TS-439 Pro Turbo NAS

Superior Performance NAS with iSCSI for Business

- **4-Bay Hot-swappable**
- **Superior Performance for Data Sharing**
- **Built-in iSCSI Target Service**
- **AES 256-bit Volume-based Encryption**
- **RAID 0/1/5/6/5+Spare/JBOD**
- **Online RAID Capacity Expansion & Online RAID Level Migration**
- **Dual Gigabit LAN: Failover, Load-Balancing & Multiple IP Setting**
- **Touch-N-Go PC-less Installation**

QNAP

TS-439Pro
169.254.100.100

ENTER

SELECT

POWER

COPY

Powerful Intel Processor
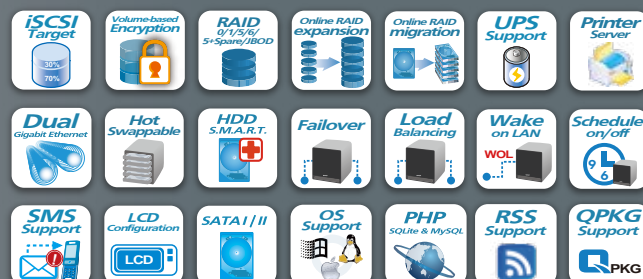**1.6GHz**

1GB
DDRII Memory

- **Superior cooling design**
- **Ultra-low system noise**

Abundant Business Server Features

- RAID Server
- iSCSI Target
- Web Server
- MySQL Server
- Remote Replication (Rsync)

- File Server
- Backup Server
- FTP Server
- Printer Server (Max. 3 sets)
- and more...

iSCSI Target	Volume-based Encryption	RAID 0/1/5/6/5+Spare/JBOD	Online RAID expansion	Online RAID migration	UPS Support	Printer Server
Dual Gigabit Ethernet	Hot Swappable	HDD S.M.A.R.T.	Failover	Load Balancing	Wake on LAN	Schedule on/off
SMS Support	LCD Configuration	SATA I / II	OS Support	PHP SQLite & MySQL	RSS Support	QPKG Support

TS-439 Pro Turbo NAS

Overview

QNAP TS-439 Pro is the new generation 4-bay model of the worldwide award-winning Turbo NAS Series designed to deliver high performance and reliable server features such as advanced RAID protection, built-in iSCSI target service, and AES 256-bit volume-based encryption for small business.

Powered by Intel 1.6 GHz CPU and 1GB DDRII memory, the TS-439 Pro supports RAID 0/ 1/ 5/ 6/ 5+Spare, JBOD, Online RAID Capacity Expansion, and Online RAID Level Migration. To meet the demand for high security data protection of the business users, the TS-439 Pro supports AES 256-bit volume-based encryption. The encrypted disk volumes of the NAS must be unlocked by the encryption password to be accessed, which eliminates the fear of confidential data leakage if the hard drives or the NAS were stolen.

The TS-439 Pro can serve as a NAS and an iSCSI target server. The built-in iSCSI target feature provides an affordable IP-SAN (Storage Area Network) alternative. Also, the "Virtual Space Allocation" (Thin Provisioning) feature is provided which allows you to flexibly allocate the capacity of iSCSI LUN (Logical Unit Number) at the beginning regardless of the physical volume capacity.

Moreover, the TS-439 Pro supports file sharing across Linux, UNIX, Mac, and Windows. It provides numerous applications, e.g. file server, FTP server, printer server, web server (with phpMyAdmin, MySQL, SQLite, Joomla!). The TS-439 Pro is an ideal storage solution for your office network.

Advanced RAID Management

Advanced RAID Management with How-swap Design
The NAS offers advanced RAID 0, 1, 5, 6, 5 + Spare, Single, and JBOD disk configurations. It also supports hot-swap design that a failed drive can be replaced by hot swapping without turning off the server. Besides, the best-in-class RAID on the NAS brings users a higher level of data security by allowing one more hard drive failure than other NAS of the same level.

Online RAID Capacity Expansion
The storage capacity of a RAID configuration can be expanded by replacing the hard drives with larger ones. All the 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.


1.5TB (RAID5)   3TB (RAID5)
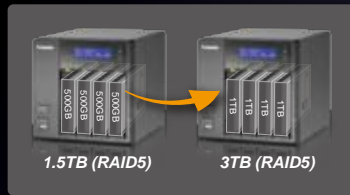
Online RAID Level Migration
You can upgrade the disk configuration to higher RAID level with the data retained. There is no need to turn off the server during the process.
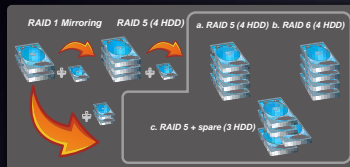

AES 256-bit Volume-based Data Encryption

The TS-439 Pro's dominant "volume-based encryption" feature enables you to build encrypted disk volumes on the NAS for the first time installation. The disk volume is securely protected by AES 256-bit encryption. An encryption key is required to unlock the encrypted volume to access the server data. This prevents data leakage if the server or the hard drives were stolen.

Benefits of Dual LAN Deployment
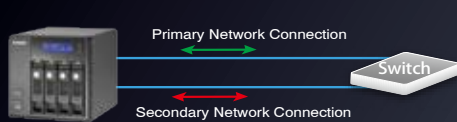
Network Failover
Failover allows the NAS to sustain the failure of one network port to provide continuous services.
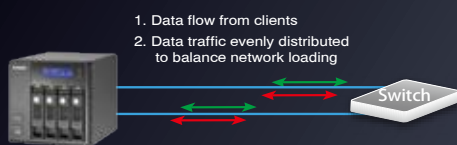
Load-Balancing
Bandwidth aggregation is supported to boost the file transfer speed (works with managed Ethernet switch with 802.3ad configured).

Multi-IP Setting
The NAS can be deployed with two different IP settings for sharing among different workgroups in two different subnets.

Flexible Built-in iSCSI Solution

Built-in iSCSI Target Service
For small business, a high-performance and flexible storage expansion solution for the existing application servers is required. However, DAS (Direct Attached Storage) is not an efficient solution and a Fiber Channel SAN is too expensive and complicated to implement.

The TS-439 Pro can act as a NAS and iSCSI target server at the same time. It provides a cost-efficient iSCSI solution to set up an IP-SAN. You can make use of the built-in iSCSI target service to add up to 8 iSCSI devices. Different iSCSI Target LUNs (Logical Unit Number) can be defined as storage expansion or backup destination of the existing application servers, such as database servers and mail servers.

Virtual Space Allocation (Thin Provisioning)
The "Virtual Space Allocation" (Thin Provisioning) feature is provided which allows you to flexibly allocate the capacity of iSCSI LUN (Logical Unit Number) at the beginning regardless of the physical volume capacity. When the physical storage capacity of the volume is going to be full, You can easily expand the storage capacity of the NAS by "Online RAID Capacity Expansion".

Application Diagram of NAS Plus iSCSI All-in-one System

Touch-N-Go PC-less Installation

You can use the handy LCD to finish the first time installation in 3 simple steps. The TS-439 Pro will automatically complete the hard disk formatting and RAID building.

DOM Architecture and Fail-Safe Dual OS Protection

All the OS and applications are embedded on the DOM of the TS-439 Pro to allow system booting without accessing the physical disk sectors, which prevents unsuccessful system startup caused by bad block sectors or file errors on the hard drives. Two operating systems are built on the DOM for system booting alternatively upon every system startup. When one fails, the other one will be used to boot up instead, and the failed OS is recoverable from the other healthy OS.

All-in-one Turbo NAS Applications

Secure Measures for Data Storage and Access

1. **Policy-based Unauthorized IP Blocking:** You can allow, deny or auto block specified IP address or network domain which attempts to connect to Turbo NAS via SSH/ Telnet/ HTTP(S)/ FTP/ samba/ AFP.

2. **Comprehensive Event Log System:** Detailed logs of file-level data access to the Turbo NAS via samba, FTP, AFP, HTTP, HTTPS, Telnet, and SSH, and networking services accessed by online users are all recorded.

3. **Syslog Setting:** All the system event logs and connection logs can be saved to a remote syslog server.

4. **Remote Login** by SSH (secure shell) or Telnet connection is supported.

5. **SSL Security (HTTPS):** The Turbo NAS can be accessed and configured by the web browser securely. You can upload a secure certificate and RSA private key in X.509PEM format issued by a trusted provider for the users to access the Turbo NAS by secure SSL login.

6. **Secure FTP:** The data can be transmitted with SSL/TLS (explicit) encryption. Passive FTP port range setup is also supported.

7. **Write-only access right on FTP server:** The third party partners are allowed to upload data to the NAS but not able to read or edit the data via FTP.

8. **Encrypted Remote Replication:** The data on the NAS can be backed up to or from another Turbo NAS over the network securely.

9. **Share Folder Management:** For the security of Windows network environment, you can hide or show network share folders.

10. **User Authority Management:** You can create user ID and password, and define the authority and quota for each user.

Diagram labels
Branches
Web Visitors
Encrypted Remote Replication
Customers
Web Server (Joomla!, PHP/ MySQL/ SQLite)
FTP Server
Printer Server x3
Syslog Server
Windows AD Support
Backup Server
File Server
MIS
Headquarters

Complete Backup Solution

NetBak Replicator (no license account limitation)
The backup software, NetBak Replicator, is provided for the NAS users to perform real-time synchronization or schedule backup from multiple PCs to the NAS.

Remote Replication by Rsync
The data on the Turbo NAS can be backed up to or from another Turbo NAS or Rysnc server over the network.

3rd Party Backup Software Ready
Acronis True Image, CA BrightStor ARCserve Backup, EMC Retrospect, Symantec Backup Exec, and LaCie Silverkeeper.

One Touch USB Auto Copy
The one touch button can be configured to trigger instant data backup from the external USB device to the NAS or the other way round (applies to the USB device connected to the front USB port of the NAS only).

Good Expansibility

Optware IPKG
MLDonkey
Joomla!
More...
QPKG Software Platform
QNAP NAS

Software Expansion via QPKG Center
The QPKG software package platform enables you to maximize the usage of the Turbo NAS by installing additional software packages developed by the users and community worldwide.

Printer Server
You can connect a USB printer to the NAS to enable network printer sharing. The NAS supports up to 3 USB printers.
x3

Web Server
With the built-in phpMyAdmin, Joomla!, editable php.ini, MySQL and SQLite, you can easily set up your web server and other online applications such as online shops, forums, and blogs.

MySQL Server
The Turbo NAS is the most affordable choice as a standalone database server. It can be applied as a database server of another web server or as an additional backup database server.

Smart Hard Drive Tools

HDD S.M.A.R.T.
The NAS supports Hard Disk Drive S.M.A.R.T. (Self-monitoring Analysis and Reporting Technology) for you to monitor the hard drive condition and prevent potential data loss.

Hard Disk Drive Health Scanning (HHS)
The embedded HDD HHS technology is provided for disk checking and bad blocks scanning of the NAS to secure your server data.

Convenient System Tools

Wake on LAN
Enable this option to power on the NAS remotely by Wake on LAN. Wake on LAN helps you manage your NAS conveniently.

Recycle Bin
The files deleted from the network shares of the NAS will be moved to a particular recycle bin folder. You can restore your data anytime in case of unintended file deletion.

Batch Creation of Users and Network Shares
The NAS supports batch creation of users and network share folders to save your time and effort in user account and folder creation.

Instant SMS/ Email Alert
You can configure the SMTP server and SMSC server settings on the NAS in order to receive instant system warning or error messages by email or SMS.

Smart Fan
The fan rotation speed is automatically adjusted according to the server's temperature. You can also define the system temperatures to trigger high speed or low speed rotation of the fan.

Hardware Specifications

Processor
- Intel Processor 1.6GHz

Memory
- 1GB DDRII RAM, 128MB flash (DOM)

HDD Capacity
- 4 x 3.5" SATA I/II HDD (the standard package is shipped without HDD)

HDD Tray
- 4 x hot-swappable and lockable tray

LAN Port
- 2 x Gigabit RJ-45 Ethernet port

LED Indicators
- Status, LAN, USB, eSATA
- HDD 1, HDD 2, HDD 3, HDD 4

USB
- 5 x USB 2.0 (Front: 1; Back: 4)
- Supports USB printer, disk, pen drive, USB hub, and USB UPS, etc.

eSATA
- 2 x eSATA port (Back)

Buttons
- System: Power button, USB one-touch-backup button, reset button

LCD panel
- Mono-LCD display with backlight and buttons for configuration

Alarm Buzzer
- System warning

Form Factor
- Compact

Dimensions
- 177(H) x 180(W) x 235(D) mm
- 6.97(H) x 7.09(W) x 9.25(D) inch

Weight
- Net weight: 3.65Kg/ 8.05lbs
- Gross weight: 4.65Kg/ 10.25 lbs

Operation Environment
- Temperature 0~40°C/ 32~104°F
- Humidity 0~95% R.H.

Power Supply
- ATX 250W, Input: 110-240 Vac~, 50-60Hz, 5A

Secure Design
- K-Lock security slot for theft prevention

VGA
- Reserved for maintenance

Fan
- 1 x quiet cooling fan (9 cm, 12V DC)

Powerful All-in-one Server

File Server
- File sharing across Windows/ Mac/ Linux/ Unix and centralized management

FTP Server
- Supports data access from remote location via FTP (max. 256 concurrent connections)
- FTP with SSL/ TLS (explicit) mode
- FXP supported
- FTP bandwidth control and connection control
- Passive FTP port range control

Backup Server
- QNAP client-side backup software - NetBak Replicator supports instant, schedule, and auto-sync backup
- 3rd party backup software support: Acronis True Image, CA Brightstor ARCserve Backup, EMC Retrospect, Symantec Backup Exec, LaCie Silverkeeper

Printer Server
- Network printer sharing via USB (Windows & Mac)
- Supports all-in-one printer (max. 3 sets)

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

Web Server
- Built-in phpMyAdmin, Joomla!, editable php.ini, SQLite and MySQL

MySQL Server
- Supports MySQL database server

UPnP MediaServer (built-in TwonkyMedia)
- Supports UPnP/ DLNA multimedia technology; share stored photos and home videos on TV, listen to music on Hi-Fi system via DMP
- Internet radio (built-in TwonkyMedia)
- Media playing with PS3, Xbox360, PSP game consoles

iTunes Server
- iTunes server for music sharing
- Smart playlist for iTunes software

Multimedia Station
- Image slide show and rotation (+90°, -90°)
- Display photo details: date, 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
- PC-less BitTorrent/ FTP/ HTTP download
- QNAP remote download control software: QGet (Windows & Mac), allows you to control the download tasks of multiple Turbo NAS on one PC via LAN/ WAN
- BitTorrent download supports TCP/ UDP, DHT
- BT schedule download
- BT download (up to 500 tasks)
- 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)
- Supports access from Mac by Mozilla Firefox

Software Specifications

Operating System
- Linux-embedded system

Networking
- TCP/IP, DHCP Client, DHCP Server, CIFS/SMB, AFP, NFS, HTTP, HTTPS, FTP, DDNS, NTP
- Failover
- Load-balancing
- Multi-IP setting
- Gigabit Jumbo frame

File System
- EXT3 (Internal/ external HDD)
- FAT (External HDD)
- NTFS (External HDD)

Supported Operating Systems
- Microsoft® Windows® 98/ ME/ NT/ 2000/ XP/ 2003/ Vista
- Mac OS X

Disk Management
- Single disk, RAID 0 (Disk Striping), RAID 1 (Disk Mirroring), RAID 5, RAID 5+ Hot spare, RAID 6, and JBOD (Linear Disk Volume)
- 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
- PC-less RAID setup via LCD panel for the first time installation (Touch-N-Go)
- AES 256-bit volume-based encryption
- Built-in iSCSI target service

User Management
- User quota management (per user)
- Windows AD
- User account management (max. 4,096 users)
- User group management (max. 512 groups)
- Batch creating users

File System Management
- Network share management (max. 512 shares)
- Network volume status management
- Share folder level ACL support
- Hide share folder on Windows network
- Unicode support
- Journaling file system
- Web File Manager

System Tools
- E-mail alert (SMTP authentication)
- SMS alert
- HDD standby mode
- Disk usage alert
- Automatic power on after power loss
- QPKG add-on firmware supported
- System firmware upgrade
- Change homepage logo
- Back up, restore, reset system settings
- Smart fan setting
- Configurable management port
- Policy-based unauthorized IP blocking
- Secure remote login by SSH connection; remote login by Telnet connection
- USB, SNMP UPS support
- Wake on LAN
- Schedule on/ off service (max. 15 settings)
- Network recycle bin
- Import SSL certificate

LCD
- RAID configuration for the first time setup
- When the system is ready, users can check or configure the IP settings, physical disk info, volume info, system info, shut down or reboot the NAS, etc.

Event Logs
- Complete system logs (file level): system events management, connection logs, current connection of on-line users
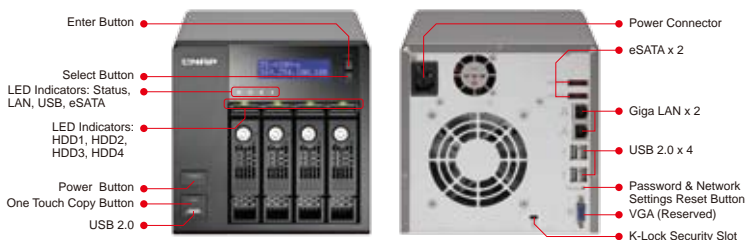
Multilingual Support
- English, Traditional Chinese, Simplified Chinese, Japanese, Korean, French, German, Italian, Spanish, Russian, Swedish, Norwegian, Finnish, Danish, and Polish

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

Package Contents

TS-439 Pro Turbo NAS

CD-ROM

Ethernet cable x 2

Quick Installation Guide

Power cord

Flat head screw x 16

Hard disk lock

Quick Installation Guide (RAID configuration)

Enter Button
Select Button
LED Indicators: Status, LAN, USB, eSATA
LED Indicators: HDD1, HDD2, HDD3, HDD4
Power Button
One Touch Copy Button
USB 2.0

Power Connector
eSATA x 2
Giga LAN x 2
USB 2.0 x 4
Password & Network Settings Reset Button
VGA (Reserved)
K-Lock Security Slot

*Designs and specifications are subject to change without notice. Please contact QNAP for updated information.

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