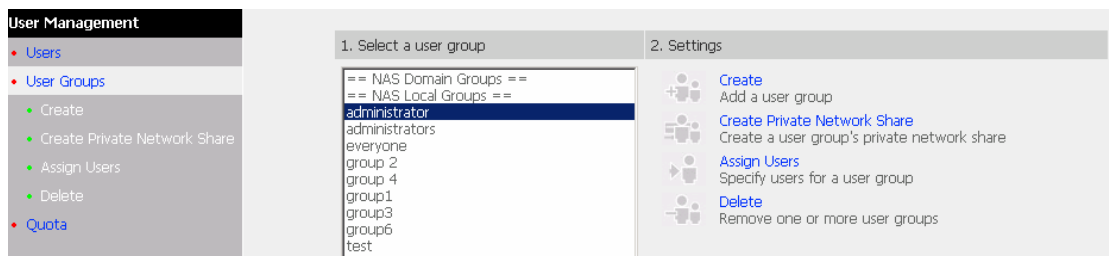
User group is a collection of users with the same access right to files or folders. TS-401T has created the following user groups by default:

① Administrators

All members in this group have administration right. You cannot delete this group.

② Everyone

All registered users belong to everyone group. You cannot delete this group.



You can manage user groups with the following options:



User groups name must not exceed 256 characters. It is case-insensitive and can contain double-byte characters, such as Chinese, Japanese, and Korean, except the following ones:

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

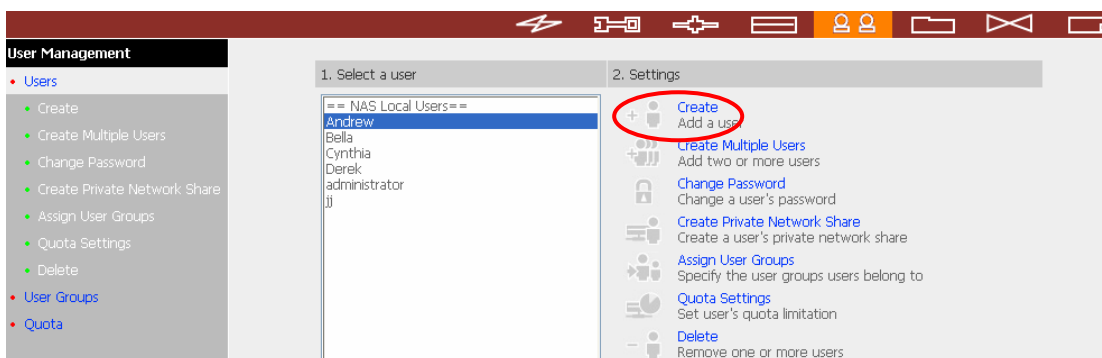
To properly manage security, it is very important to manage users and user groups. You may set the share access parameters of each user or user group accordingly.

Create Users and Assign Users to User Group

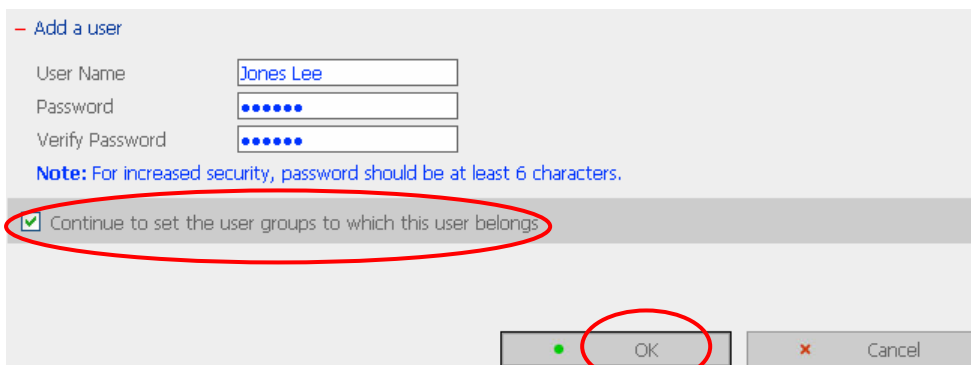
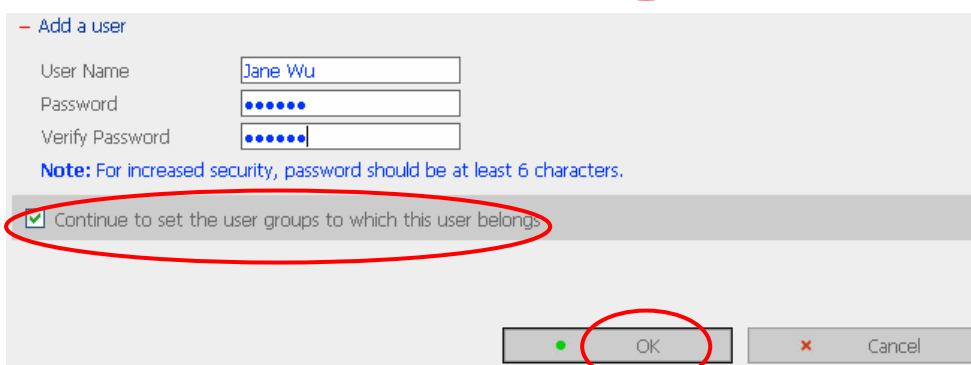
The following example demonstrates how to create new users and assign users to a user group.

ABC Co. has recently recruited two employees Mr. Jones Lee for Administration Department and Ms. Jane Wu for Sales Department. The IT Department therefore needs to create two user accounts for them to access company data on TS-401T.

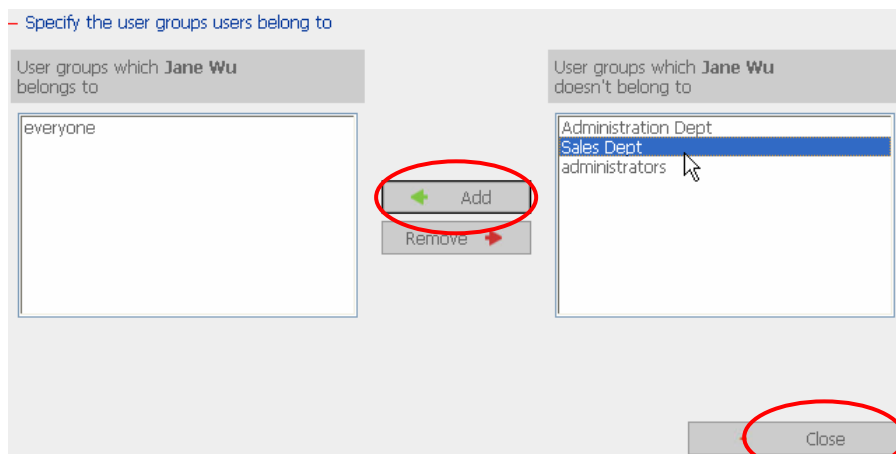
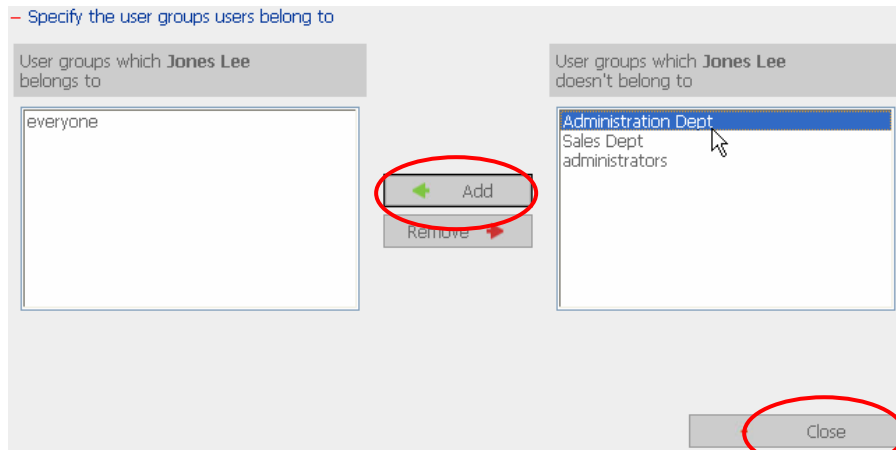
- i. To create a user account, go to User Management-Users. Click **Create**.



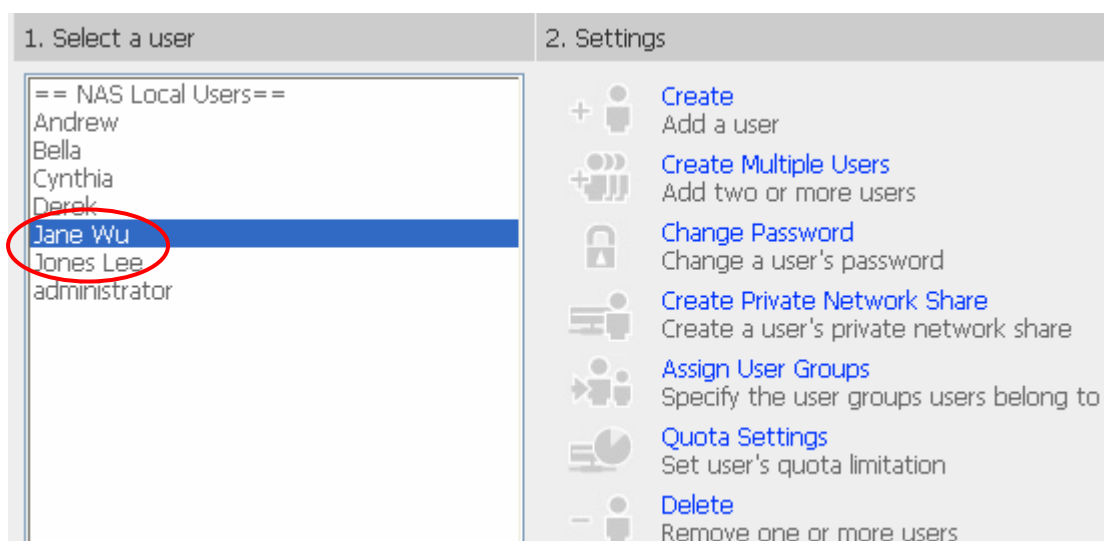
- ii. Enter the user name (Jones Lee/ Jane Wu) and password. Check the box "Continue to set the user groups to which this user belongs" and click **OK**.

A screenshot of the 'Add a user' form. The 'User Name' field contains 'Jones Lee'. The 'Password' and 'Verify Password' fields are filled with six dots. A note below the fields states: 'Note: For increased security, password should be at least 6 characters.' The checkbox 'Continue to set the user groups to which this user belongs' is checked and circled in red. At the bottom, the 'OK' button is also circled in red.A screenshot of the 'Add a user' form. The 'User Name' field contains 'Jane Wu'. The 'Password' and 'Verify Password' fields are filled with six dots. A note below the fields states: 'Note: For increased security, password should be at least 6 characters.' The checkbox 'Continue to set the user groups to which this user belongs' is checked and circled in red. At the bottom, the 'OK' button is also circled in red.

- iii. Select the user groups the users belong to on the right list, i.e. Mr. Jones Lee for Administration Dept and Ms. Jane Wu for Sales Dept, and click **Add**. Then click **Close**.



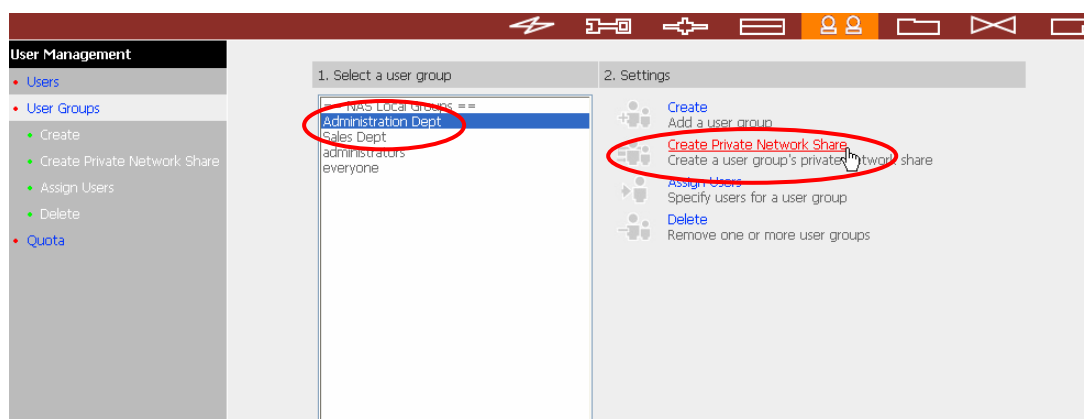
- iv. After creating the users, the users will appear on the list on Create User Page.



Create Private Network Share for User Groups

You can create particular network share for each user group. The procedure is described as below:

1. To create a network share called **media** accessible by Administration Department only, please go to "User Management—User Groups" page. Select the user group Administration Dept and click **Create Private Network Share** on the right.

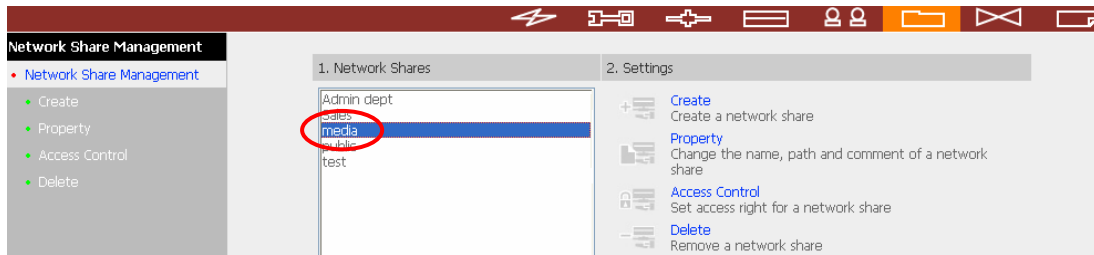


2. Enter the network share name **media**. Select to disk volume that the share will be created in and specify the path automatically or manually. Enter the comment for the network share, e.g. media folder for Admin Dept and click **Apply**.

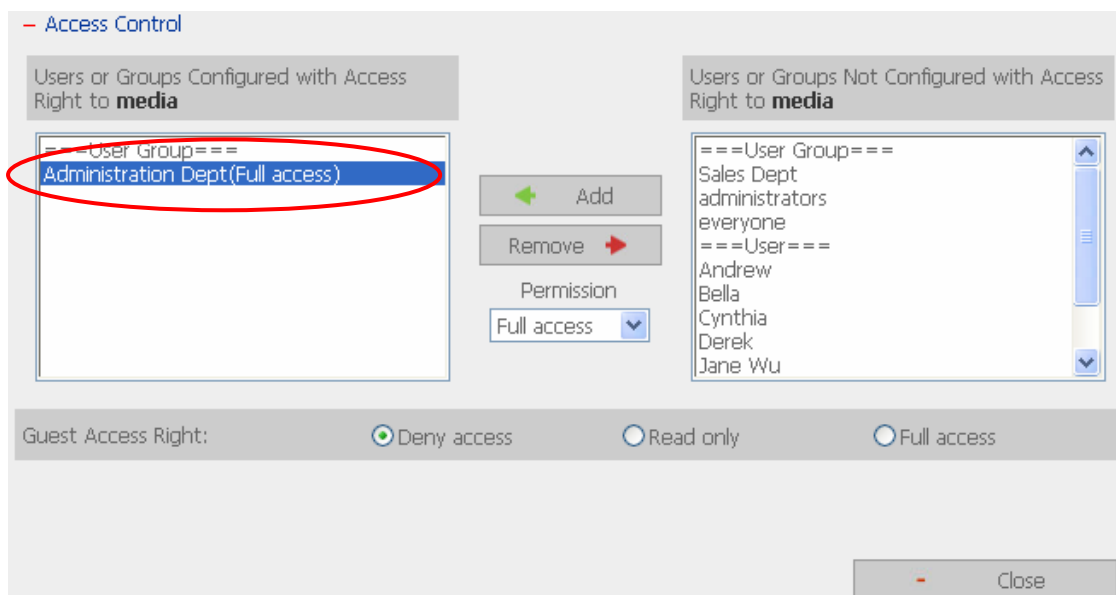
— Enter new network share's name, volume and path. Only users that are the members of Administration Dept user group can access this network share.

Network Share Name	<input type="text" value="media"/>
Disk Volume	<input type="text" value="Striping Disk Volume: Drive13"/>
Path	<input checked="" type="radio"/> Specify path automatically <input type="radio"/> Enter path manually
	<input type="text"/> <input type="button" value="Browse..."/>
Comment	<input type="text" value="media folder for Admin Dept"/>

3. You can see the folder **media** in **Network Share Management** page.



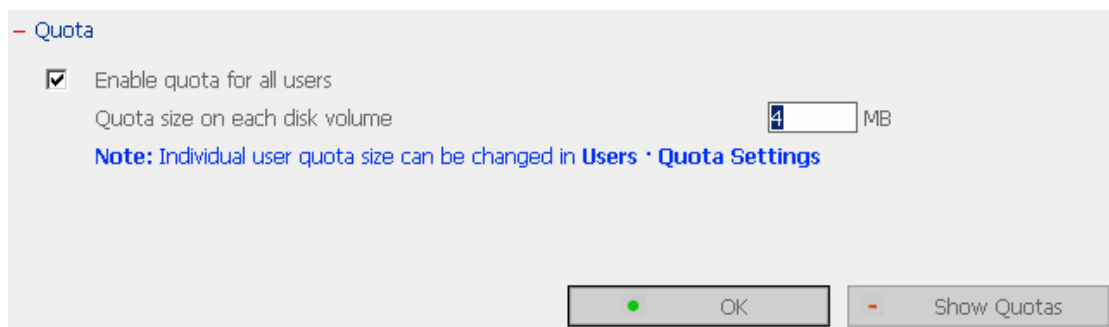
4. Enter Access Control. You can see that only Administration Dept has full access right to the folder.



6.7.3 Quota

To allocate 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 his/her disk quota, he/she cannot upload data to the server anymore. By default, no limitations are set for users. You can modify the following two options:

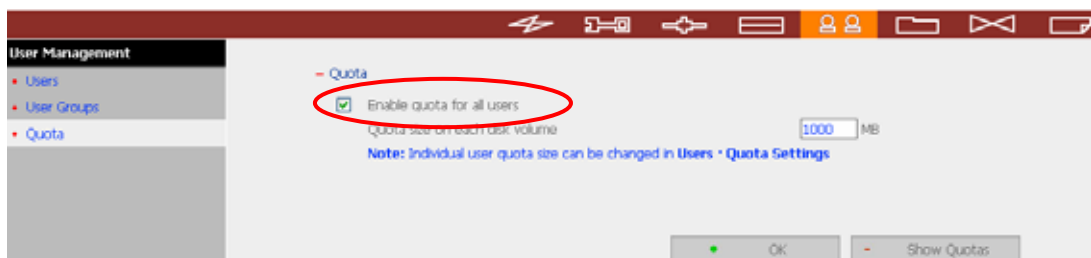
- i. Enable quota for all users
- ii. Quota size on each disk volume



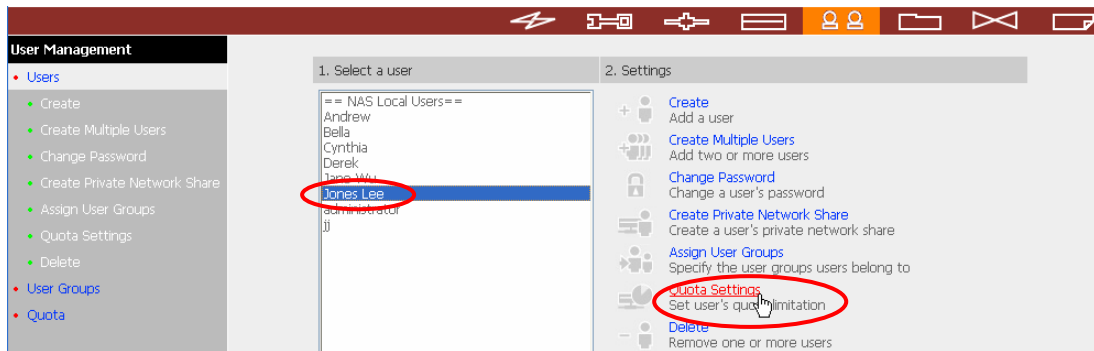
Please refer to the following example to configure the quota setting of users:

The IT department is planning to set the disk quota of Mr. Jones Lee from Administration Department and Ms. Jane Wu from Sales Department on TS-401T. The disk quota is 2000MB for Mr. Jones Lee and 4000MB for Ms. Jane Wu.

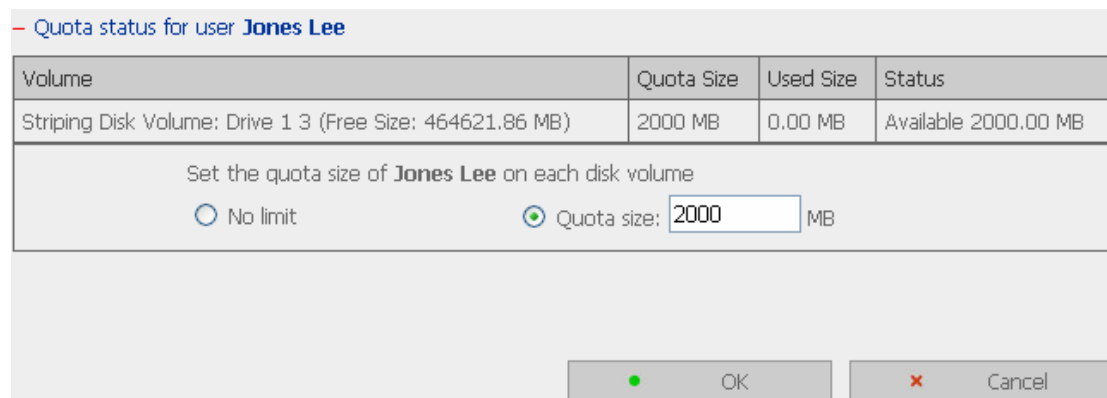
1. Please go to **Quota** page in **User Management** to enable quota for all users. Enter the quota size on each disk volume, e.g. 1000MB. The quota for individual user can be modified later.



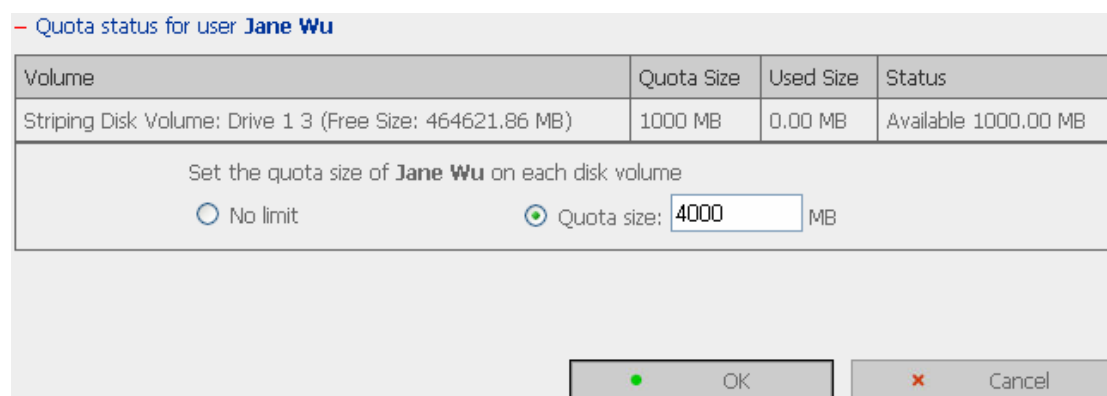
2. Select Jones Lee on User page and click **Quota Settings** on the right.



3. Enter the quota size 200MB and click **OK**.

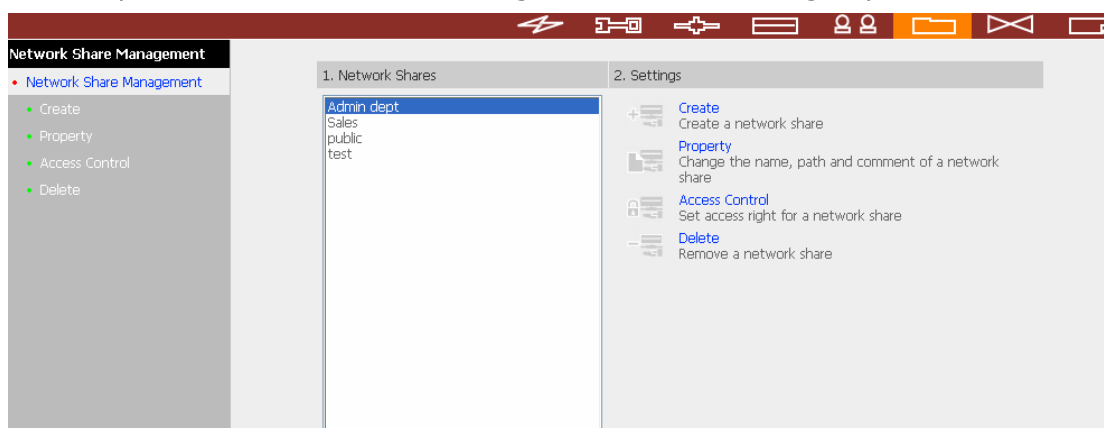


4. Follow the same steps and enter the quota size 4000MB for Jane Wu and click **OK**. The quota setting is successfully applied.

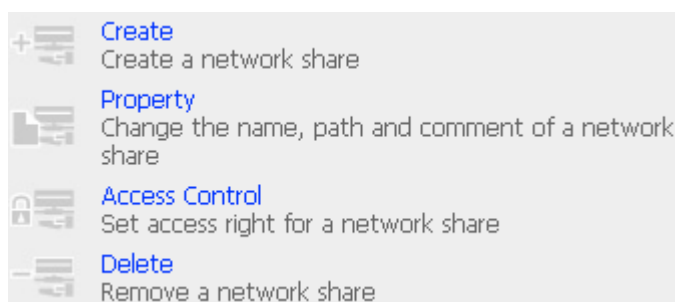


6.8 Network Share Management

The primary purpose of network storage is file sharing. In a standard operation environment, you can create different network share folders for various types of files, or provide different file access rights to users or user groups.



There are four options in Network Share Management:



6.8.1 Create

To create a network share, enter the following information:

- ✓ Network share name
The share name must not exceed 12 characters and cannot contain the following characters:
" . + = / \ : | * ? < > ; [] %
- ✓ Disk volume
This area shows the disk volume status.
- ✓ Path
All data are stored under the assigned path onto the disk volume. You can select "Specify path automatically" or assign a path manually. The path cannot exceed 256 characters and cannot contain the characters below:
" . + = / \ : | * ? < > ; [] %
- ✓ Comment
Enter a brief description for the share folder. The comment cannot exceed 128 characters.

The screenshot shows a 'Create' dialog box with the following fields and options:

- Network Share Name:** An empty text input field.
- Disk Volume:** A dropdown menu showing 'Mirroring Disk Volume: Drive12'.
- Path:** Two radio button options: 'Specify path automatically' (selected) and 'Enter path manually'. Below these is an empty text input field and a 'Browse...' button.
- Comment:** An empty text input field.
- Access Rights:** Three checkboxes: 'Grant full access right for everyone' (checked), 'Grant read access right for guest' (unchecked), and 'Continue to set access right for this network share' (checked).
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

6.8.2 Property

To edit the property of an existing network share, select a share and click **Property**. You can then edit the content of that share.

The screenshot shows the 'Property' tab of a network share configuration window. It includes the following fields and controls:

- Network Share Name:** A text box containing 'ddd'.
- Disk Volume:** A dropdown menu showing 'Single Disk: Drive1'.
- Path:** A text box containing '/ddd'.
- Comment:** An empty text box.
- Note:** A blue text note stating: "Note: If you change the share's volume or path of the share, all data that has already existed in the original volume or path will not be moved."
- Buttons:** 'Browse...' (next to Path), 'OK' (with a green dot icon), and 'Cancel' (with a red X icon).

6.8.3 Access Control

Once the network share is created, you can assign access rights to users or user groups:

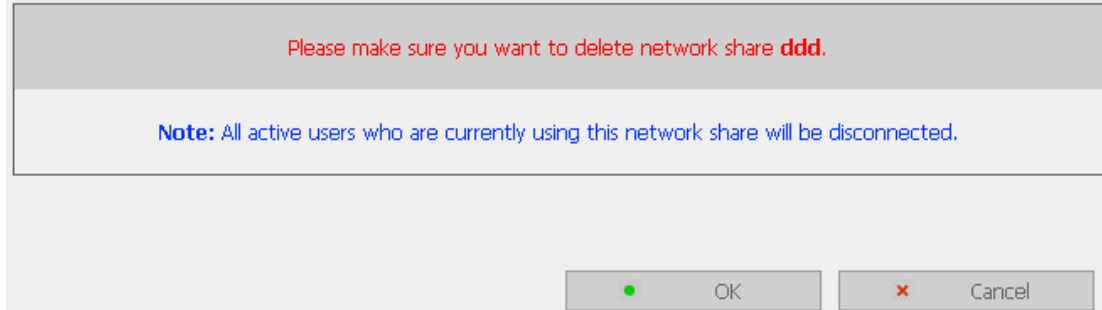
- ✓ Deny access
Access to the network share will be denied when this option is selected.
- ✓ Read only
Users can read the files only on the network share when read only is assigned.
- ✓ Full access
Users with full access are allowed to read, write, create, or delete files and folders on the network share.

The screenshot shows the 'Access Control' tab of the network share configuration window. It features two list boxes and a set of radio buttons:

- Users or Groups Configured with Access Right to ddd:** A list box containing '===User Group===' and 'everyone(Full access)'.
- Users or Groups Not Configured with Access Right to ddd:** A list box containing '===User Group===', 'administrators', 'group 2', 'group 4', 'group1', 'group3', '===User===', 'aaa', 'aaa\'sd', and 'aaaa'.
- Buttons:** 'Add' (with a left arrow), 'Remove' (with a right arrow), and a 'Permission' dropdown menu currently set to 'Full access'.
- Guest Access Right:** Three radio buttons: 'Deny access' (selected), 'Read only', and 'Full access'.
- Close Button:** A 'Close' button at the bottom right.

6.8.4 Delete

Select a share and click delete. Click **OK** to confirm.



6.9 System Tools



System Tools enable you to optimize the maintenance and management of TS-401T.

The screenshot shows the 'System Tools' window with a sidebar on the left containing a list of settings: SNMP Settings, Alert Notification, Restart/ Shutdown, Hardware Settings, UPS, System Update, Change Logo, Remote Replication, Anti-virus Configuration, Backup/ Restore/ Reset Settings, and USB CD/DVD Backup/ Restore. The main area is titled 'SNMP Service Setting' and contains two sections: 'SNMP Service Setting' and 'SNMP Trap Setting'. In the 'SNMP Service Setting' section, the 'Enable SNMP Service' checkbox is unchecked. Below it are three text input fields for 'Community Name', 'System Contact', and 'System Location'. The 'SNMP Trap Setting' section has 'Enable SNMP Trap Notification' unchecked, with 'Community Name' and 'Trap Host IP Address' input fields below it. A 'Send a test trap message' checkbox is also present. An 'Apply' button with a green indicator dot is at the bottom right.

6.9.1 SNMP Settings

Enable SNMP (Simple Network Management Protocol) service and complete all necessary settings to manage network components of the server by SNMP. When enabling SNMP Trap Notification, a message will be sent to a specified trap host when an error occurs.

This close-up screenshot shows the 'SNMP Service Setting' section where the 'Enable SNMP Service' checkbox is now checked. The 'Community Name' field contains the text 'test'. The 'System Contact' and 'System Location' fields are empty. The 'SNMP Trap Setting' section remains unchanged with 'Enable SNMP Trap Notification' unchecked and its associated input fields empty. The 'Send a test trap message' checkbox is also unchecked. The 'Apply' button at the bottom right now has a green indicator dot.

6.9.2 Alert Notification

Enter the e-mail address of administrator and SMTP server IP address. In case of warning or malfunction, e.g. CPU fan fails, a disk drive fails or is unplugged, an email will be sent to the administrator automatically. You can refer to Event Logs section in Statistics & Logs (refer to Chapter 6.10.2) to check all happened errors and warnings.

If your mailbox requires SMTP authentication, enter the user name and password.



Note: It is recommended to send a test e-mail to make sure you can receive the alert mails.

Alert Notification

Alert level: High: Send e-mails on any errors or warning events
 Medium: Send e-mails only on critical errors
 Low: No alert e-mails will be sent

E-mail (SMTP) server IP address: . . .

Enable SMTP Authentication

User Name :

Password :

E-mail address 1:

E-mail address 2:

Send a test e-mail

6.9.3 Restart/ Shutdown

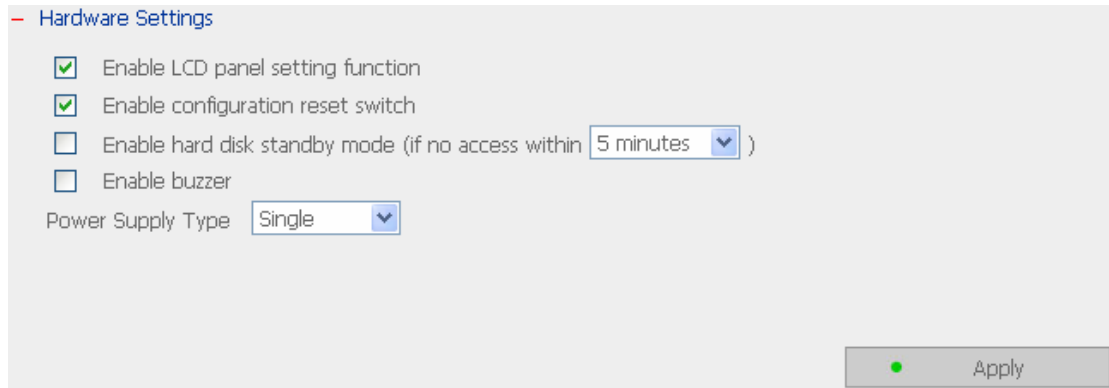
Select to restart or shut down TS-401T.

Restart / Shutdown

To restart the server, click Restart.
To shut down the server, click Shut Down.

6.9.4 Hardware Settings

You can enable or disable the hardware functions of TS-401T.



Hardware Settings

- Enable LCD panel setting function
- Enable configuration reset switch
- Enable hard disk standby mode (if no access within 5 minutes)
- Enable buzzer

Power Supply Type: Single

Apply

i. **Enable LCD panel setting function**

To enable users to configure TCP/IP settings via the LCD panel.

ii. **Enable configuration reset switch**

By enabling this option, you can press the reset button for a few seconds to reset the administrator password and system settings to default.

iii. **Enable hard disk standby mode**

When this function is enabled, hard disk will go to standby mode if there is no access within the specified period.

iv. **Enable buzzer**

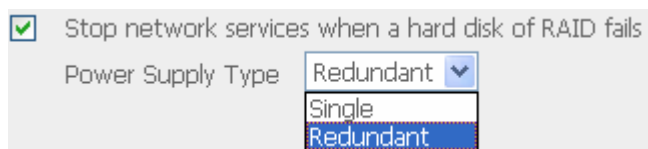
When buzzer is enabled, an alert sound will be played in case of system error.

v. **Power Supply Type**

Select power supply type. There is one power supply by default. **Do NOT change the position of default power supply.** To use a second power supply, you can purchase from the distributor.

To use two power supplies, follow the steps below:

1. Set power supply type as Redundant.



Stop network services when a hard disk of RAID fails

Power Supply Type: Redundant

- Single
- Redundant

2. Shut down the system properly.

3. Insert the second power supply and turn on the system.

If a power supply fails, the system will send an alert notification to the administrator.

6.9.5 UPS

If your UPS device provides USB interface, you can enable UPS (uninterruptible power supply) support to protect your system from abnormal system shutdown caused by power outage. In case of utility power failure, the system will shut down automatically by probing the power status of the connected UPS unit.

UPS

Enable UPS Support

The system will be shut down in minute(s) when the AC power status is abnormal.

UPS Model

IP Address of UPS . . .

UPS Model

AC Power Status: --

Battery Power Status: --

After selecting the UPS model, click Test to make sure selection is correct.

✓ Enable UPS support

To activate the UPS support, you can select this option. You can set the shutdown timer to turn off the system automatically after the system detects the AC power is abnormal. In general, the UPS can keep supplying the power for the system for about 5~10 minutes, depending on the maximum load of the UPS and the number of the loads connected to it.

UPS Model

Select the UPS model from the list. If the UPS model you are using is not available on the list, please contact our technical support.

IP Address of UPS

If you have selected APC UPS with SNMP for UPS model, enter the IP address of the UPS.

UPS

Enable UPS Support
The system will be shut down in minute(s) when the AC power status is abnormal.

UPS Model

IP Address of UPS . . .

UPS Model AC Power Status: --
Battery Power Status: --

After selecting the UPS model, click Test to make sure selection is correct.



Note: When UPS support is not enabled, the **Test** button will not function.

6.9.6 System Update



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

Before updating system firmware, please 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 same version as the firmware from QNAP website <http://www.qnap.com.tw/>. Read the release notes carefully to make sure you need to upgrade the firmware.

Step 2: Before upgrading system firmware, back up all disk data on the server to avoid any potential data loss during system update.

Step 3: Click the [Browse...] button to select the correct firmware image for system update. Click **Update System** 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.

– System Update

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

Current firmware version: 1.0.0 Build 1101

Before updating system firmware, please 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 same version as the firmware from QNAP website <http://www.qnap.com.tw/> Read the release notes carefully to make sure you need to upgrade the firmware.

Step 2: Before upgrading system firmware, back up all disk data on the server to avoid any potential data loss during system update.


Step 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.

TS-401T Turbo Server



English Change Password Administration Web File Manager



A reliable and high capacity network attached storage server

- Share your storage over Microsoft, Linux and Apple network.
- Protect your data via RAID technology and management.
- Easy administration through simple web interface.

Version 1.0.0 build 1004

Version 1.0.0 build 1004 (TS-401T firmware version)

6.9.7 Change Logo

You can choose a personal picture to display on the login page of TS-401T. The size of the picture cannot exceed 20K bytes.

Change Logo

Please select an image from the **To be displayed** pull-down menu. Then click **Apply** to confirm the change.







To upload your own image, click **Browse** to select the image. Then click **Upload** to upload the image.

To replace an image, select an appropriate image from the **To be replaced to** pull-down menu and click **Apply**.

Uploaded image:

To be replaced to:

To be displayed:

 Image 1	 Image 2	 Uploaded Image
 Image 3	 Image 4	 Current Logo Image

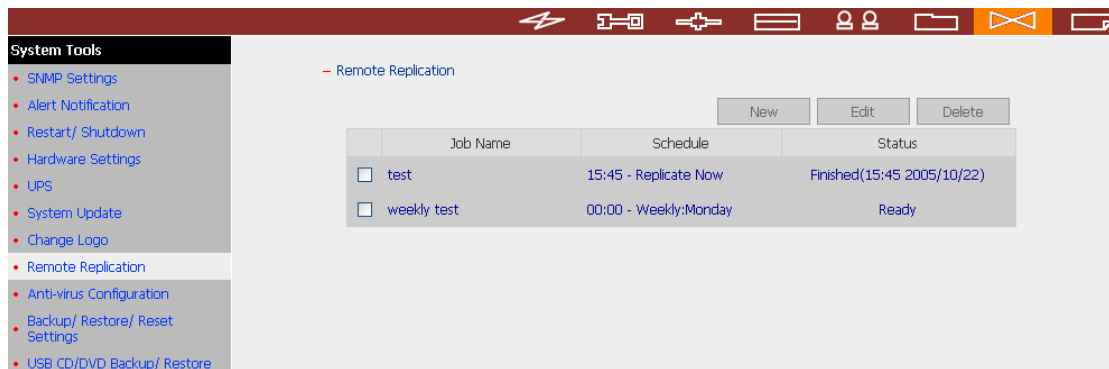
Note: For the best image effect, the recommended size for the image is 100 x 100 pixels.

6.9.8 Remote Replication

Remote Replication enables you to replicate local files to remote folders on another server. The files will be compressed before the replication process in order to save time for data transfer. **Make sure a network share is created before creating a remote replication job.**

Using Remote Replication

Login TS-401T, go to Remote Replication in System Tools.



i. **New**

- a. Click **New** to enter the following page.

– Remote Replication

	Job Name	Schedule	Status
<input type="checkbox"/>	test	15:45 - Replicate Now	Finished(15:45 2005/10/22)
<input type="checkbox"/>	weekly test	00:00 - Weekly:Monday	Ready

Buttons: **New** (circled in red), Edit, Delete

- b. Complete all settings and click OK to save or Cancel to quit.

Add a remote replication job

Job Name

Remote Destination

Remote Host Name / IP Address

Destination Path (Network Share/Directory) /

User Name

Password

Remote Host Testing (Status: --)

Local Source

Source Path (Network Share/Directory) (UU) /

Replicate Now

Replication Schedule Hour : Minute

Daily

Weekly

Monthly Day

Activate file compression

Stop network file services while replicating

Perform incremental replication

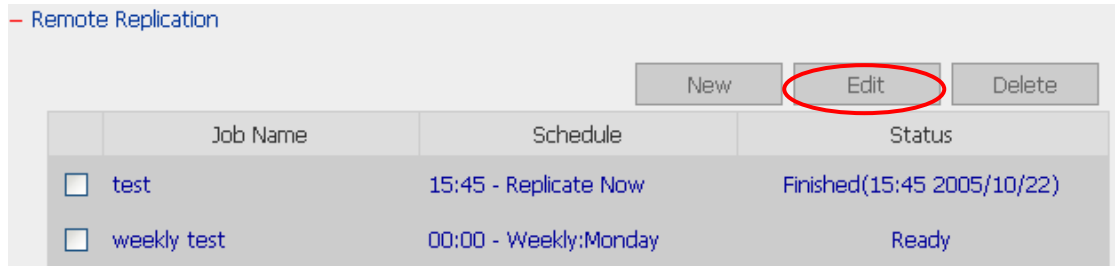
Delete extra files on remote destination



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.

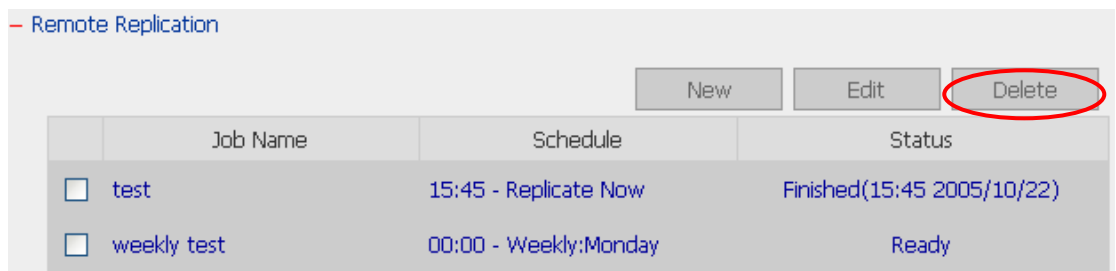
ii. Edit

- a. Select the job to be edited.
- b. Click **Edit**.
- c. Modify the settings.
- d. Click OK to save or **Cancel** to quit.



iii. Delete

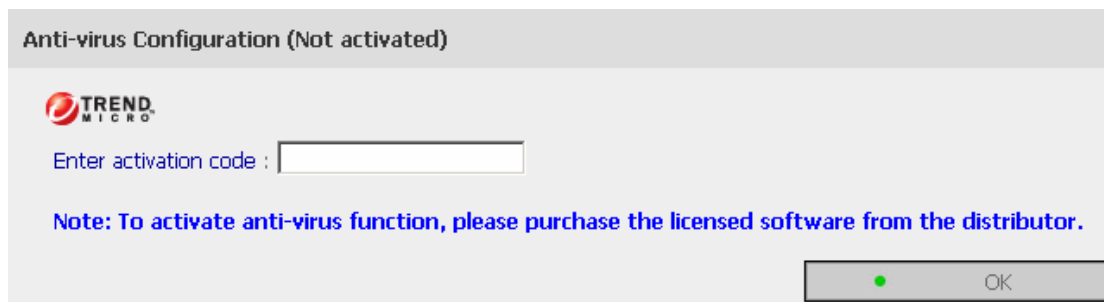
- a. Select the job to be deleted.
- b. Click **Delete**.




6.9.9 Anti-virus Configuration

TS-401T supports anti-virus mechanism which protects system against infection. You need to operate Windows NT or Windows 2000 server with virus-scanning software installed to perform real-time virus scanning. To enable anti virus support, make sure the **first disk is initialized** and **DNS settings are properly set**. Then go to Anti-virus Configuration page and enter activation code purchased from the distributor.

Enter activation code when the following screen appears.



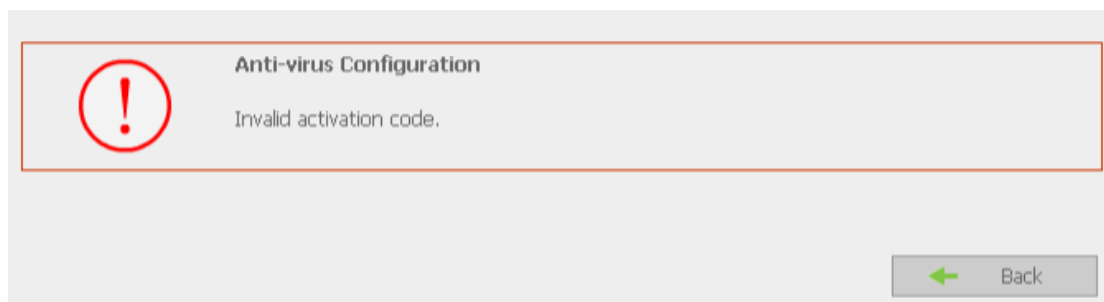
Anti-virus Configuration (Not activated)

 TREND
MICRO

Enter activation code :


Note: To activate anti-virus function, please purchase the licensed software from the distributor.

The following screen will appear if an invalid code is entered.



 Anti-virus Configuration

Invalid activation code.

 **Attention:**

Note that you may have a valid activation code entered but an unknown error notification is shown. In such case, please check the DNS settings of TS-401T. Make sure DNS settings are properly set for the server to register the activation code online.

The following screen will appear if a correct code is entered. You can view anti-virus information in the table at the bottom. As anti-virus function is not enabled, anti-virus status will be disabled. It is recommended to select Automatic Update when you enable anti-virus configuration.

– Anti-virus Configuration

Enable Anti-virus 

Automatic Update

Enter activation code

Update Virus Pattern File / Engine

When virus detected


- Clean virus; if failed, quarantine the infected file(s) .
- Quarantine infected file(s).
- Delete infected file(s).
- Log only. No action taken.

Note: Quarantined files will be saved in a system folder named "Quarantine".

Anti-virus Information	
Anti-virus Status	Disabled / Manual update
Scan Engine Version	7.510-1002
Virus Pattern File Version	2.795.00
Previous Update Time	12:04:00 08-23-2005
Previous Update Status	Update successful.
Activation Expiry Date	08-17-2007

The first time you activate anti-virus configuration, anti-virus status will be Start, Auto Update, or Downloading. The status should be Enabled, Auto update, or Ready to indicate anti-virus function is enabled successfully. You need to update web content manually to acquire the latest data, as shown below.

- Anti-virus Configuration

Enable Anti-virus 

Automatic Update

Enter activation code

Update Virus Pattern File / Engine

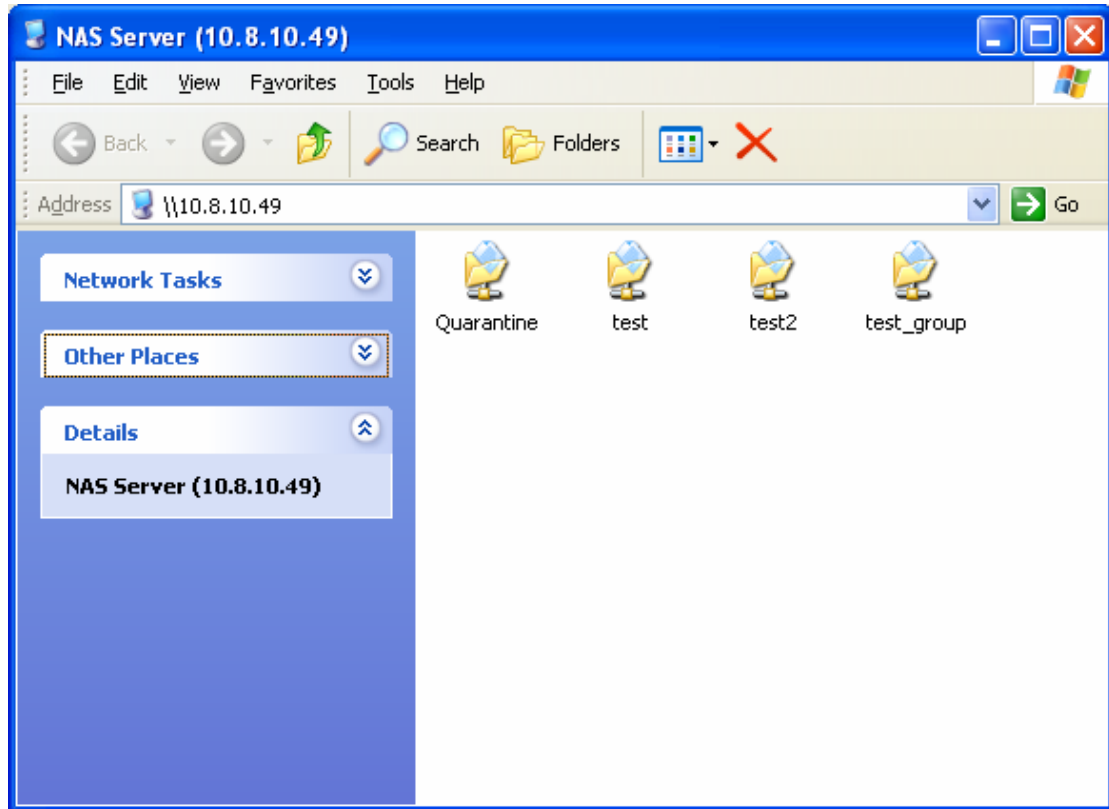
When virus detected

- Clean virus; if failed, quarantine the infected file(s) .
- Quarantine infected file(s).
- Delete infected file(s).
- Log only. No action taken.

Note: Quarantined files will be saved in a system folder named "Quarantine".

Anti-virus Information	
Anti-virus Status	Enabled / Auto update / Ready
Scan Engine Version	7.510-1002
Virus Pattern File Version	2.795.00
Previous Update Time	12:04:00 08-23-2005
Previous Update Status	Update successful.
Activation Expiry Date	08-17-2007

The first time anti-virus function is enabled, the system will create a folder "Quarantine" which saves all detected files infected with virus. This folder cannot be shown from Network Share Management, but can be viewed by Network Neighborhood or other file services.



Note: Quarantine folder cannot be deleted. When you enter a new activation code, quarantine folder will not be created if it has already existed.

You can select four actions to take when virus is detected:

When virus detected

- Clean virus; if failed, quarantine the infected file(s) .
- Quarantine infected file(s).
- Delete infected file(s).
- Log only. No action taken.

Note: Quarantined files will be saved in a system folder named "Quarantine".

- **Clean virus; if failed, quarantine the infected file(s)**
The system will try to clean the virus. If failed, the infected files will be isolated in Quarantine folder. Details will be recorded in Event Logs.
- **Quarantine infected file(s)**
When infected files are detected, they will be moved to Quarantine immediately. Details will be recorded in Event Logs.
- **Delete infected file(s)**
Infected files will be deleted immediately when they are detected. Details will be recorded in Event Logs.
- **Log only. No action taken.**
When infected files are detected, the system will only save the record in Event Logs.

Viewing Details of Infected Files

To view the details of infected files of the network share, go to Event Logs of Statistics & Logs. A warning message will be shown in the table.



The screenshot shows the 'Statistics & Logs' window with the 'Event Logs' section selected. A table of events is displayed, with one row highlighted in red. The table has columns for 'Type', 'Content', 'Date', and 'Time'. The highlighted row is a 'Warning' event with the following content: '/share/MD0_DATA/test/ecaccon2.zip is infected with "Eicar_test_file" virus. Action Taken: Quarantine OK.' The date is 11/03/2005 and the time is 19:37:06.

Type	Content	Date	Time
Information	Anti-virus started. Engine version: 7.510-1002; Pattern version: 2.925.00.	11/03/2005	21:24:00
Information	Anti-virus related files are stored in Disk 1.	11/03/2005	21:24:00
Information	Anti-virus stopped.	11/03/2005	21:24:43
Warning	/share/MD0_DATA/test/ecaccon2.zip is infected with "Eicar_test_file" virus. Action Taken: Quarantine OK.	11/03/2005	19:37:06
Information	Anti-virus started. Engine version: 7.510-1002; Pattern version: 2.925.00.	11/03/2005	19:50:01
Information	Anti-virus related files are stored in Disk 1.	11/03/2005	19:50:01
Information	Anti-virus stopped.	11/03/2005	19:43:45
Warning	/share/MD0_DATA/Quarantine/ecar.com is infected with "Eicar_test_file" virus. Action Taken: Quarantine OK.	11/03/2005	15:36:16
Warning	/share/MD0_DATA/Quarantine/ecar.com is infected with "Eicar_test_file" virus. Action Taken: Quarantine OK.	11/03/2005	15:36:16
Warning	/share/MD0_DATA/Quarantine/ecar.com is infected with "Eicar_test_file" virus. Action Taken: Quarantine OK.	11/03/2005	15:36:16

6.9.10 Backup/ Restore/ Reset Settings

To backup the setting(s), select the appropriate option(s) and click **Backup**. To restore a backup settings file, click **Browse** to select the file and click **Restore**. To reset the setting(s) to factory default(s), select the appropriate option and click **Reset**.

- Backup/Restore/Reset Settings

- To restore a backup settings file, click Browse to choose the backup settings file. Then click Restore.
- To back up the setting(s), select the appropriate option(s) and click Backup.
- To reset the setting(s) to factory default(s), select the appropriate option and click Reset.

User / User Group Settings
 Disk Configuration
 Share Volume Settings
 Hardware Settings
 System Settings
 Network Configuration
 All Settings

6.9.11 USB CD/ DVD Backup/ Restore

USB Backup/Restore function enables you to back up local data to CD/DVD discs via USB CD/DVD burner, and CD/DVD data to local disk.

Using USB Backup/Restore

USB CD/DVD Backup/ Restore

Device: No device detect
Media Type: No media detect
Maximum Write Speed:
Status: **No Disc**

Write Data

Volume Label:
Source Path (Network Share/ Directory): test /
Write Speed: 1x

Status: Idling

Load Data

CD Label
Destination Path (Network Share/ Directory): test /
 Overwrite existing files
 Skip existing files

Status: Idling

i. **USB CD/DVD Detection**

- a. Connect USB burner to TS-401T. Turn on the burner and input a writable disc.
- b. Click **Re-detect**. The system will display information of the detected burner.



- c. Click **Eject Disc** to eject the disc from the burner.
- d. Insert the disc again and click **Re-detect** and continue to use writing and loading functions.

ii. **Write data**

- a. To write data from TS-401T to disc, enter the volume label name.
- b. In Source Path (Network Share/Directory), select a network share from the drop-down menu and enter a directory name. You can also use stroke to indicate multiple directories, e.g. sales/jenny.

Write Data

Volume Label:

Source Path (Network Share/ Directory): /

Write Speed:

Status: Idling

- c. Select Write Speed.
- d. Click **Write to disc** to write data to the disc. To view updated writing status, click Refresh.

Write Data

Volume Label:

Source Path (Network Share/ Directory): /

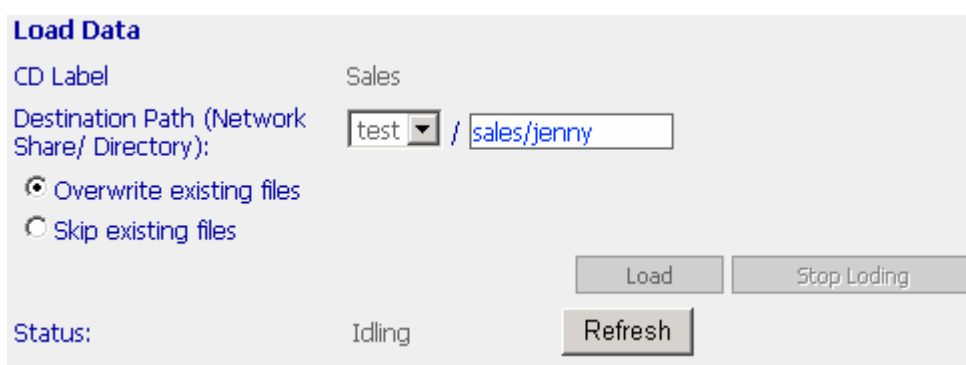
Write Speed:

Status: 11.32%

- e. The disc will be ejected after burning.

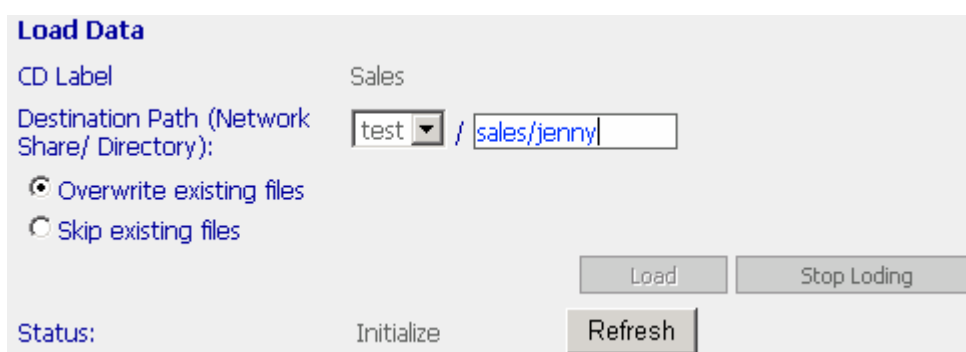
iii. Load data

- a. Insert the disc for loading data to TS-401T network share. The volume label is shown in CD Label.
- b. In Destination Path (Network Share/Directory), select a network share from the drop-down menu and enter a directory name. You can also use stroke to indicate multiple directories, e.g. sales/jenny.
- c. Select **Overwrite existing files** to overwrite existing files in the directory or **Skip existing files** to skip loading files that have existed in the directory during loading process.



The screenshot shows the 'Load Data' window. The 'CD Label' is 'Sales'. The 'Destination Path (Network Share/ Directory):' is 'test / sales/jenny'. The 'Overwrite existing files' radio button is selected. The 'Load' button is active, and the 'Stop Loading' button is disabled. The 'Status:' is 'Idling' and the 'Refresh' button is active.

- d. Click **Load** to load data to destination path.



The screenshot shows the 'Load Data' window after clicking 'Load'. The 'CD Label' is 'Sales'. The 'Destination Path (Network Share/ Directory):' is 'test / sales/jenny'. The 'Overwrite existing files' radio button is selected. The 'Load' button is disabled, and the 'Stop Loading' button is active. The 'Status:' is 'Initialize' and the 'Refresh' button is active.

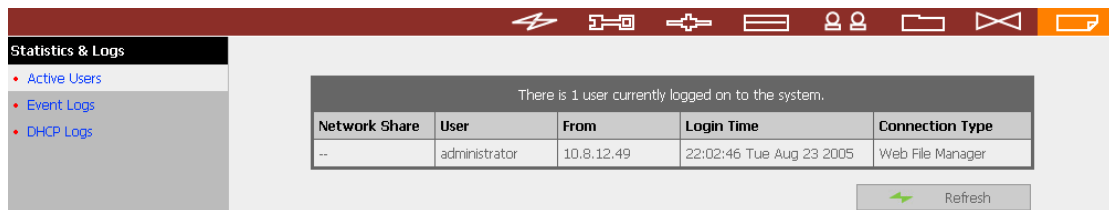
- e. The disc will be ejected after loading.

6.10 Statistics & Logs

You can view the event logs of all currently online users on TS-401T for system monitoring.

6.10.1 Active Users

This page shows all users that are currently logged on to Web File Manager.

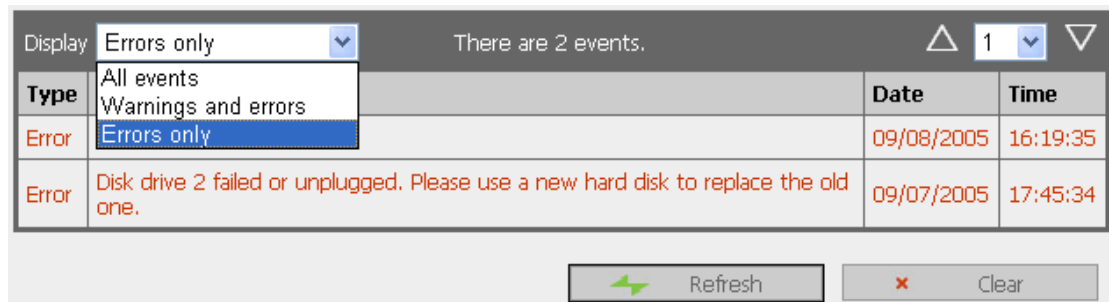


Network Share	User	From	Login Time	Connection Type
--	administrator	10.8.12.49	22:02:46 Tue Aug 23 2005	Web File Manager

Refresh

6.10.2 Event Logs

TS-401T can store thousands of recent event logs, including warning, error and information messages. In case of system malfunction, event logs can be retrieved to analyze system problems.



Type	Date	Time
Error	09/08/2005	16:19:35
Error	09/07/2005	17:45:34

Refresh Clear

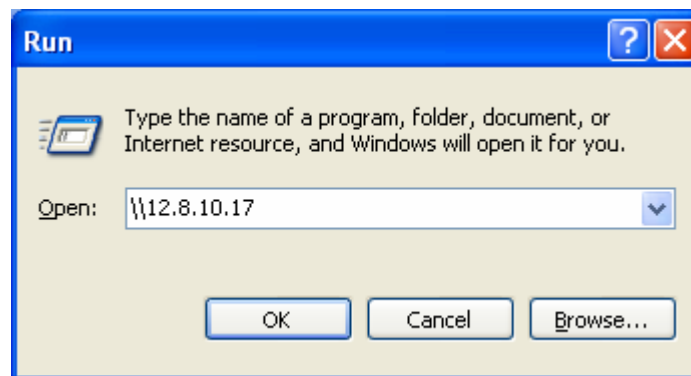
6.10.3 DHCP Logs

When DHCP service is enabled, you can refer to DHCP logs to monitor all assigned dynamic addresses, client MAC addresses and other information.

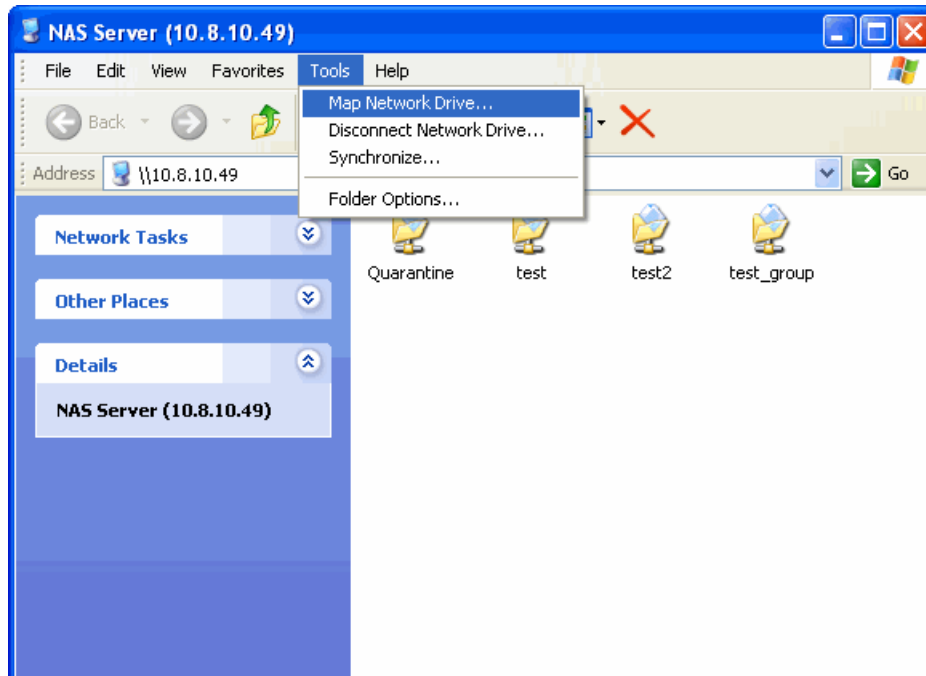
Chapter 7 Access TS-401T

7.1 By Microsoft Windows

1. You can access TS-401T in Windows OS by the following ways:
 - a. By Quick Install Wizard. For further information, please refer to Chapter 4.
 - b. You may also search for TS-401T within the Network Neighborhood. Locate the workgroup and find the name of your TS-401T. When the server is found, double-click on the server name to connect.
 - c. You may also use "Search for Computers" function to look for your TS-401T in Windows. Under Windows OS, please follow these steps:
 - i. Open "My Network Places".
 - ii. Under the tool bar, click **Search**.
 - iii. Enter the name of TS-401T in Computer Name field.
 - iv. Click **Search**.When TS-401T is found, double click the item to access the server.
 - d. Use Run function in Windows. Type \\[server name] or \\[server IP] to access share folder on TS-401T.



2. Once the connection to TS-401T is successful, all listing on your available network share will be displayed. Use the option **Map Network Drive** to map the folder(s) as your network drive.

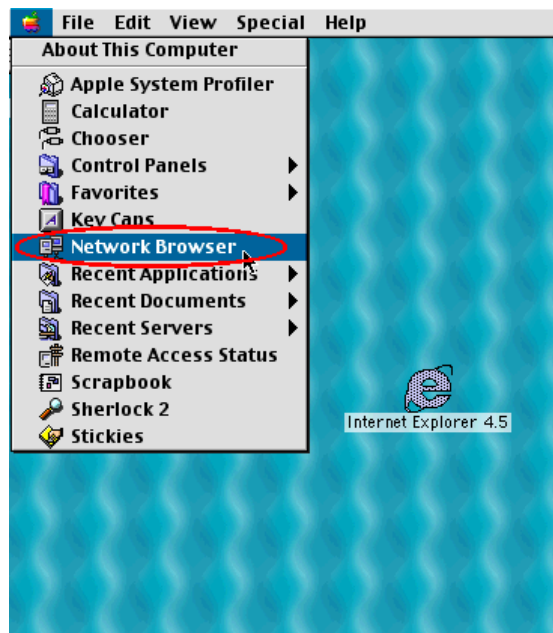


7.2 By Apple MAC OS

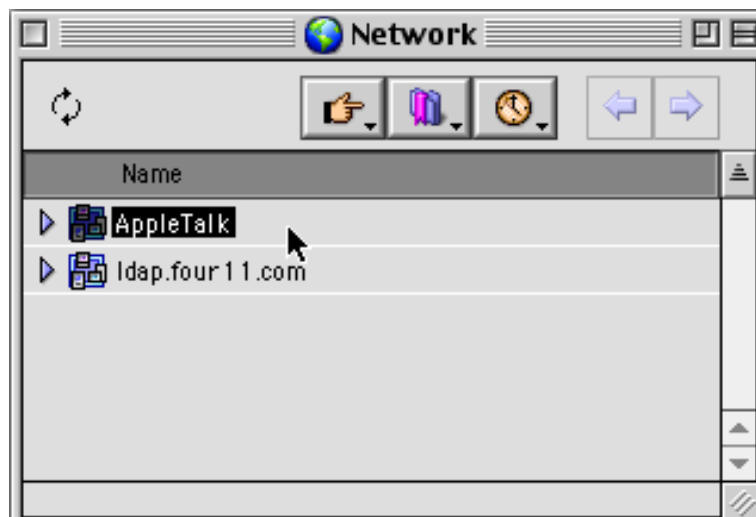
If you are an Apple MAC user, you can access TS-401T by the following ways:

1. Using Network Browser

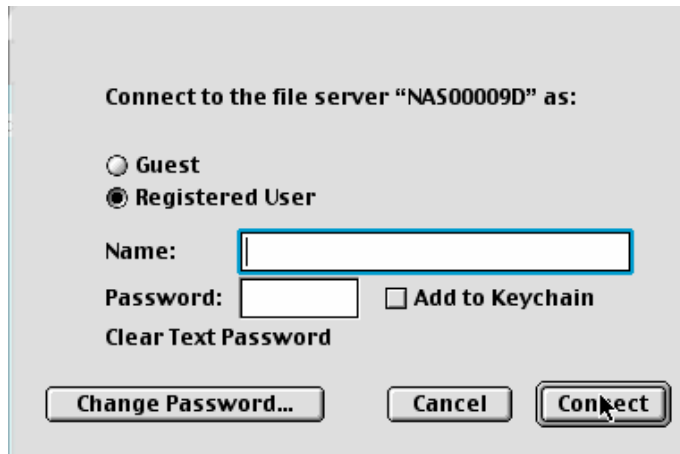
- a. Choose "Network Browser" in Apple menu.



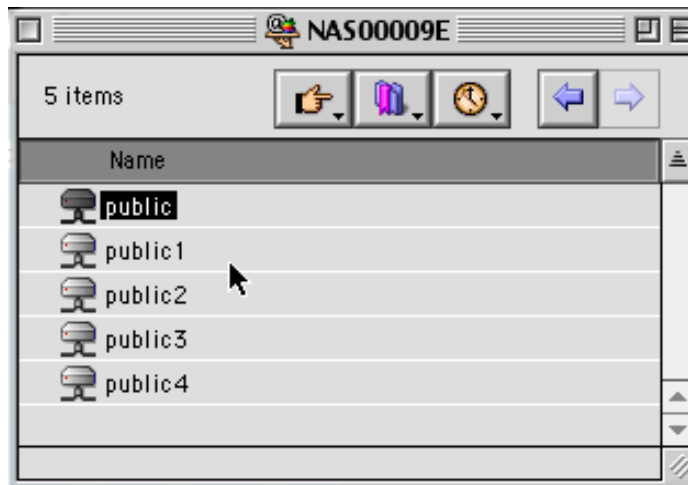
- b. In "Network Browser", choose AppleTalk. A list of computers on the AppleTalk network will appear. Select TS-401T.



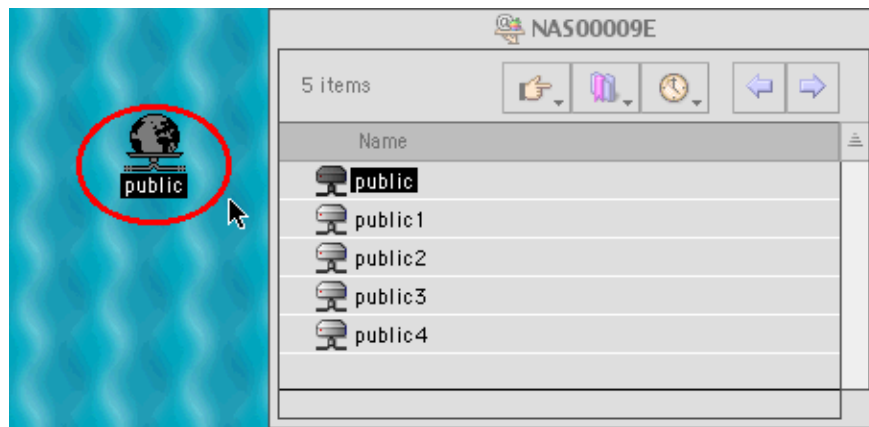
- c. Enter the login name and password, or use "Guest" to enter. Click **Connect**.



- d. When TS-401T is connected, all network shares will be shown.

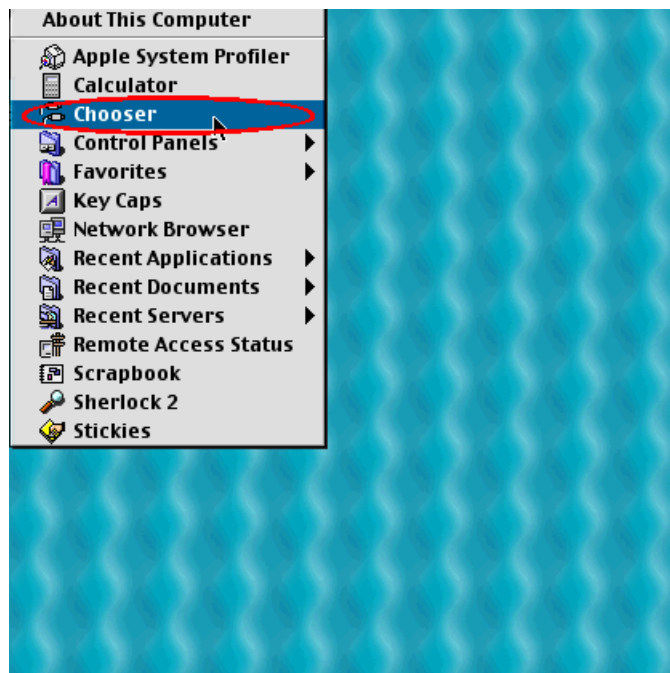


- e. Choose a network share to connect. The network share will appear on the desktop.

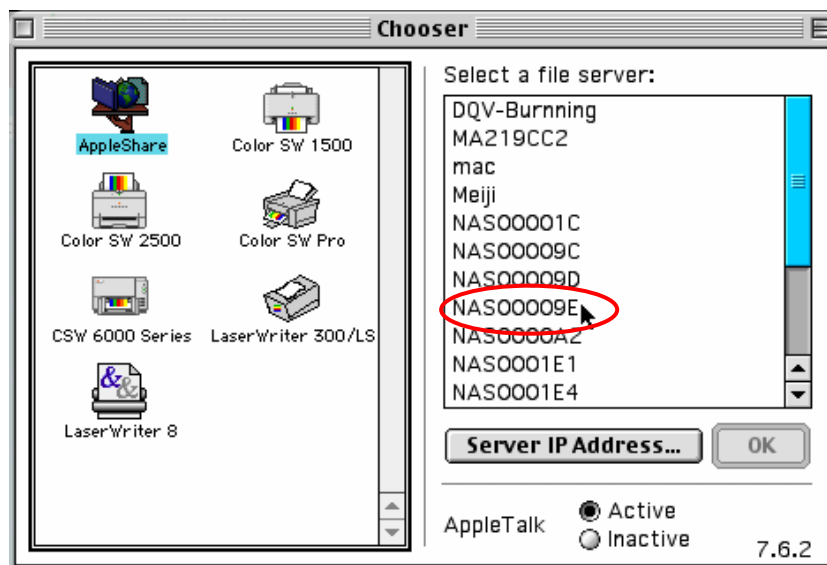


2. Using Chooser

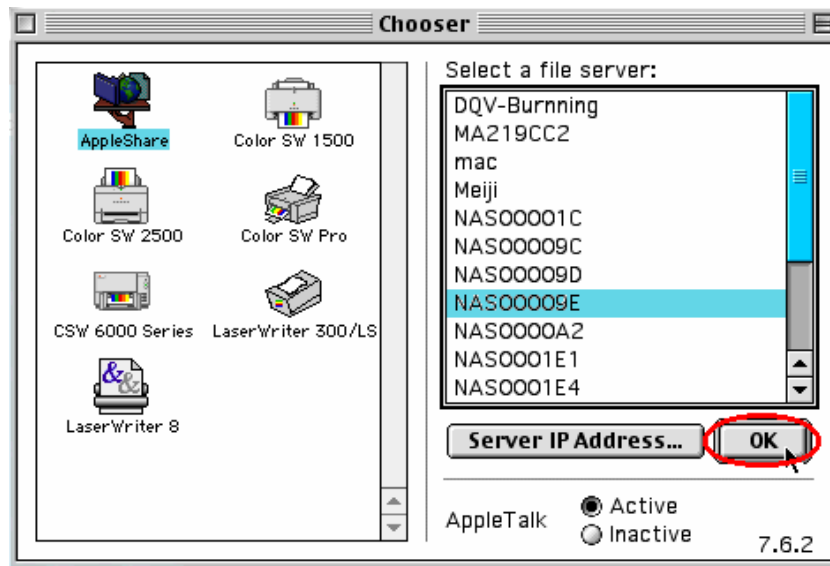
- a. Select **Chooser** on Apple menu bar.



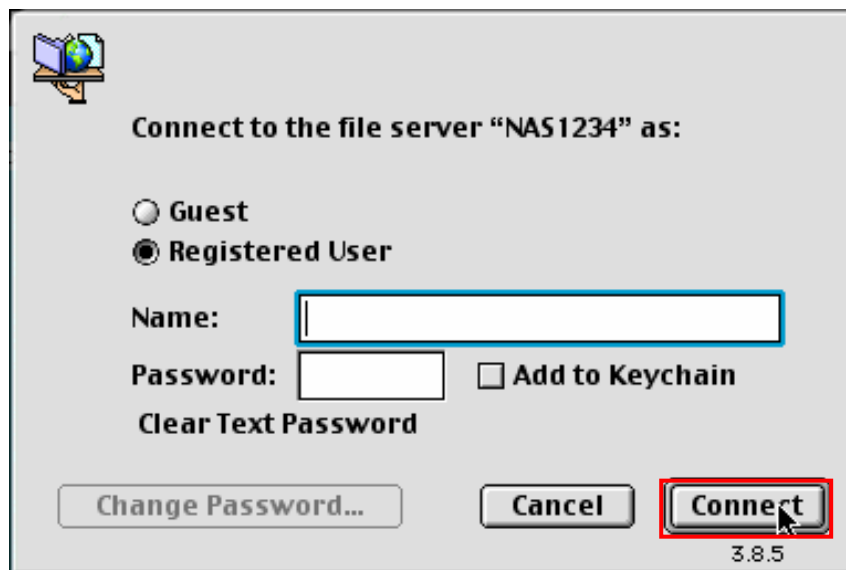
- b. Click on **AppleShare**. The name of TS-401T will appear on the right side of the window.



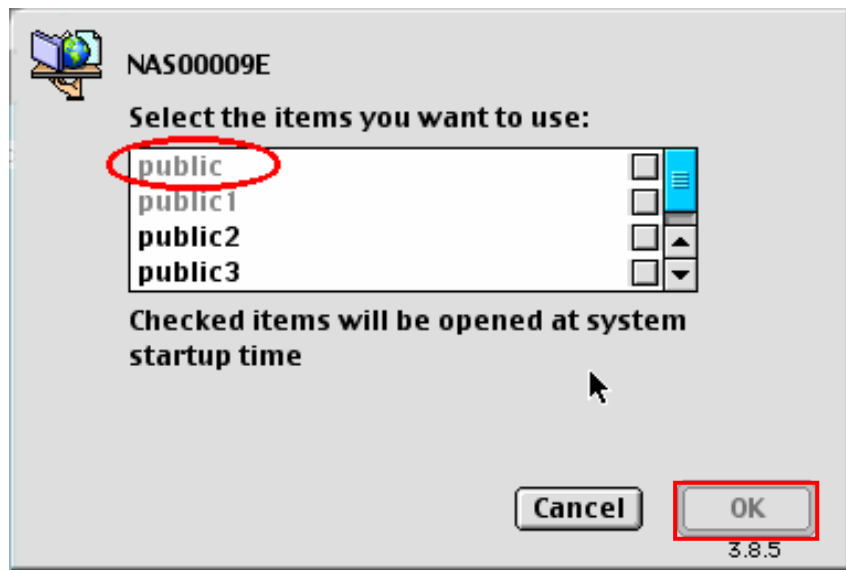
- c. Use the mouse to highlight TS-401T and click OK.



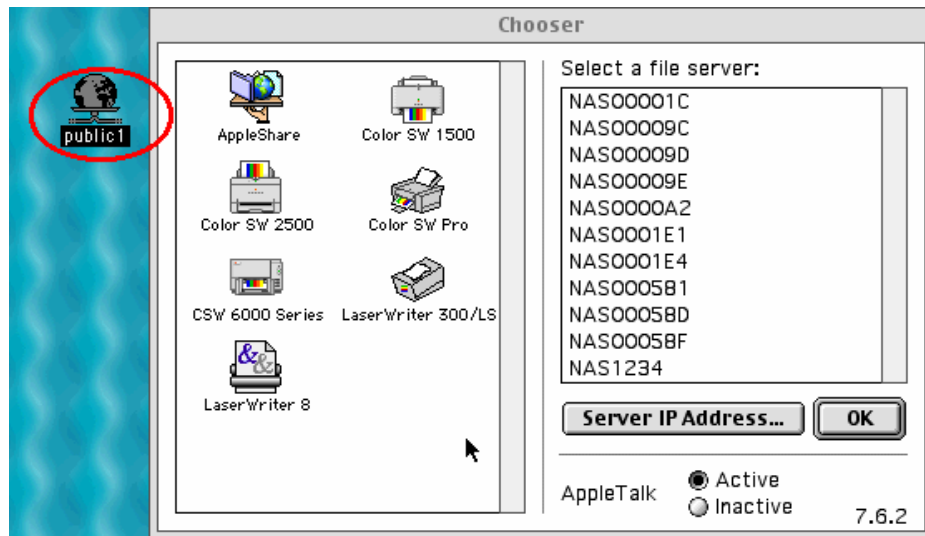
- d. Enter the correct login name and password or use "Guest" to login, and then click **Connect**.



- e. All available network shares will be listed. Select a network share and click OK.



- f. Close the Chooser program. Double click on the icon on the desktop to access the files.



7.3 By Linux OS

In addition to Microsoft and MAC OS, TS-401T also supports Linux systems through the NFS service:

1. On Linux, run the following command:

```
mount -t nfs <TS-401T IP address>: /<Network Share Name>  
<Directory to Mount>
```

For example, if the IP address of your TS-401T 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 "root" user to initiate the above command.

2. Login as the user id you define, you can use the mounted directory to access your network share files.

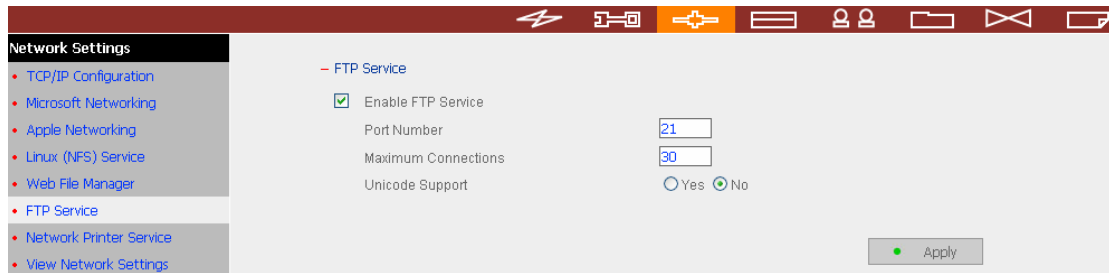
7.4 By Web Browser

Other than OS support, your TS-401T also provides a convenient web file management interface that allows using a standard web browser to access your data. If you link TS-401T to the Internet and use a public IP address, you can access the files on the server anywhere. For more information, please refer to Appendix A.

7.5 By File Transfer Protocol (FTP)

In addition to working with multiple operating systems, TS-401T also supports connection via FTP. Enter the correct user name and password to connect the server or access the public share folders as guest.

Please go to **Network Settings—FTP service** and enable FTP service before using FTP service.



Follow the steps below to use FTP service:

1. Open an IE browser and type ftp://[server IP] or ftp://[server name]. OR
2. By Web File Manager of TS-401T.
 - a. Go the TS-401T administration and click Web File Manager. Enter user name and password to login TS-401T.



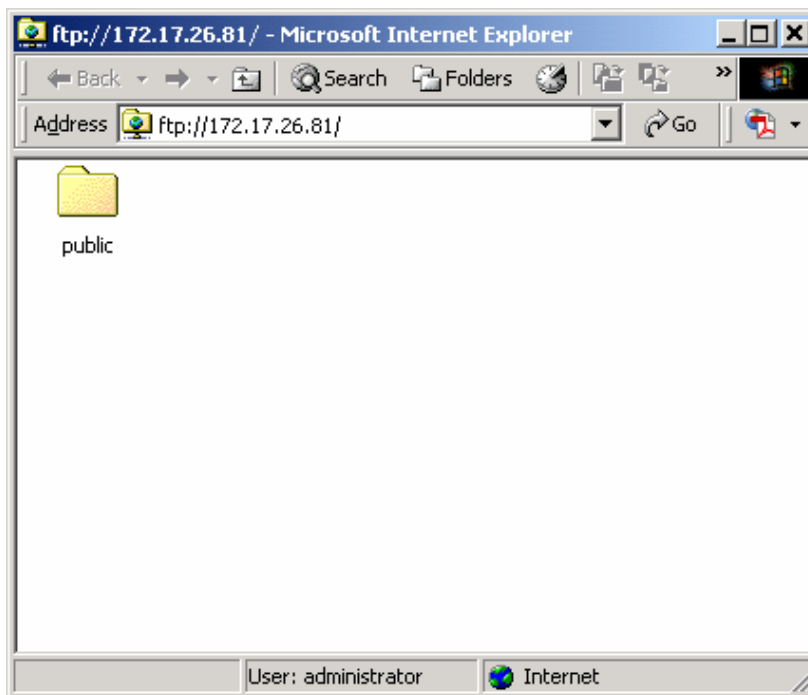
b. Click the share folder in **FTP** section.



c. When the ftp folder is shown, enter user name and password.



- d. The share folder will be shown. You can then manage the folder by dragging and dropping files to it, as well as rename or delete the files.



Chapter 8 NetBak Replicator

NetBak Replicator is a powerful program installed in user's system (Windows OS only) for data backup. You can back up any files or folders on local PC to specified share folder on TS-401T by LAN or WAN.

Main Functions

1. Backup

- Instant Backup

You can select files and folders on local PC and back up files to specified network share folder on TS-401T immediately.

- File Filter

You can select particular file types to be excluded from backup. The system will filter all files belonging to these file types when backing up data.

- Schedule

You can specify a schedule for backing up data with this option, e.g. 12:00 every day or 05:00 every Saturday.

- Monitor

When this option is enabled, the system will upload all files or folders to the server instantly for backup when the files or folders are modified.

2. Restore

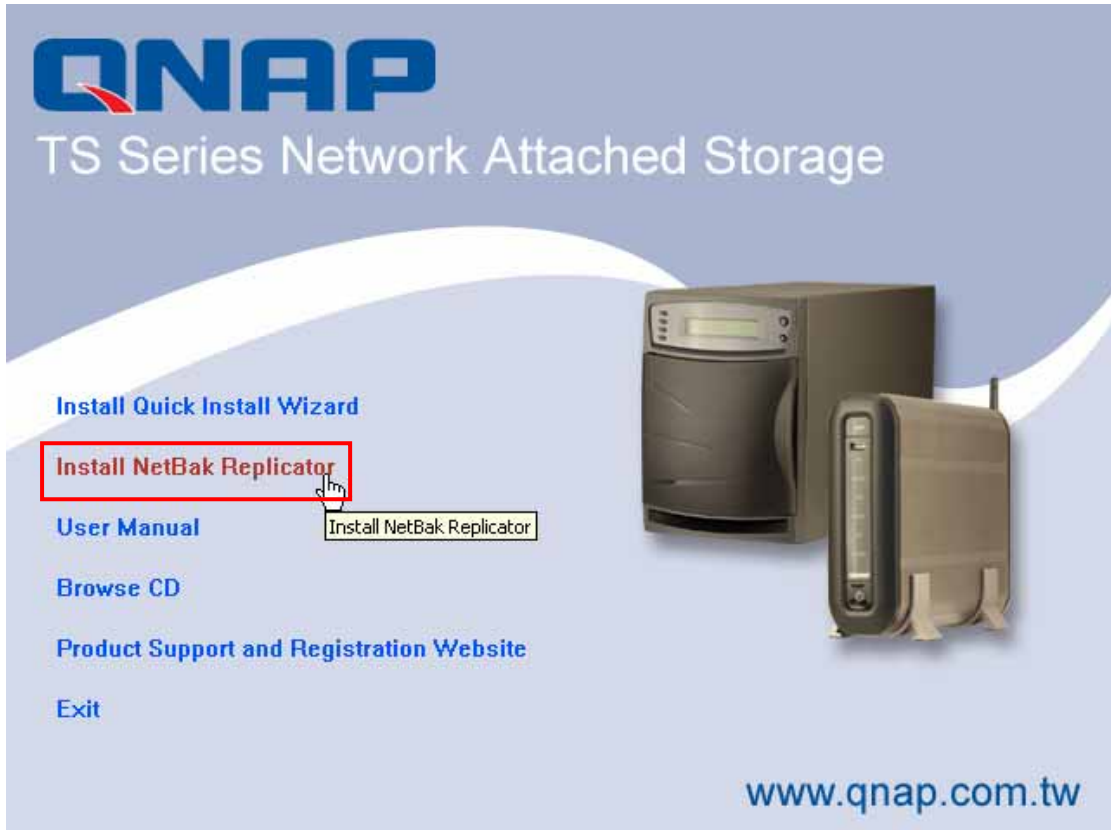
Select this option to restore backed up data to the original location of the file or to a new directory.

3. Log

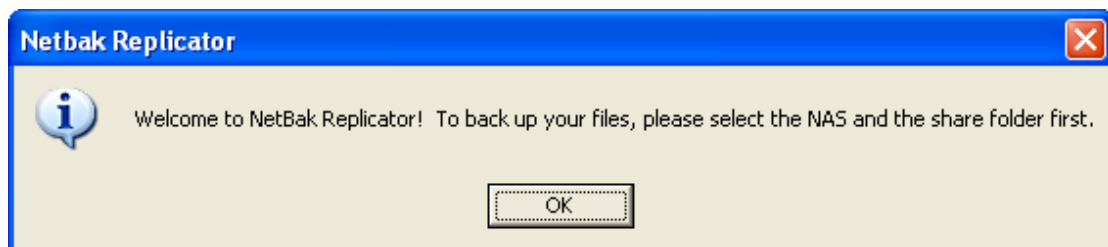
Enable this option to record events of NetBak Replicator, e.g. the time when NetBak Replicator starts and terminates, Restore and Monitor, backup time and original location of all files, etc.

Installing NetBak Replicator

1. Run **Install NetBak Replicator** in the CD-ROM.



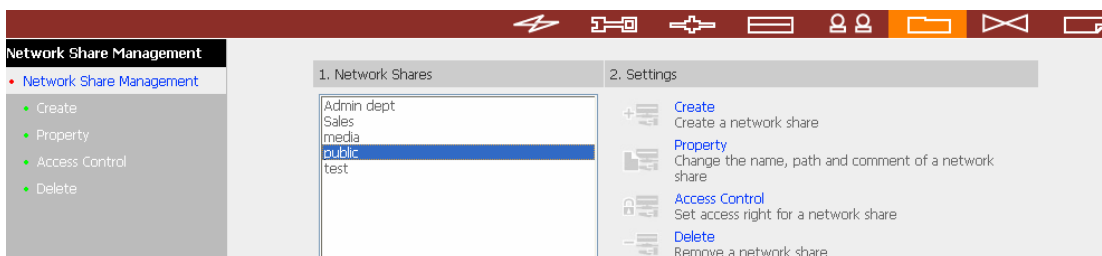
2. Follow the steps to install NetBak Replicator.
3. Click **OK** when the following message appears. You can start to use NetBak Replicator immediately.




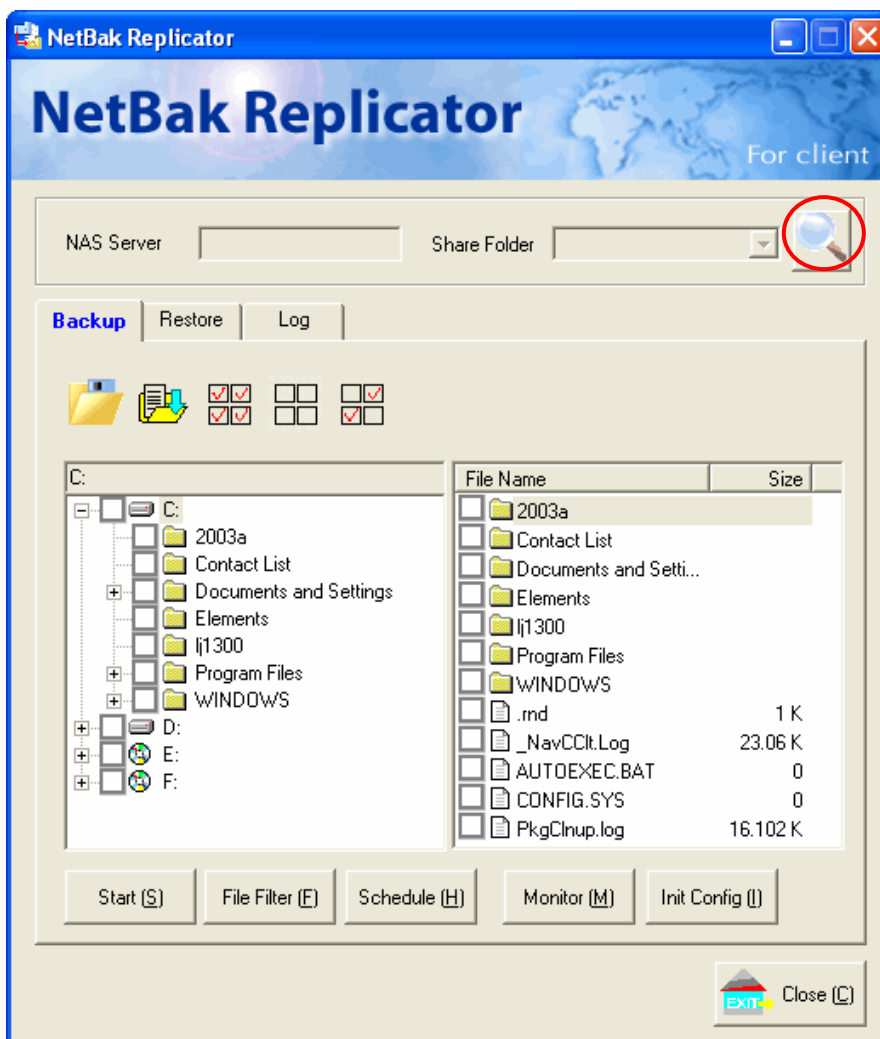
Upon successful installation, a shortcut icon  will be shown on the Desktop.

Using NetBak Replicator

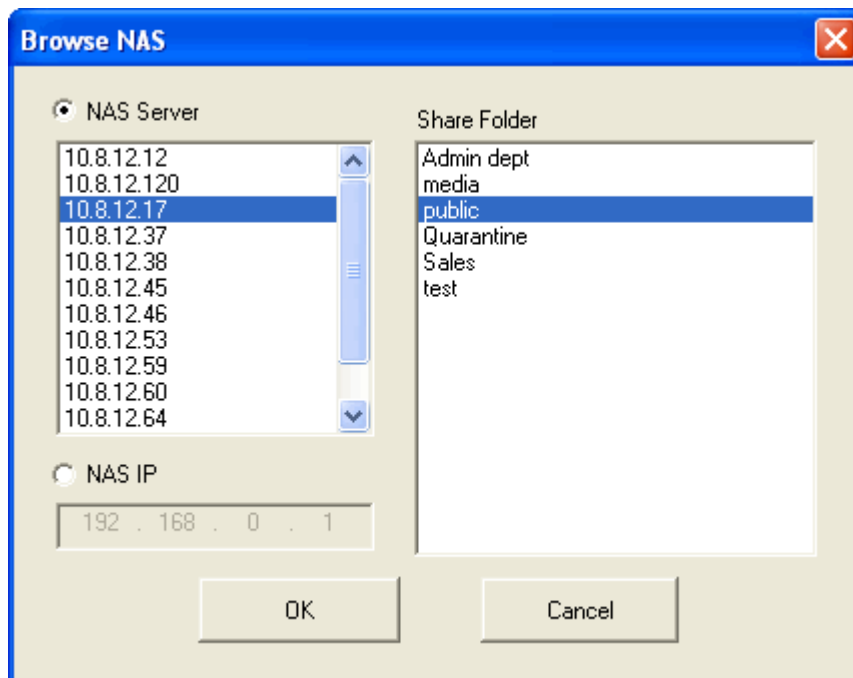
1. Before using NetBak Replicator, please login TS-401T administration and go to **Network Share Management** to create a share folder for backup.



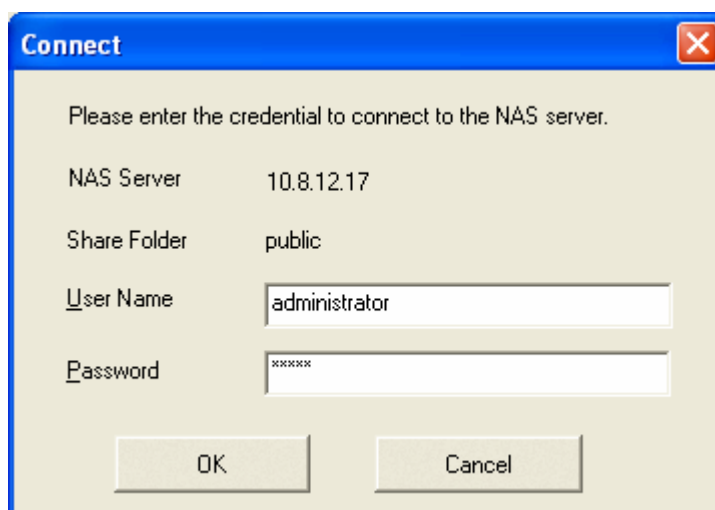
2. Run NetBak Replicator. Click . All TS-401T and their share folders within the network will be displayed.










- When the following window appears, TS-401T connected to the LAN will appear on the left list. Select a server and a share folder on the right. NetBak Replicator also supports backup via WAN, you can enter the IP address of TS-401T for data backup directly and select a share folder. Then click **OK**.



- Enter the user name and password to login the server.



Description of Buttons on NetBak Replicator

	Open Configuration: Open a previously saved NetBak Replicator configuration.
	Save Configuration: Save the settings on NetBak Replicator. The file will be named as *.rpr
	Select All: Select all folders. The column on the left shows all available folders and the right column shows the files in the folders.
	Clear All: Clear selection of all folders.
	Select My Document: Select all folders in My Document.
	Close: When clicking this button, NetBak Replicator window will minimize and an icon  will be displayed in system tray. To restore or exit the program, right click the icon and select Restore or Exit.

5. You can start the backup procedure upon successful connection to the TS-401T.

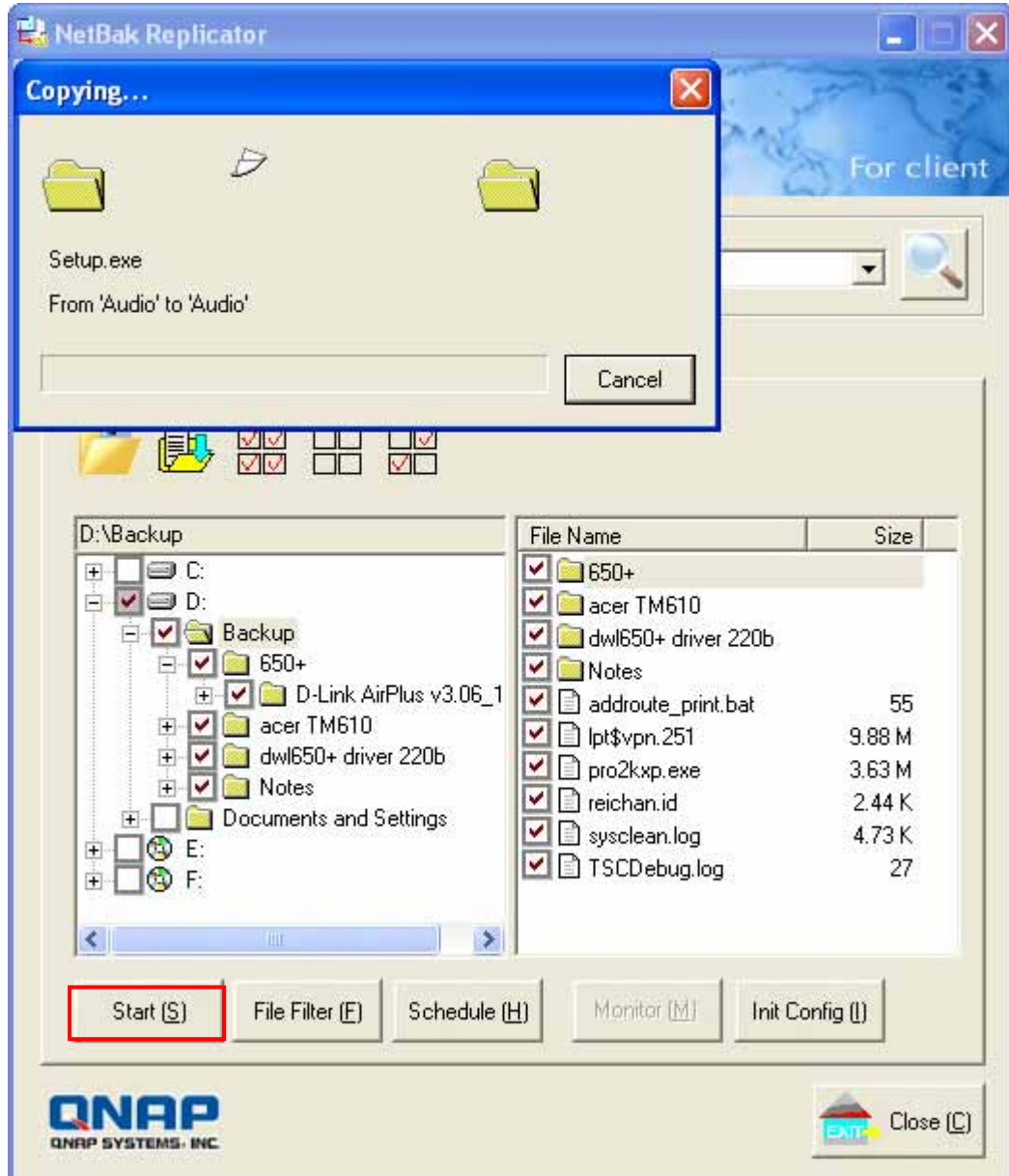
- **Backup**

Select files and folders for backup.



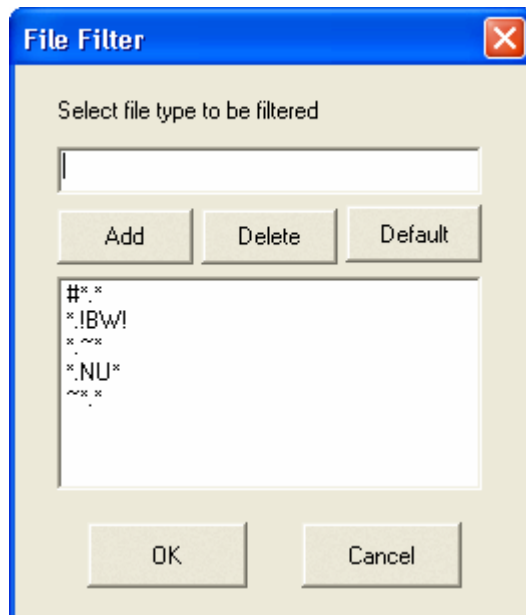
✓ Start

When you have selected the files for backup to TS-401T, click **Start** on NetBak Replicator. The program will start to copy the selected files to the specified share folder on TS-401T.



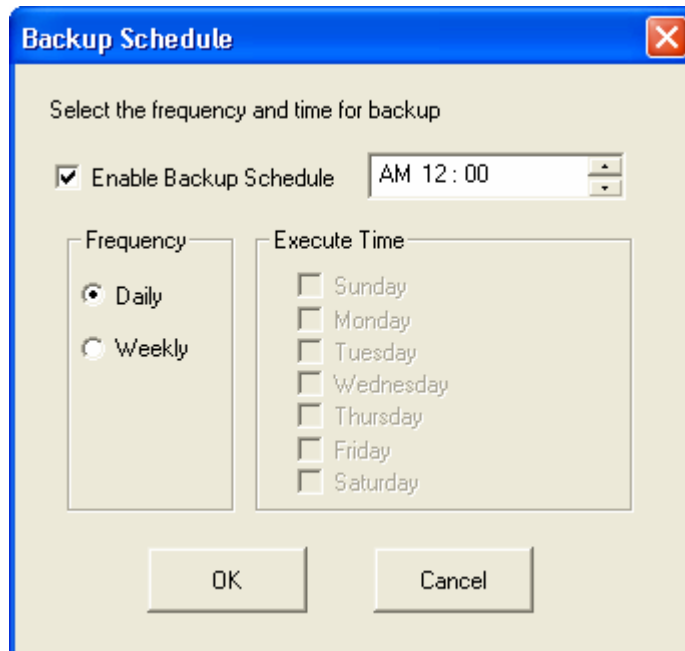
✓ File Filter

Click **File Filter** on NetBak Replicator main page to select file format to be skipped from backup. Then click **OK**.




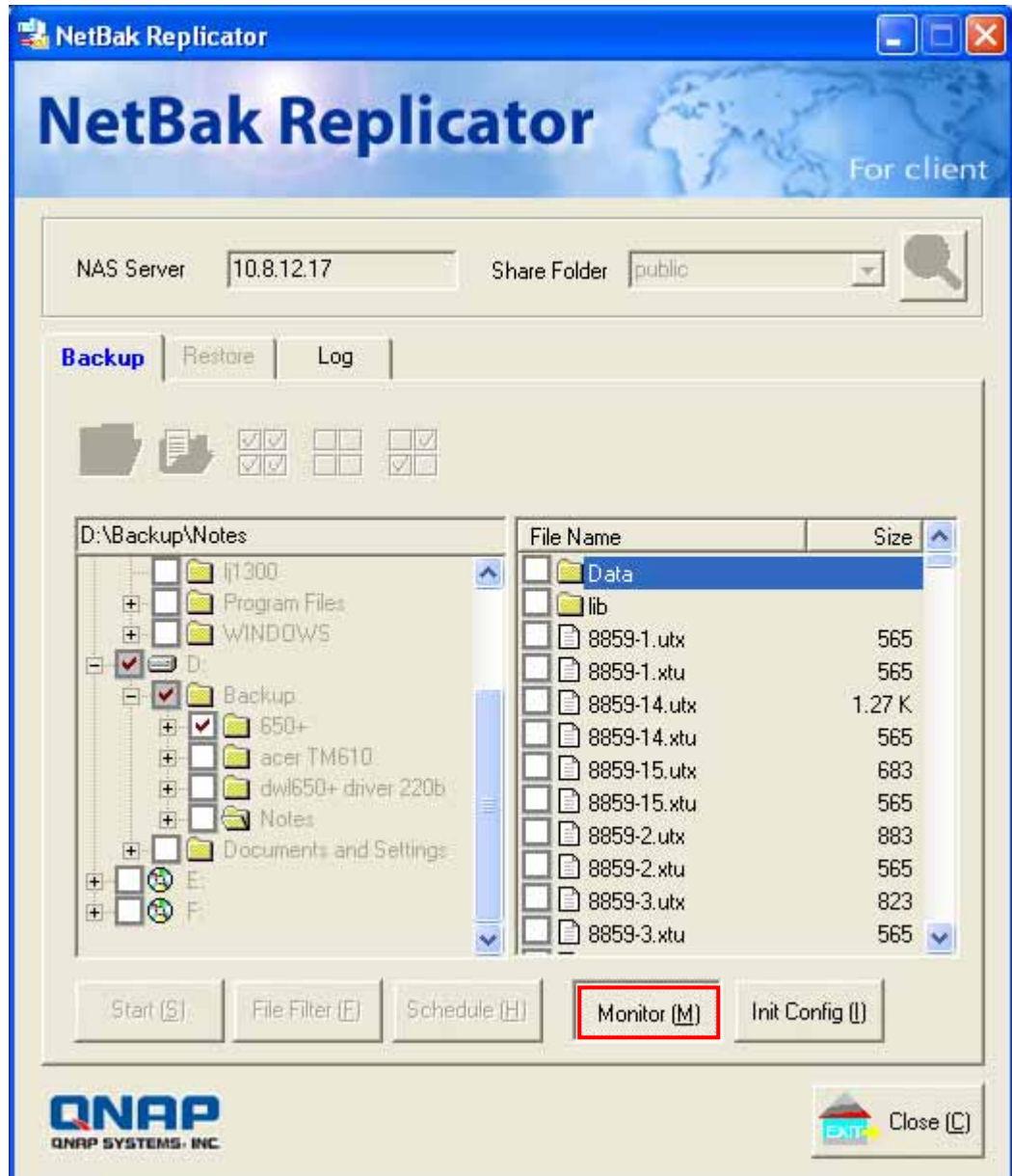
✓ Schedule

Click **Schedule** on NetBak Replicator main page. Then check the box "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, the system will upload all files or folders to the server instantly for backup when the files or folders are modified. Other files will be gray and cannot be selected. Click **Monitor** again to cancel monitoring. An icon  will appear on task bar of Windows® when monitoring is in process.




✓ Initialize Configuration

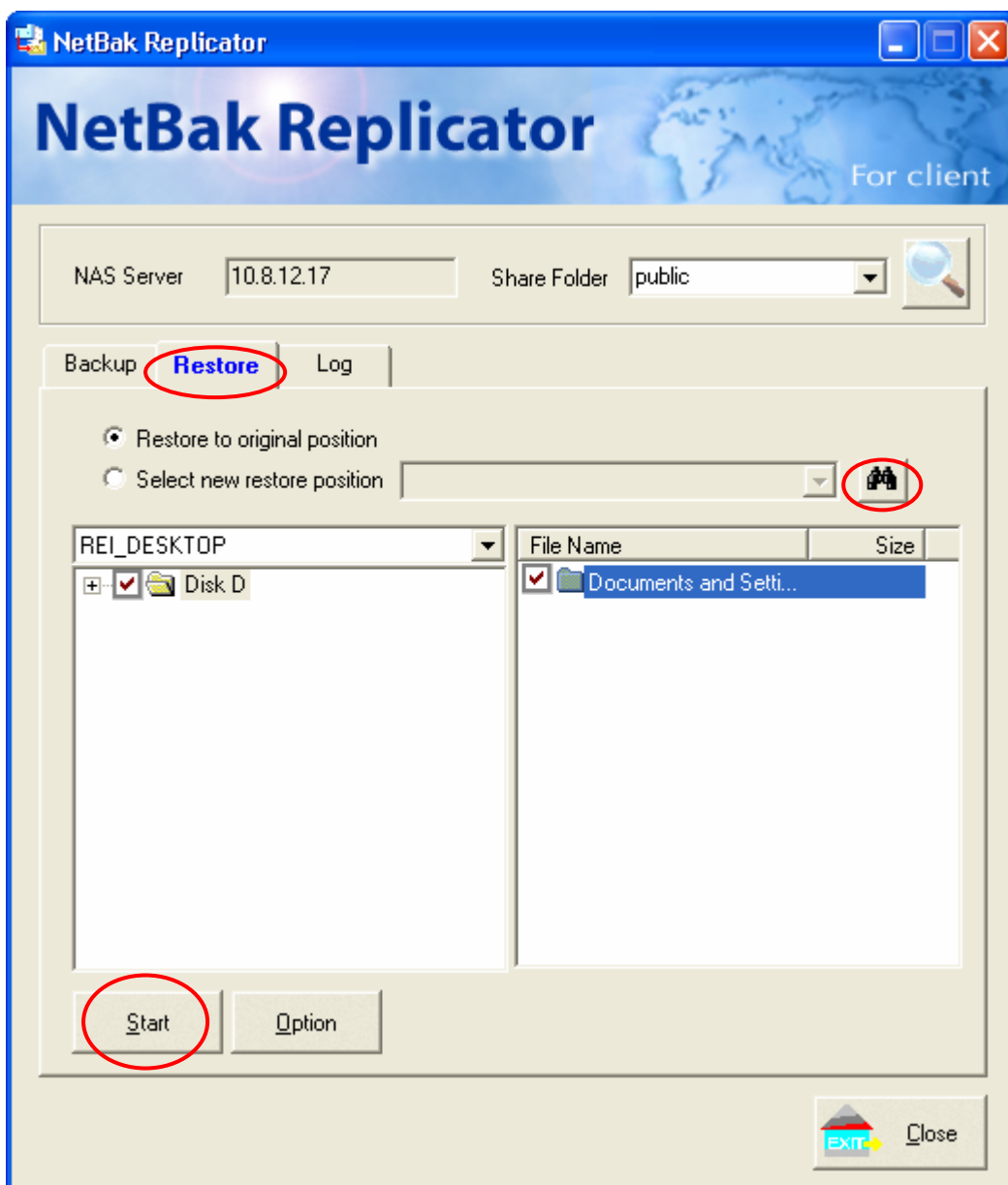
When using this function, NetBak Replicator will record all current settings of the user, including whether or not monitor function is enabled. When the user login again, this program will load the previous recorded settings for users to manage data backup.



- **Restore**

Please follow the steps below to restore files from TS-401T to your PC.

- a. Restore to original position: Select the location that the data will be restored to.
- b. Select new restore position: Click  to select the directory to restore data to or select a previously chosen location from the drop-down menu.
- c. Select the folder(s) and sub-folder(s) for restoring data on the right list and click **Start**.



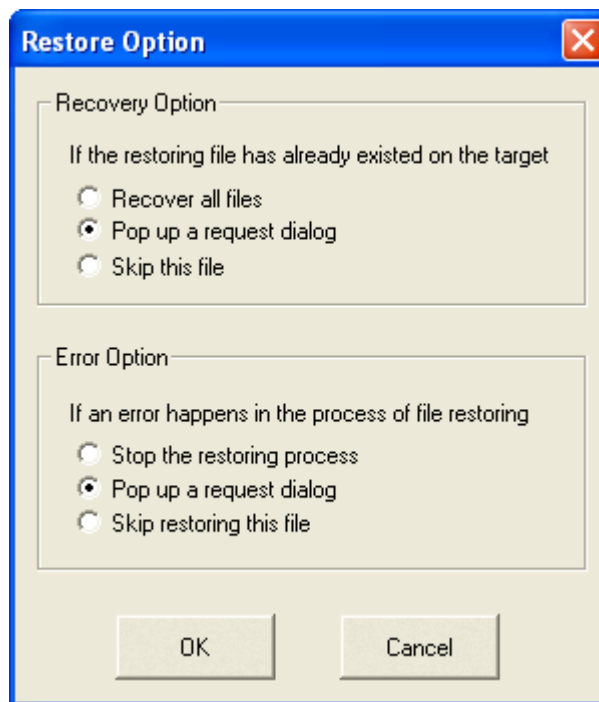
d. Option: Select recovery option and error option.

If the restoring file has already existed on the target folder, you can select to:

- ✓ Recover all files
- ✓ Pop up a request dialog
- ✓ Skip this file

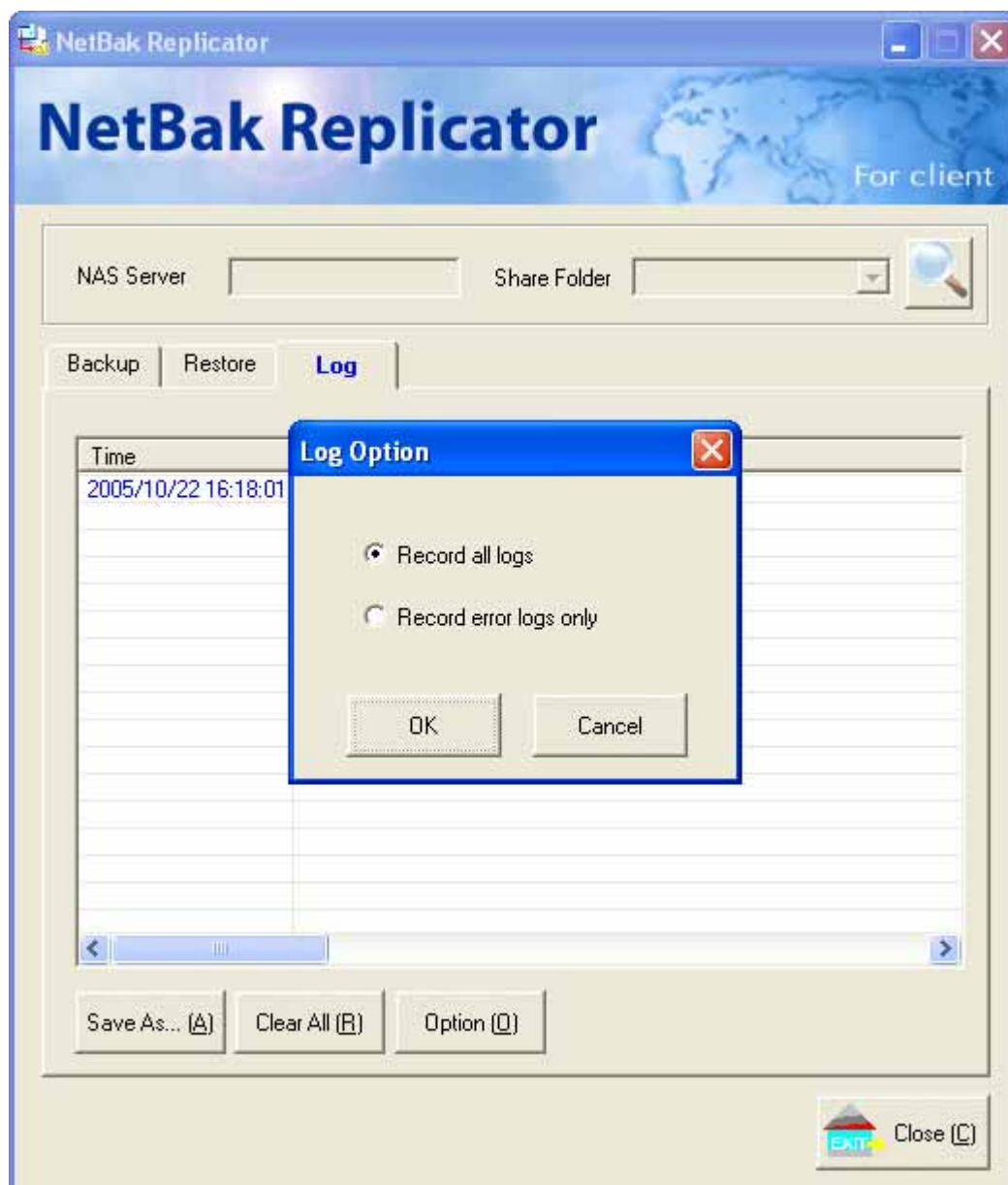
If an error happens in the process of file restoring, you can select to:

- ✓ Stop the restoring process
- ✓ Pop up a request dialog
- ✓ Skip restoring this file



- **Log**

- a. **Save As...:** To save all logs on NetBak Replicator, click this button. All logs will be saved as text file.
- b. **Clear All:** Click this button to clear all logs.
- c. **Option:** Select the type of logs to be recorded— “Record all logs” or “Record error logs only”.



Chapter 9 TS-401T Maintenance

TS-401T is specially designed to run 24x7 and be ready at all times against system crash caused by power outage. This section provides a general overview on system maintenance.

9.1 Restart/ Shut down Server

Follow the steps below to restart or shut down TS-401T.

1. Ask all active users of TS-401T to save their files and disconnect from the server.
2. Enter the administration page and select Restart/ Shutdown in System Tools.
3. Click **Restart** to reboot the server or **Shut Down** to turn off the server. You can perform these actions by the LCD panel.



9.2 Reset Administrator Password and Network Settings

To reset the administrator password and network settings of TS-401T,

1. Press the reset button of TS-401T for a few seconds. A beep sound will be heard.
2. Login TS-401T with the default user name and password:

Default user name: **administrator**
Password: **admin**



Note: To reset the system by the reset button, the option "Enable configuration reset switch" in Hardware Settings must be activated.

Hardware Settings

- Enable LCD panel setting function
- Enable configuration reset switch
- Enable hard disk standby mode (if no access within 5 minutes)
- Enable buzzer

Power Supply Type Single

Apply

5.1 Disk Failure or Malfunction

When you encounter disk malfunction or failure, please do the following:

1. Record the malfunction status or error messages.
2. Stop using the failed TS-401T and turn off the server.
3. Contact customer service for technical support.



Note: Your TS-401T must be repaired by professional technicians, please do not try to repair the server yourself. Please back up any important files or folders to avoid potential data loss due to disk crash.

5.2 Power Outage or Abnormal Shutdown

In case of power outage or improper shutdown of TS-401T, the system will resume to the state before it is shut down. If your server does not function properly after restart, please do the following:

1. If the system configuration is lost, configure the system again.
2. In the event of abnormal operation of the server, contact customer service for technical support.

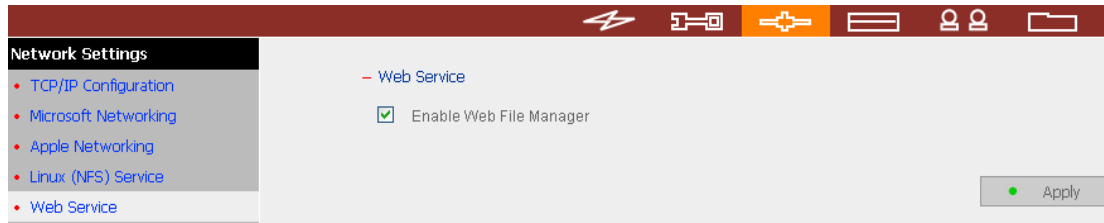
To avoid the above situations, please back up your data periodically and make sure you have done the following:

- Follow the instructions described in Chapter 9.1 to restart or shut down the server.
- If there is an anticipated power outage, back up all important data and turn off the server properly until power supply is resumed.

Appendix A Web File Manager

Using Web File Manager

To use Web File Manager, enable web service in Network Settings first.



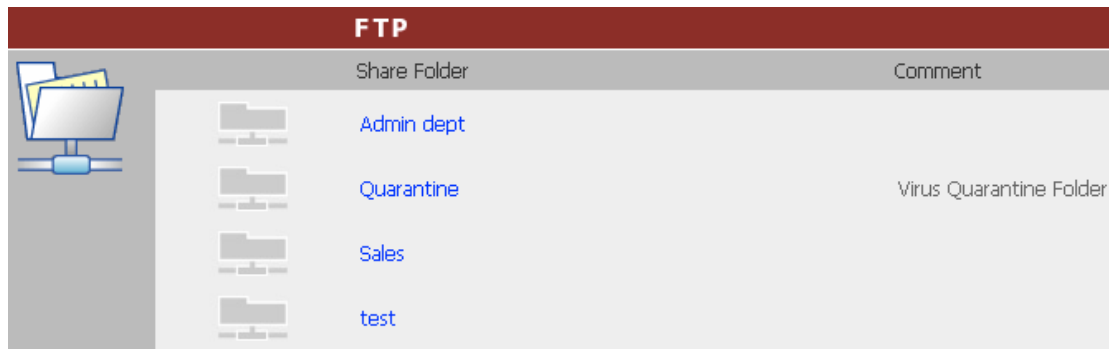
Launch the web browser and go to TS-401T home page. Select **Web File Manager** and enter the correct login name and password. You may also enter “guest” in the login name field with no password to access the network shares on TS-401T as an anonymous guest.



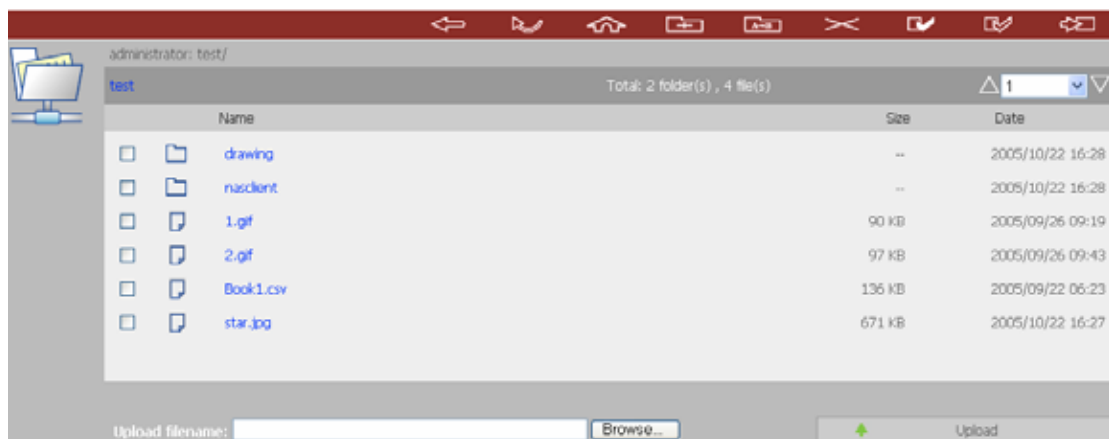
Note: Make sure a network share has been created before using Web File Manager.



Select an existing network share for management.




You can organize network share folders of TS-401T. With Web File Manager, you can upload, rename, or delete files and folders in the network shares.




View files online

Click on a file displayed on the web page. The information of the file will be displayed. If your browser does not support the file format, the download window pops up automatically. Once the file is downloaded, you can open it on your computer.


Create folder

- i. Select a network share or folder in which you want to create a new folder.
- ii. Click  (Create Folder) on the toolbar.
- 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) on the toolbar.
- iii. Enter the new file or folder name and 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.

To delete all files and folders, click  (Select All) and then  (Delete).


Upload file

- i. Open the folder to upload file to.
- ii. Click **Browse** to select the file.
- iii. Click **Upload**.

Download file

- i. Select a file to download.
- ii. Right click the mouse and select "Save Target As" to save the file.

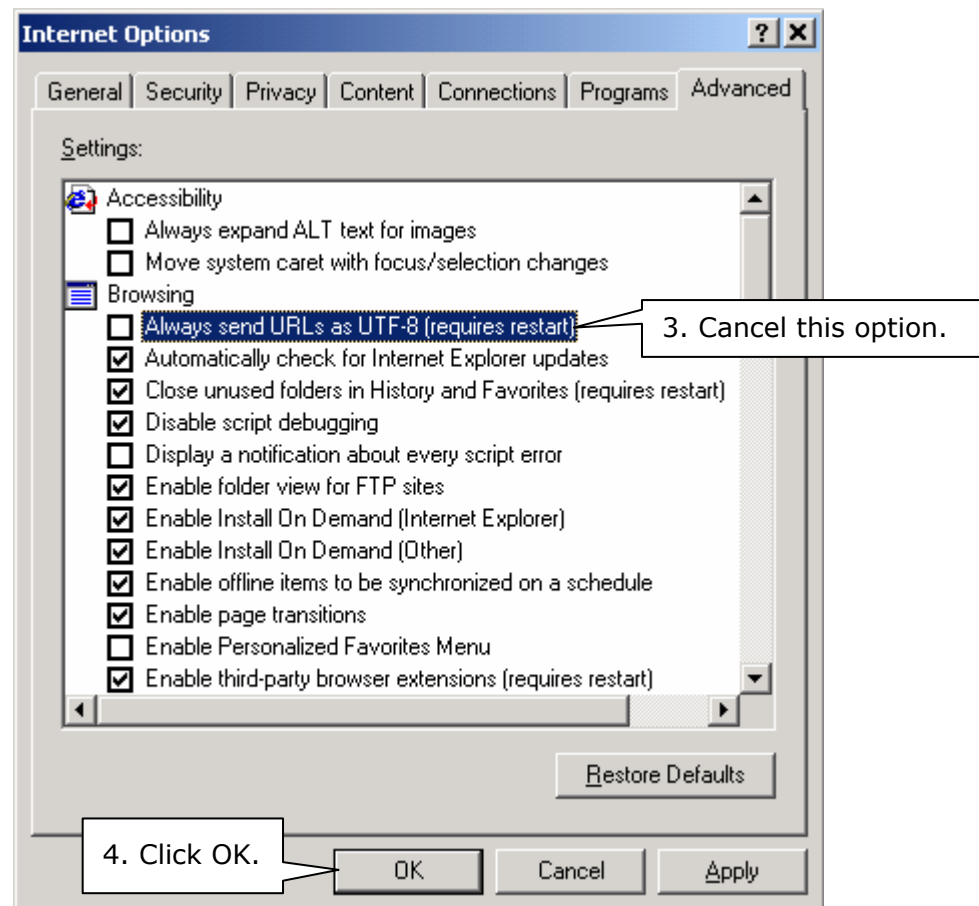
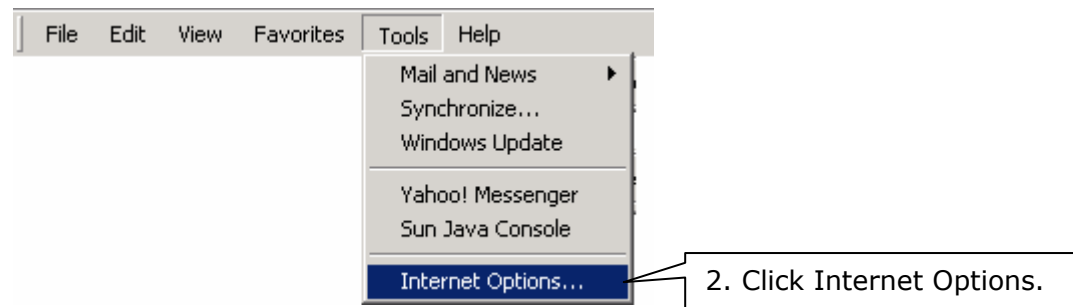
Logout

To exit Web File Manager, click  (Logout).

Viewing Files Named in Chinese











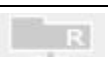

To view files named in Chinese, you may have to configure the browser settings. Take Internet Explorer as an example, follow the steps below to configure the settings.

1. Click on **Tools** in IE browser.



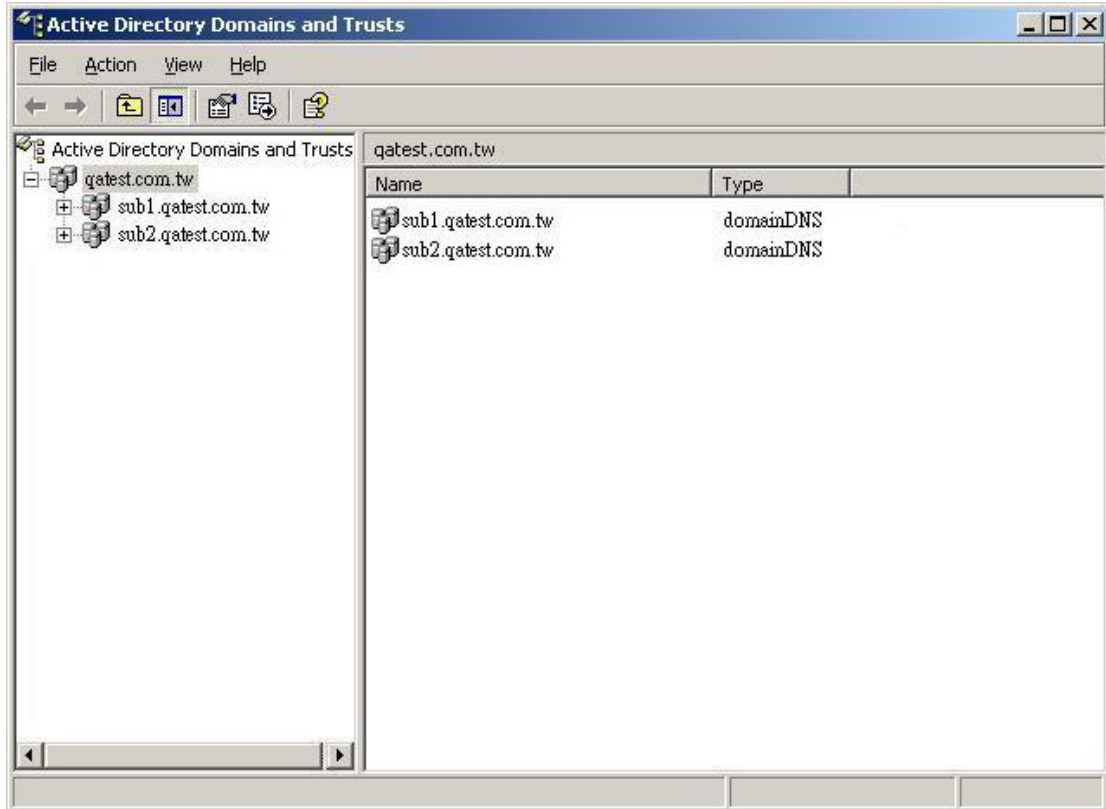
5. Restart the browser.

Web File Manager Icons

Icon	Description
	Up-return to the parent folder
	Refresh-reload the current page
	Home-return to network share list home page
	Create folder
	Rename file or folder
	Delete file or folder
	Select all
	Cancel selection
	Logout
	Full access network share folder
	Read-only network share folder
	Malfunction network share folder

Appendix B Configuring AD Authentication

AD environment mixed mode can be supported by TS-401T. For example, qatest.com.tw and sub2.qatest.com.tw are domains controlled by Windows 2003 server, and sub1.qatest.com.tw domain is controlled by Windows 2000 server.



Please make sure you have enabled the Active Directory Service on the Windows Server and check the following items:

1. DNS Server setting on TS-401T has to be directed to AD server.
2. TS-401T and AD server can synchronize only if their time difference is less than 5 minutes.
3. TS-401T and AD server will synchronize each 5 minute. To configure the settings manually, TS-401T has to be set as standalone mode and then added to AD domain.
4. When adding TS-401T to AD domain, please login by domain_name\Username. TS-401T local user cannot login AD domain.
5. Inter-network segments can be used.
6. If you are using NT Domain, please select standalone mode when you want to upgrade the system, then join AD domain.
7. It is suggested to use Windows 2000 Service Pack 4, or Windows 2003 Service Pack 1.
8. When TS-401T is added to AD domain, the authority of "everyone" will not work, "everyone" is the original account of TS-401T, but doesn't include AD. Therefore the authority has to be reset.
9. The DNS setting on Windows 2000 server should be added as "Active Directory DNS", the server should be rebooted after DNS setting is set.
10. You should use the full domain name on the AD setting of TS-401T. For example, if your FQDN name of AD server is "ad.test.com.tw", you should use "test.com.tw" as the ad domain setting on TS-401T.
11. The DNS setting on AD server should have the IP of AD server itself.
12. You must change the password of "administrator" after you create "Active Directory" service on AD server.
13. The DNS server on the AD Server should have two records on it.

For example, AD Server Name: 2003tc.testad.com

DNS record on DNS Server

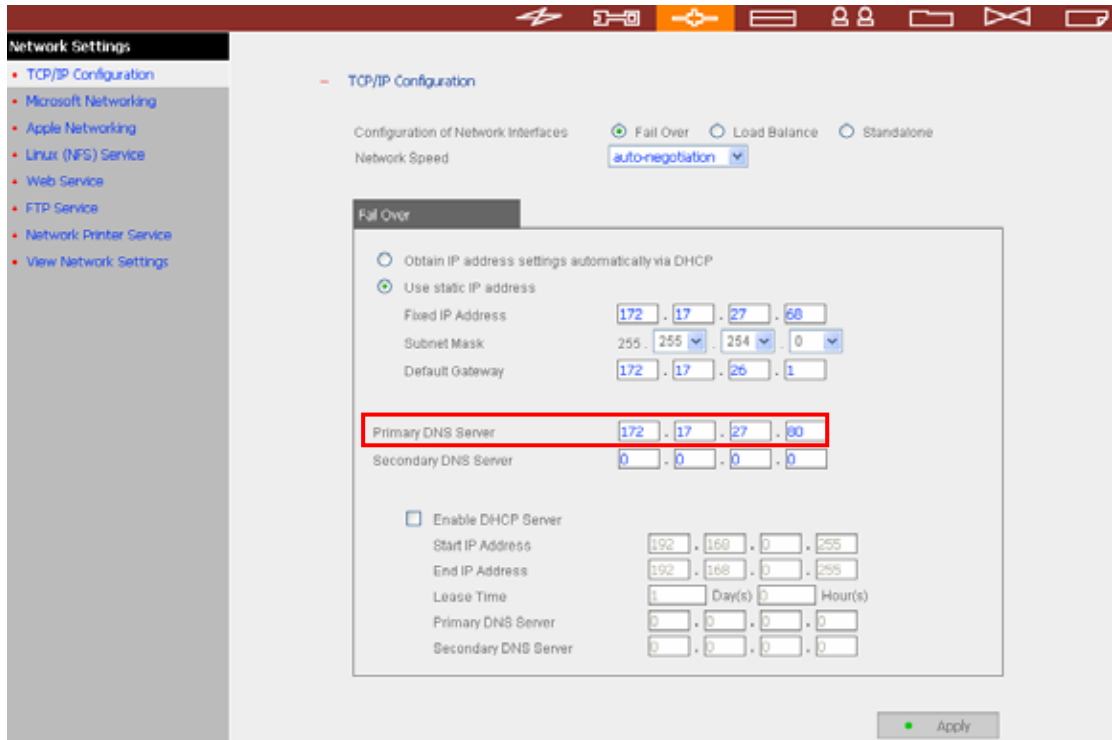
2003tc.testad.com	A	192.168.1.100
-------------------	---	---------------

testad.com	A	192.168.1.100
------------	---	---------------

One is "A record" for AD server, and the other is the domain "A record" for DNS queries.

Adding TS-401T to Windows Server 2003 Active Directory Domain

1. Go to TCP/IP Configuration in Network Settings. Enter the IP address of primary DNS server. You can inquire AD domain via this DNS server.



2. Go to Microsoft Networking of Network Settings. Enable AD Domain Member, and enter the domain name and the user name with administrator access right to that domain.

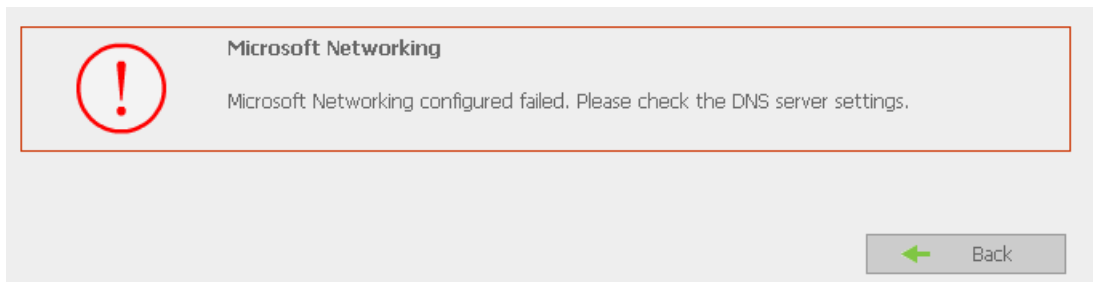
The screenshot shows the 'Microsoft Networking' configuration window. The 'AD Domain Member' radio button is selected and highlighted with a red box. The 'Domain Name' field is also highlighted with a red box and contains the text 'qtest.com.tw'. Other fields include 'Server Description' (NAS Server), 'Workgroup' (NAS), 'AD Server Name' (AD server), 'Domain Username' (administrator), and 'Password' (masked with dots). There is an 'Apply' button at the bottom right.



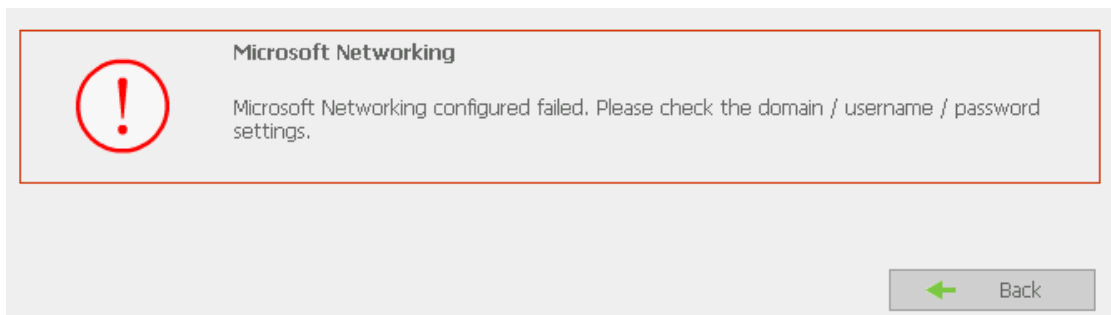
Note:

- a. Make sure that a fully qualified domain name such as qtest.com.tw has been filled in.
- b. Make sure the user name with administrator access right to that domain.

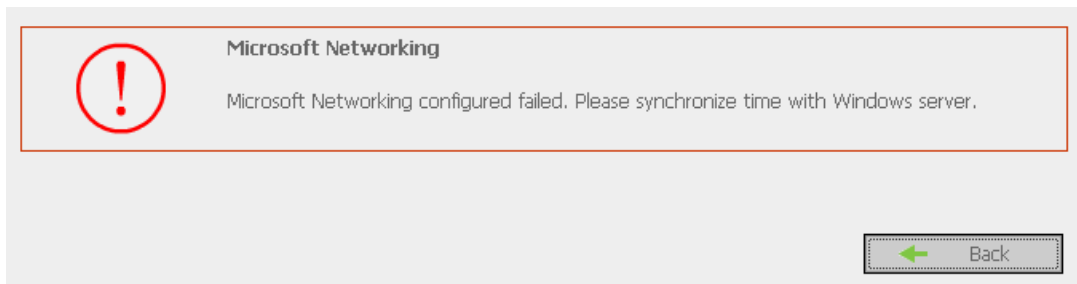
3. When the following message appears after applying the settings in step 2, check the DNS IP.



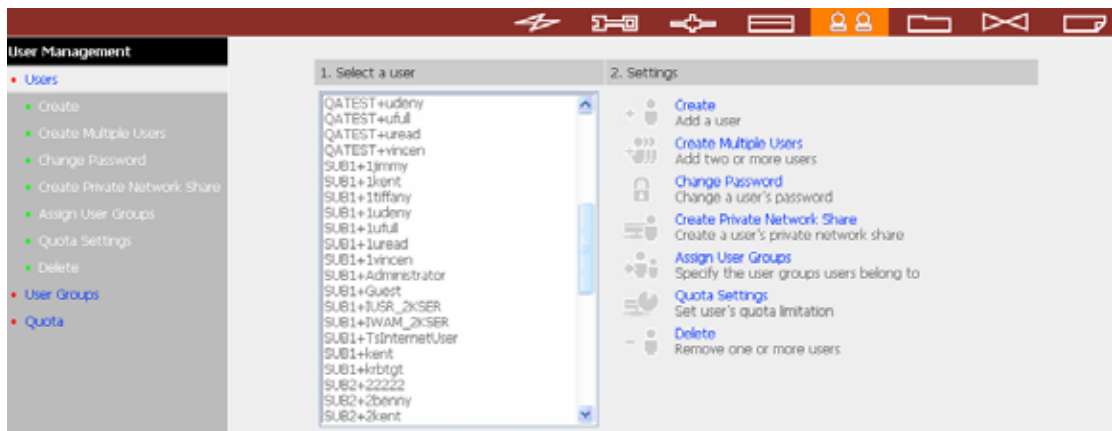
- When the following message appears after applying the settings in step 2, domain name, domain user name, and the password.



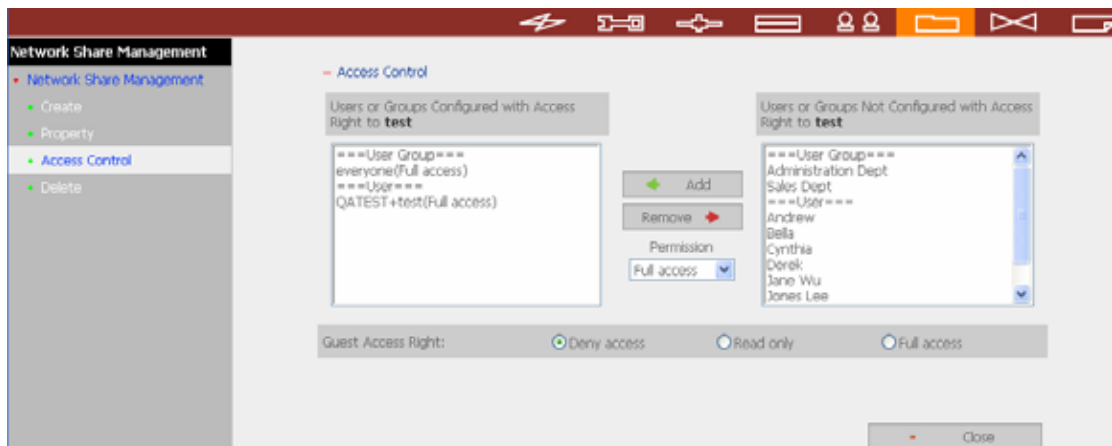
- When the following message appears after applying the settings in step 2, check the time zone settings. Make sure the difference of your time and that of AD server is less than 5 minutes. If the time difference is larger than 5 minutes, you will not be able to add the domain member.



- Upon successful adding of domain member, you can view the list for domain users and local users in User Management.



- Go to Access Control in Network Share Management to configure the access control right of AD users for all available network shares.



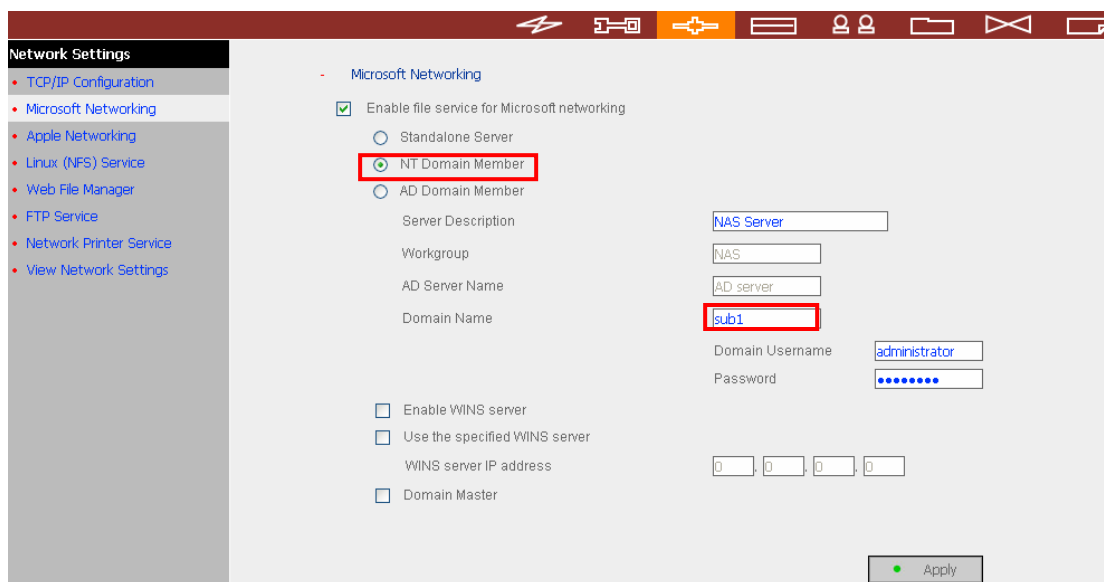
Using AD users to access services

To access services like FTP, Network Neighborhood, or Apple Talk with an AD user account, add **DomainName** before the user name when logging in.



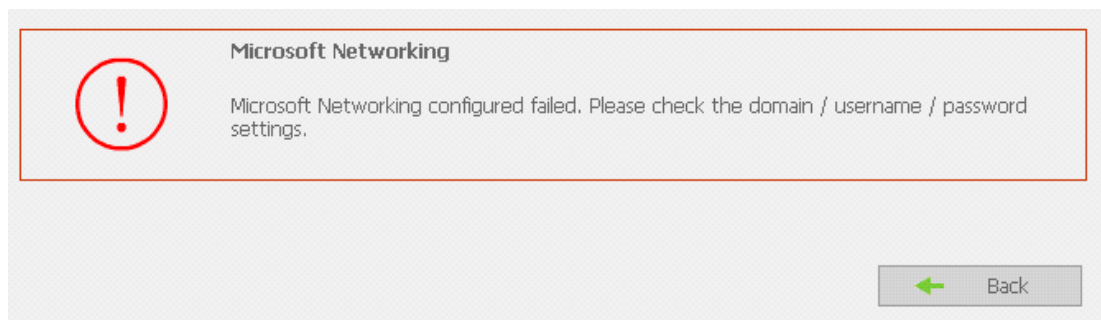
Adding TS-401T to Windows Server 2000 NT Domain

1. Go to Microsoft Networking to enable NT Domain member and then enter the domain name such as sub1 and the user who has administrator access right for identification.



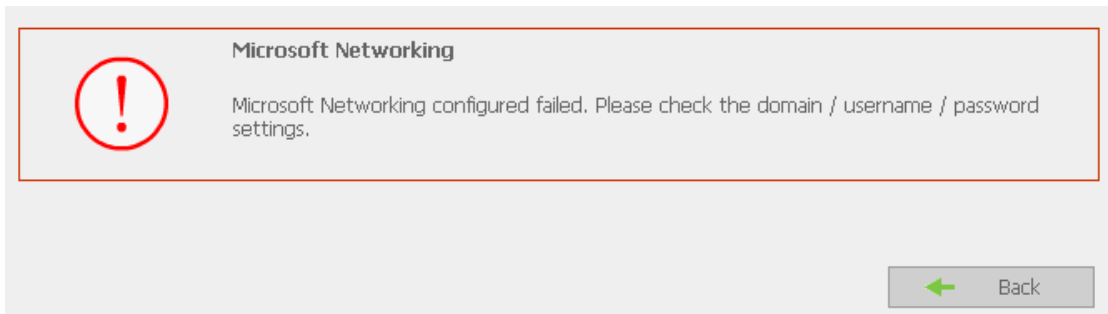
Note:

- a. Please notice that TS-401T and Windows 2000/2003 server must be in the same section or the system will show the following error message.

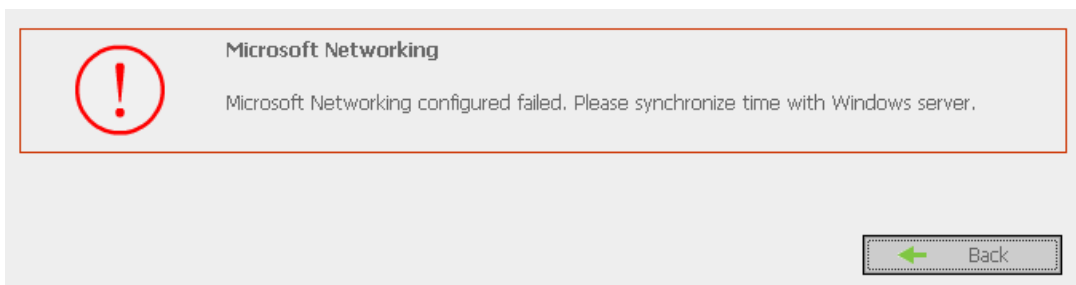


- b. Make sure that a domain name such as sub1 has been filled in.
- c. Make sure the user name with administrator access right to that domain.

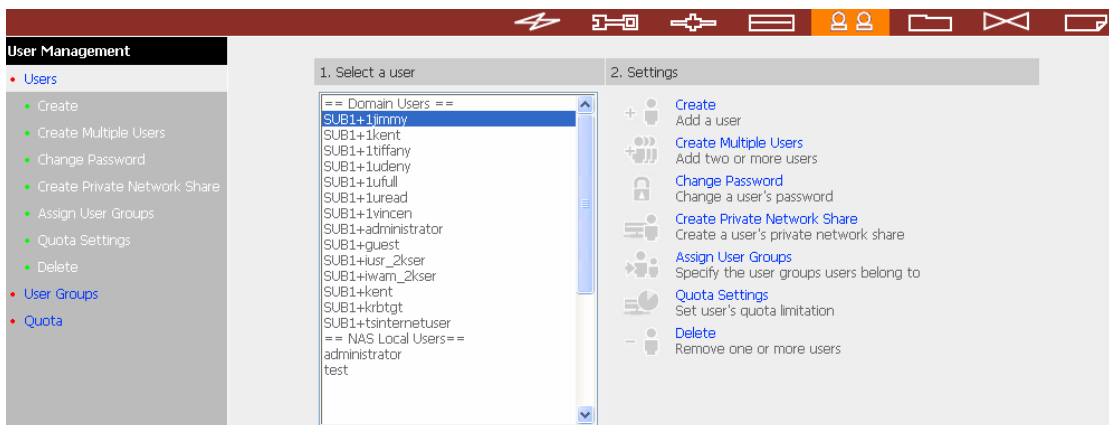
2. When the following message appears after applying the settings in step 1, check the domain name, domain user name, and the password.



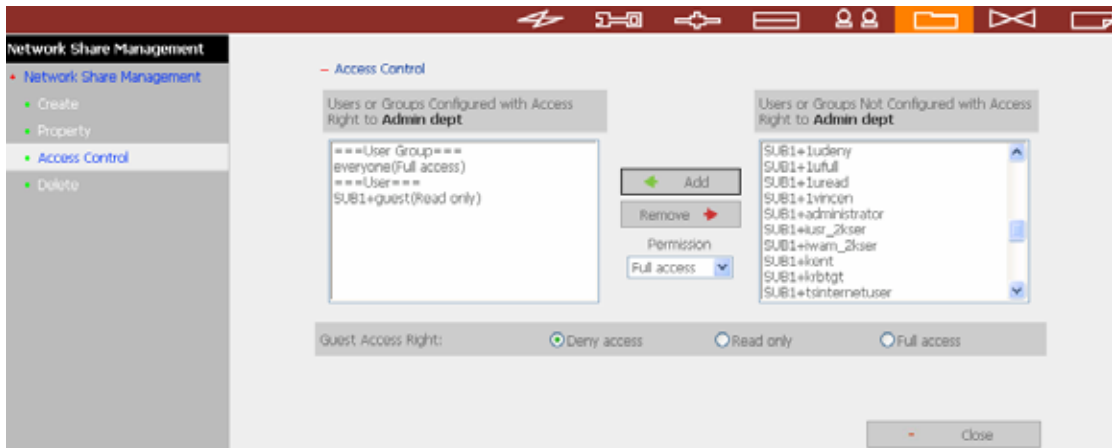
When the following message appears after applying the settings in step 2, check the time zone settings. Make sure the difference of your time and that of AD server is less than 5 minutes. If the time difference is larger than 5 minutes, you will not be able to add the domain member.



3. Upon successful adding of domain member, you can view the list for domain users and local users in User Management.

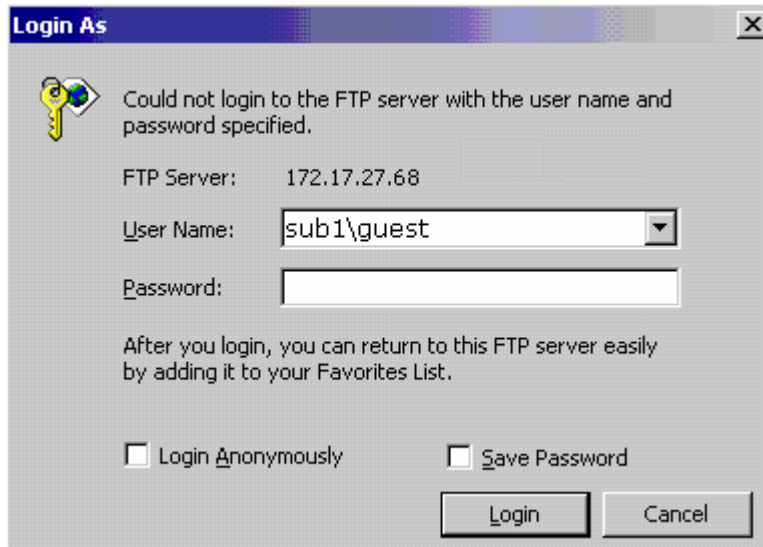


- Go to Access Control in Network Share Management to configure the access control right of domain users for all available network shares.



Using domain users to access services

To access services like FTP, Network Neighborhood, or Apple Talk with an domain user account, add **DomainName** before the user name when logging in.



Note: To join AD domain again, set TS-401T as standalone server in Microsoft Networking section. Make sure all domain users are removed in User Management before joining TS-401T to AD domain.

Appendix C Messages of Hard Disk and Disk Configuration Status

Hard Disk	
English Display	Status Description
Ready	The hard disk status is normal
No disk	No disk currently ✓ Disk tray is not installed or there is main board error. Users can check disk tray. If there is main board error, please contact QNAP customer service.
Invalid	Indicates the disk does not have a record on TS-401T ✓ The disk is used on TS-401T the first time, or the disk on the same TS-401T model is used. Users can re-configure disk volume.
R/W error	Disk fails ✓ When R/W error is shown, users should back up data immediately and replace the failed disk.

Disk Configuration/ RAID Configuration	
English Display	Status Description
Initializing	Initializing disk
Formatting	Formatting disk
Creating	Creating RAID configuration
Removing	Removing RAID configuration
Rebuilding	Rebuilding RAID configuration
Checking	Error checking on hard disk or disk configuration in process ✓ TS-401T will check disk automatically if it is shut down improperly

Disk Configuration/ RAID Configuration	
English Display	Status Description
Ready	The status of current disk or disk configuration is normal
Unmounted	Hard disk is not installed or hard disk configuration is not configured
Not Active	RAID configuration is damaged and cannot be enabled ✓ When this message is shown, users should back up disk data immediately and replace the failed disk.
Uninitialized	Initialization fails ✓ Single disk does not support hot swap. If the hard disk is unplugged when TS-401T is turning on, disk configuration will be damaged and will lead to data loss.
In degraded mode	A disk of RAID 1 or RAID 5 configuration is unplugged or fails. RAID data protection mechanism fails. ✓ In this situation, users should back up disk data immediately and replace the failed disk to rebuild RAID configuration.



Note:

1. When R/W error is displayed for hard disk status, or "Not active" or "In degraded mode" is displayed for RAID configuration, please replace the hard disk immediately to ensure RAID data protection can work properly. QNAP is not responsible for any data loss caused by delay in replacing failed disks in a RAID configuration by users intentionally or unintentionally.
2. QNAP Systems, Inc. guarantees that all TS-401T (TS-401T) released have passed strict and complete QA test and can operate properly in normal condition. QNAP offers conditional and limited maintenance for TS-401T within warranty period. However, QNAP disclaims the responsibility for any data loss or damage, or business loss of users. In no event shall the liability of QNAP exceed the price paid for the product from direct, indirect, special, incidental, or consequential software, or its documentation.