QNAP

TS-x69 Pro Series

- Exceptional Performance: 222.3 MB/Sec Reading, 222.1 MB/Sec Writing
- SATA 6Gb/s, SuperSpeed USB3.0 Supported
- Centralized Storage and File Sharing
- Backup Center for Business
- NAS, iSCSI/ IP-SAN Storage Combo Solution for Server Virtualization
- Feature-rich All-in-one NAS Applications
- Private Cloud Storage for Ease of Deployment
- Energy-efficient & Eco-friendly

TurboNAS Business Series

Overview

Modern businesses face the challenge of dramatic growth of digital data. Deploying a reliable, affordable and expandable storage center to securely store, share, and back up business digital assets has become an important task for the IT administrators.

QNAP Turbo NAS provides an efficient and flexible network attached storage solution with iSCSI services, cross-platform data sharing, and rich business applications. With VMware® Ready™ and Citrix® Ready™ verifications, and proven compatibility with Microsoft® Hyper-V™ environment, the Turbo NAS is an ideal shared storage solution in the virtualized and clustered environment.

Rich Business Applications

The Turbo NAS supports file sharing across Windows®, Mac®, Linux, and UNIX platforms. It can be used as a file server, FTP server, print server, and web server. Windows AD (Active Directory) support and advanced features such as WebDAV, Shared Folder Aggregation, IPv6 and IPv4 dual-stack, Wake on LAN, scheduled power on/off, hard drive S.M.A.R.T., comprehensive log systems, and policy-based unauthorized IP blocking are all included.

Well-rounded Backup Solutions

The Turbo NAS offers the IT administrator flexible server backup solutions,

including encrypted remote replication, Real-time Remote Replication (RTRR), and cloud-based storage backup. Windows users and Mac users can use QNAP NetBak Replicator utility and Time Machine respectively to back up data to the Turbo NAS. Furthermore, the Turbo NAS also supports third party backup software such as Veeam® Backup & Replication and Acronis® True Image.

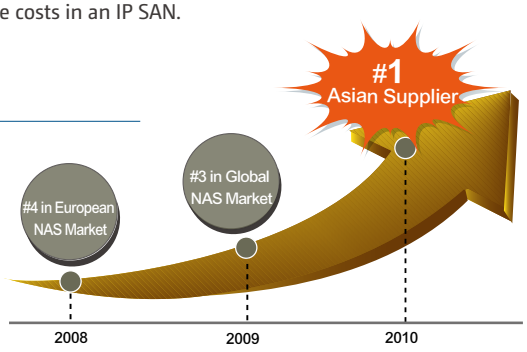
Affordable and Flexible Virtualization Solution

The Turbo NAS is VMware® Ready™ for ESXi 5.0 and ESX 4.1 with support for vSphere 4 and vSphere 5, Citrix® Ready™ for XenServer 6.0, and compatible with Microsoft® Hyper-V™. The Turbo NAS can be utilized as the network shared storage of VMware, Citrix virtualization environments and Windows clustered servers. Comparing with traditional SAN (Storage Area Network), the Turbo NAS is a competitive alternative with much lower setup and maintenance costs in an IP SAN.

Class-leading QNAP Turbo NAS

Highly Regarded Worldwide

QNAP is ranked as the #1 Asian supplier of stand-alone NAS products in the sub-$5,000 price band in terms of vendor revenue, according to Gartner research report 2010. This reflects QNAP's ongoing commitment to developing and marketing high quality network storage products which meet and exceed our customers' expectations.



Abundant Business Features

The Turbo NAS supports a multi-use of server business applications.

File Server

The Turbo NAS provides seamless file sharing cross Windows, Mac, Linux, and UNIX platforms. It also supports WebDAV for easy access to shared folders via HTTP/HTTPS protocol remotely.

Backup Server

The Turbo NAS offers a centralized backup center for Mac users using Time Machine and Windows users using QNAP NetBak Replicator utility.

Print Server

The Turbo NAS offers printer sharing over the network and remote printing over the Internet via IPP (Internet Printing Protocol). Print job management, and Bonjour printing for Mac OS X are also supported.

Encrypted Remote Replication

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

Syslog Server

By collecting and storing the logs of other network devices on the Turbo NAS with QNAP's Syslog server support, the IT administrator can easily monitor the status of these devices, and further troubleshoot when necessary.

Web Server

The IT administrator can host multiple websites on the Turbo NAS with the built-in web server and virtual host feature.

FTP Server

The IT administrator can establish an FTP server with the Turbo NAS and share files conveniently with colleagues or customers.

TFTP Server

The TFTP server simplifies network configuration management for firmware upgrades, deployment or backup of configurations from various network devices such as routers and switches.

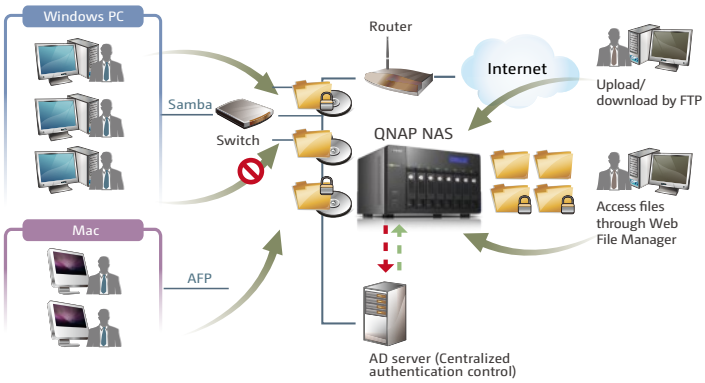
Centralized Storage and File Sharing

Cross-platform Sharing
The Turbo NAS supports SMB/CIFS, AFP, and NFS protocols for file sharing across Windows, Mac, Linux/UNIX networks. User accounts and shared folders can be created via the user-friendly web-based interface without IT expertise. The integrated antivirus solution for the Turbo NAS ensures business continuity by offering detection against the latest viruses, malware, worms, and Trojan horses.

Web File Manager
The Turbo NAS provides Web File Manager for users to access and manage their data anywhere with a web browser. Intelligent data search, batch files upload and download, file extraction, and access control allow users to access and share their data securely and conveniently. Besides, the Web File Manager now allows sharing multiple files with unique URLs that can be clicked to download without requiring any user login. This eliminates complicated privilege configurations and login process. The Turbo NAS owner can also set a URL expiration time for the shared URLs.

Shared Folder Aggregation
Access the shared folders of other servers on Microsoft Networking through the "portal folder" on the Turbo NAS. This saves the time and effort to log on different servers one by one.

ISO CD/DVD Archiving and Sharing
The Turbo NAS supports mounting ISO images of CD and DVD discs as network shares for data archiving, storage, and sharing. This feature saves the space for storing the physical discs, reduces the risk of data loss caused by disc wearing and tearing, and enhances the efficiency of data sharing on business network.



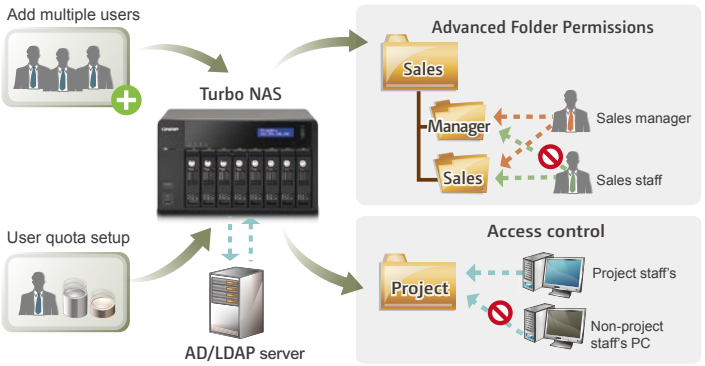
Comprehensive Access Control

User Authority Management
Create multiple users and specify their passwords, quota, and user groups by simply uploading the batch files in TXT or Excel CSV format to the NAS.

Windows ACL
The Windows ACL (access control list) feature offers sophisticated shared folder permission settings and thus simplifies IT management for businesses with a large number of users. By enabling the Windows ACL, basic permissions and 13 advanced permissions can be set up from the Windows Explorer and synchronized with the permission settings of the Turbo NAS. In addition, the same permissions apply to AFP, FTP, Web File Manager, and Samba when Advanced Folder Permissions are enabled at the same time.

Advanced Folder Permissions
Advanced folder permissions allow users to configure folder/subfolder access to the Turbo NAS. With this feature enabled, users can manage the folder permissions from Microsoft Windows or the web-based management interface of the Turbo NAS easily.

Windows Active Directory (AD) and LDAP Directory Service
The Windows AD and LDAP directory service features enable the IT administrator to retrieve user accounts from Windows AD or LDAP-based directory server to the Turbo NAS, reducing time and effort in account setup.



Well-rounded Backup Solution

Backup Windows PC with NetBak Replicator
QNAP's backup utility NetBak Replicator helps users back up files from Windows PC to one or multiple QNAP Turbo NAS servers. Users can set up real-time data synchronization or scheduled backup from multiple PCs.

Apple Time Machine Support
Back up the data from Mac to the Turbo NAS, restore the system, or retrieve files from a specific backup timestamp via Time Machine when needed.

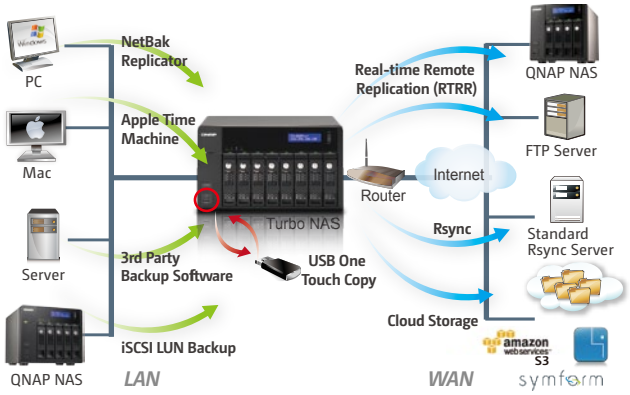
Third-party Backup Software Support
The Turbo NAS is compatible with popular third-party backup software, such as Veeam® Backup & Replication and Acronis® True Image.

Remote Backup
- Real-time Remote Replication (RTRR) provides real-time or scheduled data replication between the local Turbo NAS and a remote Turbo NAS, an FTP server, or an external drive.
- Rsync backup is supported.

iSCSI LUN Backup and Restore
The Turbo NAS iSCSI LUN backup/restore allows the IT administrator to use the LUN snapshot to back up contents in the LUN to various storage destinations, including Windows shared folders via SMB/CIFS, Linux shared folders via NFS, or local shared folders on the Turbo NAS.

One-touch-copy Backup
Back up the Turbo NAS to an external storage device or vice versa by hitting the one-touch-copy button on the front cover.

Cloud Storage Backup
Turbo NAS supports backing up data to Amazon S3, ElephantDrive, and Symform.



Comprehensive Security Features

Policy-based Unauthorized IP Blocking
The IT administrator can allow, deny or auto block specified IP address or network domain that attempt to connect to the Turbo NAS via SSH, Telnet, HTTP(S), FTP, Samba, or AFP.

Remote Login
The Turbo NAS supports remote login via SSH (secure shell) or Telnet connection.

SSL Security (HTTPS)
The Turbo NAS supports HTTPS connection. The IT administrator can upload a secure certificate and RSA private key in X.509PEM format issued by a trusted provider to allow access to the Turbo NAS via secure SSL login.

Secure FTP
The Turbo NAS offers secure data transfer with SSL/TLS (explicit) encryption. Passive FTP port range setup is supported

Encrypted Remote Replication via rsync
The data on the Turbo NAS can be backed up to or from another Turbo NAS or rsync server over the network securely.

Shared Folder Management
The IT administrator can select to hide or show selected shared folders of the Turbo NAS on Windows network.

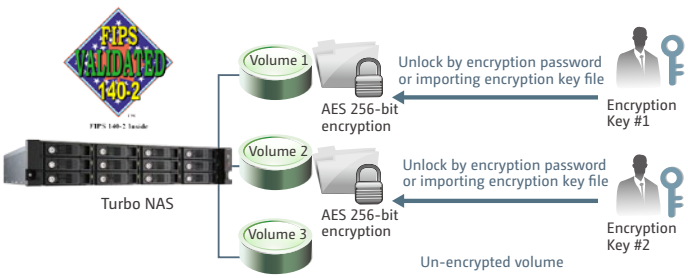
Service Binding
QNAP's service binding feature provides an ideal solution for the IT administrator to allow or block specific services from predefined network interfaces.

Antivirus
The integrated antivirus solution for the Turbo NAS ensures business continuity by offering detection against the latest viruses, malware, worms, and Trojans.

RADIUS Server
The RADIUS server centralizes and consolidates user authentication by maintaining a list of user accounts that are authorized for remote network access through dial-up equipment, Wi-Fi access point, or VPN connections.

Reliable System

FIPS 140-2 Validated AES 256-bit Volume-based Data Encryption
The disk volume with FIPS 140-2 Validated AES 256-bit encryption can only be accessed with an authorized encryption password or key. This prevents the sensitive government or businesses data on the Turbo NAS from unauthorized access and breach even if the hard disk drives or the entire system were stolen.



* The data encryption functions may not be available in accordance to the legislative restrictions of some countries. Please contact QNAP sales representatives for further information.

External Drive Encryption
An external drive attached to the Turbo NAS means easy removal. The important data on the drive needs a solution to protect the data against theft. The Turbo NAS now supports encrypting contents in the external drive.

Multiple LAN Deployment
The LAN ports of the Turbo NAS can be configured in failover mode which allows the Turbo NAS to sustain the failure of one network port providing continuity services.

Redundant Power Supply*
The Turbo NAS is equipped with two power supply units, each capable of supplying the power for the entire Turbo NAS independently. If one of the units fails, the other one will take over to supply the power to ensure continuous operation of the Turbo NAS. The failed power supply unit can be replaced without turning off the server.

DOM Architecture and Fail-safe Dual OS
Two operating systems are built on the DOM of Turbo NAS for system booting alternatively upon every system startup. When one fails, the other one will be used to boot up the Turbo NAS, and the failed OS is recoverable from the other healthy OS.

Advanced RAID Management with Hot-swap Design

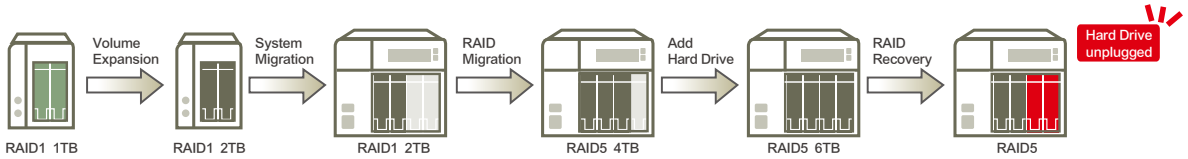
The Turbo NAS offers RAID 0, 1, 5, 5+hot spare, 6, 6+hot spare, 10, 10+spare, single, and JBOD disk configurations. It also supports hot-swap design so that a failed member drive of a RAID configuration (RAID 1 or above only) can be replaced by hot swapping without turning off the server.

Online RAID Capacity Expansion
The storage capacity of a RAID configuration can be expanded by replacing larger hard drives. All the data will be kept and seamlessly moved to the newly installed hard drives without turning off the server.

Online RAID Level Migration
Upgrade the disk configuration to a higher RAID level with the data retained without turning off the server.

Enhanced read-only Protection
A degraded RAID volume with bad blocks will normally cause read/write error and the RAID volume might crash when it reaches the number of allowed failed hard disks. The Turbo NAS allows the volume with one or more hard disk failure to enter the read-only protection mode in case the bad block error happens on the second failed disk of RAID 5 or third failed disk of RAID 6, allowing the IT administrator to rescue critical data.

RAID Recovery
If more than one disk on a RAID 5 volume or more than two disks on a RAID 6 disk volume are unplugged, the RAID volume will crash. With QNAP's exclusive RAID recovery technology, when more than the allowed disks are removed from a RAID volume, the IT administrator can still recover the RAID volume.



iSCSI and Virtualization Deployment

NAS + iSCSI Combo Solution
The Turbo NAS can serve as a NAS for file sharing and iSCSI storage concurrently.

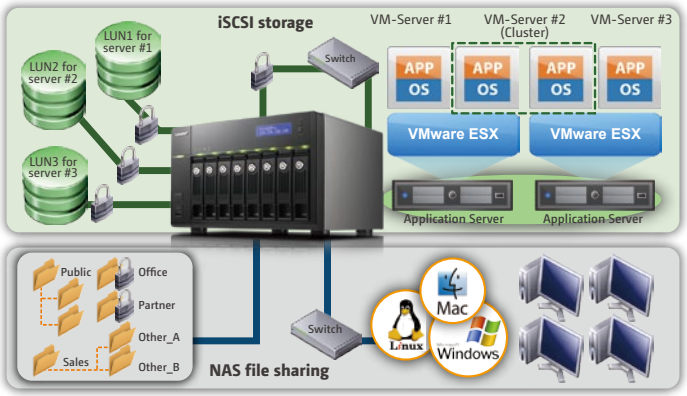
Designed for Virtualized and Clustered Environments
Compared with a high cost Fibre Channel SAN, the Turbo NAS is an affordable system that can be deployed as a storage center for virtualized and clustered server environments, such as VMware and Microsoft Windows Failover Cluster.

Flexible Management
The Turbo NAS supports multiple LUNs (Logical Unit Numbers) and iSCSI targets. LUNs can be flexibly mapped to, unmapped from, and switched among different iSCSI targets.

Secure Deployment
Designed with CHAP authentication and LUN masking, the advanced ACL (Access Control List) offers the capability to block unauthorized access from the initiators.

SPC-3 Persistent Reservation Supported
The built-in iSCSI service supports enterprise-level features such as SPC-3 persistent reservation for clustering in VMware and Windows Server 2008 R2. The IT administrator can set up Microsoft Failover Cluster environment, use Cluster Shared Volume for Hyper-V, and execute virtual machine live migration between Hyper-V hosts.

Advanced MPIO and MC/S Supported
Users can connect to the iSCSI targets on the Turbo NAS using two or more network interfaces from their server with failover and load balancing. Furthermore, with MC/S settings better data transmission performance is achieved.



iSCSI LUN Snapshot/Backup
The Turbo NAS has taken iSCSI LUN backup/restore to a whole new level with snapshot technology. The IT administrator can use the LUN snapshot to back up contents in the LUN to various storage destinations, including Windows shared folders via SMB/CIFS, Linux shared folders via NFS, or local shared folders on the Turbo NAS.

Virtual Disk Drive (VDD)
The unique "Virtual Disk Drive" adds flexibility to expand the capacity of the Turbo NAS. By using the built-in iSCSI initiator, the Turbo NAS can connect to other iSCSI targets on the network and turn them into virtual disks, which become multiple single volumes on the Turbo NAS. Up to 8 virtual disks can be stacked.

Mobile Support

The mobile apps Qfile, Qmanager, and Qmobile provide iOS® or Android™ mobile device users with a convenient way to access and monitor the Turbo NAS live, on the go.

System Management Tools

Instant SMS, Email and Windows Live Messenger Alert
Configure the SMTP server, SMS server, and Windows Live Messenger account settings on the Turbo NAS in order to receive instant system warning or error messages via email, SMS, and Instant Messages.

Comprehensive Event Logs
Detailed logs of file-level access to the Turbo NAS via Samba, iSCSI, FTP, HTTP, HTTPS, Telnet, and SSH, and networking services accessed by online users can all be recorded.

Touch-N-Go PC-less Installation*
Use the front panel LCD display to complete the first time installation in a few simple steps without a PC.

Scheduled Power on/off
Create schedules to automatically turn on, turn off, or restart the Turbo NAS. Up to 15 schedules can be set.

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

SNMP (Simple Network Management Protocol)
Collect the information, warning, or errors of the Turbo NAS and send warnings to up to 3 SNMP servers for centralized management and real-time monitoring.

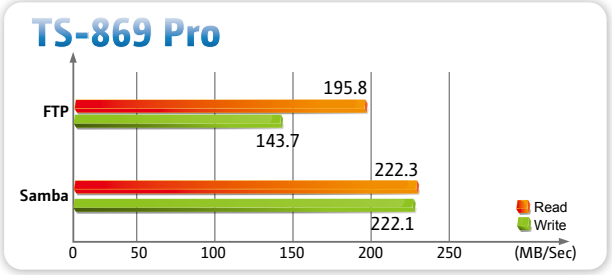
Surveillance Station Pro

The Surveillance Station Pro supports over 1,000 IP cameras, ranging from high-end to low-end models, and is compatible with ONVIF/PSIA specifications. Administrators can purchase additional licenses to increase the number of channels based on their surveillance needs. iOS® and Android™ users can install the VMobile app to monitor the surveillance channels anytime and anywhere with the functions of camera live view, motion-detection recording, PTZ control, instant event notifications, video snapshot, and advanced playback and search functions.

Note: Surveillance Station Pro is only available for Turbo NAS TS-x69 series in V3.7 firmware at present, and will be available for more models later.

Exceptional Performance with Port Trunking Support

The Turbo NAS supports multiple bonding modes: Balance-rr (Round-Robin), Active Backup, Balance XOR, Broadcast, IEEE 802.3ad, Balance-tlb (Adaptive Transmit Load Balancing), and Balance-alb (Adaptive Load Balancing).



- FTP/SAMBA Testing Environment: Intel(R) Core(TM) i7-2600 CPU @ 3.40GHz/ 16GB DDR3 RAM, Windows 7 Professional 64bit, Realtek RTL8111
- FTP/SAMBA Testing Method: Connect TS-x69 Pro and PC to switch, upload/download 8GB file, Trunking mode: IEEE802.3ad, with Jumbo Frame 1500, FTP Tool: FileZilla

Turbo NAS Business Series - Tower






Model	TS-1079 Pro	TS-879 Pro	TS-869 Pro	NEW TS-869L	TS-669 Pro	NEW TS-669L
CPU	Intel® Core™ i3-2120 3.3 GHz Dual Core	Intel® Core™ i3-2120 3.3 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core
Memory	2GB DDR3	2GB DDR3	1GB DDR3	1GB DDR3	1GB DDR3	1GB DDR3
Extra RAM Slot (Memory Expansion)	--	--	✓ (up to 3GB)	✓ (up to 3GB)	✓ (up to 3GB)	✓ (up to 3GB)
Max. Number of Hard Drives Supported[1]	10 x SATA 6Gb/s	8 x SATA 6Gb/s	8 x SATA 6Gb/s	8 x SATA 3Gb/s	6 x SATA 6Gb/s	6 x SATA 3Gb/s
Lockable HDD Trays	✓	✓	✓	--	✓	--
Hard Drive Type Supported	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5" / 3.5"
Maximum Raw Capacity	40TB	32TB	32TB	32TB	24TB	24TB
Hot Swappable	✓	✓	✓	✓	✓	✓
USB 2.0	Back: 4	Back: 4	Front: 1 ; Back: 4	Front: 1 ; Back: 4	Front: 1 ; Back: 4	Front: 1 ; Back: 4
USB 3.0	Front: 1 ; Back: 1	Front: 1 ; Back: 1	Back: 2	Back: 2	Back: 2	Back: 2
eSATA	2	2	2	2	2	2
10/100/1000 Mbps LAN Port	2(Max.4)[3]	2(Max.4)[3]	2	2	2	2
10Gbps Lan Port	✓ (optional)	✓ (optional)	--	--	--	--
Wake on LAN	✓	✓	✓	✓	✓	✓
LCD Quick Configuration	✓	✓	✓	--	✓	--
Dimensions (HxWxD mm)	217.5 x 327 x 321.2	217.5 x 327 x 321.2	185 x 298.2 x 235.5	185 x 298.2 x 235.5	185 x 260 x 235.5	185 x 260 x 235.5
Weight (Net/Gross Weight Kg)	9.84 / 15.43	8.39 / 13.98	7.3 / 8.6	7.3 / 8.6	5.2 / 6.5	5.2 / 6.5
RAID Supported	Single Disk, JBOD, RAID 0 / 1 / 5 / 6 / 10, RAID 5 / 6 / 10 + Hot Spare, Global Hot Spare Drive					
Power	350W	350W	350W	350W	250W	250W
Fan	2 (12cm)	2 (12cm)	2 (12cm)	2 (12cm)	2 (9cm)	2 (9cm)
Power Consumption (Sleep Mode/In Operation)[2]	40W / 121W	39W / 101W	38W / 71W	38W / 71W	31.5W / 63.6W	31.5W / 63.6W
Throughput (Read/Write MB/sec)[2]	1,907 / 1,904[5]	1,984 / 1,913[5]	222.3 / 222.1	222.3 / 222.1	221.8 / 220.8	221.8 / 220.8
Max. User Accounts	4096	4096	4096	4096	4096	4096
Max. Groups	512	512	512	512	512	512
Max. Shared Folders	512	512	512	512	512	512
Max. Concurrent Connections	256	256	256	256	256	256






Model	TS-569 Pro	NEW TS-569L	TS-469 Pro	NEW TS-469L	TS-269 Pro	NEW TS-269L
CPU	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Intel® Atom™ 1.86 GHz Dual Core
Memory	1GB DDR3	1GB DDR3	1GB DDR3	1GB DDR3	1GB DDR3	1GB DDR3
Extra RAM Slot (Memory Expansion)	✓ (Up to 3GB)	✓ (Up to 3GB)	✓ (up to 3GB)	✓ (up to 3GB)	✓ (up to 3GB)	✓ (up to 3GB)
Max. Number of Hard Drives Supported[1]	5 x SATA 6Gb/s	5 x SATA 3Gb/s	4 x SATA 6Gb/s	4 x SATA 3Gb/s	2 x SATA 6Gb/s	2 x SATA 3Gb/s
Lockable HDD Trays	✓	--	✓	--	✓	--
Hard Drive Type Supported	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5" / 3.5"
Maximum Raw Capacity	20TB	20TB	16TB	16TB	8TB	8TB
Hot Swappable	✓	✓	✓	✓	✓	✓
USB 2.0	Front: 1 ; Back: 4	Front: 1 ; Back: 4	Front: 1 ; Back: 4	Front: 1; Back: 4	Front: 1 ; Back: 2	Front: 1; Back: 2
USB 3.0	Back: 2	Back: 2	Back: 2	Back: 2	Back: 2	Back: 2
eSATA	2	2	2	2	1	1
10/100/1000 Mbps LAN Port	2	2	2	2	2	2
10Gbps Lan Port	--	--	--	--	--	--
Wake on LAN	✓	✓	✓	✓	✓	✓
LCD Quick Configuration	✓	--	✓	--	--	--
Dimensions (HxWxD mm)	185 x 210.6 x 235.5	185 x 210.6 x 235.5	177 x 180 x 235	177 x 180 x 235	150 x 102 x 216	150 x 102 x 216
Weight (Net/Gross Weight Kg)	5.1 / 6.5	5.1 / 6.5	3.65 / 4.65	3.65 / 4.65	1.74 / 2.92	1.74 / 2.92
RAID Supported	Single Disk, JBOD, RAID 0 / 1 / 5 / 6 / 10, RAID 5 / 6 / 10 + Hot Spare, Global Hot Spare Drive		Single Disk, JBOD, RAID 0 / 1 / 5 / 6 / 10, RAID 5 + Hot Spare, Global Hot Spare Drive		Single Disk, JBOD, RAID 0 / 1	
Power	250W	250W	250W	250W	90W	90W
Fan	1 (12cm)	1 (12cm)	1 (9cm)	1 (9cm)	1 (7cm)	1 (7cm)
Power Consumption (Sleep Mode/In Operation)[2]	29.1W / 48.5W	29.1W / 48.5W	25W / 43W	25W / 43W	19W / 23W	18W / 22W
Throughput (Read/Write MB/sec)[2]	220.8 / 219.8	220.8 / 219.8	221.8 / 212.2	221.8 / 212.2	218.4 / 221.8	218.4 / 221.8
Max. User Accounts	4096	4096	4096	4096	2048	2048
Max. Groups	512	512	512	512	256	256
Max. Shared Folders	512	512	512	512	256	256
Max. Concurrent Connections	256	256	256	256	256	256

(1) The standard system is shipped without hard drives. Visit www.qnap.com for compatible hard drives.
(2) The actual result may vary on different network environments.
(3) Additional Gigabit network expansion cards are required (optional).
(4) Firmware 3.7.0 or above is required.
(5) The statistics are obtained in 10 GbE network environments with Trunking LAN port configurations.

Turbo NAS Business Series - Rack Mount

Model	TS-EC1679U-RP	TS-1679U-RP	TS-EC1279U-RP	TS-1279U-RP	TS-EC879U-RP	TS-879U-RP
CPU	Intel® Xeon® E3-1225 3.1 GHz Quad Core	Intel® Core™ i3-2120 3.3 GHz Dual Core	Intel® Xeon® E3-1225 3.1GHz Quad Core	Intel® Core™ i3-2120 3.3GHz Dual Core	Intel® Xeon® E3-1225 3.1 GHz Quad Core	Intel® Core™ i3-2120 3.3 GHz Dual Core
Memory	4GB DDR3 ECC	4GB DDR3	4GB DDR3 ECC	4GB DDR3	4GB DDR3 ECC	4GB DDR3
Extra RAM Slot (Memory Expansion)	✓ (up to 16GB)	✓ (up to 16GB)	✓ (Up to 8GB)	✓ (Up to 8GB)	✓ (Up to 8GB)	✓ (Up to 8GB)
Max. Number of Hard Drives Supported[1]	16 x SATA 6Gb/s	16 x SATA 6Gb/s	12 x SATA 6Gb/s	12 x SATA 6Gb/s	8 x SATA 6Gb/s	8 x SATA 6Gb/s
Lockable HDD Trays	✓	✓	✓	✓	✓	✓
Hard Drive Type Supported	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5" / 3.5"
Maximum Raw Capacity	64TB	64TB	48TB	48TB	32TB	32TB
Hot Swappable	✓	✓	✓	✓	✓	✓
USB 2.0	Back: 4	Back: 4	Back: 4	Back: 4	Back: 4	Back: 4
USB 3.0	Back: 2	Back: 2	Back: 2	Back: 2	Back: 2	Back: 2
eSATA	2	2	2	2	2	2
10/100/1000 Mbps LAN Port	4(Max.8)[3]	4(Max.8)[3]	4(Max.6)[3][4]	2(Max.6)[3][4]	4(Max.6)[3][4]	2(Max.6)[3][4]
10Gbps Lan Port	✓ (optional)	✓ (optional)	✓ (optional)	✓ (optional)	✓ (optional)	✓ (optional)
Wake on LAN	✓	✓	✓	✓	✓	✓
LCD Quick Configuration	--	--	--	--	✓	✓
Dimensions (HxWxD mm)	130 x 442.4 x 528.3	130 x 442.4 x 528.3	88 x 439 x 520	88 x 439 x 520	88 x 439 x 520	88 x 439 x 520
Weight (Net/Gross Weight Kg)	18.14 / 25.92	18.14 / 25.92	15.88 / 22.92	15.88 / 22.92	12.52 / 20.76	12.52 / 20.76
RAID Supported	Single Disk, JBOD, RAID 0 / 1 / 5 / 6 / 10, RAID 5 / 6 / 10 + Hot Spare, Global Hot Spare Drive					
Power	600W Redundant Power Supply	600W Redundant Power Supply	600W Redundant Power Supply	600W Redundant Power Supply	300W Redundant Power Supply	300W Redundant Power Supply
Fan	3 (6cm)	3 (6cm)	3 (6cm)	3 (6cm)	3 (6cm)	3 (6cm)
Power Consumption (Sleep Mode/In Operation)[2]	89.1W / 229W	89.1W / 229W	68W / 167W	68W / 165W	68W / 132W	68W / 130W
Throughput (Read/Write MB/sec)[2]	2,052 / 2,004[5]	2,019 / 2,038[5]	1,922 / 1,868[5]	1,926 / 1,896[5]	1,879 / 1,907[5]	1,953 / 1,899[5]
Max. User Accounts	4096	4096	4096	4096	4096	4096
Max. Groups	512	512	512	512	512	512
Max. Shared Folders	512	512	512	512	512	512
Max. Concurrent Connections	256	256	256	256	256	256

Model	NEW TS-1269U-RP	NEW TS-869U-RP	NEW TS-469U-RP	TS-419U II/TS-412U
CPU	Intel®Atom™ 2.13 GHz Dual Core	Intel®Atom™ 2.13 GHz Dual Core	Intel® Atom™ 2.13 GHz Dual Core	Marvell® 6282 2.0 GHz / Marvell® 6281 1.2 GHz
Memory	2GB DDR3	2GB DDR3	1GB DDR3	512MB DDR2
Extra RAM Slot (Memory Expansion)	✓ (up to 4GB)	✓ (up to 4GB)	✓ (up to 3GB)	--
Max. Number of Hard Drives Supported[1]	12 x SATA 6Gb/s	8 x SATA 6Gb/s	4 x SATA 6Gb/s	4 x SATA 3Gb/s
Lockable HDD Trays	✓	✓	✓	✓
Hard Drive Type Supported	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"	2.5"/ 3.5"
Maximum Raw Capacity	48TB	32TB	16TB	16TB
Hot Swappable	✓	✓	✓	✓
USB 2.0	Back: 4	Back: 4	Front: 1 ; Back: 4	Front: 1 ; Back:3
USB 3.0	Back: 2	Back: 2	Back: 2	--
eSATA	2	2	2	2
10/100/1000 Mbps LAN Port	2	2	2	2
10Gbps Lan Port	--	--	--	--
Wake on LAN	✓	✓	✓	--
LCD Quick Configuration	--	✓	--	--
Dimensions (HxWxD mm)	89 x 482 x 534	89 x 482 x 534	44 x 439 x 499	44 x 439 x 483
Weight (Net/Gross Weight Kg)	11.54 / 19.78	11.02 / 19.26	7.63 / 9.55	6.7 / 9.5
RAID Supported	Single Disk, JBOD, RAID 0 / 1 / 5 / 6 / 10, RAID 5 / 6 / 10 + Hot Spare, Global Hot Spare Drive		Single Disk, JBOD, RAID 0 / 1 / 5 / 6 / 10, RAID 5 + Hot Spare, Global Hot Spare Drive	
Power	380W Redundant Power Supply	300W Redundant Power Supply	250W Redundant Power Supply	250W
Fan	2 (7cm)	2(7cm)	2 (4cm)	2 (4cm)
Power Consumption (Sleep Mode/In Operation)[2]	66.8W / 81.2W	56.6W / 74.7W	37W / 52W	15W / 29W
Throughput (Read/Write MB/sec)[2]	222.3 / 222.1[5]	222.3 / 222.7[5]	221.3 / 210.2[5]	210.3 / 155.4(RP) 202.1 / 129.6(SP)
Max. User Accounts	4096	4096	4096	4096
Max. Groups	512	512	512	512
Max. Shared Folders	512	512	512	512
Max. Concurrent Connections	256	256	256	256

ALL specifications are subject to change without notice.
For more QNAP product information, please visit www.qnap.com

Software Specifications

Operating System
- QNAP Turbo NAS System 3.7

Protocols
- CIFS/SMB, AFP (3.2), NFS (v3), FTP, HTTP, HTTPS, Telnet, SSH, iSCSI, SNMP, SMTP, SMSC

Platforms
- Microsoft Windows, XP, Vista (32/64-bit), Windows 7 (32/64-bit), Server 2003/2008 R2
- Apple Mac OS X
- Linux & UNIX

Multilingual Support
- Chinese (Traditional & Simplified), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese (Brazil), Romanian, Russian, Spanish, Swedish, Thai, Turkish

Browser Support
- Internet Explorer 7+
- Firefox 3+
- Safari 3+
- Google Chrome

File System
- Internal Hard Drive: EXT3, EXT4
- External Hard Drive: EXT3, EXT4, NTFS, FAT32, HFS+

Networking
- TCP/IP (IPv4 & IPv6: Dual Stack)
- Dual Gigabit NICs with Jumbo Frame
  - Failover
  - Multi-IP Settings
  - Port Trunking/NIC Teaming (Modes: Balance-rr, Active Backup, Balance XOR, Broadcast, IEEE 802.3ad/ Link Aggregation, Balance-tlb and Balance-alb)
- Optional Dual-port 10 GbE and 1 GbE Network Expansion Cards*
- Service Binding based on Network Interfaces
- Virtual LAN (VLAN)
- DHCP Client, DHCP Server
- UPnP & Bonjour Discovery
- USB Wi-Fi Adapter Support

Security
- FIPS 140-2 Validated AES 256-bit Volume-based Data Encryption*
- AES 256-bit External Drive Encryption*
- IP Filter & Policy-based Automatic IP Blocking
- Network Access Protection with Auto-blocking
- Encrypted Access: HTTPS, FTP with SSL/TLS (Explicit), SSH/SFTP (admin only), Encrypted Remote Replication (Rsync over SSH)
- CIFS Host Access Control for Shared Folders
- Antivirus Protection
- Importable SSL Certificate
- Instant Alert via E-mail, SMS, Instant Messaging, and LCD
- RADIUS Server

Disk Management
- Single Disk, JBOD, RAID 0, 1, 5, 6, 10, 5+Hot Spare, 6+Hot Spare , 10+Hot Spare, Global 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
  - iSCSI LUN Backup, One-time Snapshot, and Restore
  - SPC-3 Persistent Reservation
  - MPIO & MC/S
  - Online LUN Expansion
- Virtual Disk Drive (via iSCSI Initiator)
  - Stack Chaining Master
  - Virtual Disk Drives: Max 8

Server Virtualization & Clustering
- VMware vSphere 4 and 5
- Citrix XenServer (6.0)
- Windows Server 2008 Hyper-V
- Windows Server 2008 Failover Clustering

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

Access Right Management
- User Accounts Management
- User Groups Management
- Network Shares Management
- Batch User Creation
- Import/Export User List
- User Quota Management
- Windows ACL
- Sub-folder Permissions Support for CIFS/ SMB, AFP, FTP and Web File Manager

Domain Authentication Integration
- Microsoft Active Directory
- LDAP Directory Service
- Domain Users Login via CIFS/SMB, AFP, FTP, and Web File Manager
- NTLMv2 Authentication

MyCloudNAS Service
- Private Cloud Storage and Sharing
- Free Host name Registration (DDNS)
- Auto Router Congfiguration (via UPnP)
- MyCloudNAS Connect for Easy Connection (Windows utility)

Storage Plug & Play
- Windows Software: QNAP Finder
- Create and Map Shared Folders
- Create and Connect to iSCSI Target LUN

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
- LCD Quick Installation (Touch-N-Go)*

File Server
- Protocols: CIFS/SMB, 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
  - Supports ISO Mounting
  - Direct File Viewing via Google Doc
  - Create and Send Download Links for Public File Sharing with Expiration Time and Password Protection

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
- Real-time Remote Replication (RTRR)
  - Work as Both RTRR Server & Client
  - Supports Real-time & Scheduled Backup
  - Supports Encryption, Compression, and File Filter , and Transfer Rate Limitation
- Apple Time Machine Support with Backup Management
- Desktop Backup by QNAP NetBak Replicator
- Data Backup to Cloud Storage (Amazon S3, ElephantDrive, and Symform)
- Backup to External Storage Devices
- USB One Touch Backup (Import/ Export)*
- Block-level Remote Replication:
  - Work as Both Rsync Server & Client with Bandwidth Control
  - Encrypted Replication to/from Turbo NAS
- Third Party Backup Software Support : Veeam Backup & Replication , 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

Syslog Server
- Supports TCP & UDP
- Immediate E-mail Alerts
- Supports Manually Log Filtering and Advanced Filtering via a Wizard
- Web-based Log Display

RADIUS Server
- Centralized Account Management and Authentication for Network Access
- Supports PAP, EAP-TLS/PAP, and EAP-TTLS/PAP Authentication

Print Server
- Network Printer Sharing (LAN or WAN)
- Printers: Max 3 (USB)

Surveillance Station Pro
- Max. IP Cameras: 12, optional purchase (1 free license included)
- Mobile app: VMobile (iOS, Android, Windows Mobile 6.5)

QPKG
- Web Applications
  - Joomla!
  - phpMyAdmin
  - WordPress
  - AjaXplorer
  - vtigerCRM
  - eyeOS
  - Magento
  - GLPI
- P2P Applications
  - MLDonkey (eMule)
  - SABnzbd+
- Server Applications
  - Tomcat
  - Mono
  - Asterisk
  - XMail
- Others
  - Optware IPKG
  - Python
  - Java Runtime Environment
  - iStat
  - QUSBCam

… and more

* This feature may vary according to different models.

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

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

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