

# 1-Bay / 2-Bay Compact NAS TS-128 / TS-228

**QNAP**

## Your Personal Multimedia Cloud Simple · Powerful · Silent



Multimedia and entertainment center



All-inclusive data backup and synchronization



Multiple data security mechanisms



TS-128

TS-228

### ★ Personal, affordable NAS

- ◆ Entry-level NAS powered by ARM v7 dual-core 1.1GHz with 1GB RAM
- ◆ Tool-less installation, super-quiet, compact, and environmentally friendly
- ◆ Hybrid Backup Sync for comprehensive backup from anywhere, anytime, on any device
- ◆ Multimedia entertainment center for centralized management, playback, and sharing
- ◆ Complete data protection with multiple security mechanisms
- ◆ A wealth of mobile apps for easy media access, sharing, backup, and playback

Dual-Core 1.1 GHz 1GB GbE USB 3.0 SD Eco Friendly Copy Button

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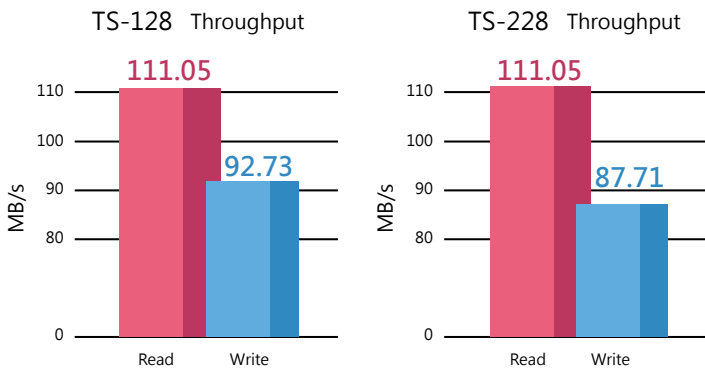
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# Powerful, affordable, dual-core NAS for your private cloud

## Dual-core ARM®v7 1.1GHz processor and 1GB memory

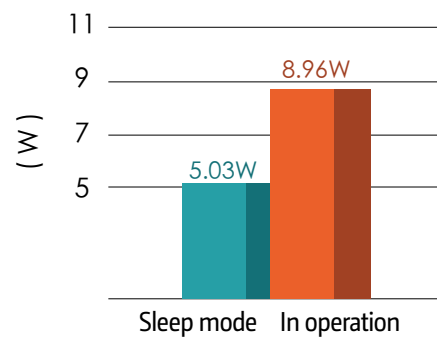
The TS-128 and TS-228 represent a new benchmark for network attached storage, backup, and multimedia management. The TS-128/TS-228 sport a ARM® v7 dual-core 1.1GHz processor with 1GB DDR3 memory delivering fantastic performance ideal for one/two-bay personal or home cloud usage. Fully capable of multiple, simultaneous access with storage space for high-density multimedia storage the TS-128/TS-228 are full-fledged home multimedia centers with impressive multitasking capabilities. Use the TS-128/TS-228 to enjoy your photo, music, and video libraries while handling downloads and backup jobs efficiently.



NAS:  
OS: QTS 4.2.0  
Volume type: TS-128 (Single)/ TS-228 (RAID 1), Seagate ST1000NM0033 1 TB (SN03)  
Network environment: direct connection between NAS and PC, 1GbE LAN (MTU 1500)  
Client PCs:  
Intel® Core™ i7-4790 3.60GHz CPU; DDR3-1600 16GB; Seagate 500GB ST500DM002;  
Intel Gigabit CT (MTU 1500); Windows® 7 Professional 64bit SP1  
IOMeter configuration: Transferring 8GB file continuously to/from 2 PCs for 3 minutes. Block size: 64KB for SMB2.0 (Throughput)

## Cool and Quiet

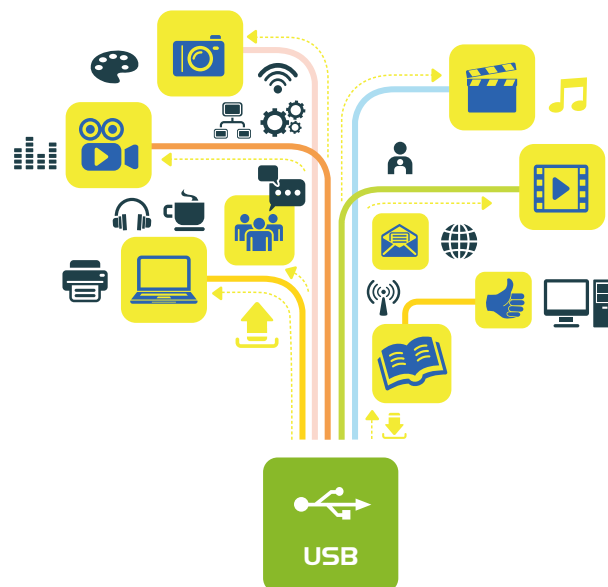
Beyond its ARM® v7 dual-core 1.1GHz processor and 1GB DDR3 memory, the TS-168/TS-228 uses an ultra-low-noise smart fan, which automatically adjusts its speeds according to the ambient temperature of system. Auto power-on and shutdown allows the NAS to go into an energy saving mode including standby, automatic system reset, and power-off (at specific intervals). This environmentally friendly feature conserves power consumption and prolongs the life of your device.



Test parameters  
Product model: TS-128  
HDD: Hitachi HUS724020ALA640\*1(ErP)  
WD WD10EFRX\*1(PC)  
Power supply unit: FSP FSP036-RBBN2

## Support for USB external drives, printers, and uninterruptible power supplies (UPS)

In addition to accommodating 3.5" SATA HDDs, the TS-128/TS-228 incorporates USB 3.0 in addition to USB 2.0 ports to support high-speed connections to external drives, network printers, or UPS to protect your investment in the case of a power supply failure. Built with easy setup and management in mind, the TS-128/TS-228 helps you create your personal cloud at ease without requiring professional IT skills. The easy-to-use web-based graphical user interface saves time and effort enabling you to set up, control, and monitor the system remotely.



# Comprehensive backup and synchronization for a consolidated backup solution

**PC to NAS:**

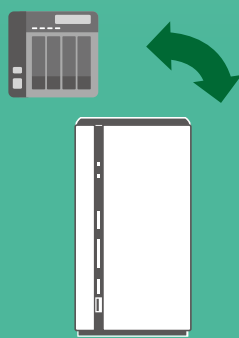
- NetBak Replicator
- Time Machine
- 3rd-party backup software



PC to NAS

**Remote backup and synchronization on the NAS:**

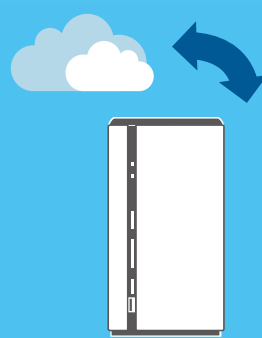
- RTRR
- FTP
- Rsync
- CIFS/SMB



NAS to NAS

**NAS cloud backup:**

- Support for a variety of cloud storage



NAS to cloud

## Backup from computer to NAS

Windows users can install the free QNAP NetBak Replicator utility to back up files from Windows PC. Mac users can also use Time Machine to back up files from Mac workstations.

### Local Backup

Use the One-Touch-Copy button on the front panel of the NAS to quickly backup data to or from external USB devices (e.g. digital cameras, camcorders and other USB devices or disks), and vice versa.

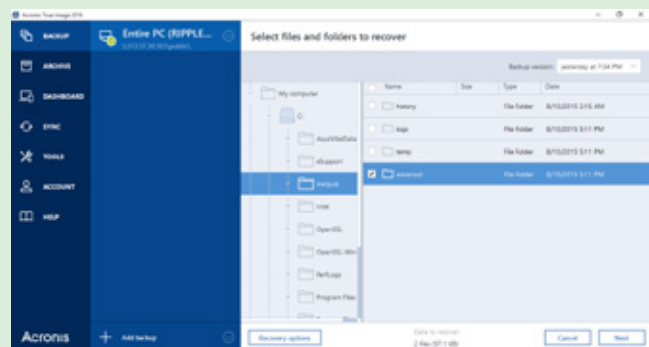
### 3rd party backup software

QTS is compatible with various renowned backup software including Acronis® True Image™, Symantec® Backup Exec, and many others. Backup entire disk drives, documents, pictures, music, videos, fonts, emails, and more – to one or multiple NAS units. With a very simple setup process, you can set up real-time backups and fully automated scheduled backups.



## Acronis® True Image

The powerful tools provided by Acronis® True Image enable you to back up system image files and all additional data. In the event of data loss, choose to recover specific files or to recover an entire system and its data, to balance Recovery Point Objective (RPO) and Recovery Time Objective (RTO) enterprise requirements. QNAP NAS with Acronis® True Image™ makes it possible to utilize storage space efficiently while remaining entirely confident with automated scheduled backups. Additionally, Acronis True Image® licensing allows a maximum of 3 activations for one serial number. For more information on Acronis True Image®, please visit <http://www.acronis.com/>



Backup files from Acronis True Image® should only be used for data restoration. For data synchronization, please use the Qsync utility.

## Remote-site backup and synchronization

Using the Real-Time Remote Replication (RTRR) or Rsync service on your QNAP NAS to back up data to your NAS is a simple and easy process. Your computer or your NAS can be the source, destination, or relay server during the backup process. It also gives you the option of (CIFS/SMB) or FTP service when setting up RTRR remote replication.



### RTRR with version control

RTRR enables saving backup files to time based versions. In case of an incident, files can be restored to earlier backed-up versions specified by time and date. Smart versioning enables you to create backup versions hourly, daily, weekly, or monthly, allowing you to dynamically adjust the number of backup versions in a given period of time according to your backup plan. Alternatively, simple versioning keeps a fixed number of versions for a given period and automatically rotates stored versions.

### Two-way shared folder synchronization

Use the RTRR service to set up real-time or scheduled synchronization of shared folders between two NAS unit. With two-way synchronization, file backup consistency is improved and is especially helpful in synchronization and collaboration across departments and branch offices.

## Cloud backup

Protecting against potentially disastrous data loss is of paramount importance for all businesses regardless of size. A QNAP NAS is a comprehensive backup and recovery solution to back up not only files for all devices on the LAN, but also for remote-site NAS units and servers. Furthermore, QNAP NAS fully supports backup from the QNAP NAS to online cloud storage services (e.g. Amazon® S3, Amazon® Glacier, Microsoft® Azure, Google® Cloud Storage). The QTS Backup Station is a powerful and comprehensive tool that makes backup and recovery simpler.



## Hybrid Backup Sync Cloud sync solutions

Hybrid Backup Sync supports leading cloud storage services and synchronization with designated folders. The Hybrid Backup Sync supports Amazon® Cloud Drive, Google™ Drive, Dropbox™, Microsoft® OneDrive®, Yandex.Disk, and Box for continuous synchronization between your NAS and cloud storage.



The HybridBackup Sync Beta app will be available in Dec., 2015.

## Complete and centralized backup and access

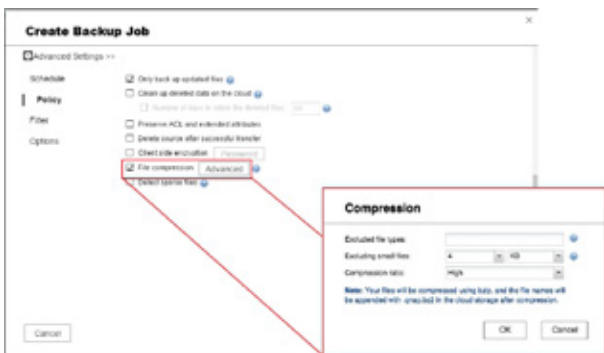
The explosive growth of data brings challenges of data protection and management. Unless an organization has the necessary knowledge and a disaster recovery strategy to protect and recover data, data integrity and data security will continue to present a problem. Hybrid Backup Sync assists you in managing and planning backup strategies (including local, remote-site, and cloud backups) with its centralized management capability even in the most complex data environments.

Job Name	Status	From	To	Schedule	Last time & status	Action
Local-Remote 1	Off	Public	WebDAV	Continuous	---	Pause Job
Local Backup 1.1	Off	Verac	RecordingLocal Backup 1.1/Local/Verac	Continuous	Finished 2015/02/03 01:00	Backup Now
Local Backup 2.01	Off	Verac	Verac	Continuous	Ready	Backup Now
Local Backup 2.0	Off	Verac 1	RecordingLocal Backup 2.0/Verac/Verac 1	Continuous	Finished 2015/02/03 01:01	Backup Now
Local Backup 2.02	Off	Verac 1	Verac 1	Continuous	Verac 1	Sync Now
Local-Remote 1	Off	RecordingLocal Backup 1/Verac/Verac 1	COMMISSION	Continuous	Finished 2015/02/03 10:01	Pause Job
Local-Remote 1	Off	Verac	RecordingLocal Backup 1/Verac/Verac 1	Continuous	---	Backup Now
Local-Remote 1	Off	RecordingLocal Backup 1/Verac/Verac 1	Verac 1	Continuous	Finished 2015/02/03 01:00	Pause Job

## Cloud backup made simple

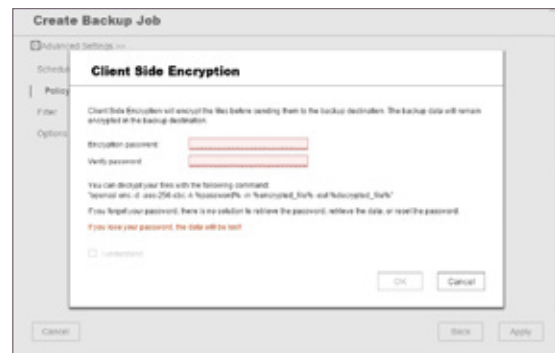
### 1 Compress

Hybrid Backup Sync supports compressed backup files, scheduled file deletion according to users' specifications and sparse file detection to avoid backing up unnecessary files. You can screen files by type, size, and date to ensure only the required files are saved on the cloud for greater storage and cost efficiencies.



### 2 Select folder and encrypt

Hybrid Backup Sync features an SSL-secured connection and military-grade AES 256-bit data encryption to protect your data in transmission and at rest on the cloud.



### 3 Multi-thread transmission

Hybrid Backup Sync supports multi-task processing and multithreaded data transfer\*. The latter improves file transmission speed and enhances work efficiency by segmenting large files into smaller ones before uploading. You can preview files in the cloud and download individual files instead of the entire folder.



WebDAV app does not support multi-threaded data transfer.



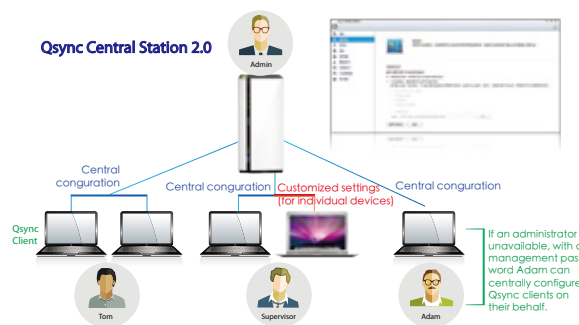
## Qsync Central Station 2.0 - Centrally manage and secure your files and devices

Qsync Central Station 2.0 supports file synchronization between multiple devices, and you can utilize a smart phone, tablet, computer or webpage to browse through synchronized files. When your computer is offline, you can edit the files offline or view the files on the local Qsync folder, and as soon as the network resumes, online, Qsync will resume the data synchronization. You can also choose to keep the files stored on your QNAP NAS un-deleted to save the storage space of your local device.



### Enhance management efficiency by monitoring equipment settings

The administrator can create default settings on Qsync Central Station 2.0 and also apply them to Qsync clients, which helps to not only save time and effort setting up individual clients, but also allows administrators to monitor user settings, thereby strengthening enterprise-wide IT management and file filtering control and avoiding the risk of deleting files on a QNAP NAS by mistake due to synchronization. Also, by using permission settings, administrators can flexibly adjust individual user's equipment settings, where it not only retains the above advantages, but further enhances the flexibility and convenience of the centralized management approach.



### Remotely delete shared folders to prevent data leaks

In the event where a computer/device is stolen or lost, the Qsync folder can be remotely erased\* to ensure that sensitive or confidential data is not accessed by unauthorized users or leaked. Once the computer/device is recovered, Qsync can easily restore the data that was deleted, ensuring the perfect balance between security and convenience.

\* The data will still be retained on the QNAP NAS



### Seamless file sharing for better work Collaboration

Besides the Qsync folder, now you can synchronize shared folders on a QNAP NAS to the Qsync client on your computer, enabling synchronization among multiple shared folders on the NAS and elevating the level of file sync and sharing efficiency to a higher level. Qsync Central Station also supports sharing team folders to improve work efficiency, making teamwork simple and easier.



### Qsync Smart Version Control

Enable Qsync version control and all file revisions (up to 64 versions) are saved as a copy for future retrieval. In the event of accidental deletion or unintended modification, previous versions always remain available, even files that have been deleted from the recycle bin.





## The Qsync utility

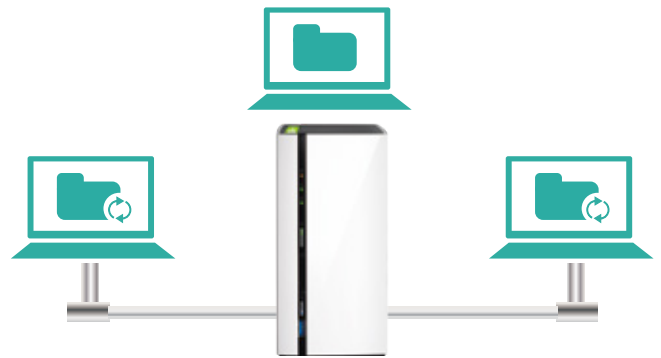
With the Qsync utility, you have all the files you want on the computer, server, or mobile devices you use without spending a lot of time copying files manually.



Available for Windows® and Mac.

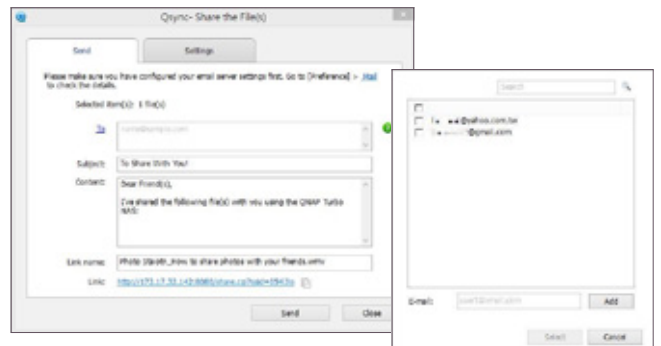
### Share team folders with different groups of people

Your life is connected with different groups of people. You can create sub-folders within the Qsync folder, and share them with different groups of QNAP NAS users.



### Streamlined file sharing with previous contacts

Qsync has been updated to save and display contact details from previous file sharing occasions. As such, when you share a new file the process of sharing a file is simpler and more streamlined without having to look-up and enter contact information.



### Sync selective sub-folders

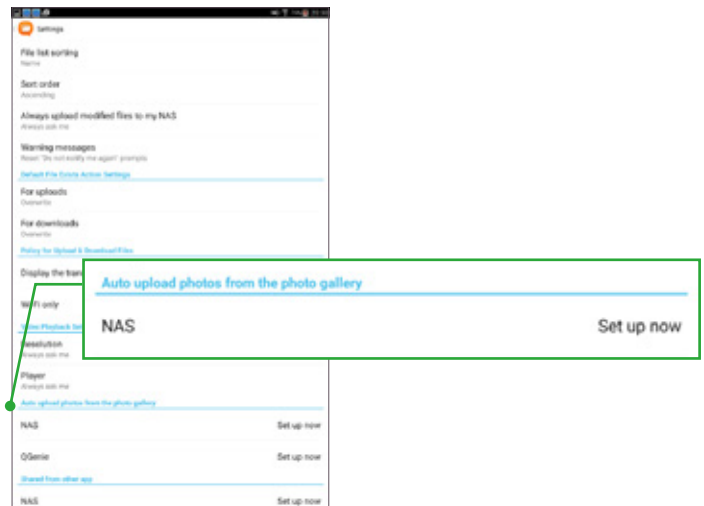
When synchronizing files, you can choose to only sync specific sub-folders within the Qsync folder, which is useful if your computers have limited storage.



## Qfile Auto-upload photos

Qfile allows you to remotely upload/download, share or preview files, and stream multimedia files. With this app, network environment or devices are longer an issue to remotely access your files, even though you only have a mobile phone or a tablet. What's more, it allows automatically backing up photos and music on your mobile phone to your QNAP NAS.

Use Qfile to automatically upload new photos to your QNAP NAS from anywhere. Simply enable the "Auto upload photos from the photo gallery" option, and set the destination in the "Settings" page of Qfile to be your NAS. Once configured, you have a real-time backup of your precious photos, and never have to worry about storage space on your mobile devices.

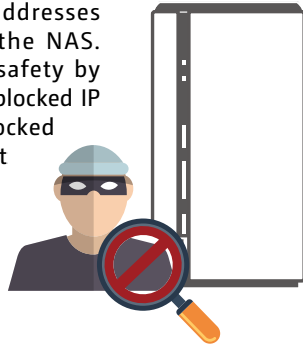




# Secure your data with multiple protection mechanisms

## Connection management

Allow or deny specific IP addresses or subnets to connect to the NAS. This increases connection safety by creating lists of allowed and blocked IP addresses. Servers of the blocked IP will be unable to connect to the NAS. Block a user who has stayed online for too long or logged in from suspicious IPs to enhance system security further.



## Network transmission encryption

Advanced encryption ensures the security of shared folders. Without the key, no one can access the data in encrypted folders or files. Data transmitted over the Internet can also be encrypted to protect data security when using services such as FTP, WebDAV or in File Station.

## Push service

In addition to email and SMS, you can get messages sent to your mobile devices in the event of a system failure or other warning\*. This keeps you updated with the latest system status so that you can take immediate action to rectify the situation and reduce the risk of data loss.

## Two-Step Verification

The Two-Step Verification\* requires users to log in to the QNAP NAS with both their passwords and a 6-digit one-time password (OTP) generated by an authenticator app.

This requires the installation of one of the following authenticator apps on your mobile device: Google Authenticator (Android, iOS, BlackBerry) or Authenticator (Windows Phone).



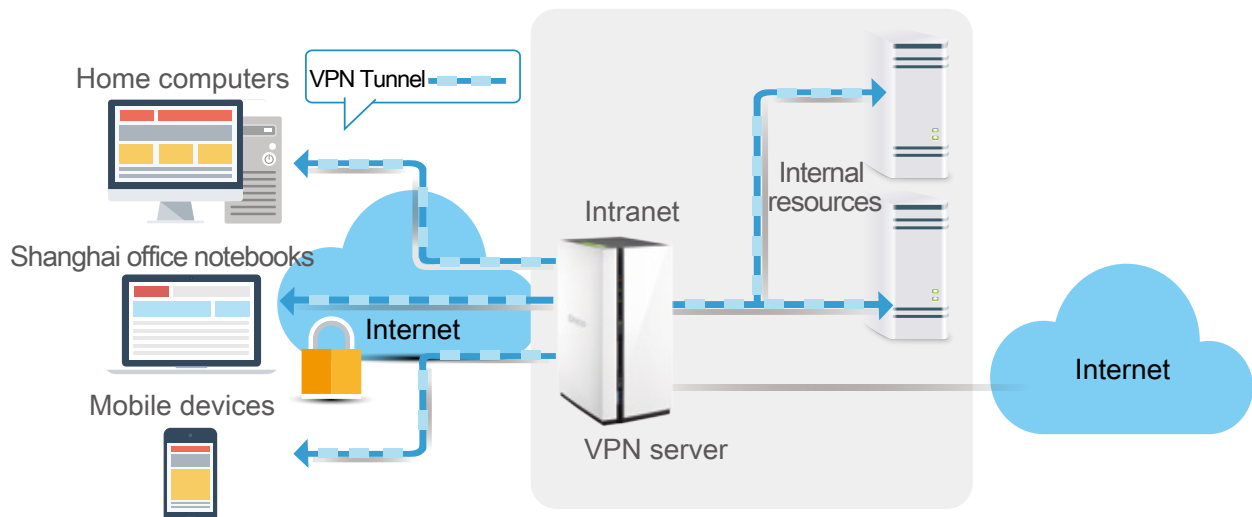
## Virtual Private Network (VPN)

A virtual private network (VPN) enables secure connections to access network resources and services across a public network. A VPN offers a convenient solution for NAS users to build end-to-end encrypted tunnels to your QNAP NAS. Whether you are an individual user or an IT administrator, you can use the built-in VPN server (L2TP/IPsec, PPTP, or OpenVPN) or VPN client (PPTP or OpenVPN) on the NAS for such purposes.

To use your NAS as an L2TP/IPsec VPN server, please install the L2TP/IPsec VPN server app from the QTS App Center.

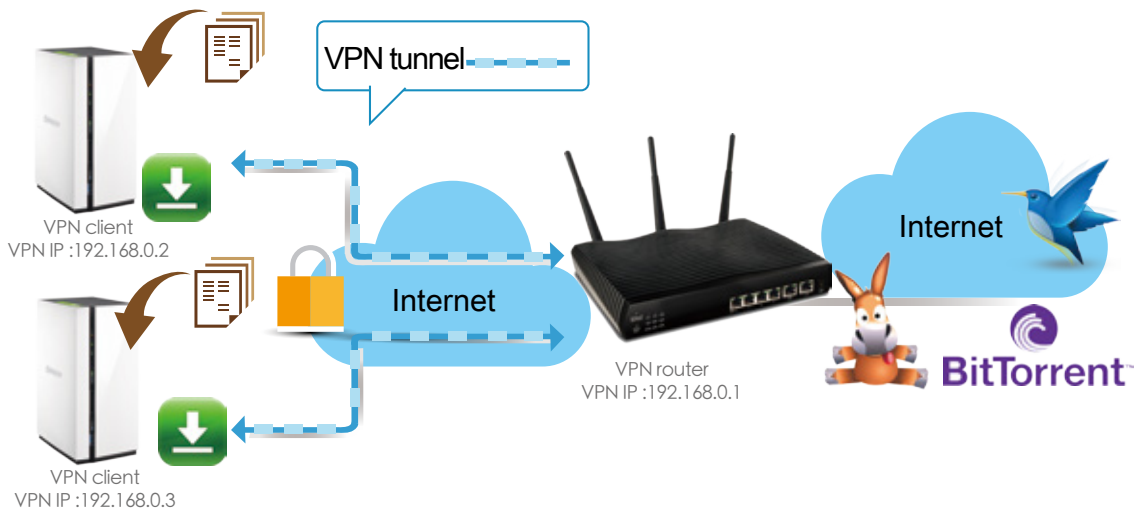
### Connection management

The VPN server also comes with user and connection management to help you manage VPN services. Furthermore, a VPN can help gain access to resources that may otherwise be restricted by your network environment.



## Secured connections

When the NAS acts as a VPN client, VPN can better protect your data when you use services like BitTorrent and eMule. Configure the QNAP NAS to be a VPN client for secure data transmission when setting up backup or other services to branch offices at remote locations.



## Protection against unauthorized access

QNAP NAS provides the best private cloud solutions with encryption keys capable of locking a specific folder or an entire storage volume. QTS also supports different levels of AES encryption (i.e., AES-128, AES-192, AES-256) for external USB drives to protect against unauthorized access.

## Anti-Virus protection

QTS integrates the ClamAV™ antivirus toolkit to defend against the latest viruses, malware, worms, and Trojan horses with continuous free virus database updates, ensuring continuous business operation. ClamAV™ supports immediate and automated scheduling of scans for designated folders or entire volumes.

## Proxy Server

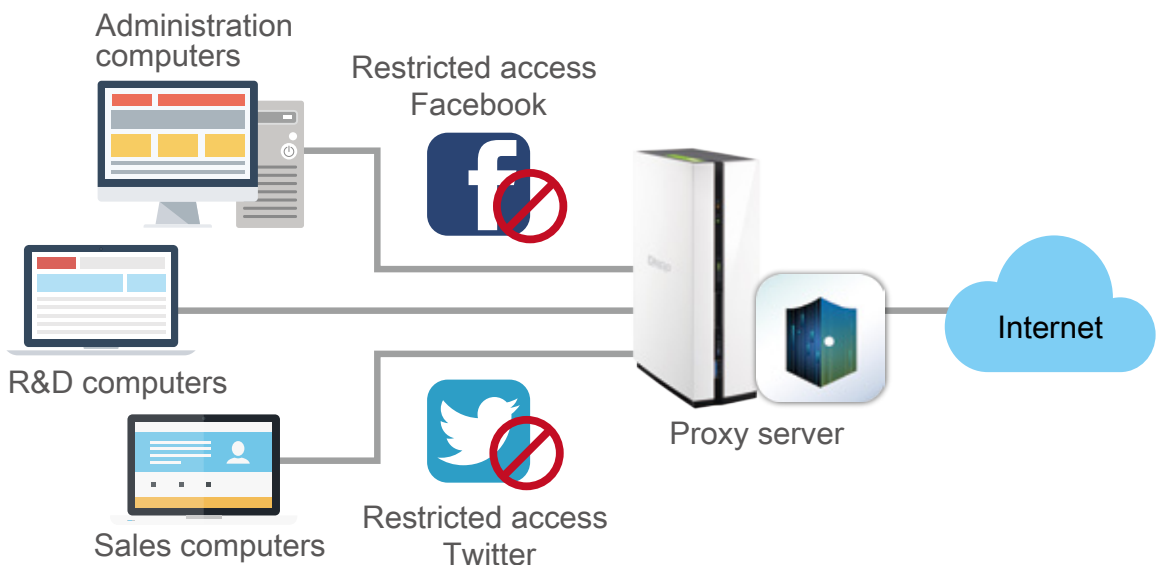
The Proxy Server application provides an intuitive interface to simplify proxy server settings on your NAS, enabling you to operate your own proxy server in just a few clicks. The proxy server provides cache and connection controls for Internet services. For companies that need a boost to web response time and security, this application can be leveraged to make your NAS a web proxy server to protect other devices in your local network from Internet attacks. The following are the highlighted features:

**Caching:** Improves response times and saves bandwidth required for web access by caching visited web content and other web resources.

**Access Control:** blocks access to certain websites or restricts access for Internet connections.

**Logging:** logs visits to web sites for generating statistics to aid in network management.

**Advanced Settings:** In addition to the settings available via the graphic user interface, advanced settings are available to fine tune and customize your proxy server including cache settings, and enabling access without an SSH tool.

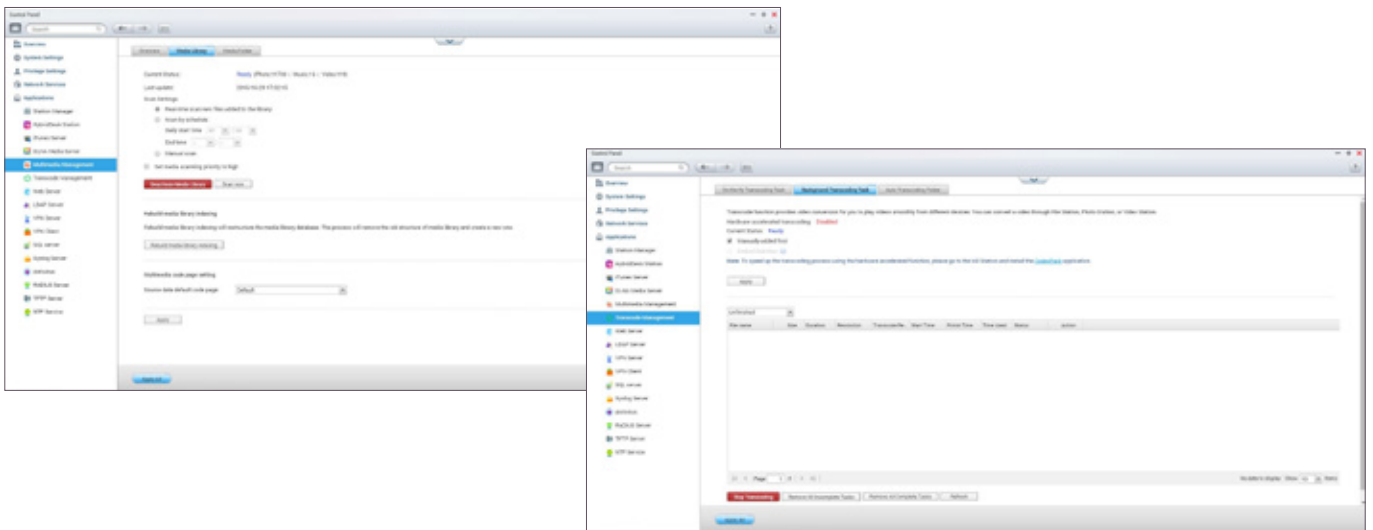


# Enjoy home entertainment with the multimedia center and cloud technology



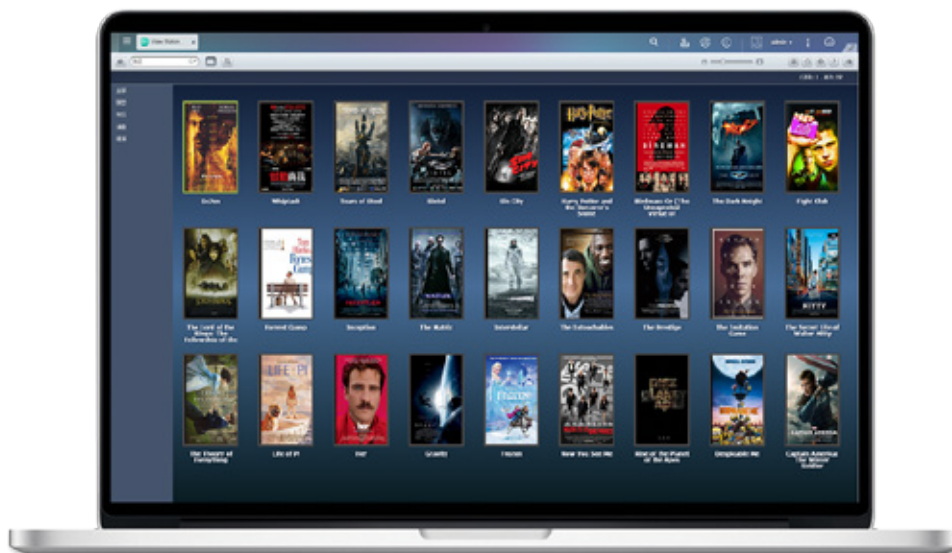
## Multimedia management and background transcoding

QNAP NAS is an ideal multimedia hub to safely store and search through huge collections of videos, music, and photos. The QTS Media Library service scans for multimedia files within your designated media folders and indexes them into the media library to make searching for and organizing your content quick and easy. To manage your content in Photo Station, Video Station and Music Station, go to “Control Panel” > “Applications” > “Multimedia Management” > “Media Library” and enable “Activate Media Library”. Perform an immediate media scan with the Manual Scan button, in real-time or by schedule. Then go to “Media Folder” to add, edit, and scan folders that contain your media. Moreover, enable and configure auto transcoding in Transcode Management to convert videos into different resolutions and formats suitable for multiple devices and multiple networks.



## Video Station - Entertainment beyond the limits of devices and languages

Video Station is an excellent platform for you to create your personal video entertainment website that can organize. Use Video Station to convert your library into different resolutions and universal formats for smooth viewing across any network bandwidth or any device. Video Station can automatically find and download movie posters and other movie information from the Internet (genre, director, actors, etc.) to enrich your collection and enhance your viewing experience.





## Photo Station - Record the precious moments in your life

Create a virtual album and add photos to the album without moving the physical files. Alternatively, create a smart album that automatically searches and adds photos that match the search criteria such as today in history, a specific period, or tags. Use the Sharing Cart to add and modify shared content in addition to specifying sharing settings such as a validity period. Share the cart by email, social networks, or create a sharing link.



(Sharing cart)



## Music Station - Build your own music cloud

Music lovers often face the problem of organizing and managing huge music collections. Music Station offers a number of categories and browsing modes and allows you to create up to 200 playlists. You will never miss your favorite music again. The Music Station allows you to play stored music on the PC and mobile devices via the Internet, acting as your personal music cloud. With the Internet, you can enjoy all your music on your QNAP NAS anywhere.



## Multimedia streaming playback

You can utilize the browser-based File Station, Music Station, Photo Station or Video Station to directly play back a variety of multimedia, or stream the files via these stations to various devices. You can also utilize your smart phone or tablet to stream photos and video files to DLNA®, AirPlay®, Chromecast™ compatible devices.

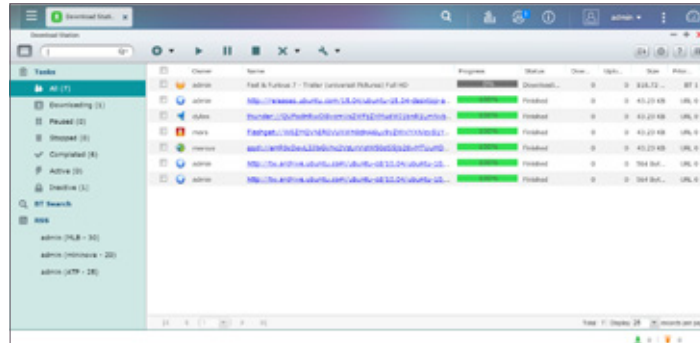


The Media Streaming Add-On must first be installed from the App Center on the NAS.



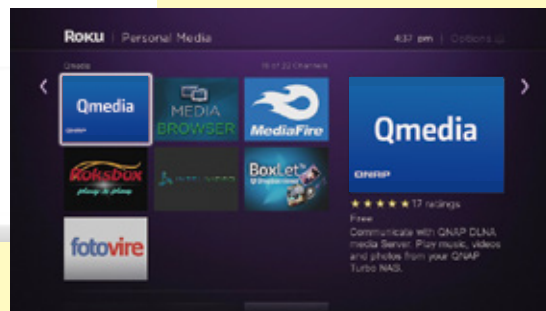
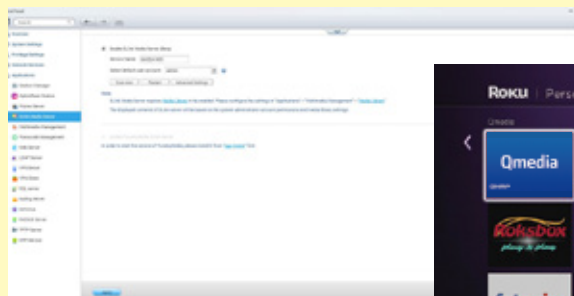
## Download Station - Your 24/7 download center

Download Station has a built-in torrent search engine and supports a wide range of download types. It also provides RSS feeds subscription with automatic download. Once you finish managing download tasks, just turn off the computer. The download tasks will keep going until they are finished. Easy, and power-saving.



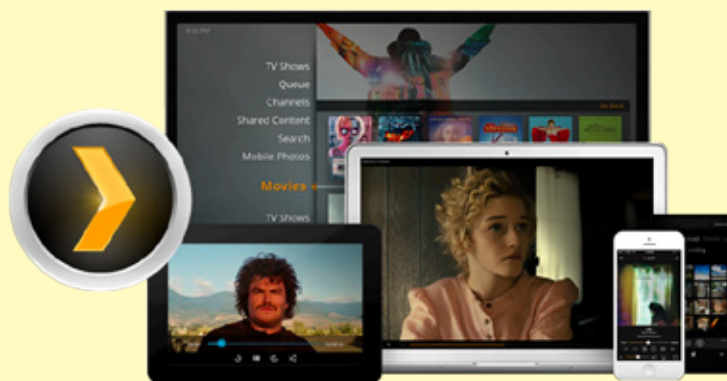
## Qmedia - a player designed for Roku®

Qmedia is a customized channel for Roku®, which enables you to browse and play the media stored on your NAS via Roku. Qmedia enables users to easily stream photos, music, and videos from a QNAP NAS to a TV. With full support for on-the-fly transcoding on your NAS, users can transcode media files to formats that can be streamed by Roku. Improve transcoding performance by installing CodexPack if your NAS supports hardware acceleration.



## Plex Media Server

Video streaming is made easy with Plex Media Server. Use Plex Media Server to enjoy easy management and instant playback of all your media on your NAS wherever you are. Plex apps for Android, iOS, Windows, and Windows Phone let you browse and enjoy your media on your choice of device. Configure Plex Media Server to index and transcode content in any directory on your NAS to reduce bandwidth and increase playback device compatibility. Plex Media Server can be downloaded and installed from the App Center. For more information about Plex Media Server, visit <https://plex.tv>

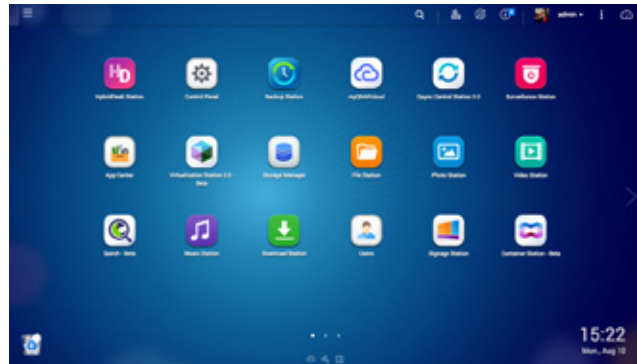
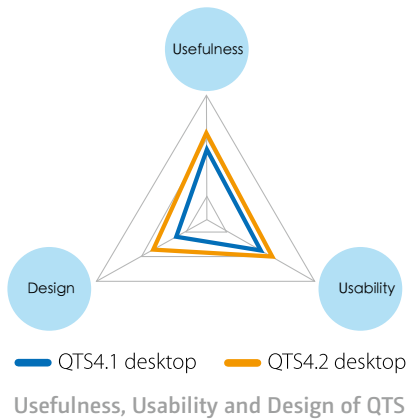


# Simplifying your NAS experience with QTS 4.2 Operating System



Experience a simple and innovative design

The QNAP operating system, QTS, has been optimized to perform elegantly and simplify the whole NAS experience. Equipped with a variety of applications, QTS is simply designed to meet all your needs for storage, management, backup, multimedia, and surveillance.



## Multitasking and customizable desktop

The new QTS operating system dramatically improves your efficiency with multitasking, multi-window, multi-desktop, and multi-display modes enabling you to begin new tasks without waiting for the previous one. Simply and easily minimize running apps onto the task bar and switch between them. The multi-desktop design of QTS enables drag-and-drop shortcut icons from the Control Panel or Main Menu to the desired desktop to suit your preferences. Additionally, drag and drop a desktop icon on top of another one to group them together to create a personalized desktop for greater efficiency.



## Smart dashboard

The system status displays immediately with a single click on the upper-right corner of the desktop. Open the smart dashboard to obtain a quick view of important information including system health, disk information and health, resource monitoring, storage space, scheduled tasks, device information, and firmware information. Drag and drop dashboard functions to the desktop to monitor them at any time. Moreover, in the event of a critical NAS system failure (hard disk corruption, etc.) the smart dashboard will flash and prompt system administrators to take immediate action to recover data and to prevent the loss of important data.



## Storage Manager - Unified storage management

The QTS Storage Manager neatly presents tools and options for managing system storage with an intuitive graphical interface. From reviewing the system storage to managing volumes and disks, this centralized management utility simplifies hard drive management.





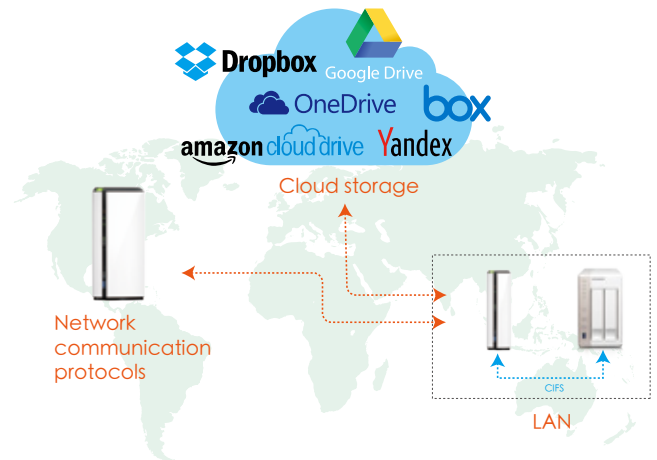
## File Station—Manage all files from a single management window

### Multi-functional File explorer

Just like a file explorer on your PC, File Station lets you easily carry out common tasks operations such as rename, copy, move, delete and compress/uncompress. Move files from a local PC/Mac to File Station by drag-and-drop to upload the files to the NAS easily. Moreover, enable mutual sharing to both NAS and non-NAS users on a shared folder by allowing file upload to the folder.

### Remote device connection and cloud storage

File Station supports SMB/CIFS and WebDAV remote networking protocols, so you can carry out file management tasks from remote to local devices and vice versa from a single management window. In addition, it supports connection to six cloud services: Google Drive™, Dropbox™, Microsoft OneDrive®, Box, Amazon Cloud Drive™, and Yandex Disk™.



## myQNAPcloud- Helps you easily create your NAS cloud

Cloud access is greatly simplified in QTS 4.2. Following the setup wizard, you can effortlessly create your personal or private cloud. With myQNAPcloud, you can always enjoy the services of your QNAP NAS safely and conveniently regardless of your network environment.

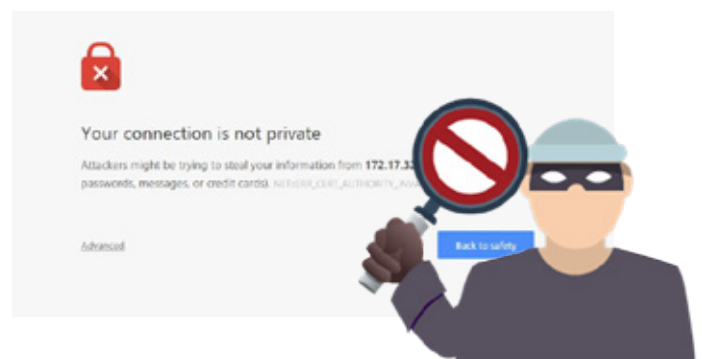


### CloudLink

CloudLink is the best remote access service provided by myQNAPcloud and allows you to connect to your device via the Internet using the myQNAPcloud website ([www.myqnapcloud.com](http://www.myqnapcloud.com)). No complicated port forwarding settings on the router are required. In addition to the web-based connection, CloudLink also allows you to connect to your QNAP device with the QNAP mobile apps Qfile and Qmanager as well as the PC utility Qsync.

### myQNAPcloud SSL authentication

QNAP offer myQNAPcloud SSL certificates for you to purchase online. myQNAPcloud SSL certificates are used to provide a secured connection between the QNAP NAS and web browsers, providing authorization as well as encrypting the connection to secure data and transactions.

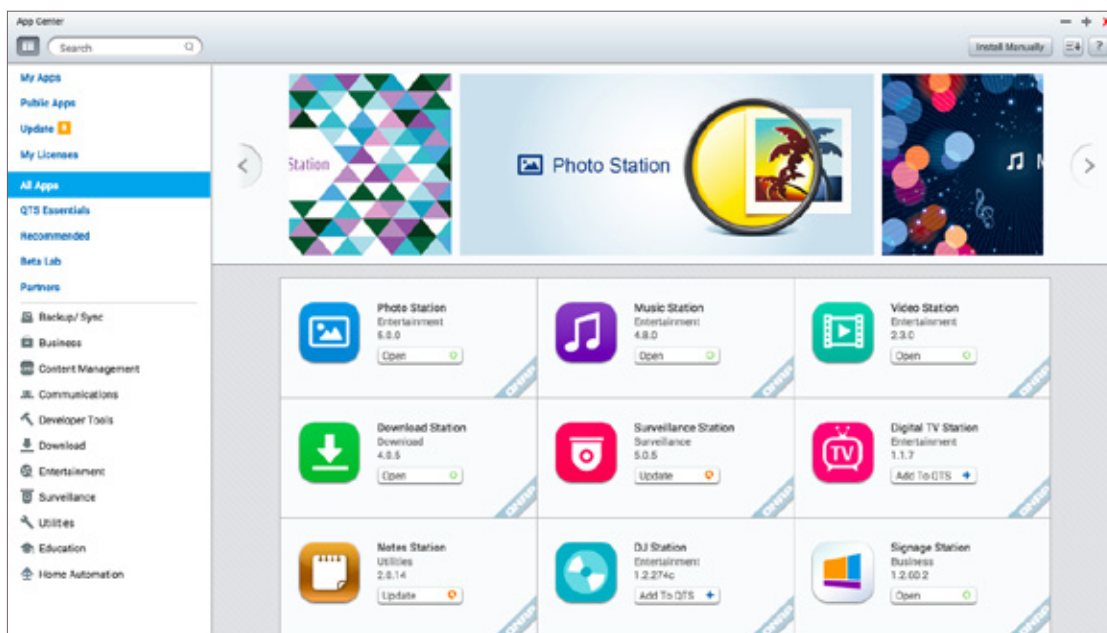


# Customize your QNAP NAS for endless possibilities



## App Center – Installation-on-demand applications to suit your needs

Search for, install, remove, and update apps through the App Center to extend the functionality of your QNAP NAS. The QTS App Center provides a wide range of install-on-demand apps for you to deploy. The available applications include business applications, cloud backup and synchronization tools, home entertainment, surveillance, and many more.



## Surveillance Station - Build a robust surveillance system

As surveillance technology evolves, the required system hardware and software have become increasingly affordable. For all environments, including homes, offices, schools and other organizations, QNAP offers comprehensive support and solutions that can flexibly meet your schedule and budget constraints. QNAP Surveillance Station is a professional network surveillance video management, supporting high-definition video display and offering recordings playback, immediate alerts for events (notifications can be sent to up to 5 email addresses), and more advanced functions.



Channel Licenses:  
Free: 2 Max: 8



Before using Surveillance Station, please install the Surveillance Station App from the App Center. For a list of compatible cameras, please refer to [www.qnap.com](http://www.qnap.com).





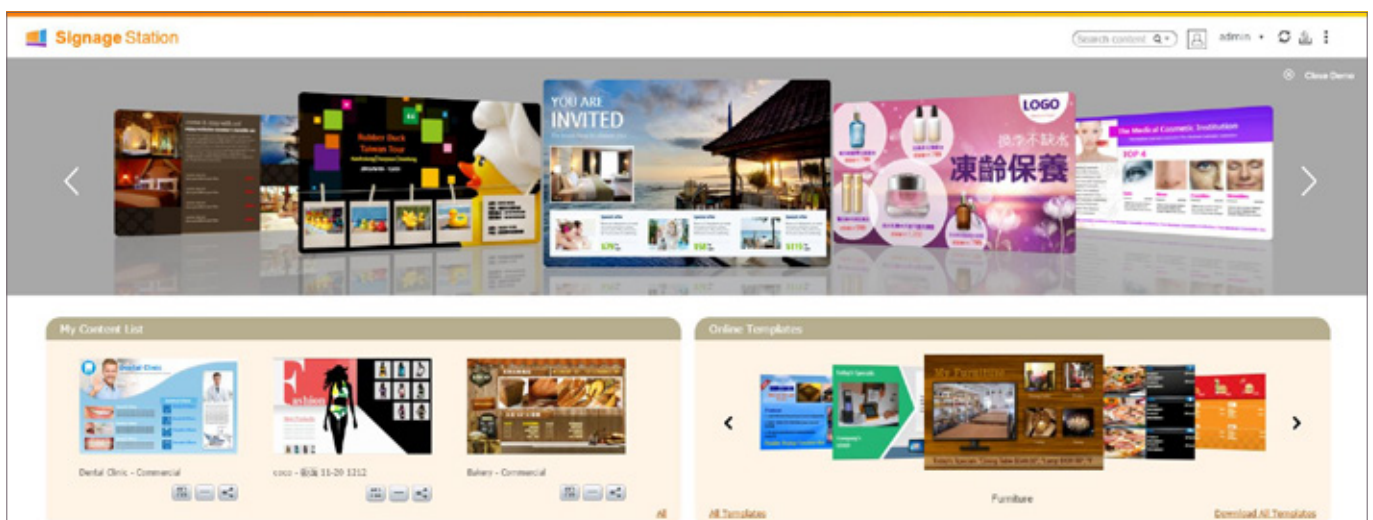
## Notes Station - A handy notepad on your private cloud

Notes Station 2.1 provides the convenience of note taking on cloud-based services so that you can manage your entire note systematically and flexibly. You can jot your valuable ideas in Notes Station and keep them safely accessible through your own devices. Notes Station also offers several backup options. Users can choose to back up files to their PC or NAS. Additionally, system administrators can use the backup features of the NAS to periodically and remotely replicate notebooks to another NAS for all users.



## Signage Station - Your best design partner

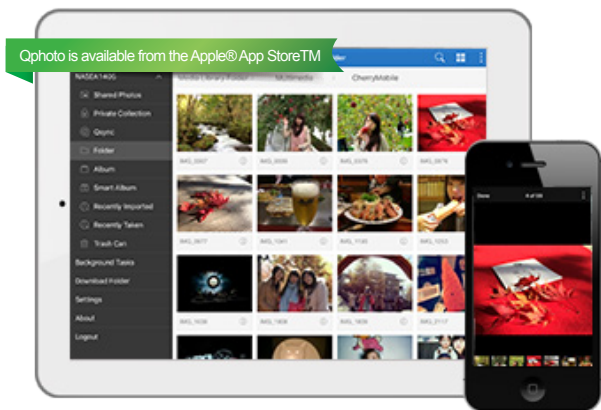
Signage Station is a free app for QNAP NAS. It allows businesses to create attractive menu boards, advertising posters and business profiles and easily publish them to monitors and tablet devices to attract more customers. For home users, they can edit their own multimedia content, and publish them to Facebook™ and other websites. There are no complicated steps involved, and by using simple drag & drop operations you can create content and dynamic resumes with iArtist Lite and publish them using your QNAP NAS.



# Connect to NAS wherever you go with mobile apps



## Qphoto - Share photos on your NAS on the go



### Photo browsing

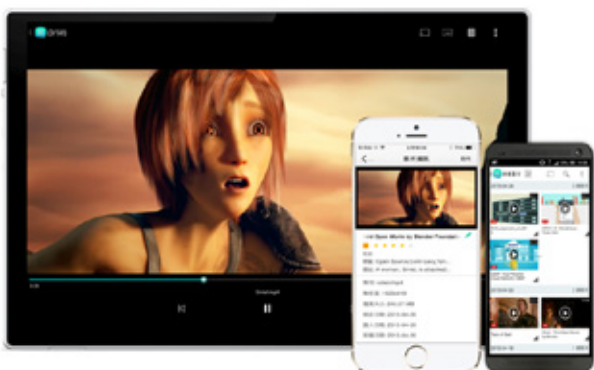
Browse your photo collection using a timeline view, thumbnails, detailed list and folders.

### Enjoy slideshows

Create and enjoy slideshows with photos and preferred background music from your mobile devices.



## Qvideo - Watch videos stored on your NAS



### Download and watch videos anywhere you go

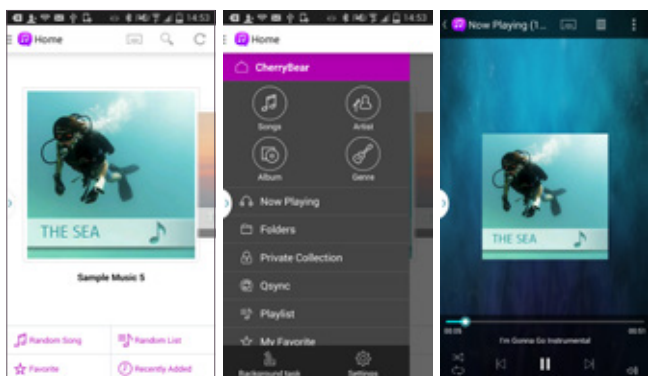
Use Qvideo to download videos from your NAS to your mobile device home and you can then watch them at your leisure from anywhere without worrying about reception or bandwidth usage.

### Supports streaming to Airplay®, DLNA® and Chromecast™ devices

Use Qvideo as a remote control to enjoy videos with the ones you love.



## Qmusic - Listen to music stored on your NAS



### Play music offline

Click the "Download" button to instantly download the music from the QNAP NAS to your mobile device for offline listening. The music never stops even when the Internet is not available.

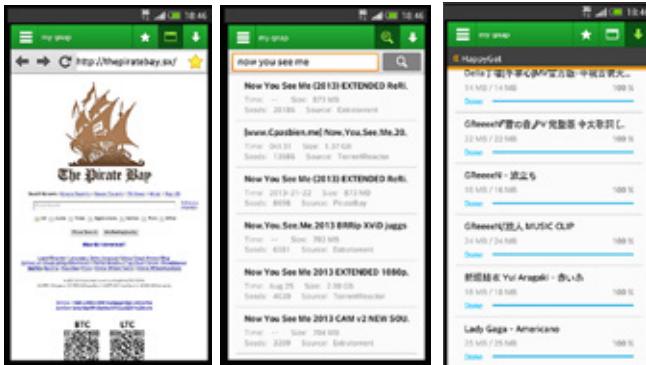
### Play music on demand

Easily connect to the QNAP NAS and play music at your fingertips. It is just like having a mobile music hub.





## Qget - Remotely manage download tasks



### Manage download tasks

Conveniently review and manage all of your download tasks (including running, pausing and removing tasks.) You will receive a notification from Qget after a download task is complete.

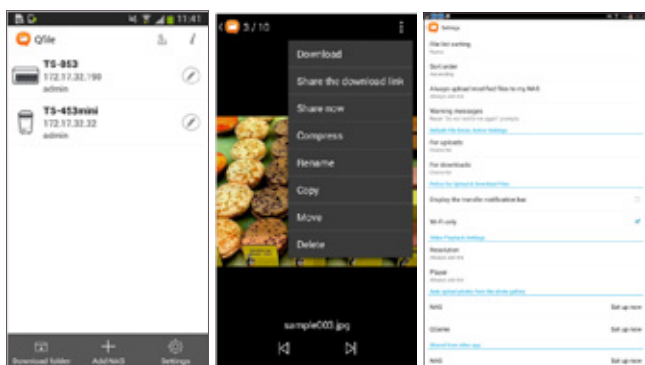
### Back up videos from video sharing

With a single tap, you can back up YouTube videos to your QNAP NAS through HappyGet\*.

HappyGet is a third-party application available in QNAP App Center for backing up videos from video sharing sites.



## Qfile - Conveniently access files stored on your NAS



### Remote file access

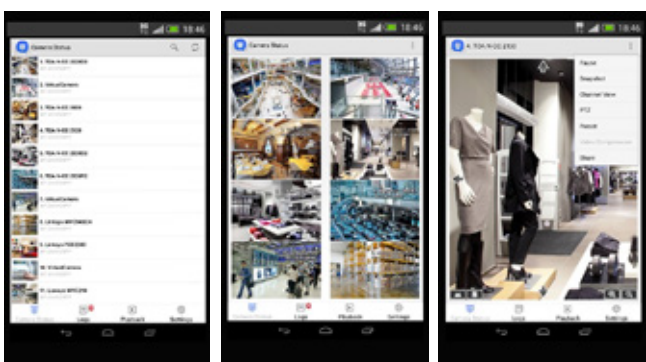
The file thumbnails help you easily identify file types at a glance, allowing you to spot music, videos and photos rapidly. You can stream multimedia files and play them on your mobile phone, turning it into a mobile media player.

### Simultaneously compress and share files

With Qfile, you can compress files and share them with your friends via email, with apps on your mobile phones or by creating download links. You can uncompress files that have been shared with you too.



## Vmobile - Professional mobile surveillance App



### Mobile surveillance

The Vmobile app is a professional mobile surveillance app that enables you to monitor the Surveillance Station and VioStor NVR anytime and anywhere using iOS and Android devices.

### Event notification

When an event occurs, Vmobile can notify by ringtone, push notifications, or vibration to alert you immediately.





## Qmanager - Remotely manage and monitor your QNAP NAS



### Monitor system status

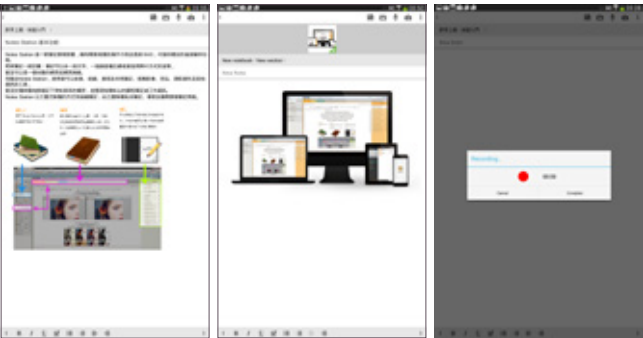
Review system and connection records, restart or shutdown your QNAP NAS remotely, identify the location of your NAS, and safely reject external devices.

### Push notification

Check system events and real-time updates and receive important push notifications on your mobile phone.



## Qnote - Your personal assistant on the go



### Events on the Calendar and To-do list

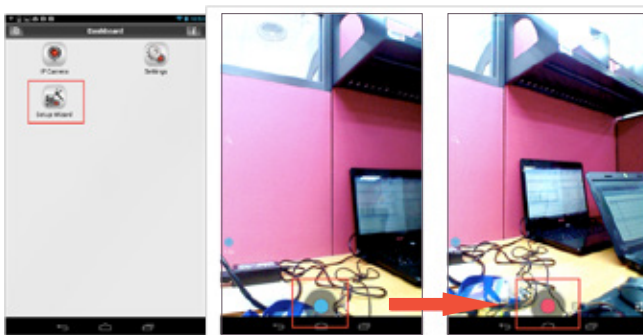
Qnotes provides the Calendar and To-do list features and enables you to add events in the Calendar and To-do list as you edit notes.

### Taking and sharing notes on the go

Qnotes provides an effective way to take notes with high privacy. It is the only Android note taking app that supports a private cloud. Qnotes can either sync data with other devices via QNAP NAS or works alone without any NAS or Internet.



## Vcam - IP camera on the go



### Simultaneously record and upload anywhere, anytime.

Use your mobile device camera as an IP camera with Vcam. Directly record your surroundings using the camera on your mobile device and upload it immediately to your QNAP NAS from anywhere, at any time.

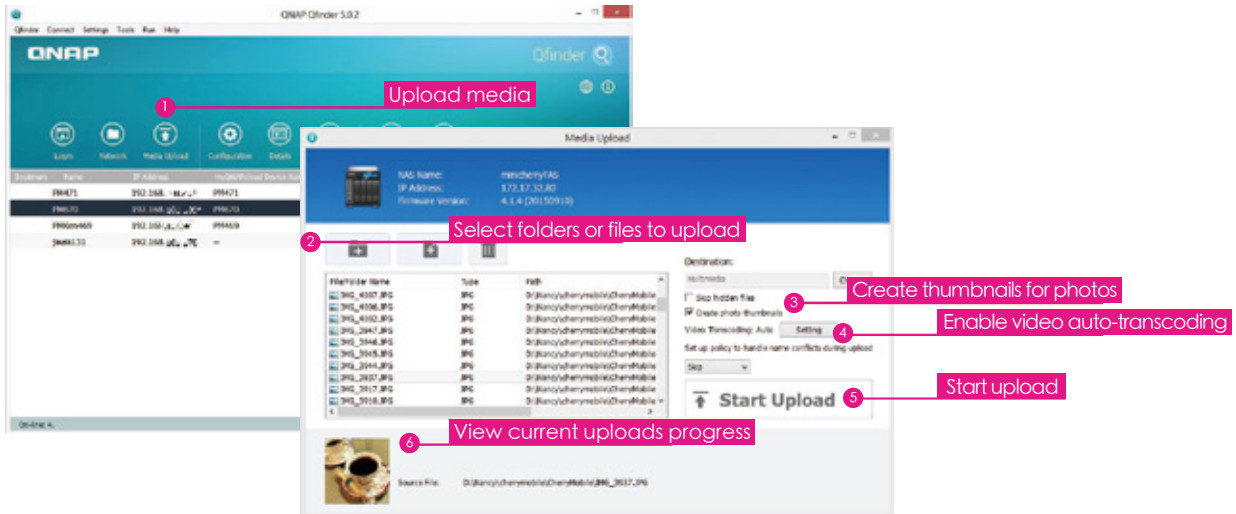


# Boost the productivity with computer utilities



## Qfinder Pro

Not only does Qfinder Pro help you find and access a QNAP NAS in the LAN and it can also be used to generate thumbnails for media files in advance of file upload, accelerating media file processing and improving user experience.



Available for Windows®, OS X®, Linux® and the Chrome™ Browser.



## NetBak Replicator

The QNAP NetBak Replicator is free for anyone with a QNAP NAS and helps you easily back up files from Windows PC - entire disk drives, documents, pictures, music, videos, fonts, emails, and more - to the QNAP NAS. The operation is very simple. You can set up the backup task in just a few clicks using NetBak Replicator by setting real-time synchronization, scheduled backup and auto-backup from multiple PCs to the QNAP NAS. NetBak Replicator also supports backing up to a remote server via FTP and WebDAV through the Internet.

Available for Windows®.



## myQNAPcloud Connect

myQNAPcloud Connect is a VPN application designed for all Windows users and supports all VPN options to connect to a QNAP NAS (including L2TP/IPsec, PPTP and OpenVPN). By installing and setting up myQNAPcloud Connect, you will be able to connect to the QNAP NAS and easily manage files by drag-and-drop actions.

Available for Windows®.



## Qsync

With the Qsync utility, you have all and up-to-date files you want on the computer, server, or mobile devices you use without spending a lot of time copying files manually. Just put files in the Qsync folder to synchronize files across different devices and share files across groups and communities. For more information about Qsync, please refer to Qsync Central Station 2.0.

Available for Windows®, OS X®.

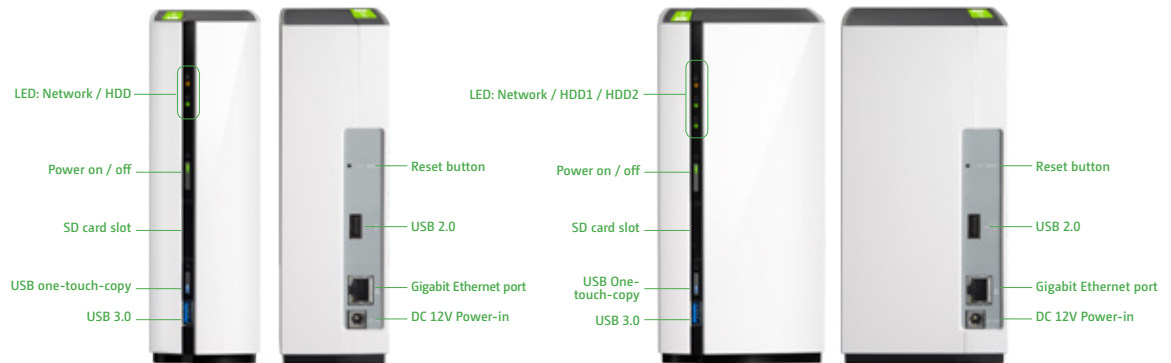


## Qsnap

Qsnap is a handy utility that helps you quickly capture screenshots on your PC, and easily edit, save, and share, enabling quick note-taking or productive communication in your work and life.

Available for Windows®.

# Hardware Specifications



Product Model	TS-128	TS-228
CPU	ARM®v7 1.1 GHz dual-cores	
Pre-installed Memory	1GB DDR3 RAM	
Flash	4 GB	
Max. number of HDDs/SSDs	1	2
Compatible Drive Type	3.5" SATA HDDs	
LAN Ports	1 x Gigabit RJ-45 Ethernet ports	
USB Ports	1 X USB 3.0 (front) 1 X USB 2.0 (back)	
LED Indicators	Status, LAN, USB, HDD	Status, LAN, USB, HDD 1-2
Buttons	Power/status, USB One-touch-copy, Reset	
Buzzer	System alarm	
Form Factor	Compact desktop	
Dimensions	187.7 x 60 x 125 mm 7.36 x 2.36 x 4.92 inch	187.7 x 90 x 125 mm 7.36 x 3.54 x 4.92 inch
Weight (Net/Gross)	0.56 Kg (1.23lbs) / 1.74 Kg (3.84lbs)	0.7 Kg (1.54lbs) / 1.88 Kg (4.14lbs)
Power Consumption (W)	In Operation: 8.96 HDD Sleep: 5.03	In Operation: 13.24 HDD Sleep: 6.05
Operating Temperature	0 - 40 °C	
Relative Humidity	5 - 95% R.H	
Power Supply	External Power Adapter 36W, 100-240V	External Power Adapter 60W, 100-240V
System Fan	V	
Windows® upload (10 GB, 1 x GbE), MB/s	69	64
Windows® download (10 GB, 1 x GbE), MB/s	101	99

All specifications are subject to change without notice

# Software Specifications

## Operating System

- QTS 4.2 (embedded Linux)

## Supported Client OS

- Windows XP and Windows Server 2003 onward
- Apple Mac OS X
- Linux & UNIX

## Supported Browsers

- Microsoft Internet Explorer 10+
- Mozilla Firefox 8+
- Apple Safari 4+
- Google Chrome

## 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

## File System

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

## Networking

- TCP/IP : IPv4
- Proxy client, proxy server
- DHCP client, DHCP server
- Protocols: CIFS/SMB 3.0, AFP (v3.3), NFS(v3), FTP, FTPS, SFTP, TFTP, HTTP(S), Telnet, SSH, SNMP, SMTP, and SMSC
- UPnP & Bonjour Discovery

## Security

- Network access protection with auto-blocking: SSH, Telnet, HTTP(S), FTP, CIFS/SMB 3.0, AFP
- CIFS host access control for shared folders
- Importable SSL certificates
- Instant alerts via email, SMS,

## Storage Management

- TS-128: Single disk
- TS-228: Single disk, JBOD, RAID 0/1
- Bad block scan and hard drive S.M.A.R.T.
- Bad block recovery
- RAID recovery
- Bitmap support

## Power Management

- Automatic power on after power recovery
- USB and network UPS support with SNMP management

## Access Right Management

- Batch users creation
- Import/Export users
- User quota management
- Local user access control for CIFS, AFP, FTP, and WebDAV
- Application access control for Photo Station, Music Station, Video Station, and Multimedia Station
- Subfolder permissions support for CIFS/SMB 3.0, AFP, FTP, and File Station

## myQNAPcloud Service

- Private cloud storage and sharing with myQNAPcloud id (qid)
- Free host name registration (DDNS)
- Auto router configuration (via UPnP)
- Web-based file manager with HTTPS 2048-bit encryption
- CloudLink for remote access without any complicated router setup

## Qsync

- Syncs files among multiple devices with SSL support
- Selective synchronization for syncing specific folders only
- Share team folder as a file center for team collaboration
- Shares files by links via e-mail
- Policy settings for conflicting files and file type filter support
- Version control: up to 64 versions.
- Supports Windows & Mac OS
- Incremental synchronization for HDD space saving

## Web Administration

- Multi-window, multi-tasking based system management
- Personalized desktop
- Smart toolbar and dashboard for neat system status display
- Dynamic DNS (DDNS)
- Login screen with personalized photo-wall style
- Smart fan control
- SNMP (v2 & v3)
- Resource monitor
- Network recycle bin for file deletion via CIFS/SMB 3.0, AFP, and File Station
- Automatic Cleanup
- File Type Filter
- Comprehensive logs (events & connection)
- Syslog client/server
- System settings backup and restore
- Mobile app: Qmanager for remote system monitoring & management

## File Server

- File sharing across Windows, Mac, and Linux/UNIX
- Windows ACL
- Advanced folder permissions for CIFS/SMB 3.0, AFP, FTP
- Shared folder aggregation (CIFS/SMB 3.0)

## FTP Server

- FTP over SSL/TLS (Explicit)
- FXP supported
- Passive ftp port range control

## File Station

- Supports ISO Mounting (Up to 256 ISO Files)
- Support thumbnail display of multimedia files
- Supports sharing download links and upload links
- Drag-n-drop Files via Chrome and Firefox Browsers
- Photo, music, and video preview and playback
- File Compression (ZIP or 7z)

## Backup Station

- Remote replication server (over rsync)
- Real-time remote replication (RTRR) to another QNAP NAS or FTP server
- Works as both RTRR server & client with bandwidth control
- Real-time & scheduled backup
- Compression, file filter, and transfer rate limitation
- Desktop backup with QNAP NetBak Replicator for Windows
- Apple Time Machine backup support
- Data backup to multiple external storage devices
- Synchronizes with cloud storage: Amazon Cloud Drive, Dropbox\*, and Google Drive.
- Third party backup software support: Veeam backup & replication, Acronis True Image, Arcserve backup, emc retrospect,

Symantec Backup Exec, etc.

## Print Server

- Max number of printers: 3
- Supports Internet Printing Protocol
- Print job display and management
- IP-based and domain name-based privilege control

## Hybrid Backup Sync (beta)

- Amazon Cloud Drive
- Google™ Drive
- Dropbox
- Microsoft® OneDrive
- Yandex.Disk
- Box

## Photo Station

- Show photos by thumbnails, list, timeline, or folder view
- Supports virtual/smart albums
- Validity control for sharing albums
- Tag photos with text, colors, and ratings
- Slideshows with background music and different transition effects
- Geotag photos and display them on Google maps
- Animated thumbnails for videos
- Shares slideshows link to social websites or through email
- Supports modification on photo taken date
- Supports Facebook friends login

## Music Station

- Play or share music via web browser
- Internet radio (MP3)
- Up to 8 music alarms
- Mobile app: Qmusic for music streaming and management

## iTunes Server

- Audio and video sharing for Windows & Mac iTunes

## Video Station

- Show photos by thumbnails, list, timeline, or folder view
- Supports virtual/smart collections
- Validity control for sharing collections
- Tag videos with text, color, and ratings
- Animated thumbnails for videos
- Share video links to social websites or through email
- Sorting videos automatically into defined classifications
- Share video links to social websites or through email
- Display movie information from IMDB
- Mobile app: Qvideo for online video browsing and management

## Cloud Backup Station

- Amazon S3
- Amazon Glacier
- WebDAV-based cloud storage
- Microsoft Azure
- OpenStack

## Download Station

- PC-less BT, FTP/FTPS, and HTTP/HTTPS, Thunder, FlashGet and qqdl download (up to 500 Tasks)
- BT download with Magnet Link and PT support
- The maximum number of concurrent downloads for an ARM-based NAS is 30 (10 BT/PT downloads, 10 HTTP, 10 FTP downloads)
- Scheduled download and bandwidth control
- RSS subscription and download (broadcasting)

- Proxy support for BT download
- Bulk download with wildcard settings
- BT search
- PC utility: Qget for downloads browsing and management
- Mobile app: Qget for downloads browsing and management

## Surveillance Station

- Supports over 3,000 IP cameras
- Includes 2 free camera licenses, up to 8 camera channels by purchasing additional licenses
- Instant playback to check recent events
- Visual aid by e-map
- Playback and speed control using the shuttle bar
- Video preview on playback timeline
- Intelligent video analytics (IVA) for advanced video searching
- Surveillance client for Mac
- Mobile surveillance app: Vmobile (iOS and Android)
- Mobile recording app: Vcam (iOS and Android)

## VPN Server

- Secure remote access: PPTP - L2TP/IPsec & OpenVPN VPN services
- Max number of clients: 30

## VPN Client

- Supported VPN protocols: PPTP & OpenVPN services
- PPTP Authentication: PAP, CHAP, MS-CHAP, MS-CHAPv2
- PPTP Encryption: None, AES 40/128 bit, AES 256 bit
- OpenVPN Encryption: None, AES 40/128 bit, AES 256 bit
- Transmission package monitor
- OpenVPN port control
- OpenVPN link compression

## DLNA Server

- Supports DLNA/UPnP TVs and Players such as PlayStation 3 and Xbox 360
- Support CUE indexing file

## Mobile App

- Qfile: iOS, Android, Window phone& Tablets
- Qmanager: iOS, Android Phone
- Qmusic: iOS, Android Phone
- Qget: Android Phone
- Vmobile: iOS, iPad, Android Phone

All specifications are subject to change without notice

# QNAP TS-128 / TS-228

The outstanding and affordable NAS perfect for both productivity and entertainment



## Modern converged storage and applications



08:00

### Start your day with rich mobile apps

Use Qfile, Qnotes, and Qsync to check in with overnight progress on your projects, and use Qmusic to enjoy your digital music library on your way to work.



15:00



### Automatic backup and synchronization

Arrive on site with your clients and demonstrate the very latest developments in your project by remotely accessing content on your NAS with a web browser. Use Notes Station during the meeting and rest assured Qsync will synchronize them immediately for your team to access and collaborate.

20:00

### Enjoy a wonderful home theater experience

Wind down your day and enjoy a movie with Video Station. Use your NAS as a multimedia center to collect, share, and enjoy your digital multimedia library. Easily stream your content to playback devices for you and your family to enjoy from anywhere.



## QNAP Systems, Inc.

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