

# TS-409

## Turbo NAS

# 4-Bay Hot-swappable RAID 0/1/5/6/JBOD Online RAID Capacity Expansion Online RAID Level Migration

*All-in-one NAS Server for SOHO & Home Users*

### Outstanding Performance with the Most Advanced Backup Solution

- 500MHz Powerful CPU with 256MB DDRII and Gigabit LAN interface
- Auto-sync/ Instant/ Schedule Backup (Professional Backup Software, NetBak Replicator Included!)
- Encrypted Remote Replication

### Expand Storage Capacity and Migrate RAID Level Flexibly

- Advanced disk configurations: RAID 0, 1, 5, 6, 5+spare, single, and JBOD
- Online RAID Capacity Expansion: Replace the Hard Drives on TS-409 Step by Step to Increase the Storage Capacity
- Online RAID Level Migration: Add a Hard Disk Drive to the Disk Configuration and Migrate to Higher RAID Level for increased data redundancy

### Best Choice to Set up Your Own Web Server

- MySQL and SQLite Dual Support
- Built-in phpMyAdmin
- Built-in DDNS Support

### Connect TS-409 to Your Digital Home

- Play the Photos, Videos and Internet Radio (with Built-in TwonkyMedia Server) via UPnP/ DLNA Compliant Media Players
- Enjoy Your Music by iTunes Server
- Manage the Continuous Download Tasks by QGet Software, Anytime, Anywhere
- Share Your Photos in Web-based Photo Album with Access Management



- Quiet
- Power-saving
- Superior cooling mesh design

### Abundant SOHO and Home Server Features

- File Server
- FTP Server
- iTunes Server
- Remote Replication
- RAID Server
- Backup Server
- Web Server
- MySQL Server
- Multimedia Station
- Printer Server
- Media Server
- Download Station



# All-in-one NAS Server

TS-409 Turbo NAS

4-Bay • Hot-swappable • Advanced RAID



## Overview

TS-409 is the new generation network-attached storage (NAS) server dedicated to SOHO and home users. It is an all-functions-in-one server with hotswap design and supports 4 SATA hard drives (max. 4TB capacity). TS-409 adopts high performance 500MHz CPU, 256MB DDRII large-sized memory, and Gigabit Ethernet design. The high-speed performance of the server largely enhances the file transfer rate and maintains high performance service quality in the network environment for multiple simultaneous access.

TS-409 offers advanced RAID management tools: online RAID capacity expansion and online RAID level migration. With online RAID capacity expansion: users can select to purchase the most cost-effective hard drives for initial server setup and upgrade to larger ones in the future. All the stored data will be kept and seamlessly moved to the newly installed hard drives. There is no need to turn off the server during the process. With online RAID level migration: Users can start from one drive firstly and add more drive members to upgrade the RAID level in the future with the data retained. There is no need to turn off the server during the process.

TS-409 provides plenty of powerful functions. The intelligent backup utility NetBak Replicator is offered with multiple backup modes for data backup from multiple Windows PCs to TS-409. Other functions include the PHP, MySQL, and SQLite web and database server, encrypted remote replication,

easy-to-set-up enterprise standard RAID 5 and RAID 6 for advanced redundancy, built-in DDNS, and SSH remote login. The convenient user interface enables SOHO users to install the server without the need to ask for MIS help.

For home users, TS-409 is a server with many interesting and practical home-use multimedia applications. The applications include music sharing via iTunes server, network broadcast via UPnP/ DLNA (TwonkyMedia) support, photo sharing with friends and family via the web-based album, PC-less BitTorrent download station, etc. In addition, TS-409 is compatible with various gaming consoles and mobile devices. Users can use PS3 or Xbox to play the multimedia contents stored on the server on the TV or Hi-Fi system, or listen to the music files wirelessly via PSP. They can also use the DLNA control point function of Nokia N95 to remote control media player and play the multimedia contents on NAS.

Moreover, TS-409 provides the best thermal dissipation with the smart fan and excellent mechanical design by hard disk drive bracket to make wind tunnel effect. TS-409 is power-saving and supports 24/7 non stop operation. QNAP TS-409 is undoubtedly the best choice for SOHO and home users for mass storage of multimedia contents.

## Versatile Functions for SOHO and Home Users

### Your Data Center for File Sharing and Storage



#### File Server

The principle purpose of file server is for data storage and sharing. Data security and access management are the major concerns of most users. TS-409 allows server manager to create user ID and password, and define the authority and quota for each user. Thus, personal data stored on TS-409 is well protected.



#### FTP Server

Having troubles with sending large files by e-mail due to the limited capacity? You can establish your own FTP server by using TS-409. You can manage the access authority of the FTP server and share your files with your friends or customers easily in a few steps.



#### Sharing files across Windows and Mac

TS-409 is specially designed for different users to share the files across Windows and Mac environment.



#### Ultra-high-speed Performance

TS-409 adopts the latest powerful Marvell 5281 CPU and large-sized 256MB DDRII memory for extra high performance (the highest performance of its class) in uploading mass data to and downloading them from the server.



#### Web Server with Built-in phpMyAdmin

With the built-in phpMyAdmin and dual support of MySQL and SQLite, SOHO and home users can easily set up their own web server. With the editable php.ini support, there is no need of going through all the hassles of setting up a web server. You can either develop programs by yourself or download a variety of open-sourced applications, such as online shops, forums, blogs, etc., over the Internet.

### Back up and Share Your Digital Contents



#### UPnP Media Streaming Server (with built-in TwonkyMedia Server!!!)

TS-409 is a perfect media storage center and it works well with DLNA (Digital Living Network Alliance) compliant media players. TS-409 can also stream your stored photos, music, and videos to your PS3 and Xbox360 game consoles.



#### Photo Sharing

Now you can share photos with your family and friends by TS-409. The server automatically generates a web-based photo album with thumbnails and details, such as date, resolution, focal length, aperture, etc. You can browse and share the digital photos in a convenient way!



Digital camera with USB interface

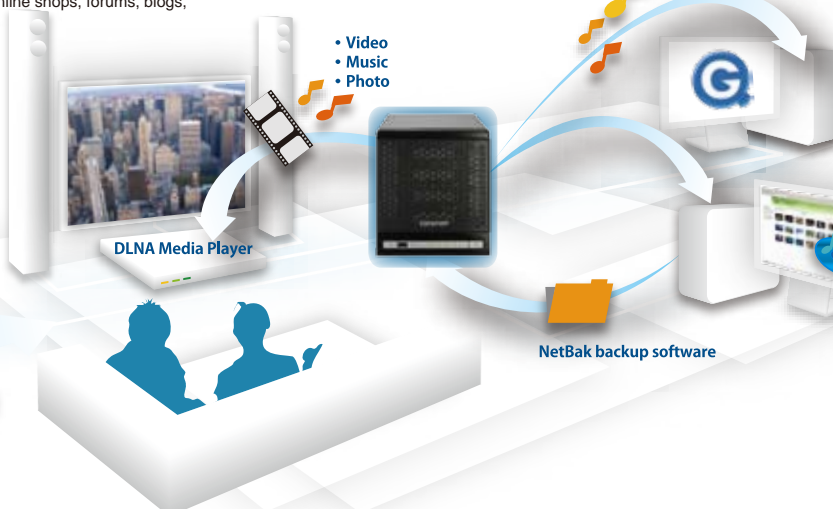
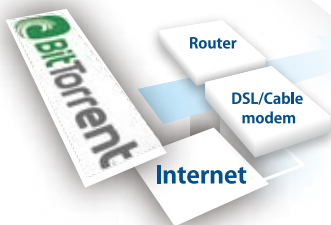
#### One Touch Copy Button

#### Intelligent One Touch Auto Copy

When USB device is installed, simply press the copy button and all USB data can be copied to TS-409 independent of PC.

### Digital Home Application

BT download without PC



- Video
- Music
- Photo

QGet Remote management software

- Personal web
- Blog / Forum
- Photo album
- iTunes Server

NetBak backup software

## Complete Backup Solution



### Encrypted Remote Replication

Encrypted remote replication provides high level of data protection. Files can be backed up from TS-409 to other QNAP NAS products in remote locations. Advanced options including data compression, block-level incremental backup, and data synchronization are supported to optimize the bandwidth and time for data backup.



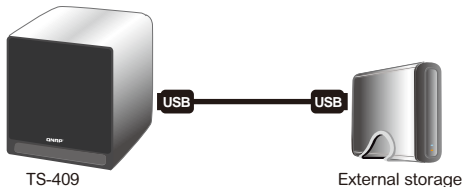
### Backup Server

The intelligent automatic backup software, NetBak Replicator, is provided for TS-409 users to perform real-time synchronization or schedule backup from multiple PCs to TS-409.

- You can use the encrypted remote replication feature to back up all the data on a TS-409 to another TS-409 QNAP NAS over LAN/ WAN.



- TS-409 supports data backup from internal hard drives to external USB storage device.



## S.M.A.R.T. & Advanced HDD Health Scanning (HHS)



S.M.A.R.T. & Advanced HDD Health Scanning (HHS) TS-409 supports Hard Disk Drive S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) which enables users to monitor the status of hard disk drive and check the potential problems. This tool helps prevent unexpected failure of hard disk and avoid critical data loss. Moreover, TS-409 is embedded with HHS technology which supports disk checking and bad blocks scanning to prevent potential data loss.

## Store, Access and Share Your Data Securely



- Personal data stored on TS-409 is well protected**  
Server manager can create user ID and password, and define the authority and quota of each user.
- IP filter control**  
Users can allow or deny specified IP connections to TS-409.
- SSL Security (HTTPS)**  
TS-409 can be accessed and configured by web browser securely.
- Remote login your TS-409 by SSH (secure shell) or Telnet connection.**
- Secure FTP**  
Share and transmit your data over SSL/TLS (Explicit) encryption.  
Passive FTP port range setup is also supported.
- Smart FTP policy control**  
The maximum number of all FTP connections and a single account can be configured.
- Encrypted remote replication**  
Data on TS-409 can be backed up to another QNAP NAS product over the Internet securely.

## Comprehensive Event Log System



Logs of connections to TS-409 via samba, FTP, AFP, HTTP, HTTPS, Telnet, and SSH, and networking services accessed by online users are all recorded. Server managers can monitor the status of TS-409 closely.

## Advanced RAID Management with Hot-swap Design



To ensure the data security, TS-409 offers advanced disk configurations for RAID 0, 1, 5, 6, 5 + Spare, Single, and JBOD.

When HDD failure occurs, the administrator can be alerted by e-mail alarm and LED indication. The failed drive can be replaced by hot swapping without turning off the server. The intelligent data rebuilding feature allows users to replace a failed drive by hot-swapping and enables automatic data rebuilding to the new drive without suffering from any system downtime.



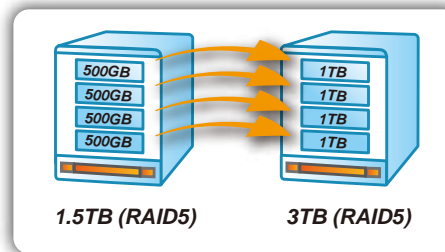
RAID 5 (disk striping with 1 parity)



RAID 6 (disk striping with 2 parities)

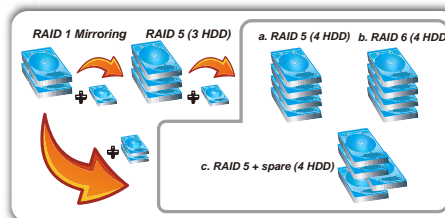
## Online RAID Capacity Expansion and RAID Level Migration

Online RAID Capacity Expansion:



With Online RAID Capacity Expansion, users can select to purchase the most cost-effective hard drives for initial server setup and upgrade to larger ones in the future. All the stored data will be kept and seamlessly moved to the newly installed hard drives. There is no need to turn off the server during the process.

Online RAID Level Migration:



With Online RAID Level Migration, users can start from one drive firstly and add more drive members to upgrade the RAID level in the future with the data retained. There is no need to turn off the server during the process.

## Establish a PC-less Home Multimedia Center by Using QNAP NAS and PS3 or Xbox 360



- All the multimedia contents stored on QNAP NAS can be automatically shared to a PS3 or an Xbox360 in the home network. Users can play their stored photos and videos on a TV, or listen to the music via their Hi-Fi system. QNAP NAS can be a perfect home storage and sharing center for establishing a PC-less, HD video-playing (via PS3, video resolution up to 1080p), highly accessible, and power-saving digital home theatre.



## Hardware Specifications

### Processor

- Marvell 5281 500MHz

### Memory

- 256MB DDRII RAM, 8MB Flash

### HDD Capacity

- 4 x 3.5" SATA I/II HDD, up to 4TB (the standard system is shipped without HDD)

### LAN Port

- 1 x Gigabit RJ-45 Ethernet port

### LED Indicators

- USB, Status, HDD 1, HDD 2, HDD 3, HDD 4, LAN

### USB

- 3 x USB 2.0, support USB printer, disk, digital camera, pen drive, card reader, USB hub, and USB UPS etc.

### Buttons

- USB auto-copy button
- Power button
- Reset button

### Alarm Buzzer

- System Warning

### Form Factor

- Tower

### Dimensions

- 225(D) x 176(W) x 188(H) mm

### Weight

- Net weight: 3Kg
- Gross weight: 4.75Kg

### Operation Environment

- Temperature 0~40°C
- Humidity 0~95% R.H.

### Power Supply

- External Adapter, 96W, DC 12V, 8A

### Energy-saving Design

- Smart fan, sleep mode: 18.8W
- In operation: 44.6W

### Thermal Solution

- Heat dissipation by smart fan

### Secure Design

- K-Lock security slot for theft prevention
- Anti-kick power adaptor design

## Powerful All-in-one Server

### File server

- File sharing across Windows and Mac centralized management

### FTP server

- Support data access from remote location via FTP (max. 32 concurrent connections)
- FTP with SSL/ TLS (explicit) mode
- Passive FTP port range control

### Backup server

- Client-side backup software-NetBak Replicator supports Instant, Schedule, and Auto-sync backup
- 3<sup>rd</sup> party backup software support: Acronis True Image, CA Brightstor ARCserve Backup, EMC Retrospect, Symantec Backup Exec

### Print server

- Network printer sharing via USB (support Windows & Mac platform)
- Support all-in-one printer (max. 3 sets)

### Remote Replication

- Block-level remote replication supports instant, schedule backup management; support synchronization mode

### Web Server

- Establish users own web page and interactive websites with editable PHP.ini, SQLite and MySQL dual support

### MySQL Server

- Support MySQL database server

### UPnP MediaServer

#### (built-in TwonkyMedia)

- Support UPnP/ DLNA multimedia technology: share stored photos and home videos on TV, listen to music on Hi-Fi system via DMP
- Enjoy more than hundreds of

worldwide Internet radio

- Support media playing with PS3, Xbox360, PSP
- Support Nokia N95 (DLNA control point)

### iTunes Server

- iTunes server for music sharing on your network
- Support Smart Playlist for iTunes software

### Multimedia Station

- Image slide show and rotation (+90°, -90°)
- Display photo details: dates, exposure time, aperture, etc.
- Automatic thumbnail generation for easy browsing
- Photo album access authority management
- Multimedia files (video and audio) local playing
- Automatic file categorization

### Download Station

- Support PC-less BitTorrent/ FTP/ HTTP download
- Unique remote download control software: QGet (Windows-based application) allows you to control the download tasks of multiple Turbo NAS on one PC via LAN/ WAN
- BitTorrent download supports DHT (automatic relaying if interrupted)
- Download configuration (current seed number, configurable port range, bandwidth control, download percentage, UPnP NAT port forwarding for BitTorrent download)
- Download status list management (download percentage)
- Support access from Mac by Mozilla Firefox

## Software Specifications

### Operation System

- Linux-embedded system

### Networking

- TCP/IP, DHCP Client, DHCP Server, CIFS/SMB, AFP, HTTP, HTTPS, FTP, DDNS, NTP, Gigabit Jumbo Frame

### File System

- EXT3 (Internal/ external HDD)
- FAT (External HDD)
- NTFS (External HDD, read-only)

### Supported Operating Systems

- Microsoft® Windows® 98/ ME/ NT/ 2000/ XP/ 2003/ Vista
- Macintosh® OS X

### Disk Management

- Single disk, JBOD, RAID 0, RAID 1, RAID 5, RAID 5+ Hot spare, RAID 6
- Multiple RAID, online RAID capacity expansion, online RAID level migration
- Disk usage status management
- Check disk (Check Linux file system)
- HDD S.M.A.R.T.
- Bad blocks scan

### User Management

- User quota management (per user)
- User account management (max. 1,024 users)
- User group management (max. 128 groups)

### File System Management

- Network share management (max. 256 shares)
- Share folder level ACL support
- Unicode support
- Journaling file system

- Web File Manager

### System Tools

- E-mail alert (SMTP authentication)
- HDD standby mode
- Disk usage alert
- Automatic power on after power loss
- System firmware upgrade
- Change homepage logo
- Back up, restore, reset system settings

### Smart fan setting

- Configurable management port
- Easy IP filter management
- Secure remote login by SSH connection; remote login by Telnet connection
- USB, SNMP UPS support
- Network recycle bin

### Event Logs

- Complete system logs (system events, connection logs, current connection of on-line users)

### Multilingual Support

- English, Traditional Chinese, Simplified Chinese, Japanese, Korean, French, German, Italian, Spanish, and Russian

### Backup Management

- PC-client backup software-NetBak Replicator: Instant/ Schedule/ Auto-sync backup
- Encrypted remote replication
- One touch USB copy for different destination folders
- Backup to external storage device

## Package Contents



TS-409 Turbo NAS



Adaptor



Power cord



CD-ROM



Quick Installation Guide



Flat head screws x 16



Ethernet cable

Power Button

USB 2.0 Port

One Touch Copy Button

LED Indicators:

USB, Status, HDD1, HDD2, HDD3, HDD4, LAN

Power Connector

Password & Network Setting Reset Button

Giga LAN

USB 2.0 Port x 2

K-Lock Security Slot

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