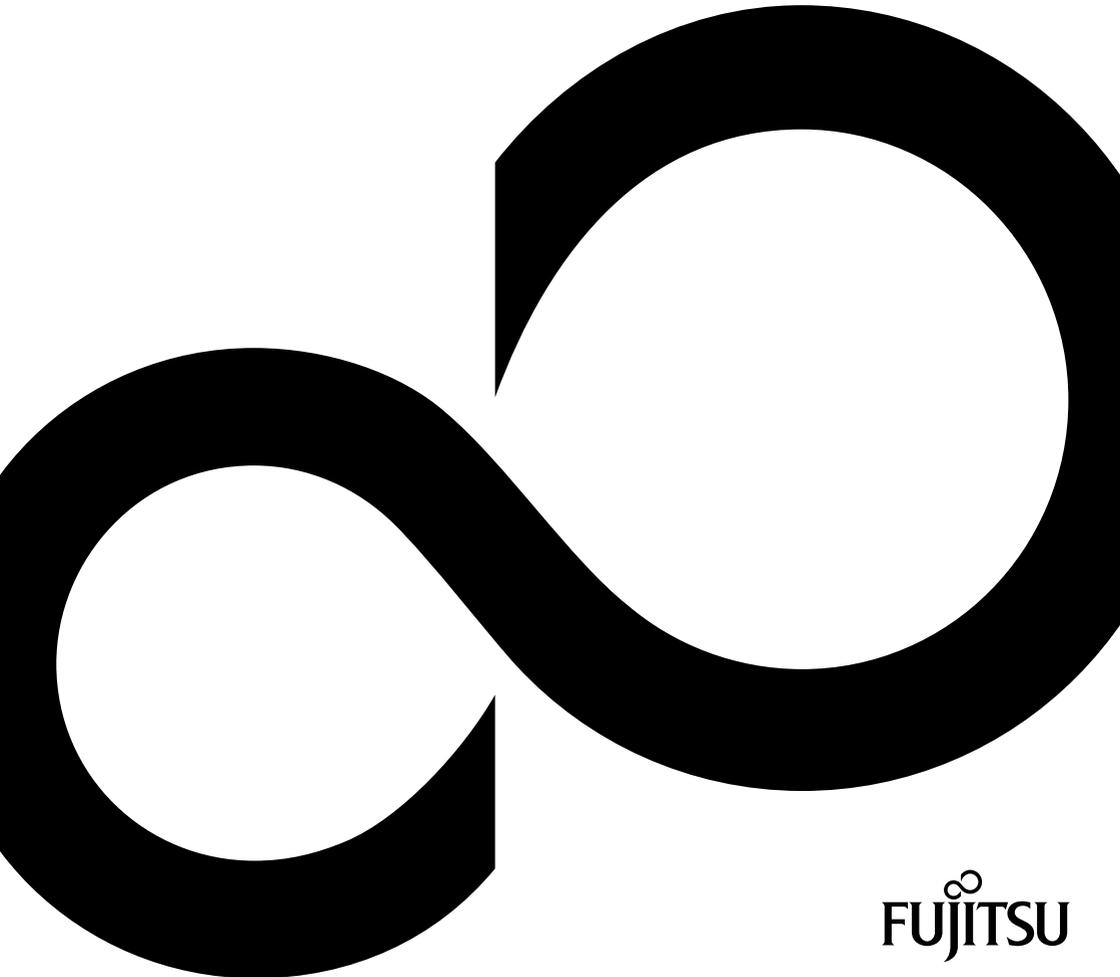


# CELVIN® NAS Server

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- your sales partner
- your sales office

We hope you enjoy working with your new Fujitsu system!





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# **CELVIN® NAS Server**

## Operating Manual

<b>Your CELVIN® NAS Server ...</b>	<b>3</b>
<b>Installing the NAS</b>	<b>9</b>
<b>Connecting to the NAS</b>	<b>30</b>
<b>Copying data using the front USB port</b>	<b>37</b>
<b>Web Server</b>	<b>39</b>
<b>FTP server</b>	<b>41</b>
<b>Using the QGet download software</b>	<b>42</b>
<b>NetBak Replicator</b>	<b>45</b>
<b>Firmware update</b>	<b>47</b>
<b>NAS maintenance</b>	<b>50</b>
<b>Troubleshooting RAID operation errors</b>	<b>55</b>
<b>Technical data</b>	<b>59</b>

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# Contents

<b>Your CELVIN® NAS Server</b> .....	<b>3</b>
Safety Warnings .....	3
CE marking.....	3
Hardware overview.....	5
CELVIN® NAS Server Q802 .....	5
CELVIN® NAS Server Q902 .....	7
<b>Installing the NAS</b> .....	<b>9</b>
List of recommended hard disks.....	9
System ventilation .....	9
System status checks.....	10
Use the LCD Panel.....	13
View system information by the LCD panel.....	15
System Messages .....	18
Configuring software settings .....	19
Connecting a network drive.....	25
<b>Connecting to the NAS</b> .....	<b>30</b>
Using the public folder (public network share).....	30
Administering the NAS via a Web browser under Windows.....	32
Administration user interface.....	33
Opening the main menu .....	34
Control Panel / Opening applications .....	35
Accessing the NAS from Linux.....	36
<b>Copying data using the front USB port</b> .....	<b>37</b>
<b>Web Server</b> .....	<b>39</b>
MySQL administration .....	40
SQLite administration .....	40
<b>FTP server</b> .....	<b>41</b>
<b>Using the QGet download software</b> .....	<b>42</b>
<b>NetBak Replicator</b> .....	<b>45</b>
Installing NetBak Replicator .....	45
Using NetBak Replicator .....	46
<b>Firmware update</b> .....	<b>47</b>
Updating the system firmware using Fujitsu Finder.....	48
<b>NAS maintenance</b> .....	<b>50</b>
Shutting down/rebooting the server.....	50
Resetting the administrator password and network settings .....	52
Failure or malfunction of a hard disk .....	53
Power failure or abnormal shutdown .....	53
Abnormal system software behaviour .....	53
System temperature protection .....	53
EuP mode configuration (for compliance with legal standby requirements).....	54
<b>Troubleshooting RAID operation errors</b> .....	<b>55</b>
Hot-swap Hard Drives .....	56
RAID Recovery.....	57
<b>Technical data</b> .....	<b>59</b>

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# Your CELVIN® NAS Server ...

Thank you for purchasing a CELVIN® NAS Server. These operating instructions provide detailed information on the use of this product. Please read the instructions carefully to enjoy the full benefit of the powerful functions offered by the CELVIN® NAS Server.

## Safety Warnings



Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Do NOT touch the fan inside the system to avoid serious injuries.

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

## CE marking



**CE marking for devices without wireless component supplied at launch from 20.07.2007**

The shipped version of this device complies with the requirements of EC directive 2004/108/EC "Electromagnetic Compatibility", 2006/95/EC "Low voltage directive" and 2009/125/EC "Ecodesign Directive".



The CELVIN® NAS Server will subsequently also be referred to by the short names NAS, Q802 (model with 4 hard disks) or Q902 (model with 6 hard disks).



Back up your system regularly to avoid any potential data loss. Fujitsu Technology Solutions will not accept responsibility for the loss of or the recovery of any data in any form.

## Q802



## Q902

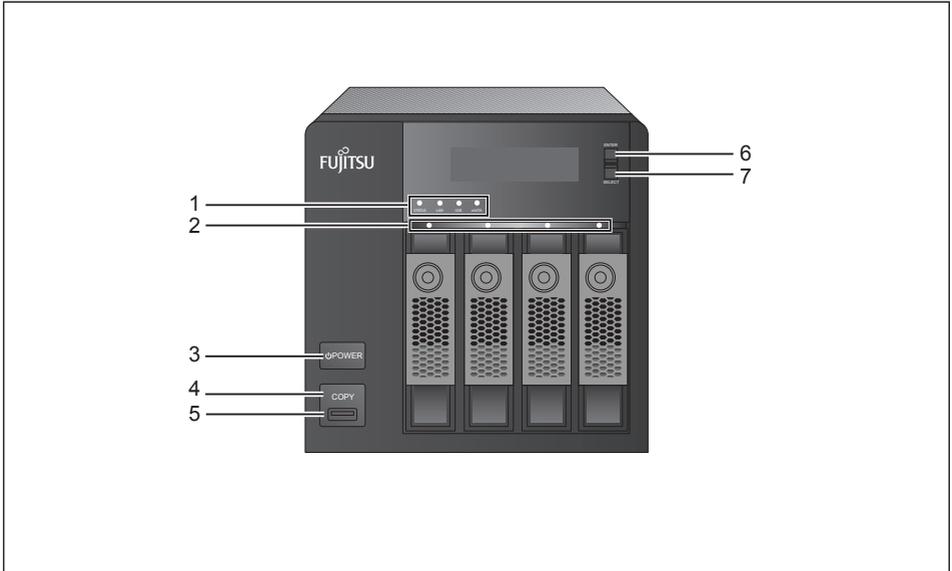


Further information, such as data sheets, frequently asked questions and tutorials, can be found on the Internet at [www.celvin.com](http://www.celvin.com).

## Hardware overview

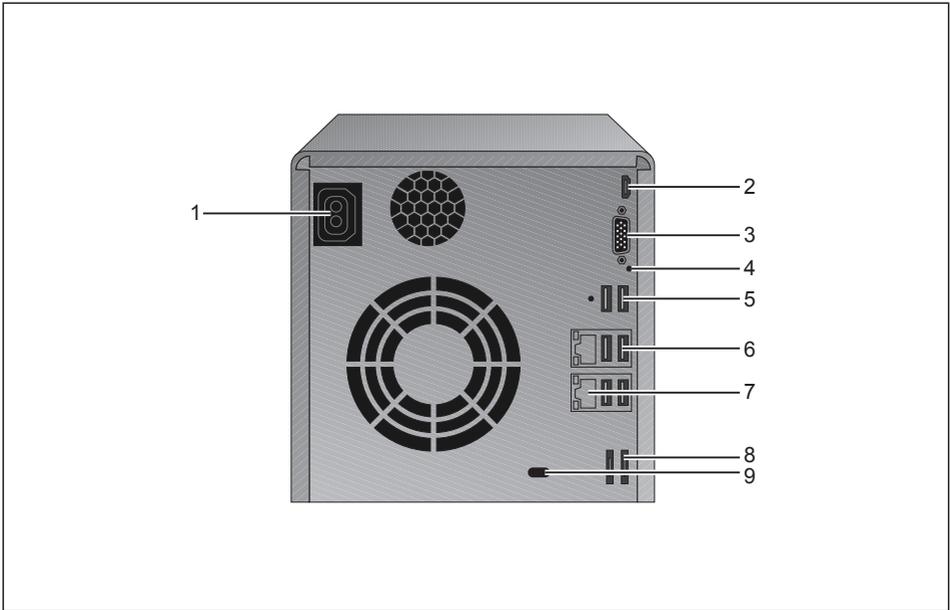
### CELVIN® NAS Server Q802

#### Front



- 1 = LED indicators: Status, LAN, USB, eSATA
- 2 = LED indicators: HDD 1-4
- 3 = ON/OFF switch
- 4 = One Touch Copy button
- 5 = USB 2.0
- 6 = Enter button
- 7 = Select button

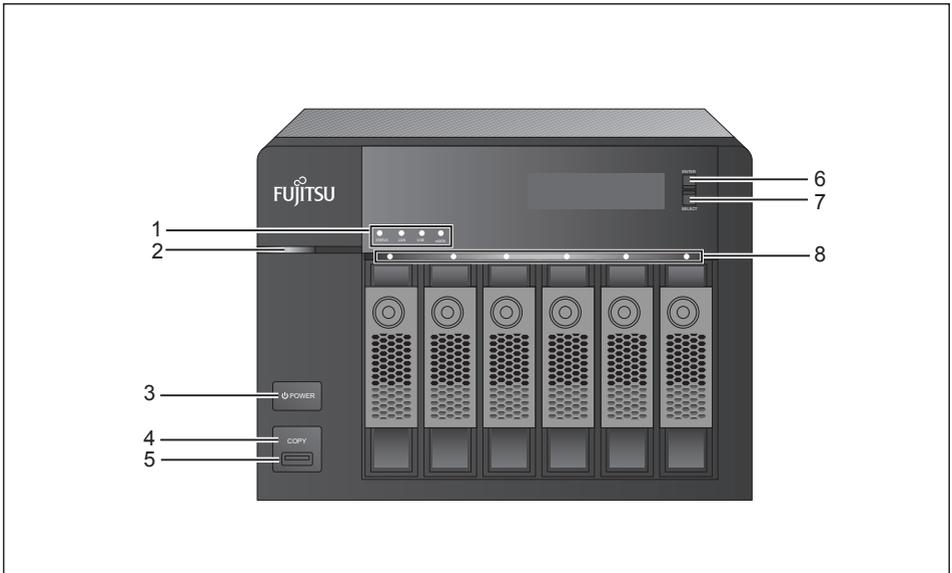
Rear



- 1 = Power supply
- 2 = HDMI (reserved)
- 3 = VGA (reserved for service purposes)
- 4 = Reset button for password and network settings
- 5 = USB 3.0 x 2
- 6 = USB 2.0 x 4
- 7 = Gigabit LAN x 2
- 8 = eSATA x 2
- 9 = Security Lock slot

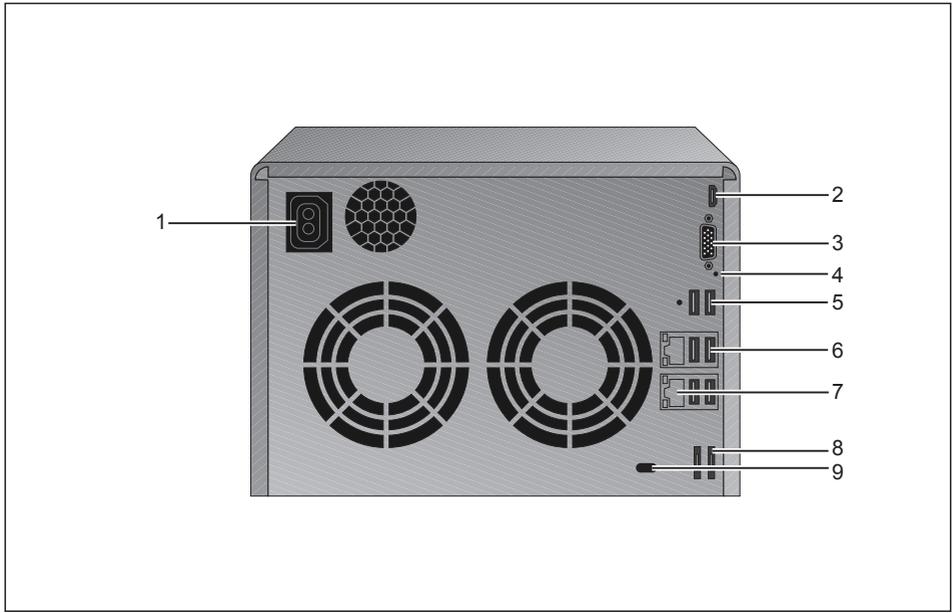
## CELVIN® NAS Server Q902

### Front



- 1 = LED indicators: Status, LAN, USB, eSATA
- 2 = LED indicator: Power supply
- 3 = ON/OFF switch
- 4 = One Touch Copy button
- 5 = USB 2.0
- 6 = Enter button
- 7 = Select button
- 8 = LED indicators: HDD 1-6

**Rear**



- 1 = Power supply
- 2 = HDMI (reserved)
- 3 = VGA (reserved for service purposes)
- 4 = Reset button for password and network settings
- 5 = USB 3.0 x 2
- 6 = USB 2.0 x 4
- 7 = Gigabit LAN x 2
- 8 = eSATA x 2
- 9 = Security Lock slot

# Installing the NAS

For information on hard disk installation, please refer to the "Quick Start Guide".

## List of recommended hard disks

This product will work with 2,5/3,5 inch SATA hard disks from major hard disk manufacturers. A list of compatible drives can be found at <http://support.ts.fujitsu.com>.



Fujitsu Technology Solutions will accept no liability whatsoever for any product defects/faulty operation, and/or any time and costs associated with data loss/data recovery, insofar as the cause can be attributed to misuse or improper installation of hard disks, regardless of the circumstances or for whatever reason.



Please note that when installing a hard disk (new or used) which has not previously been installed on the NAS, the hard disk will first be formatted and sub-divided automatically, and all disk data will be lost.

## System ventilation

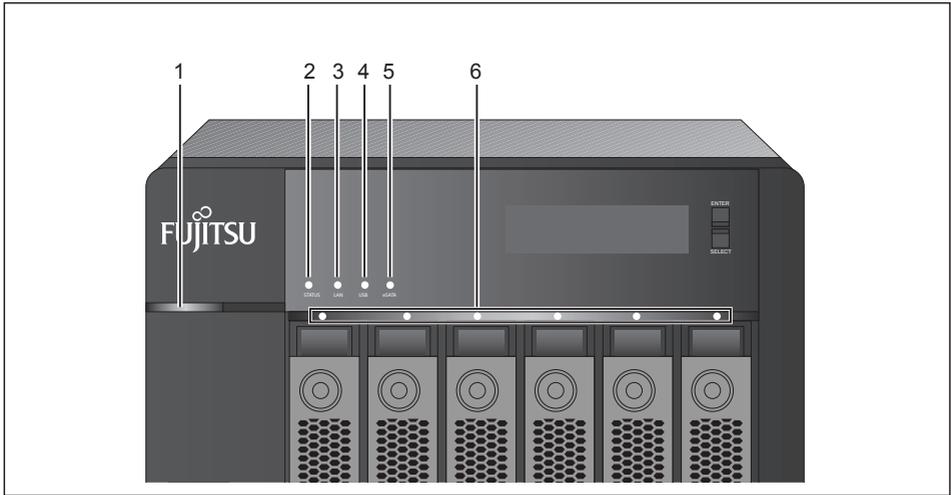
Please ensure when setting up the device that sufficient ventilation will be available at all times. The air inlet on the underside of the product must not be covered, as otherwise it is not possible to guarantee that the system will receive sufficient ventilation, which may lead to the product being damaged.

### System status checks

The NAS is fitted with LED indicators to show the system status and further information. When the NAS is switched on it is important to check the following items to make sure that the system is working normally. Please note that the information provided by the LEDs described below is only valid if the hard disks have been correctly installed and the NAS is connected to the network and the power supply.



The following illustration shows the CELVIN® NAS Server Q902. The status indicators, other than the power supply status indicator, are identical for both device variants.



1 = Power supply (Q902)

2 = System status

3 = LAN

4 = USB

5 = eSATA

6 = HDD 1 - 4 (Q802)  
HDD 1 - 6 (Q902)

## LED Display &amp; System Status Overview

LED	Colour	LED-Status	Description
System Status	Red / Green	Flashes green and red alternately every 0.5 sec	<ul style="list-style-type: none"> <li>The hard disk drive on the NAS is being formatted.</li> <li>The NAS is being initialized.</li> <li>The system firmware is being updated.</li> <li>RAID rebuilding is in process.</li> <li>Online RAID capacity expansion is in process.</li> <li>Online RAID level migration is in process.</li> </ul>
		Red	<ul style="list-style-type: none"> <li>The hard disk drive is invalid.</li> <li>The disk volume has reached its full capacity.</li> <li>The disk volume is going to be full.</li> <li>The system fan is out of function.</li> <li>An error occurs when accessing (read/write) the disk data.</li> <li>A bad sector is detected on the hard disk drive.</li> <li>The NAS is in degraded read-only mode (2 member hard drives fail in a RAID 5 or RAID 6 configuration, the disk data can still be read).</li> <li>(Hardware self-test error).</li> </ul>
		Flashes red every 0.5 sec	The NAS is in degraded mode (one member hard drive fails in RAID 1, RAID 5 or RAID 6 configuration).
		Flashes green every 0.5 sec	<ul style="list-style-type: none"> <li>The NAS is starting up.</li> <li>The NAS is not configured.</li> <li>The hard disk drive is not formatted.</li> </ul>
		Green	The NAS is ready.
		Off	All the hard disk drives on the NAS are in standby mode.
LAN	Orange	Orange	The NAS is connected to the network.
		Flashes orange	The NAS is being accessed from the network.
HDD	Red / Green	Flashes red	The disk data is being accessed and a read/write error occurs during the process.
		Red	A hard drive read/write error occurs.
		Flashes green	The disk data is being accessed.
		Green	The hard drive can be accessed.

### LED Display & System Status Overview

LED	Colour	LED-Status	Description
USB	Blue	Flashes blue every 0.5 sec	<ul style="list-style-type: none"> <li>A USB device (connected to front USB port) is being detected.</li> <li>A USB device (connected to front USB port) is being removed from the NAS.</li> <li>The USB device (connected to the front USB port) is being accessed.</li> <li>The data is being copied to or from the external USB or eSATA device.</li> </ul>
		Blue	A front USB device is detected (after the device is mounted).
		Off	<ul style="list-style-type: none"> <li>No USB device is detected.</li> <li>The NAS has finished copying the data to or from the USB device connected to the front USB port of the NAS.</li> </ul>
eSATA	Orange	Flashes	The eSATA device is being accessed.
		Off	No eSATA device can be detected.

### Alarm Buzzer

The alarm buzzer can be disabled in *Control Panel - Hardware*.



The beep, which sounds when booting the device, cannot be deactivated.

Beep sound	No. of Times	Description
Short beep (0.5 sec)	1	<ul style="list-style-type: none"> <li>The NAS is starting up.</li> <li>The NAS is being shut down (software shutdown).</li> <li>The user presses the reset button to reset the NAS.</li> <li>The system firmware has been updated.</li> </ul>
Short beep (0.5 sec)	3	An attempt is being made to copy NAS data to an external storage device connected to the front USB port, but the data cannot be copied.
Short beep (0.5 sec) Long beep (1.5 sec)	3, every 5 min.	The system fan is out of function.

Beep sound	No. of Times	Description
Long beep (1.5 sec)	2	<ul style="list-style-type: none"> <li>The disk volume is going to be full.</li> <li>The disk volume has reached its full capacity.</li> <li>The hard disk drives on the NAS are in degraded mode.</li> <li>The user starts hard drive rebuilding.</li> </ul>
	1	<ul style="list-style-type: none"> <li>The NAS is turned off by force shutdown (hardware shutdown).</li> <li>The NAS has been turned on and is ready.</li> </ul>

## Use the LCD Panel

You can use the LCD panel to perform disk configuration and view the system information.

When the NAS has started up, you will be able to view the NAS name and IP address:

N	A	S	5	F	4	D	E	3									
1	6	9	.	2	5	4	.	1	0	0	.	1	0	0			

For the first time installation, the LCD panel shows the number of hard drives detected and the IP address. You may select to configure the hard drives.

Number of hard drives detected	Default disk configuration	Available disk configuration options
1	Single	Single
2	RAID 1	Single → JBOD → RAID 0 → RAID 1
3	RAID 5	Single → JBOD → RAID 0 → RAID 5
4 or above	RAID 5	Single → JBOD → RAID 0 → RAID 5 → RAID 6 → RAID 10

**i**

Press the Select button to choose the option.

Press the Enter button to confirm.

For example, when you switch on the NAS with 5 hard disks installed, the following message is displayed on the LCD panel:

C	o	n	f	i	g	.	D	i	s	k	s	?					
→	R	A	I	D	5												

## Installing the NAS

---

Use the Select button to select further options, e.g. RAID 6.

Proceed as follows to select a standard drive configuration:

- ▶ Press Enter.

The following message is displayed:

C	h	o	o	s	e		R	A	I	D	5	?			
→	Y	e	s				N	o							

- ▶ Use the Select button to select *Yes*.
- ▶ Confirm your selection by pressing Enter.

When you execute RAID 1, RAID 5, RAID 6 or RAID 10 configuration, the system will initialize the hard drives, create the RAID device, format the RAID device, and mount it as a volume on the NAS. The progress will be shown on the LCD panel.

When it reaches 100 %, you can connect to the RAID volume, for example, create folders and upload files to the folders on the NAS.

In the meantime, to make sure the stripes and blocks in all the RAID component devices are ready, the NAS will execute RAID synchronization and the progress will be shown on *Disk Management - Volume Management* page. The synchronization rate is around 30-60 MB/s (varies depending on the hard drive models, system resource usage, etc.)



If a member drive of the RAID configuration is lost during synchronization, the RAID device will switch to a degraded mode. You can continue to access the drive data.

If you insert a new member drive in the device, the drive is restored. You can check the status on the *Volume Management* page.

If *Encrypt Volume?* is displayed on the LCD screen, select *Yes* if you wish to encrypt the data carrier. The default selection is "No".

The default encryption password is *admin*. To change the password, login the web-based administration interface of the NAS with an administrator account and change the settings in *Disk Management - Encrypted File System*.

E	n	c	r	y	p	t		V	O	L	U	M	E	?	
→	Y	e	s					N	o						



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

When the configuration is finished, the NAS name and IP address will be shown.  
If the NAS fails to create the disk volume, the following message will be shown.

C	r	e	a	t	i	n	g	.	.	.									
R	A	I	D	5		F	a	i	l	e	d								

## View system information by the LCD panel

When the LCD panel shows the NAS name and IP address, you may press the “Enter” button to enter the Main Menu. To do this, press and hold Enter for two seconds. The main menu consists of the following menu items:

1. TCP/IP
2. Physical disk
3. Volume
4. System
5. Shut down
6. Reboot
7. Password
8. Back

### TCP/IP

Menu item *TCP/IP* contains the following options:

1. LAN IP Address
2. LAN Subnet Mask
3. LAN Gateway
4. LAN PRI. DNS
5. LAN SEC. DNS
6. Enter Network Settings
  - Network Settings – DHCP
  - Network Settings – Static IP
  - Network Settings – BACK
7. Back to Main Menu



In *System Administration - Network - TCP/IP*, you can configure the IP address, subnet mask, gateway, and DNS of LAN 1 and LAN 2.

## Physical disk

Menu item *Physical disk* contains the following options:

1. Disk Info
2. Back to Main Menu

*Disk Info* shows the temperature and capacity of the hard disk.

D	i	s	k	:	1		T	e	m	p	:	5	0	°	C
S	i	z	e	:	2	3	2		G	B					

## Volume

This menu item shows the drive configuration of the NAS. The first line shows the RAID configuration and the memory capacity. The second line shows the drive numbers of the drives involved in the configuration.

R	A	I	D	5						7	5	0	G	B	
D	r	i	v	e		1	2	3	4						

If there is more than one volume, press the Select button to view the information. The following table shows the description of the LCD messages for RAID 5 configuration.

LCD Display	Drive configuration
RAID5+S	RAID5+spare
RAID5 (D)	RAID 5 degraded mode
RAID 5 (B)	RAID 5 rebuilding
RAID 5 (S)	RAID 5 re-synchronizing
RAID 5 (U)	RAID 5 is unmounted
RAID 5 (X)	RAID 5 non-activated

## System

This menu item shows the system temperature and the rotation speed of the system fan.

C	P	U		T	e	m	p	:	5	0	°	C		
S	y	s		T	e	m	p	:	5	5	°	C		

S	y	s		F	a	n	:	8	6	5	R	P	M		

**Shut down**

Use this option to turn off the NAS.

- ▶ Press the Select button to select *Yes*.
- ▶ Then press the Enter button to confirm.

**Reboot**

Use this option to restart the NAS.

- ▶ Press the Select button to select *Yes*.
- ▶ Then press the Enter button to confirm.

**Password**

The default password of the LCD panel is blank. Enter this option to change the password of the LCD panel.

- ▶ Select *Yes* to continue.

C	h	a	n	g	e		P	a	s	s	w	o	r	d	
					Y	e	s	→	N	o					

You may enter a password of maximum 8 numeric characters (0-9).

- ▶ When the cursor moves to *OK*, press the Enter button.
- ▶ Verify the password to confirm the changes.

N	e	w		P	a	s	s	w	o	r	d	:			
														O	K

**Back**

Select this option to return to the main menu.

# System Messages

If an NAS system error occurs, a corresponding error message is displayed in the LCD panel.

To display an error message, press Enter.

To display the next error message, press Enter again.

S	y	s	t	e	m		E	r	r	o	r	!			
P		s	.			C	h	e	c	k		L	o	g	s

System Message	Description
Sys. Fan Failed	The system fan fails.
Sys. Overheat	The system overheats.
HDD Overheat	A hard drive overheats.
CPU Overheat	The CPU overheats.
Network Lost	Both LAN 1 and LAN 2 are disconnected in failover or load balancing mode.
LAN1 Lost	LAN 1 is disconnected.
LAN2 Lost	LAN 2 is disconnected.
HDD Failure	A hard drive fails.
Vol1 Full	The disk volume is full.
HDD Ejected	A hard drive is ejected.
Vol1 Degraded	The disk volume is in degraded mode.
Vol1 Unmounted	The disk volume is unmounted.
Vol1 Nonactivate	The disk volume is inactive.

## Configuring software settings

- ▶ Run the product CD.

This will open a model selection menu.



- ▶ Select the appropriate NAS model to continue.



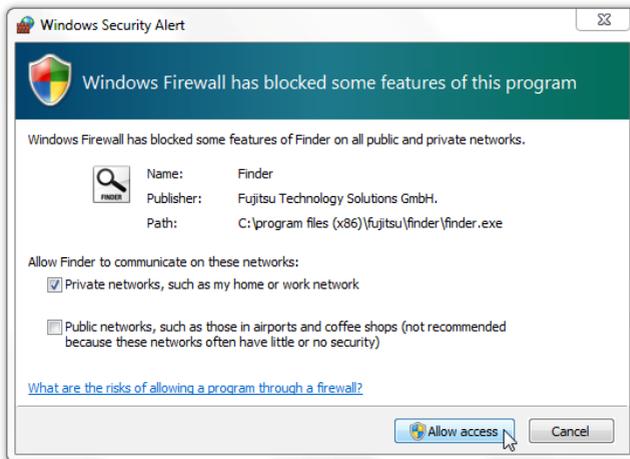
- ▶ Select *Install Fujitsu Finder*.
- ▶ Follow the on-screen instructions to install *Fujitsu Finder*. *Fujitsu Finder* will then run automatically.

The following window will be displayed if Windows XP SP2 / SP3 is being used:



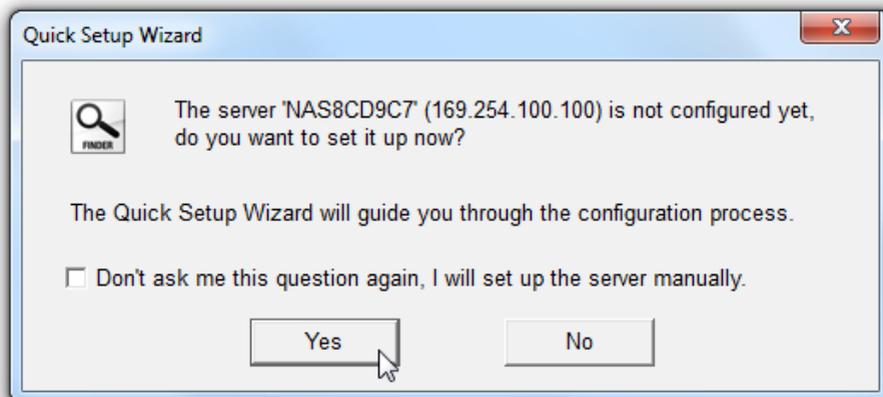
- ▶ Please select *Unblock*.

If you are using Windows 7, the following window will be displayed:



- ▶ Set a checkmark against *Private networks, such as my home or work network*.
- ▶ Click on *Allow access*.

*Fujitsu Finder* detects the NAS in the network and asks whether Quick Setup should be run.



- ▶ Click on *Yes* to continue.



If the NAS could not be found, please click on *Refresh* to retry.  
Check that you have installed a hard disk in the NAS.



If you have already set up the NAS via the LCD panel, you do not have to perform the following steps of the Quick Setup.



Note that during NAS set up, the installed hard disk will be formatted and all the data on it will be lost.

The first page of the Quick Configuration wizard will be displayed.

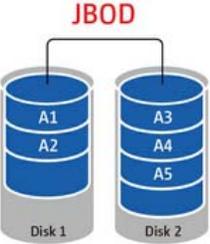
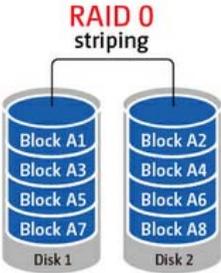
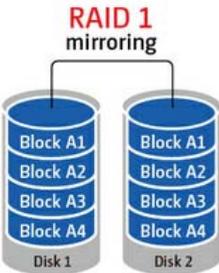
- ▶ Click on *Start* to start the configuration process.

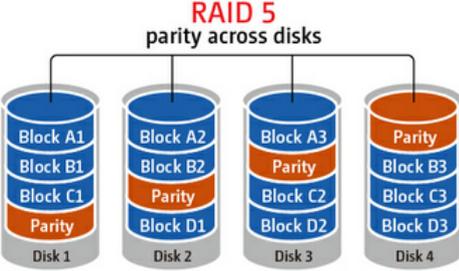
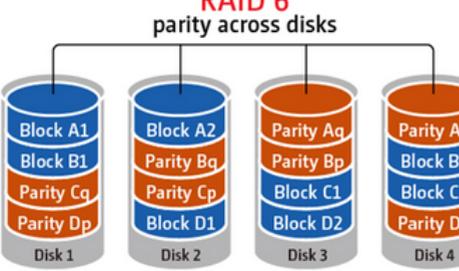
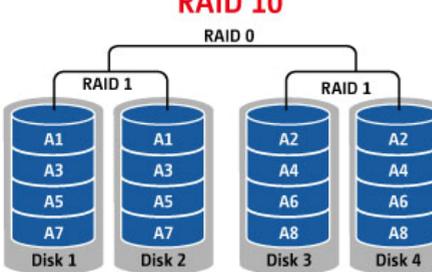


The configuration process may take up to twenty minutes if the hard disk used has a capacity greater than 500 GB.

- ▶ Follow the instructions for initial configuration.

- Select the desired drive configuration for the NAS Server:

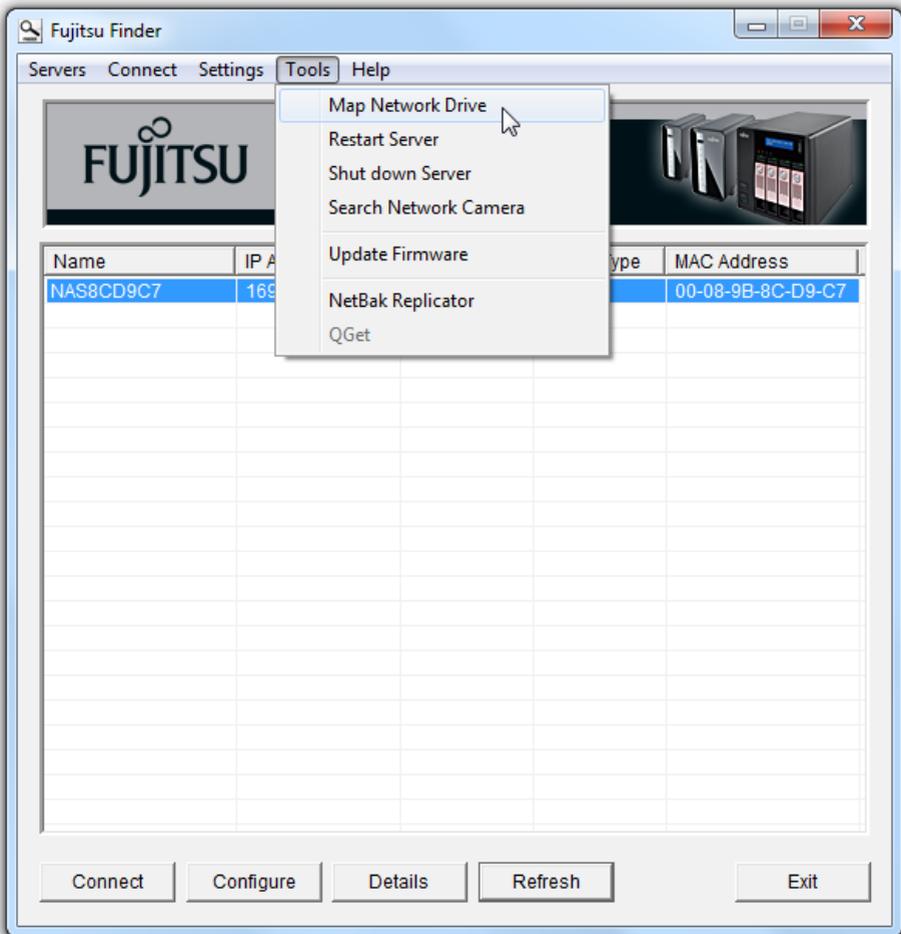
Configuration	Description
Single Disk Volume	Each hard drive is used as a standalone disk. If a hard drive is damaged, all the data will be lost.
<p>JBOD (Just a bunch of disks)</p> 	JBOD is a collection of hard drive that does not offer any RAID protection. The data are written to the physical disks sequentially. The total storage capacity is equal to the sum of the capacity of all member hard drives.
<p>RAID 0 Striping Disk Volume</p> 	RAID 0 (striping disk) combines 2 or more hard drives into one larger volume. The data is written to the hard drive without any parity information and no redundancy is offered.  The total storage capacity of a RAID 0 disk volume is equal to the sum of the capacity of all member hard drives.
<p>RAID 1 Mirroring Disk Volume</p> 	RAID 1 duplicates the data between two hard drives to provide disk mirroring. To create a RAID 1 array, a minimum of 2 hard drives are required.  The storage capacity of a RAID 1 disk volume is equal to the size of the smallest hard drive.

<p>RAID 5 Disk Volume</p> <p style="text-align: center;"><b>RAID 5</b> parity across disks</p> 	<p>The data are striped across all the hard drives in a RAID 5 array. The parity information is distributed and stored across each hard drive. If a member hard drive fails, the array enters degraded mode. After installing a new hard drive to replace the failed one, the data can be rebuilt from other member drives that contain the parity information.</p> <p>To create a RAID 5 disk volume, a minimum of 3 hard drives are required. The storage capacity of a RAID 5 array is equal to (N-1) (size of smallest hard drive). N is the number of hard drives in the array.</p>
<p>RAID 6 Disk Volume</p> <p style="text-align: center;"><b>RAID 6</b> parity across disks</p> 	<p>The data are striped across all the hard drives in a RAID 6 array. RAID 6 differs from RAID 5 that a second set of parity information is stored across the member drives in the array. It tolerates failure of two hard drives.</p> <p>To create a RAID 6 disk volume, a minimum of 4 hard drives are required. The storage capacity of a RAID 6 array is equal to (N-2) (size of smallest hard drive). N is the number of hard drives in the array.</p>
<p>RAID 10 Disk Volume</p> <p style="text-align: center;"><b>RAID 10</b> RAID 0</p> 	<p>RAID 10 combines four or more disks in a way that protects data against loss of non-adjacent disks. It provides security by mirroring all data on a secondary set of disks while using striping across each set of disks to speed up data transfers.</p> <p>RAID 10 requires an even number of hard drives (minimum 4 hard drives). The storage capacity of RAID 10 disk volume is equal to (size of the smallest capacity disk in the array) N/2. N is the number of hard drives in the volume.</p> <p>RAID 10 tolerates failure of only two disks from two different sets of disks.</p>

- ▶ Select the desired *File System*.
- ▶ Click on *Next* and then on *Start Installation*.

## Connecting a network drive

- ▶ Start the *Fujitsu Finder*.

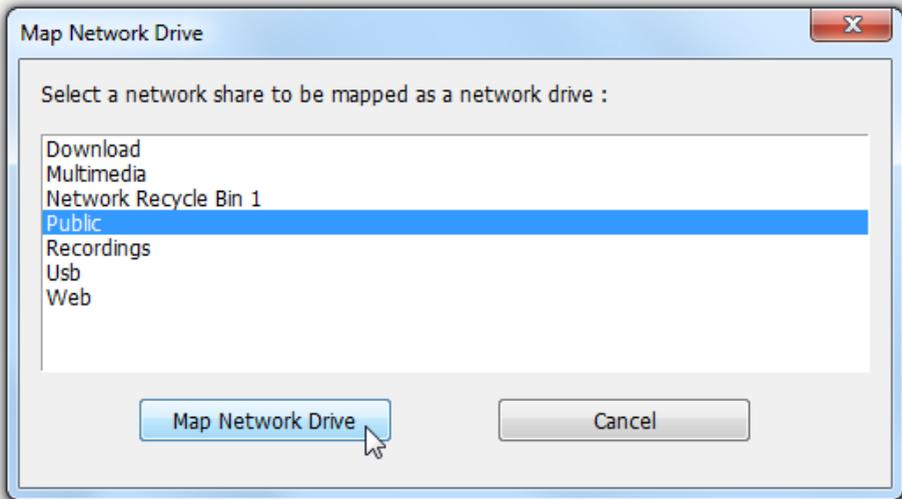


- ▶ Open the menu *Tools - Map Network Drive*.

## Installing the NAS

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The NAS offers several standard network shares.



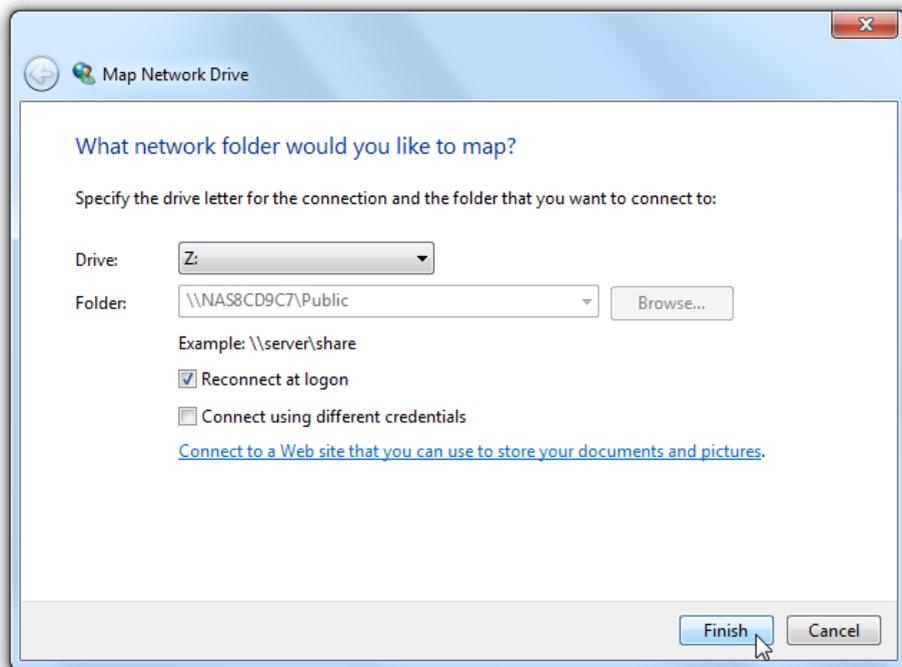
- ▶ Select the network share that should be mapped as a network drive and click on *Map network drive*.



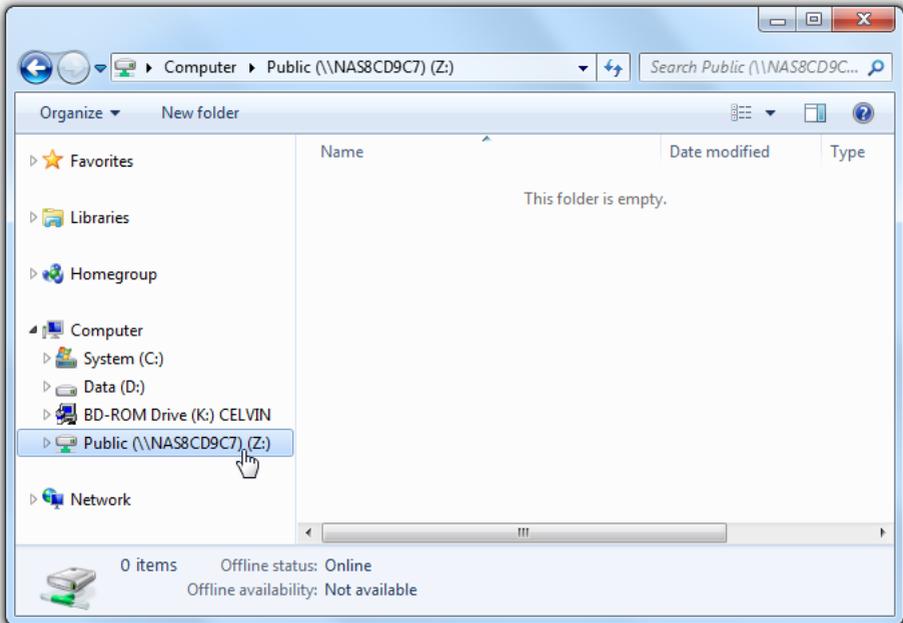
Download, multimedia, usb und web are standard network shares for using Download Station, Multimedia Station, external USB storage devices (automatic copy function), or Web Server. Recordings is the standard network share for using the Surveillance Station.



- ▶ Enter the default user name and password.
  - Default user name: admin
  - Default Password: admin



- ▶ Select the drive letter to be used for the connection and click on *Finish*.



- ▶ Once a connection has been successfully established, the network share will become available for use as a local data carrier in Windows Explorer.

# Connecting to the NAS

## Using the public folder (public network share)

The NAS public folder can be accessed in the following ways:

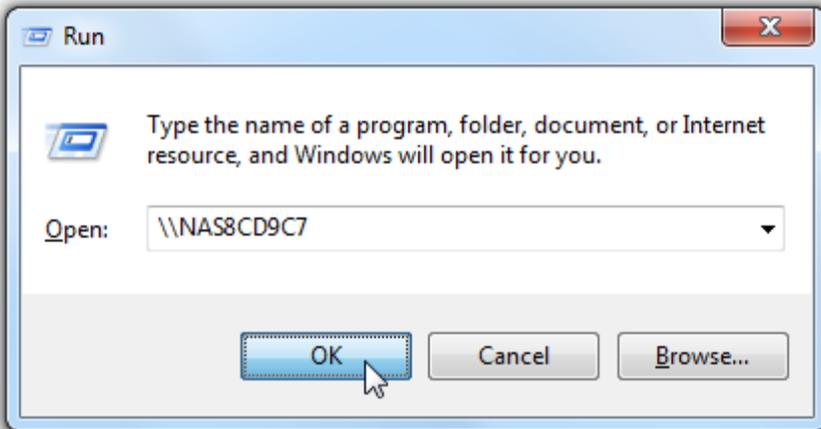
- ▶ Open Network Neighborhood and locate the NAS workgroup.
- ▶ If the server cannot be found, then please search the whole network for the NAS.
- ▶ Double click the name of the NAS to establish a connection.

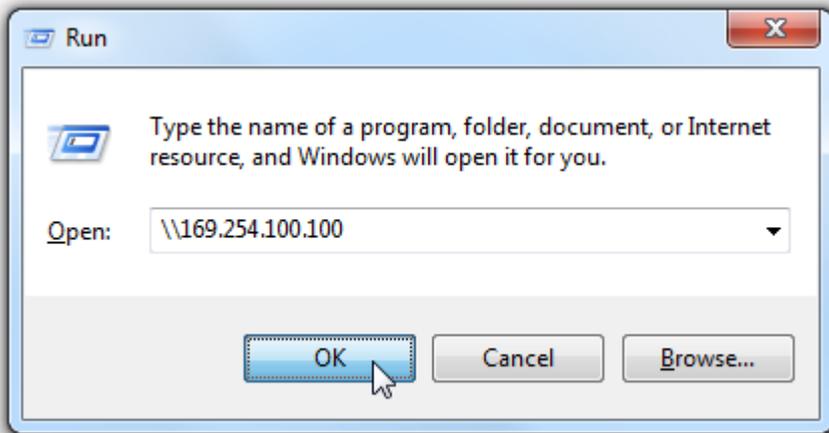
Alternatively:

- ▶ Click on *Start - Run* or keep the Windows key on your keyboard pressed and press the **R** key.
- ▶ Enter `\\[NAS name]` or `\\[NAS IP]` to access the shared folders on the NAS.



The placeholders *[NAS name]* and *[NAS IP]* represent the name or IP address of your NAS. You can use the *Fujitsu Finder* to obtain this information.





- ▶ Please enter your user name and password.
  - Default user name: admin
  - Default password: admin

Files can be uploaded to the network shares.

# Administering the NAS via a Web browser under Windows

The NAS Web administration page can be accessed by the following methods:

- ▶ Find the NAS via the Connect *Fujitsu Finder* and click on *Connect*.
- ▶ Open a web browser and enter `http://[NAS IP]:8080`.



The default NAS IP is 169.254.100.100:8080. If the NAS has been configured to use DHCP, then the *Fujitsu Finder* can be used to check the IP address of the NAS. Make sure that the NAS is connected to the same subnet as the computer that is running *Fujitsu Finder*. If it is not possible to search for the IP address of the NAS, please try connecting the NAS directly to the computer and restarting the *Fujitsu Finder*.



- ▶ Enter the user name and password to log in.
  - Default user name: admin
  - Default password: admin

The NAS supports encrypted SSL login. This allows the server to be configured and managed over an encrypted data link.

- ▶ To use this function, check the *Secure Login* option on the administration page before logging in to the server.



If the NAS is situated behind a NAT gateway and it is necessary to allow access to the NAS using secure login over the Internet, then Port 443 must be open on the NAT and mapped to the LAN IP of the NAS.

## Administration user interface

After completing the initial set-up for the NAS and logging in, the Administration user interface appears.



1 = Desktop area with various applications

2 = Control Panel

3 = Main menu

4 = Show desktop

5 = Taskbar

6 = Background tasks

7 = External devices

8 = Messages and warnings

9 = Personal settings

10 = Restart, shutdown, logout

11 = Search

12 = Help

13 = Language

14 = Display

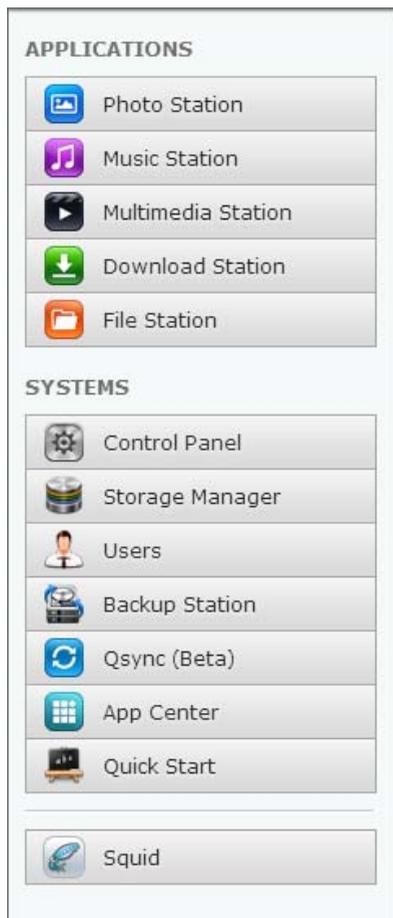
15 = Next desktop

16 = Control centre

### Opening the main menu

► Click on .

The main menu will appear.



The main menu consists of three parts:

#### **Applications**

The sub-items enable access to NAS extensions that are provided and maintained by QNAP Systems, Inc.

#### **System settings**

The sub-items enable access to the NAS main function settings.

### Third-party provider applications

The annexe contains a list of applications that have been created and submitted by independent developers and approved by QNAP Systems, Inc. These applications can be installed via the App Center.



Please understand that Fujitsu cannot be held liable for the content, functionality and security of these applications in any way. In the event of problems with these applications, please contact the relevant developer directly.

## Control Panel / Opening applications

- ▶ Click on Control Panel or one of the applications.

A new window opens inside the desktop area.



When you open a third-party provider application, a new browser window will open instead of a window inside the desktop area

- ▶ Click on the Help button in the top right corner of the window for more information on the relevant menu or application.
- ▶ Click on to minimise a window. You can then access it again later from the taskbar.
- ▶ Click on to maximise a window.
- ▶ Click on to close a window.

# Accessing the NAS from Linux

In addition to operating systems from Microsoft, the NAS also supports Linux systems using the NFS service.

- ▶ In Linux, run the following command: `mount -t nfs <NAS IP address>:./<Network Share Name> <Directory to Mount>`
- ▶ For example, if the IP address of the NAS is 169.254.100.100 and the link to the network share folder "public" should be created in the /mnt/pub directory, use the following command:  
`mount -t nfs 169.254.100.100 ./public /mnt/pub`



The above command can only be executed when logged in as "root".

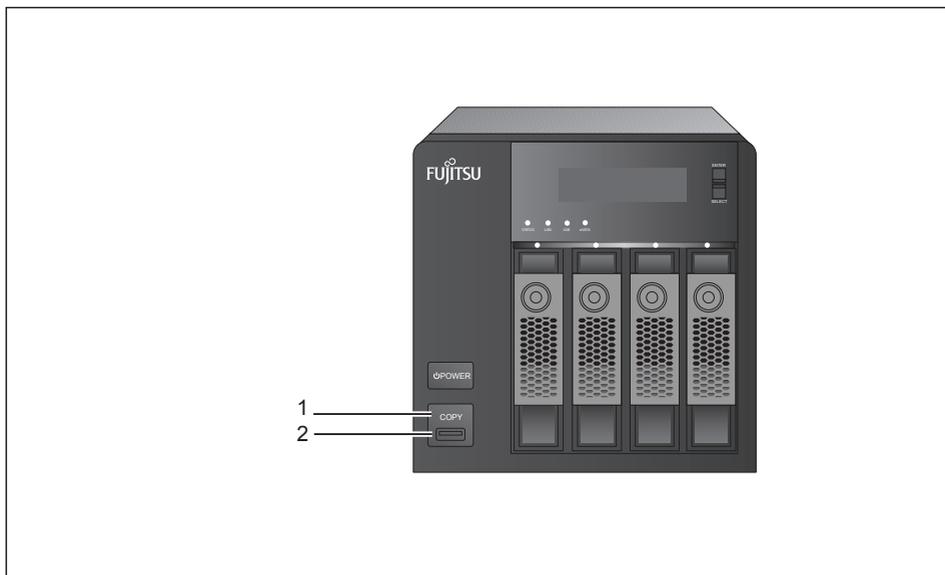
- ▶ Log in with the user name specified previously. The network share folder can be accessed via the mounted directory.

# Copying data using the front USB port

Data can be copied directly from an external drive to the NAS or vice versa by simply pressing the USB Copy button on the front of the device. To use this function, follow the steps below:

- ▶ Make sure a hard disk has been installed and formatted in the NAS. This will create the usb standard network share.
- ▶ Switch on the NAS.
- ▶ Configure the behaviour of the Copy button on the *Backup - USB One Touch Copy* page.
- ▶ Connect the USB drive, e.g. digital camera or flash drive, to the front USB port on the NAS.
- ▶ Press the Copy button. Data will be copied to the NAS according to the previously defined settings.

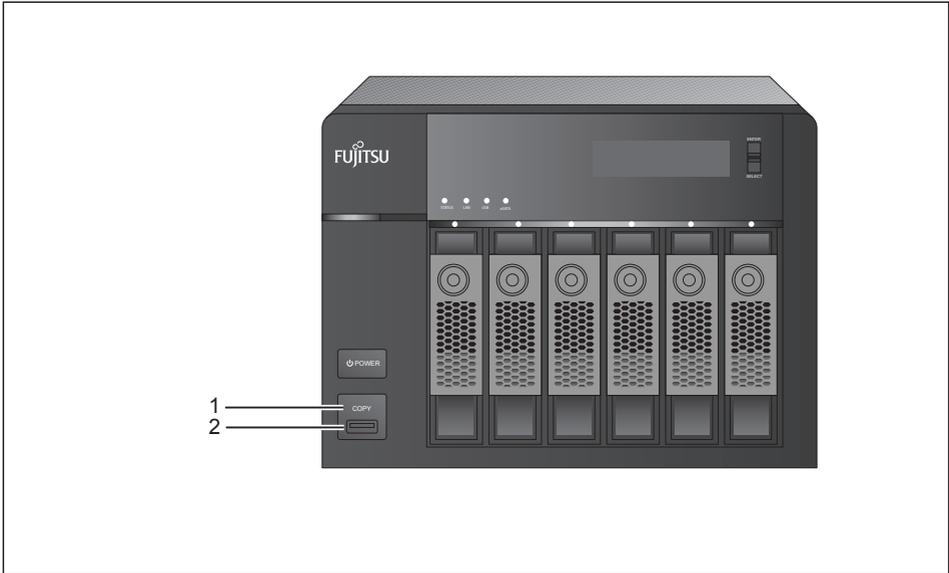
## Q802



1 = Copy button

2 = USB 2.0

## Q902



1 = Copy button

2 = USB 2.0



This function performs an incremental backup. After the first time data backup, the NAS only copies the files that have changed since the last backup.



If several partitions are available on the source storage device, a new folder for each partition is created on the target device as a backup folder. The backup folder is named after the backup date and the partition number, YYYYMMDD-1 for partition 1, YYYYMMDD-2 for partition 2, etc. If the source storage device only contains one partition, the backup folder is simply named YYYYMMDD.



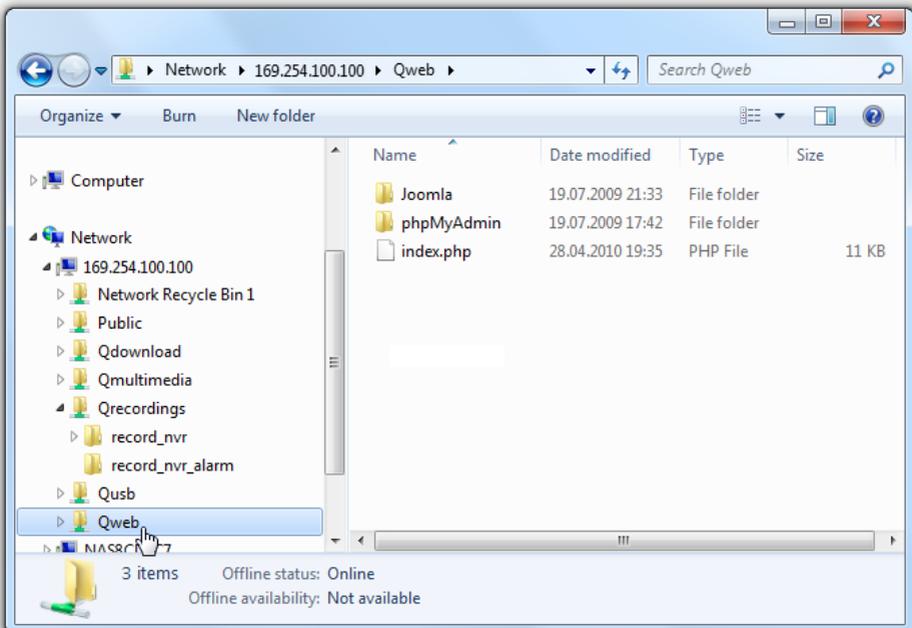
Files are copied from the source to the target. Additional files on the target are deleted; files with the same name are overwritten by the source. The source data remains unchanged.

# Web Server

The NAS can be used to upload web pages, with the Web Server function providing a convenient way to manage a website. Interactive websites using Joomla!, PHP, and SQLite are also supported.

- ▶ Activate the Web Server function and enter the port number in *Control Panel – Applications - Web Server*.
- ▶ Web pages can be uploaded to the web folder using the following methods:
  - Using Samba: Open a web browser and enter `\\[NAS IP]\Web` or `\\[NAS Name]\Web`. Log in to the folder and upload the web pages.
  - By FTP: Log in to the FTP service and upload the web pages to the folder.
  - Using Web File Manager: Log in to the Web File Manager and upload the web pages to the folder.

The file `index.html`, `index.htm`, or `index.php` will be the home page of the website.



- ▶ Click the `http://[NAS IP]/` link on the Web Server page to access the web pages that were uploaded. Note that when Web Server is enabled, it is necessary to type `http://[NAS IP]:8080/` into the web browser to access the login page for the NAS.

### MySQL administration

As a MySQL administration tool, it is recommended that you install the phpMyAdmin plugin from the App Center. When the firmware is updated in future, phpMyAdmin will not be re-installed and none of the data in the database will be overwritten or changed.

The phpMyAdmin program files are created in the Qweb share folders. It is possible to change the folder names and to access the database by entering the URL in the browser. The link on the Web management interface will not change however.



The default user name for MySQL is "root". The password is "admin". Please change the root password immediately after logging in through the phpMyAdmin administration interface.

### SQLite administration

The SQLiteManager is a multilingual, web-based tool for the administration of SQLite databases. You can download it at <http://www.sqlitemanager.org/>.

Please follow the steps below or refer to the INSTALL file in the SQLiteManager-\*.tar.gz download to install SQLiteManager.

- ▶ Extract the SQLiteManager-\*.tar.gz download file.
- ▶ Upload the extracted SQLiteManager-\* folder to `\\[NAS IP]\Web\`.
- ▶ Open a web browser and go to [http://\[NAS IP\]/SQLiteManager-\\*](http://[NAS IP]/SQLiteManager-*/).

The "\*" symbol refers to the version number of SQLiteManager.

# FTP server

The NAS supports the FTP service. To use the FTP service, enable this function in *Network Services* and follow the steps below:

- ▶ Open Internet Explorer and enter *ftp://[NAS IP]* or *ftp://[NAS Name]*.



It is essential that secure passwords are used when using the FTP server. A secure password contains numbers, letters and special characters.

# Using the QGet download software

QGet is a powerful software tool for managing BT, HTTP and FTP download tasks on multiple NAS servers over LAN or WAN. QGet does away with the need to use the Web interface to log in to individual Download Stations on multiple servers separately to modify the settings one after the other. Simply install QGet on any Windows computer to manage the download tasks for all NAS servers in one place.

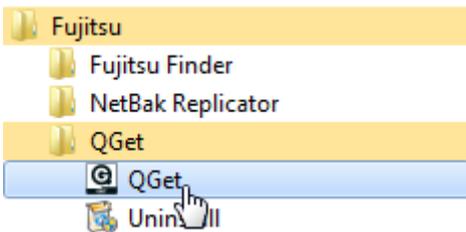
- ▶ To use QGet, install the software from the product CD-ROM.

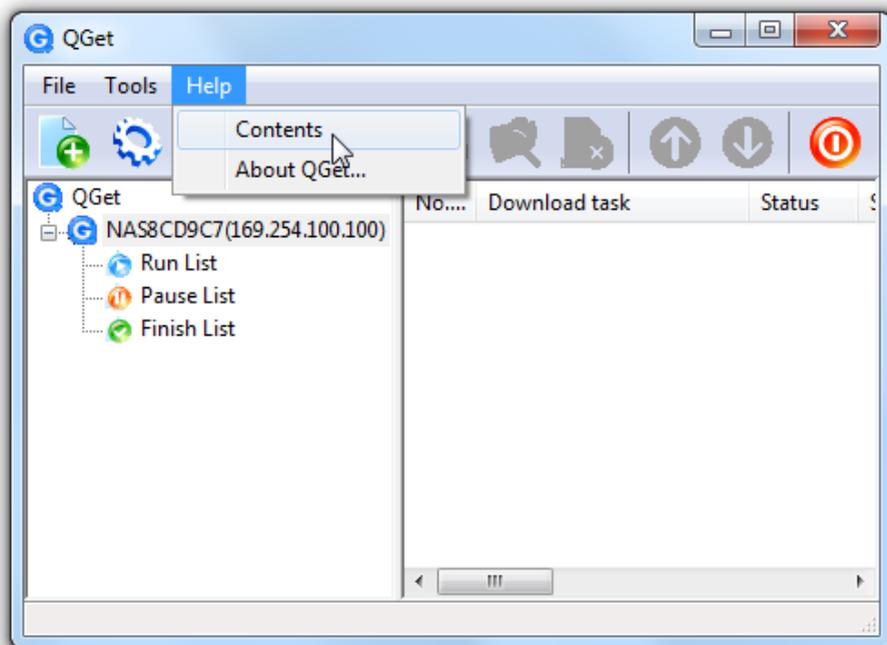


- ▶ Follow the instructions to install QGet.



- ▶ Run QGet from the installed location.





For details on using QGet, please refer to the online help included with the software.

# NetBak Replicator

NetBak Replicator is a powerful data backup program (Windows only). Selected files and folders from the local PC can be backed up in user-defined share folders on the NAS. Data is transferred via LAN or WLAN.

## Installing NetBak Replicator



- ▶ Select *Install NetBak Replicator* from the menu on the NAS CD.
- ▶ Follow the on screen instructions to install the application.



- ▶ A shortcut icon  will appear on the desktop upon successful completion of the installation process. Double click on this icon to launch NetBak Replicator.

### Using NetBak Replicator

- ▶ Before using NetBak Replicator, please login to the NAS administration page and go to *Access Right Management - Share Folders* to create a share folder for backup purposes. Make sure the share folder is available for access by all users, or that you log in to the share folder with an authorized account or as administrator.



- ▶ Launch NetBak Replicator.
- ▶ For details on how to use the software, press **F1**.

# Firmware update



When updating the firmware, the mains power and network connection must not be disturbed. Do not switch the NAS off during a firmware update under any circumstances.



If the system is running properly, then there is no need to update the firmware.

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

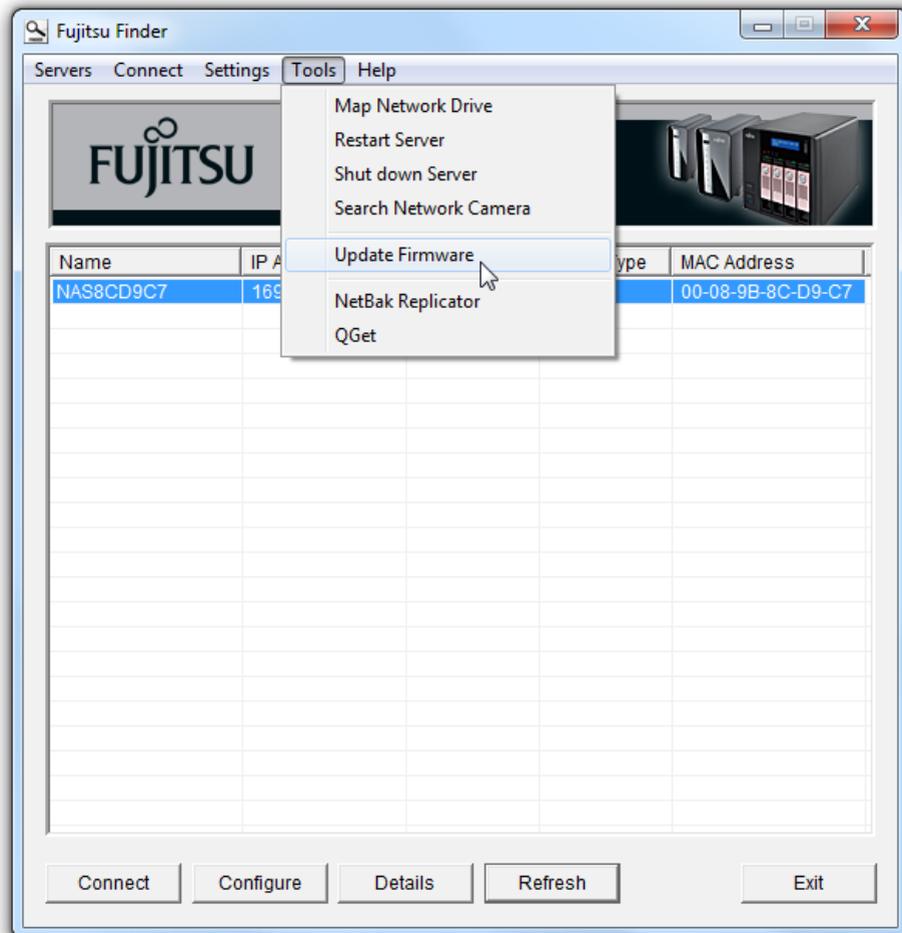
- ▶ Please visit <http://www.fujitsu.com/fts/support> and read the release notes for the new firmware version to check if it is necessary to update the firmware.
- ▶ Before updating the system firmware, back up all data stored on the hard disk to avoid any data being lost during the system update.
- ▶ Open the Administrator screen and select *Control Panel – Update Firmware – Update Firmware*.
- ▶ Click *Browse...* to select the new firmware image for the system update.
- ▶ Select the corresponding IMG file and then click on *Update system* to update the firmware.

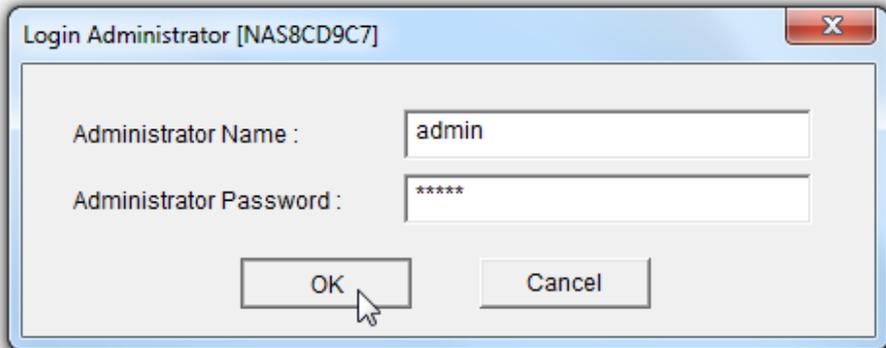


The system update may take anywhere from a number of seconds to several minutes to complete, depending on the network connection status. Please be patient. The system will display a message when the system update is completed.

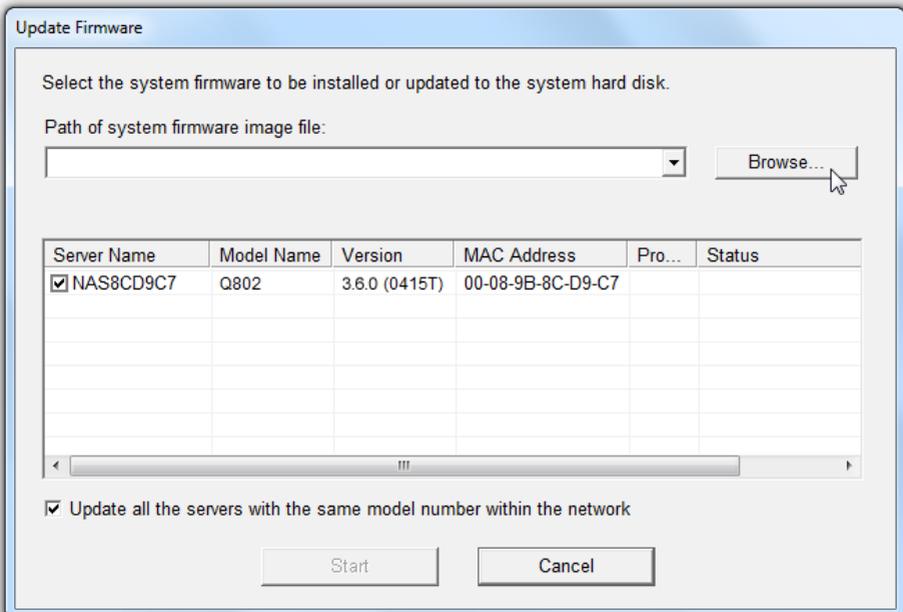
### Updating the system firmware using Fujitsu Finder

The system firmware can be updated using *Fujitsu Finder*. Choose the NAS model and select *Update Firmware* from the *Tools* menu.





- Log on as an administrator.



- Browse to select the correct firmware for the NAS. Click *Start* to update the system.



The *Fujitsu Finder* can be used to update all servers of the same model on the same local network. Please note that this process requires administrator access to all the servers to be updated.

# NAS maintenance

## Shutting down/rebooting the server

Follow the steps below to shut down or reboot the server:



- ▶ Log into the NAS.
- ▶ Click on the user name you used to log in (e.g. "admin") in the upper right section of the screen.
- ▶ Click *Restart* to reboot the server.
- ▶ Select *Shutdown* to switch off the device.

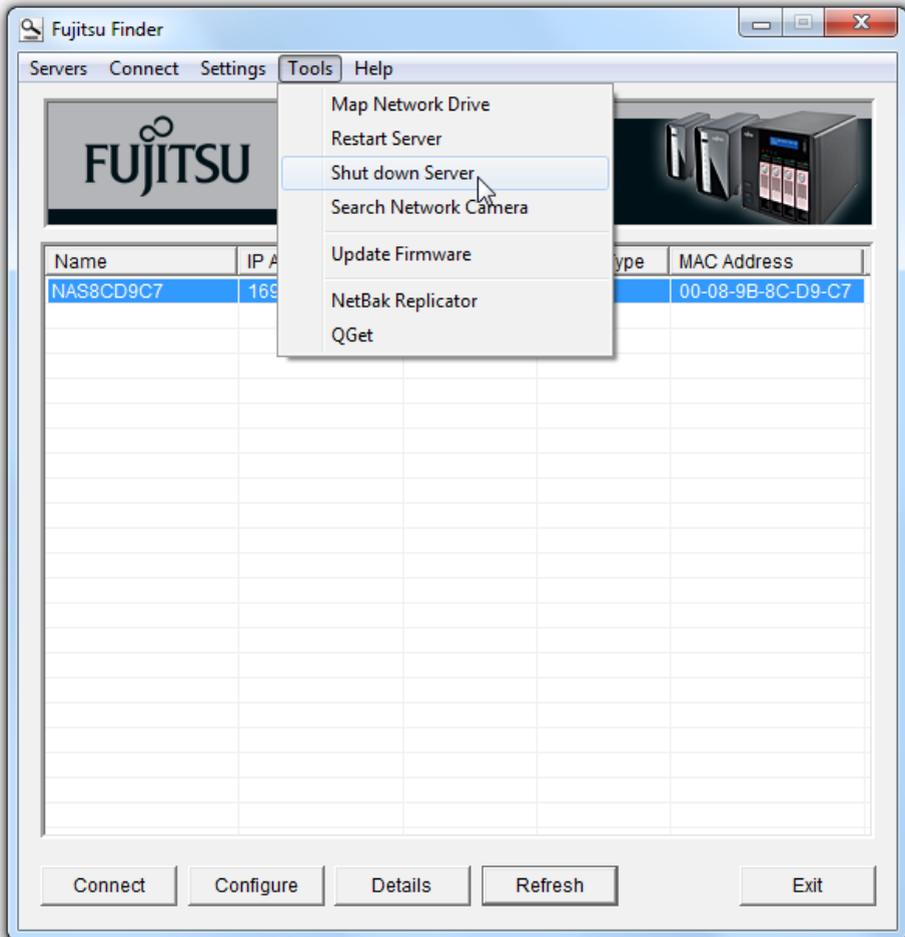
You can force the shutdown if the server will not shut down in the normal way.



Forcing a shutdown may damage the file system and lead to data loss.

- ▶ To force a shutdown of the server, press and hold down the ON/OFF button for at least 10 seconds. The server will beep once and then shut down immediately.

The *Fujitsu Finder* can be used to restart or shut down the server (admin access required).



## Resetting the administrator password and network settings

To reset the administrator password and NAS network settings, proceed as follows:

- ▶ Press and hold the Reset button on the NAS for 3 seconds. A beep will be heard. This will reset the following settings to their defaults:
  - System administration password: admin
  - TCP/IP configuration: Obtain IP address settings automatically via DHCP
  - TCP/IP configuration: Disable Jumbo Frame
  - TCP/IP configuration: If port trunking is enabled (dual LAN models only), the port trunking mode will be reset to “Active Backup (Failover)”.
  - System Port: 8080 (system service port)
  - Security Level: Low (Allow all connections)
  - LCD panel password: (blank)
  - VLAN will be disabled

### Advanced system reset (10 sec)

- ▶ Press and hold the Reset button for 10 seconds.

Two beeps sound (after the third and tenth seconds). The NAS will reset all the system settings to default as it does by web-based system reset in *Control Panel - System Settings - Backup / Restore - Restore to Factory Default* except all the data are reserved. The settings such as the users, user groups, and the network share folders previously created will be cleared. To retrieve the old data after the advanced system reset, create the same network share folders on the NAS and the data will be accessible again.

- ▶ Log in to the NAS with the default user name and password:
  - Default user name: **admin**
  - Password: **admin**



The *Enable configuration reset switch* option must be enabled in *Control Panel - System Settings - Hardware* in order to allow the system to be reset to defaults using the reset button.

## Failure or malfunction of a hard disk

Please proceed as follows if a hard disk malfunctions or fails:

- ▶ Make a note of all unexpected behaviour and/or error messages to assist the technician.
- ▶ Stop using the NAS for any purpose and switch it off.
- ▶ Contact technical support.



The NAS must be repaired by a trained technician. Never try to repair the NAS yourself.

## Power failure or abnormal shutdown

Following a power failure or improper shutdown of the NAS, when the system is restarted it should normally restore to the same state it was in before the shutdown or power failure. If the system does not function properly after the restart, please carry out the following steps:

- ▶ If the system configuration is lost due to the shut down or power failure, then reconfigure the system manually.
- ▶ In the event of abnormal operation of the system, or if error messages are displayed, contact customer services for technical support.

## Abnormal system software behaviour

If the system software does not operate correctly, the NAS will automatically restart to restore normal operation. If the system restarts continuously, it may fail to resume normal operation. Please contact technical support immediately in such cases.

## System temperature protection

When the system temperature exceeds 70 °C (158 °F), the system will shut down automatically to protect the hardware.

## EuP mode configuration (for compliance with legal standby requirements)

The EU directive 2009/125/EC defines ecodesign requirements for energy-related products. In order to comply with this directive, the EuP mode needs to be activated.

- ▶ Activate EuP mode under *Control Panel - System Settings - Power*.

When EuP mode is enabled, the following settings will be affected so that the server maintains low power consumption (less than 0.5W) when the server is powered off:

- Wake on LAN: Disabled.
- AC power resumption: The server will remain off after the power restores from an outage.
- Schedule power on/ off/ restart settings: Disabled.

If EuP mode is deactivated, the power consumption of the server is greater than 0.5W when switched off. EuP is disabled by default so that you can use the functions Wake on LAN, AC power resumption, and power schedule settings properly.

# Troubleshooting RAID operation errors

If the RAID configuration for the NAS is incorrect or error messages are displayed, please try the following solutions:



It is essential to back up all important data on the NAS first to mitigate any potential data loss.

Check the following to determine if the RAID rebuild has failed:

- LED: The Status LED on the NAS is flashing red.
- The *Control Panel - System Settings - Storage Manager* page is displaying the hard disk configuration status as *In degraded mode*.

► Establish which hard disk(s) caused the RAID rebuild failure:

- Go to the *Control Panel - System Settings - System Logs* page and search for the following error messages in order to establish which hard disk(s) caused the error.

Error occurred while accessing Drive **x**

Drive **x** has been removed



**x** refers to the number of the hard disk port.

## Fault elimination

The drive rebuild will start when a new hard disk (e.g. HDD 1) is connected. If the drive configuration fails again due to a read/write error from the hard disk during the rebuild process, then please check which hard disk caused the error and then follow the steps below to rectify the problem.

**Scenario 1:** The error was caused by the last drive to be connected.

If the last drive to be connected (e.g. HDD 1) caused the rebuild error, then please disconnect HDD 1 and connect another new drive to start RAID rebuilding.

**Scenario 2:** The error was caused by an existing drive (e.g. HDD 2) in the RAID configuration.

If the RAID configuration is RAID 1, then carry out one of the following steps:

- Back up the data on the drive to another storage device. Once this is done, repeat the installation and setup of the NAS.
- Format the last drive to be connected (e.g. HDD 1) as a single drive. Next, back up the data on the NAS to this drive (HDD 1) using Web File Manager. Remove the faulty drive (e.g. HDD 2). Install a new drive in the NAS to replace the faulty drive. Finally, run the RAID 1 migration.



When connecting or removing a hard disk, please adhere strictly to the following rules to avoid causing a system operation fault or loss of data.

Only one drive at one time may be connected to or disconnected from the NAS.

After connecting or disconnecting a hard disk, wait for about ten seconds or longer until two beeps are heard. The next hard disk can then be connected/disconnected.

## Hot-swap Hard Drives



Fujitsu Technology Solutions 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.

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



To prevent the risk of electric shock, switch the NAS off before replacing the hard disks.

The NAS supports hot-swapping the hard drives when 1 member drive crashes in RAID 1, 1-2 member drives crash in RAID 5 or RAID 6.

To replace a hard disk while the NAS is in operation, proceed as follows:



Prepare a new hard drive to replace the failed one.

The capacity of the new hard drive should be the same as or larger than the failed hard drive.

- ▶ Login the NAS.
- ▶ Check the disk volume configuration in *Storage Manager*.
- ▶ The drive is in *degraded mode*.
- ▶ Unplug the failed drive from the NAS.
- ▶ Wait until the server emits two beeps.
- ▶ Remove the failed drive from the drive tray.
- ▶ Install the new hard drive on the drive tray.
- ▶ Insert the slide-in module into the NAS.
- ▶ The server should beep 1.5 seconds twice.
- ▶ Check the volume status on the web administration page.

The drive now automatically runs the restore.

## RAID Recovery

The CELVIN NAS supports exclusive RAID recovery technology to recover a failed RAID disk volume from unintentional disconnection or removal of the hard drives from the system. Using the RAID recovery, users can recover an inactive RAID 1, RAID 5, or RAID 6 volume to *degraded mode*, or an inactive RAID 0 and JBOD configuration to normal.

Disk volume	Supports RAID recovery	Maximum number of disk removal allowed
Single	No	-
JBOD	Yes	1 or more
RAID 0	Yes	1 or more
RAID 1	Yes	1 or 2
RAID 5	Yes	2 or more
RAID 6	Yes	3 or more
RAID 10	No	-

If the volume status is not active, users can install the same hard drives back to the same slots of the NAS.

- ▶ Select *Storage Manager - RAID Management - Recover*.
- ▶ Wait for about 60 seconds for the process to complete.

After the restore is completed, you can access your data again.



After recovering a RAID 1, RAID 5, or RAID 6 disk volume from *not active* to *degraded mode* by the RAID recovery, users can read or write the volume normally.

The volume status will be recovered to normal after synchronization.

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

## Troubleshooting RAID operation errors

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	<b>CELVIN RAID 5</b>	<b>CELVIN RAID 6</b>
Degraded mode	N-1	N-1 & N-2
Read only protection (for immediate data backup & hard drive replacement)	N-1, bad blocks found in the surviving drives of the array.	N-2, bad blocks found in the surviving drives of the array.
RAID recovery (RAID status: Not active)	If re-inserting all the original hard disk drives to the NAS and they can be spun up, identified, accessed, and the hard drive superblock is not damaged.	If re-inserting all the original hard disk drives to the NAS and they can be spun up, identified, accessed, and the hard drive superblock is not damaged).
RAID crash	N-2 failed hard drive and any of the remaining hard drives cannot be spun up or identified or accessed.	N-3 and any of the remaining hard drives cannot be spun up or identified or accessed.

N = Number of hard disk drives in the array

# Technical data

	Q802	Q902
CPU	Intel® Atom™ D27xx	
RAM	1 GB DDRIII	2 GB DDRIII
Flash memory	1 GB (USB DOM)	
Hard disk	up to 4 x SATA 6G hard disks (hot-swappable and lockable)	up to 6 x SATA 6G hard disks (hot-swappable and lockable)
Network	2 x Gigabit RJ-45 network connector (Intel 82574L NIC)	
LEDs	Status, LAN, USB, eSATA, HDD1, HDD2, HDD3, HDD4	Operation, Status, LAN, USB, eSATA, HDD1, HDD2, HDD3, HDD4, HDD5, HDD6
Buttons	Switch-on button, copy button, configuration reset button	
USB	5 x USB 2.0 ports (front: 1, rear: 4) 2 x USB 3.0 ports (rear: Supports USB printer, USB storage and control of uninterrupted power supply over USB.	
eSATA	2 x eSATA 3G	
VGA	For console management (reserved for maintenance)	
HDMI	V1.3a (reserved)	
Dimensions	177 x 180 x 235 mm (H x W x D)	175 x 257 x 235 mm (H x W x D)
Weight	3.65 kg (net), 4.65 kg (gross)	5.2 kg (net), 6.5 kg (gross)
Operating temperature	0~40 °C	
Humidity	0~80 %	
Power supply	Input: 100-240 V ~ / 3.5 A, 47 Hz - 63 Hz Output: +3.3 V / 6 A, +5 VSB / 2 A Max power: +5 V / 12 A, -12 V / 0.5 A 250 W: +12 V / 17 A	
Anti-theft device	Security Lock	
Fan	1 x low-noise fan for power supply 1 x low-noise fan for hard disks and PCB	1 x low-noise fan for power supply 2 x low-noise fan for hard disks and PCB

	<b>Q802</b>	<b>Q902</b>
Accessory	Accessory Box Power cable CD-ROM 2 x 1.8 m Ethernet cable Quick Installation guide Service Desk brochure Safety instructions Screws for 2.5"hard disk Screws for 3.5"hard disk 2x Hard disk key	

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Version 3, 29 June 2007

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