QTS 4.3.4

The Essence of Storage
The Nature of NAS

New Storage & Snapshots
Comprehensive and user-friendly management of storage devices and snapshots

Improved File Station
Total solution for storage, digitization, searching, and archiving

GPU Empowerment for QTS and Virtualization
Boosted image processing and virtual machine performance

Embrace QNAP NAS for all your storage needs

1

Huge capacity, multiple backups

QNAP NAS comes with intuitive management features and huge storage capacity potential. QNAP NAS supports multiple RAID types to safeguard your data in the event of hard disk failure, in addition to enabling reliable data recovery.

*Data recovery capabilities depend on the RAID configuration of the NAS.

2

Always online, sharing anywhere

A QNAP NAS is a private cloud enabling you quick access to your files from any Internet-connected device. Sharing is also much faster and easier without needing external drives and not being limited by the size of email attachments.

3

Multiple layers of data protection

QTS is built on a "security first" principal that includes multiple data protection mechanisms and user privilege controls to minimize the risk of data breaches. Together these enable you to fine tune access to your data by person, device, and IP address to ensure peace of mind.

4

Entertainment and streaming

In addition to data storage, QNAP NAS are fully-capable home entertainment systems. Stream multimedia to HDMI, DLNA®, AirPlay®, iTunes®, and ChromecastTM devices. Control media playback with your mobile devices and enjoy a high-quality multimedia experience throughout your home.

5

Qsirch, fast full-text, real-time search engine

Powered by a full-text, near real-time search engine, Qsirch makes searching through masses of data a lot faster. Auto-completion in the search bar offers suggestions to save you time while the search results will highlight keywords in documents to help you quickly find what you are looking for. Additionally, fully editable saved searches, and results previewing make searching near-instantaneous.

Introduction

QNAP is committed to providing the best storage solutions. Besides relentless hardware optimization and upgrades, QNAP has also taken on new challenges in the software arena and developed a range of comprehensive, smart solutions that push NAS far beyond simple storage tasks. Today's QNAP NAS is not only a network storage device for data protection, backup and recovery - it also an integrated collaboration platform for your home and business needs. With QNAP NAS, collaborative work efficiency is significantly increased, and multimedia entertainment has never been more exciting.

According to a recent study by the international research and consulting firm Gartner, 59% of enterprise organizations' AI strategies are still at the information gathering stage, while others have begun to try or implement AI solutions.

For this reason, QNAP developed QTS 4.3, a more intuitive and intelligent operating system than its predecessors. It provides intelligent agent services, flexible and automated data and system support, and increases management efficiency by leaps and bounds. Qtier identifies "hot" and "cold" data through self-learning based on data access rates; Qfiling automatically classifies and moves files based on preset conditions.

QTS 4.3 meets the demands of businesses, personal productivity, and multimedia applications, giving a glimpse into the intelligent life of the future.

01 QTS Overview (Qboost)

File Station 4.3 04
Qfile - Remotely access files stored on your NAS 07
Qfiling 1.1 Smart archiving 08
Storage & Snapshot 10
Local snapshot and remote snapshot backup tasks 14
Qtier™ 2.0 18
VJBOD (Virtual JBOD) 22
Resource Monitor 1.1 24
Hybrid Backup Sync 2.1 25
Network & Virtual Switch 1.4 29
Qsync Central 34
myQNAPcloud 2.8 37
App Center 38
Helpdesk 1.1 39

40 Data Security

44 Virtualization Applications

Virtualization Station 3.0 44
Container Station 1.7 48

51 QIoT Suite Lite

QIoT Suite Lite 51

55 QvPC

HD Station 3.1 56
Linux Station 1.4 57

58 Productivity tools

Q'center 1.5 58
QRM+ 1.0 60
IFTTT Agent 62
QmailAgent 1.3.1 66
Qsirch 3.2 68
Browser Station 74
Qcontactz Quantum Contacts Manager 1.0 75
Gmail Backup 1.4 79
Notes Station 3.0 80

84 Multimedia Entertainment Center

360° panoramic photos and videos 84
Cinema28 86
Video Station 5.0 90
Music Station 5.0 94
Photo Station 5.6 96
DJ2 Live 103
OceanKTV 2.0 108
Download Station 5.0 112

114 Video Surveillance Solution

QVR Pro 114
Surveillance Station 5.1 119

124 Application tools

127 Mobile Apps

Experience a simple and perfect design

QTS Overview

The QNAP operating system, QTS, has been re-engineered and optimized to perform elegantly, with a familiar PC feel. It is more intuitive, convenient and polished. Equipped with a variety of applications, QTS is designed to meet all your needs for storage, management, backup, multimedia, and surveillance.

Cloud install - Simple and intuitive NAS installation

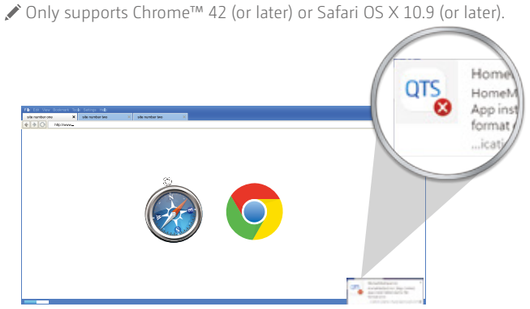
After setting up your hardware, follow the instructions on the Quick Setup sticker to initialize your NAS. You can either visit install.qnap.com in your web browser and enter the Cloud Key, or scan the QR code on the sticker with a mobile device to begin NAS initialization.

For further information, visit start.qnap.com.

Push service

In addition to email and SMS, you can get messages sent to mobile devices if a system failure or other events occur*. With the latest system status at your fingertips, you can react immediately to rectify the situation and minimize the risk of data loss.

Only supports Chrome™ 42 (or later) or Safari OS X 10.9 (or later).



Smart dashboard

The system status can be easily viewed with a single click on the icon in the top-right corner of the desktop. Use the smart dashboard for an overview of important system information, including system health, hard disk health, resource management, storage space, scheduled tasks, and real-time information on the device and firmware. Drag and drop dashboard functions to the desktop to monitor them at any time. In the event of a critical failure the smart dashboard will flash and prompt the administrator to take immediate action to prevent data loss.

Qboost - One-click acceleration

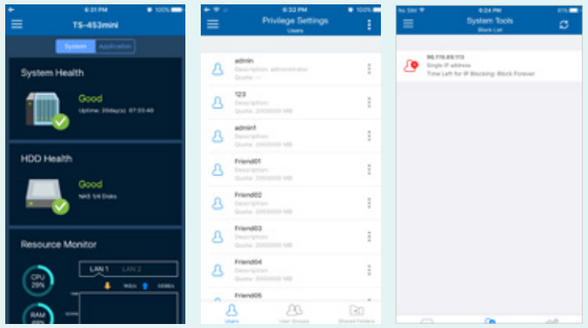
The Qboost robot on the bottom left of the QTS desktop constantly monitors QTS memory usage. If there is not enough free memory, you can perform "one-click acceleration" to free up more memory resources. Qboost can also assist in clearing unnecessary files to free up storage space. Another application management feature allows time-based scheduling of programs to avoid a large number of simultaneous services that can stifle system performance.

Qmanager - Remote surveillance and management

With Qmanager, you can review system and connection records, restart or shutdown your QNAP NAS remotely, and wake up your NAS with WOL using a mobile device. Safely unmount external devices with Qmanager to ensure all ground is covered in your monitoring system.

Supports: iOS®, Android ™, and Windows devices

Manage users and shared folder privileges
Management is a breeze with a simple and elegant interface. Easily use mobile devices to monitor users, user groups and shared folder statuses.



Manage backup tasks

Check the status of current backup tasks using mobile devices or initiate saved backup tasks.

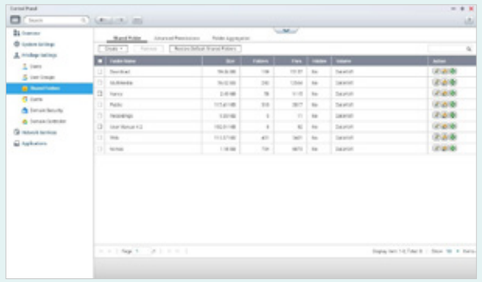
Push notifications

Check system events, real-time updates, and receive important push notifications on mobile devices.

Allocate user accounts and access privileges

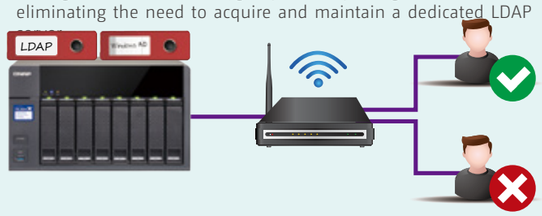
Home Folder

Enable the Home Folder feature to automatically create personal folders for users. The home folder is created the first time users log into the NAS. With this feature, IT administrators no longer have to create folders and set privileges separately for each NAS and domain user. All home folders will be listed in the "homes" folder in File Station, making it easy for IT administrators to perform backups.



Reduce administrative burdens with centralized authentication

The Lightweight Directory Access Protocol (LDAP) and Windows Active Directory (AD) are enterprise-level tools enabling IT administrators to connect to, search, and centrally manage network resources. QNAP NAS supports both services. Administrators can centrally create and manage user/groups in lieu of maintaining separate user account information on each NAS. Domain users can use credentials from either service to access network resources (including the NAS) without remembering multiple account credentials. This greatly reduces the burden on IT administrators and increases overall user productivity. In addition to joining your NAS to an Active Directory Domain, your NAS is able to act as an LDAP server. Other QNAP NAS and LDAP clients (e.g. Mac and Linux PCs) bind to the server joining the directory service, enabling management of LDAP user/group access privileges to NAS, while eliminating the need to acquire and maintain a dedicated LDAP



Windows ACL

Windows ACL enables IT administrators to configure file and folder permissions for local and domain users on a NAS. Enable this feature to configure basic and 13 advanced permissions from Windows File Explorer. These permissions grant or deny access to files and folders and will be aligned with the shared folder permissions on the NAS. Additionally, apply permission settings to Samba, FTP, AFP file sharing, and File Station by enabling "Advanced Folder Permissions".

QTS supports graphics cards to support more applications and increase performance

Development of graphics computing

Graphics cards have greatly evolved from being exclusively used by gamers to becoming the engines of servers and data centers in performance-demanding applications. This has been driven by the growing abilities of both programmable shaders and floating point calculations on graphics processors, providing general-purpose computing on GPU (GPGPU). Graphics cards tend to have higher memory bandwidth and are more suitable for large and parallel calculations. GPGPU has found a home in big data, cryptocurrency, artificial intelligence, deep learning, and other diverse applications.
In QTS 4.3.4, QNAP has added support for PCIe graphics cards to the QTS operating system. With the powerful processing capabilities of dedicated graphics cards, the media transcoding performance in QTS has been greatly improved. Graphics cards can also be passed-through to virtual machines for empowering virtualization environments.

Flexible expansion card allocation and more application support

Starting from QTS 4.3.4, in QNAP NAS that support PCIe expansion cards you can find your video card resource configuration settings in “Control Panel” > “Hardware Settings” > “Video Cards”. Based on your needs, you can assign graphics card resources to:
1. Virtualization Station:
This will allow graphics cards to be assigned to virtual machines. (the system will automatically stop hardware acceleration support for QTS on the graphics card.)
2.HD Station/Linux Station/Hardware acceleration:
For TS-1685 or TS-x77 series NAS, even if there is no built-in HDMI port, you can output the HD Station and Linux Station desktop through the HDMI port via the graphics card. In addition, QTS system can also use the graphics card's computing power to enhance the system's video conversion performance.

Improved transcoding efficiency

The powerful processing abilities of modern graphics cards enables QTS to transcode multimedia files in a much shorter time. For example, the time taken to transcode a 1080p AVC video file can be reduced by a third or to one tenth (based on NAS model).

Support list:
Function: HD Station/Linux Station/hardware transcoding
Models: TS-1685, TS-x77 Series
Graphics card: NVIDIA GeForce GTX 1050, 1060, 1070; NVIDIA Quadro p2000
Function: Virtualization Station Pass-through
For detailed compatibility list, please refer to https://www.qnap.com/compatibility/

Before purchasing a graphics card, ensure that it can physically fit inside the NAS.
Also check that the NAS meets the power requirements of the graphics card.

Manage all files from a single interface

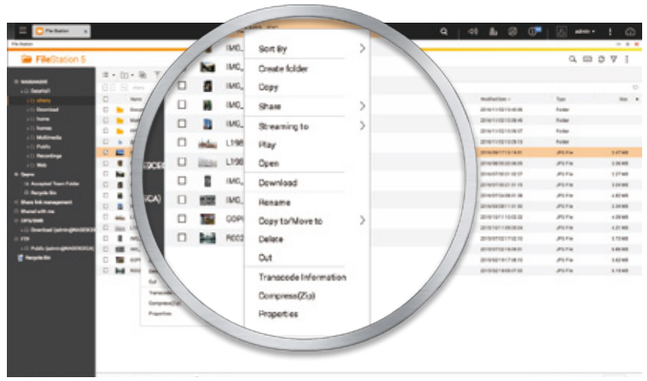
File Station 4.3

The all-new File Station boasts a more elegant interface. In addition to the remote mounting feature that allows you to manage NAS content, accessing external devices, remote NAS, cloud files, file management operations and various other details are further optimized.

Comprehensive range of basic operations

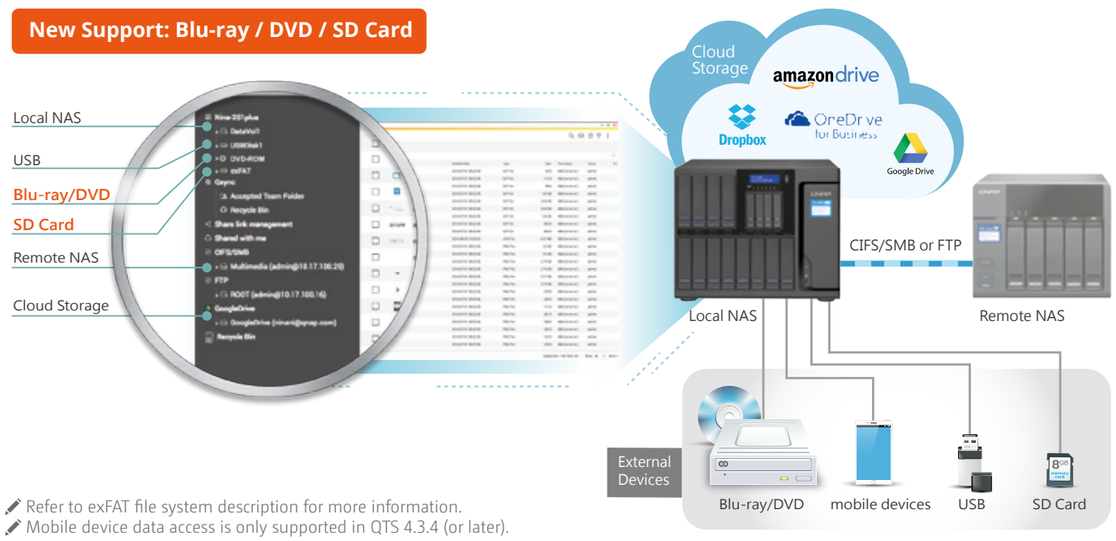
Simply drag and drop files and directories on your computer to the File Station interface to upload them to the NAS. File Station allows all basic file and folder operations, such as: renaming, copying, moving, deleting, and compressing/uncompressing multiple files and folders. You can also specify thumbnail images to display various multimedia files, making it easier to organize large number of photos, music, and video files.

To make multimedia file management even more convenient, you can configure a folder as multimedia folder by right-clicking a folder and selecting the required properties in File Station, as well as specifying the type of multimedia files to be indexed.



All files at a glance

In addition to viewing files on the local NAS and USB devices, File Station supports accessing files from external devices such as optical disc drives. This provides a total file management solution from within a single window, and allows centralized storage of all your files on a QNAP NAS. With remote mounting, it can also read remote NAS or files hosted on cloud storage.



Refer to exFAT file system description for more information.
Mobile device data access is only supported in QTS 4.3.4 (or later).

QTS
Operating System
Overview

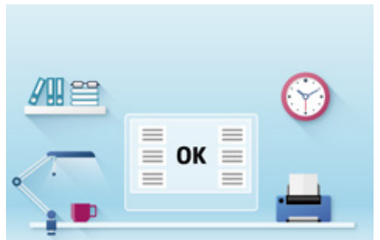
Remote mounting

The remote mounting function provided by File Station allows you to mount files from a remote NAS to your local NAS via CIFS/SMB, FTP or WebDAV without logging in to a different device. Using the Connect to Cloud Drive app, you can also mount cloud storage spaces. Eight cloud services are currently supported: Dropbox, OneDrive, OneDrive for Business, Google Drive, Yandex, Amazon Drive, Box, and HiDrive, allowing you to easily browse all of your files from a single window.

Before using remote cloud services and WebDAV in File Station, you must install the Connect to Cloud Drive app.

In the past, you needed to log in to different devices to copy and transfer files.

Now, you can connect to remote devices/cloud spaces using File Station.



Mounting offers a new range of applications

With remote mounting, you can quickly access files on other servers for data migration. If your needs are not just remote file access but local storage expansion, you can use Virtual JBOD (VJBOD). After mounting, the local computing resources can be used to perform snapshots, transfer and more, it is as flexible as using local space.

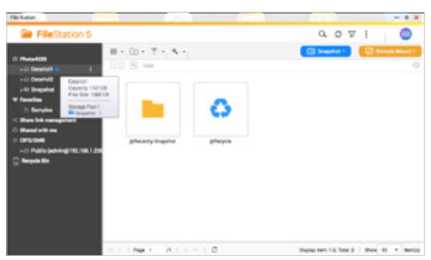
	Remote mounting	Virtual JBOD
User Interface	File Station	Storage & Snapshots Manager
Connection Method	CIFS/SMB, FTP, WebDAV	iSCSI
Supported operation level	File-level operation	File and block level operation
Auto recovery after disconnection	Not Supported	Supported
Supports remote devices	Supports all CIFS/SMB, FTP, or WebDAV servers	Supports QNAP NAS with block-level iSCSI LUN services
Usage Scenario	Quickly connect to other NAS or servers for file backup	Use the free space of a QNAP NAS to expand the capacity of other QNAP NAS

For more information, see the VJBOD section

Snapshots and layering for easier operation

File Station allows you to take snapshots of protected volumes, folders, and files. You can take snapshots, restore to a specific point in time, and view remote backup information at any time. If you use Qtier, you can easily view the status of each tier through the small icons in File Station. You can also directly enable or disable the Qtier feature of the shared folder.

For more information, refer to the snapshot and Qtier sections.



File preview at a glance

File Station brings together various document, file and email preview tools, and is integrated with a multimedia browser - Media Viewer. This allows you to play media content without having to download them or to use plug-ins such as VLC.

Documents

• Document preview: With the Google Docs extension*, you can open Office files (.doc .docx .xls .xlsx .ppt .pptx) and browse their contents directly in File Station. Or right-click on the file and select Office Online and Google Docs to view the content.
• Text Editor: Allows you to edit text files (.txt) with an easy-to-use interface. You can directly open text files in File Station, or right-click and select Edit to use Text Editor.

Only for Google Chrome. Requires the Office Editing for Docs, Sheets & Slides extension.

To edit text files, install the Text Editor application from the QTS App Center.

Email

Manage emails backed up through QNAP's QmailAgent with File Station. You can also open your emails (.eml), and reply, forward, or compose a new message directly in File Station.

Videos:

On-the-fly transcoding allows you to watch a video while it is being converted in real time. You can also right-click folders in File Station and set them to automatic transcode video content. Any video files added to these folders will be automatically converted to the specified video formats.

Only for models that support real-time online file transcoding.

Photo:

View a wide range of image formats and play images in a slide show. Additional, set an image as the QTS wallpaper directly from the Media Viewer.

Music

Play music from wide range of formats.

Easily share files and folders

Internal file sharing

You can share files with your friends on the NAS easily and quickly by using the following methods:

» Share space with a user: System administrators can allocate space to NAS users, and specify a storage quota in File Station.
» Directly share with other NAS users: Share files directly with selected NAS users without setting shared folder permissions.

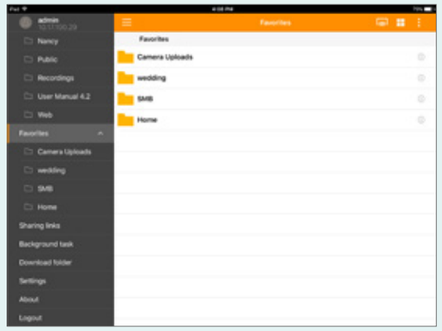
Links for External Sharing

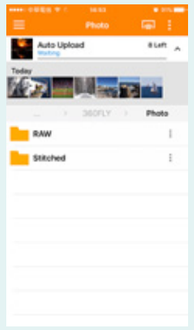
Create Share Links to share files with those who do not have an NAS account. With File Station SmartShare, you will get directed to the desired site smoothly. Register for myQNAPcloud to quickly share files with other users. The new version of Share Links further optimizes your browsing experience through mobile devices.

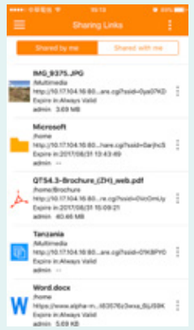
» Share download links via email: Users can share links from their own email address.
» Share with social networks: You can copy and paste Share Links as status updates or messages on social network sites.
» Share link: Create a share link only and send it to the people you want to share with.

Mutual file sharing: You can easily share several files in a shared folder with friends via a Share Link. By enabling the "Allow file upload to this folder" option, your friends can use the Share Link to upload files to your File Station without needing a user account.

Qfile - Remotely access files stored on your NAS







Supports: iOS®, Android™ and Windows® devices.

Versatile file management

Remotely upload/download, share, manage, and stream files from your QNAP NAS and synchronize files between the NAS and mobile devices.

Quickly find files

As the number of files and data grow on your NAS, it can be increasingly difficult to find files.

Advanced Search

You can filter search results based on path, size, type, date, and date modified.

My Favorites

My Favorites lets you pin frequently-accessed folders on the left column to quickly access files.

Folder and file sharing

By using share links, you can share files without capacity/file type restrictions. You can also easily share files via instant messengers or email.

Automatically upload photos and files

When you enable automatic uploading, Qfile will automatically back up the photos or files in your designated folder to the NAS.

Folder synchronization/upload is only supported by Qfile for Android 2.5.2 (and later).

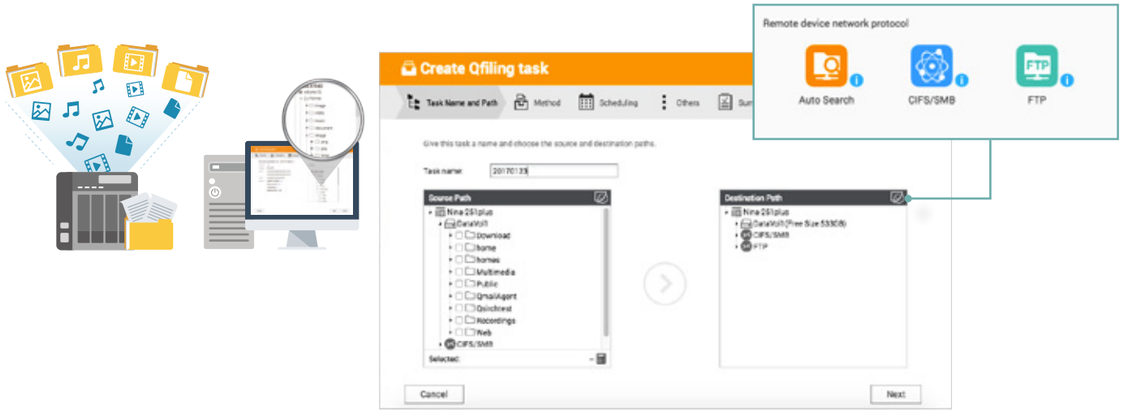
Revolutionize your perception of data

Qfiling 1.1 Smart archiving

Organizing an ever-increasing collection of files and data that are distributed across a vast number of folders can be difficult and time consuming. With Qfiling's automatic archiving feature and preset classification conditions, you can automatically organize and sort files.

Keep track of your filing status while moving files

Besides automatic organization of files on the local NAS, it also supports organizing files that meet specific criteria, copying files from external devices, iSCSI virtual disk volumes, or a remote NAS to the local NAS. You can also perform a clean-up during the transfer to free up space on the source device. System logs and task logs give you 100% control of all the details of the archiving tasks.



Set sorting conditions for rapid file organization

Qfiling works with selected types of frequently-accessed files such as images, music. videos, and documents. Simply set an automatic filing path, and you can rapidly transfer specific types of files to a designated target in separate folders. Advanced archiving conditions can also be set for each category, so that all kinds of files are archived in the most appropriate manner. Use the folder preview area in the overview page to confirm the archived file structure. Once you have confirmed that the conditions are met, you will be able to start archiving to instantly keep the system organized.

Photos

Organizing photos can be a chore. You can now customize the way your photos are organized by setting criteria such as: camera brand, camera model, shooting date, IPTC keywords, file extension, etc.

Music

Music files can be sorted and organized based on criteria such as album, artist, album artist, genre, year of publication, etc.

Video

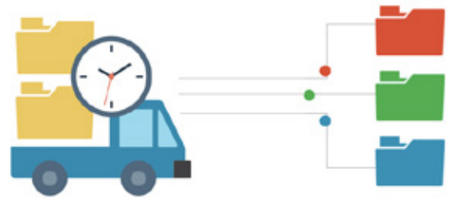
Qfiling has an advanced video filing feature for keeping videos with .srt subtitle files of the same name together.

Documents

PDF and Microsoft Office files can be sorted based on their authors. You can also sort documents based on their types, such as Word, PowerPoint, Excel, etc.

Schedule Background Batch Processing

Customize a schedule for performing automatic sorting and organization of your files in the background. Use checksums to ensure that the files are accurately moved from the source to the target.



Recipe library stores commonly-used settings for quicker and easier filing

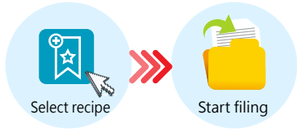
In addition to creating archiving tasks using the five-step process of "Custom Tasks", you can also select a saved recipe to complete settings. To help you quickly confirm your archiving conditions, Qfiling presents all the information on the same page. You just need to fine-tune the settings to create a new archiving task.

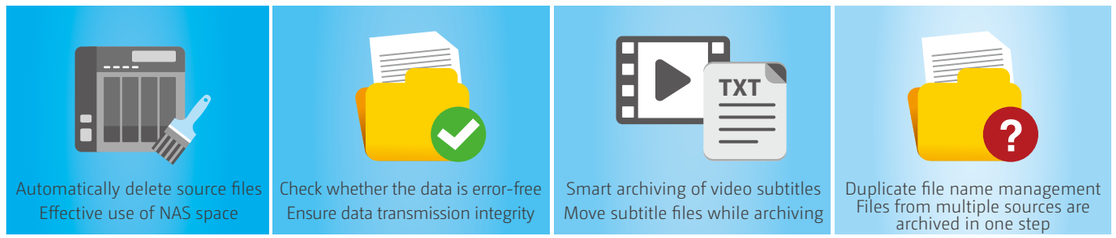
Featured recipe

Qfiling offers different recipes for different file types, including document assistant, music guru and video wizard and more. Through saved custom archive settings, it helps you understand frequently-used conditions, so that you can quickly complete archiving task setup.

Exclusive recipe

Once you become familiar with filing operations, you can add frequently-used archiving conditions as exclusive recipes and store them in the recipe library, so that later on, you can set up an archive task in just a few seconds and execute the task immediately.





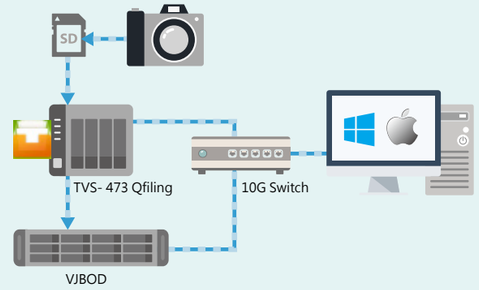
To use Qfiling and its related features, download Qfiling and Qsirch from the App Center. Hardware requirements: x86 models and ARM models with at least 2GB RAM.

Special column

Use VJBOD to optimize storage utilization

Virtual disks enable administrators to expand the storage of a QNAP NAS. Using an iSCSI initiator to connect to an iSCSI target on a QNAP NAS, administrators are able to create a virtual disk on a local server. QNAP's Virtual JBOD (VJBOD) also allows centralized management and allocation of unused space from multiple NAS on a single NAS.

For more information, see the VJBOD section



Centralized Storage Management

Storage & Snapshots

QNAP Storage & Snapshots Manager in QTS 4.3.4 aims to be the industry's best storage system management interface. It includes a new storage space setup wizard, storage space monitoring dashboards, and sophisticated information tables for managing various storage settings. Storage & Snapshots Manager is aimed for beginner and professional users alike to easily manage disks, storage spaces, iSCSI services and block level snapshots.

QNAP Multi-Storage Pool, Multi-Volume Architecture

At the core of QNAP storage architecture is the Storage Pool. Users can quickly create a RAID Group with the storage and snapshot wizard, and create a storage pool on it. Multiple disk volumes or block-level iSCSI LUNs can be created in the storage pool according to different working groups, and finally, snapshots are created for protecting using the space outside of the disk volumes and LUN. Users can expand the storage space at any time with online services in an uninterrupted manner, or add more disk groups to the storage pool, so that the flexible architecture can meet various storage requirements.

Storage Space Overview and Disk Management

Through the various overview pages of Storage & Snapshots Manager, you can instantly view and monitor all storage devices, disks, storage space configurations, and storage space utilization. If a storage device or space enters an abnormal status, the management interface will immediately show the abnormal status. In addition, the system also has wizards that can guide the user to perform instant disk scan, disk group abnormality elimination and more. Its ease of use and availability, combined with existing disk groups online migration, replacement, and expansion, makes it the best tool an administrator can have for managing storage spaces.

Choose the appropriate volume category for different applications

Static Volume

Instead of storage pool, create file systems directly on disk volume to provide the best random file access performance (about 20% higher than other volumes). Although it lacks some advanced features such as support for multiple volumes, block-level LUNs, and disk snapshot protection, it is suitable for creating high-performance storage space for file sharing or online collaboration.

Thick Volume

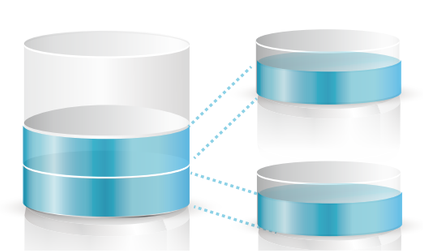
If NAS supports storage pools, an entire volume can be created in the storage pool through pre-configuration. The dedicated disk space in the volume will not be disturbed by other applications, and its use can be flexible and stable through continuous extension. This volume has the recommended configuration and applies to all storage scenarios.

Thin Volume

While allocating storage capacity of the storage pool, advanced users can choose to break through existing space limitations, and use thin volume to set to a larger space than the actual capacity of the storage pool, and only use the storage pool when writing data. Multiple thin volumes allow more optimal use of storage space, and is useful for dynamic storage spaces and when there's a need for multi-person storage space allocation .

Please note that thin volumes requires users to carefully monitor space usage to avoid interruption of storage services due to lack of space. Thin volume size refers to the largest possible space. Note that other disk volumes may also occupy the actual free space. Therefore, usable space may not reach the upper limit. When snapshot restore requires the corresponding space and the actual space is insufficient, it might not be restored. Please keep this risk in mind.

You can pre-allocate all the required storage spaces such that they cannot be used by other volumes of LUNs.



Space usage is more flexible since only the space that is actually used is calculated.

Two types of iSCSI LUNs

Block-based iSCSI LUN

A block-based iSCSI LUN on a storage pool is considered the best strategy to share device storage space through iSCSI. In addition to directly dividing the space at the block level to improve iSCSI storage performance, it also supports Windows ODX offloaded data transfer, VAAI space recovery with thin provisioning and QNAP block-based instant snapshot recovery and other advanced virtualization applications and storage protection features, so it is best suited for use in virtualization and enterprise environments.

File-based iSCSI LUN

QNAP's fully-configured disk and static volumes also support traditional file-based iSCSI LUN. In addition to iSCSI services that can be used without a storage pool, file-based LUNs can also accelerate the system through memory caching, so it is suitable for quickly sharing NAS space with other devices.

Virtual Disk Drives increase expansion flexibility

With the unique "Virtual Disk" function, users can connect to other iSCSI targets on the network using the built-in iSCSI initiator function. so that the Virtual Disks can become virtual storage space of the NAS system for users to use. QNAP's innovative Virtual JBOD (VJBOD) also allows centralized management and allocation of unused space from multiple NAS on a single NAS through partition of block-based iSCSI LUNs. For more information, see the VJBOD section

Disk Group Synchronization (Rebuild, Synchronize, Clean) Smart Speed Adjustment

The Storage & Snapshots Manager also supports various disk inspection and optimization functions, such as RAID Scrubbing and SSD Trim. Starting from QTS 4.3.4, QNAP has introduced disk group synchronization (rebuild, sync, clean) smart speed adjustment function, which is different from previous versions which limit rebuild speed to ensure storage service. With the latest version, the system will not only intelligently adjust the rebuild speed according to the load such as SSD and HDD on the system, it is also more open, as users can set up service priority, balance, and rebuild priority settings. The user is also free to choose between service performance and completion of rebuilding at the highest speed, avoiding the potential for corruption of data due to more disk errors in the maintenance process. As a result, it is now much easier for users to maintain information and restore in emergency.

Advanced disk safe erase function

While considering storage, besides security of stored data, data privacy is also an issue of high concern to enterprise users. The Storage & Snapshots Manager supports advanced disk safe erase functionality. Besides standard fixed bits, single-copy data write, it also adopted NIST (National Institute of Standards and Technology) recommendations, allowing users to select random bits and multiple writes, supplemented by SSD fast data erase designed for SSD ATA commands, and use international standards to completely erase idle disk data without worrying about confidential information being restored by others from purchased, repaired or destroyed disks.

Data Migration and Disk Order Auto-detection

In addition to disk group management functions, data migration is also supported between the QNAP NAS. When a NAS removes and inserts a disk group to another NAS, all data can be restored by scanning through "idle disks", and this feature is particularly suitable for NAS replacement. You do not need to worry about getting the order wrong when your reinsert the disks during maintenance. It has a protective mechanism that automatically detects disk order. Even if the disks are rearranged when the system is powered off, it is able to detect the correct disk order and access data normally after the system is powered up. This reduces the risk of data loss due to human error.

Special column

Supports RAID 50/60

Optimal balance is achieved between capacity, redundancy, and performance with QNAP's extended storage pool support for RAID 50/60*.

RAID 50 requires at least 6 disks to be created and is recommended for use in models with more than 10 disks.

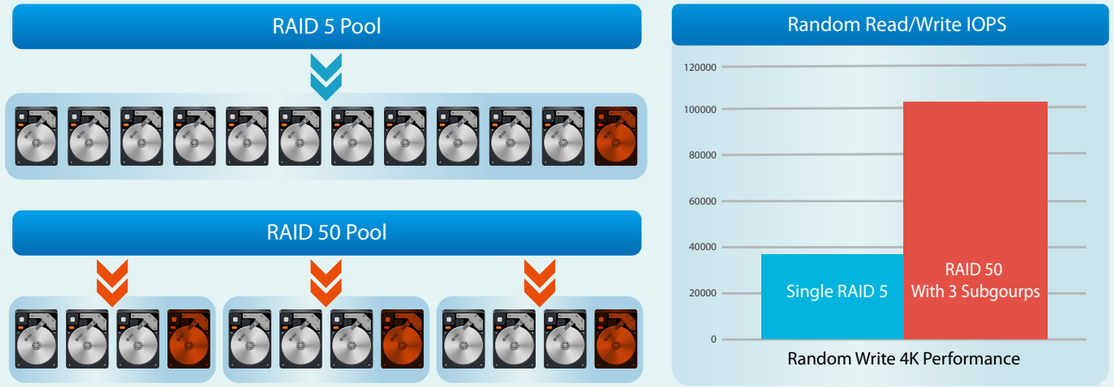
Why choose RAID 50/60?

By configuring multiple disks as RAID disk group, you can protect your stored data from one or more disk failures within the group. However, in storage environments with a large number of drive, the probability of disk failure and recovery time increases as the number of disks in the RAID group grows. IT professionals often need to create multiple RAID groups. This may improve data protection, but it may also adversely affect performance and make managing storage more difficult.

Improve performance with flash storage

In the past, all RAID flash storage applications need to use RAID 10 due to RAID 5/6 write performance limits, and space and performance cannot be both satisfied. QNAP RAID 50/60 not only provides more data protection than a single RAID5/6, it also writes randomly in Parity Check, and helps maximize flash storage efficiency. it is a more cost-effective alternative in buying SSD and deploying critical applications.

In QNAP lab, the performance of random 4K write can be increased by a factor of three compared to a single RAID 5 and RAID 50, 3 RAID 5 sub-groups formed by 15 identical SSDs.



Select the most appropriate RAID type

RAID 50/60 strikes a balance between RAID 5's capacity, RAID 6's protection and write speed, and RAID 10's performance. Whether to select RAID 50 or RAID 60 depends on how many disks used. When using RAID5/6, we recommend RAID 6 to be used on 5 or more disks, and do not use RAID 5 when there are more than 8 disks. The above logic also applies to RAID 50 and RAID 60*:

»For 10-disk configurations, use RAID 50, with two RAID 5 each on 5 disks.
»For 20-disk configurations, use RAID 60, with two RAID 6 each on 10 disks.
»For 30-disk configurations, use RAID 60, with three RAID 6 each on 10 disks.

To expand the RIAD 50/60, an additional set of RAID 50/60 disk groups that can be divided into the same number of subgroups need to be prepared for expansion.

RAID Type	RAID 0	RAID 5	RAID 6	RAID 10	RAID 50	RAID 60
Number of disks	Any	At least 3 disks	At least 4 disks	At least 4 disks	At least 6 disks	At least 8 disks
Number of disk fault tolerance	No	1	2	1 per sub-array	1 per sub-array	2 per sub-array
Protection	-	★	★★	★★★	★★	★★★
Write Performance	★★★	★	★	★★★	★★	★★
Capacity	★★★	★★★	★★	★	★★	★★
Usage Scenario	Not recommended	As backup space	File server and NAS applications	Database and virtualization storage	High-frequency backups	High-capacity databases and virtualization storage

Comprehensive data protection

Local and remote snapshot backup tasks

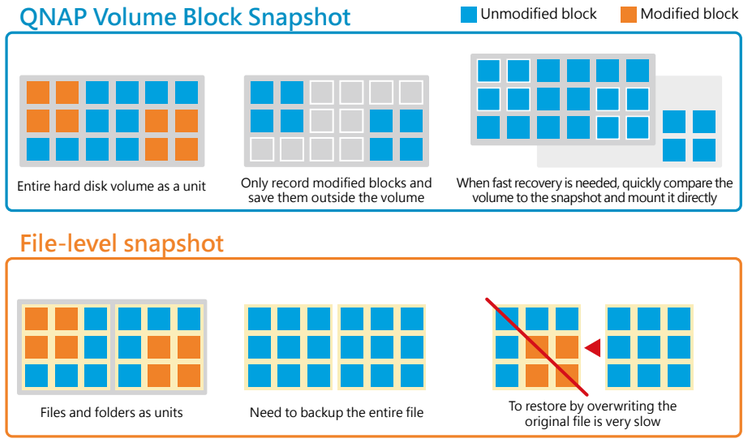
Ransomware attacks are becoming increasing common and companies demand reduced data restoration times. QNAP snapshots use block-based protection at its core, keeping track of block-level differences caused by file modification at a specific point in time. This not only effectively reduces storage space usage, but also allows users to use Snapshot Revert to restore an entire disk volume or block-level iSCSI LUN in the shortest time possible to meet the enterprise's high requirements for Recovery Time Objective (RTO) and Recovery Point Objective (RPO).

From QTS 4.3.4, only 1GB RAM is required to use snapshots. The following models do not support snapshots: TAS-x68, TS-x69/U, TS-x31/U , TS-x28.

Block-level Snapshot Copy-On-Write

QNAP snapshots use Copy-On-Write technology to write the changed files to the new block at each snapshot time point. It not only supports smart snapshot capture during file changes, but also block-based snapshot of volumes as a unit to effectively reduce the space required for backup. Snapshots at the block level can not only complete a large number of file snapshots in a matter of seconds, it is also not subject to computer viruses such as file-level ransomware. The snapshot can be encrypted, and only administrators can delete snapshots. So it is the best way for users to ensure data security.

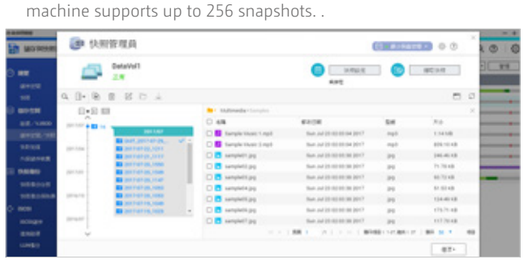
When read and write caches are enabled in a volume, the cached data must be saved back to the storage area before snapshots are taken.



Local snapshot management

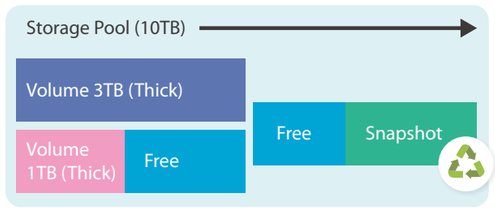
The QTS snapshot manager can be opened in both File Station and QTS Storage Manager. Users can easily use the timeline to view snapshots taken at different time points and open their contents, and further use schedule settings to allow the system to create a snapshot at least once every five minutes. In local snapshot management, QNAP NAS supports 256 snapshots for each Volume or iSCSI LUN*, while the entire machine supports up to 1,024 snapshots, allowing your system to be fully and efficiently protected.

When the memory is less than 4GB, the maximum number of snapshots will be reduced. TS-x51, TS-x51+ and specific ARM series models support up to 64 snapshots per LUN or block level, and the machine supports up to 256 snapshots. .



Snapshot protection and automatic recovery mechanisms outside of the disk volume

Snapshot protection is not foolproof. As it operates at the block level, when a file is deleted, related snapshots need to be deleted to release the space. A snapshot shared with the disk volume may lead to insufficient storage space and cause service interruption. Storing QNAP snapshots in unallocated space outside the volume and iSCSI LUNs has two major advantages. Besides making snapshot usage accurate, multiple disk regions and LUNs can also share the same space for maximum snapshot space utilization. With the Snapshot Domain setting, snapshots can be automatically recovered when space is insufficient, allowing administrators to safely enable snapshot protection in any application.

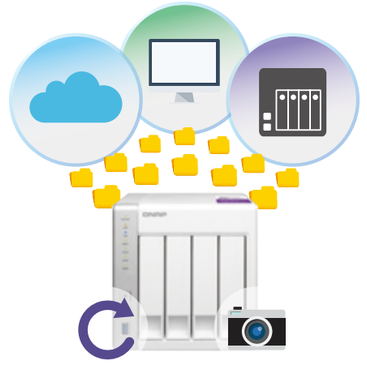


Provides multiple restore methods

Local snapshot recovery and restoration:

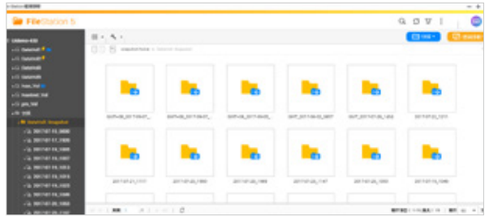
Besides providing snapshot schedule settings, the snapshot manager can also restore snapshot contents. First of all, snapshot manager's snapshot recovery function is to quickly restore the entire disk and block-based LUN in seconds by means of matching the data to the mounted data. Snapshot replication means that the user creates a new storage space for the entire volume or LUN snapshot at the same speed without overwriting the original file, to edit and modify by comparing with the original space.

Besides restoring or duplicating the entire snapshot, the user can also select any number of files and folders to duplicate, restore to other locations, or to a newly created folder. Moreover, in addition to restoring to the local end, snapshot manager can also allow NAS administrators to rapidly restore snapshot files to an external device, remote, and even the cloud through remote or cloud connections, so that NAS administrators can perform file restoration even if there is not enough local space.



Restore via File Station:

Snapshots are traditionally only available in high-end business/enterprise systems. Starting from QTS 4.3.4, QNAP has added snapshot support to all NAS with at least 1GB RAM* including ARM-based models. The snapshot process has also been redesigned and optimized. Now a user can also directly retrieve, view, copy and restore files, and even recover the entire volume snapshot contents via File Station.



Restore from computer (Snapshot Directory and Windows® Version Control Support):

Users can enable the @Recently-Snapshot directory function to allow not only NAS administrators, but also users to connect to SMB/CIFS, AFP and other online network drives to obtain its own snapshot directory in each accessible folder. Users can directly open and copy the files in this snapshot directory.

Windows® users can also browse through the changes in the records stored in the NAS according to the “Previous Version” function* in Windows File Explorer for direct data restoration. Both of these functions allow users to restore files without the help of an administrator, effectively improving work efficiency.

Remote restoration

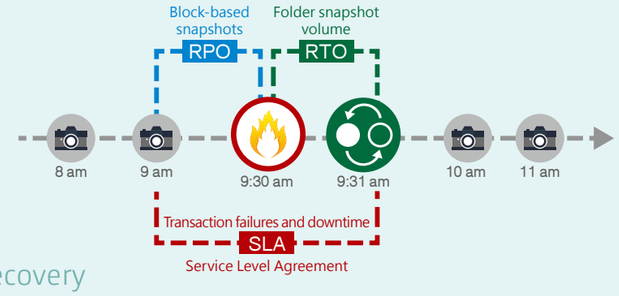
Besides using snapshots on local and expansion devices for multi-version restore of volumes and iSCSI LUNs, QNAP NAS also supports snapshot backup tasks that further allows you to store snapshots on different storage pools or remote QNAP NAS. By storing snapshots on a remote machine, you can directly copy the backup snapshot to a new volume and iSCSI LUN at the remote end if the local NAS is damaged. This not only provides an off-site disaster recovery service for your valuable information, but also minimizes service disruption time.

The remote QNAP NAS performing the snapshot backup task must also support the snapshot function and have enough unconfigured storage pool space to hold the source volume/LUN.

High-speed data recovery to reduce enterprise RTO, RPO

In corporate IT environments, service level agreements (SLAs) can be used to quantify the agreements reached between storage service providers and users on service quality and performance through quantitative values. The most important keys here are the Recovery Time Objective (RTO) and Recovery Point Objective (RPO) in the event of data disaster.

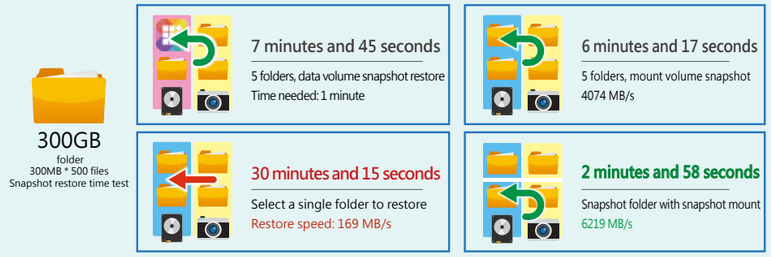
RTO refers to the time it takes to restore. The faster the restore, the less downtime after the disaster. RPO refers to how long it takes to restore the available version. The shorter the time, the less data is lost after the restoration. The lower the two, the lower the loss of data and transactions after the disaster occurred. QNAP's block-level snapshot has lower space requirements due to its only saving changes in a block, therefore it can be used to record data more frequently to reduce RPO. Compared with general backup methods, its snapshot recovery (Revert) mechanism is significantly faster, therefore further reducing RTO. These two characteristics will effectively reduce corporate losses in the event of data disasters and boost service level agreements.



High-speed data recovery

In restoring the file system's files, in addition to copying and restoring from the specified file or folder in the snapshot, the best way to use QNAP snapshot is to restore the entire disk volume snapshot. Compared to selected file, block-level recovery uses block comparison and mounted snapshots to quickly restore a large number of files in an entire volume. For example, in the following figure, a 300GB shared folder, which may take tens of minutes through the selected folder/file restoration operation, can be restored in 3 minutes by using a single snapshot folder and a volume's snapshot.

Adopted mode	Not partitioned	Differentiate between application and data volumes	Folder snapshot volume
Separate snapshot space	Large	Large	Small
Number of files in a single restore	Many	Many	Few
Snapshot restore speed	Need to suspend system services and increase restore time*	Data volume restore is fast, individual folder restore is slow.	Fast
Applications	Home backup storage	Home application storage and storage server	Commercial and online collaboration data



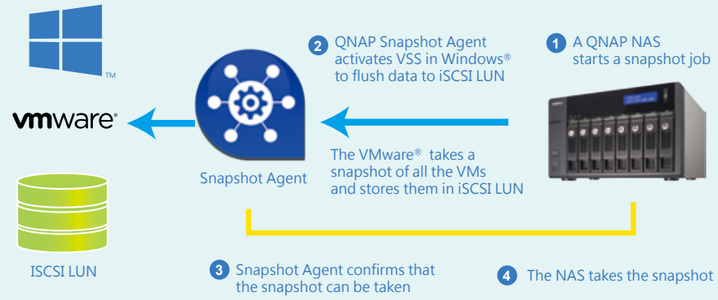
The NAS tested were the TVS-1282T, i7-6799 32GB (RAM), and 6 x 2TB RAID5 configurations. Volume snapshot restore time varies depending on system processing power.

Thin volume with minimal snapshot guaranteed space

Snapshots outside the disk volume allow the user to effectively control storage space. With dynamic configuration of thin volumes, the system will consider service as the first priority in taking snapshots. QNAP exclusively provides snapshot guaranteed space for advanced architectures with flexible space and snapshot requirements. By allowing the system to set aside space for snapshots, you can have a streamlined dynamic architecture and let the system maintain a certain number of snapshots for protection. This will further address the challenge of persistent data writes by ransomware leading to insufficient snapshot storage space.

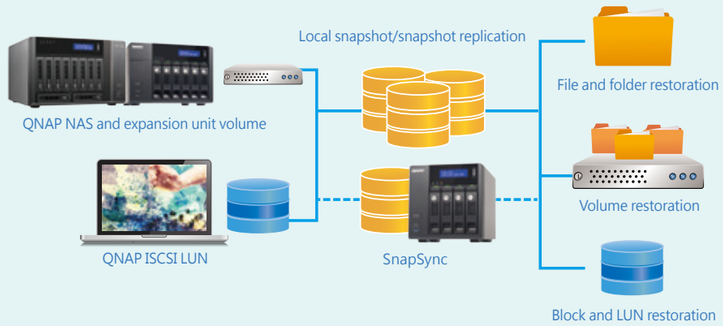
Application-consistent snapshots

You can use QNAP's Snapshot Agent application to connect the NAS to an iSCSI LUN remote server to ensure snapshot consistency. When a QNAP NAS takes a snapshot, the applications (for example, VMware virtual machine, Hyper-V virtual machine, etc.) executed on the remote server can write in-use data from memory to the iSCSI LUN to ensure integrity of the snapshot on the QNAP NAS.



Advantages of remote snapshot backup

Compared to traditional backup method which requires each modified file to be completely transmitted, remote snapshot backup only transfers the block difference data. The block difference only transmission effectively reduces the transmission time required for remote backup. Even if the network is unstable and the task is interrupted during the transmission, snapshots that have already been transmitted can still be directly presented and used on the remote device. Remote snapshot backup not only speeds up backup time, but also reduces loss due to backup failure. The dual advantage makes snapshot backup more suitable for big data backup.



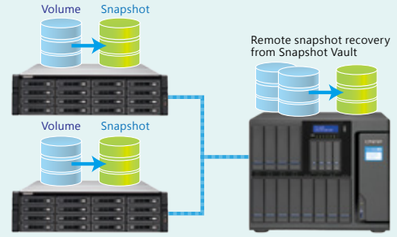
Snapshot Backup Job

Snapshot Replica for different needs

In the Storage & Snapshots Manager, you can not only manage local snapshots, but also quickly select another storage pool and even another QNAP NAS in a different place through snapshot backup task, transmit all snapshots through various backup plans, or each time a task is executed, take a new snapshot and sent it to the remote device. The data of one volume or iSCSI LUN is continuously backed up to the remote target NAS with one or more snapshot backup tasks to ensure that the versions on both sides are consistent and accessible at any time.

Snapshot Vault that can accommodate multiple sources

Once the snapshot backup task confirms that the target has sufficient storage pool space and starts the backup, a Snapshot Vault volume is created on the remote NAS and the snapshot is stored under this volume. Whenever you need to perform a remote restore, you can select the snapshot version from the Snapshot Vault to mount it as a standard volume or iSCSI LUN, and then quickly read individual files through the File Station file manager, or establish a new iSCSI target to quickly restore the restored iSCSI LUN from the required iSCSI initiator.



Smart data management Automatic tiered storage

Qtier™ 2.0

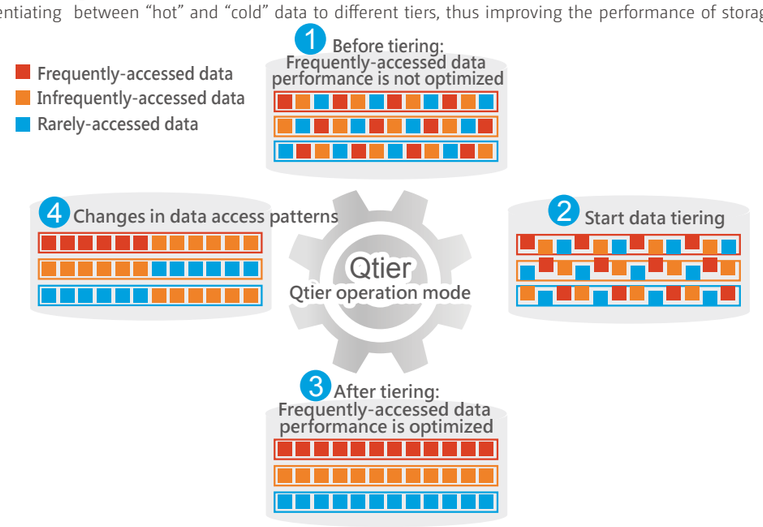
QNAP's Qtier™ automatic tiered storage solution with flexible storage pool architecture allows for three-tiered configuration of ultra-high-speed SSD disk groups, high-speed SAS HDD disk groups and SATA HDD disk groups in the same storage pool, and through identification of data access frequencies and smart algorithms, it will automatically transfer frequently-accessed "hot" data to the high-performance SSD layer and infrequently-accessed "cold" data to the low-cost, high-capacity SATA HDD layer, allowing enterprises to enjoy high-performance and cost-effective storage services. System performance and storage space usage efficiency are enhanced at the same time. This is no doubt the best storage solution for virtual applications with rapidly-changing data processing loads.

Qtier™ Supported Models: QTS 4.3.4: TDS-x89U, TES-x85/x85U (QTS), TS-x85, TVS-x82/x82U, TVS-x80/x80U, TS-x80/x80U, TVS-x79U, TS -x79U, SS-x79U, TS-x77, TVS-x73, TS-x73/x73U, TVS-x71/x71U, TVS-x70, TS-x70/x70U, TVS-x63, TS-x63/x63U, TS-x53A TS-x53B/x53BU, TS-X53pro, TS-x32X/x32XU. For more information, please refer to https://www.qnap.com

Automatic data-tiering according to storage requirements

As the price of solid-state drives (SSD) becomes more favorable, the demand for high-performance storage increases. With the advantages of high IOPS and low response times, SSDs improve the performance of data center applications that require fast and consistent performance (such as databases). However, the average cost of SSD per GB is still higher than traditional HDD, so it is very expensive to deploy a full-SSD storage solution.

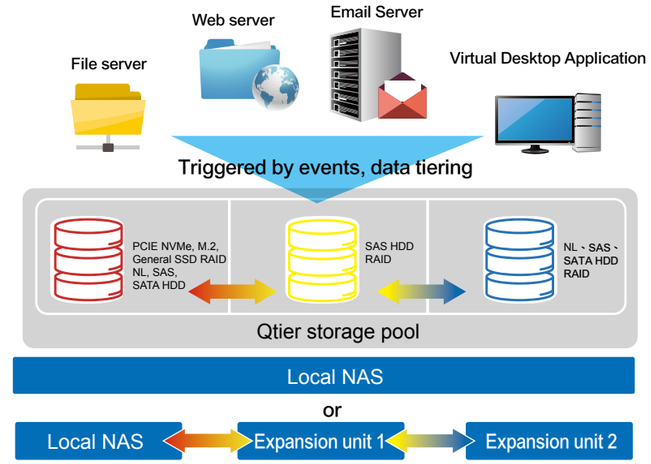
Qtier™ is a hierarchical storage architecture management system. Using Qtier™ storage pools and QNAP's self-developed algorithms, the NAS will automatically move frequently-accessed blocks to high-order disk tiers (SSD) and then gradually move them back to the SATA HDD disk group after the data is no-longer frequently accessed. This mechanism can significantly reduce the burden on storage efficiency assessment, configuration design, data migration and ROI management, and at the same time, make the most effective use of SSD by eliminating the need for manually differentiating between "hot" and "cold" data to different tiers, thus improving the performance of storage devices for frequently-accessed data.



Answers your demands for storage efficiency

Based on the storage needs of enterprise users, Qtier™ automatic tiering technology allows users to create hierarchical disk groups according to SSD and HDD, and the system will automatically move "hot" and "cold" data to the corresponding tier. This configuration is best suited for use in fixed-access mode, event-triggered applications. IT staff can use this system to allow files, websites, email servers or commonly-used virtual desktops with high-speed access needs to automatically enjoy high-speed SSD benefits, while the remaining files can be automatically stored to large-capacity HDD. Build a highly-efficient and low-cost Hybrid Storage Array for your data center.

Configuration method	Qtier™ 2.0	Full SSD	Full HDD + cache	Full HDD
Investment costs	$$	$$$	$$	$
Storage performance	★★★	★★★	★★	★
Storage Space	Large	Small	Large	Large
SSD expansion mode	RAID Group Expansion	RAID Group Expansion	Limited to memory and local slots	No
Data migration mechanism	Instant migration based on us-age frequency	All stored in SSD	Replicates frequently-accessed data to SSD	All stored on HDD
Applications	When applications need high performance but have a fixed access mode. Such as archives, websites, online streaming, email servers, and VDI environments.	When all applications need high performance. Such as database or high-speed virtualization ap-plications.	When only specific data is repetitively and frequently used. Such as virtualization and online collaboration.	When data requires prolonged writes without needing quick access. Such as backup or stor-age monitoring.



Special column

Tiering On-demand with Qtier™ 2.0

Qtier™ 2.0 embraces the on-demand concept, allowing users to flexibly build a dedicated storage system based on different application scenarios.

SSD upgrades storage pools to Qtier™ storage pool

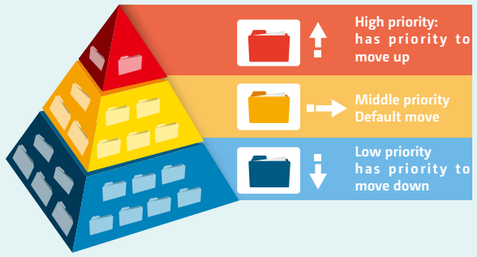
Qtier™ application functionality has been released to more product lines when QTS 4.3 was released. In addition to rack-mount enterprise products, Qtier™ is also available for desktop SMB product lines. Whether you use Qtier™ when creating a storage pool, you can always add SSD disk groups, QM.2 expansion cards, or storage expansion devices to the selected storage pool and to a planned tier through storage manager, and immediately use Qtier™.

Enable Qtier™ in three steps:

1. In Storage & Snapshots Manager, click the Qtier™ icon in the top-right corner, select Upgrade to Qtier™, and select the storage pool you want to upgrade.
2. Select the SSD or HDD disk group you want to add.
3. Confirm the settings and start.

More accurate performance tuning, enabling or disabling settings of shared folders and iSCSI LUN for Qtier™

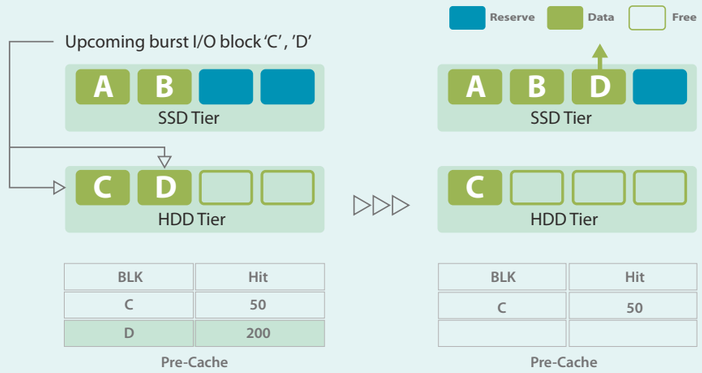
The high-speed access space provided by the SSD storage tier needs to be properly utilized to realize its value. Even if the system can layer hot and cold data, the performance of key data access via SSD might be negatively impacted due to massive storage of unimportant data. The new on-demand Qtier™ 2.0 embodies QNAP's goal of maximizing the return on investment for its customers. Whether in File Station or Storage & Snapshots Manager, the administrator can specify the specific shared folders and iSCSI LUNs to enable or disable automatic tiering. When automatic tiering is disabled, files in the storage space will be stored back to the capacity layer and no longer moved to the SSD layer.
Through data tier adjustments, managers can accurately adjust the invested SSD capacity according to the amount of data on the NAS, and improve the performance of the most critical data access. This not only makes Qtier™ more flexible with limited SSD storage space, but also significantly increased the ROI of using SSDs.



Qtier™ data-aware algorithm simulates storage cache

Besides the new tier switch for each folder and iSCSI LUN, the Qtier™ algorithm is also further improved. Qtier™ 2.0 will start delimiting an simulated cache block in the highest-speed tier. Whether a tiering schedule is being executed or not, the system will monitor the number of data accesses 24 hours a day, and when data is massively accessed and exceeds the threshold, it is immediately moved to the high speed SSD space, and when the number of accesses is reduced, the data is sent back to the low-speed storage tier.

This reserved part of the SSD space is used as a mechanism to simulate a cache. It solves the previous problem of QNAP tiered storage only being optimized for read and write performance when it is manually scheduled or when the system is idle. Qtier™ uses real-time monitoring to simulate read and write cache behavior. In QNAP lab tests, in a situation when there is a continuous stream of data written into the Qtier™ storage pool, the new data-aware algorithm has the lowest impact on continuous access as compared to the old algorithm. The read and write performance of random files has increased by more than 300%. With this technology, Qtier™ will not only be suitable for email or file servers with fixed-access mode, but also more handy for large network servers, virtualization and database applications in corporate environments.



Comparison table	Qtier™	On-demand Qtier™ 2.0
Enable Qtier	Setup required when creating a storage pool	You can use the Qtier™ upgrade program to build on top of general storage pool by installing a new SSD, QM2 M.2 SSD expansion card, external storage expansion unit and other devices to integrate as Qtier™ storage pool. *
Tiering schedule.	As long as it is data in the Qtier™ storage pool, it will be able to be tiered.	Users can choose to tier data only on specific shared folders and iSCSI LUNs.
Tiering mechanism	Tiering data with high-access frequency according to tiering schedule.	Real-time monitoring of random data access frequency and flexible change of data storage location, while sequential data migration in accordance with a tiering schedule.

✎ When you use Qtier™ to upgrade a storage pool, storage-related services will need to be temporarily suspended.

Benefits of using Qtier Technology

Optimal Storage Efficiency

Data can be flexibly migrated across high-performance SSD, SAS drives and high-capacity SATA disks based on access frequencies. Storage efficiency is continuously optimized during system idle time, and data optimization can be completed before peak system usage times.

High Performance Access

Overall system performance is improved as active data is moved to faster storage tiers for standby.

Automatic Optimization or Manual Scheduling

QTS 4.3's automatic scheduling can determine the appropriate time for data transfer according to storage pool operating efficiency. This feature runs uninterrupted all day long.

Easy to Set Up

Use the QTS Storage & Snapshots Manager to create RAID groups for each tier, set the required schedules, and it's done.

Cost saving

By buying only the SSDs that are needed, businesses can save money on expensive Flash technology.

Performance analysis

Check history reports for Auto Tiering statistics to evaluate the accuracy of auto-tiering policies

Build high-performance, high-capacity and secure storage solution with RAID 50/60

Qtier™ is not only a high-performance hybrid storage solution, it can also be used with QNAP NAS storage to integrate RAID 50/60 and expansion enclosures. For example, you can build a SSD RAID 50 ultra-fast tier on a NAS machine, and set up a SATA RAID 60 capacity tier on an expansion enclosure. Then you can continue to stack more capacity layers for different host models to create a total storage space. From the perspective of more than 1 PB (depending on the model), it also has powerful storage system with SSD flash storage and multiple RAID disk group protection.

View auto-tiering history

Auto-tiering is carried out at the block level, and will be done with normal I/O segment protection. Administrators need not worry about data inconsistency in automatic tiering. Managers can view the history of data tiers at all times in Storage & Snapshots Manager, and understand the operational status of the Qtier™ as well as complete tiered data migration records.

Flexible and economic use of storage space

Virtual JBOD

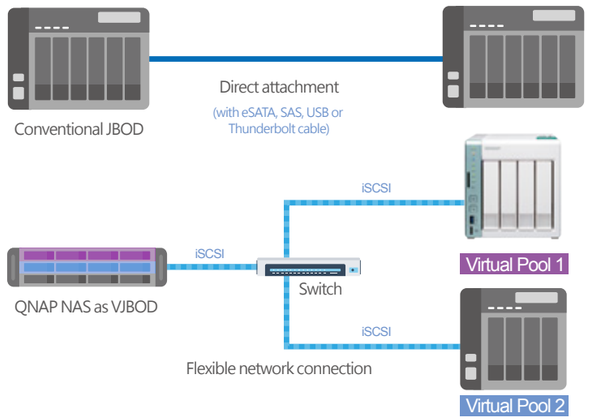
When I have multiple QNAP NAS, or when I need to expand capacity on-demand, how do I achieve the best NAS storage utilization? With QNAP VJBOD (Virtual JBOD), you can interconnect the unused storage space on the local NAS and other compatible QNAP NAS, and create a virtual storage pool or JBOD on the local NAS. Maximize the usage efficiency of each NAS

On-demand, instant storage capacity allocation

Use QNAP VJBOD to instantly allocate storage space from another QNAP NAS as an iSCSI LUN. Then use the iSCSI LUN to create storage pools, take snapshots, make a clone from snapshots or index multimedia files into the media library on the local NAS. VJBOD redefines storage space architecture using appropriate software, such that even small to medium businesses can make use of this new technology.

Expand storage capacity remotely

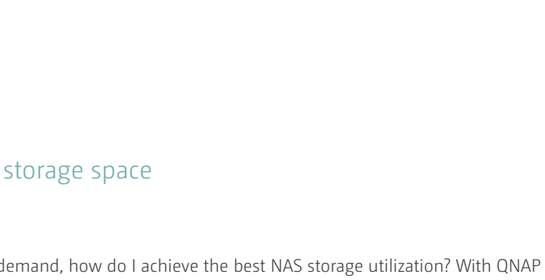
As long as the remote QNAP NAS supports iSCSI services and storage pool settings, it can be added into the VJBOD*. For example, a TVS-882 connected with four UX-800P expansion units can have approximately 300TB raw storage capacity in total (calculated using 8TB HDDs). The capacity can also be easily expanded up to 1PB using QNAP VJBOD**.



*Remote QNAP NAS must support iSCSI service and storage pools, and its firmware must be QTS 4.2.1 (or later). Supports up to 8 remote NAS.
**VJBOD local function is not supported the following models: X89, X82, X80, X79, X71, X70, X63, X53, X51, IS-400. QTS 4.2.2 (or later) is required.

Intuitive and easy-to-use interface

No complicated commands or procedures are needed to set up Virtual JBOD. Take two connected QNAP NAS, and click "Virtual JBOD" in Storage & Snapshots Manager. Then follow the "Create Virtual Disk" wizard to search for the second NAS. After confirming the usable space, the iSCSI LUN will be created, and the space will be converted to a virtual drive on this machine. Then freely utilize and manage this virtual disk in Storage & Snapshots Manager, including checking the status and network location of the virtual disk.



High-performance VJBOD storage with super-fast 40GbE and 10GbE

VJBOD offers greater flexibility with online capacity expansion over traditional JBOD expansion. In a data center environment where transmission speed is a priority, you can leverage 10GbE or even 40GbE network expansion cards and switches, it also works for data transfer between local LUNs and virtual LUNs.

Offloaded data transfer (ODX) is on the Client Window operating system, so the data transfer between the local NAS LUN and the Virtual JBOD LUN does not need to go through the Client.

	VJBOD	JBOD
Connection Interface	Ethernet (1GbE, 10GbE, or 40GbE)	USB 3.0, SAS 6G/12G
No. of Connections	8 Virtual JBOD (Multiple hard drives can be set up for a single NAS)	1 to 8 (depending on the NAS model)
Connection Method	Ethernet	Single connection or daisy-chained
Backup Connection	Supported (Port Trunking)	Not Supported
Application Scenario	Multiple QNAP NAS units offering the flexibility in storage utilization while maintaining the highest availability	It can be used to expand local storage pools on a single QNAP NAS.

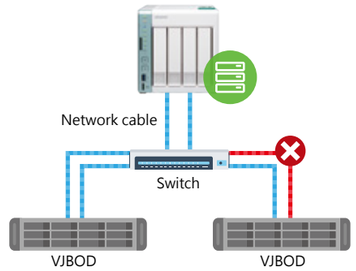
Virtual JBOD does not currently support directly expanding a local storage pool.

Redundant network architecture to increase reliability of VJBOD

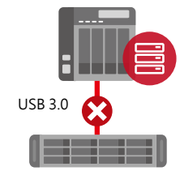
Online capacity expansion over a network does not cause an associated instability of storage space utilization. QNAP NAS with two or more Ethernet ports support port trunking (link aggregation with multiple LAN ports). Port trunking increases the bandwidth of your NAS and provides fail-safe traffic to maintain connectivity in the case of a connection failure. With port trunking, network traffic will also automatically achieve load balancing for each connected device.

Automatic VJBOD storage recovery after auto-reconnection

Your data's integrity is protected by both the disconnection protection mode in QNAP NAS and disconnection protection mechanism of the VJBOD. If the remote NAS encounters a power outage or change in IP address, you will get warnings via event notifications in QTS. The NAS will also automatically try to reconnect and recover the VJBOD storage.



VJBOD + Port Trunking
(offers connection fault tolerance)

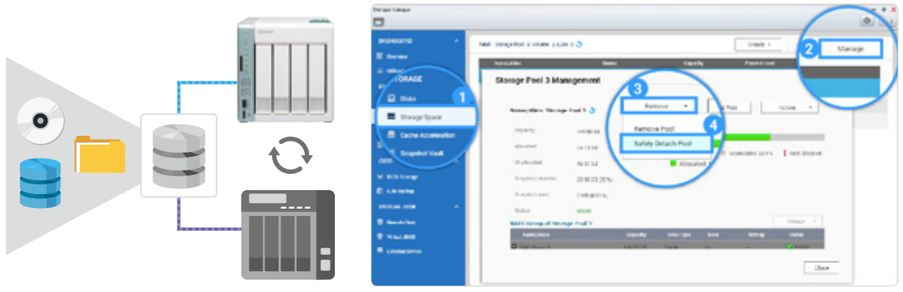


JBOD + SAS series connection
(without fault tolerance)

Instant migration of VJBOD

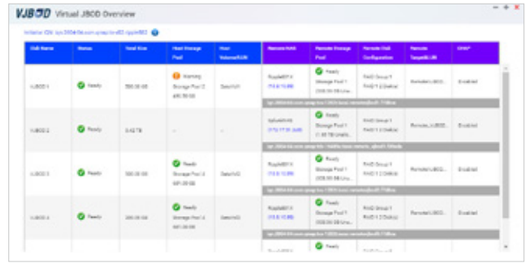
Typically, to migrate an expansion unit requires transporting it to the destination and plugging it in. However, VJBOD enables connection using iSCSI and can be safely detached as a storage pool in Storage & Snapshots Manager. Virtual disks that have been detached from your NAS can immediately be used again on other NAS making the data and applications on virtual disks accessible to be shared among different QNAP NAS. This makes it incredibly easy to transfer large amounts of data, applications and LUNs from one NAS to another.

Virtual disks that have been connected via iSCSI targets to be used in Virtual JBOD should be excluded from other iSCSI initiator connections.



Monitor device connection status with Virtual JBOD Overview

QNAP NAS provides management and monitoring functions enabling administrators to obtain the most up-to-date information on connected VJBOD. You can also use the iSCSI connection page on the remote NAS to check what NAS is currently using the Virtual JBOD function. Furthermore, with the independent system on the remote NAS, if the host NAS is down and the connection log is inaccessible, you can still access the remote NAS to view logs and records for easy troubleshooting.



You can use Q'center to monitor the health status of each remotely connected NAS.

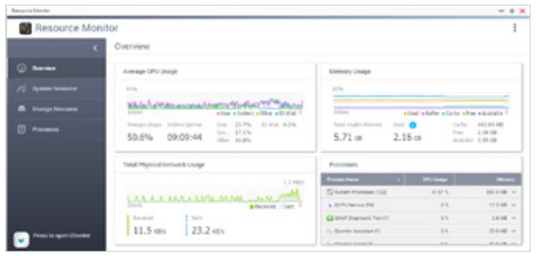
Fine-tune your NAS performance with the integrated monitoring app

Resource Monitor 1.1

To meet the various demands of users, QTS includes a wide range of storage settings and apps. For this reason, you need an effective and clear overview of how the various resources of the NAS are being used.

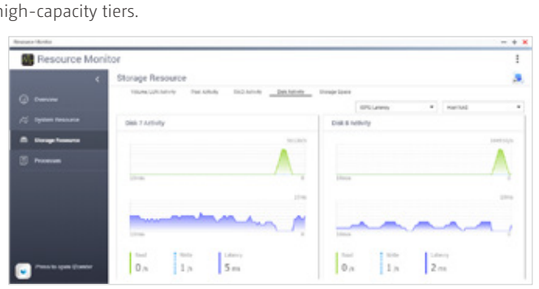
All-new interface

All of the monitoring elements in Resource Monitor have been redesigned for better identification, and hyper threading is now displayed as average values. All Ethernet and wireless network usage and other information are available to you at a glance in Resource Manager,. The simple and elegant interface gives administrators an instant overview of NAS resource usage, making monitoring easier than ever.



Differentiated analysis of storage efficiency

Through the resource monitoring menu, you can choose to monitor the IOPS, latency rate, throughput and other information on various disks in real-time. Information on RAID groups, volumes and LUNs can also be displayed in charts. Monitor current SSD status in the form of cache activities, and assess how much they are increasing the performances of target volumes and LUNs. Keep tabs on the performance of the two RAID groups in the high-speed and high-capacity tiers.



QTS 4.3 will add additional SSDs swap area, which will be used more preferentially than hard drives to enhance processing performance.

List applications by type

No other monitoring software can match Resource Manager in providing information on your QNAP NAS. Not only can Resource Monitor track the usage of processing and storage resources, it also sorts the applications by their types. This helps administrators effectively identify various applications (Virtualization Station, Qsync, etc.) and monitor their resource usage and consumption rates. The collected data can help troubleshooting, hardware maintenance and update planning.

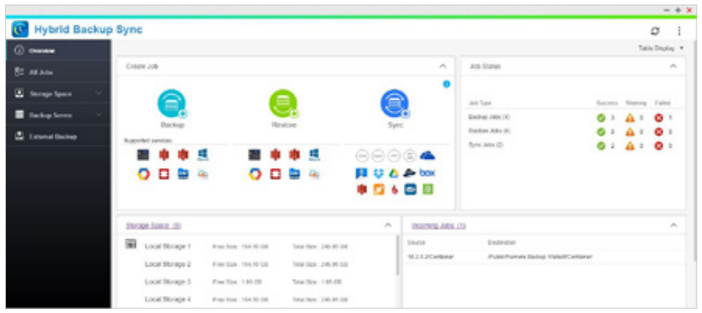
Perfect integration of public and private clouds

Hybrid Backup Sync 2.1

Businesses increasingly warehouse huge volumes of data across disparate storage infrastructure, at disparate locations, and across disparate devices. This presents huge challenges to data management and storage. In response, QNAP offers a comprehensive backup and recovery solution to backup data to a QNAP NAS and to synchronize the data with remote NAS/servers and cloud services.

Centralized file storage and management

Hybrid Backup Sync is a comprehensive backup solution to efficiently manage storage spaces for all devices on the LAN, across remote-site NAS units and cloud services. QNAP NAS also supports backup from NAS to cloud storage while recording and encrypting all remote connections to accelerate remote-site or cloud backup tasks.



Local backup and synchronization

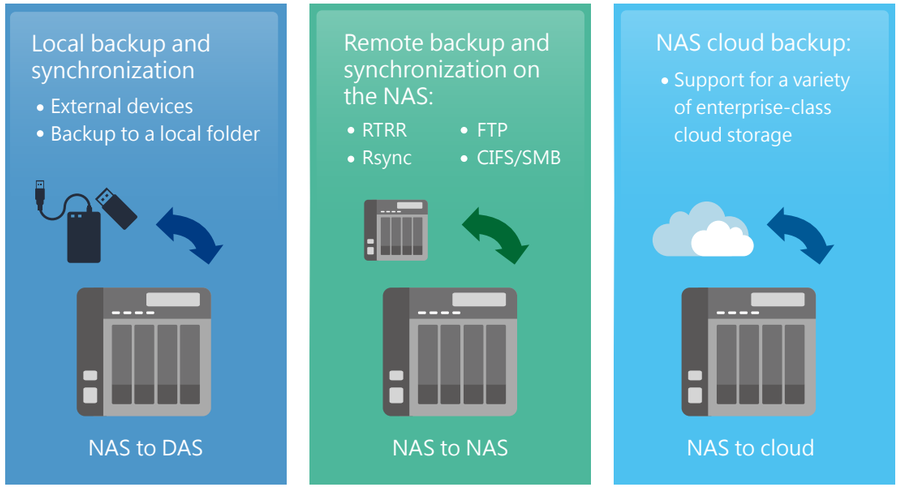
Hybrid Backup Sync allows you to back up your data locally without network connectivity. You can now back up your data to a folder on the NAS or an attached device for added data security without connecting to a network.

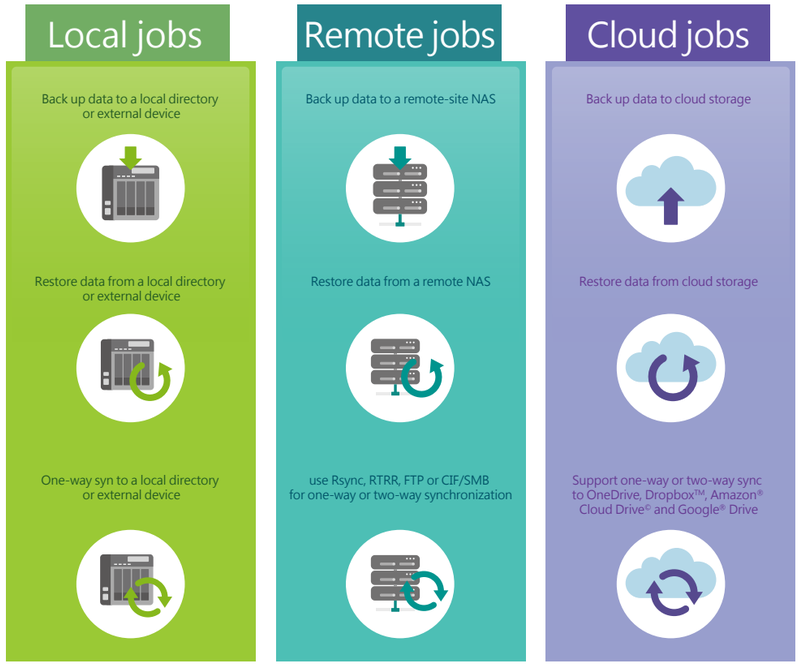
Backup to a local folder

By backing up and synchronizing the data on the QNAP NAS to other folders on the local machine, you can prevent files from being mistakenly overwritten or accidentally deleted.

Backup to an external device

Connect a USB device to the front-panel USB port and press the “Copy” button to instantly back up data to/from its storage.





Remote-site backup

Your computer or NAS can be used as the source or destination, or as a relay server during the backup process. Through QNAP RTRR (Real-Time Remote Replication) technology, you can easily backup data from your office to your NAS at home. You can also sync data to another computer via Rsync, CIFS/SMB, or FTP.

Two-way shared folder synchronization

QNAP supports remote backup technology RTRR, which can schedule two-way synchronization of shared folders of two QNAP NAS to ensure that they share the same data. With two-way synchronization, file backup consistency is improved, which is especially useful in facilitating collaboration between departments and branch offices.

Backup Monitoring

Hybrid Backup Sync lets administrators monitor backup jobs from remote servers. The administrator can monitor all backup statuses on a single NAS without logging in to the respective NAS.

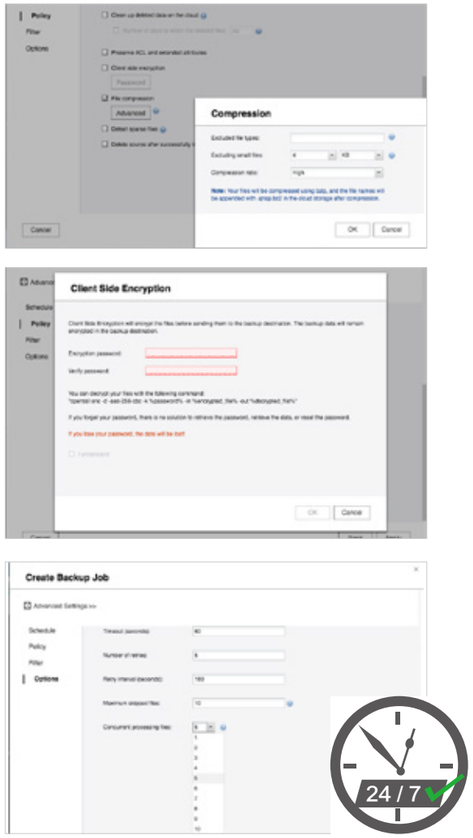
Smart version control and recycling

With version control supported by RTRR, you can effectively manage backup versions. If a file has errors or a disaster occurs, a flexible saved backup version helps you to restore the file to a previous version. Smart versioning allows you to schedule hourly, daily, weekly, and monthly backups, automatically back up more versions in a short period for easy access, and keep only a few versions for a long time to save space. Alternatively, you can use simple versioning to save a fixed number of versions of backup files over a given period of tine, and automatically rotate saved versions.

Active data synchronization

Administrators can synchronize the files of remote computer folders to the local NAS through a single interface. Using agentless backup architecture, it is not necessary to install backup software on remote computers, whether via RTRR, CIFS/SMB, or FTP protocol. QNAP NAS can automatically connect to a remote computer for synchronization tasks, saving the time and cost required to back up multiple computer data.

Cloud backup made simple



1 Compress

Hybrid Backup Sync supports compressed backups, scheduled file deletion according to user specifications, and sparse file detection to avoid backing up unnecessary files. Filter files by type, size, and date to ensure only 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 during transmission and storage on the cloud.

3 Multi-thread transmission

Hybrid Backup Sync supports multi-task processing and multi-threaded data transfers. This improves file transmission speed by segmenting large files into smaller ones before uploading. Users are able to preview files in the cloud and download individual files instead of the entire folder.

The WebDAV app does not support multi-threaded data transfer.

Cloud backup and synchronization

QNAP is integrated with cloud services, allowing you to synchronize or schedule backups of your QNAP NAS data to cloud storage, including Google Drive™, Microsoft® OneDrive®, Microsoft® OneDrive® for Business, Dropbox®, Dropbox® Business, Amazon® Drive, Yandex® Disk, Box®, hubiC®, Amazon® S3, Amazon® Glacier, Microsoft® Azure, Google® Cloud Storage, HiDrive®, Backblaze® B2, HKBN® and S3/OpenStack Swift/ WebDAV compatible cloud services. It also allows data to be restored to QNAP NAS after a disaster, allowing you to build a simple and affordable disaster recovery plan.

Backup from computer to NAS

Windows users can also install the free QNAP NetBak Replicator utility to back up files from their PC to their QNAP NAS. Mac users can use Time Machine to back up their files. A variety of other backup tools and software are also supported.

NetBak Replicator

QNAP's NetBak Replicator helps Windows users back up their files from their PCs to one or more QNAP NAS. With a few clicks, users can set up real-time backup, scheduled backup and auto-backup. You can also set up automatic shut down after backup to save power, filter unnecessary files, or set email notifications for completed backups.

Virtual backup server

As a secondary virtual backup solution, QNAP NAS is compatible with virtual servers such as VMware® ESXi server, Citrix® XenServer and Microsoft® Hyper-V, etc. In addition, users can also install NAKIVO Backup & Replication program in QNAP App Center to make the NAS instantly become a backup system for virtual machines. NAKIVO supports VMware® vSphere™, Microsoft® Hyper-V®, and Amazon® EC2, providing a reliable and cost-effective backup solution for virtualized environments.

Third-party backup software

QNAP NAS are compatible with various renowned backup software such as Acronis® True Image and Symantec® Backup Exec. Users that have adopted these backup soluitons can immediately back up data from other sources to the NAS

QJBOD Express for fast data migration without a network

The new QJBOD Express enables rapid back up or migration of massive volumes of data to local or remote sites without using network bandwidth. The following example illustrates data migration from a headquarters in Taipei to a branch office in Kaohsiung.

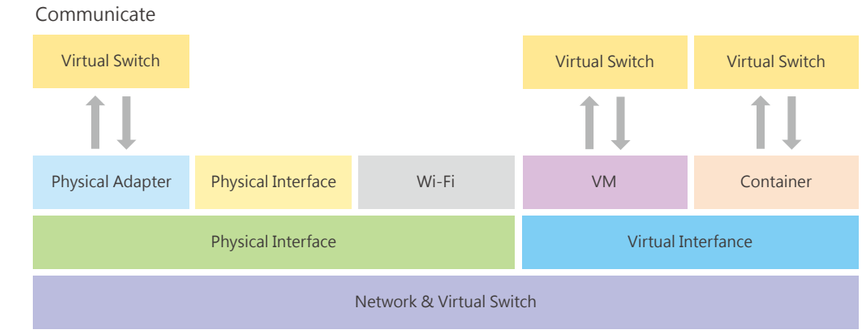
✎ The remote NAS must support JBOD expansion to use this feature.

Cost of migrating 50TB of data from Taipei to Kaohsiung.		
Method	Time	Bandwidth cost
100Mbps network	About 45 days	50TB
QJBOD Express	In one day	0

All network settings at a glance

Network & Virtual Switch 1.4

The new Network & Virtual Switch integrates existing QTS network management functions, such as TCP/IP, IPv6, Wi-Fi, Thunderbolt™, USB QuickAccess and Wireless AP. A new overview page and virtual switch functionality has also been added. Now both home and business users can enjoy optimized network building and management through these two functions.



✎ Thunderbolt / USB QuickAccess / WirelessAP and other special features are only supported by certain models.

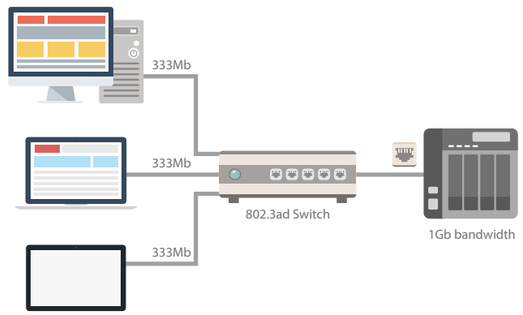
Detailed overview page

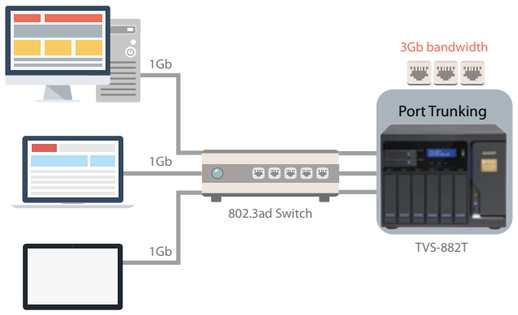
With the new Network & Virtual Switch overview page, both IT administrators and general users can get real-time information on network connection statuses. The powerful overview visualization provides you with the latest connection status regardless of the complexity of your network infrastructure. In event of a disconnection, you are able to troubleshoot quickly, and reduce time costs.

Use Port Trunking to increase overall service bandwidth

With Port Trunking (port aggregation; also known as LACP: Link Aggregation Control Protocol), you can combine two or more network interfaces, and thereby balance the loads and increase network bandwidth to maintain transfer speeds in multi-user scenarios. In addition, the network fault tolerance feature allows mutual support between multiple Ethernet interface adapters, so that if one adapter malfunctions, another adapter can maintain its connections and ensure uninterrupted services.

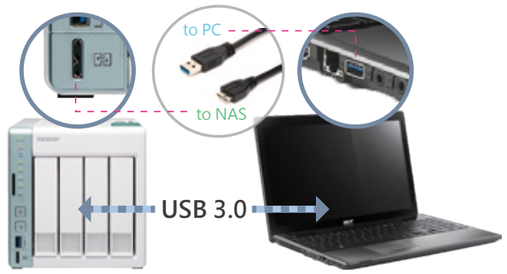
✎ QNAP provides 7 different Port Trunking protocols (to be used with supported network switches).
✎ The overall transmission performance is dependent on the read/write speeds and configurations of storage devices (such as SSD or HDD; type of RAID).





USB QuickAccess

The USB 3.0 QuickAccess port coupled with Qfinder Pro allows you to complete the first-time installation and setup without requiring network connectivity. By connecting the USB QuickAccess port on the front panel to a Windows or Mac computer, shared folders on the NAS can be directly accessed using Qfinder Pro. Everyone can then access their data without needing network connectivity. Furthermore, you can assign access privileges to users for different folders to prevent unauthorized access to important files.

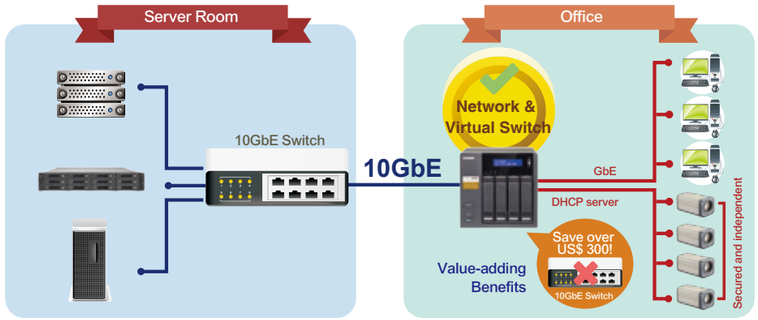


- USB-C cable sold separately.
- Only some models are supported.

Decouple hardware and software networking for lower capex, opex, and increased ROI.

By using virtual switches, NAS can easily bridge 1 Gigabit and 10 Gigabit networks, just as switches do. Without buying expensive 1/10Gbps Ethernet switches, you can also connect 1GbE devices to NAS and further bridge 10GbE networks for file access and exchange. Simply connect the 10GbE network devices to enjoy the large bandwidth. On top of that, you can also use a virtual switch to build an isolated LAN environment with the built-in DHCP server for accessing IP camera surveillance footage in a closed network environment. Data security is enhanced as the recordings can only be accessed through the Intranet.

» All physical and virtual ports can be interconnected. (So that virtual machines can also make use of high-speed network ports)
» Communication between different virtual machines can also be carried out through the Virtual Switch. (E.g.: the server VM will be able to access the SQL Database service hosted on a container)



- Only supports x86-based models (excluding the TS-269H, TS-269L, TS-569 Pro, and TS-1269U-RP).

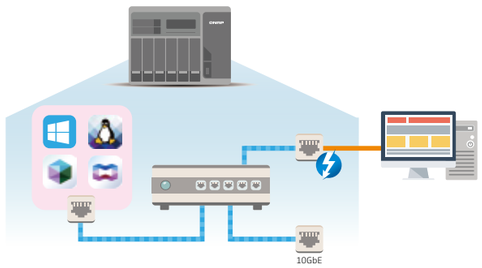
Using Thunderbolt and Virtual Switches together

When you connect your computer to the NAS through its Thunderbolt 2 port, not only can you access your data at high speeds, you can also use the T2E virtual switch to facilitate communication between your device and virtual machines.

- Transmission speed is dependent on available NAS system resources.

T2E (Thunderbolt To Ethernet) Converter

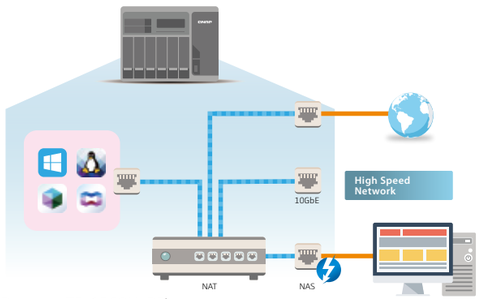
You can create a two-way network transmission environment by simply configuring the network settings of the T2E converter and binding the interface card. QNAP Thunderbolt NAS are versatile Thunderbolt converters that helps to bridge physical and virtual interface cards.



Thunderbolt Residential Gateway (NAT)

By enabling the NAT service of the Thunderbolt Virtual Switch, Thunderbolt devices can be connected to all network ports and virtual machines through the NAS, without configuring complicated network settings.

- Thunderbolt devices under the NAT architecture do not support end-to-end host connections and some Internet protocols.



- Only supports x86-based models (excluding the TS-269H, TS-269L, TS-569 Pro, and TS-1269U-RP).

Use a QNAP NAS as a wireless base station

WirelessAP Station

QNAP NAS can be transformed into the most convenient wireless base station. Install a compatible PCIe wireless network card and download the WirelessAP Station app to allow devices to connect to your NAS for directly accessing its services and Internet connection.

- For detailed installation instructions, see "How to Get It"

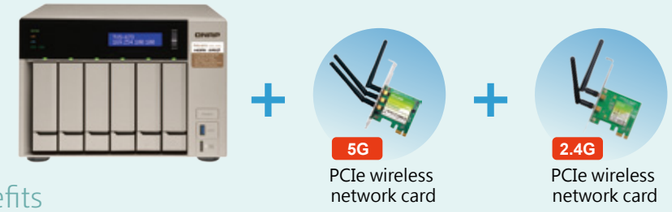
System Requirements

QTS 4.3.0 (or later)
QNAP NAS and other NAS models with PCIe slots

Supported network cards		Supported channels	Highest bandwidth	Number of antennas
TP-LINK TL-WDN4800 N900		2.4G / 5G	2.4Ghz : 450Mbps 5Ghz : 450Mbps	3
TP-LINK TL-WDN3800 N600		2.4G / 5G	2.4Ghz : 300 Mbps 5Ghz : 300 Mbps	2
TP-LINK TL-WN881ND N300		2.4G	2.4Ghz : 300 Mbps	2
TP-LINK TL-WN781ND N150		2.4G	2.4Ghz : 150 Mbps	1

Scalable physical wireless access point

Traditional wireless network routers use software-based (virtual) access points to share "single and identical" physical devices, but this will be limited by the bandwidth of a single network card, making it difficult to stabilize connections. When you need to use the wireless network at the same time, the wireless base station service allows you to increase the bandwidth that is actually available by adding physical network cards without interfering with each other. For example, you can install two wireless network cards in QNAP NAS and configure them respectively as 2.4G and 5G base stations, then the NAS will be able to simultaneously provide services at different frequency ranges.



Five major benefits

1. NAS - x86 level of wireless network access point
2. Directly connect to the NAS with a wireless network
3. Scalable Entity AP - add several access points with multiple expansion cards
4. Set up separate wireless connection interfaces (such as: IoT / VM / Container) as needed
5. Enjoy network optimization with traffic shunting

Solution comparison

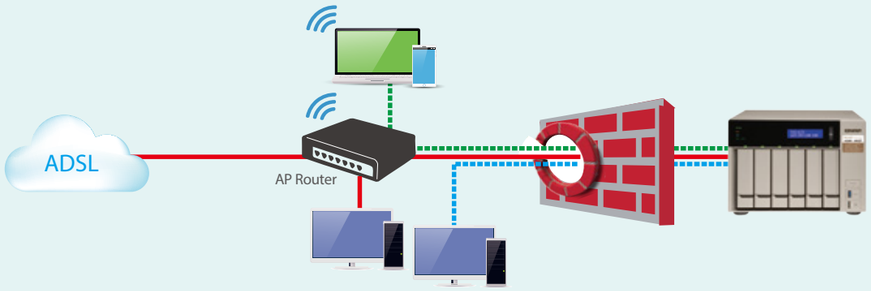
	QNAP Wireless Base Station Service	Home AP/Router	Professional AP Router
CPU	Better processing power than dual-core x86 CPU	MIPS 24K, 74K 380 ~ 600MHz	Dual-core ARM, MIPS 800M - 1GHz
RAM	Over 1GB	32 / 64MB	128 / 256MB
Flash	Over 512MB storage space, and direct NAS integration	8 / 16MB	128MB

Directly connect to the NAS

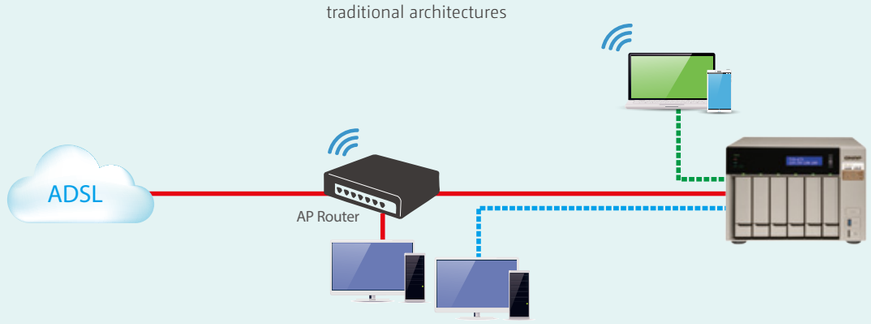
Enjoy the wireless network services provided by QNAP NAS on mobile devices and use rich applications such as Qfile, Qmusic and Qvideo.

Enjoy network optimization with traffic shunting

The high performance of QNAP NAS not only provides you excellent data access services, but also allows you to enjoy smooth NAS connectivity. In general, even if you are at home using a mobile device to connect to the NAS, you still need to use the wireless base station function of a router to connect to the NAS. Therefore, when the router is busy, the quality of the NAS connection will be affected. The base station set up by the wireless base station service allows your device to connect directly to the NAS, so that you are no longer limited by the performance of the router, and can enjoy excellent network shunting and connection speeds.



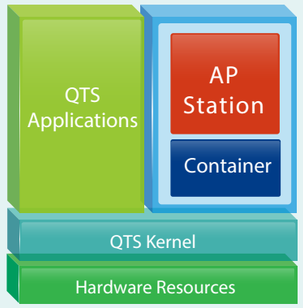
Network connections using traditional architectures



Network connections when using the QNAP wireless base station service

System architecture

The Wireless base station service is based on OpenWrt in conjunction with the QTS LXC Container technology.



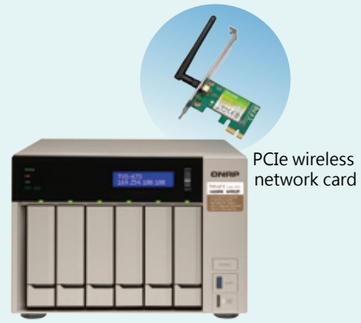
Freely set up an independent, secure wireless connection interface

In addition to shared resources, you can also assign individual NICs to containers or use different QNAP services as required through integration with QNAP Network & Virtual Switch, and enjoy a separate wireless connection interface. You can also create a small private network, for example: When you need to set up a highly private Internet of Things environment, you can set it up to not pass through any other sharing devices, so that your IoT network becomes a highly secure and reliable independent network.

How to get it

You can download wireless base station services for QNAP NAS compatible models from the QTS App Center. A setup wizard is provided to make installation and set up as easy as possible. Install the wireless network card, download the WirelessAP Station app, then follow the instructions to complete the setup process.

1 Install the wireless network card



2 Go to the QTS App Center, download and install Container Station, and then download and install WirelessAP Station.

3 Once set up, your devices will be able to wirelessly connect to the NAS.

Instant synchronization of important files with the NAS

Qsync Central

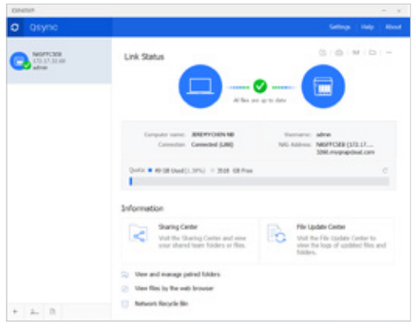
With recent advancements, users and IT administrators may not be satisfied with traditional ways of backing up images, videos and important files. Current backup methods are unable to provide instant access across multiple devices, and can be difficult to set up. Qsync Central is an easy-to-use private cloud for storing and synchronizing large volumes of personal, business and organizational data across multiple devices. Qsync provides a complete file sync solution that helps businesses and organizations ensure that team members always have the most up-to-date files for greater work efficiency.

Setting up in three steps

1. Download the Qsync Client
2. Enter the NAS IP and account information
3. Select the local folders to be synchronized

Browse your files on different platforms and devices

Qsync Central supports file synchronization across multiple devices. You can browse synchronized files on mobile devices, computers or on a website. If your computer is offline, you can view/edit files in the local Qsync folder. When Internet connectivity resumes, Qsync will continue data synchronization. With personalized synchronization settings, you can choose to permanently retain the files on the QNAP NAS, conserving storage space on local devices.



Start using Qsync immediately

Qsync Client's easy-to-use interface comes with a number of handy and practical features that allow you to create download links, share files through the computer's email server, perform connection speed testing, and troubleshoot connection problems. With Qsync Client, managing all tasks is a breeze.

✎ Qsync Client supports Windows® and Mac® and allows synchronization across multiple computers.

Supports shared folder synchronization across multiple NAS for seamless file sharing

Qsync supports synchronization across multiple NAS, allowing users to share files freely with anyone with a QNAP NAS, or synchronize files with your business partners to facilitate better collaboration. You can also synchronize multiple shared folders on the QNAP NAS with your computer's Qsync Client.

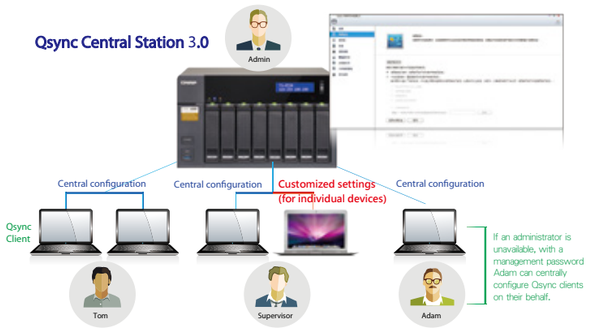
✎ Synchronization across multiple NAS is currently only supported by Windows®.

Share team folders to improve collaboration and team work efficiency

Ensuring consistency of materials used throughout workplaces is a priority in teams and departments. Qsync allows you to build an environment for greater collaboration and teamwork. Simply create a sub-folder in the Qsync folder, configure some simple settings on your device or NAS, and you can share the sub-folder with different groups of NAS users so that every group will have the latest files.

Control your device settings for simpler management

By creating default settings in Qsync Central and applying them to Qsync clients, you do not need to set up individual clients separately. Administrators can also monitor user settings through the central management system, strengthening enterprise-wide IT management and file filtering control, and eliminating the risk of accidentally deleting files on a QNAP NAS during synchronization. By using different permissions settings on each device, administrators can also customize the management of individual devices. In addition to the above, Qsync Central also offers flexibility and convenience in centralized management.



Protecting your data carefully with remote wipe and version control

What will happen to your private or confidential files in your Qsync folders if your device is lost? Lost or stolen devices can have their Qsync folder remotely erased to ensure that sensitive or confidential data is not accessed by unauthorized users or leaked. When the device is recovered, Qsync can easily restore the data that was deleted once it's connected, providing the perfect balance between security and convenience.

✎ The data will still be retained on the QNAP NAS after remote wipe.

Give your business an edge with system self-recovery

Your database may be accidentally damaged by careless operations or NAS hardware failures. The time required to troubleshoot and repair the system may result in losses for your business. The new self-detection and restoration feature in Qsync Central can help reduce the incidence of errors, increase system reliability and reduce the risk of accidental data loss.

Qsync Client ensures that all your important data files are not lost

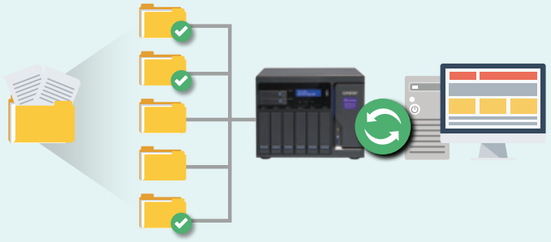
Qsync Client is an Android application. It displays all statuses in the simplest and most intuitive manner. You can also monitor the statuses of synchronization and uploading tasks, and thereafter open the files or share the links.

A convenient helper for detecting connection problems

In event of connection problems, the helper can help detect problems with the NAS and devices. You can also monitor transmission rates during normal connections. It is easy to use, allowing all users to locate the source of connection problems.

Selective Synchronization

You can choose the type of file or sub-folder on the NAS to synchronize with the folder on your device, saving storage space on your device and increasing synchronization efficiency.

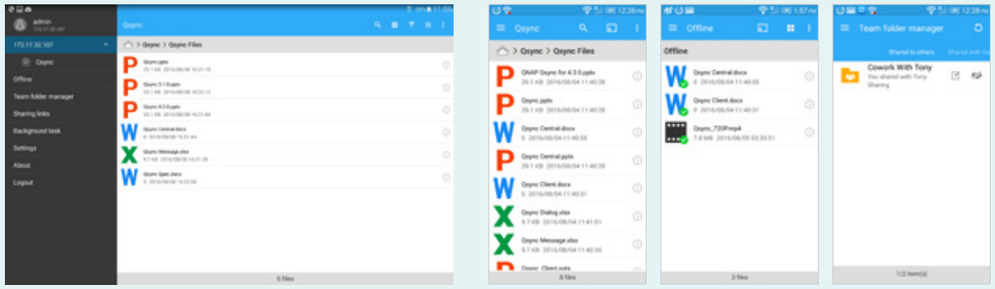


With Qsync, you have all the files on your NAS at your fingertips wherever you go

Preview the files on your NAS from anywhere

Simply connect and select files to browse on the NAS. You can also easily move, copy, rename, or delete files in NAS without needing a computer.

Supports Android™ 4.0 (or later).



Offline Browsing

For offline browsing, simply download files, photos or files from the NAS to the offline browsing folder. After weighing out the importance of the files and the available space on your device, you can download the most important files for offline access. You can also configure settings such that synchronization is only carried out when the device is being charged and connected to Wi-Fi.

Synchronize mobile data to ensure no important data is lost

Select the folder on your mobile device to be synchronized with the Qsync folder on your NAS. Keep important files on your mobile device, computer and NAS at your fingertips while you are on the go.

Enhance collaboration through instant sharing

Create a download link for files or folders, and send links through email, SMS or messenger apps. In addition, you can also share team folders with other NAS users. Once they accept the invitation, you can work collaboratively on the files in those folders.

Supports multimedia playback

Stream music, photos and videos from the NAS. With the NAS acting as the storage for your mobile device, you no longer need to set aside huge amounts of space on your mobile device for storing audio and video files.

Create a private cloud easily with remote connection services

myQNAPcloud 2.8

The myQNAPcloud setup wizard will guide you through creating your private cloud . With myQNAPcloud, you can access your QNAP NAS cloud services safely and conveniently at any place and at any time.

myQNAPcloud ID (QID)

QID is your unique identity. After registering using an email or mobile phone number, you can remotely access the files on the QNAP NAS through the myQNAPcloud portal (www.myqnapcloud.com), the mobile app, or the computer application tool Qsync.

CloudLink Remote Connection

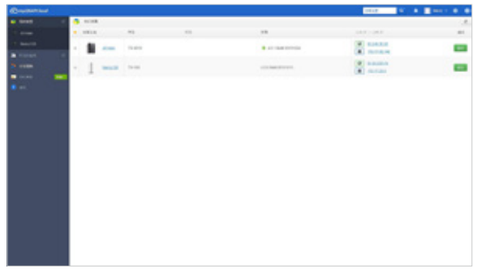
CloudLink is the best connection method for connecting to your QNAP NAS via the myQNAPcloud web portal (www.myqnapcloud.com). You do not need complicated router settings. Just register for a myQNAPcloud ID (QID) on your device and enable CloudLink. You can then sign into myQNAPcloud web portal using your myQNAPcloud ID (QID) to connect to your QNAP device. CloudLink will automatically select the best connection method based on your network environment. Other than web-based connections, CloudLink also supports connection via the QNAP phone App or Qsync. With CloudLink remote connection is a breeze.

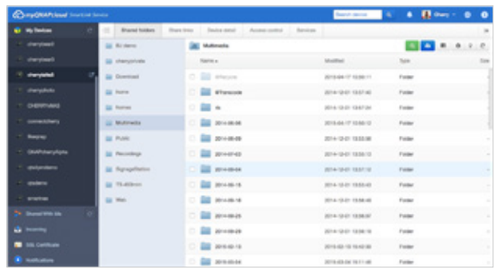
Supports SSL secure connections

myQNAPcloud SSL certificates are used for establishing secure channels of communication between the browser and QNAP NAS, as well as for server authentication and encrypted data transmission. These channels ensure the security of all data passing between the QNAP NAS and web browser. After purchasing and installing a myQNAPcloud SSL certificate, when you use DDNS to access the NAS, you can be confident that you are accessing a secure and genuine website.

Web-based management of multiple devices and files

The myQNAPcloud website (www.myqnapcloud.com) is a user-friendly interface that allows you to check for available and connected NAS servers. Download, move, copy and share files stored on your QNAP NAS on your web browser, and enjoy the convenience of accessing multiple NAS from a central Internet portal. myQNAPcloud is a fantastic assistant if you own multiple QNAP NAS.





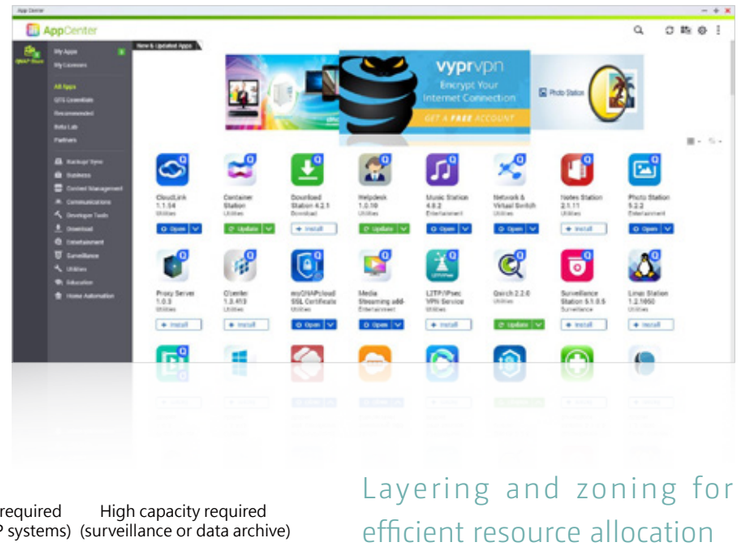
Customize your QNAP NAS for endless possibilities

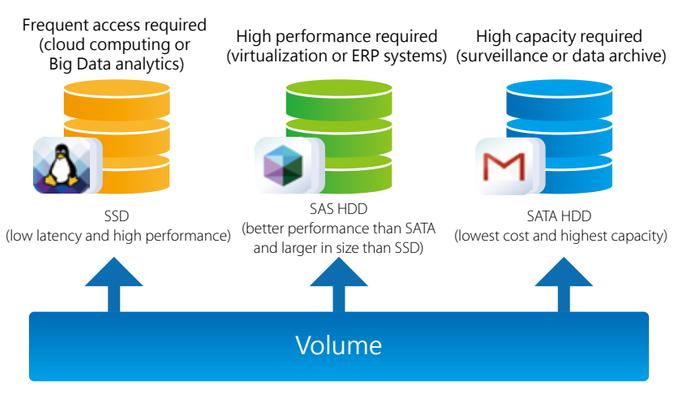
App Center

Extend the functionality of your QNAP NAS to enrich your work and home life. The QTS App Center provides various install-on-demand apps to meet needs ranging from cloud backup/sync, home entertainment, business applications, to creating a surveillance center.

Newly-designed App Center interface

The App Center has been redesigned to be simpler and easier to use. Search by category, by keyword, or try an app recommended by QNAP. The App Center now supports multiple languages to cater to your language preferences. Alternatively, view the apps in list mode to get detailed information on the apps.





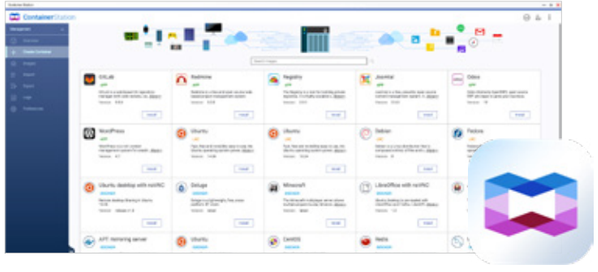
Layering and zoning for efficient resource allocation

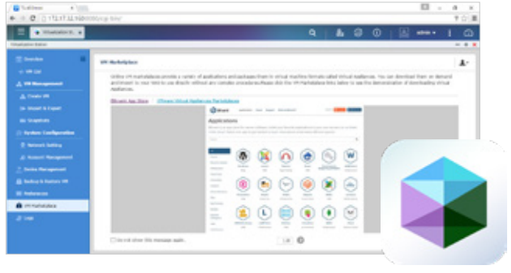
Leveraging the tiered storage architecture of QNAP NAS, applications can be installed on specific volumes or freely migrated between different volumes. This allows administrators to manage applications flexibly based on performance and capacity requirements. For example: Frequently-accessed apps can be installed on SSD volumes and apps requiring high-performance can be installed on SAS volumes for optimal performance and space efficiency.

✎ The feature is only supported by some apps.

Value-adding apps to widen your horizons

The App Center provides over 100 apps in several categories including Backup and Synchronization, Business, Content Management, Communication, Developer Tools, Download, Entertainment, Surveillance, and general purpose tools. Container Station or Virtualization Station can be used to run more applications, satisfying all kinds of business and personal needs in all aspects and creating unlimited possibilities.

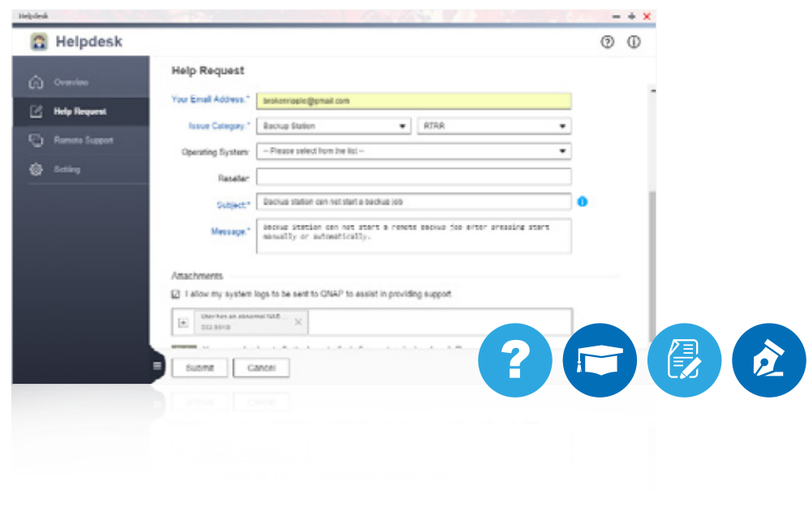




Instant technical support

Helpdesk 1.1

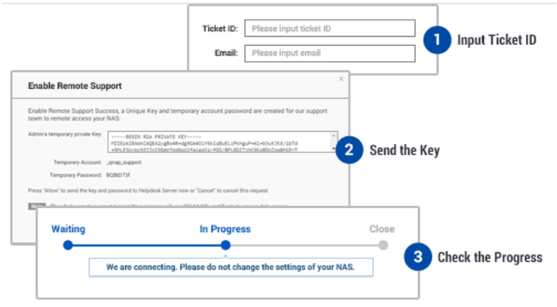
Use the Helpdesk app to instantly report issues and to enable QNAP support engineers to securely and remotely troubleshoot your NAS over an encrypted remote connection. Every NAS sold represents QNAP's commitment and promise to provide rapid and reliable responses to feedback and questions.



Secure remote support services

Once our support team confirms your remote connection request, you can enable the remote support service*. QNAP Helpdesk will automatically create a support service account to allow the support team to remotely connect to your NAS over a dedicated, recorded, and encrypted connection (256-bit SSL). This helps us resolve your issues quickly without compromising data security.

✎ Please read the Helpdesk Terms of Service before enabling the remote support service.



Instantly send support requests and receive responses within 24 hours

Helpdesk* lets you send support requests directly to the QNAP support team and automatically collects the necessary information for troubleshooting, including firmware version, RAID configuration, system events and logs. The automatically-collected information helps us understand the problems you face.

✎ *Install the Helpdesk app from the App Center if you are using an earlier firmware version of QTS.
**Response times may vary due to time zones and national holidays.

Your feedback counts

We want Helpdesk to be more than a channel for technical support. We would like users to provide suggestions, feedback, and feature requests on Helpdesk for existing apps. We value your input and will follow-up on the progress of actions taken. Through this platform, you can become an important part in QNAP's growth, and can help us develop products that can better meet your needs.

All-round data protection

Data Security

Organizations may suffer significant losses if important data is leaked or lost. Whether an individual or business user, encryption should ideally be used by everyone to protect the privacy of confidential documents and personal material. QNAP helps to minimize the risk of data breaches with multiple protection mechanisms, allowing you to focus on data application, rather than data protection.

Network environment protection

Connection management (black/white list)

Allow or deny connection to the NAS from specific IP addresses or subnets by creating whitelists and blacklists for filtering IP addresses. Servers with blocked IP addresses will be unable to connect to the NAS. For example: if there are five failed login attempts within a minute, the IP address can be blocked from accessing the NAS for one hour, one day, or permanently. Devices that use the blocked IP will be unable to connect to the NAS. Users that have been online for too long or who have logged in from a suspicious IP can also be blocked.

Service Binding

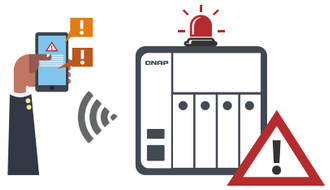
QNAP NAS with multiple Ethernet ports generally permits data access through every port. However, this can compromise data security. Service binding allows users to bind network interfaces with only specified services for enhanced system security. For example: critical company data can only be accessed by certain users and specific protocols or permitted internal IP addresses. Not only is security enhanced through allowing/denying access to specific network services and network cards, service binding with LAN ports also ensures that critical services get dedicated bandwidth.

Account security and system notifications

Two-step Verification

Two-step Verification* requires users to sign in to the NAS with their username, password, and a 6-digit one-time password (OTP) generated by an authenticator app. This provides an additional layer of security to the NAS.

To use Two-step Verification, you must install one of the following authenticator apps on your mobile device. Google® Authenticator (Android™, iOS®, BlackBerry®) or Authenticator (Windows® Phone).



Push service

In addition to email and SMS notifications, messages can also be sent to your mobile devices or web browser in the event of a system alert or other warnings*. 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.

Requires the Qmanager mobile app.

Data encryption

Encryption for the entire system

QTS offers volume encryption to protect all of the data stored on the NAS. The system will ask for the encryption key when mounting encrypted volumes, and the data will be inaccessible without it. This effectively protects data against unauthorized access if the entire NAS or individual drives are stolen.

Folder encryption

QTS also allows you to encrypt specific folders from unauthorized access. The contents of shared folders will also be encrypted.

Encrypt external hard drives

External storage devices are convenient for data migration as they can be easily attached and detached. QNAP NAS can encrypt external drives to protect against unauthorized access if they are stolen or lost. You can choose to protect your data using encryption methods including AES-128, AES-192, and AES-256.

Anti-virus

QTS is integrated with the ClamAV™ antivirus toolkit to protect your system against the latest viruses, malware, worms, and Trojan horses. Continuous free virus database updates ensures that your business is not disrupted. Administrators can select specific folders for immediate or scheduled virus scans. If viruses are detected, email notifications will be sent to the administrator. McAfee™ anti-virus software is also available.

You can purchase McAfee® virus protection from the App Center.

Transmission encryption

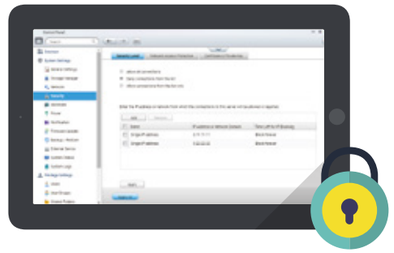
Network transmission encryption

Advanced AES 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 while using FTP, WebDAV or File Station services.

Encryption is provided for the following services:
rsync backup (SSH encryption), RTRR backup (TLS encryption), SFTP: FTP (SSH encryption)
FTPS: TLS encryption, web server (TLS encryption), share access (SSH encryption)

NEW

QTS 4.3 not only supports certificates uploaded from control platforms and issued by authorized units, it also allows the creation of self-signed certificates, or certificates obtained from Let's Encrypt (a public certificate authority).



Let's Encrypt is a third-party entity. QNAP is not responsible for the security, compatibility, or reliability of Let's Encrypt's services. When in doubt, use myQNAPcloud SSL certificates. For more information, refer to the myQNAPcloud section.

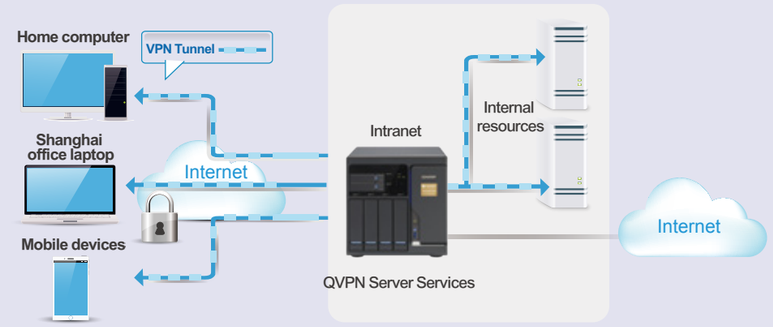
Special column

QVPN Service - Affordable virtual private network

A Virtual Private Network (VPN) allows secured access to network resources and services across public networks. It provides secure and encrypted connection for data transmission. Both home and business users can create affordable and secure virtual private network environments by selecting the QVPN services on the NAS (L2TP/IPsec, PPTP or OpenVPN) or on the client (L2TP/IPsec, PPTP or OpenVPN) .

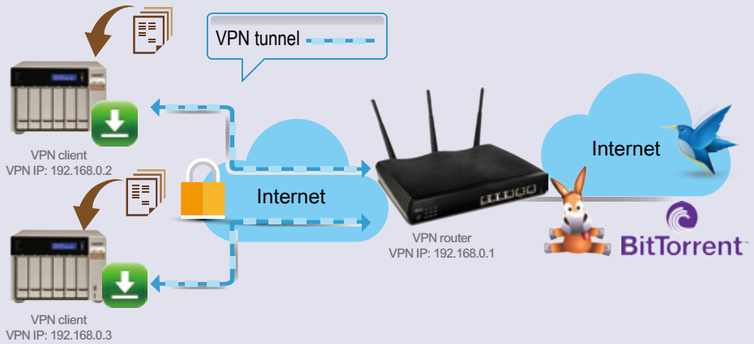
QVPN server service

With a VPN server on your NAS, you or your employees can connect securely to servers or other shared resources on your home or corporate private network even if you're away from home. The QVPN server also provides account and connection management, and supports remote user connection in addition to local users, so you can effectively control VPN service access. A VPN can also help you access resources that may otherwise be restricted by your network environment.



QVPN Client Services

You can also use your NAS as a QVPN client to be connected to the QVPN server on another NAS or other VPN servers. When using a download service (such as BT, eMule, Thunder), QVPN connections can protect your privacy. You can also create a safe network channel for remote support (you can configure the NAS to be a VPN client for secure data transmission when setting up backup or other services to branch offices at overseas locations).



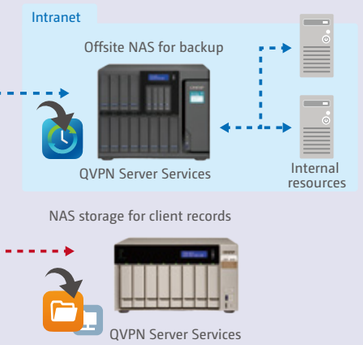
Introducing VyprVPN

QNAP is proud to be the first NAS provider to support Golden Frog (a third-party VPN service provider). VyprVPN offers advanced network management solutions that provides users with a high-speed and highly-secure VPN network. Through VyprVPN, a QNAP NAS user can connect to Golden Frog servers around the world through either PPTP or OpenVPN.

QNAP users can enjoy a VyprVPN trial service. Relevant fees will apply when using this service after the trial period ends.

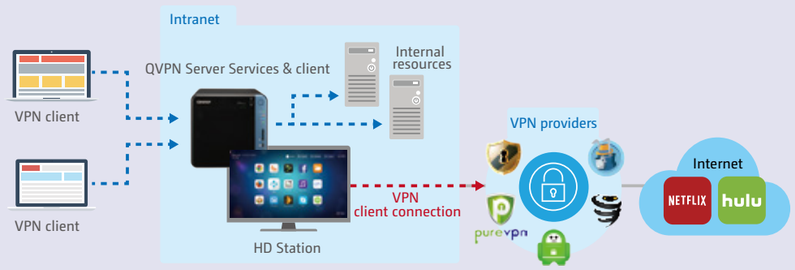
Support for multi-connection VPN Clients

A single VPN Client now supports multiple VPN connections to different QVPN servers. For example, a NAS can simultaneously tunnel to VPN servers on both a business and a client site. This allows backups using the Backup Station, as well as remote connections using Samba in File Station for secured data transmissions.



Simultaneous VPN server and VPN client roles

A NAS can simultaneous serve as a VPN server and VPN client. This way, VPN servers that are part of the NAS can be connected to different network interfaces according to NAS settings to access devices on the network and connect to the Internet. For example, you can configure the NAS to be a VPN server to allow secured access to Intranet resources from remote devices. You can also set up the NAS to connect with other VPN servers for services such as Netflix and Hulu via HD Station, bypassing regional restrictions on these services.



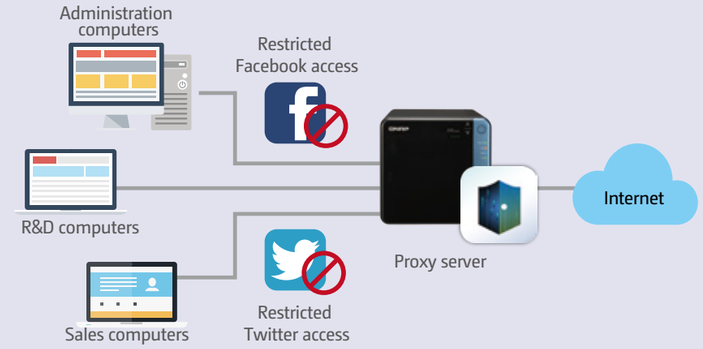
VPN Server, VPN Client, and L2TP/IPsec VPN services have been integrated into the QVPN Service. To use VPN-related features, install the QVPN Service from the App Center. Existing VPN-related settings will be automatically retained.

Proxy Server

The Proxy Server provides an intuitive interface to simplify proxy server settings on your NAS. You can 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 times and security, this application can turn your NAS into a web proxy server to protect other devices in your local network from Internet attacks.

Highlighted Features

- Caching: Improves response times and saves bandwidth required for web access by caching visited web content and other web resources. You can access cached content without consuming any bandwidth.
- Content Control: Restrict or limit connectivity to web sites, servers, or computers.
- Maintain logs: Records user behavior in log files, which can be used to analyze user habits and interests.
- Antivirus: QNAP is integrated with SquidClamav, an antivirus suite for proxy servers, which scans each package received through the proxy server. QTS also supports file and account whitelist settings that allow you to select trusted content (only supported by x86-based NAS).
- Advanced Settings: Users can enter Squid commands to customize the proxy server, edit cache settings, and access controls without an SSH tool.
- Smart Blacklist: After updating to Proxy Server 1.3.0, you can enable Smart Blacklist, which uses SquidGuard technology. Once you have enabled the blacklist function in the Proxy Server and downloaded the pre-defined blocking list, you will be able to block all of the classified sites at once. The blocking list can be updated at any time, so you no longer need to manually block any single site. The smart blacklist also provides a query function that can quickly confirm whether a particular site is blocked among tens of thousands of sites.

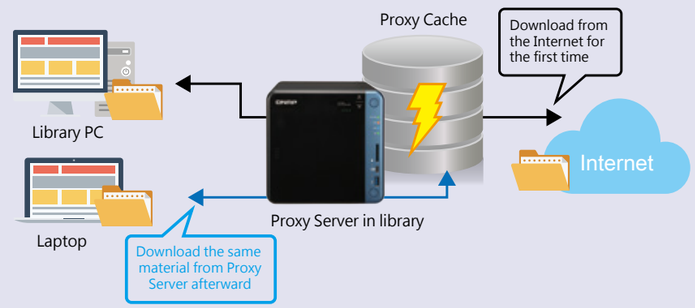


Ideal for Proxy Server deployments

The Proxy Server uses storage space on the device as temporary cache to conserve external connection bandwidth and enhance network efficiency. This is an ideal role for a NAS due to the high storage potential and the ability to allocate resources to dedicated cache functions. Because it is on the NAS, caching proxies can also benefit from RAID configurations (RAID 5, RAID 6, etc) and/or high performance storage (SSD) configurations to provide significant performance improvements.

Application scenario: Proxy Caching - bandwidth savings and application acceleration

In a university library, a client computer often downloads large journals and research papers. This uses a lot of bandwidth and is extremely time consuming. Applying the Proxy Server on a QNAP NAS in this library's network environment can help create a high-performance cache space. Frequently-accessed papers can be stored on the NAS and can be retrieved directly from the internal network when needed. Not only does this save time, it also lowers the library's bandwidth costs.



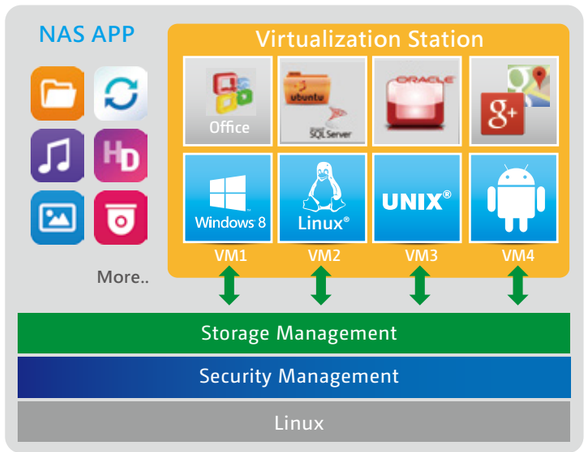
Comprehensive Virtualization Platform

Virtualization Applications

Perfect virtualization applications can be found on the QNAP NAS QNAP provides Virtualization Station and Container Station to meet different needs. Virtualization Station completely revolutionizes the underlying network architecture and significantly improves network performance. It is especially useful when complete and independent operating systems are required for running applications, and which must be securely isolated from the host. Container Station supports common platforms like Docker® and LXC (Linux Containers) and is useful for rapid deployment, high availability and application service-oriented lightweight virtualization. By sharing the kernel with the host system, you can apply this on various cloud service platforms that support Docker®, without installing the operating system.

An all-new experience with further backup advancements

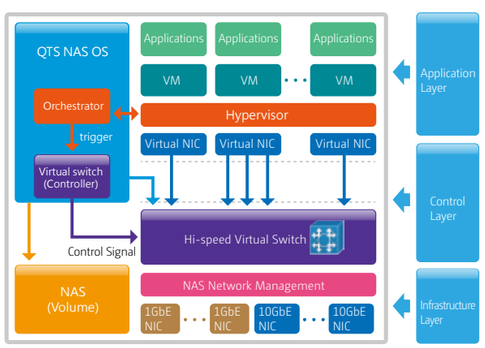
Virtualization Station 3.0



Virtualization Station comes with an intuitive and simple-to-operate interface, which significantly reduces operating time. Virtualization Station eliminates the constraints of conventional virtual machines to provide a better user experience. Create multiple virtual machines that use Windows®, Linux®, Android™, or UNIX® to serve multiple purposes. One QNAP NAS can replace numerous physical servers and devices.

Software-defined Networking

By adopting a Software-defined Networking (SDN) approach, virtual machines can now share the network interface with the QNAP NAS to maintain the best data transmission speed without being limited by hardware resources. The SDN architecture comprises the application layer, controller layer and structure layer. Virtualization Station (the Application Layer) can be used for running and managing virtual machines; the VM Orchestrator is used for receiving signals from the Virtualization Station for task scheduling. When the Virtualization Station orchestrator receives a transmission request from the Hypervisor, the orchestrator will signal the vSwitch Controller (the QNAP NAS network controller), and then the vSwitch Controller will dynamically adjust the Hi-speed Virtual Switch so that virtual machines can connect with the Physical Networks or NAS storage for data communication. By employing a high-performance virtual switch, virtual machines are no longer limited by the transmission speeds of the physical NICs when transmitting data between virtual machines or between virtual machines and the NAS.

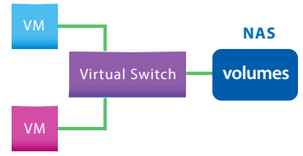


Virtual Switch

Virtual Switches allow virtual machines to share network interfaces with the NAS, eliminating the need for a dedicated VM network. Bypassing the need to transfer data through physical networks also boosts transfer rates between virtual machines and the NAS. The Virtual Switch also supports 10GbE and port-trunking, providing fast and secure connectivity.

Host Network (Host)

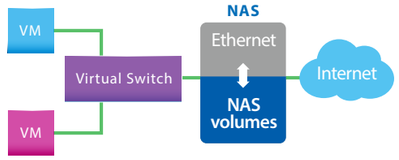
No external physical network interface is required to provide an internal high-speed transmission environment between the virtual machine and the NAS.



Bridged Networking

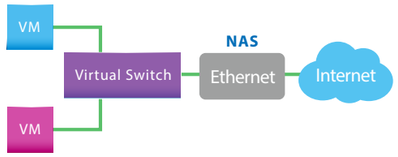
Attaching an Ethernet interface (Port-trunking available*) to a Virtual Switch creates a bridged network. Through internal network communication, you can have high-speed file transfer without using a separate network interface, thus saving 10GbE network connection ports.

✎ Only supports the following Port-trunking modes: Active Backup, IEEE 802.3ad, Balance-tlb.



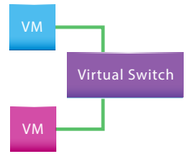
External-only Networking

Specify an Ethernet interface for a Virtual Switch to enable dedicated routing between virtual switches and external networks. Enable DHCP to automatically assign an IP address to a Virtual Switch or choose to manually assign an IP address.



Isolated Network

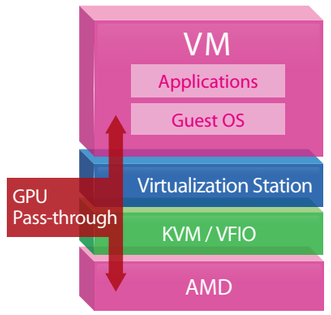
A network is isolated if the Virtual Switch is unable to connect to any Network Interface. Virtual machines connected to the switch can communicate with each other by manually configuring the virtual machine's IP addresses, but they will be unable to communicate with the NAS or external networks.



GPU Pass-through

QNAP NAS uses Intel® processors and Intel® VT technology, and through independent processing units, virtual machines can provide a secure computing environment (for example: Ring authority classification in a processor). It effectively segregates computing resources, so there's no need to worry about resource over-allocation. In addition, with Intel® VT-d-supported I/O Pass-through, a virtual machine is able to utilize GPU Pass-through. The graphics card can be allocated to a virtual machine, and the virtual machine's graphics performance will be enhanced. OpenGL, Direct X and APIs are also supported.

The GPU first establishes communication with Linux® lower layer modules (KVM/VFIO), then connects to the virtual machine in Virtualization Station. Even though GPU Pass-Through goes through two layers, the performance is still over 80%. The following figure shows test scores with DirectX.

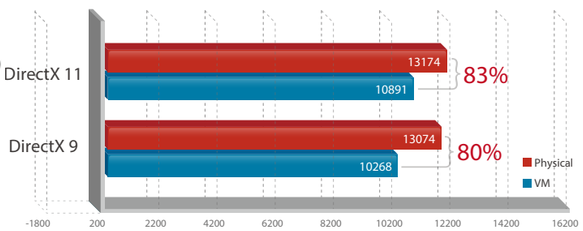


✎ GPU Pass-through is only available on the TVS-ECx80U, TS-ECx80U, TVS-x82, TS-1685, TS-x77 and TDS-16489U models.

✎ Always check the compatibility of a graphics card before purchase - including the physical space and power requirements .Check www.qnap.com for more information.

AMD RX 480

APIs support: DirectX ® 12, Mantle, OpenGL ® 4.58, Vulkan ™, and OpenCL ™ 2.0
PCI EXPRESS ® version: 3.0
4K resolution support: Yes
GPU clock speed: up to 1266 MHz
Required power connectors: 1x8 pin
Overall dimensions: full-height, small package, dual-slot



NAS:TVS-1282
Processor: Intel (R) Core (TM) i5-6500 CPU @3.20GHz
Graphics card: PowerColor RX 480 (AXRX 480 8GBD5-M3DH)
Hard drive: Micron MX300 525GB
Memory: 16GB DDR4

Supports QVM 4K and audio output

Using QVM in HybridDesk Station, a VM can be used as PC by attaching a keyboard, mouse, and HDMI display to the NAS. Unlike using an HTML5 web browser to connect to the virtual desktop (which only supports 1080p output with no audio), QVM provides 4K output with analog audio, and can be used for other multi-purpose applications, such as video services.

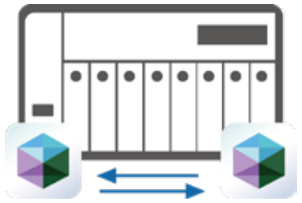
- Only some models are supported.
- Web browser (HTML5) opens the virtual machine desktop using noVNC transport protocol. This transfer protocol does not include audio transmission. If you require audio output, use Windows® Remote Desktop Connection and SPICE Client. For more information regarding using the SPICE Client, refer to the "Tutorials and FAQs" section on www.qnap.com

Easily set up VM Backup and Restore tasks

Virtualization Station is task-oriented and supports local and remote backup and restore. You can see task progress and schedule in real time through a unified management interface, and you can also start or interrupt tasks. In order for virtual machines to run without service interruption, Virtualization Station supports online backup. You can also set up schedules and upper limits for backups in order to effectively use storage space. It also supports backup directly through the virtual machine while creating local restore tasks, thus reducing downtime during a restore.

Support for Remote Import and Export

Through virtual machine import and export, your virtual machine can be quickly provisioned in Virtualization Station, or other virtualization platforms (Hypervisors).



Support for USB Pass-through

USB devices connected to the QNAP NAS can be used in hosted virtual machines. General USB storage devices, card readers, keys, sensors, and other devices such as bar code scanners can be passed-through for usage on a virtual machine. USB 3.0 devices are supported by USB Pass-through.

- Currently only supports Windows® 10, Windows® 8.1, CentOS 7, Fedora 16, RHEL 7, Ubuntu® 14.04, General Linux® 3.4.6 (or later) operating systems.

Exclusive virtualization technology

When you need to download files from a QNAP NAS to a local computer, if the file is too large, it will take a long time and require significant bandwidth. With Virtualization Station, you can open the files directly on a virtual machine, without wasting any time and bandwidth. In the past, certain file formats on a QNAP NAS could not be directly opened, and had to be downloaded to a local computer to open it. If your computer has not installed (or cannot install) the corresponding application, you are often unable to open files on the QNAP NAS. However, by using applications in a virtual machine, you can directly view files using virtual machine in different browsers.

Virtualization Applications

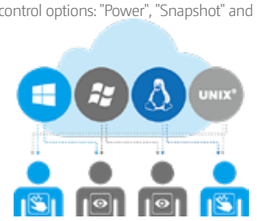
Saving bandwidth and time

When you need to download files from the NAS to a local computer, if the file is too large, downloading the file will take a long time and also take up bandwidth. Through virtual machines installed on QNAP NAS and their applications, you can open the files directly on the virtual machine, saving both time and bandwidth.

User-based permissions settings

Virtualization Station administrators can create users for virtual machines, and set user different permissions. Because each user's needs and purposes vary, from an administrator's perspective, setting up user permissions can enable the administrator to more effectively manage virtual machine usage and resource allocation. From the user's perspective, being able to use the virtual machine independently means that they don't need to worry about incidental actions of other users (for example: power off the virtual machine) resulting in data loss or risk of possible application service interruptions.

- Remote Desktop Permissions: "Control" and "View".
  Virtual machine control options: "Power", "Snapshot" and "Advanced Settings".

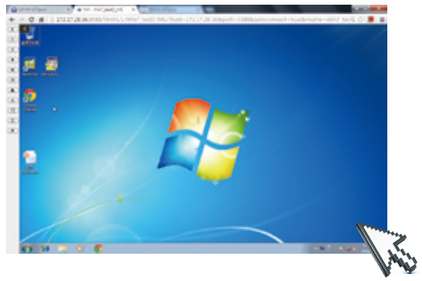


Enhanced security

Through a virtual machine on QNAP NAS and its installed applications, you can directly open and run files on a virtual machine, so that all information during the operation are kept inside the QNAP NAS, avoiding data transmission and potential interception.

Operate Virtual Machines as Remote Desktops

Install an operating system on a virtual machine, and operate and manage the virtual machine using a web browser. You can also stop the virtual machine, force the virtual machine to shut down, reboot, shutdown, backup a system snapshot, use Ctrl + Alt + Del on the virtual machine, and open a keyboard and perform other operations.

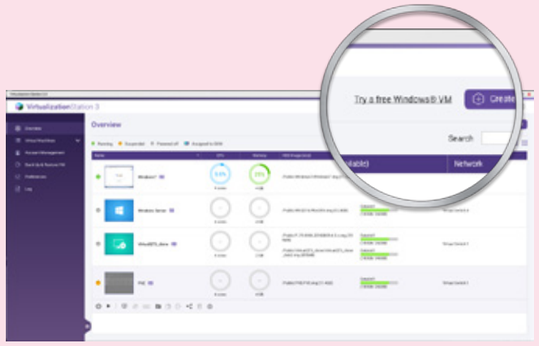


Special column

Windows® virtual machine one-click deployment

Microsoft® allows users to download a Windows virtual machine. After downloading, you can set it up and use it in Virtualization Station.

- The Microsoft® virtual machine is for testing purposes only and it will expire after 90 days. It is recommended that you create a snapshot when you first install the virtual machine.



Rapidly deploy container-based applications

Container Station 1.7

With the development of Internet applications and cloud platforms, virtualization has become the only way for an enterprise to enter the cloud environment. QNAP has launched a software container workstation, further streamlining the operating system. With this lightweight virtualization technology, developers and IT managers can easily and freely switch among PC, QNAP NAS and the Cloud. You can use your PC as a development environment, and after completing each stage, containerize the completed software and operating environment, then upload it to the DockerHub™ or export and save to the NAS. At the same time, other project members such as testers, project managers, customers or other developers can download and test the software, or continue to the next stage of development. Through interconnection of Container Station, whether it is QNAP NAS, PC, virtual host or cloud computing, all could become a part of software development.

A growing number of popular apps

Container Station currently provides the most popular and pre-configured applications, and you can rapidly deploy them . The following applications are currently available: LibreOffice, MongoDB, Nginx, Nodejs, Redis, MySQL, WordPress, Deluge, Minecraft, Wine, Jenkins, GitLab, Redmine, Joomla!, OpenERP and more.

Two virtualization technologies to bring even more value to your NAS

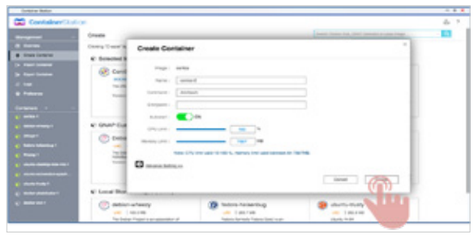
» LXC- lightweight Linux® virtual machine: Complete Linux® virtual machine execution using LXC within NAS. Can install Ubuntu®, Debian, Fedora and other Linux® virtual containers, with complete operating system functionality.
» Docker®- rapid deployment of a large number of applications: Implementing Docker lightweight Microservices on NAS.

Install-on-demand applications

Search for official or third-party software directly through the Docker Hub Registry. Whether it is a database, web server, programming language or development tool, you can click and install, just like downloading an app on a mobile device.

One-click installation

The Container Station Installation Wizard eliminates complicated setup process, can automatically detect system configuration, and helps you complete installation. Just click “Setup" to immediately start enjoying rich containerized applications.



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Supports ARM-based NAS

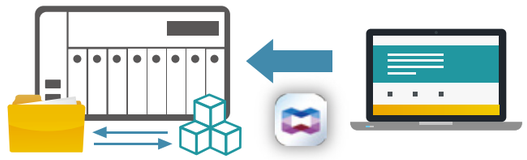
QNAP's entry-level models (TS-231+, TS-431+, and TS-531P) are the first ARM architecture NAS with dual LXC + Docker® support.

Access shared folders

Mount folders directly inside software containers or mount folders from other containers. Data generated by the app can be saved at a speed nearly as fast as the host machine.

Export/import software containers

Easily export software containers along with data contained in it to any shared folder. The import/export function not only provides container backup, it also makes container transfer between different QNAP NAS more convenient.



Resource management

Through data visualization, you can view host resources at a glance through a browser, and monitor resource usage of each container at the same time, therefore you never get confused whatever the number of installed containers. In addition, you can also set an upper limit of CPU and memory use for individual containers to adjust your NAS for best performance.

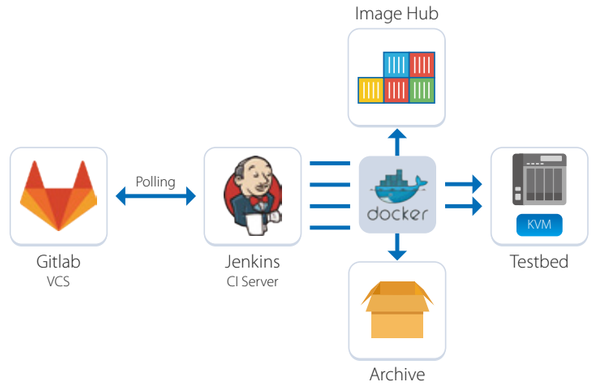
A variety of built-in productivity tools to support additional formats

» Powerful office suite software LibreOffice®: Writer (word processing), Calc (spreadsheet), Impress (PowerPoint), Draw (graphics and flow charts), Base (database and its front-end interface), and Math (mathematical editor).
» Use Pinta for graphics drawing or photo editing: useful image editing software, supports JPEG/JPG, Tiff, TGA, PNG, ICO, BMP and Open Raster, with more functions than Painter.
» Text editor Emacs: highly extensible, very popular among programmers and other technology-oriented PC users.

Easily create a continuous integration development environment

No need to memorize complicated program settings, through the popular apps in Container Station and with the one-click install feature, all settings are automatically and completely loaded, so that app developers can quickly and easily create integrated development environment.

Recommended Quick Install applications: Private Registry, GitHub, Jenkins.

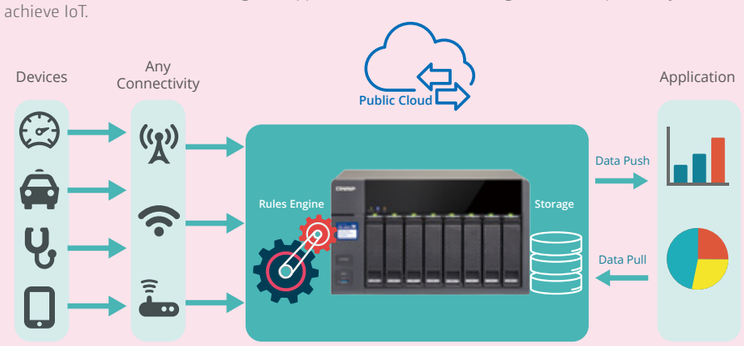


Special column

QIoT Containers - rapid development of an IoT private cloud

The IoT operational framework comprises the perception, network and application layers. Perception layer includes: objects to be detected, sensors, gateways and other components, which are used to identify the objects, and collect and transfer information to the network layer. The network layer is responsible for transmitting detected information to the application layer applications. The application layer is where various information is combined and visually presented, in order to meet the different business needs of enterprises.

IoT technology is based on current sensors, networking and application software technologies. An enterprise only needs to further integrate and interconnect them to achieve IoT.

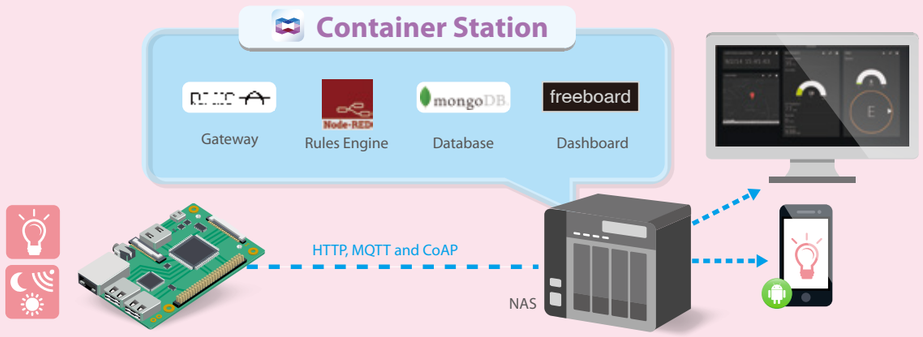


Container apps designed specially for IoT

QIoT Containers rapid development example: Container Station provides Ponte, Node-RED, MongoDB, Freeboard and other dedicated IoT software containers to create IoT environments. A typical IoT architecture combines sensors with the development versions available in the market (such as Raspberry Pi), Ponte (data receiving), Node-RED (data analysis), MongoDB (data storage) and Freeboard (data presentation) on QNAP NAS.

Container Station v1.6 provides recommended IoT applications, such as:
· Kafka · RabbitMQ · MQTT · Freeboard · Node-RED
· Redis · MongoDB · Ponte · Dashing · Freeboard

Module	Protocol converter (Protocol converter)	Message broker (Message broker)	Rules engine (Rules engine)	Database (Database)	Presentation (Presentation)
Description	QNAP's QBridge can be used to bridge two different protocols in the Field Gateway.	Responsible for receiving messages, parsing, and then sending out the message.	Processes the received message, and gives your devices (Things) the ability to interact with a particular service.	Use a NoSQL database to capture and manage large amounts of data from sensors, devices and gateways.	Usually through a mobile device, a wearable device, and a web/ device app. Monitor and control Internet of Things devices.
Software container	QNAP QBridge	Kafka Ponte RabbitMQ	Node-RED Blockly	MongoDB Redis MariaDB	Freeboard Dashing



QIoT breaks limitations and brings unlimited application potential

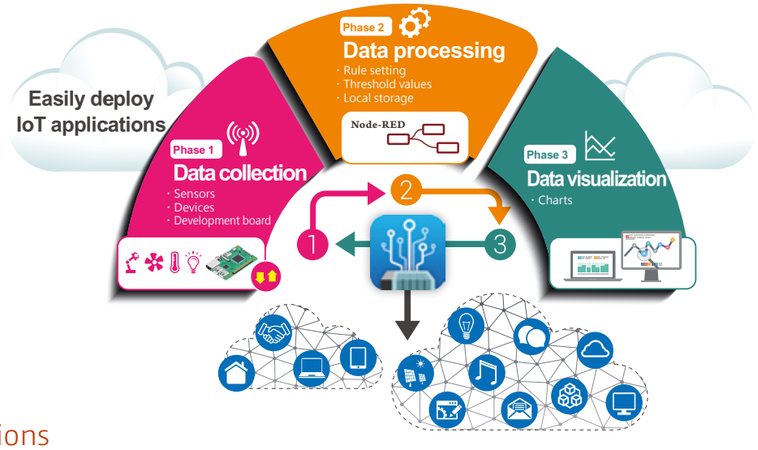
QIoT Suite Lite

After launching QIoT Containers, which helps users to build an exclusive IoT private cloud platform, QNAP introduced QIoT Suite, providing more practical modules that can be immediately used by developers to accelerate the development and service process. NAS is no longer just a data storage device, it also helps developers to explore new ideas and put them into practice, to be one step ahead in the IoT field.

Developing innovative IoT applications becomes much easier

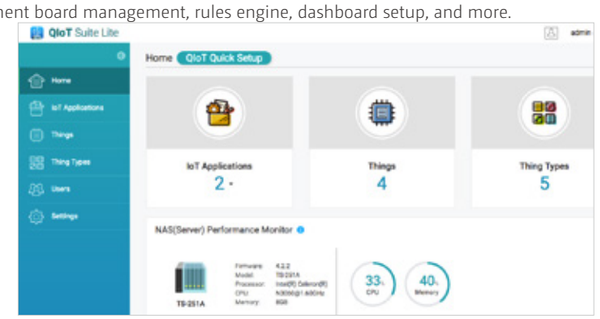
QIoT Suite Lite

QNAP NAS not only stores your data, but also has a Launchpad, which allows you to use QIoT technology to develop potential IoT business opportunities. Following the launch of QIoT Containers which can build a private IoT cloud platform, QNAP is now releasing the QIoT Suite Lite tool, a very practical IoT development application suite with built-in utility modules for developers and system integrators to accelerate the development of IoT services. .



IoT Applications

QIoT Suite Lite can help you quickly deploy a variety of IoT applications and helps developers find various packages. QIoT Suite Lite can be used for user management, development board management, rules engine, dashboard setup, and more.



Rules Engine

The NodeRED-based rules engine makes it easier to develop IoT applications, and QIoT Suite Lite provides custom nodes to help developers handle messaging and data presentation.

Dashboard

The built-in Dashboard shows development board and sensor information at a glance. This information can be presented in different ways, and can be output to Freeboard, Microsoft PowerBI and other information tools.

QIoT Suite Lite supports MQTT, HTTP and CoAP protocols, and provides MQTTs and HTTPs, so developers do not have to worry about connection security. QIoT Suite Lite can be used as an IoT center of a private cloud. It can also be used as a medium for other network services, such as wearables and smart home applications.

QIoT Containers

Features
Provides practical containerized modules.

Advantages
Flexible customization and selection of IoT modules to suit your needs.

Target audience
IT enthusiasts who want to experiment with new software modules and are familiar with integration.

QIoT Suite Lite

Features
Turnkey solution with connection mechanisms, rules engine, and dashboard.

Advantages
Easy setup and integration with a stable platform.

Target audience
Makers looking to easily connect and develop IoT systems.

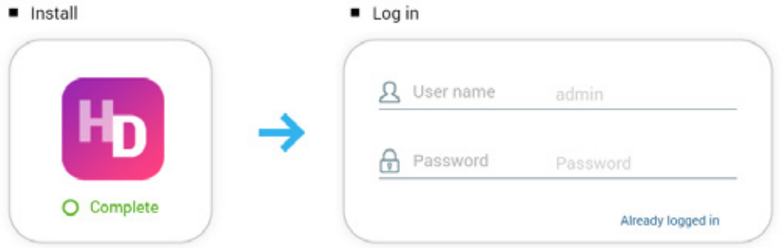
Customize your QNAP Remote Control (RM-IR004) with QButton to enjoy a more convenient NAS digital experience

QButton

QButton combines QTS App functionality, allowing you to set up button functions of QNAP RM-IR004 remote control to easily experience IoT convenience. You can experience even more convenience by using the voice prompt feature. Download QButton from the App Center, assign buttons to events, and then you can get things done with a single button press.

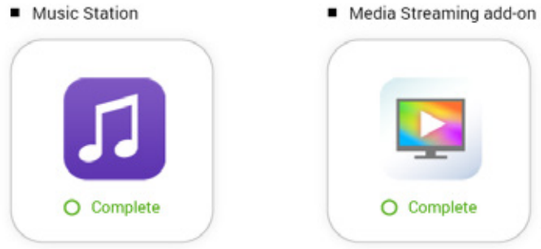
Simple three-step installation

Step 1: Install and login to HybridDesk Station.



Step 2: Connect the NAS to an HDMI display.

Step 3: Install Music Station and the Media Streaming add-on



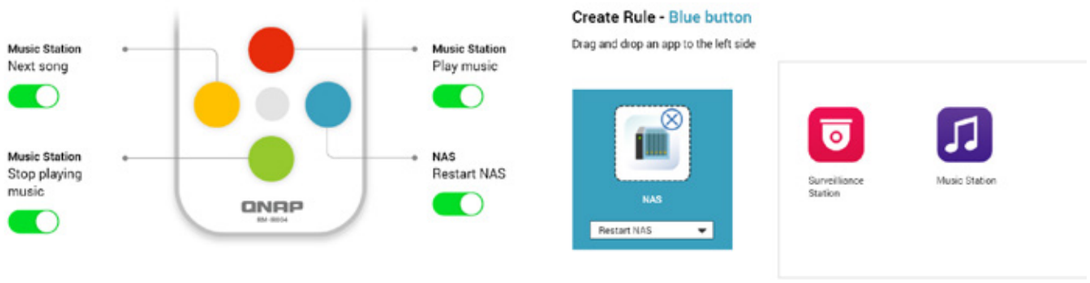
It's easier to play music, monitor camera channels, or reboot/shut down the NAS

Play your favorite song list and set other buttons to play the previous or next track.

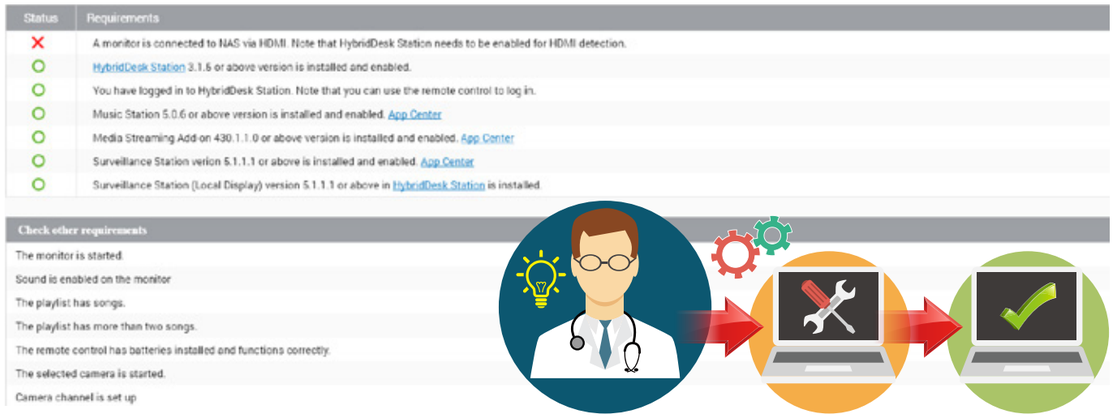
Watch a Surveillance Station camera channel and monitor security.

Quickly restart or shut down the NAS.

Simple rule settings



Troubleshooting page allows users to quickly find answers and troubleshoot problems



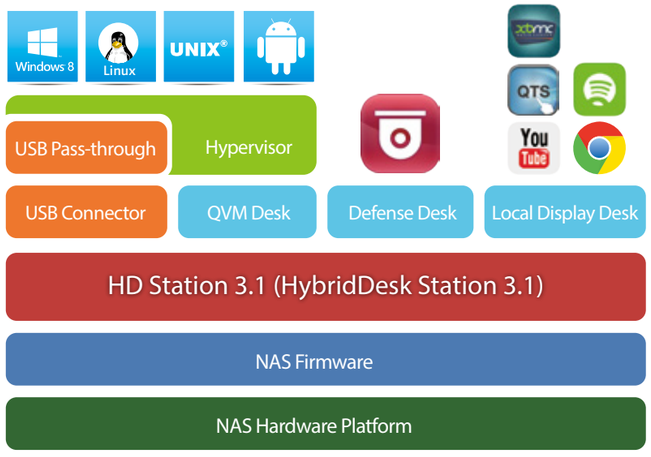
Status	Requirements
✕	A monitor is connected to NAS via HDMI. Note that HybridDesk Station needs to be enabled for HDMI detection.
○	HybridDesk Station 3.1.6 or above version is installed and enabled.
○	You have logged in to HybridDesk Station. Note that you can use the remote control to log in.
○	Music Station 5.0.6 or above version is installed and enabled. App Center
○	Media Streaming Add-on 430.1.1.0 or above version is installed and enabled. App Center
○	Surveillance Station verion 5.1.1.1 or above is installed and enabled. App Center
○	Surveillance Station (Local Display) version 5.1.1.1 or above in HybridDesk Station is installed.

Check other requirements
The monitor is started.
Sound is enabled on the monitor.
The playlist has songs.
The playlist has more than two songs.
The remote control has batteries installed and functions correctly.
The selected camera is started.
Camera channel is set up.

Use your NAS as a PC

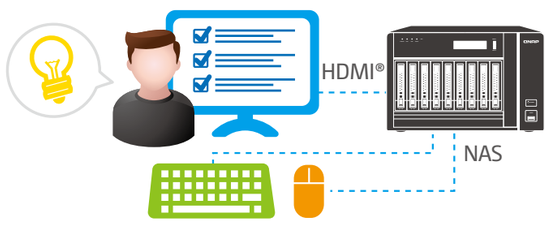
QvPC

QvPC technology (QNAP Virtualized Personal Computer) is a result from the R&D efforts of QNAP following SDx (Software-defined Anything) trends through continuous development and improvement in software and hardware technology. By connecting a keyboard, mouse and HDMI display to the NAS, you can transform it into a real computer, making QNAP NAS a cost-effective dual-purpose machine with superior functionality.



After purchasing a NAS, the next step is usually to use an installation CD to install software and to find the NAS in the network, or connect to the vendor's web site for installation. For users with no network knowledge, the installation process may be difficult. QNAP NAS is clearly the best choice for storage. With QvPC technology users only need to connect the QNAP NAS to a keyboard, mouse and HDMI display and then follow the on-screen instructions to install and set up. It's just like using a PC, and even users with no network knowledge can quickly set it up. All files are protected through RAID data protection, and can be accessed through the Internet at any time.

NAS Passive installation: Needs an installation CD or website. For the average user, it can be too complicated.



Streamlined installation: Simply connect a keyboard, mouse and HDMI display and follow the on-screen instructions to complete the installation.

Local output, fast and convenient

HD Station 3.1

HD Station is very easy to use. By connecting the NAS to an HDMI display, you can enjoy a streamlined installation procedure with up to 4K video output *. This way, you not only avoid the complex setup of network media players, but you can also use your NAS as a Home Theater PC for direct multimedia enjoyment.

Not all QNAP NAS models support 4K output.

A wealth of apps

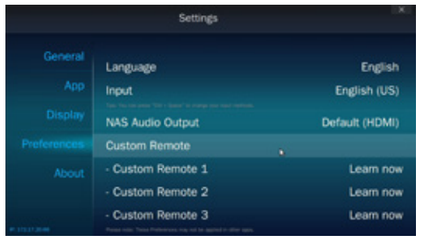
In addition to QNAP's own apps, HD Station supports a number of popular multimedia players (HD Player, Plex Home Theater, DeaDBeeF, Clementine), web browsers (Chrome™, Firefox) and other multimedia platforms (YouTube, Spotify, TuneIn Radio) to provide you with complete entertainment features.

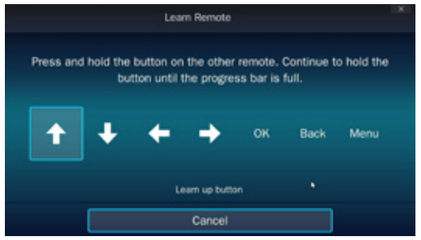
Multilingual input and improved multitasking

HD Station supports multi-language input methods, allowing you to use your preferred language. HD Station also supports multitasking. In the past, HD Station could only display one app at a time. Now users can switch between multiple apps for convenient and handy use.

Customizable remote control - no need to buy a dedicated remote control

HD Station provides remote control learning and memorizing functionality. With the ability to use your own remote controls, it can assist in reducing clutter in the living room. Just follow these two steps to pair an infrared remote control with HD Station.



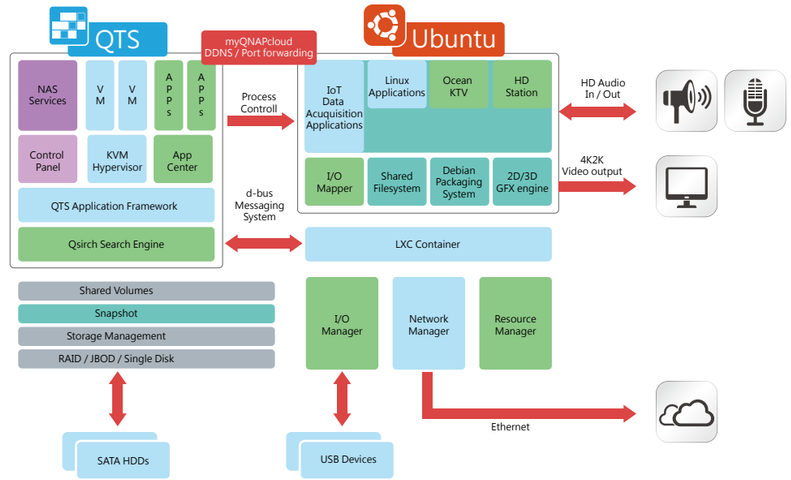


1. Go to “Settings“ > “Preferences“ in HD Station, find the Custom Remote option, and select “Learn now“.
2. Press the corresponding buttons on the remote control to pair it. When pairing, press and hold the corresponding button until the progress bar finishes.

System requirements
»HD Station 3.1.1 (or later) » Supported Hardware: TS-x53A series NAS» Supports up to three custom remote controls »Some remote controls may not support this feature.

In line with the IoT era

Linux Station 1.5



QNAP has perfectly integrated QTS and Linux® using advanced virtualization technology. Download Linux Station from the App Center and connect a keyboard, mouse, and HDMI display to use your QNAP NAS as if it were a Linux® desktop. Being able to use Linux® to develop more apps also makes NAS the best solution for secondary IoT development and applications. Using Linux Station, you can freely switch output resolutions and even enable remote connection to access it using a web browser.

Supports Ubuntu and Ubuntu Kylin.
Container Station is required to use Linux Station.
Linux Station requires a QNAP NAS with more than 4GB RAM. Remote desktop supports remote audio output through sound streaming mode.

Easily switch between HD and Linux® dual HDMI display interface

When using HDMI output, you can choose to output HD Station simple mode, or Linux® Advanced mode. The current display mode can be set in “Control Panel“ > “Apps“ > “HybridDesk Station“.

Linux® Advanced mode interface

You can install any package, customize the 3D desktop environment, and preset multiple desktops using thousands of themes, so that NAS can be used as smoothly as a PC.

HD Station simple mode

With a simple and intuitive interface, and support packages (such as: HD Player, YouTube or JRiver etc.), the NAS can be used as a general multimedia player. An infrared remote control or the Qremote mobile app can be used for convenient operations.

Special column

Qremote - Easy to get started

In addition to a keyboard, mouse, or QNAP remote control, you can also use the Qremote mobile app (for iOS and Android devices) that turns your mobile device into a remote control. Qremote offers four modes: app shortcuts, simple remote control, touch panel or keyboard mode, allowing you to enter text and operate in an easier manner.

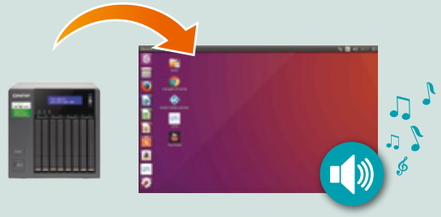
Special column

Linux Station VNC and Streaming Solution

Video Streaming Remote Desktop

With its support for audio and video streaming, you can receive audio output from local sources without installing any additional client program, even if the Linux® desktop is operated through a web browser. Whether it is entertainment or for advertising, you can remotely run media applications such as Kodi, HiRadioTray, Me TV and more.

Remote desktop operation using the VNC protocol currently has no audio output. To use remote desktop with audio output, switch to voice streaming mode.



Maximize the value of your QNAP NAS

Productivity tools

QNAP provide many apps that allow you to fully use the data on your QNAP NAS to increase productivity and enjoy a more convenient and secure service.

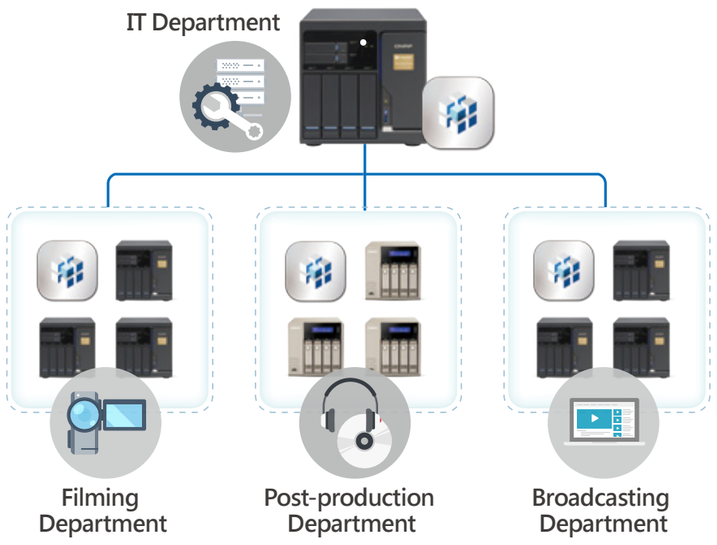
Multiple QNAP NAS management platform

Q'center 1.5

In the past, if an IT manager needed to manage multiple QNAP NAS, they would need to log into each NAS to check the system status of each station. Q'center provides a central management platform that is used to centrally monitor and manage multiple QNAP NAS. Through rapid deployment, real-time data collection, visual reports and other features, IT staff can work more easily and efficiently.

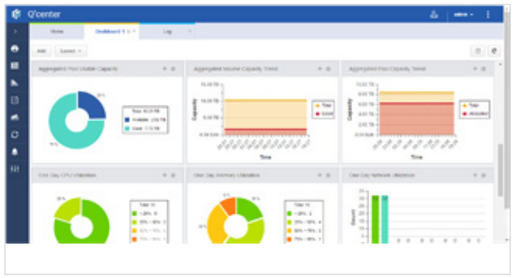
The Best Utility for IT Administrators

Q'center is a powerful QNAP NAS management tool. With visual summary charts, you can easily manage the disks, capacities and health status of multiple QNAP NAS through Q'center. In a LAN environment, you can install Q'center on one QNAP NAS and use it as a management server, and set other QNAP NAS as clients, then all system information of the other QNAP NAS can be viewed on the Q'center interface. Q'center is a great tool for IT resource allocation and storage planning.



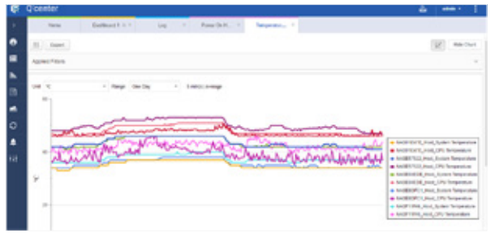
Central Management Platform

The central dashboard enables you to quickly view all QNAP NAS system status, and view QNAP NAS system logs for troubleshooting. You can also customize the dashboard, to display preferred content and alerts.



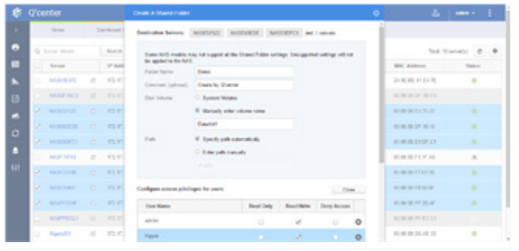
Visualized Statistics

Visualized data and messages allow you to quickly grasp the system status of all QNAP NAS, such as: storage utilization, shared folders usage, hard disk IOPS, latency, CPU usage and other useful information. This information can then be used for storage system usage trend analysis.



Unified large-scale deployment

Besides monitoring and recording NAS usage, Q'center also allows you to change multiple QNAP NAS system settings and network services all at once, while more advanced operations allow you to install QTS apps and firmware, create new shared folders, and set access permissions. All these features can significantly improve the operational efficiency of data centers when managing multiple storage devices.



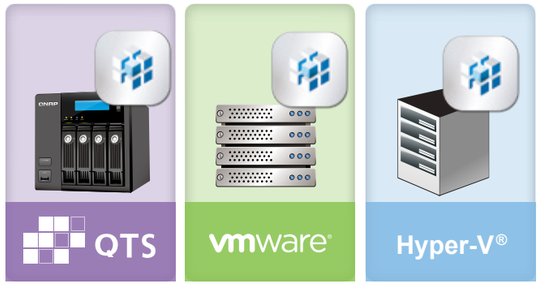
Managing QNAP NAS behind a firewall

By using Q'center Assistant, a QNAP NAS client can actively initiate a connection with a Q'center server. You no longer need to set up complicated router or VPN connection settings.

Installing on a virtual machine

QNAP also offers Q'center virtual applications for VMware® and Windows®Hyper-V®. This version of Q'center can be installed directly on a virtual machine, which not only makes it more flexible for IT staff, but also enables Q'center to manage more NAS*.

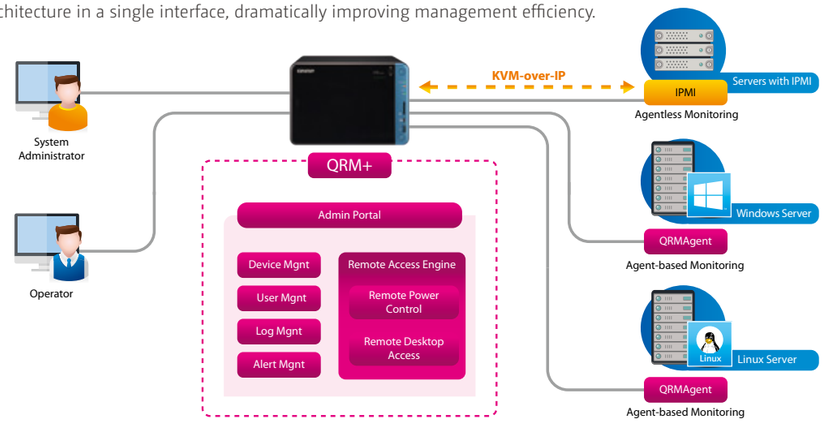
- Basic requirements for up to 100 NAS: 4 virtual CPUs, at least 1GB RAM and 108 GB storage.
- Between 100 and 500 NAS: Dedicated server, Intel i5 quad-core (or similar), at least 8GB RAM and 500GB custom storage space.
- More than 500 NAS: Dedicated server, Intel i5 quad-core (or similar), at least 16 GB RAM and 1TB custom storage space.



Integrated solution for remote server and PC management

QRM+ 1.0

QRM+ is a centralized remote server and PC management integrated solution. It is designed for IT equipment management personnel and can monitor and control the health status of all important servers in your network. In addition, as long as the lightweight QRMAgent is installed on Windows® and Linux® devices, information on remote Windows and Linux devices can be seen at the QRM+ management platform, including: CPU usage, memory usage, hard disk usage, network usage and power status. With QRM+, you can quickly manage your IT equipment and understand its architecture in a single interface, dramatically improving management efficiency.

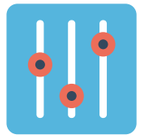


- Container Station is required to use QRM+.
- QRM+ is only supported by specific models. See www.qnap.com for more information.

Key benefits

- Enhance control over mission-critical servers.
- Detect, respond, monitor and manage network resources using a single platform.
- A central web-based management platform.
- Supports agent-based (QRMAgent) and Agentless (IPMI) control. Supports IPMI 2.0.
- Tracks important system parameters of all devices, and provides advanced alerts and event management.
- Generates reports to help analyze the performance of networked resources.
- Supports multiple platforms (including Windows® and Linux®), simple and fast setup and maintenance through QNAP's proprietary QRMAgent (Lightweight remote management proxy service). Save time in troubleshooting, quickly restore systems to an operational state.
- Reduce management and maintenance-related costs. Maximize IT staff productivity.
- Effectively reduce downtime.
- Easily track real-time / historical data to predict future trends.

Detect



Control

Monitor

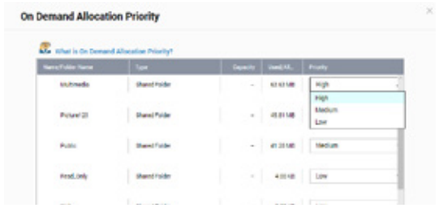
Real-time/historical data trend analysis

Customizable Dashboards

IT managers often face the problem of insufficient information or collected network information being illogical and of no decision value, thus being unable to solve the problem. QRM+ dashboards provide proper assistance. You can monitor all devices and associated parameters through graphics and reports, and customize the dashboard according to your personal preferences; a variety of graphical tools makes it much easier for you to manage. You no longer need to open multiple windows to get more information and view each server. QRM+ unifies all these into a single window, allowing you to manage it more conveniently.

Device discovery and topology

QRM+ can identify all devices on your network, including host computers with Windows/Linux, high-end servers with IPMI, or other devices. By scanning the specified IP range, you can discover all your network devices, while QRM+ can also display discovered devices in a network architecture diagram. You can also customize the diagram. The network architecture diagram can quickly provide an overview of the network environment, graphically present connected devices, and help you quickly understand and find out where problems occur.



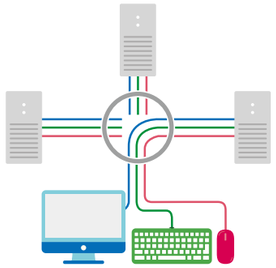
Web-based management

QRM+ is a web-based centralized management platform. IT management staff can login and operate QRM+ from anywhere. QRM+ also supports detects multiple system information (for example: CPU usage, memory usage, disk space usage, CPU temperature and CPU fan speed) so that you can easily view all system conditions.

Remote KVM solution for IPMI

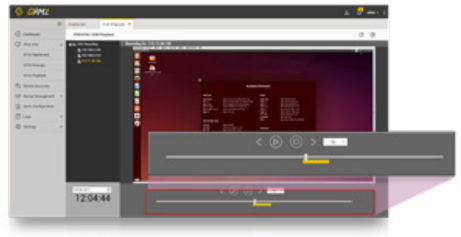
Multi-channel/centrally-managed remote KVM solution is suitable for servers with IPMI functions. Even if the server is in powered off or in BIOS mode, QNAP's proprietary KVM Proxy solution allows you to remotely control it. QRM+'s KVM solution is also multi-channel, allowing different users to connect to remote servers via KVM simultaneously. With noVNC and RDP technology, QRM+ also allows devices without IPMI to support Remote Desktop. In addition, QRM + also supports Remote SSH connections.

- Manage through KVM over IP remotely in a browser.
- IPMI KVM currently only supports Supermicro® and IEI Technology Inc. devices.



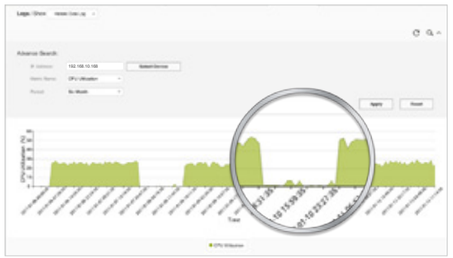
Remote KVM recording and playback

KVM recording saves KVM data as videos. You can record all events by date and time and play the recorded data. This helps users to record all actions on the server and enhances system security.



Three features in one: alert creation, log analysis and trend tracking

- Easily create alerts/manage events.
- Log management to view overall IT activities.
- All IPMI sensors trigger status, real-time/historical data trend analysis for all parameters.



Special column

QRMAgent

QRMAgent is an agent developed by QNAP to be installed on a client. QRM+ can monitor and manage devices through this agent. When you want to add the client to the QRM+ server, the system will automatically install the agent, or you can also install it manually.

QRMAgent currently supports the following operating systems:

Platform	Operating System
x86 - Windows	Windows XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2012
x86 - 64 - Windows	Windows Windows Vista/7/8/8.1/10, Windows Server 2003/2008/2012/2016
x86 - 64 - Linux	Ubuntu 12.x/14.x/16.x
x86-64 - CentOS	CentOS 6, CentOS 7
x86-64 - Debian	Debian 8

Workflow automation to improve work efficiency, making QNAP NAS even more powerful

IFTTT Agent

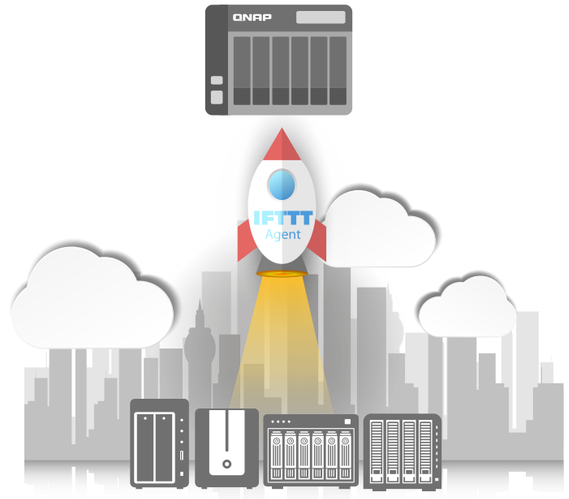
The Internet has become an indispensable part of our daily lives, and more and more Internet services, devices and platforms have emerged. In an effort to make routine work more automated, "Workflow Automator" software has emerged. Such software allows users to create small application processes. One application can trigger another application to react to it, thus providing the opportunity for productivity to be boosted.

IFTTT Overview

IFTTT ("If This Then That") is a popular web automation service that allows users to link a variety of networking devices/services to create a simple but rather powerful application-to-application workflow. For example: If Gmail does something, then Facebook will do something. IFTTT refers to workflows as applets. All registered IFTTT network services have pre-defined trigger conditions and actions. Applets are created by combining the triggers of a service (such as Gmail) with the action of another service (such as Facebook). There are currently more than 300 services registered with IFTTT, and through the vast user base, IFTTT service executes more than a billion applets every month.

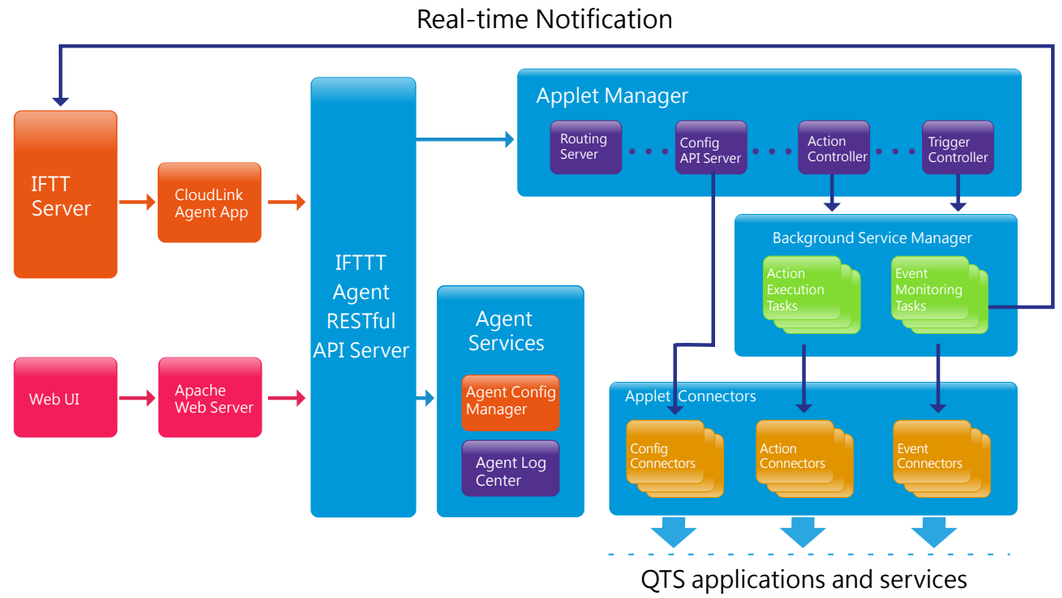
Automate routine tasks with IFTTT Agent

IFTTT Agent can greatly enhance your productivity. Users can connect their IFTTT accounts to their QNAP NAS and then create a limitless number of NAS-associated applets on the IFTTT website. IFTTT Agent is responsible for ensuring that these applets can be smoothly run on your QNAP NAS. Users can also freely create their own automation workflows. IFTTT Agent aims to change how users perform non-technical work on their NAS, thus improving the quality of life and user experience.



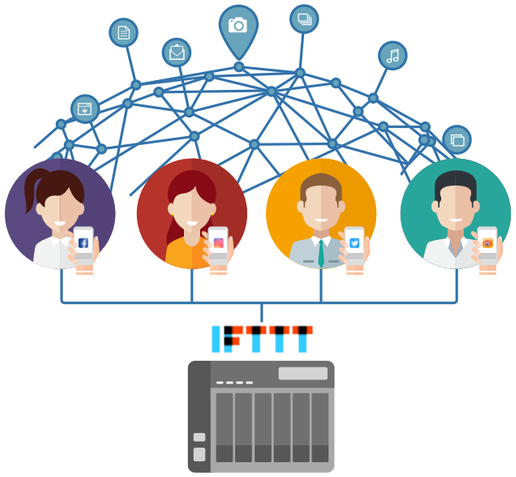
Connect your favorite apps with QNAP NAS

IFTTT Agent takes full advantage of the myQNAPcloud service to build a secure and robust connection to the IFTTT service. With myQNAPcloud's high availability, users can simultaneously run a near-limitless number of applets. QNAP provides the perfect architecture to ensure that applets can be successfully run in an almost-perfect manner.



Improve your digital lifestyle with applets

Users can create countless applets in IFTTT to automate day-to-day tasks. With the latest set of triggers and actions provided by QNAP, users have multiple ways to automate NAS workflows.

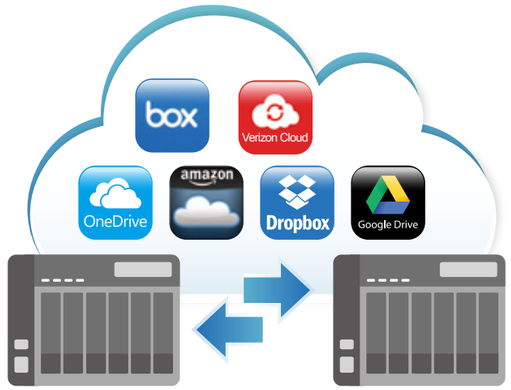


1 Archive social network data

Most Internet users use social networks to share photos and videos with friends. Manually backing up this media content can be very cumbersome. IFTTT Agent provides applets that can automatically archive social network data.

2 Use Amazon Alexa to control QNAP NAS

Amazon Echo and its virtual assistant Alexa is one of the highest-profile smart home products on the market. IFTTT provides an Amazon Alexa channel to help QNAP NAS users control the NAS via voice commands. For example, the user can ask Alexa to restart the NAS, shut down the NAS, or make it enter sleep mode.



3 Double the synchronization speed between NAS and cloud services

NAS is a common device for storing and backing up data. IFTTT Agent can help NAS users simplify bi-directional file synchronization between NAS and cloud services such as Dropbox, Google Drive, Amazon Cloud Drive, Microsoft OneDrive and Box. As the number of cloud services continues to increase, this is the best solution to improve online backup speed and efficiency.

Productivity tools

4 Enhance your Music Station experience

IFTTT Agent can be used to provide a user context for Music Station, so that it automatically plays music when a user arrives at home or stops playing when the user leaves. Users can stop playing music when a lamp is turned off, or use Amazon Alexa to play music stored on the NAS via voice commands.

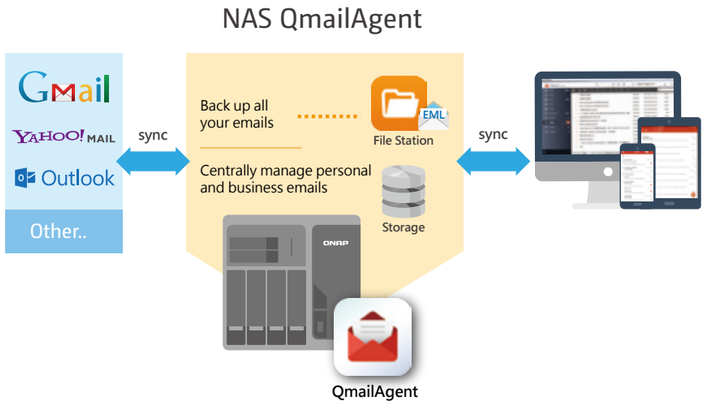
5 Automatically upload from mobile devices

Maximize the space available on your mobile devices by automatically uploading newly-taken photos to your QNAP NAS. You can create an applet to automatically collect photos taken on your mobile device,
then upload these photos to a NAS folder. This provides a great way to back up your photos as soon as they are taken. It also allows you to save space on your mobile devices.

NAS email agent

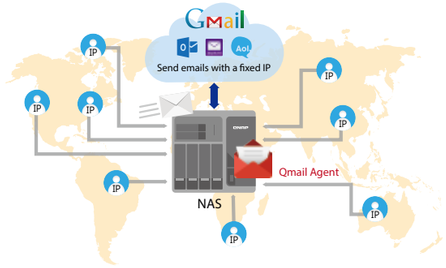
QmailAgent 1.3.1

QmailAgent helps you centrally manage multiple email accounts. You can log in and access multiple email accounts from a single platform and synchronize/backup emails to the NAS, providing a centralized email platform for greater convenience.



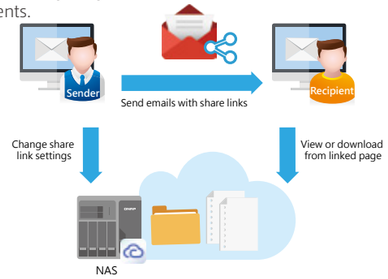
Protect your privacy

Email is all around us. No matter where you are, at work, at home, or around the world, you frequently need to send and receive emails through different IP addresses. But logging in with different IP addresses exposes you to potential privacy risks. When your emails are sent through QmailAgent, only one IP address is used. This assists in masking your IP address and location. And when accessing a QmailAgent hosted on a NAS outside China, you can access Gmail within China without being blocked.



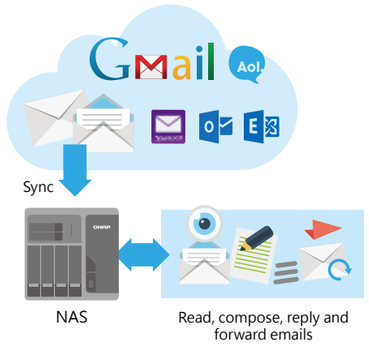
Overcome attachment size limits, securely share any link

QmailAgent's attachment sharing removes size limits and allows you to easily select large files or folders, such as videos, presentations and videos, and automatically create links with file-sharing methods on the NAS and attach them to emails. You can also set access restrictions to your files for security and privacy. In addition, to allow recipients to receive attachments of any size, you can use QmailAgent's attachment sharing feature along with CloudLink to ensure that they only need to click on a share link to access the attachments.



Back up your emails to your NAS

QmailAgent can back up your emails to your NAS. Once the email account is set up, it will save all of the emails to the NAS - providing protection against accidental deletion. Attachments can also be saved, making it easier to archive complete emails and convenient for finding required files.

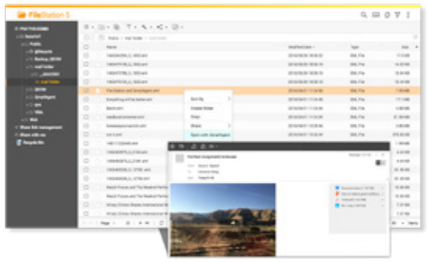


Easy and convenient access to attachments

Sometimes you need to email files, but you may not have them on your current device. QmailAgent combines NAS and the local device, allows you to directly access files, documents and photos on the NAS, and to send them as email attachments. You can also save incoming email attachments to the NAS.

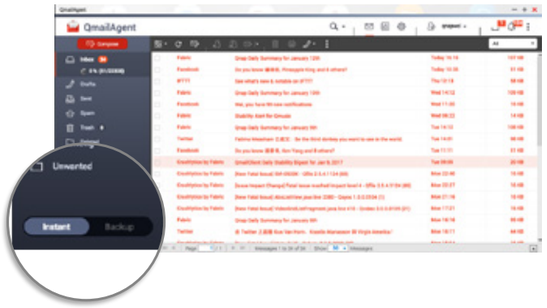
Viewing and opening, no need to download

With traditional NAS applications, you would have to download email files from the NAS to your local device to read or send them. Now you can read emails using QmailAgent and also open email backups directly in File Station.



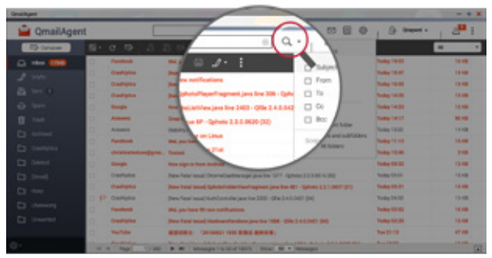
Easily switch viewing modes

QmailAgent instantly checks the email status on the server, so that you can synchronize all emails to the server via the interface. It also has a backup email view mode. Even if you delete the email on the server, the downloaded version will still be on your NAS.



Quickly find emails

It can be challenging to find specific emails that are hiding in your inbox or folders. QmailAgent provides an instant search function, allowing you to define the search range and settings to filter out unwanted results.

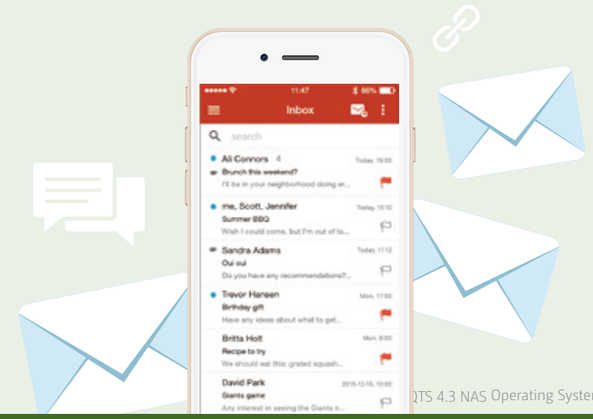


Special column

QmailClient - Send or receive email at any time via NAS

The benefits of QmailAgent are also directly available on mobile devices with the QmailClient companion app. The system will automatically push new messages to your mobile device. Using QmailClient, you can also save your latest emails to your mobile device for offline reading.

Supports iOS® and Android™ devices



Instantly find files

Qsirch 3.2 fast global search

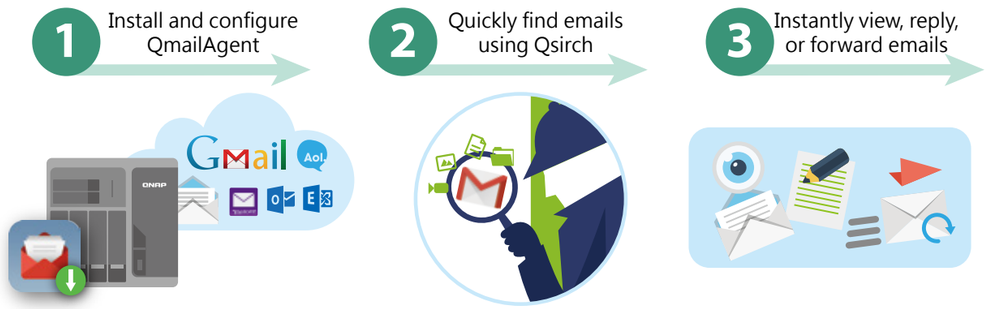
Photos, videos, music, documents, emails and other files can greatly accumulate on a NAS, making it difficult to find desired files. Qsirch provides the ability to quickly find files, and eliminates the need for tedious file searching. With a vast number of supported file formats, filters, and other features, Qsirch is an amazing tool for both work and personal usage.

Proprietary technology for accurate results

Qsirch's full-text search engine supports over 6000 file formats. It also uses proprietary TF-IDF technology and an automatic result recommendation system, so that when you are entering a keyword, you immediately see recommended results. This can greatly reduce the time spent searching for files, and substantially increases productivity. As soon as you enter Qsirch, you are immediately presented with a file distribution chart, laid out according to preset file formats such as images, music, videos, emails, documents and other types, allowing you to quickly understand search results. In addition to viewing by file type, you can also customize the presentation according to different conditions, such as file modification date, file size and other conditions to view the file.

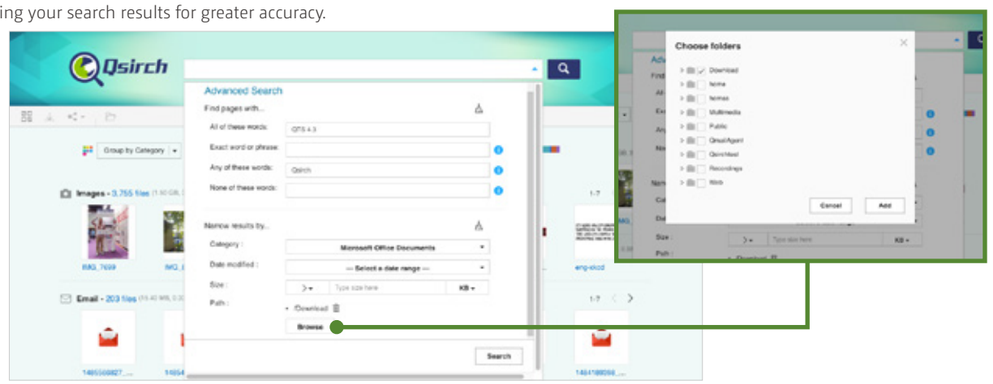
Quickly find email files

Qsirch is perfectly integrated into QmailAgent to provide a powerful email search engine. You can set custom filtering criteria (such as: date, copy, sender, etc.) and quickly search through all the .eml files stored on your NAS. Just enter a keyword, and you will be able to find content that matches those keywords in email archives. You can also directly open archived emails and directly reply, forward or compose new emails.



More accurate searching with advanced search

You can use search operators to create keywords in Advanced Search and easily perform complex searches by setting up query range, time, file size, and other criteria,
narrowing your search results for greater accuracy.



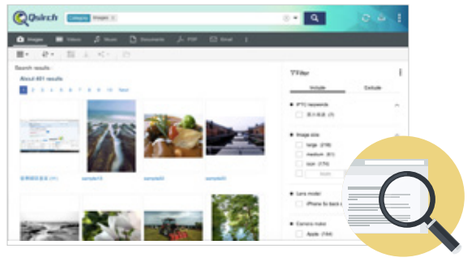
Productivity tools

Increase search efficiency by customizing search filters

The new Flexible Custom Filter feature makes your search more accurate by providing unique filters based on the selected file type on the right side of the search results. Qsirch will scan all NAS data immediately according to the set criteria,
quickly filter search results, and find critical files in a timely manner.

Exclusive filter conditions for various file types

Photos can be selected based on criteria such as camera model, focal length, lens information, IPTC keywords and shooting date. Music files can be based on artist or album name. Documents can be selected according to author. Emails can be based on send date, recipients and other conditions.

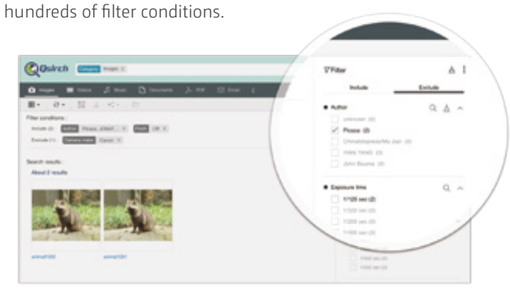


Customizable filters

Use the settings page to adjust filter conditions for each file category. You can adjust the sorting criteria to move frequently-used conditions to the top,
so that later, you will be able to set up filter conditions more effectively.

Freely switch between Inclusive/Exclusive filter conditions

The filter provides two modes: Inclusive and Exclusive. You can choose a suitable mode according to the files you want to find.
It also provides search fields to help you quickly find and check the filter criteria you want to add among
hundreds of filter conditions.



Presented as tags for viewing at a glance

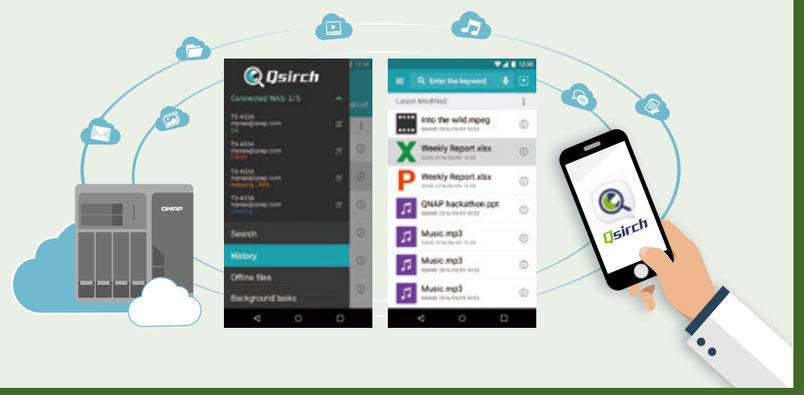
The filter criteria will appear above the search results page, so you can see all the selected filter conditions and delete any specified condition at any time from this block,
and quickly adjust the filter criteria for the search results.

Special column

Qsirch App - Instantly find files while on the go

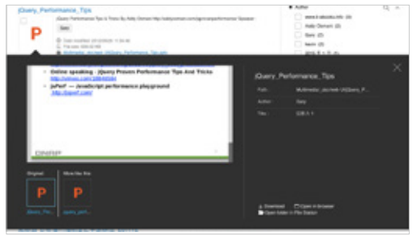
The Qsirch app for mobile devices provides all your files at your fingertips. Files can be quickly found, and then accessed or shared as necessary. Qsirch on both your NAS and mobile device can greatly benefit your everyday needs.

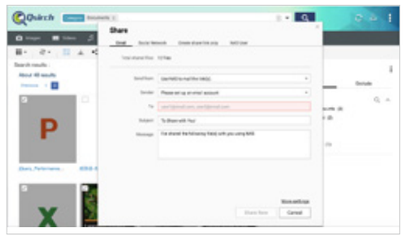
Supports iOS® and Android™ devices.



Instantly preview and easily share files

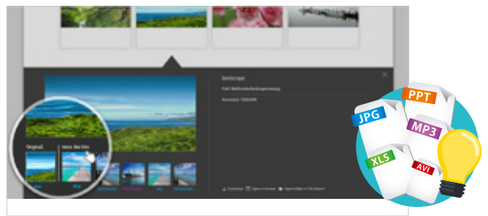
Files discovered during a search an be previewed simply by clicking on them. An integrated file previewer allows you to preview files in more formats, including multimedia, documents, emails, and PDF. Qsirch has integrated the cloud previewers Google Docs and Office Online, so that you can preview document content. In just a few steps, you can perform keyword search, content preview and file sharing all at once, drastically improving your productivity.





Smart relevant file recommendation

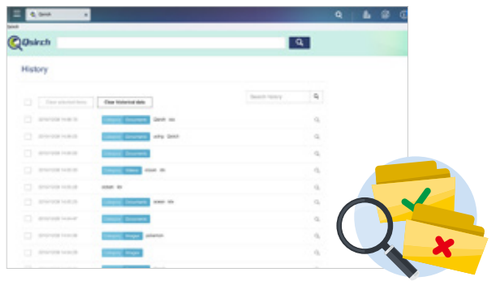
Qsirch's new relevant file recommendation feature enables you to find related files that you may also be interested in. This provides an additional way of potentially finding files you are interested in.



Folder indexing and search history management

Qsirch also provides other advanced features, such as folder indexing and search history management.
etc. You can filter out unindexed folders. After that, the background task in the top-right corner will always check the index status, so you can grasp the current status. In addition, you can manage historical search records. Qsirch keeps each search record in order to provide more accurate automatic recommendations for you. Or you can search for files by viewing or searching through past search records to shorten the search process.

Qsirch requires a QNAP NAS with at least 2GB RAM.



Special column

Qsirch Assistant, instant search

Qsirch Assistant is a Qsirch Chrome™ extension and Firefox add-on. Once installed, click the Qsirch icon to search for files on the QNAP NAS. QID support is available to quickly complete NAS connection settings. Qsirch Assistant also supports Google synchronized search, so that every time you use Google search, it also synchronously searches for files on the NAS, and present the results to the right of Google search results.

• Qsirch Helper (Chrome Extension)

• Supports simultaneous Google searches

Special column

Example use of Qsirch

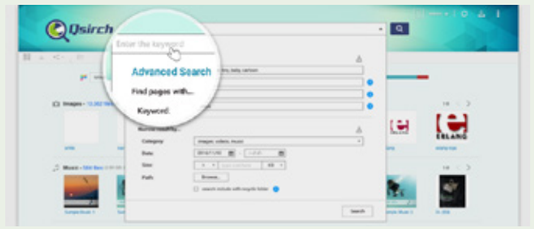
Professors in academic research must read large numbers of papers and journals. If there is no time to organize the articles, they might find it hard to find specific documents.

Photographers must handle a vast number of photos every day, many of which might get lost while being archived. This requires an effective way of finding files from specific dates and from specific cameras.

Using QNAP NAS, you can not only easily store, backup and organize important files, but also use Qsirch to quickly find them.

Advanced file search

Use search operators to create more accurate keywords in Advanced Search and easily perform complex search by setting up query range, time, file size, and other criteria, and narrow your search to get more accurate search results.

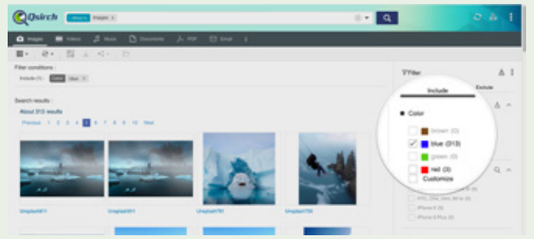


From email search to share, Qsirch is here to help

Qsirch provides a powerful email search function. You can quickly search through all the .eml files stored on your QNAP NAS. Archived emails can be opened, replied to, or forwarded.

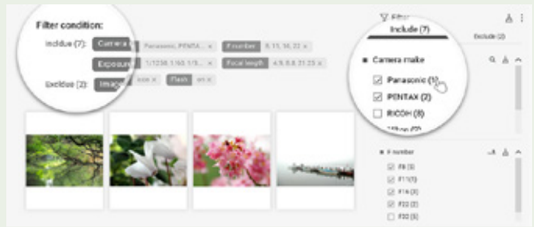
Enable advanced image indexing to search by image color

Qsirch 3.1 provides an advanced indexing function for images, which uses smart algorithms to index the colors in an image. Once indexed, you will be able to find image using color filter by selecting the color that the image has. For example: if the image you are looking for contains sea or sky, you can select “blue” to find the image.



Quickly find media files

It is usually not so intuitive to find media files and photos using keywords. Qsirch provides filters for each file type (including shooting date, IPTC keyword, XMP, and other filter conditions) so that you can find important files in a timely manner by excluding or including certain criteria.



Special column

OCR Converter Beta - Automatic Text Recognition

OCR Converter can easily extract text from images. Simply select the image file, set the language in the image, choose the file type to be created (txt or pdf), and the text will be extracted from the image.

Two steps to extract text from image files

OCR Converter lets you convert images to documents via OCR (Optical Character Recognition) technology. Select the image to extract text from, and set the document type. You can also schedule the conversion for all images with the same characteristics at a specified time.

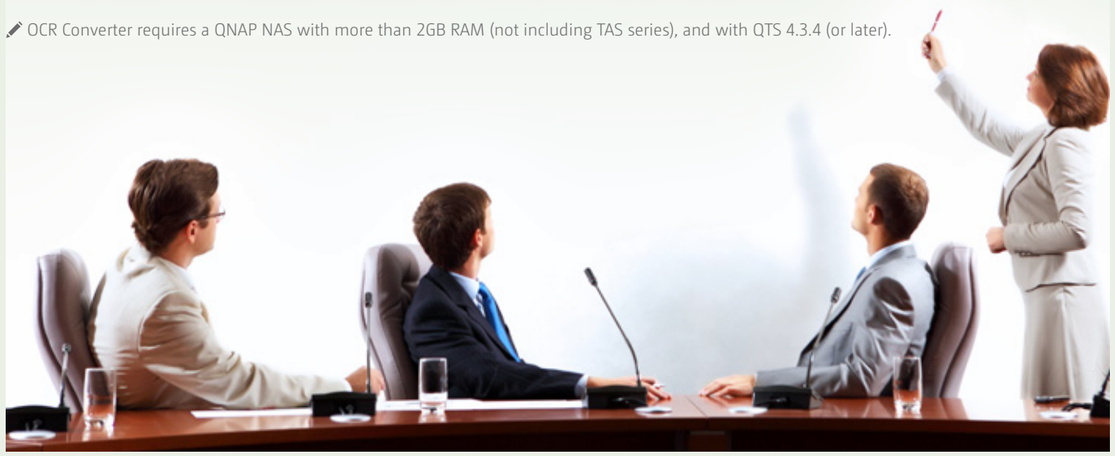
Task view to see all status at a glance

You can toggle between “Single“ and “Schedule“ modes and view/ manage each task.

Instant comparison, quick correction with Text Editor

You can preview and compare the differences between the source and converted documents, and use Text Editor to make corrections. Once the documents are confirmed, choose to download a single document or batch download all selected documents.

OCR Converter requires a QNAP NAS with more than 2GB RAM (not including TAS series), and with QTS 4.3.4 (or later).

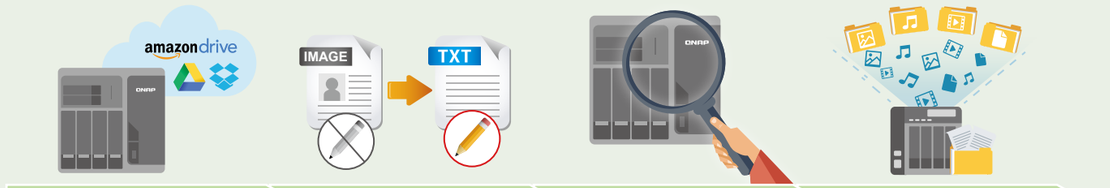


QNAP File Management Solution

Satisfy your storage, management, retrieval, and archiving needs

QNAP NAS provides multiple apps for increasing your work efficiency, including complete services for nearly every aspect of file management. Improve your productivity with QNAP's file management solutions.

File Station | OCR Converter | Qsirch | Qfiling



Manage all your files in one place

File Station provides single-interface management for files on your NAS, cloud services, local PC, and USB devices.

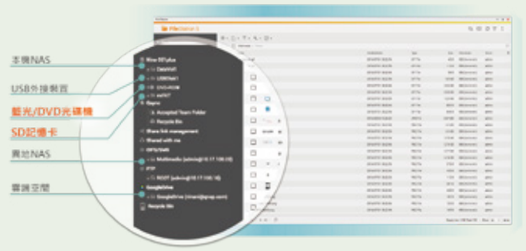
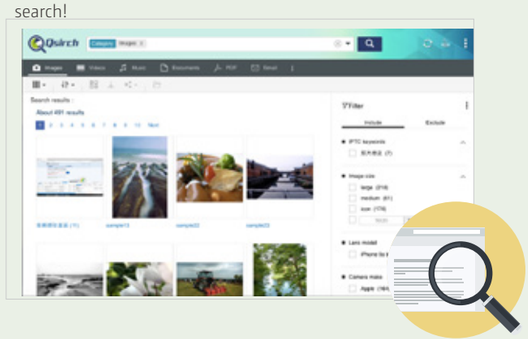


Image text extraction, editing, and reuse

Use OCR Converter with Text Editor to convert PDF files into text files. This can greatly simplify future file searching and editing.

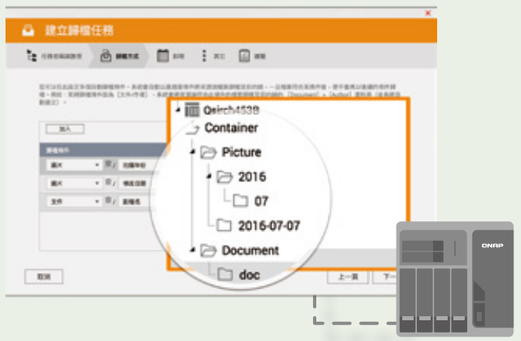
Find important files instantly

Use the Qsirch full-text search tool and use contextual keywords or file-related EXIF and other metadata (such as shooting time, lens model) to help you quickly find the right documents. Qsirch will never let you down whether it is document or multimedia file search!



Efficient and smart filing

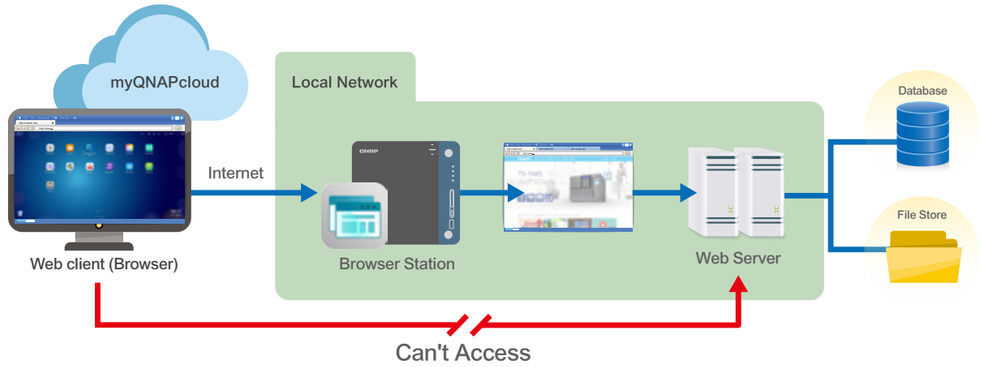
Qfiling's smart filing capability makes archiving files automatic and efficient. You only need to set filing conditions to quickly archive and sort the numerous files stored on your NAS. With Qfiling, archiving files becomes easier, smarter, and more efficient.



Browse NAS without restrictions

Browser Station

Browser Station uses virtualization to allow users to open a virtual browser on their NAS. When you connect to a NAS you can easily access the resources on the LAN through the NAS browser, or you can download files directly from the browser to the NAS.



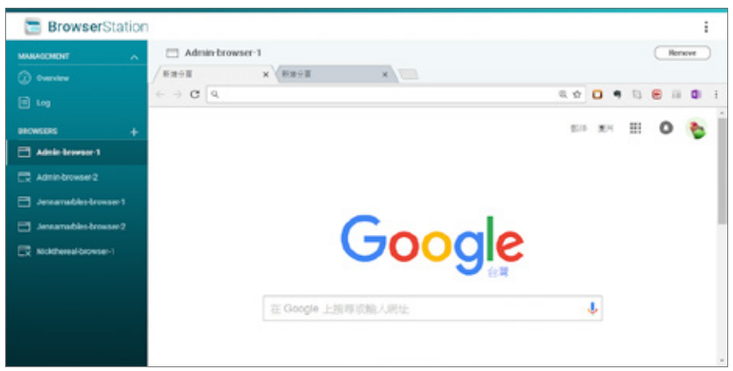
Browser Station is only supported by some QNAP NAS models. Check www.qnap.com for more information.
Browser Station currently supports Firefox and Chrome.

Protect your browsing privacy and security

In the past, if a business traveler wanted to connect to their company's internal network or use services restricted through the company's IP address, it is usually done through VPN. With Browser Station they can now easily access data on the same network, and even use Google and Facebook services if they are geoblocked. Browser Station can also be used as a log in entry point to avoid being monitored or logged while browsing websites.

Exclusive management interface

The overview page uses an intuitive graphical interface to make it easier for administrators to use and manage. With the management interface, you can view the system's real-time monitoring information and system resource status. In case the browser is taking up too much resources and hinders performance, you can adjust your browser's usage at any time.



Retain your status when switching devices

No matter how many devices you have used, Browser Station retains the usage history, open tabs, bookmarks, recent browsing history, the tab and the "reading list".

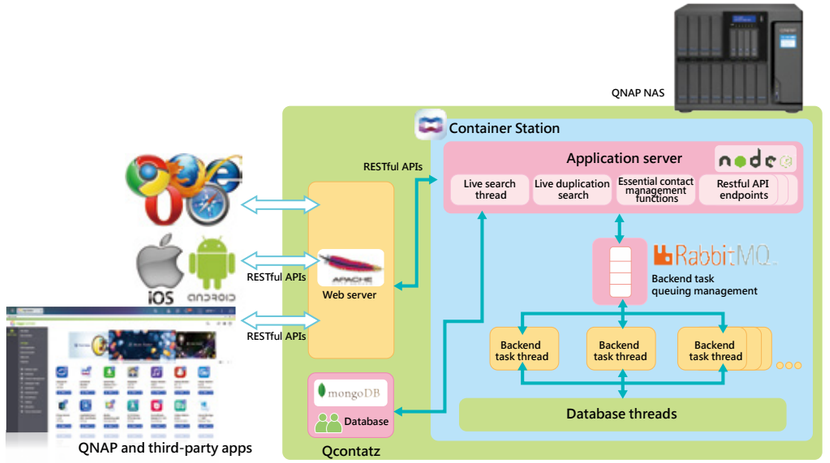
Securely store your valuable networking resources

Qcontactz Quantum Contacts Manager 1.0

As the number of our contacts increases, management of contact information becomes increasingly difficult. Qcontactz allows you to centrally store and manage a countless number of networking resources for convenient access and for archiving contact information.

The perfect architecture for the safest private cloud

Backed by a private cloud and with software redefinition, Qcontactz provides a complete database architecture for optimal contact storage and search. It overcomes the storage limits of computers and mobile devices to let you manage a countless number of contacts. Your contact lists are also protected against unauthorized access.



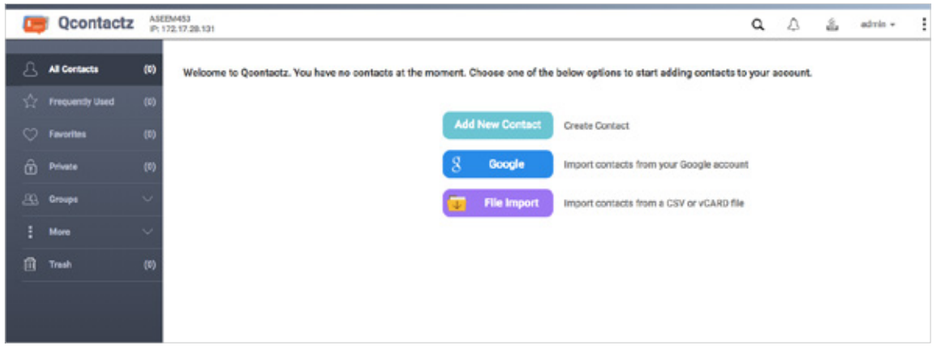
Import and manage contacts, API integration

Qcontactz supports multiple ways of importing contacts, and can be operated via web browsers using an easy-to-use web interface. It also has API support that allows quick integration of Salesforce and other ERP/CRM systems. Qcontactz provides a great contacts management service for both business and personal use.

Container Station is required to use Qcontactz. Check www.qnap.com for compatibility information.

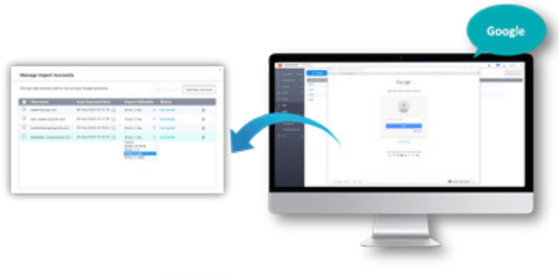
Cross-platform import, integration and management of contact information

Qcontactz supports synchronizing with Google contacts, importing contacts from CSV/vCard files, and manually adding new contacts. When using Qcontactz for the first time, the Quick Tour introduces 3 ways of importing your contacts list:



1 Synchronize contacts with your Google account

If you choose to synchronize with your Google account, you'll be able to link up your account and import your Google contacts upon successful authentication. Qcontactz supports importing contact information from multiple Google accounts and synchronizing updates to these contacts.



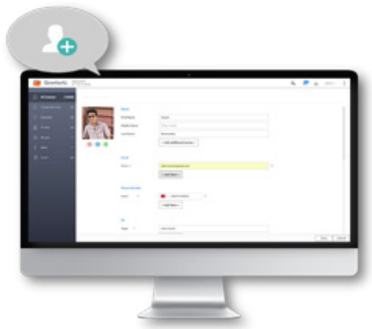
2 Import CSV and vCard files

Commonly-used communication apps (such as Skype, Outlook, Yahoo, IBM Notes) all support exporting their contacts into CSV and vCard files. The content of these files can then be imported into Qcontactz. When importing csv files, you can flexibly select the contacts and fields you want to import in the Qcontactz interface.

Qcontactz supports vCard version 3.0 (and later). In addition to importing contacts, Qcontactz also supports exporting contacts to CSV and vCard files.

3 Manually create new contacts

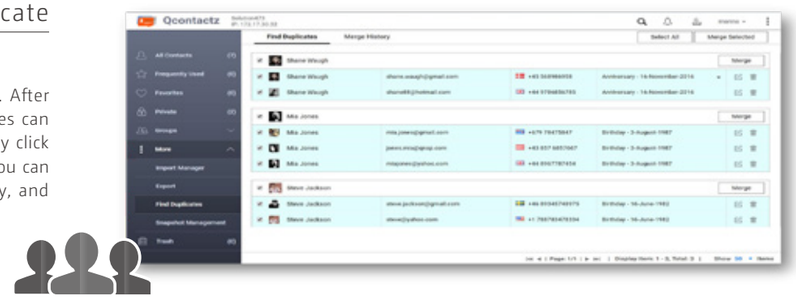
You can create new contacts by entering the relevant information.



Increase network resource management efficiency

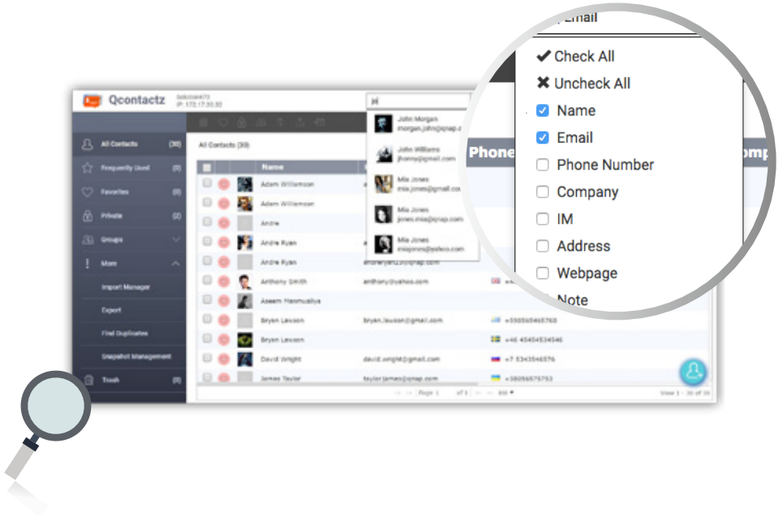
Merge and combine duplicate contacts

Qcontactz identifies duplicate contacts. After importing your contacts, duplicate entries can be easily found using this feature. Simply click "merge" to combine duplicate contacts. You can also view your contacts merging history, and restore contacts where necessary.



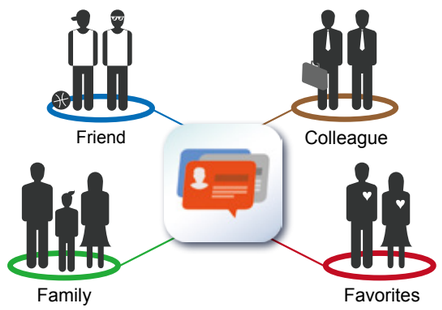
Quickly find contact information

You can easily find specific contacts by searching for their names, email addresses, phone numbers, or other information.



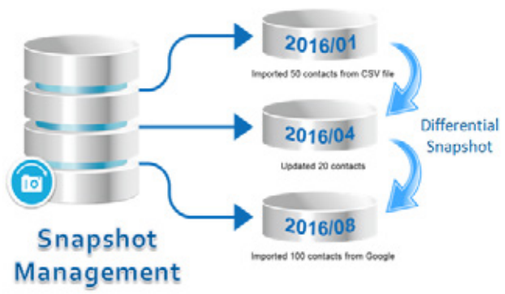
Manage groups and confidential contacts

Many people have over a hundred contacts. If these are not categorized, finding a specific contact can be tedious and time consuming. You can organize your Qcontactz contacts using pre-defined groups (such as Clients, Family and Classmates), or add in other groups where required. Confidential contacts can be added to highly-confidential groups, which can be password protected to ensure privacy and security.



Backup and manage different versions of your contact list with snapshots

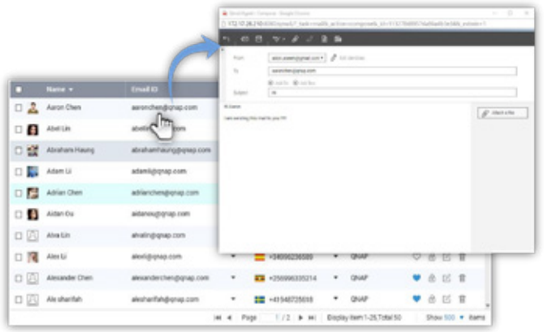
Snapshots of your contacts list can be taken at any time, and an unlimited number of version snapshots can be saved. In event of accidental deletion or modification, you can quickly restore contact information.



More ways to enhance efficiency with Qcontactz

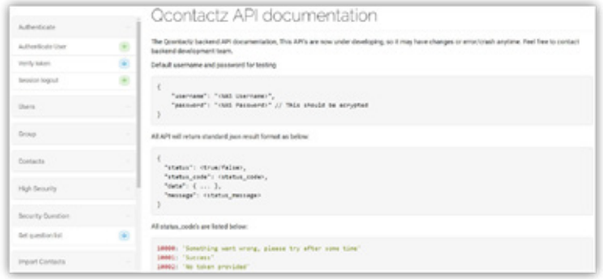
Streamline your entire email workflow with Qcontactz and QmailAgent

Qcontactz integrates with QmailAgent and automatically lists frequent and recent contacts. You can also send emails to your contacts quickly by clicking on them in Qcontactz.



Provides a complete API file for easy integration with existing corporate CRM/ERP information

The Qcontactz API file is available to third-party applications as part of the system. To view the file, go to "<NAS IP>:9090/api/v1/docs" in your web browser. Qcontactz can also be integrated with your existing corporate CRM/ERP database to provide a cross-platform and multi-terminal contacts management solution.



Special column

Mobile Qcontactz — Access your contacts at anytime

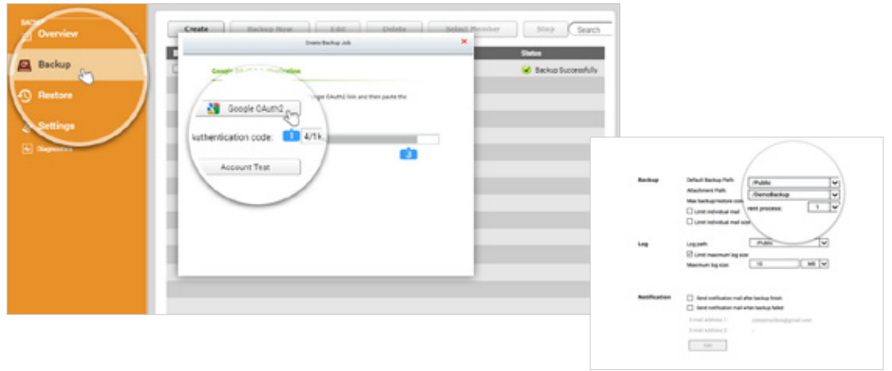
Keeps your contacts information on your mobile phone updated at all times. With the Qcontactz mobile app you can quickly import the contacts from your mobile phone. You can also set automatic synchronization with the NAS at a preset schedule.

Supports iOS® and Android™ phones.

Dedicated email backup

Gmail Backup 1.4

Gmail Backup 1.4 not only backs up important emails and information, but also saves attached files individually in folders, allowing you to categorize, search, and improve work efficiency.



Complete email backup

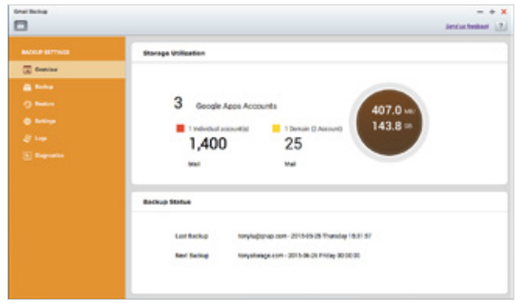
Gmail Backup provides personal and domain email backup, and authenticates through Oauth2 for backup and migration. The system can set up automatic backup to a dedicated backup storage folder for the same domain or personal email, and helps users quickly backup, search and manage important messages, and easily backup the complete email folder.

Efficient email recovery and migration

If backup emails are accidentally deleted or lost, Gmail Backup can help quickly restore the backup to the original mailbox, without needing additional software. Alternatively, you can also move the emails in the backup account to a specified mailbox. Whether restoring or moving an email, you will have the flexible option of either handling all emails at once or just a specific email.

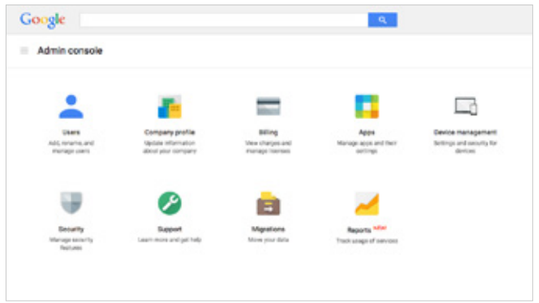
Separately access and search attachments from an email

Allows you to access and backup to designated folders. You can choose to save attachments to designated paths to facilitate management, and use Qsirch to quickly find files.



Complete operational logs

System operation logs, backup email status and schedules are all recorded in detail, so you can clearly grasp email backup status.



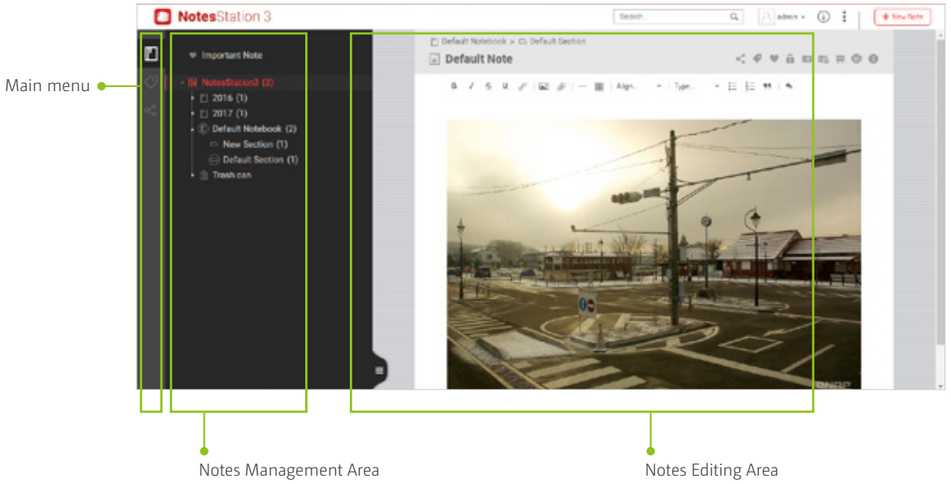
Private cloud notes collaboration platform

Notes Station 3.0

Notes Station provides collaboration features while retaining the security and convenience of a cloud environment. With Notes Station, NAS users can edit notes together, and collaborate to create a co-authoring environment.

Revamped user interface

Notes Station's new interface shows the primary function area, the notes management area and the notes editing area. The newly-optimized UI allows you to effortlessly create, organize and share your notes.

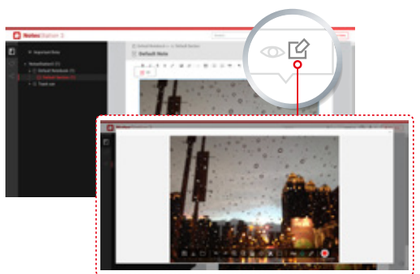


Private cloud notes collaboration platform

Notes Station has complete collaboration features. You not only can co-author a note with other NAS users, but also see the other user's edit records. Notes Station has significantly raised the bar as to how private cloud notes software is used.

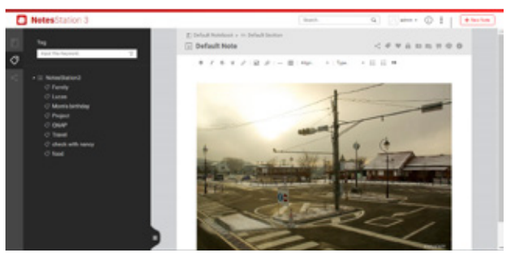
The new image editor - create beautifully illustrated notes

Notes Station has a built-in, highly-automated layout editor, so you can easily transform text content into beautiful notes. In addition, you can also quickly place highlights on a picture and do simple image editing.



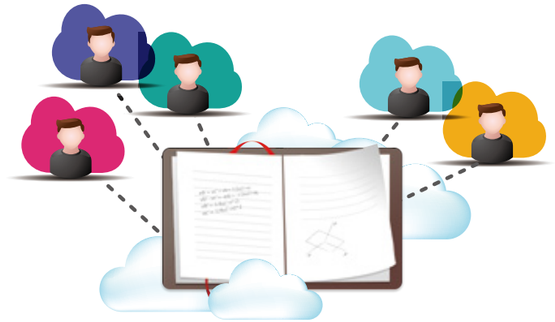
Tagging and My Favorites - organize your important notes

In addition to elegant notes management and powerful search capabilities, Notes Station also provides a tagging feature. You can add tags to notes and search for the tags for quicker access. Additionally, you can also favorite often-used notes for easy access.



Take notes on your private cloud

Sharing has become an essential feature in life. Notes Station has a built-in sharing feature, which requires just two steps. After a successful share, other users can view or edit shared notes.

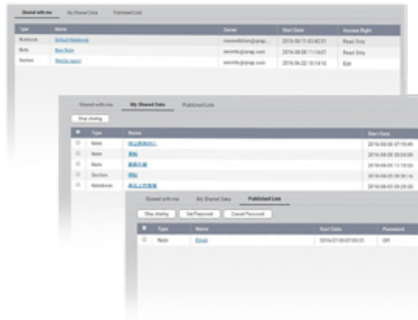


Public links

If you need to share with non-NAS users, Notes Station also has a public link feature. With a few steps, users can make Notes Station a message publishing platform. Users can also enable password protection when transmitting private notes to avoid information leaking.

Sharing list

Managing the files you've shared can be troublesome. QNAP provides a new sharing management interface. Whether it is a document shared by others, a document shared to others or public link, you can centrally manage them in the sharing management interface.



Add NAS files as attachments - all your NAS data at your fingertips

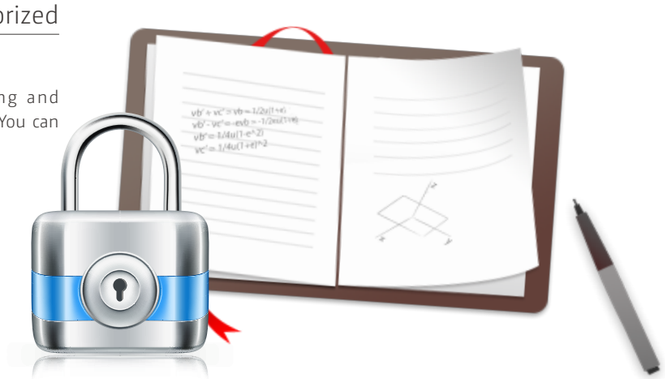
Each user may have lots of data and creative writing stored on the NAS. Notes Station allows you to access data within your NAS at any time and turn it into an attachment. You can also directly copy and paste to quickly complete a note.

Data security is the utmost priority of Notes Station

Notes Station provides four features: encryption, version snapshot, notes export/import, and full backup to help you protect your data.

Password Protection - prevents unauthorized access to your notes

Because Notes Station places emphasis on sharing and collaboration, password protection is an essential feature. You can password protect notes to avoid unauthorized access.

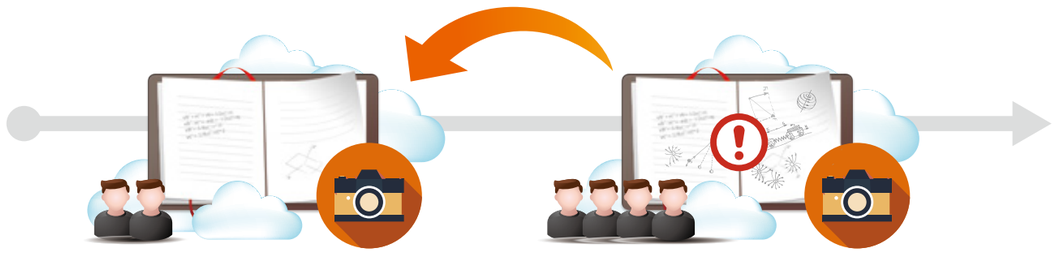


Version snapshot

When you are editing content, Notes Station will constantly save a copy for you. However, it's not easy to recall previously-edited content. The best approach is to enable snapshots to save a number of edited versions at different times, for use as needed in the future.

Notes export and full backup

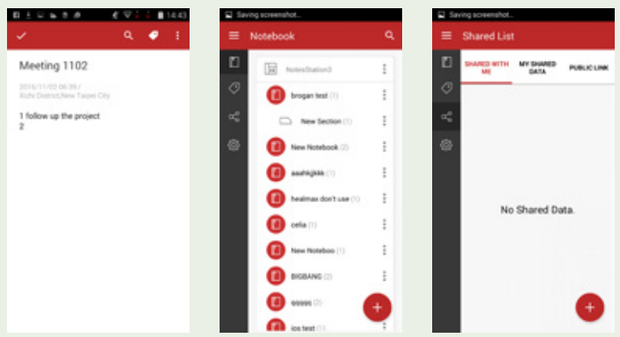
Notes Station has built-in export feature that allows you to export your notes to a remote NAS or your own computer as a PDF or Notes Station backup file. Additionally, NAS administrators can set scheduled backups to prevent data loss due to hardware damage or system failure.



Special column

Qnotes 3.0 - Notetaking on the go

Qnotes has further evolved alongside Notes Station. You can invite work partners to edit notes with you, and see your changes to the notes on the device.



Supports iOS®, Android™, and Windows® Phone devices.

Easy-to-use notebook design

With a three-level structure, you can quickly organize and categorize notes. In addition, it also provides a quick note feature, allowing you to record audio, use images, or write text. You can also open attachments using your mobile device's built-in media player.

Sharing list

Qnotes encourages you to share your notes and to invite others to complete notes. At the same time, the sharing list feature allows you to clearly see the notes sharing status (shared from others, shared with others, shared through a public link).

Custom label

Using custom labels in combination with the search function, you can quickly categorize and find notes, even if there are tons of notes.

Community share

After editing notes, you can always share them with mainstream communities, and share your ideas and thoughts with the whole world.

The world's first Ryzen-based NAS

TS-x77 series

Upgraded virtualization performance and 4K video processing

Achieve more with the amazing power of AMD Ryzen

Optimized storage performance with Qtier and SSD caching

Expand NAS functionality with PCIe cards

Supports RAID 50/60 for optimal

TS-677 TS-877 TS-1277

Enjoy complete multimedia entertainment

Multimedia Entertainment Center

Your photos, music, and videos need a storage solution that's easily manageable and allows you to access them both in and outside your home. QNAP NAS provides a variety of apps and services for multimedia files. By consolidating your multimedia files onto a QNAP NAS, you can easily manage them, back them up, share them with friends, and enjoy them using DLNA®, AirPlay®, Chromecast™ and other methods. Files can also be directly downloaded to the NAS.

360° panoramic photos and videos

An increasing number of devices support panoramic photography, allowing you to take complete 360° photos and videos. 360° panoramic photos and videos capture a complete view of your surroundings, allowing for you to truly relive the moment at any time.

Support for 360° panoramic photos and videos

Most 360° panoramic photographs and videos taken are fisheye images, which are then converted into the Equirectangular format. These images can be stored on the NAS and viewed with their 360° panorama with QNAP apps. You can pan or rotate these 360° images, allowing you to enjoy beautiful photography from a variety of angles.

When converting panoramic photos and videos, different devices or software may use different processing methods. Some will embed 360° information in the file so they can recognize these 360° photos or videos and enable 360° viewing. Some do not embed this information, making it impossible for files to be viewed properly by sites such as YouTube or Facebook. QNAP apps provide the option of manually enabling 360° viewing, and mobile companion apps such as Qfile, Qphoto, and Qvideo also provide 360° viewing capabilities.

The screens that players generally see when playing 360° media, or when 360° view is disabled:

Once 360° view is enabled:

With 360° view enabled, you can enjoy different views of the photo or video:

Supports mobile VR

Companion mobile apps support viewing panoramic media files with mobile VR headsets.

Apps that support 360° panoramic viewing:

File Station (QTS 4.3.4 or later)
Photo Station (version 5.6.0 or later, with QTS 4.3.4 or later)
Video Station (version 5.2.0 or later, with QTS 4.3.4 or later)

Qfile iOS version (2.6.3 or later, with QTS 4.3.4 or later)
Qfile Android version (2.6.3 or later, with QTS 4.3.4 or later)

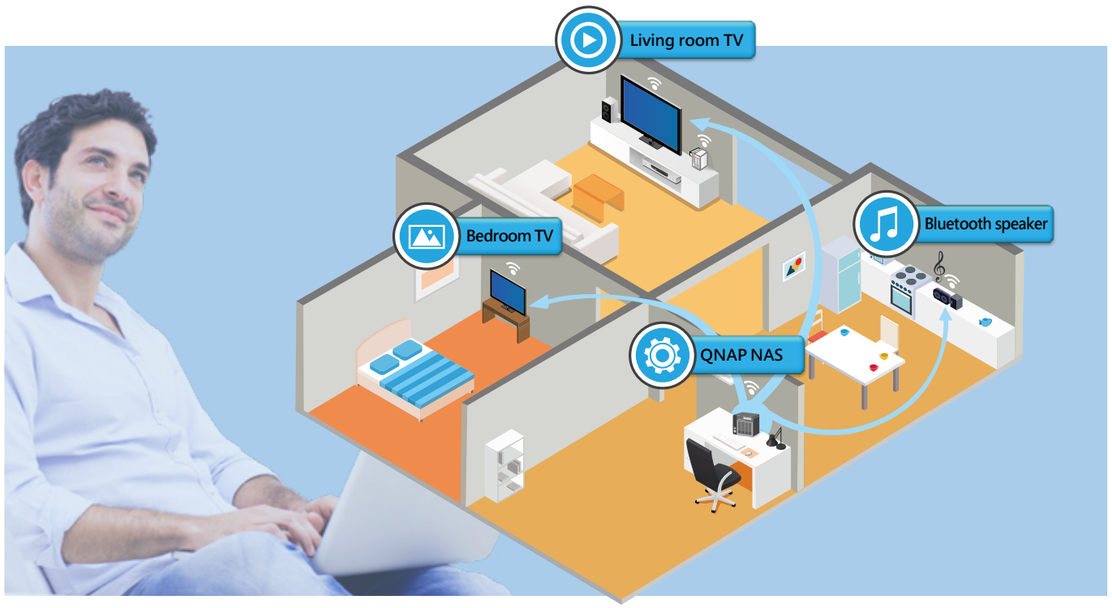
Photo Station (version 5.6.0 or later, with QTS 4.3.4 or later)
Qphoto iOS version (version 3.2.0 or later, with Photo Station 5.6.0 and QTS 4.3.4 or later)
Qphoto Android version (version 3.1.1 or later, with Photo Station 5.6.0 and QTS 4.3.4 or later)

Qvideo iOS version (version 3.1.0 or later, with Video Station 5.2.0 and QTS 4.3.4 or later)
Qvideo Android version (version 3.2.0 or later, with Video Station 5.2.0 and QTS 4.3.4 or later)

Enjoy multimedia throughout the home

Cinema28

QNAP NAS can be used as a one-to-many media playback center (one NAS concurrently serving multiple media devices). You only need to open Cinema28 to manage multimedia files in the NAS. Media files can then be directly played and streamed using the NAS line-out audio output (audio only), HDMI output (Note 1), USB speakers (music only), Bluetooth speakers (music only) (Note 2), DLNA, Apple TV, and Chromecast.



Why do you need Cinema28?

In the past, it could be complex to play NAS-based multimedia files on a DLNA-enabled TV depending on your TV's user interface. And if your TV lacked DLNA you would need to directly attach another device (laptop, etc) to the TV. And if you only used your phone to play music to a Bluetooth speaker or connect it to a speaker, you would need to stop playing music if you received a call. These situations did not make for an ideal multimedia experience.

With Cinema28, you don't have to run to different devices.
In Cinema 28, you can clearly know the progress of each device. You can quickly find media files using Qsirch (Note 3) and drag-and-drop them to devices to play them. It's that simple.

Multi-Room Streaming

Cinema28 is designed to improve your multi-room streaming experience by controlling the playlists of connected media devices. Cinema28 actively detects currently-connected devices, helps you to add and operate more media devices, and these devices are then clearly displayed for you to manage their content and playback status.

Full mode: Shows full device status.

Simple mode: Focuses on current playlists.

Multimedia Entertain-ment Center

Cinema28 with Qsirch provides convenient multi-room playback

Cinema28 supports QNAP's Qsirch search engine to quickly find files. Enter a keyword and Qsirch will search through the metadata of files and display matching or related results. You can also use filters for more accurate search results. Cinema 28's integration with Qsirch makes multi-room streaming more convenient.

Easily drag and play

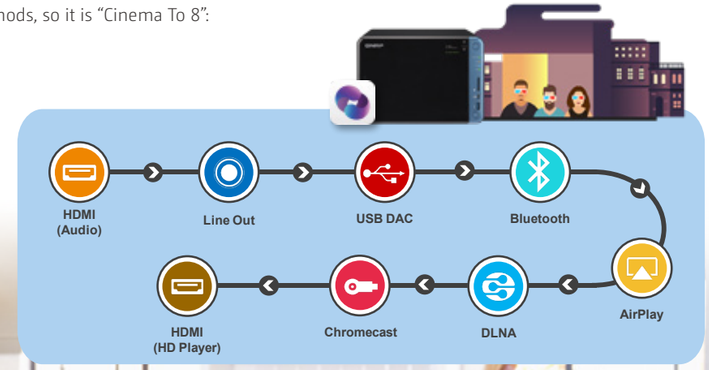
Note 1: HDMI and analog audio output vary according to different NAS models.

Note 2: Music Station must be installed before using the Cinema28 Bluetooth function.

Note 3: To use Qsirch on Cinema28, you must install and enable Qsirch from the App Center.

What does the number 28 in Cinema28 mean?

Cinema28 supports 8 types of output/streaming methods, so it is "Cinema To 8":
HDMI audio output
Line-out audio output
USB speaker
Bluetooth speaker
Support for media playback:
HD Player
DLNA devices
AirPlay devices
Chromecast devices
With Cinema28, you can stream your NAS media content to eight different devices for complete multimedia coverage throughout the home



Android TV streaming

Qmedia Android TV

Qmedia Android TV is an application on the Android TV system that allows you to enjoy video and audio files stored on the QNAP NAS. Qmedia supports multiple media formats and functions for a diverse multimedia experience.

Breakthrough network limits to support multiple login methods

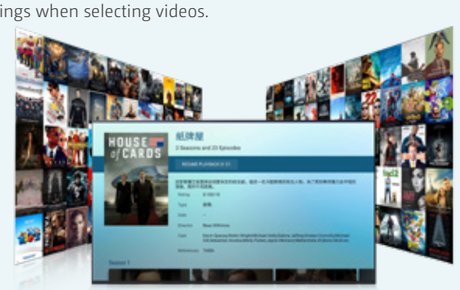
Directly select the NAS on the same network as the login page to log in, allowing you to quickly find your NAS. In addition, Qmedia breaks through the network limits, allowing you to manually set up NAS connections on different networks so that finding Android TV and NAS devices that are connected to different networks segments is no longer an issue.

Qmedia Home

Qmedia homepage displays important files on your NAS, such as recently-viewed videos, top 100 hit songs, recently-imported videos, music and photos, so you can quickly and easily enjoy media files.

Complete support for online media databases

Qmedia fully supports contents from online movie and TV databases. You can see information such as story outline, cast and ratings when selecting videos.



Supports third-party players

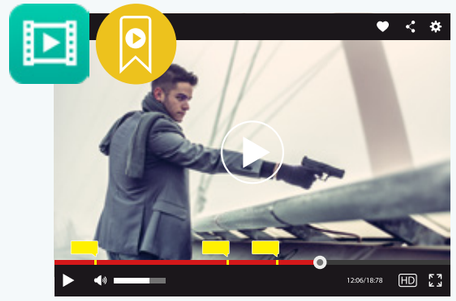
You can also play videos with other media players.

Smart playback function

When you pause a video in Cinema28, you can easily continue viewing from the same place.

Supports bookmarks

Insert a video bookmark using Video Station to start watching videos from your bookmarked moment.



Folder browsing mode

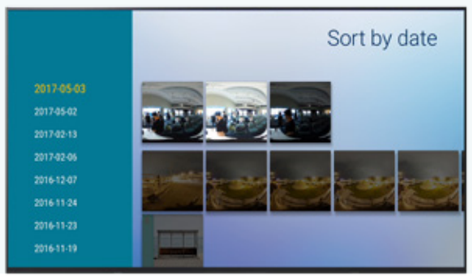
Quickly find multimedia files by browsing folders.

Supports background music playback

Qmedia supports music playback in the background. You can see the list of currently-playing music on the Qmedia homepage. Also, when you return to the Android TV homepage, you can still listen to the music.

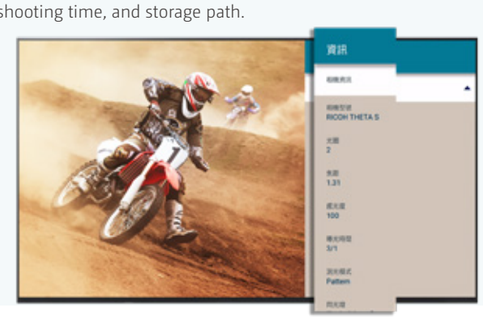
Sort photos by shooting time

Qmedia can arrange all your photos according to the shooting time, so you can clearly view your photos on the timeline.



Show detailed photo information

Browse and click on the photos on Qmedia Android TV to see detailed information about the photo, such as the size of the photo, shooting time, and storage path.



Enjoy photos in slideshows

Display photos in an attractive slideshow that includes music. You can adjust the playback speed, select play mode and music in slideshow mode.

In pursuit of video and audio excellence

Video Station 5.0

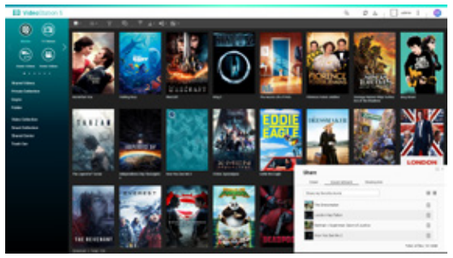
Video Station continues the fine tradition of QNAP in thorough consideration of user requirements and constant quality improvement. Video Station provides a new interface to facilitate sharing. It has comprehensive search modes and multilingual support of movie/TV data. During playback, it provides embedded audio/subtitles, and you can add bookmarks to videos to remember your favorite parts. It also comprehensively restructures TV shows to display TV series according to season/series number, and filters for directors, actors and other information. Additionally, it has added a convenient "follow a series with a keystroke" feature. QNAP always strives to enhance your audio and video experience.

New Interface

Video Station has been greatly improved based on user feedback. It allows you to enjoy your videos without distraction, and to show off your videos.

Easy sharing

Video Station uses QNAP's sharing shopping cart design. After selecting videos to share, send a video link to friends and family. Videos can also be uploaded to YouTube, Youku and other well-known video sites.



Sharing Center

Video Station arranges shared videos in the Sharing Center. You can manage videos based on shared content, for example: delete shared links, share view history and even share again with other users.

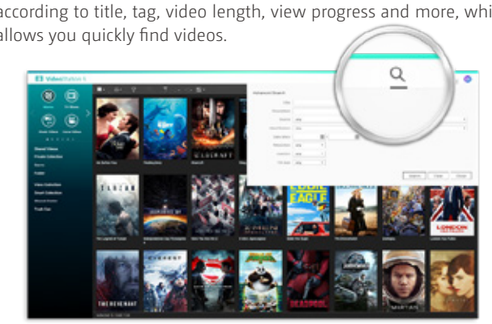
Embedded audio/subtitles

If a video has embedded audio or subtitles (for example: MKV format), then you can select it in the player, and easily switch between different audio channels and subtitles.

✎ Playing embedded audio and subtitles requires transcoding.

Advanced Search

Gone are the days where you could only search based on limited conditions. Now you can set a combination of search criteria, according to title, tag, video length, view progress and more, which allows you quickly find videos.



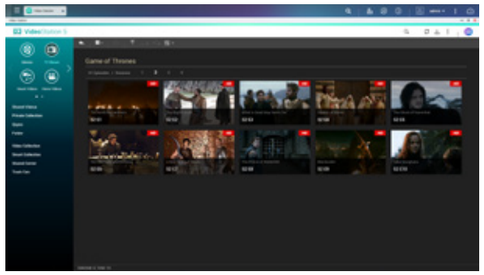
Play bookmarks

Insert bookmarks into videos to quickly skip to your favorite parts. It is also possible to edit bookmarks along with other users, and share favorite clips.

TV program structure

You can organize your TV programs according to season/series, so that you can easily find specific episodes and play a TV series in the same playlist, automatically playing the next episode.

✎ You must name the videos in a TV program in a specific manner, for example: "Game of Thrones.S06E01.mp4" will be categorized as Game of Thrones, sixth season, episode one.

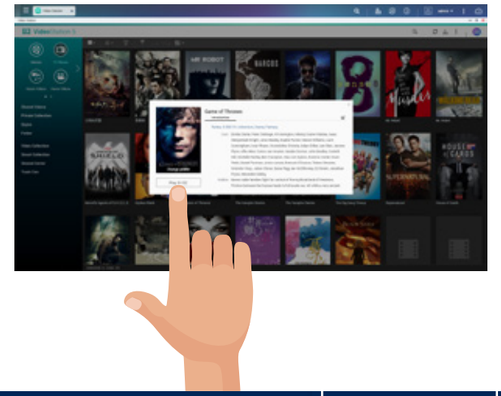


Online database support

Video Station 5.0 supports downloading information from online databases to improve video information.

Follow a series with a keystroke

Automatically remember where you stopped watching last time, so you don't need to remember the season and episode you watched last time. With a simple keystroke, you can continue where you left off.

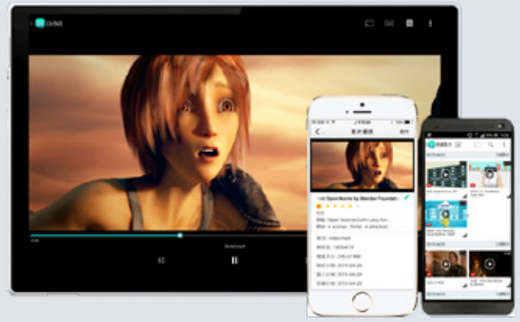


Special column

Qvideo - a mobile cinema

Qvideo is a mobile companion app for Video Station. It allows you to play videos on the QNAP NAS at any time and from anywhere, or share your favorite movies with friends and family.

✎ Supports: iOS®, Android™, and Windows® Phone.



Download videos to watch at any time

Avoid missing out on your favorite videos due to lack of connectivity. Download the videos from the NAS to Qvideo to enjoy them offline.

Rapid share

It's easy to share videos using Qvideo. It fully integrates with various communities and communication applications, so you can always share your favorite videos with friends and family!

Supports Airplay®, DLNA® and Chromecast™ devices

Use Qvideo as a remote control to enjoy videos.

Support Mini-player and playlists

Qvideo supports Mini-player and playlists, allowing you to continually add videos even when you're viewing them.

New media experience

QNAP Video HD

QNAP Video HD is an add-on for KODI. This add-on fully supports all the functions of Video Station, and combines the powerful playback capabilities of KODI to allow you to stream video and audio files.

Complete support for multiple operating systems

QNAP Video HD is compatible with KODI for multiple operating systems, including Windows, macOS, and Linux. Install Video HD in KODI on different operating systems according to your preferences and devices. You can also install Video HD on your Android TV or set-top box.

- QNAP cannot guarantee the availability of all functions on all Android TV or set-top boxes.
- To install QNAP Video HD add-on kit, KODI v17 (Krypton) (or later) is required.

Full support for Video Station features

QNAP Video HD provides full support for Video Station's features, including video classification, online database content, video collections, smart collections, folder browsing, and more. It also remembers where you stopped viewing last time, so you can instantly resume watching from any device.

Powerful video playback

QNAP Video HD combines KODI to deliver the best video playback. KODI's powerful audio and video decoding capabilities can handle most audio and video formats. You no longer need to worry whether a video can be played or whether playback is smooth or not.

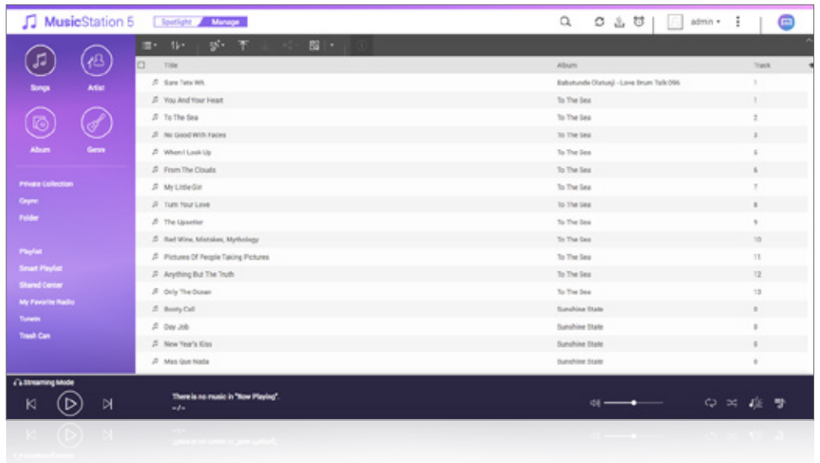
Use QvPC Technology for direct multimedia enjoyment

Install KODI v17 (Krypton) in Linux Station and HD Station on the QNAP NAS (download from https://www.qnapclub.eu/) and connect to an HDTV or A/V receiver via HDMI. This method provides the best way of experiencing multimedia files.

Your personal music cloud

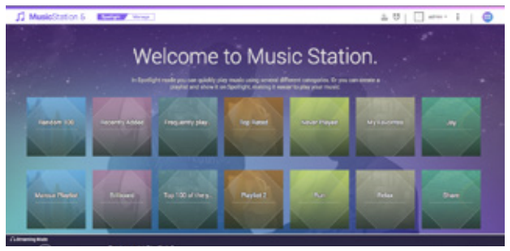
Music Station 5.0

Music Station not only plays music from connected PCs and mobile devices, it is also your personal cloud music center. Simply connect to the Internet, and you will be able to enjoy your music even away from home. Music Station provides multiple categorization and browsing modes for you to choose from, and you can create up to 200 playlists. All of your music can be effortlessly managed and played on various devices.



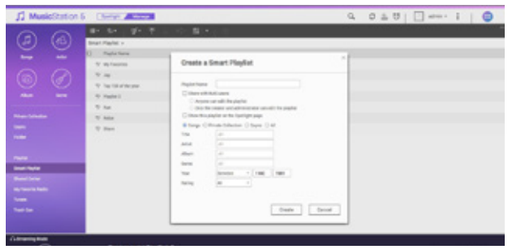
Spotlight mode

Spotlight mode allows you to switch between Spotlight and Manage mode easily to perform different functions. In Spotlight mode, Music Station will automatically recommend different playlists to you, such as: Random 100, Top Rated, and Recently played. You can also pin customized playlists on the Spotlight page, so that every time you open Music Station, you can quickly find your favorite playlists.



Smart playlist

Set different criteria to quickly create favorite playlists. If you want to listen to pop music of the 80's, just select “Smart playlist” when adding a playlist. Add the year condition, and Music Station will automatically grab all matching songs.



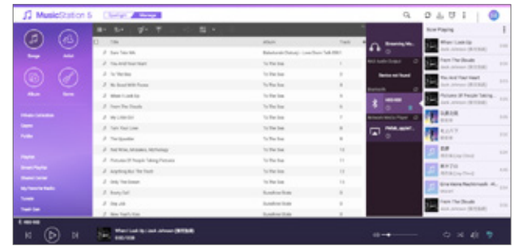
Custom album covers

Music Station will automatically download album covers for music. This helps with visual identification of music and also completes your collection. You can also upload your own album covers for your own personal touches.

Multimedia Entertain-ment Center

Play music on multiple devices

Music Station no longer plays music only through the browser. You can simultaneously play music on multiple devices. Music Station supports multiple playback methods, including: AirPlay®, Chromecast™, DLNA, Bluetooth, HDMI, USB, and more. Click the earphone icon on the control column to begin streaming music to various devices, including Apple TV®, Chromecast™, Internet TV, Bluetooth speakers, or USB speakers .

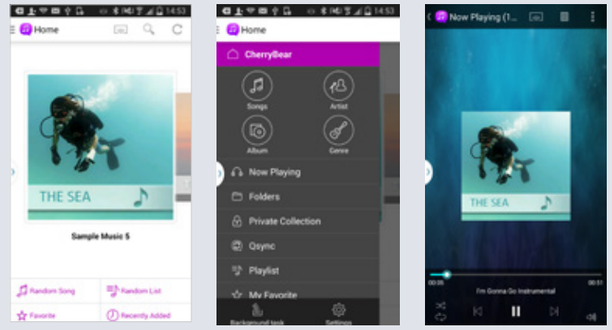


Special column

Qmusic - Mobile music library

You can stream music stored on your QNAP NAS to your mobile devices wherever you go.

Supports: iOS®, Android™, and Windows® Phone.



Quickly play music

With so many rapid play features, you can play music based on your mood: play any music, play your favorite music, randomly play any music playlist, or play the latest additions.

Editing playlists online

Easily create playlists, edit list contents, or save the “Now Playing” song list as an individual playlist.

Download music for offline enjoyment

If you are traveling to somewhere without stable Internet connectivity, you can download music to your device for offline playback. Simply tap “Download” and the music will be saved on your device.

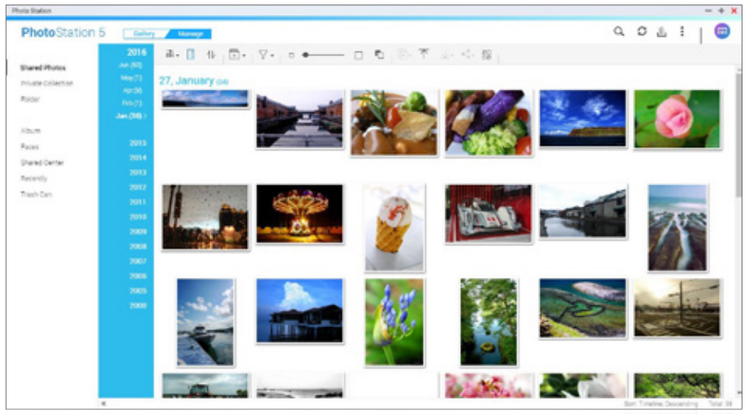
Browse music library to your liking

Qmusic allows you to browse music on QNAP NAS according to song title, artist name, album, folder, and more. This allows you to easily find desired music whenever you want.

Safeguard and share your photos

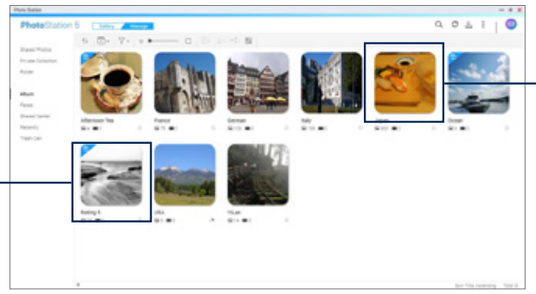
Photo Station 5.6

Photo Station makes photo sharing simple, and you can designate your own access right controls. Photo Station enables you to manage photos through virtual albums, categorize photos through tagging, quickly search and share your photos and meet your needs for photo management. Simply upload your photos to your NAS to create & organize your photo albums through a web browser, and share with your family and friends through social networks such as Facebook®, Google+™, Twitter® and Pinterest®.



Virtual albums, easy management

Virtual Album allows you to group together images into albums without creating new files, allowing for better organization of photos without requiring additional storage space. You can also create smart albums according to set conditions, so photos satisfying a condition will be automatically added to the album. Albums free you from restrictions of complex NAS folder permissions settings. You can simply select the account that you want to share in the album settings, or by sharing the link, then you will be able to share photos to users without an account.

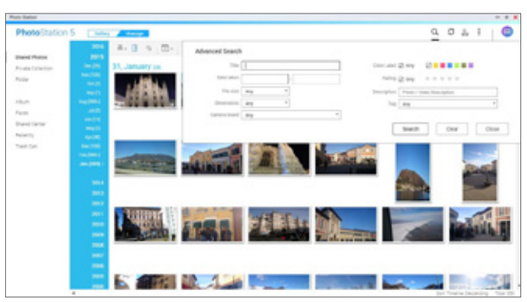


Smart Album: Set conditions for the album, and photos that match these conditions will be automatically added.

General Album: Manually add photos.

Quickly find photos with Advanced Search

Photo Station provides various search conditions, including title, tag, date, camera model, and more.

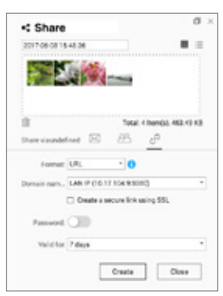


Advanced folder permissions

Photo Station supports advanced folder permissions. You can set up permissions for each sub-folder in the Control Panel, then each user can only view photo/video of allowed folders in Photo Station, making permissions management more accurate and simple.

Easily share photos

You can share photos with your friends and family. When sharing photos, you can also set a password and expiry dates to increase privacy and security. You can also directly upload photos or videos to Flickr, Weibo, YouTube, and other online communities.



Multimedia Entertain-ment Center

People in the photo

Photo Station can scan your photos and automatically recognize and categorize the people in the photo.

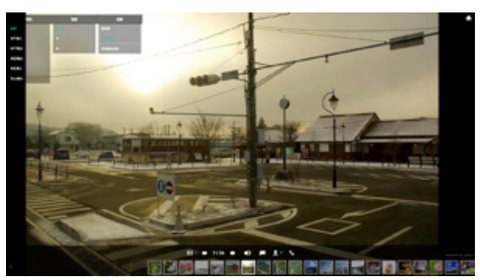
The Photo Station Extension app must be installed before using this feature.

360 degree panoramic views

Photo Station allows you to fully experience 360-degree photos and videos in full panoramic mode.

Enjoy photos in slideshows

Create wonderful slideshows that include your favorite photos and background music.



Right-click lock to prevent photo saving

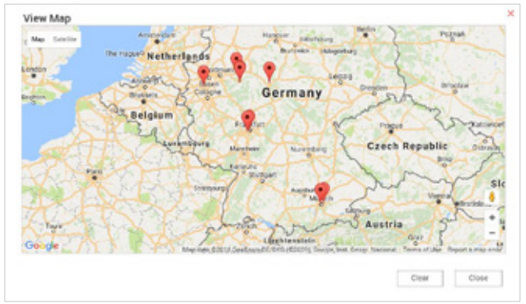
Photo Station completely locks right clicking and downloading can also be disabled to prevent users viewing shared images to directly download them.

High-definition enjoyment

QTS automatically creates thumbnails in three sizes for your photos for easy identification.

Map mode

Mark on a map where photos were taken for tracking vacations and other activities.



Special column

Photo Station Extension

With the Photo Station Extension kit, you can tag faces, convert PDF files into albums, and play an album as a series of photos.

Only supports x86-based QNAP NAS models.

Supports exFAT devices

QTS 4.3 supports the exFAT file system. exFAT is used by many modern devices and SD cards. After purchasing the exFAT driver for your NAS, content from these exFAT devices can be directly accessed and backed up to your NAS without needing an intermediate computer.

To purchase the exFAT Driver, go to https://license.qnap.com or contact your local QNAP distributer.

Multimedia Entertain-ment Center

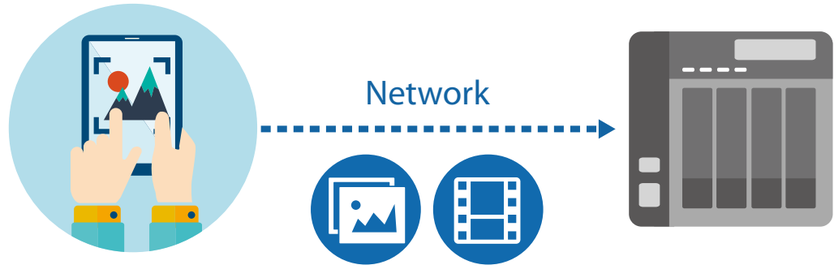
One device with all photos at any time

Qphoto 3.0

Qphoto enables you to capture, relive, and share every precious moment on the go. In Qphoto, your photos are displayed and arranged on a timeline for fast browsing and quick access. You can also directly upload newly-taken photos to your QNAP NAS to conserve the storage space of your mobile device. All of the existing photos on your mobile device can also be directly uploaded to the NAS for backup and long-term storage. Qphoto is a great tool for those routinely using their mobile devices as cameras and for users looking for a convenient way to organize the photos on their mobile device.

Backup photos directly to your NAS

Qphoto 3.0's shoot-and-send function allows you to directly upload photos taken by a mobile device to your NAS without saving it on the device. This provides an immediate method of backing up photos, and also helps to save the storage space of your mobile device.

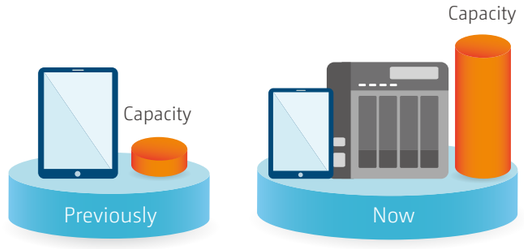


1

The storage capacity of your NAS on your mobile device

In the past, you would need to delete old photos from your mobile device to take new photos. Now you can take as many photos as you want without having to worry about taking up storage space on your mobile device.

Solves problem 1: ~~Delete old photos to take new ones~~

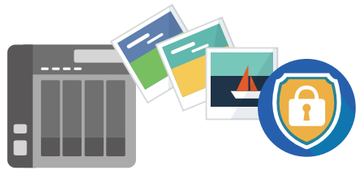


2

No more worries of photo loss

By uploading photos directly to your NAS, your photos are safe even if your mobile device is lost or damaged.

Solves problem 2: ~~Photos lost if phone is lost~~



3

Take a long video and record everything

Whether it is a wedding ceremony or a conference speech, Qphoto lets you record videos straight to your NAS.

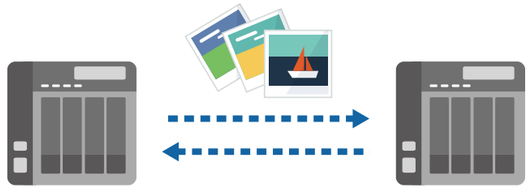
Solves problem 3: ~~Limited space on mobile devices~~

4

Simple and secure automatic backup

Qphoto's let you enjoy a simple and convenient backup solution on NAS. You can easily have different backups in different places, save more than one copy, and provide more protection.

Solves problem 4: Time-consuming backup tasks

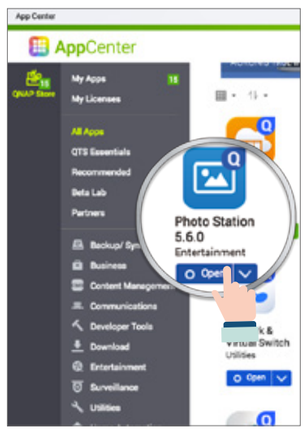


Benefits of Qphoto

	External storage	Qphoto
Capacity	128 GB	User-dependent and easily expandable
Must be carried at all times?	Yes	No
Risk of loss	High	Low
Automatic backup	No	Yes
Supports sharing	No	Yes (Share from the NAS at any time)

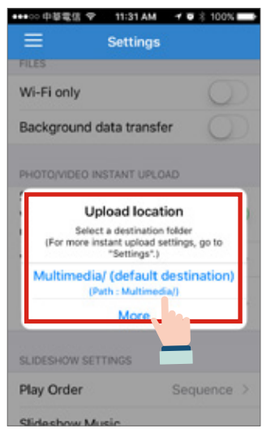
Three steps to get started

1 Install Photo Station



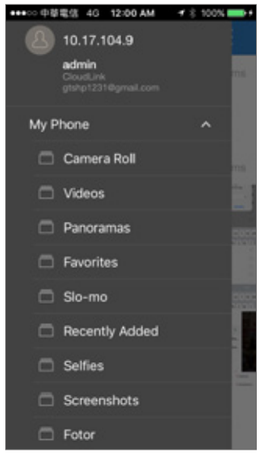
2 Log in to your NAS in Qphoto and press the camera or video button.

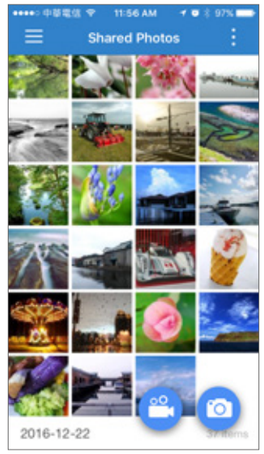
3 Select the upload location and start taking photos.

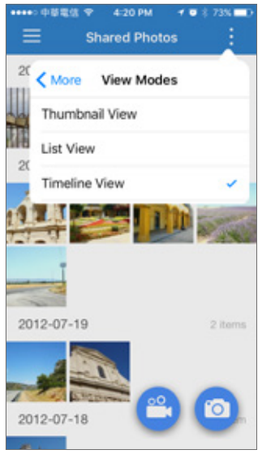


Local photos can also be viewed and managed

Qphoto can also browse the photo library on your mobile device. You don't need to switch apps to see your photos, and you can easily browse all your photos, upload photos, and manage them. Qphoto will mark the photos that have been backed up to the NAS, so you can fully control the backup process.







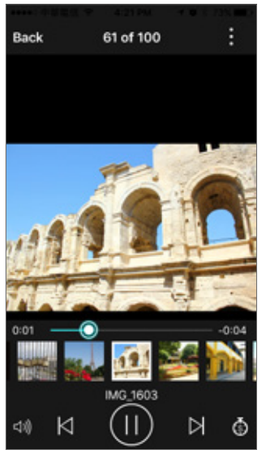


Photo browsing

Browse your photo collection using timeline, thumbnail, detailed lists and other view modes.

Enjoy slideshows

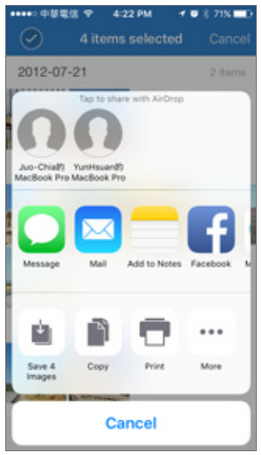
Create wonderful slideshows that include your favorite photos and background music.

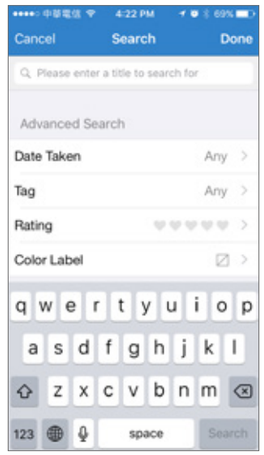
Instant Photo Sharing

Share photos from your QNAP NAS to Facebook, Twitter, Google+, WhatsApp, Line, Instagram, Gmail and other platforms.

Supports Advanced Search

Use keywords or tags to find specific photos & videos on your QNAP NAS.





Special column

When photographers meet QNAP

Photographer A: There's never enough storage capacity! My photos are all stored in the RAW file format, so my SD cards quickly reach their capacity. Even when saved to my computer, RAW files take up too much storage space

Photographer B: I want to quickly back up my photos. Photography is for capturing the moment and every picture is precious. How can I save my photos in a good manner?

Photographer C: I've accumulated tens of thousands of photos on my computer. Managing photos is really time consuming. I really want a software solution to manage my photos more efficiently.

If any of these situations sounds familiar, then QNAP has the solution for you!

With a suitable QNAP NAS, Photo Station, Qphoto, and the exFAT Driver, you can easily solve these problems.

USB QuickAccess

Some NAS models feature USB QuickAccess, allowing you to access files on the NAS by connecting it to a PC via USB cable. No network settings are required, nor are any drivers needed. By connecting a computer to NAS, you can quickly archive and back up the content of your PC to the NAS.

Quickly save high quality RAW files

exFAT devices can also be directly accessed by the NAS (purchase of an exFAT driver is required). exFAT is used by many modern devices and SD cards. After purchasing the exFAT driver for your NAS, content from these exFAT devices can be directly accessed and backed up to your NAS without needing an intermediate computer.

Backup your photos

By saving photos to NAS, you not only have more local storage to use for photos, but you can also use various NAS backup solutions to ensure your photos are never lost.

Photo Station

Photo Station is the ideal app for managing all of the images on your NAS. You can centrally store, access, and categorize images for greater convenience. With Photo Station, you can also easily upload photos, create albums, and share your photos with family and friends. Photo Station also offers a variety of photo browsing options to meet different needs, and can even stream to other multimedia players and be viewed and enjoyed by other people.

Qphoto

Qphoto is a mobile companion app for Photo Station. It allows easy access to the photos on your NAS wherever you are. Just connect to your NAS with Qphoto and you can manage your photo library and easily upload new photos.

Real-time interaction across the world

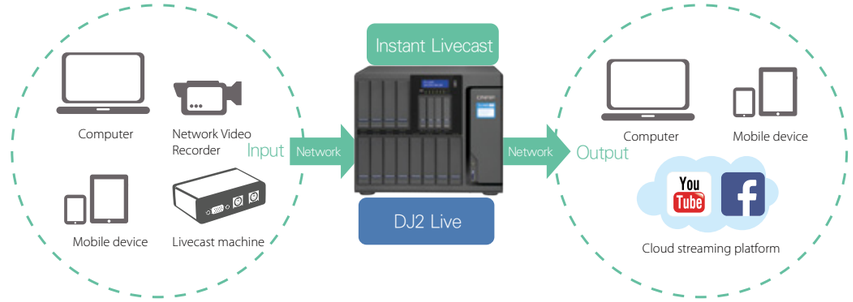
DJ2 live

Live streaming, irresistible charm

In recent years, many online live streaming platforms have emerged, with content ranging from lifestyle, video game streaming, corporate speeches and politics. Big players such as YouTube and Facebook have all entered the market. Unlike video broadcasting in the past, live streaming provides direct interaction with the audience, building a closer relationship among live streamers and their communities. Live content also has a sense of presence, what is most important is that it builds a sense of "expectancy", so people can not bear to turn it off and even indulge in it. It also makes more and more people willing to share their lives with the public. Corporations and the media also want to deliver their videos to different live streaming platforms simultaneously to achieve higher viewing rates.

Outstanding private cloud live streaming

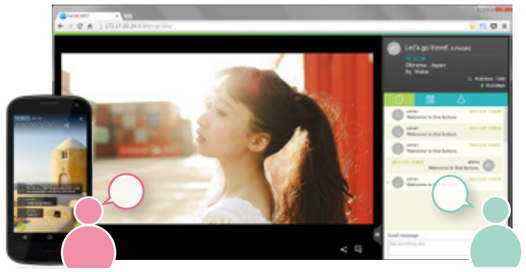
QNAP DJ2 Live turns your NAS into a livestreaming server. You can easily have your own online livecasting platform built on the many intrinsic benefits of a QNAP NAS. Broadcast videos to NAS on the local area network in a more modern manner, such as via a personal computer, a mobile device, or a webcam. You can also broadcast to YouTube, Facebook and other online platforms, and even deploy to your exclusive CDN and for worldwide audiences. DJ2 Live supports setting viewer permissions based on NAS account and Google accounts, and livecasts can also be encrypted. Videos can also be saved to the NAS for archiving and future rebroadcasting. There are numerous business applications for DJ2 Live, including corporate training, online classes, and more.



Instant audience interaction

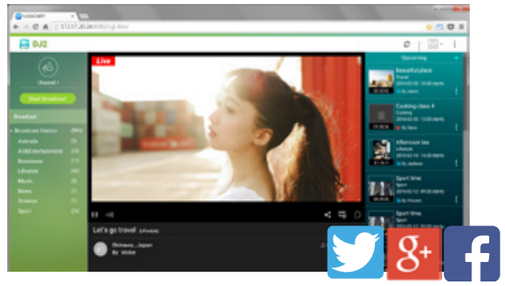
Chat while watching

The audience can view the live screen of DJ2 Live using their web browser or the DJ2 Client companion app on a mobile device. At the same time, the audience can also interact with the host and other audience members in an online chat room.



Notifications & Sharing

In addition to live streaming, you can also create future live streaming events. Once the event is created, DJ2 Live can notify authorized users via email or push notification. When the live channel is open to the public, viewers can also share their current live stream via email, community announcement, or link.



Six DJ2 Live advantages

If you look at current live streaming solutions, there are very few affordable all-in-one live streaming systems that provide private streams and can support both local area networks and the Internet. QNAP DJ2 Live brings together six major advantages and provides you a complete livecast, storage and sharing solution.

1. Security and protection

Well-known live web sites are built on open systems, there are many limitations and risks to live streaming through public clouds. For example, in terms of privacy, even if you set up to allow only certain people to watch live, it will still keep a copy in the cloud, and you never know whether there are any security holes on the site. DJ2 Live provides access controls and encrypted streaming. The streams are also kept on your NAS and can only be uploaded to online services with your permission.

2. Fast and stable internal network

Live streaming services are built on the Internet. If the host and the audience are on the same internal network and still use Internet traffic, it will waste bandwidth. DJ2 Live supports livecasting using the local area network, so it can not only make effective use of bandwidth, but also maintains high-quality stream stability for prolonged usage.

3. Supports CDN deployment

DJ2 Live supports fast CDN deployment, which makes it advantageous in terms of security protection, network acceleration and bandwidth. You can share your livecast without worry, since no one can attack your NAS through the CDN site address. The CDN network structure also allows viewers to enjoy the benefits of network acceleration and releases NAS bandwidth, so you can provide higher-quality live videos.

Before deployment　　After deployment

CDN (Content Delivery Network) is a computer network system connected through the Internet, which uses the nearest server to transfer files to the user in a faster and more reliable manner, and which means higher performance, scalability and low-cost web content to the user.

4. NAS video live streaming

In addition to real-time live streaming, you can also choose to live stream videos stored on the NAS at scheduled times, and freely mix your channel with live streaming and video. This can be used in tutorials. If a specific student wants to re-take classes, you can directly grant the student permission, and in the live streaming period, connect the student to the NAS to watch.

5. Save & Share again

Most live streaming services only provide instant live streaming, you can not save the actual broadcast. Whereas sites with general support for live streaming playback usually don't provide export functionality. If you want to edit a video that has been played before, it is very inconvenient. If you need to save your broadcasts, DJ2 Live is the best choice.

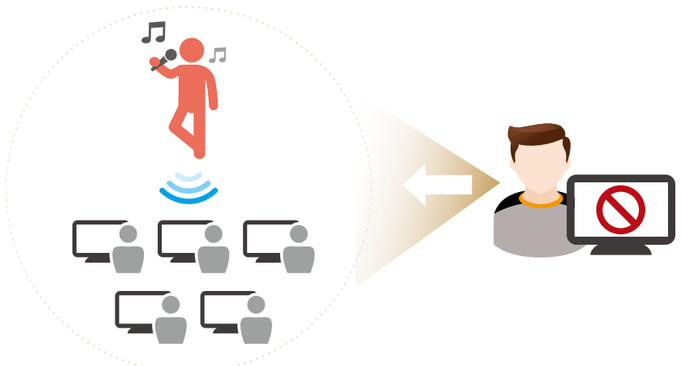
6. Low setup and maintenance cost

If you want to start livestreaming, you can find numerous professional/educational live streaming systems on the market. However, these systems are usually split into several devices according to functionality and can be expensive. Each device can also have independent management interfaces. Users often need to spend time studying these interfaces, or even need to train a team of professionals for its maintenance and management.
On the other hand, if you use a cloud live streaming service, then it may be easy to set up - but paying for time, bandwidth, and storage may lead to excessive costs. QNAP DJ2 Live provides a centralized solution for livestreaming, and the app is free for all QNAP NAS users.

Live streaming - to the right people

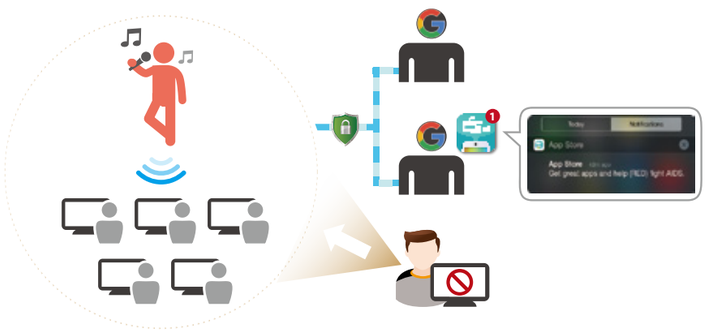
1. Live streaming to internal networks

You can set up DJ2 Live in such a way that only devices within the same area network as NAS can watch the livecast, thus you can not only ensure that your livecast is not watched by outsiders and protect your privacy, but also save external bandwidth.



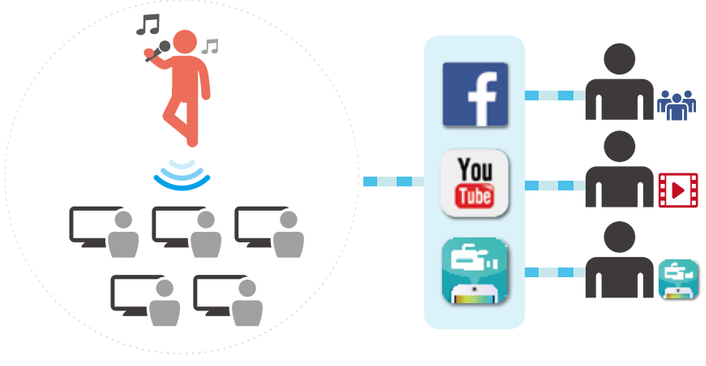
2. Permission controls (NAS account and Google account) with encrypted live streams:

You can grant different users different view permissions for each livecast, and control the permissions through NAS account or Google account. DJ2 Live also supports mandatory livecast encryption. If you enable this option, the livecast can only be viewed over a secure HTTPS connection.



3. Integration with cloud platforms for unlimited audience reach

If you have an established viewer base on YouTube, Facebook, or another platform you can also stream your video from your device to your NAS and broadcast it on this platform. With additional bandwidth, you can let users watch via cloud platform and extend your audience reach.



Quick live streaming

DJ2 Live also has a companion mobile app - DJ2 Client - allowing you to start livecasting from anywhere. You can also use DJ2 Client to manage stored live videos and re-share them. When a livecast starts, DJ2 Live will notify users by email or push notification. After receiving the notification, users can watch the livecast in a web browser or DJ2 Client. You don't need to spend tons of money, with just a mobile device you can start a small/medium scale live streaming event.

DJ2 Client can be installed on Android phones and iPad. Other mobile devices are also supported.

3 steps to mobile live streaming

Use the standard live streaming format RTMP, extensive support for live streaming equipment and platforms

DJ2 Live uses the industry-standard RTMP protocol. In addition to DJ2 Client, you can also install various free livecast software on your computer (including OBS and XSplit) to stream your screen and audio to DJ2 Live for livecasting. In addition, you can also use cameras that support RTMP to directly send footage to DJ2 Live for livecasting.

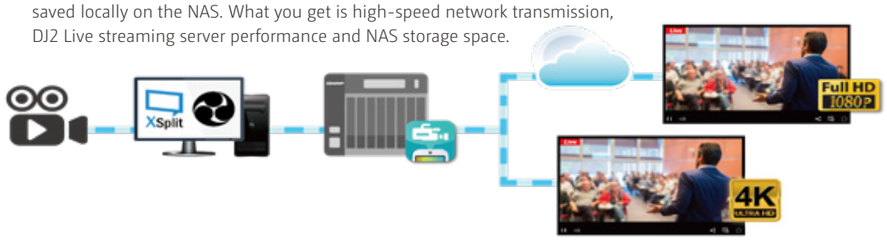
RTMP (Real Time Message Protocol) is a communication protocol commonly used for video conferencing or live streaming. Unlike RTSP (Real Time Streaming Protocol) commonly used by webcams, this protocol is used to proactively upload audio and video, so it can pass through multi-layer network environments (NAT). In addition, RTMP uses the TCP protocol to ensure better viewing quality.

Case Sharing

4K live streaming

General cloud platforms usually have limits for live streaming time, video quality, and you may not be able to locally save the footage. DJ2 Live in QNAP NAS has no such limits, you can livecast as long as you want and save as much footage as your NAS can support.

DJ2 Live can help you have the best 4K livecast at the lowest cost. As shown below, you can use PC-based software to stream 4K footage to DJ2 Live. Viewers on the local network have enough bandwidth for the full 4K experience, while viewers from the internet can receive a 1080p stream to optimize bandwidth usage. The full-quality 4K video will be saved locally on the NAS. What you get is high-speed network transmission, DJ2 Live streaming server performance and NAS storage space.



IEI HDMI capture device

Other than livecasting videos from DJ2 Client, webcams and video files stored on the NAS, you can also stream high-quality video and audio to your computer via IEI's capture device, including: high-quality video cameras, video game consoles, or any HDMI output device, so that your live content is not limited.

The IEI video/audio capture solution includes hardware video compression and uncompressed feeds. Hardware compression supports H.264 format videos for real-time encoding. Uncompressed feeds include analog and digital video signals and supports standard and high-definition resolutions.

Powerful real-time streaming encoders

Best DJ2 partners

You can install encoding software on your Windows PC or Mac to capture content from your computer, cameras, microphones, and other devices. You can then upload to DJ2 Live in accordance with your requirements and switch to the scene, so that viewers can enjoy your program live.

DJ2 Live uses the standard RTMP interface which is widely supported by various encoders. You can select the most suitable encoding software based on your needs. Our recommended encoders are listed below.

XSplit plugin - Easily customize your live content

XSplit is a well-known live streaming software for Windows that is continuously being updated and optimized. XSplit has a plug-in for DJ2 Live. It supports local search in NAS, and can automatically obtain the URL streaming address and key after NAS login. It also allows you to quickly set livecast parameters and more. XSplit also features the following functions:

- Capture multiple live sources and adjust various effects (for example: echo effects, text marquee) to enrich your live content.
- Set multiple groups of scenes based on your needs, and quickly switch between appropriate scenes.
- High-quality streaming (varies according to account level).
- Local recording function

Visit the XSplit website for more information. XSplit offers different premium options based on your needs.

OBS - Popular free video and live open source software

OBS is a widely-used video and live streaming software, available for Windows, Mac, and Linux. As with any open source software, enthusiasts around the world continue to add various live features for OBS, and the QNAP DJ2 Live team is one of them. QNAP's OBS plug-in supports local NAS search and automatic acquisition of stream URLs and keys after NAS login. It also allows you to quickly set live parameters and more. OBS also features:

- Capture from multiple sources and integrate into live footage to make your live content more unique.
- Pre-prepare various scene combinations and switch during the livecast.
- High-quality streaming
- Local recording

You can learn more on the OBS official forum.

* For optimum performance of XSplit, OBS and other real-time streaming software, it is recommended that you meet the following requirements:

- 720p Streaming / Video: Core i5 CPU or similar.
- 1080p Streaming / Video: Core i7 CPU or similar.
- Memory: 8GB RAM
- Graphics card: GeForce or Radeon.

Case Sharing

A QNAP event held in Taipei used XSplit's powerful editing function. The conference slides, speaker screens and themes were presented as customized content, and according to different timing (such as: live Demo, changing speakers on stage or intermission), different scenes were switched. It was streamed by XSplit to DJ2 Live and broadcast live on Facebook and YouTube.

Transform your living room into a karaoke room

OceanKTV 2.0

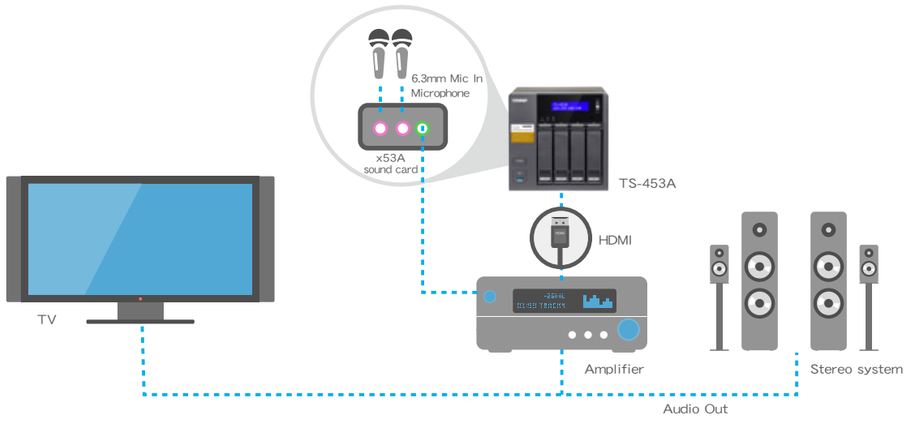
With OceanKTV your NAS is transformed into a unique karaoke system. It also supports iOS® and Android™ devices for hands-on playlist controls. Whether you are inviting friends over to enjoy music, or managing a vast music collection, QceanKTV is able to fully meet your needs.

Create a playlist and arrange the songs you want to sing

In the OceanKTV song library management system, you can create favorite songs in various playlists. “Playlist” allows you to connect to the NAS at any time through the browser and edit the song list.

Convenient, affordable, karaoke entertainment

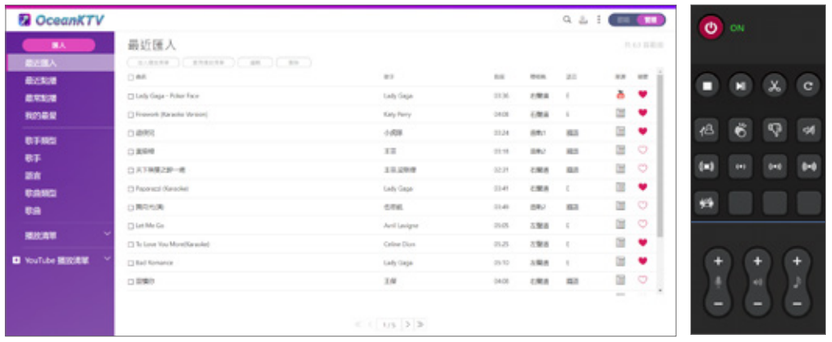
OceanKTV provides NAS users with an incredibly unique experience. Connect your NAS to a TV, and some dynamic microphones to your NAS to start your karaoke experience. Once OceanKTV is installed and your songs are imported then it's all ready.



- HD Station can be installed in the Control Panel. OceanKTV can be installed in the App Center You can start your karaoke experience once both are installed.
- You must have a QNAP NAS with HDMI output, 4GB RAM, and a built-in sound card (or QNAP Audio Box KAB-001). The microphones must be dynamic microphones.

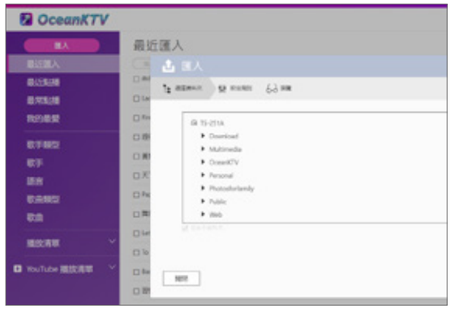
OceanKTV

In addition to the main program OceanKTV TVplayer which runs on HD Station and the iOS®/Android ™ app, QNAP also launched an application utility that can be run on QTS so that you can complete all editing, operation and management functions here. The new OceanKTV interface also makes it easier to pick and manage songs. Here you can also select a song, insert a song, adjust the volume, create sound effects or open the guide, and use the built-in adjustment function to adjust the song to the most suitable range for you to enjoy.



Import songs from anywhere

Previously, songs could only be imported from the “OceanKTV” folder. Now songs can be imported from any NAS shared folder,or USB drivel.

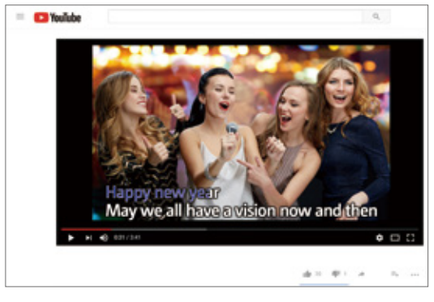


Simple import rules

As long as the file format in the folder is the same, you can easily import a large number of songs according to the setting rules provided by the system. Importing into OceanKTV no longer requires you to modify the file name one by one.

Access YouTube's global music library

You no longer need to worry about how to get songs without extra cost. Just enter keywords to quickly find and enjoy the countless songs available from YouTube™. Note: OceanKTV only streams songs from YouTube™. You cannot download them to the NAS.



Automatic selection list

OceanKTV will provide you with the latest, most-popular songs so you can easily grasp the latest trends in music.

It’s not just a phone, it is your karaoke remote control

OceanKTV supports using iOS® and Android™ devices as remote controls for your OceanKTV experience. Install the OceanKTV Client on your device, connect to the same network as your NAS, and then you can directly log in and start picking songs. You can easily control basic functions when using your mobile device, including enabling/disabling singing guides, adjusting echo effects, interrupting songs, adjusting volume, pausing, or even playing special effects.

A unique experience

OceanKTV is a one-of-its-kind experience for home NAS users, providing a unique multimedia experience for users.

Play now and know where you stopped

If you need to leave for a moment and don't want to lose your space, open your OceanKTV Client to see where you stopped from “Now Playing”.

✎ Karaoke To Go currently supports: Android™ / .3gp, .mp4, .ts, .mkv; iOS® / .m4v, .mp4, .mov
✎ Now Playing supports: Android™ / .3gp, .mp4, .ts, .mkv; iOS® / only DTS and AC3 are not supported

New look for a new experience

OceanKTV's new interface design is simple and clear. In addition to providing a popular list from YouTube, the songs you import are also categorized into various projects. When you view categories, you can preview, on-demand, and play the songs, or add to favorites. Picking songs becomes so much more intuitive.

Special column

QNAP Audio Box

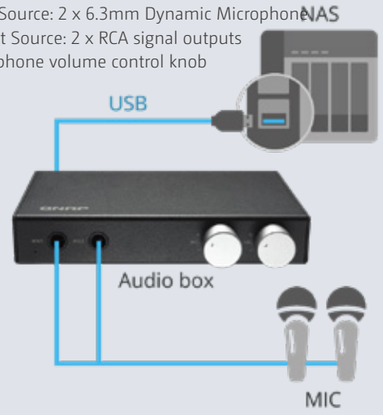
Add dynamic microphones to a QNAP NAS using the QNAP Audio Box. Designed specifically for OceanKTV, the QNAP Audio Box allows two 6.3mm dynamic microphones to be installed on a QNAP NAS.

✎ OceanKTV also supports some third-party USB sound cards. For a compatibility list, go to https://www.qnap.com.

✎ For more information, visit http://OceanKTV.com

Product specification:

Interface connection: 1 x USB 2.0
Input Source: 2 x 6.3mm Dynamic Microphone
Output Source: 2 x RCA signal outputs
Microphone volume control knob



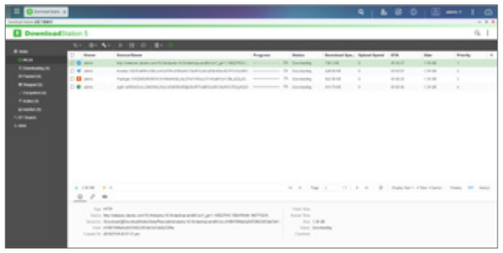
Your 24/7 download center

Download Station 5.0

When you use a computer to download files, usually you need to keep the computer on, which is inconvenient and also wastes power. Download Station is an around-the-clock download center. After setting up a download task, you can shut down your computer, and the task will continue to be run on the NAS, making file downloads more convenient and energy efficient.

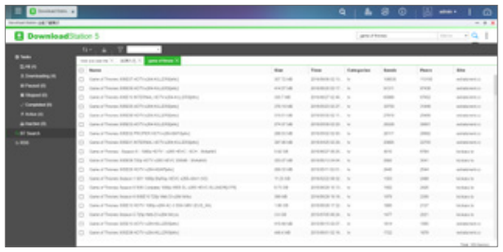
New user interface

Download Station has comprehensively enhanced its user interface for greater management and response speed. With customized administrative interface settings, you can also easily obtain the real-time status of all tasks.



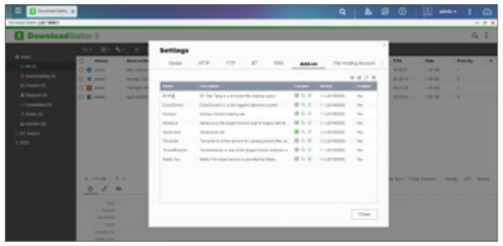
Built-in search engine, supporting multiple language BT site search

You don't need to browse around all major sharing sites to look for download resources, Download Station can help you easily find the files you want, and directly download them. Simply use Download Station's built-in multi-language BT Search.



Extend functionality with plug-ins

Install plug-ins developed by QNAP or third parties to extend the functionality of Download Station to include RSS support for a particular site, add more BT sites to increase file search results, or enable Download Station to decode special site URLs and download files from them.



Multi-user downloading

Grant permissions to general NAS users so they are no longer restricted by the administrator role. All your friends and family can experience the convenience brought by Download Station.

- Grant application privileges for Download Station to users in the Control Panel.

Wide range of download protocols

Supports multiple transfer protocols and encoding types, including: HTTP/HTTPS, FTP/FTPS, BT, PT *, Magnet links, Thunder, Express, qqdl encoding format, and Baidu cloud download space.

- PT supported download varies by platform. If Download Station (libtorrent) is not on your list of recommended PT sites and cannot download normally even after turning on compatibility mode, try an alternative download tool (such as Transmission) from the App Center.

RSS subscription and automatic download

Download Station fully supports downloading via RSS feeds with filter and criteria settings. Subscribe to an RSS feed and Download Station will automatically download the content for you.

Online download settings and schedule management

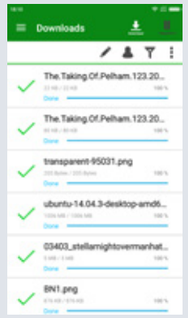
Set download/upload speed limits with a flexible download schedule and optimize your bandwidth distribution.

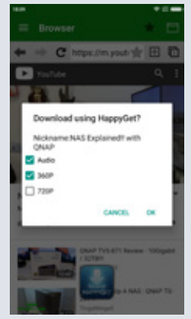
Special column

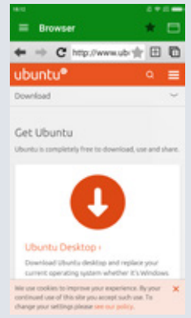
Qget - remotely manage download tasks

With Qget you can easily view and manage the status of all download tasks: including starting, pausing or removing download tasks. When downloading is complete, you will receive notification from Qget, so you are informed of the current download status.

- Supports iOS® and Android™.







Backup videos from video websites

HappyGet * helps to backup videos from YouTube to your QNAP NAS. All it takes is one click.

- HappyGet can be downloaded from the App Center.
- This feature is only available for the Android ™ version of Qget.

Quickly add download tasks

Enter multiple download links or upload torrent files in Qget to quickly add tasks and let Download Station download for you.

- Torrent file uploading is only available for the Android ™ version of Qget.

Download anytime

With the built-in browser, you no longer need to copy or paste any links. Simply press the direct download link on the site to add the download task to Download Station.

BT search

You no longer need to perform complex BT search operations with a computer. You can search resources through mobile devices at anytime, from anywhere, and use Download Station to download them for you.

Build a professional surveillance system

Video Surveillance Solution

Surveillance has always been a core part of QNAP. With the constant development of digital surveillance technologies, solutions that were once very expensive are now well within the reach of general users. Regardless of usage environment, whether it is a home, office, school, or other institution, QNAP provides a complete surveillance solution. QNAP NAS provides at least two free camera channels, with expandable surveillance channels if required. ONVIF and PSIA universal camera protocols are supported, and over 3,000 cameras models from over 100 brands are supported.

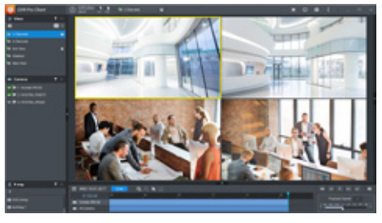
Independently-controlled monitoring environment

QVR Pro

QVR Pro is a surveillance solution that integrates existing QVR monitoring functions into the QTS system. It allows you to have an independent surveillance environment, dedicated video storage, with QTS storage expansion and space management functions.

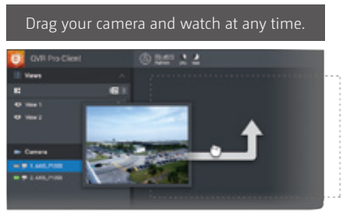
Single interface instant monitoring and playback

View real-time footage and playback of multiple cameras at the same time without switching between functional modes. If you see a suspicious event, you can investigate by clicking the timeline to play the video of that point in time.



Flexible monitoring modes

With QVR Pro Client, users can intuitively drag multiple cameras or electronic maps to the screen and easily adjust the layout size and position. The highly-flexible and customizable layout perfectly suits various monitoring scenarios.

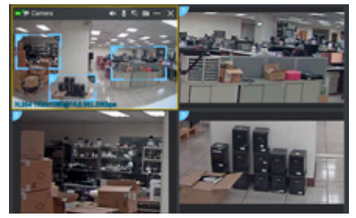


Supports Windows®, macOS®, and HD Station.

Clear and easy ROI function

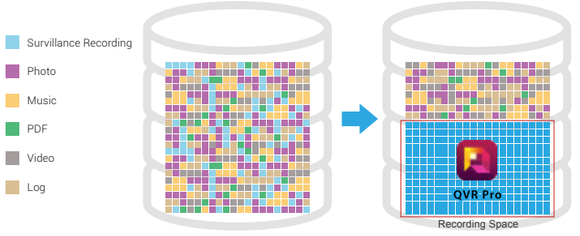
The Region-of-Interest (ROI) function allows you to focus on individual areas of camera feeds for more in-depth monitoring of key regions of interest.

System requirements: 64-bit QNAP NAS with at least 4GB of RAM.
Firmware requirements: QTS 4.3.0 (or later)
Dependent application: Container Station



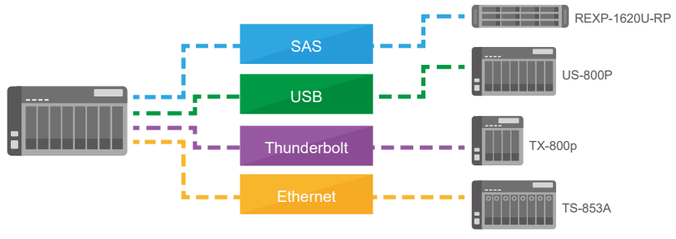
Flexible video storage space

Independent operating environment
QVR Pro can reserve dedicated storage space in advance and enjoy the advantages of storage management brought by QTS. Even if it shares the same NAS with QTS or even the same storage pool, it can still save files independently without interference.



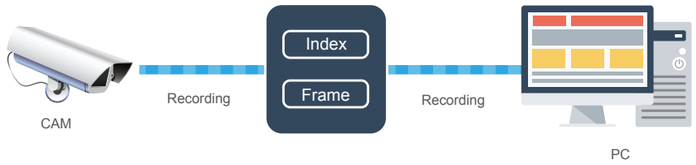
Expand at any time

The video storage space of QVR Pro can be spread across multiple disk volumes. When the NAS storage capacity is running out, you can expand the existing storage space using QNAP Expansion Enclosures and also by using VJBOD technology.



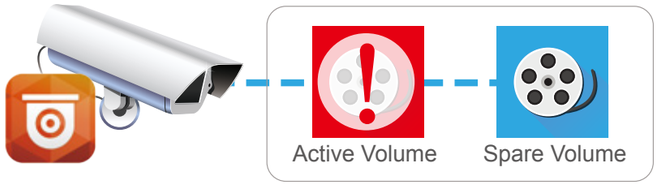
Index Design Architecture

Improves write performance and helps with playback. Even if the capacity of the volume is full and old data needs to be overwritten, performance will not be affected by overwriting.



Backup disk volume, uninterrupted video recording

You can include multiple disk volumes in your video storage space, and even if one of the volumes is damaged or lost, you can continue to record without interruption and save the entire video.

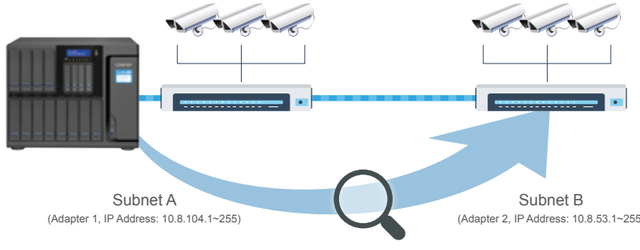


Batch add/edit cameras

Cameras can be added/edited in batches to reduce the time and manpower needed to set up and maintain a monitoring system.

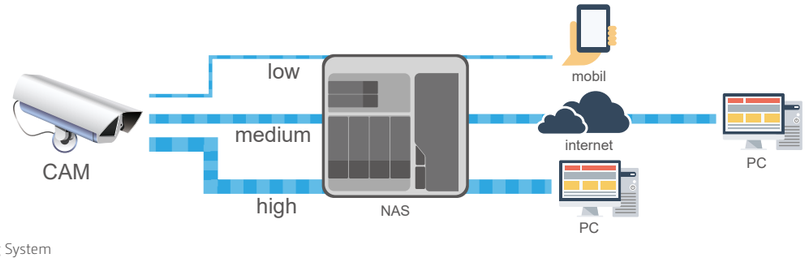
Add cameras from across networks

Due to protocol limitations, automatic camera searching was previously limited to the local NAS network. QVR Pro only needs to have a network connection, and when you enter a group of network segments that you want to search, it will automatically search the cameras under these network segments, significantly reducing the complexity of adding cameras.



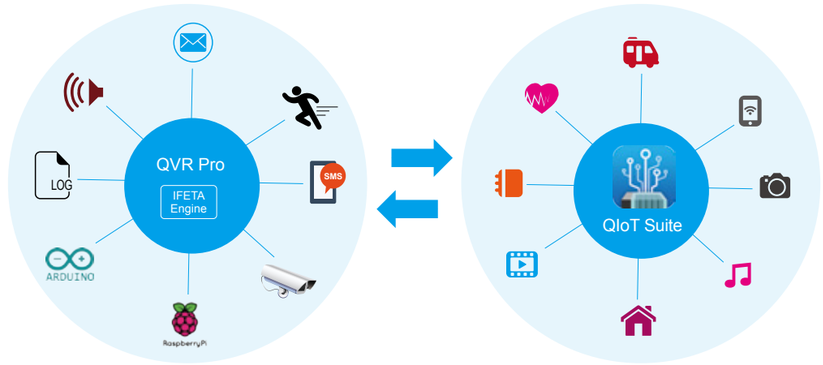
Partition to store multiple image quality or type

QVR Pro supports concurrent recording of multiple video streams for different applications. Users can select different streaming video quality according to their network conditions. For example, high-quality monitoring can be used on the company's intranet, and users remotely accessing the feeds can use a bandwidth-friendly low/medium-quality video instead. In addition, when you need to play videos with a different resolution, no CPU resources are required. This allows the NAS to focus on recording and enhances video stability. QVR Pro can set up different video storage spaces for different video applications. You can save high-quality 4K video recordings to SSD storage to keep applications such as event recordings or regions of interest clear, maximizing hardware performance without compromising image quality.



QVR Pro Event Engine Linked to QIoT Platform

QVR Pro events can trigger QIoT devices and sensors. It can connect to alarms or IoT devices using simple HTTP settings to trigger device responses.

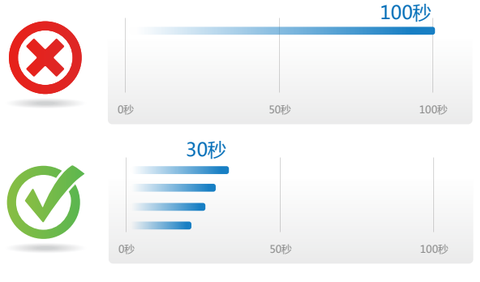


RTMP Multi-Application - Live, Fisheye & 360 Panorama Cameras

QVR Pro supports storage and RTMP/RTSP recording, and can output RTSP streaming to multiple live devices. Qdewarp fish-eye reduction technology is compatible with all fisheye and 360 panoramic cameras supported by QNAP, including Luna 360 panoramic camera and Ricoh Theta. With Qdewarp's multiple reduction modes and movable reduction areas, users can see image details without distortion. Qdewarp also supports instant monitoring and video playback.

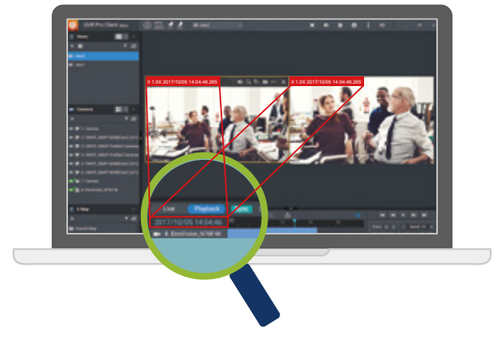
Maximize system performance

Supports multithreading and GPU hardware acceleration.



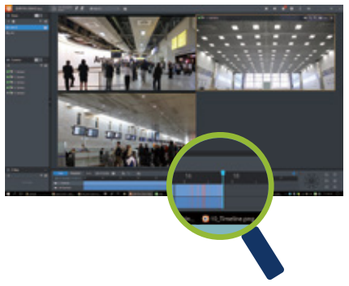
Synchronized playback

Click the "Sync" playback button and all video cameras on the monitor interface will be synchronized to play back video files at the same time and rate.

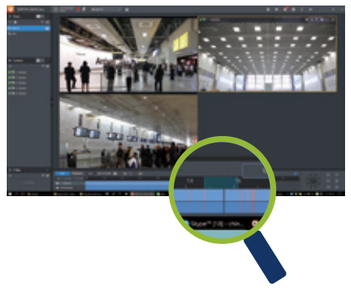


Easy-to-use timeline

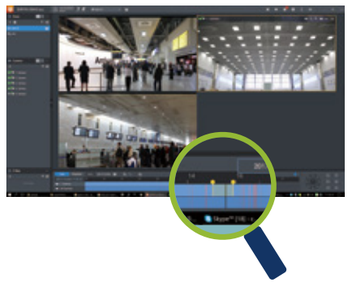
Select any interval (black scale position) on the timeline to zoom in on the timeline



Select any interval on the timeline (blue area) to export the video file



Click the "Sync" playback button and all video cameras on the monitor interface will be synchronized to play back video files at the same time and rate.



QVR Pro Client for Mobile

New QVR Pro Client Mobile App

PTZ and camera preset point control

Remote control via mobile device allows easy use of PTZ and camera presets.

Instant event notification and viewing

If an incident occurs, QVR Pro Client for Mobile can instantly notify you by ringing, vibrating, or sending a push notification to your mobile device. You can quickly view the event video using your mobile device and control the event status.

E-map

If an incident occurs, you can quickly see the location of the camera where the incident occurred by using an electronic map.

Single integrated interface monitoring

Multiple built-in quick monitoring templates allow you to monitor multiple channels simultaneously. In the single channel monitoring mode, you can quickly switch the instant video/playback function. Click the event or timeline and immediately play back the video at selected time point.

Low-bandwidth mode

If the network speed is slow, you can select the low-bandwidth mode to view videos smoothly. This does not affect the quality of the original videos.

Support iOS, Android (QR Code)

QVR Pro Client for Mobile

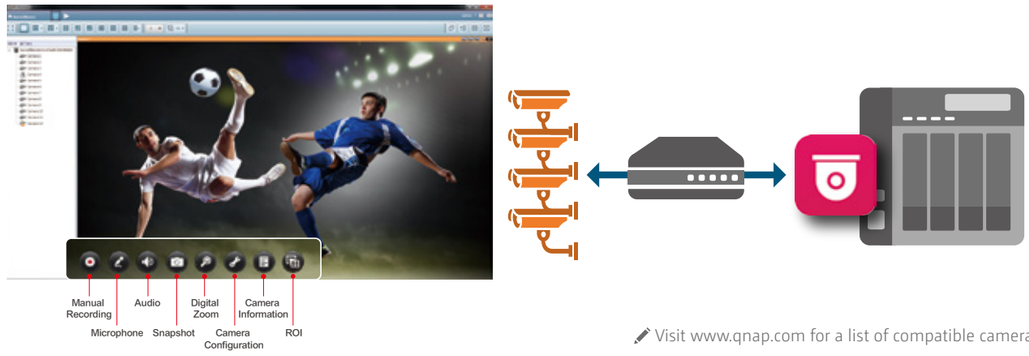
Google Play

App Store

Professional video surveillance and management system

Surveillance Station 5.1

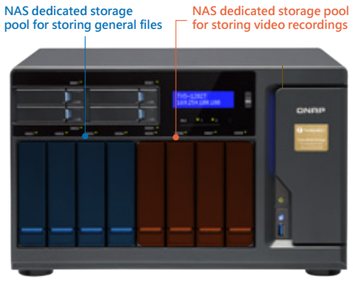
Surveillance Station is a professional video surveillance and management software that provides complete real-time remote monitoring, recording, playback, intelligent video recording, alarm functions, intelligent analysis and management capabilities.

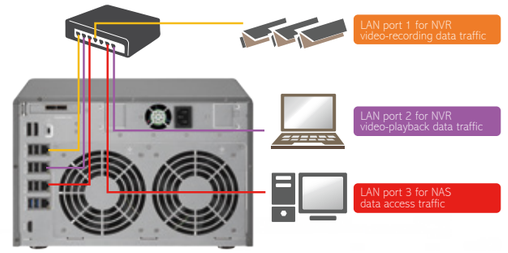


Visit www.qnap.com for a list of compatible cameras.

Layered and partitioned storage architecture

QNAP's multiple functions and architecture are based on a layered and partitioned structure. Through the storage pool storage architecture, you can distinguish between NAS and NVR, and save to different storage pools composed of different hard disks. You can also set dedicated network ports for NVRs to achieve the best read/write performance for coexisting NAS and NVR.



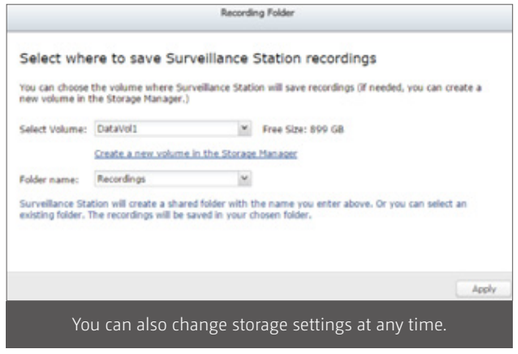


Quickly set up a professional surveillance system in three steps

1. Choose where Surveillance Station recordings are saved

When first using Surveillance Station, you must specify where surveillance video will be stored. We recommend using a separate storage pool for storing video surveillance files.

- We recommend using hard drives specifically designed for NVR/ surveillance purposes. Visit www.qnap.com for a compatibility list.

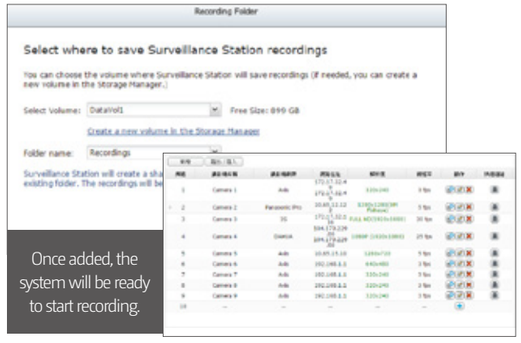


You can also change storage settings at any time.

2. Camera settings

After installing the camera on the same network as the NAS, click the "New" camera button, and the video surveillance center will automatically find the camera on the network.

- In addition to IP cameras, QNAP also provides other options. The QUSBCam app allows using standard USB webcams as IP cameras. You can then use Surveillance Station to record and playback videos from USB webcams.

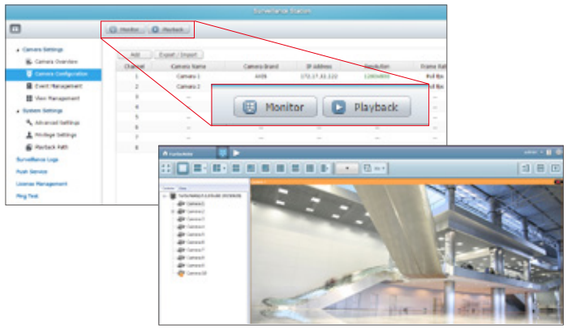


Once added, the system will be ready to start recording.

3. Start surveillance or playback video

Surveillance Station provides multiple ways to monitor or play recordings. You can click the surveillance footage, click the playback button, or use Vmobile, mobile apps, or QvPC local display for monitoring.

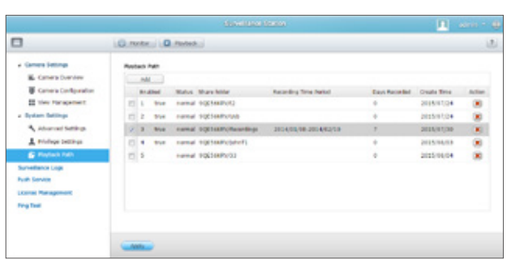
- NAS models with HDMI output and over 4GB RAM can run QvPC video surveillance center (local display). Or you can directly output to large screen via HDMI for better viewing.
- PC or Mac must have Client software installed before viewing. Click the monitoring or playback button to guide you through installation. A single PC Client software can be used to simultaneously log into different video surveillance centers to view multiple screens.



Never miss any recordings

Playback path management

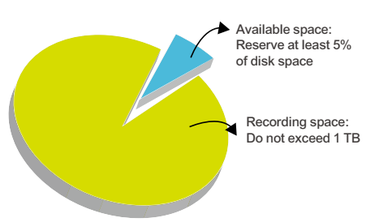
When changing the video location, Surveillance Station will automatically record the path of the old location in the playback path management table. With this feature, the video files stored in another folder can also be played back through Surveillance Station.



Automatic override setting

Surveillance Station has two-camera usage threshold default settings, and will not allow you to have less than 5% remaining storage space for videos, or exceeding 1TB of storage. If you require a surveillance video storage space of more than 1TB on your hard disk, you can adjust the size of the designated space to suit your needs.

Upper and lower storage limits for fine-tuned administrative control



Flexible monitoring modes

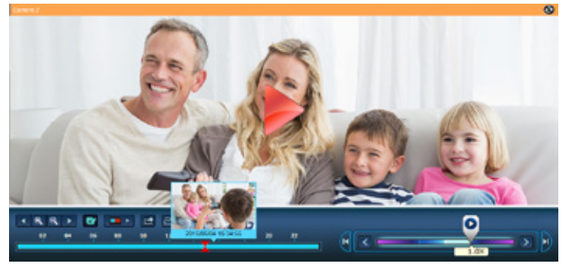
Diverse layout choices for playback and monitoring

The default settings provide a rich set of viewing modes (including 1, 2, 3, 4, 6, 8, 9, 10, 12, 16, 20, 25, 36, 49, 64 channel viewing modes). If these standard modes do not meet your monitoring requirements, you can customize your layout using the layout management function.

- Click "Refresh" to view the new layout.

Virtual cameras

When using high-resolution cameras to cover a wide area, you can take advantage of virtual cameras to highlight areas you want continuous attention to. Virtual cameras do not need authorization. They may also be included in customized versions to show in conjunction with the general camera.



Fast forward, rewind, adjust speed, and frame-by-frame playback

Using the shuttle button, you can drag right or left, drag forward or backward to quickly and easily find desired frames, at the speed you want. When it's near the event, you can change to frame view for greater detail.

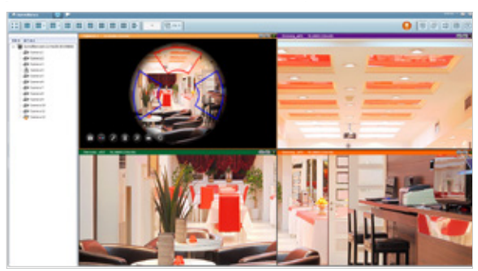
PTZ controls

You can control the network camera, moving it up and down or zooming in and out, using the PTZ (Pan / Tilt / Zoom) feature in Surveillance Station. You can also enable the "Click Go" function to select the location you want to set and make it more convenient for remote monitoring.

- Surveillance Center 5.1 features a digital watermark tool that displays the exact recording date and time, camera name, and QNAP NAS model to verify the authenticity of the output video or still image.

QNAP General Fisheye Reduction (Qdewarp)

Fisheye lens are ideal for spacious places. Using image restoration technology, users will be unaffected by the distortion and will be able to see the image details. Qdewarp is compatible with all supported fisheye cameras. Select the camera type you want to view in the restored video layout, and move the restored area at any time. Qdewarp supports real-time monitoring and recording playback, and ensures there are no blind spots.



Region Of Interest

Compared to traditional analog surveillance cameras, high-resolution webcams (such as 4K cameras) can cover a much wide area. QNAP Remote Control provides options to quickly setup areas of interest. You can select a 5 or 7 split-area from the full image to focus in order to see more details, and monitor and manage the focus area without requiring additional camera licenses.

Immediate alerts for events

Set alerts and notifications

If cameras detect motion or alerts are triggered, Surveillance Station will automatically send notifications to up to 5 email addresses.

Show camera location status on a map

After the images of the area under surveillance are uploaded to Surveillance Station, drag and drop the camera icon onto the map. In event of an alarm, the camera icon will flash. Click the icon to view real-time images before taking necessary actions.

Special column

QUSBCam2 – Use USB webcams as surveillance cameras

The new QUSBCam 2 supports ONVIF and RTSP

QUSBCam2 turns USB webcams into IP cameras that support the ONVIF protocol and the RTSP streaming protocol. With Surveillance Station, you can monitor and view USB webcams using QUSBCam2. You can quickly set up a home video surveillance system without needing expensive IP cameras.

Combined monitoring software

QUSBCam2 uses the standard ONVIF protocol and can be combined with monitoring software that supports ONVIF, such as QVR Pro or Surveillance Station.

QUSBCam2 link sharing

Easily share real-time monitoring screens with link sharing. Turn on the verification mechanism to further protect shared videos.

QNAP

The most user-friendly Thunderbolt 3 & 10GbE NAS

QNAP TS-453BT3

Create a collaborative environment for professional video editing and high-speed sharing

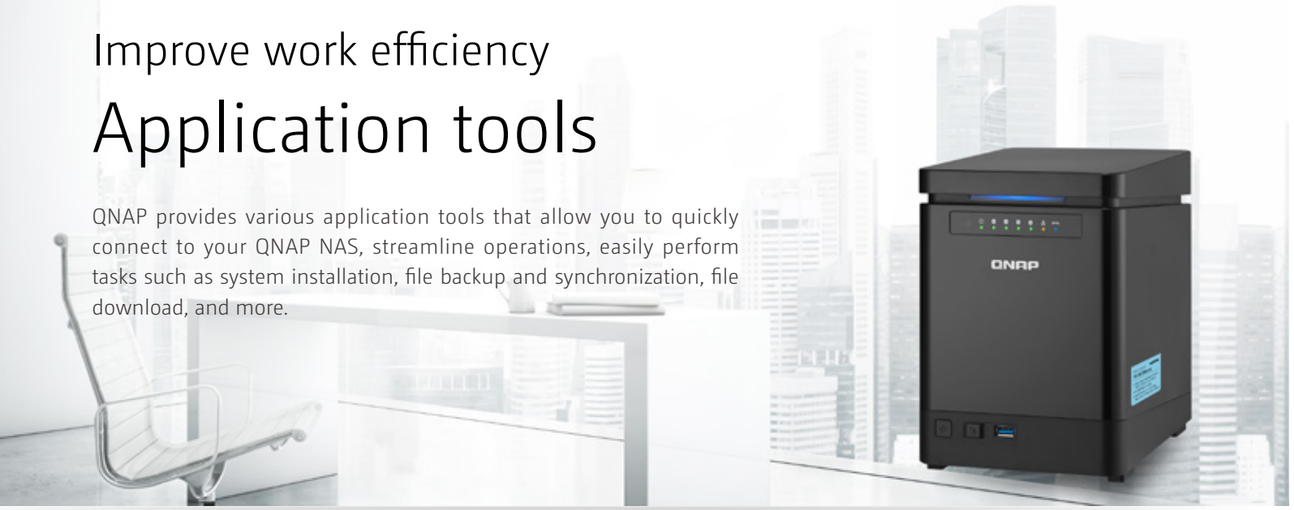
- High-speed transmission
- Perfect collaboration platform for Mac and Windows users
- Quickly find files with Qsirch
- Optimized storage performance with Qtier and SSD caching

THUNDERBOLT

Improve work efficiency

Application tools

QNAP provides various application tools that allow you to quickly connect to your QNAP NAS, streamline operations, easily perform tasks such as system installation, file backup and synchronization, file download, and more.



Qsync

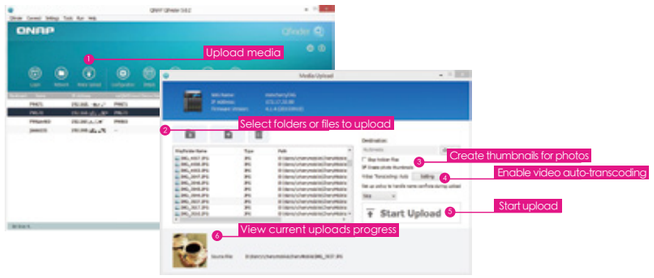
Qsync supports Windows and Mac and provides file synchronization between multiple devices. Simply move files into the Qsync folder to sync them across all your authorized devices (including computers and mobiles). For more information, refer to Qsync Central Station 2.0.

Supports Windows and macOS.

Qfinder Pro

Qfinder Pro lets you quickly perform the initial NAS installation and then to quickly find and connect to all of the QNAP NAS on your network. It supports all platforms, so you don't need to worry about how to connect after installing a NAS. Qfinder Pro will automatically find all of the QNAP NAS within the LAN, and you can then double-click a specific NAS to connect to it.

Supports: Windows, macOS, Linux, Chromebook, and Google Chrome.



Easy access through Storage Plug & Connect

The Windows version of Qfinder Pro provides a convenient way to access QNAP NAS, connected network drives, and virtual disks. Use Qfinder Pro to create a shared folder on the NAS and connect it to a network drive, you can then use it as extra storage space, just as you would with a local disk.

Qfinder Pro video upload

Qfinder Pro not only helps you quickly find QNAP NAS and connect to network drives, it can also automatically generate thumbnails during video uploads to save NAS system resources.

myQNAPcloud Connect

myQNAPcloud Connect is a VPN connection software designed for Windows users. It supports all VPN connections (including L2TP / IPsec, PPTP and OpenVPN) on the NAS. Users can establish a VPN connection with the NAS and connect to other QNAP NAS in the LAN to provide entry window for each service and manage the files easily by dragging and dropping.

Support: Windows, Mac operating system.

NetBak Replicator

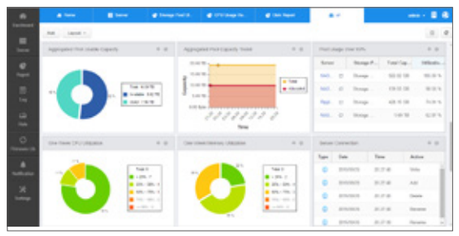
The free QNAP NetBak Replicator allows you to easily back up files, photos, music, movies, fonts, and emails from a Windows PC to QNAP NAS. You can complete real-time backup, scheduled backup, and automatic backup with just a few clicks. NetBak Replicator also supports FTP and WebDAV to back up to remote servers.

Supports: Windows only.

Q'center Virtualization Solution

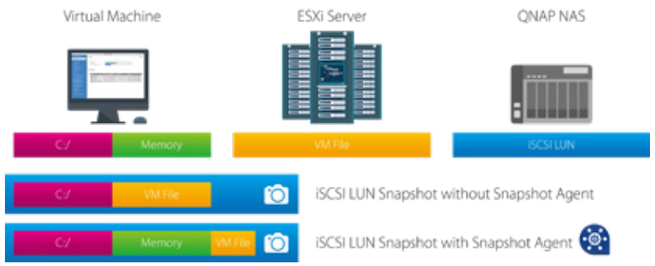
Q'center is a powerful application for managing multiple QNAP NAS, whereas the Q'center virtualization solution can use Q'center as a virtual application built into a virtual environment (such as Microsoft® Hyper-V® or VMware® ESXi™). This solution makes Q'center more flexible as it can be used in large networked storage environments.

Supported platforms: VMware ESXi (ESXi 5.0, ESXi 5.1, ESXi 5.5, ESXi 6.0), VMware Fusion 7, VMware Workstation 11 and 12, Microsoft Windows Server 2012 R2 with Hyper-V 3.0.



QNAP Snapshot Agent

When you set up an iSCSI LUN on Windows Server or VMware vCenter, you can use QNAP Snapshot Agent to take an iSCSI LUN snapshot that is consistent with NAS applications.



vSphere Client plug-in

QNAP NAS supports vSphere Client Plug-in and allows administrators to directly manage VMware storage pools (datastores) on QNAP NAS from the vSphereClient console. In large-scale server virtualization environments, virtual host management can become more centralized and easier. Administrators can easily control QNAP NAS and storage clusters, and can quickly create storage pool clusters across multiple ESXi virtual hosts with just a few clicks.

Supports: Windows only. The TS-x51 series does not support the vSphere Client plugin.

QNAP SMI-S provider

QNAP SMI-S provider allows administrators to manage QNAP NAS directly through Microsoft System Center Virtual Machine Manager 2012 (SCVMM).

Microsoft System Center Virtual Machine Manager 2012

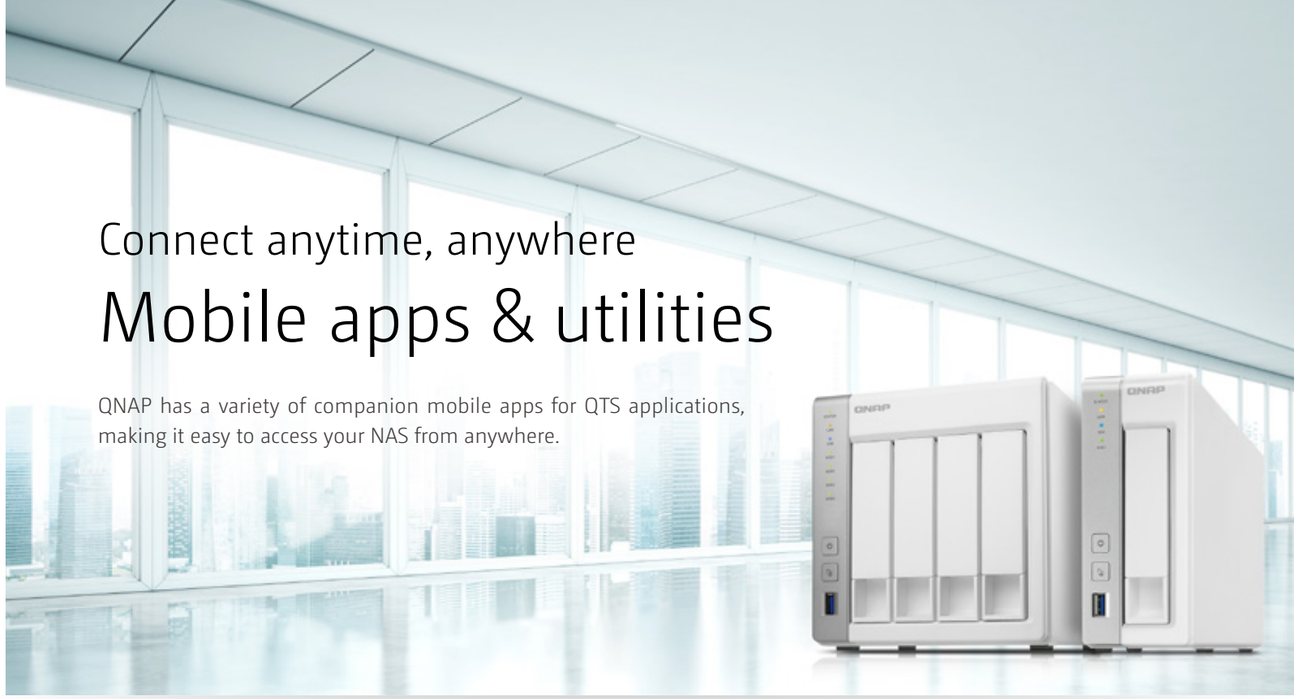
Qsnap

Quickly capture a screenshot of your computer's screen and easily edit, archive, and share it. Qsnap is a great helper for quickly taking notes and improving communication both at home and at work.

Hotkey screenshot: Take screenshots with hotkeys, no mouse clicks required. Quick edit: Edit, mark, annotate, or remove unnecessary elements from multiple images.

Instant share: Drag the screenshot to your instant messenger or attach it to an email for instant sharing.

Support: Windows only.



Connect anytime, anywhere

Mobile apps & utilities

QNAP has a variety of companion mobile apps for QTS applications, making it easy to access your NAS from anywhere.

Qfile

Remotely access NAS-based files, upload and download files, stream multimedia files, share files, and automatically sync files from mobile devices.

App Store · Google play · Windows Phone

Qmusic

Stream music stored on a QNAP NAS for a mobile music library, taking your music collection wherever you go.

App Store · Google play · Windows Phone

Qmanager

Remotely view system and connection logs from your mobile device, and remotely manage your QNAP NAS (for example, shut down, reboot, and locate the position of the QNAP NAS). Qmanager 2.0 also supports the secure removal of external devices, making it easier to manage QNAP NAS.

App Store · Google play · Windows Phone

Qvideo

Play NAS-based videos at any time and from anywhere, or share your favorite movies with friends and family. Qvideo is the perfect companion app for Video Station, allowing users familiar with Video Station to quickly learn its interface.

App Store · Google play · Windows Phone

Qphoto

Stay connected with all the photos stored on your QNAP NAS. With Qphoto you can easily view all of the images stored on your NAS without using any storage space on your mobile device. Photos can also be easily shared with your family and friends.

App Store · Google play · Windows Phone

Qnotes

Qnotes is a high-efficiency, high-privacy note-taking app, and is the only Android™ note-taking app to support private clouds. Qnotes can synchronize data with other devices via QNAP NAS, and also supports stand-alone operation. In stand-alone mode, Qnotes can be used without any NAS or network connection.

App Store · Google play · Windows Phone

Qget

Easily view and manage the status of all the download tasks on your NAS (including starting, pausing or removing download tasks). When downloading is complete, you receive a notification from Qget, so you are informed of the current status of all download tasks.

QmailClient

Access your QmailAgent using iOS® and Android™ devices and stay up-to-date with all your email accounts using only one app. Using QmailClient, you can also save your latest emails to your mobile device for offline reading.

DJ2 Client

DJ2 Client is a companion app for QNAP DJ2 Live - a private cloud broadcasting platform. You can use DJ2 Client to create livecasts, watch livecasts, interact with viewers, watch historical videos and more.

Qsirch

Quickly find the files you need. You can perform full-text searching on QNAP NAS and quickly share found files. There are also numerous filters and other methods to find the files you're looking for.

Vcam 1.0

Use your device's camera as a surveillance camera, and record the videos straight to your QNAP NAS.

Qremote

Qremote turns your mobile device into a remote control for use with HD Station.

Photo Tagger

Photo Tagger provides you with a new way of photo management. Directly tag labels on photos for personalized classification and quick searching.

Vmobile

Connect with your video surveillance system anytime, anywhere. Immediately view surveillance camera footage and receive notifications of events.

OceanKTV Client

Connect your mobile device to the same network as the NAS and download the OceanKTV Client, then you will be able to directly log into OceanKTV.

Qsync client

Simply connect and browse files on the NAS. You can also easily move, copy, rename, or delete files on the NAS.

Qcontactz

Import contacts from your mobile phone to your QNAP NAS. You can also set automatic synchronization with the NAS at a preset schedule.

QNAP , Your best choice!

QNAP Systems, Inc.

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