

# TS-409U

Turbo NAS

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

*Professional Rack-Mountable NAS for Business*



### Cross-platform Sharing among Windows, Mac, Linux, and Unix

- Multiple file sharing protocols (SMB/CIFS, AFP, NFS) are supported

### Advanced Hard Drive Protection

- HDD S.M.A.R.T. (Self-monitoring Analysis and Reporting Technology) supported
- Unique HHS (bad block scanning and disk checking) supported

### Comprehensive Log System for Protocol Management

- Monitoring the connections to TS-409U via samba, FTP, AFP, HTTP, HTTPS, Telnet, and SSH.
- Recording the networking services accessed by online users

### 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-409U 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.

### Abundant Business Server Features

- File Server
- Backup Server
- Printer Server (Max. 3 sets)
- Web Server
- RAID Server
- Remote Replication
- FTP Server
- MySQL Server
- and More...



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

Professional Rack-Mountable NAS for Business

## Overview

The biggest challenge for IT managers today is to find a reliable centralized storage solution which is able to provide highly stable file storage and sharing. It is also important to set up a solid data backup system to protect the valuable digital assets against the risk of data loss. QNAP TS-409U Turbo NAS offers the most reliable solution with these powerful features and provides value-added benefits by minimizing the maintenance cost for IT departments of modern business.

### High performance and advanced RAID redundancy

QNAP TS-409U is a 1U, 4-bay, hot-swappable All-in-one NAS (Network Attached Storage) Server. With the best price performance ratio, it is specifically designed for users who need fast performance, mass storage, and useful server features. TS-409U is a powerful Linux-embedded system with 500MHz SoC CPU and 512MB large-sized DDRII memory. It enables major business applications including storing, backing up, sharing, and archiving critical information. Advanced RAID configurations for non-stop service are also supported. RAID 5 is a widely adopted configuration for highly economic data protection that allows one drive failure with the system running. RAID 6 allows the failure of maximum two drives to offer business users more advanced data protection.

### Multi-functional All-in-one NAS Server

TS-409U supports multiple file sharing protocols for users to share files across Linux, Unix, Mac, and Windows platforms. Abundant valuable server functions such as File Server, FTP Server, and Printer Server are available. Also, Windows AD (Active Directory) is supported to help create an easy-to-access environment and lower the maintenance cost. With the dual support of MySQL and SQLite, SMB & SOHO users can easily set up their

own web and database servers. Moreover, users can make use of the encrypted remote replication and backup to external devices features for extra data protection. Various data storage and management mechanisms-FTP server with SSL/TLS encrypted technology, SSH login, and web page SSL login are also provided for secure data transfer and access.

### A solution for present and future

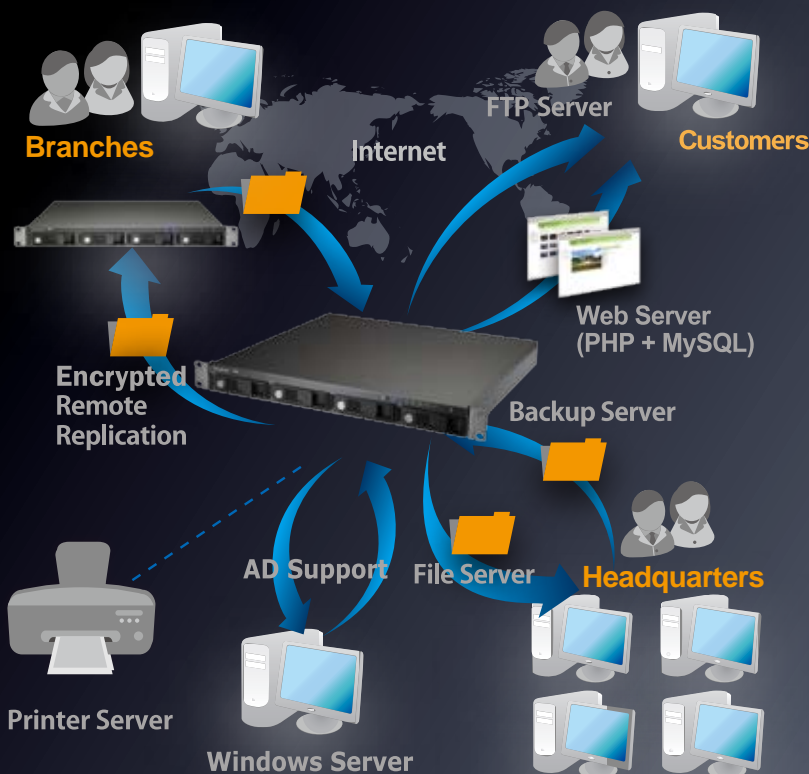
The flexible Online RAID Capacity Expansion and Online RAID Level Migration features lower the total cost of ownership. Online RAID Capacity Expansion allows the administrators to select the most cost-effective hard drives for initial server setup and upgrade to larger ones in the future. All the stored data will be kept and seamlessly moved to the newly installed hard drives without turning off the server. Online RAID Level Migration allows the administrators to start from one drive and add more to upgrade the RAID level in the future with the data retained.

### Easy setup and low maintenance cost

TS-409U adopts power-saving design which is excellent for long-term operation. Meanwhile, hot-swap design is supported. When a hard drive of a RAID configuration fails, the administrator can hot swap the failed drive with a new one without turning off the server to ensure non-stop services. The maintenance cost and effort are also minimized. Besides, the HDD S.M.A.R.T. is supported. The administrator can check the health of the hard drives and take appropriate action when unhealthy drives are found to prevent potential physical drive failure. The comprehensive log system of TS-409U summarizes the data access records and connection status. Alert emails can be sent to the administrator immediately when an error or a warning occurs.

## Professional Functions for Small Business

### Applications for Small Business



### Cross-platform Data Sharing and Storage Center



**Sharing files across Windows, Mac, Linux, and Unix**  
TS-409U is specially designed for different users to share the files across Windows, Mac, Linux, and Unix environment.



**File Server**  
TS-409U allows server manager to create user ID and password, and define the authority and quota for each user. Thus, personal data stored on TS-409U is well protected.



**FTP Server**  
You can set up an FTP server by TS-409U for data sharing among different branches or with your customers over the Internet.



**Support Windows AD**  
The Windows AD feature of TS-409U enables server manager to import user accounts from AD domain to NAS to reduce the time and effort for account setup. Users can use the same set of login name and password to access the domain and NAS.



**Printer Server**  
TS-409U supports up to three USB printers for sharing among multiple departments and staff members.

# High Reliability

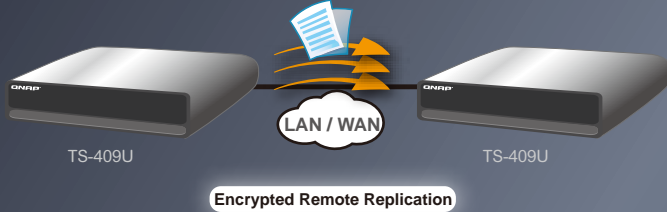
## Complete Backup Solution



### Backup Server

The intelligent automatic backup software, NetBak Replicator, is provided for TS-409U users to perform real-time synchronization or schedule backup from multiple PCs to TS-409U. TS-409U also works well with other backup software, e.g. Acronis True Image, CA BrightStor ARCserve Backup, and EMC Retrospect.

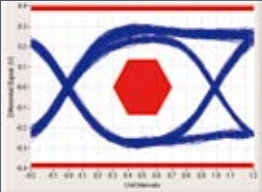
You can use the encrypted remote replication feature to back up all the data on a TS-409U to another QNAP NAS over LAN/ WAN.



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



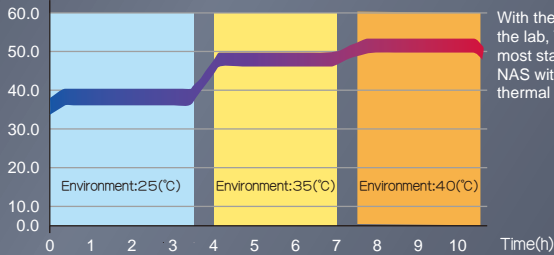
## Reliable SATA Signal Design



The high quality SATA signal design of TS-409U guarantees better hard drive compatibility and more reliable data transfer.

## Outstanding Thermal Performance

HDD Temperature(°C)



With the long term test in the lab, TS-409U is the most stable and reliable NAS with the outstanding thermal performance

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



S.M.A.R.T. & Advanced HDD Health Scanning (HHS) TS-409U 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-409U is embedded with HHS technology which supports disk checking and bad blocks scanning to prevent potential data loss.

## UPS Support

TS-409U provides uninterrupted services with the UPS support



### UPS Support

The key function of UPS is to provide the power for a period of time during power failure. TS-409U supports both APC and MGE UPS devices which help users store the data in time and avoid critical data loss when power outage occurs during data transfer.

# High Availability

## Advanced RAID Management with Hot-swap Design

To ensure the data security, TS-409U 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.



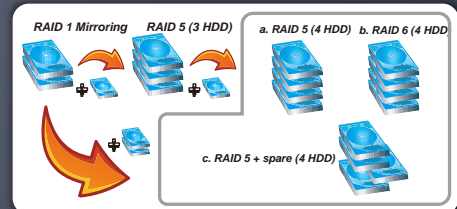
## Online RAID Capacity Expansion and RAID Level Migration

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.

# Store and Share Securely

## Secure Data Storage, Access, and Sharing



- Data stored on TS-409U is well protected: server manager can create user and password, define the authority and quota of each user.
- IP filter control: Server manager can allow or deny specified IP connections to TS-409U.
- SSL Security (HTTPS): TS-409U can be accessed and configured by web browser securely.
- Remote login to TS-409U by SSH (secure shell) or Telnet connection is supported.
- Secure FTP: Data can be transmitted with 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.

## Comprehensive Event Log System



Logs of connections to TS-409U 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-409U closely.



## Hardware Specifications

### Processor

- Marvell 5281 500MHz

### Memory

- 512MB 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, USB hub, and USB UPS etc.

### Buttons

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

### Alarm Buzzer

- System Warning

### Form Factor

- 1U Rack mount

### Dimensions

- 409.1(D) x 430(W) x 44.45(H) mm

### Weight

- Net weight: 5.2Kg
- Gross weight: 7Kg

### Operation Environment

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

### Power Supply

- Single power supply, 200W, Input: 115~230V, 47~63Hz, 3.0A

### Energy-saving Design

- Smart fan

### Thermal Solution

- Heat dissipation by fan

## Professional RAID NAS Server

### File Server

- File sharing across Windows/ Mac/ Linux/ Unix and 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

### Printer Server

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

### RAID Server

- Advanced disk configurations: RAID 0, 1, 5, 6, 5+spare, single, and JBOD
- Intelligent online RAID capacity expansion and online RAID level migration

### 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 (Digital Media Player)

- 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

- New BT client: Support TCP, UDP, and encrypted BT download
- 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, NFS, 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 32-bit
- Macintosh® OS X
- Linux/ Unix

### 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)
- Windows AD service support
- 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 online users)

### Multilingual Support

- English, Traditional Chinese, Simplified Chinese, Japanese, Korean, French, German, Italian, Spanish, Swedish, Finnish, Danish, Norwegian, Russian, and Polish

### 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



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