

# All-in-One NAS Server with iSCSI

for Home and SOHO Users

## 1/2/4-Bay

Superior High Performance for Cross-platform Data Sharing  
Energy-saving Design

- 2.5-inch & 3.5-inch hard disk drives support
- Hot-swappable hard disk drives with advanced RAID management
- Online RAID capacity expansion & online RAID level migration
- Gigabit LAN with Wake on LAN and jumbo frame settings
- Built-in iSCSI target service & virtual disk for storage expansion
- Smart IP filter & comprehensive log systems
- Complete backup solution including cloud-based and Apple Time Machine backup
- Streaming multimedia contents to iPhone or Android phones
- Ultra low power consumption & quiet operation



TS-119P+

TS-219P+

TS-419P+

### Abundant Home and SOHO Server Features

- RAID Server
- iSCSI Target
- Web Server
- File Server
- FTP Server
- MySQL Server
- Media Server
- Backup Server
- Printer Server (Max. 3 sets)
- Remote Replication (Rsync)
- Surveillance Station
- and more...



# All-in-One NAS Server with iSCSI

for Home and SOHO Users



## Overview

QNAP's TS-x19P+ Series Turbo NAS servers, including the 1-drive TS-119P+, 2-drive TS-219P+ and 4-drive TS-419P+, are designed for home and soho users who need a storage solution with large capacity to back up and share huge amount of data, such as music, videos, photos, and documents. The new models utilize Marvell's new 1.6GHz embedded processor, include 512MB of DDRIII memory, and support both 2.5-inch and 3.5-inch SATA II hard disk drives. The models combine an attractive industrial design, outstanding performance, ultra low power consumption, consumer-friendly features, and high system reliability.

TS-x19P+ Series Turbo NAS supports file access and system management across Windows, Mac, Linux, and UNIX. The new models offer business-class features such as EXT3 and EXT4 file systems, iSCSI target service, virtual disk drive (VDD), RAID 0, 1, 5, 6, 5+spare, single and JBOD disk configurations, online RAID capacity expansion, online RAID level migration, RAID recovery\*,

policy-based IP blocking, instant email and SMS alert, CD/DVD ISO backup and sharing, virtual host supported web server, Wake on LAN, scheduled power on/off, and IP video surveillance.

TS-x19P+ Series supports UPnP media server to allow users to connect to a wide range of network media players, such as Sony PS3 and Microsoft Xbox 360 gaming consoles, and NFS-supported High-Definition (HD) digital media players for HD video playback. Users can even use their iPhone or Android phones to stream and play the music, videos, and photos on the NAS from anywhere via Wi-Fi or 3G network connection. The NAS also offers Download Station for PC-less BitTorrent, FTP, and HTTP download and remote download management over the local network or the Internet.

\* The RAID features are available for 2-drive and 4-drive models only.

## All-in-One Server Features

### Virtual Host Supported Web Server

You can host multiple websites on Turbo NAS with the built-in web server and virtual host feature. The NAS supports PHP, MySQL, HTTPS connection, and SSL authentication. It is the ideal solution for you to create your own websites, e-shops, blogs, content management system (CMS), wiki, and so on.



### Printer Server

The NAS supports network printer sharing function (max 3 USB printers).



### Surveillance Station

You can connect to 2-4 IP cameras via the NAS and set up an IP surveillance system for live monitoring, video recording and playback. QNAP NAS supports IP cameras from AXIS, D-Link, IPUX, LevelOne, Linksys, Panasonic, and VIVOTEK.



### Supports PS3 and Xbox360

All the photos, music, and videos stored on the Turbo NAS can be played via PS3 or Xbox360 on your LCD TV or stereo Hi-Fi system.

### Exclusive Windows-based Backup Utility

The automatic backup software, NetBak Replicator, is provided for you to perform real-time synchronization or schedule backup from multiple PCs to the Turbo NAS.



### Using QNAP NAS with iPhone or Android Phones

QNAP offers a free multimedia application QMobile for users of iPhone and Android phones to carry all the multimedia files on the NAS in their pocket. You can stream videos, watch and upload digital pictures, play music that are stored on the NAS over the network and share your music playlists with other iPhone or Android phones users.



Stream your high definition video, music and photos to QNAP NMP-1000P network multimedia player from the Turbo NAS.

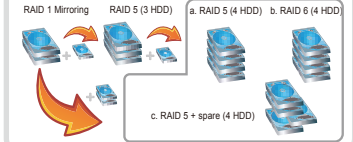


## Advanced RAID Management with Hot-swap Design

### Online RAID Capacity Expansion



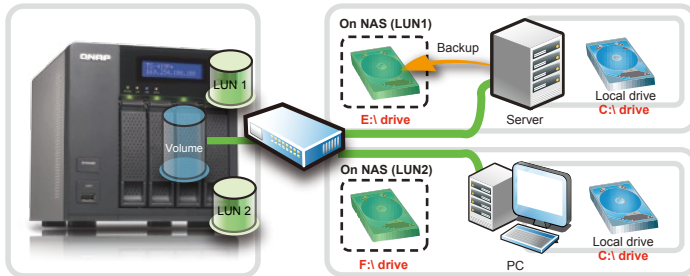
### Online RAID Level Migration



TS-219P+/419P+ supports online RAID capacity expansion for expanding the storage capacity of the RAID configuration and online RAID level migration for upgrading the disk configuration to higher RAID level.

## Flexible Built-in iSCSI Target Service

With the built-in iSCSI target feature, the NAS can be an ideal solution for backup or storage expansion. The users can easily create dedicated virtual drives on the NAS for their PCs or existing servers. The iSCSI drives on the NAS can be formatted as file system and used as local drives.



## Comprehensive Event Logs

Detailed logs of access to Turbo NAS via SAMBA, iSCSI, FTP, AFP, HTTP, HTTPS, Telnet, and SSH, and networking services accessed by online users are all recorded.



## Multimedia Station



### Build Your Own Audio Library

- Play all the stored music anytime and anywhere!
- Display the music info such as album art, artist, genre, and so on.
- Create your own playlists for fast access to your favorite music.
- Share handpicked audios and playlists.

### Brand-new Video Entertainment Feast

- Watch the videos online!
- Most of the video formats can be transcoded on Multimedia Station directly.

### Secure Access Right Management

- Manage user's authority easily.
- Let your friends upload and share their collections with you!

### Manage Photos with Perfect Ease

- Browse the photos with slide show and Cooliris 3D wall.
- Customize photo display.
- Email photos to friends.
- Publish photos to Facebook, Blogger, MySpace, Twitter, Plurk and Windows Live Blog.



## Surveillance Station

Live Audio & Video Monitoring, Recording, and Playback over the Internet

- ✓ High quality video recording in MPEG4 and Motion JPEG format
- ✓ Live 2-way audio supported for monitoring and voice broadcasting
- ✓ Real-time monitoring and recording for up to 30 frames/sec per channel
- ✓ Easy installation and management from remote locations



## Web Server Virtual Hosting



With Virtual Host support, you can host multiple websites on a NAS.

- Supports hosting up to 32 websites.
- Offers a cost-effective solution for home and SOHO users to create and host multiple websites quickly and easily.



## QMobile for iPhone & Android Phones



### Carry the Media Center in Your Pocket

View and play terabytes of photos, music and video files on the NAS by QMobile from anywhere regardless of the actual storage size of your iPhone or Android phone as long as the Internet access is available.

### Rock Your Life with My Jukebox

You can use the built-in feature My Jukebox of QMobile to create your favorite playlists. The app supports categorization by playlist, album, artist, song's title, recently played (auto-cached songs), and ID3 tag.

### Showcase Your Photos Instantly

You can upload photos to the Turbo NAS straightway from your iPhone or Android phone for sharing and backup.

### Save Your Favorites for Offline Playback

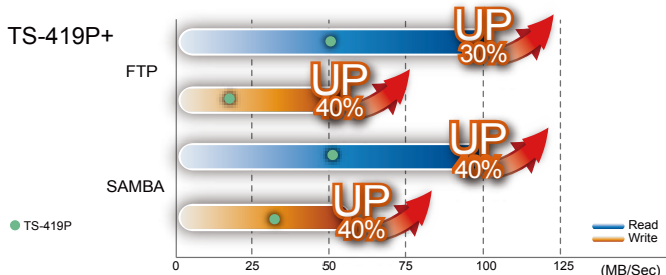
You can save your favorite files from the NAS to your handheld devices and play the multimedia contents offline even when you are out of the network range.



QMobile is an application dedicated to iPhone and Android phones users. You can browse and play the multimedia files stored on the NAS, upload photos to the NAS and publish them instantly on the Web, or download your favorite multimedia files to your iPhone/Android phone and play them offline. It also provides auto-synchronization feature upon every connection.



## Ultra-high Speed Performance



- Client PC: Intel® Core™ 2 Quad 2.50GHz CPU, 4GB DDR2/800 RAM, Intel Dual Port Server 82571 Networking Controller, Windows 7 Enterprise 32bit
- Testing Method: Connect the TS-419P+ and PC to switch, upload/download 3GB file, FTP program: FileZilla 3.3.4

## Efficient Power Management

- 1 Hard Disk Standby: You can configure the hard disks to enter standby mode if there is no disk access within the specified period.
- 2 Scheduled Power on/off: The flexible scheduled power on/off feature enables you to manage the NAS server's up time according to the working hours. You can set the time for automatic system power on, power off, or restart on any days of the week.
- 3 Power Recovery Settings: The Turbo NAS can be configured to be turned on or off when the AC power resumes after a power loss.
- 4 UPS Support & Advanced Standby Settings: The Turbo NAS supports the majority of USB UPS devices (usbhid-ups supported). You can also set the time for the server to enter standby mode when an abnormal AC power supply is detected. When the power resumes, the server resumes to the operation status before the power outage.
- 5 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.

### Low Power Consumption

TS-419P+ (Sleep mode) 13W  
 TS-419P+ (In operation) 31W  
 PC server 350W

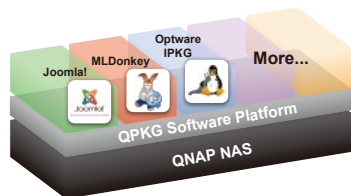
## ISO File Archiving and Sharing

Turbo NAS supports mounting ISO images of CD and DVD discs as network shares for data archiving, storage, and sharing.

- Mount up to 256 ISO image files.
- Browse and share disc image files over LAN/WAN via multiple network protocols such as SMB, AFP, NFS, FTP, and WebDAV.



## Software Expansion via QPKG



You can maximize the usage of Turbo NAS by installing additional QPKG software packages developed by the users and community worldwide.



XDove named after XMail & Dovecot the 2 open source offerings that are combined to provide a complete set of Email server functionalities which is one-click installable on your QNAP NAS. XDove not only provides SMTP, POP3 and IMAP services, it also comes with a variety of features like multiple virtual domains and accounts, AJAX webmail with extended functionalities including personal folders, address book, calendar and real-time chat among users under the same mail domain.



WordPress is a free, open-source personal publishing system that allows you to easily create a complex blog, or web log, on your site. Written in PHP and supported by a MySQL database, WordPress offers intuitive administrative tools and sophisticated design features that make it easy to develop and integrate a personal or professional blog on your site.

## Secure Data Access

### Policy-based Unauthorized IP Blocking:

You can allow, deny or auto block specified IP address or network domain which attempts to connect to the Turbo NAS via SSH/Telnet/HTTP(S)/FTP/samba/AFP.

### Remote Login:

Turbo NAS supports remote login by SSH (secure shell) or Telnet connection.

### SSL Security (HTTPS):

Turbo NAS can be accessed and configured by the web browser securely. You can also upload a secure certificate and RSA private key in X.509PEM format issued by a trusted provider for the users to access the NAS by secure SSL login.

### Secure FTP:

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

### Encrypted Remote Replication by Rsync:

The data on Turbo NAS can be backed up to or from another Turbo NAS or Rsync server over the network securely.

### Share Folder Management:

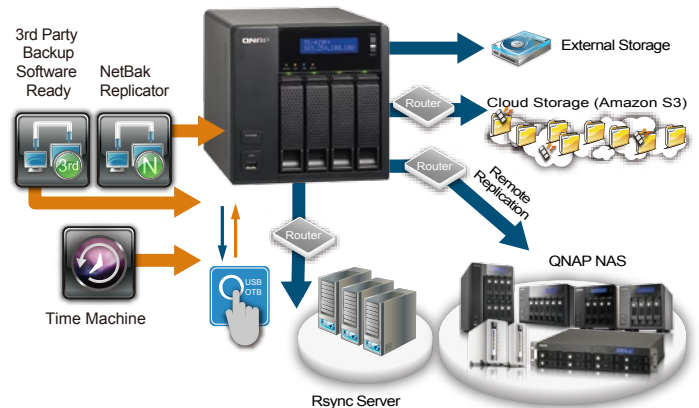
For the security of Windows network environment, you can choose to hide or show the network share folders on the NAS.

### User Authority Management:

You can create multiple user ID and password, and define the authority and quota for each user.

## Complete Backup Solution

The NAS offers complete backup solution for data protection, including cloud-based storage backup (Amazon S3), Apple Time Machine support, encrypted remote replication, third party software backup, one-touch-copy backup and QNAP exclusive Windows-based utility NetBak Replicator.



Joomla! is a free, open source content management system for publishing content on the world wide web and intranets. The system includes features such as page caching to improve performance, RSS feeds, printable versions of pages, news flashes, blogs, polls, website searching, and language internationalization.



MLDonkey is a door to the "donkey" world, a multi-network, multi-platform open source P2P application used to exchange big files on the Internet and present most features of the basic Windows donkey client and additionally supports overnet, fasttrack, BitTorrent, and gnutella protocols (and more)! The core works best with Sancho the premier graphical user interface for MLDonkey.



Squeezebox Server is the server software from Squeezebox (formerly Slim Device) that manages common digital audio formats (.mp3, .flac, .ogg, etc.) and streams them to its players. This Squeezebox Server QPKG is a combination of SSOTS (made by flipflip) and Squeezebox server. It gives you a one-click install solution, without the need to download and install Squeezebox server yourself.



lpkg, or the Itsy Package Management System, is a lightweight package management system designed for embedded devices. It is used in the Unslung operating system for the Linksys NSLU2, in OpenWRT, OpenMoko, Gumstix, iPAQ and now on QNAP NAS too.



# Software Specifications

## Operating System

Embedded Linux

## Protocols

CIFS/SMB, AFP (3.2), NFS(v3), FTP, FTPS, HTTP, HTTPS, Telnet, SSH, iSCSI, SNMP, SMTP, SMC

## Platforms

- Microsoft Windows 2000, XP, Vista (32/64-bit), Windows 7 (32/64-bit), Windows Server 2003/2008
- Apple Mac OS X
- Linux & UNIX

## File System

- Internal: EXT3, EXT4
- External: EXT3, EXT4, NTFS, FAT32, HFS+

## Networking

- TCP/IP IPv4 & IPv6 Dual Stack
- Dual Gigabit Ethernet with Jumbo Frame \*
- Port Trunking/NIC Teaming (Modes: Balance-rr, Active Backup, Balance XOR, Broadcast, IEEE 802.3ad/Link Aggregation, Balance-tlb, and Balance-alb) \*
- Load Balancing, Failover, Multi-IP Settings \*
- DHCP Client, DHCP Server
- UPnP & Bonjour Discovery

## Security

- IP Filter
- Network Access Protection with IP Auto-blocking
- HTTPS Connection
- FTP with SSL/TLS (Explicit)
- Encrypted Remote Replication (Rsync over SSH)
- Importable SSL Certificate
- E-mail and SMS Alerts

## Disk Management

- Single Disk, JBOD, RAID 0/1/5/6/5+Hot Spare \*\*\*
- Online RAID Capacity Expansion \*\*
- Online RAID Level Migration \*\*
- HDD S.M.A.R.T.
- Bad Block Scan
- RAID Recovery \*\*
- Bitmap \*\*
- ISO Mounting: Max 256 (via Web File Manager)

## iSCSI

- iSCSI Target
  - Multi-LUNs per Target
  - Up to 256 LUNs
  - LUN Mapping & LUN Masking
  - SPC-3 Persistent Reservation
  - MPIO & MC/S
- Virtual Disk Drive (via iSCSI Initiator)
  - Stack Chaining Master
  - Virtual Disk Drives: Max 8

## Power Management

- Wake on LAN
- Scheduled Power on/off (Max 15 Settings)
- Automatic Power on after Power Recovery
- Network UPS with SNMP Management
- HDD Standby Mode

## Access Right Management

- User Accounts: Max 4,096 \*
- Groups: Max 512 \*
- Shares: Max 512 \*
- Batch User Creation
- Import User List
- User Quota Management
- Supports Active Directory Authentication
  - Domain Users Login via CIFS/SMB, AFP, FTP, and Web File Manager
  - NTLMv2 Authentication

## Administration

- AJAX-based User Interface
- HTTP/HTTPS Connections
- Email & SMS Alerts

- Smart Fan Control
- Dynamic DNS (DDNS)
- SNMP Traps (v2 & v3)
- UPS Support with SNMP & USB
- Resource Monitor
- Network Recycle Bin for File Deletion via CIFS/SMB and AFP
- Comprehensive Logs (Event & Connection)
- Real-time Online User List
- Syslog Client
- Firmware Live Update
- System Settings Backup and Restore
- Restore to Factory Default

## Multilingual Support

- Chinese (Traditional & Simplified), Czech, Danish Dutch, English, Finnish, French, German, Italian, Japanese, Korean, Norwegian, Polish, Russian, Spanish, Swedish

## Browser Support

- Internet Explorer 7 & 8 or Later
- Firefox 3 or Later
- Safari 3 & 4 or Later
- Google Chrome

## File Server

- Protocols: CIFS/SMB (Plus DFS Support), AFP, NFS, FTP/FTPS, HTTP/HTTPS (Web File Manager), WebDAV
- Platforms: Windows, Mac OS, Linux/UNIX
- Web File Manager:
  - File Management by Web Browser
  - Smart File & Folder Search

## FTP Server

- FTP over SSL/TLS (Explicit)
- Concurrent Connections: Max 256
- Passive FTP Port Range Control
- FTP Bandwidth & Connection Control
- Supports FXP & Unicode

## Backup Server

- Apple Time Machine Support with Backup Management
- QNAP NetBak Replicator Backup Software (Windows Client)
- Backup to Cloud Storage (Amazon S3)
- Backup to External Storage Devices
- USB One Touch Backup (Import/Export)
- Block-level Remote Replication:
  - Work as Both Rsync Server & Client
  - Encrypted Replication to/from QNAP NAS Servers
- Third Party Backup Software Support: Acronis True Image, CA BrightStor, ARCserve Backup, EMC Retrospect, Symantec Backup Exec, LaCie SilverKeeper

## Web Server

- HTTP/HTTPS Connections
- Built-in MySQL Server
- Web-based Management via phpMyAdmin (QPKG)
- Virtual Hosts: Max 32

## Media Server

- Multimedia Station
- Photo Viewing, Audio & Video Playback
- Image Slideshow and Rotation
- Automatic & Scheduled Thumbnail Generation for Easy Browsing
- Display Photo Details from EXIF: Date, Exposure Time, Aperture, etc.
- Display Audio Details from ID3 Tag: Album Cover, Title, Artist, Album, etc.
- Access Authority Management
- Multimedia (Video & Audio) Streaming
- Cooliris 3D Wall Display
- Web Publishing (Facebook, MySpace, MSN Live, Twitter, Plurk, and Blogger)
- E-mail Publishing
- Supported Formats:
  - Photo: JPG/JPEG, GIF, PNG
  - Audio: MP3

- Video:
  - Playback: FLV, MPEG-4 Video (H.264 + AAC)
  - Transcode: AVI, M4V, MPG/MPEG, RM/RMVB, WMV

## iTunes Server

- Audio and Video Sharing
- Smart Playlist for iTunes Client (Windows & Mac)

## Mobile App

- QMobile for iPhone
  - Compatible with iPhone, iPod Touch, and iPad
  - iPhone OS 3.0 or Later Required
- QMobile for Android
  - Compatible with Android OS 1.5, 1.6, and 2.1

## UPnP Media Server

- Real-time & Background Photo Transcoding
- Media Player
  - Game Consoles: PlayStation 3, PSP, and Xbox 360
  - Digital Media Adapter/Player
  - Mobile Devices (e.g. iPhone, iPod Touch)

## Supported Formats:

- Photo: JPG, JPE, JPEG, TIFF, TIF, GIF, PNG, BMP
- Audio: MP3, MP4, M4A, M4B, 3GP, APL, AC3, M1V, M4V, MOV, AAC, AMR, AWB, WAV, PCM, LPCM, MP1, MP2, AIF, AIFF, AIFC, SND, WMA, OGG, FLAC
- Video: WMV, ASF, VDR, AVI, XVID, DIVX, FLV, MPG, MPE, MTS, MT2S, M2T, MPEG, SPTS, M2P, M2V, MP2T, MP2P, MPG2, DVR-MS, VOB

## Download Station

- PC-less BitTorrent/FTP/HTTP Download (Max 500 Tasks)
- BitTorrent Download
  - TCP/UDP Tracker Protocol
  - Scheduled Download
  - Configurable Port Range
  - Bandwidth Control
  - UPnP NAT Port Forwarding
- HTTP/FTP Download
  - Configurable File Saving Directory
  - Bulk Download with Wildcard Settings
  - RapidShare Download
- QNAP Download Management Software: QGet
  - For Windows & Mac OS
  - Remote Download Tasks Management of Multiple NAS over LAN or WAN

## Printer Server

- Network Printer Sharing (USB)
- Printers: Max 3

## Surveillance Station

- Supports IP Cameras: Max 4 \* (Optional Purchase)
- Network Surveillance: Remote Monitoring, Video Recording, and Playback

## QPKG

- Web Applications
  - Joomla!
  - phpMyAdmin
  - WordPress
  - AjaXplorer
  - VtigerCRM
  - eyeOS
  - Magento
  - GPLI
- P2P Applications
  - MLDonkey (eMule)
  - SABnzbd+
  - NzbGet
- Server application
  - Asterisk
  - XDove (Mail Server)
  - Open LDAP
- Media Server
  - Squeezebox Server
  - IceStation
- Misc.
  - Optware IPKG
  - Python
  - iStat
- ...and more

\* For TS-419P+

\*\* For TS-219P+ / TS-419P+

\*\*\* The RAID configurations available vary according to the product models and the number of hard disk drives installed.

# Comparison List

	TS-119P+	TS-219P+	TS-419P+
CPU	Marvell® 1.6 GHz	Marvell® 1.6 GHz	Marvell® 1.6 GHz
Memory	512 MB DDR III	512 MB DDR III	512 MB DDR III
Flash	16 MB	16 MB	16 MB
Internal 2.5"/3.5" HDD	1	2	4
Max. Internal Capacity (Using 2TB Hard Drives)	2 TB	4 TB	8 TB
Gigabit LAN	1	1	2
USB 2.0	3 (Front: 1, Back: 2)	3 (Front: 1, Back: 2)	4 (Front: 1, Back: 3)
eSATA	1	2	2
Power Consumption* (Sleep / Operation)	5W / 12W	7W / 19W	13W / 31W
Dimensions	<ul style="list-style-type: none"> <li>• 150.2(H) x 67(W) x 216(D) mm</li> <li>• 5.91(H) x 2.64(W) x 8.54(D) inch</li> </ul>	<ul style="list-style-type: none"> <li>• 150.2(H) x 102(W) x 216(D) mm</li> <li>• 5.91(H) x 4.02(W) x 8.5(D) inch</li> </ul>	<ul style="list-style-type: none"> <li>• 177(H) x 180(W) x 235(D) mm</li> <li>• 6.97(H) x 7.09(W) x 9.25(D) inch</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• Net Weight: 1.06kg/ 2.34 lb</li> <li>• Gross Weight: 1.86kg/ 4.10 lb</li> </ul>	<ul style="list-style-type: none"> <li>• Net Weight: 1.74kg/ 3.84 lb</li> <li>• Gross Weight: 2.92kg/ 6.44 lb</li> </ul>	<ul style="list-style-type: none"> <li>• Net Weight: 3kg/ 6.61 lb</li> <li>• Gross Weight: 4.6kg/ 10.14 lb</li> </ul>
Power Supply	AC Input Power Voltage: 100V-240V. Power Frequency: 50Hz-60Hz		
	External Power Adapter, 36W	External Power Adapter, 60W	External Power Adapter, 120W
Smart FAN	1 (5cm, 12V DC)	1 (7cm, 12V DC)	1 (9cm, 12V DC)
Disk Management	Single Disk, Q-RAID1	Single Disk, JBOD, RAID 0/1	Single Disk, JBOD, RAID 0/1/5/6/5+Hot Spare
Access Right Management	<ul style="list-style-type: none"> <li>• Max. No. of User Accounts: 2048</li> <li>• Max. No. of User Groups: 256</li> <li>• Max. No. of Share Folders: 256</li> <li>• Max. No. of Concurrent Connections: 256</li> </ul>		<ul style="list-style-type: none"> <li>• Max. No. of User Accounts: 4096</li> <li>• Max. No. of User Groups: 512</li> <li>• Max. No. of Share Folders: 512</li> <li>• Max. No. of Concurrent Connections: 256</li> </ul>
IP Cameras Support	2	2	4
LCD Panel	No	No	Yes
Environmental Compliance	<ul style="list-style-type: none"> <li>• Temperature: 0°C-40°C</li> <li>• Relative Humidity: 0%-95%</li> <li>• Certificate: CE, FCC, VCCI, BSMI, RoHS</li> </ul>		

\* Actual power consumption may be different depending on your operation environment.

## QNAP Awards and Recognitions:



**QNAP Taiwan (Headquarters)**  
 21 F, No. 77, Sec. 1, Xintai 5th Rd, Xizhi City, Taipei County, 221, Taiwan  
 TEL: +886-2-8698-2000 FAX: +886-2-8698-2270

**QNAP US Office**  
 166 University Parkway, Pomona, CA 91768  
 TEL: 909-595-2819 FAX: 909-595-2816

## Front & Rear (Example: TS-419P+)



## QNAP Systems, Inc.

TEL: +886-2-8698-2000 FAX: +886-2-8698-2270  
 Address: 21F, No. 77, Sec. 1, Xintai 5th Rd, Xizhi City, Taipei County, 221, Taiwan

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