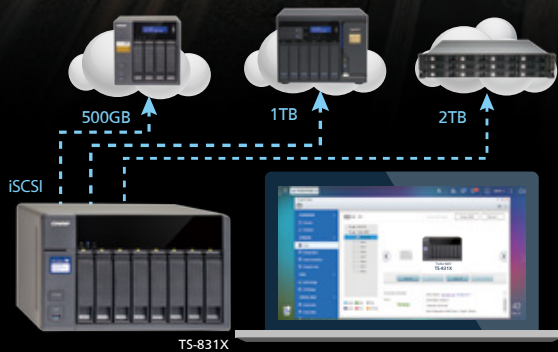# QNAP

TS-831X TS-531X

High-performance NAS with 2 built-in 10GbE SFP + network ports, Cortex-A15 Annapurna Labs Alpine AL-314 quad-core 1.4GHz / 1.7GHz processor, and up to 16GB RAM

VJBOD (Virtual JBOD)

Cost-effective expansion of other QNAP NAS

500GB　　1TB　　2TB

iSCSI

TS-831X

Container Station IoT applications

Enjoy IoT App Virtualization Services

freeboard

mongoDB

MQTT　Node-RED

Container Station

Apache Kafka

10GbE speed

Up to three 10GbE ports

Supports 10GbE network adapter cards

High-performance NAS with 2 built-in 10GbE SFP + network ports

- Centralized management, shared data, and Hybrid Backup Sync enterprise data backup tool
- Hardware-accelerated encryption engine provides performance of over 290 MB/s on encrypted volumes
- Full-text search engine Qsirch makes finding files and data fast and easy
- Easily expand storage capacity by up to 16 drives with two QNAP UX-800P 8-bay expansion enclosures

powered by
annapurnalabs
an amazon company

Expanding NAS capacity normally requires dedicated expansion enclosures. With the Virtual JBOD (VJBOD) feature however you can use the unused storage space of the TS-531X / TS-831X to expand the capacity of other QNAP NAS units. You can mount an iSCSI LUN of one TS-531X / TS-831X NAS as a virtual hard drive of the original NAS, and directly create virtual storage pools and disk volumes. This virtual storage space can then be used as if using a native storage device for functions such as media indexing, retrieving/restoring snapshots, or creating iSCSI LUNs on them, as well as continuing to expand the size of the virtual storage pool. The storage space from multiple QNAP NAS can be integrated with TS-531X / TS-831X storage space for centralized use and management via the same interface. VJBOD can also be combined with 10GbE and Port Trunking (multiple LAN and IP address) to set up a stable high-speed storage space. TS-531X / TS-831X provides the most cost-effective and high-performance NAS choice.
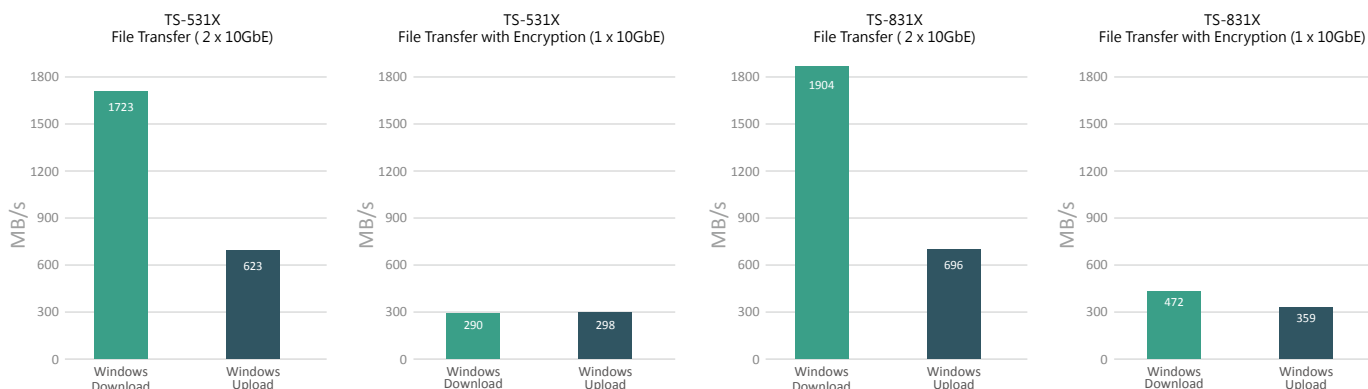
Energy-efficient quad-core processor and hardware encryption engine

The TS-531X / TS-831X supports 5 and 8 hard drives (respectively), and is a powerful, cost-effective NAS solution with 2 built-in 10GbE SFP + network ports. Not only can it be expanded to three 10GbE high-speed network ports by installing an additional 10GbE PCIe network adapter card, it is also equipped with a hardware acceleration encryption engine to double encrypted file transfer performance. TS-531X / TS-831X uses a low-power, high-performance Annapurna Labs Alpine AL-314 quad-core 1.4GHz / 1.7GHz processor to provide an economical option for daily enterprise tasks. With support for up to 16GB DDR3 RAM, two Gigabit network ports and SATA 6Gb/s transmission support, it easily handles multi tasking. Its hardware encryption engine provides up to 290 MB/s data access speeds when using AES-256-bit encryption, maintaining high system efficiency while protecting sensitive documents on the TS-531X / TS-831X.

Supports 10GbE network adapter cards

Built-in 2 10GbE SFP+ network ports

Supports 10GbE networks, enabling bandwidth-demanding applications

The TS-531X / TS-831X not only includes two built-in 10GbE SFP+ network ports, but also supports installing another 10GbE network adapter card for up to three 10GbE ports. This provides the bandwidth required to meet an enterprise's demands for transferring a large number of files and bandwidth-demanding applications such as virtualization. Coupled with large storage capacity, the TS-531X / TS-831X is ideal for large data storage and high-speed file transfer and other enterprise-related applications.

TS-531X File Transfer (2 x 10GbE)
- Windows Download: 1723 MB/s
- Windows Upload: 623 MB/s

TS-531X File Transfer with Encryption (1 x 10GbE)
- Windows Download: 290 MB/s
- Windows Upload: 298 MB/s

TS-831X File Transfer (2 x 10GbE)
- Windows Download: 1904 MB/s
- Windows Upload: 696 MB/s

TS-831X File Transfer with Encryption (1 x 10GbE)
- Windows Download: 472 MB/s
- Windows Upload: 359 MB/s

Test environment
NAS:
OS: QTS 4.2.2
Disk Group: RAID 5; 5 or 8 x Intel SSDSC2BB240G4 SSD

Client Computer:
Intel® Core™ i7-4790 3.60GHz CPU; DDR3L 1600Hz 16GB; 10GbE NIC: QNAP LAN-10G2SF-MLX & LAN-10G1SR; Windows® 10
Tested in QNAP laboratories. Data may vary due to differences in physical environments.

Multi-network aggregation mode

TS-531X / TS-831X supports a variety of Port Trunking modes. In addition to bandwidth integration, network transmission acceleration, its also provides network fault tolerance to prevent service disruption. TS-531X / TS-831X supports multiple network modes: Balance-rr (Round-Robin), ActiveBackup, Balance XOR, Broadcast, IEEE 802.3ad (Link Aggregation), Balancetlb (Adaptive Transmit Load Balancing) and Balance-alb (Adaptive Load Balancing).

Network Adapter Card ≪

2 x 10GbE ≪

2 x GbE ≪

SSD caching

TS-531X / TS-831X supports SSD caching to enhance IOPS performance and accelerate disk access, increasing system operation efficiency. It is especially suitable for applications that require high IOPS performance. By combing SSDs and HDDs, system performance is increased in a cost-efficient manner.

TS-531X TS-831X

Virtual JBOD
Share Storage Space with Multiple NAS

With Virtual JBOD, not only can you establish a backup connection, you can also expand storage space online and share unused NAS storage space with other QNAP NAS. This allows you to maximize the storage space utilization of all of your NAS.

Use the NAS as an application server and expansion unit at the same time

Virtual JBOD allows you to create virtual disks from unused space on a NAS and insert it into another NAS, while the first NAS continues hosting containers or virtual machines. With another QNAP NAS, you gain extra QTS functions as well as a flexible expansion unit.
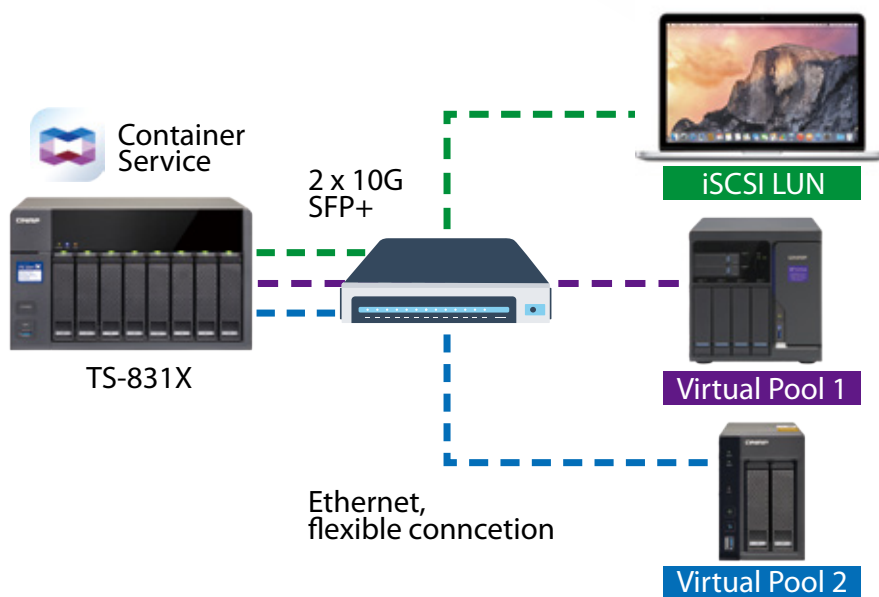
With the network and virtual expansion units, you can deploy your NAS storage space with flexibility and ease, maximizing the use of your device.

At present, you can expand the storage space of the following models with Virtual JBOD: x89, x85, x82, x80, x79, x73, x71, x70, x63, x53A, x53, x51A, x51, IS-453S, IS-400. All the above NAS must be running on firmware 4.2.2 (or later).

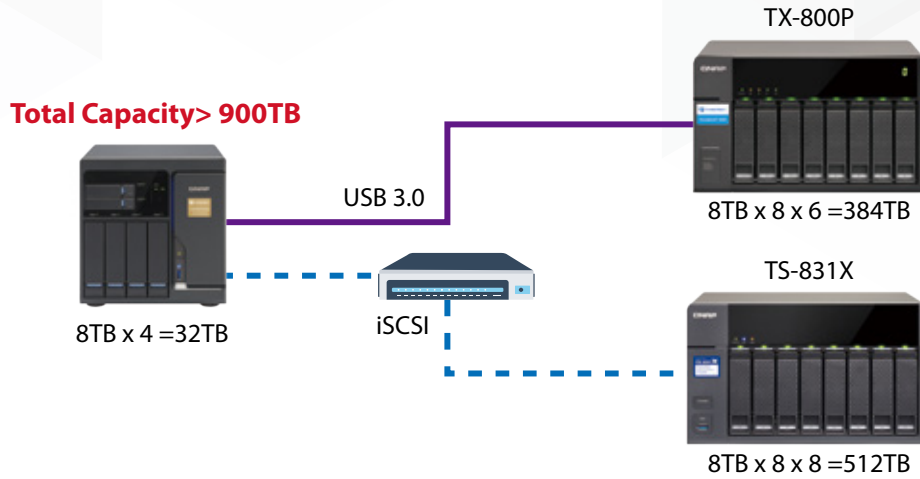## On-demand, instant storage capacity allocation

QNAP NAS as Virtual JBOD provides more advantages over conventional expansion enclosures:

	TS-531X / TS-831X Virtual JBOD	UX-800P Traditional USB 3.0 JBOD
QTS	Yes	No
Connection Interface	Ethernet, support 1GbE, 10GbE and more	USB 3.0
No. of Connections	Multiple NAS	One NAS, and limited by the number of ports in the NAS
Connection Method	Ethernet	USB
Backup Connection	Supported (Port Trunking)	Not Supported

Virtual JBOD does not currently support direct expansion of a local storage pool

Overcomes the limits of conventional expansion units

As long as the remote QNAP NAS supports iSCSI and storage pool configuration, it can be added to the Virtual JBOD. For example, a TVS-682T with attached TX-800P expansion enclosures can feature up to 400TB of storage (using 8TB drives). With Virtual JBOD, you can deploy this storage spaces on other NAS without direct connection, and the original storage capacity can be expanded to above 900TB. You need not worry about insufficient storage space when you purchase a storage device.

TX-800P

Total Capacity> 900TB

USB 3.0

8TB x 8 x 6 =384TB

8TB x 4 =32TB

iSCSI

TS-831X

8TB x 8 x 8 =512TB

Intuitive and easy-to-use interface

Virtual JBOD is easy to set up. After ensuring that the involved NAS are connected to one another on the network, select Virtual JBOD in Storage Manager. The wizard will assist in finding the NAS, confirming usable space, creating iSCSI, and converting the storage space into usable drives. You don't even need to sign into the remote NAS.

The Q'center app offers convenient tools for you to monitor the status of the remote NAS.
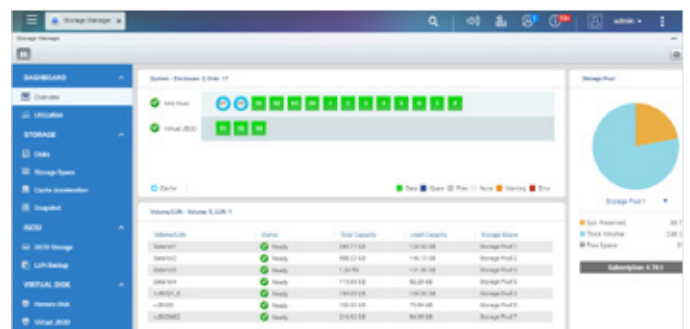
Step 1: Enable virtual expansion device in the Virtual Disk Wizard

Step 2: Search for the remote NAS
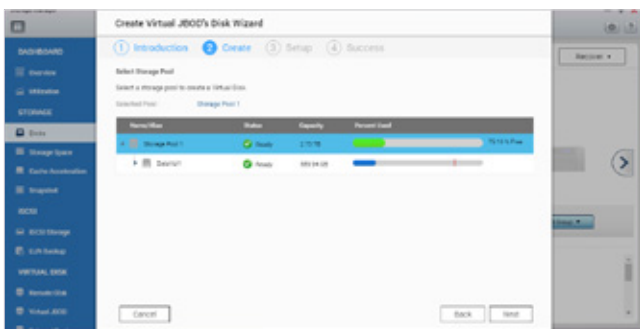
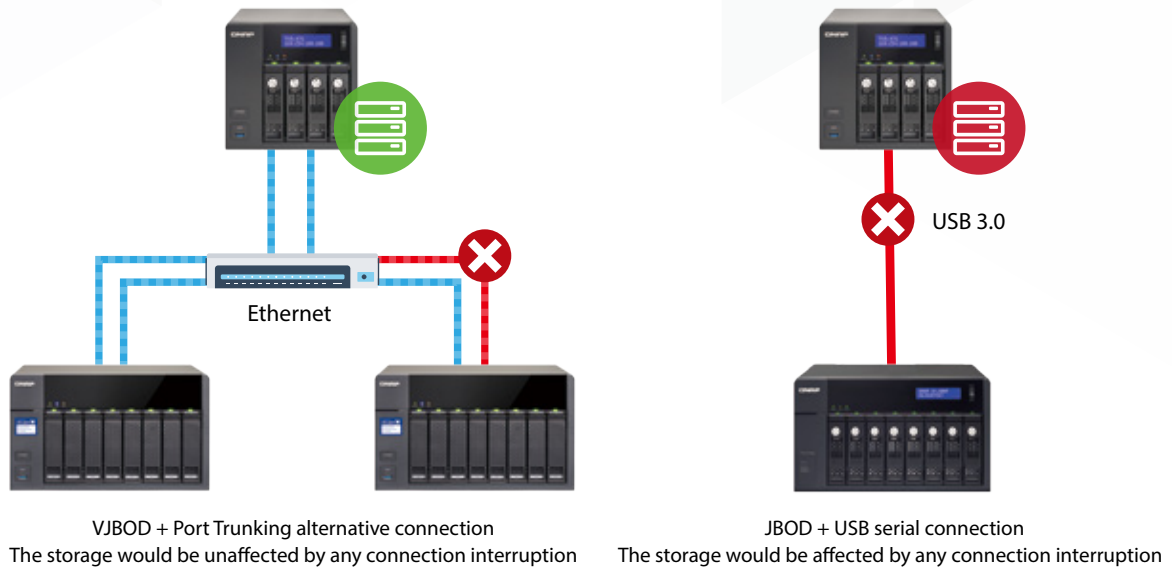Step 3: Confirm the available space and create a virtual hard disk

Step 4: The virtual hard disk is added to the machine just as a local hard drive

Build a 10GbE multi-line transmission environment that doubles storage stability

VJBOD offers greater flexibility with online capacity expansion over traditional JBOD expansion. For an efficient data center, 10 GbE connectivity can be used to bring the transmission speed of the virtual storage pool close to that of a local storage pool. For higher-level applications, network speed is sufficient for Offloaded Data Transfer between the local LUN and virtual storage pool LUN.

Furthermore, you can use multiple Ethernet connections to connect a Host and a Virtual JBOD (except load balancing) with Port Trunking configuration for storage expansion.

For ODX on the client's Windows operating system, data exchanges between the NAS LUN and the Virtual JBOD LUN will not need to go through the client.

USB 3.0

Ethernet

VJBOD + Port Trunking alternative connection
The storage would be unaffected by any connection interruption

JBOD + USB serial connection
The storage would be affected by any connection interruption

Automatically recover lost connections

Should a Virtual JBOD be accidentally powered off, disconnected, or if there is a change in its IP, you will receive a notification much faster than in normal iSCSI connections. Provided that configurations such as the IP or iSCSI Port have not been changed, the Host will automatically reconnect to the Virtual JBOD after it returns to normal.

5
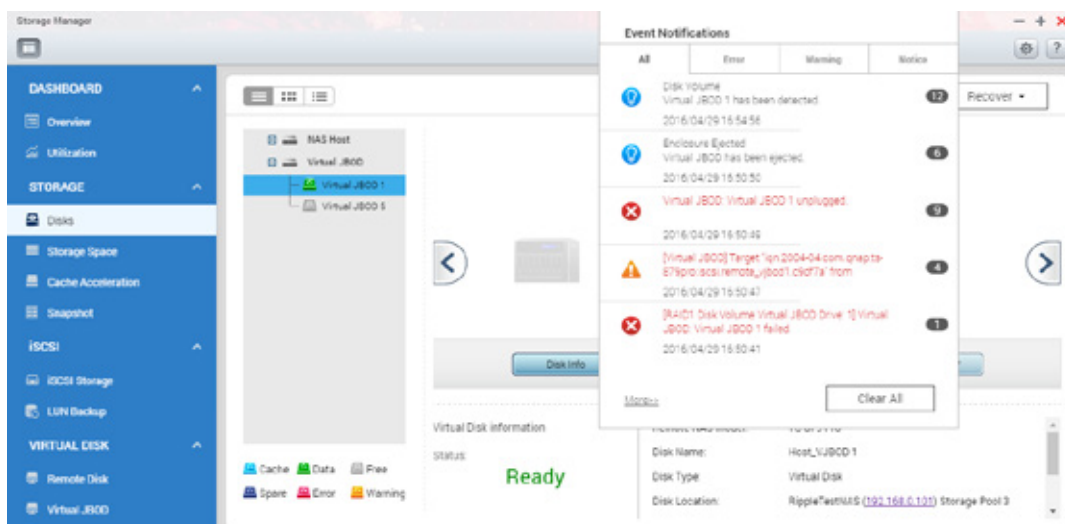
Detach and relocate the Virtual JBOD online to transfer data safely

Traditional storage expansion requires IT personnel to physically manipulate cables and hardware for data transfer. Using Virtual JBOD, data can be easily and safely offloaded from one NAS and instantly moved to another NAS. This makes it incredibly easy to transfer large amounts of data from one NAS to another.

💬 iSCSI targets that have been used for Virtual JBOD should not be connected to more iSCSI initiators
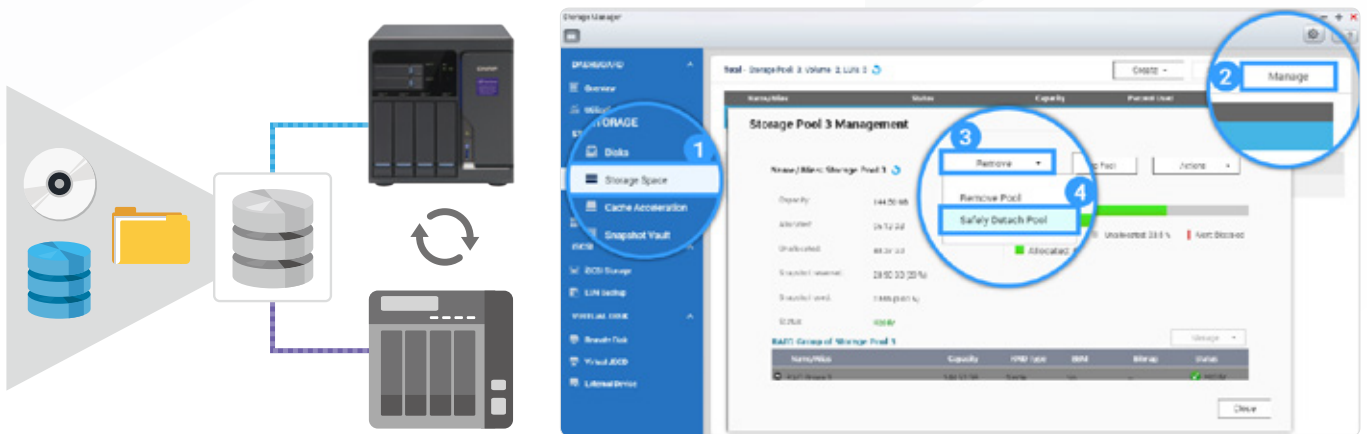
Monitor device connection status with Virtual JBOD Overview

Not only does the Storage Manager show every detail on the Virtual JBOD configuration and status, 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 an independent system on the remote NAS, if the host NAS is down and the connection log becomes inaccessible, you can still access the remote NAS to view logs and records to facilitate troubleshooting.
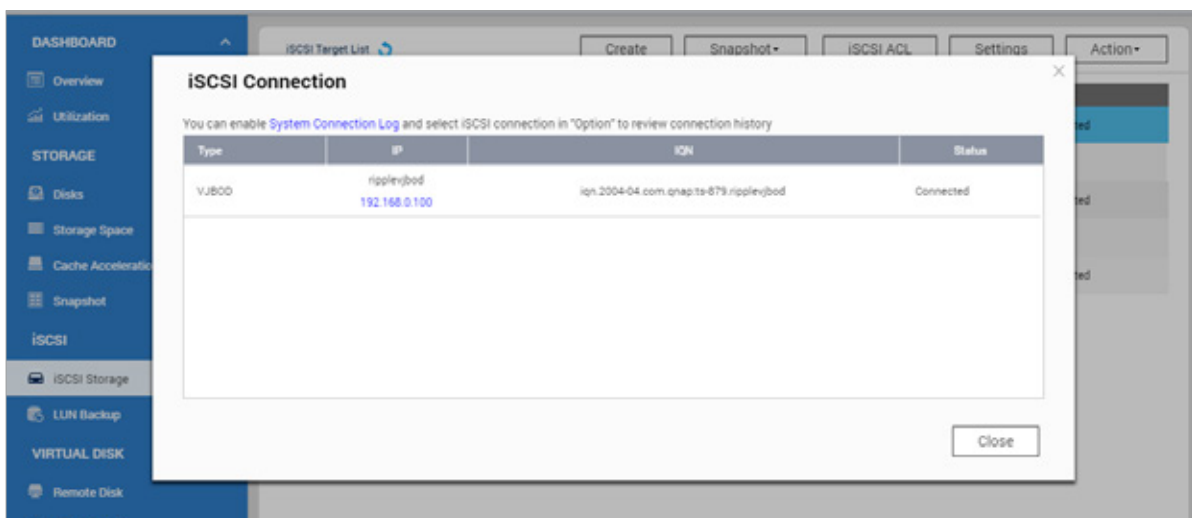
Container Station provides app virtualization

Integrated with LXC and Docker® for efficient containerization on your QNAP NAS

Container Station provides a flexible, ready-to-use development platform for developers and system administrators to rapidly develop and seamlessly deploy projects and applications across NAS, computers, and public clouds. Virtualization is an essential step for enterprises to embark on cloud environments. Container Station supports lightweight virtualization, allowing developers and IT managers to create unprecedented functional virtual environments.

Six exclusive, industry-leading features

1. One-click installation >>>

Forget complicated configurations and enjoy the simplicity of software containers. Simply click "Create" and the system will automatically download and install the required applications.

2. Lightweight Linux virtualization tool LXC >>>

LXC is integrated to Container Station and features the most common operating systems, Built-in Ubuntu, Debian, Fedora and other operating systems. After download, users can add their own applications as needed. Supporting multiple operating systems enables the user to have more choice besides Docker.

3. Automated deployment >>>

Don't know how to configure a software container? QNAP's exclusive active command deployment function automatically detects settings and configures instruction sets to facilitate easy use of software containers. With automatic deployment, installation can be completed in a breeze.

4. ARM-based NAS also supports virtual technologies >>>

You can also install and use a Linux virtual machine, forming an advanced quad-core ARM-based NAS with LXC + Docker® dual virtual technologies.

5. Operate software containers via URL or terminal >>>

Container Station automatically provides links to web-based applications for streamlining the entire software development process. Furthermore, the console also provides a familiar development environment for Linux experts.

### 6. Export/import software containers >>>

Containers can be imported and exported to/from computers and shared folders. This enables fast container backup and migration.

Docker and the Docker logo are registered trademarks of Docker Inc. in the U.S. and other countries / regions. Docker, Inc. and other parties may also have trademark rights in other terms used herein. Linux is the registered trademark of Linus Torvalds in the U.S. and other countries.

# Use containers for rapid development of Internet of Things (IoT) apps

Detailed analysis of IoT technology

The IoT operational framework comprises the perception, network and application layers. The perception layer includes perceived objects, sensors, gateways and other components. It is used to identify objects, as well as collect and transfer information to the network layer. The network layer is an application system for transmitting the perceived information to the application layer. The application layer combines various materials and presents them visually as required by the business enterprise.
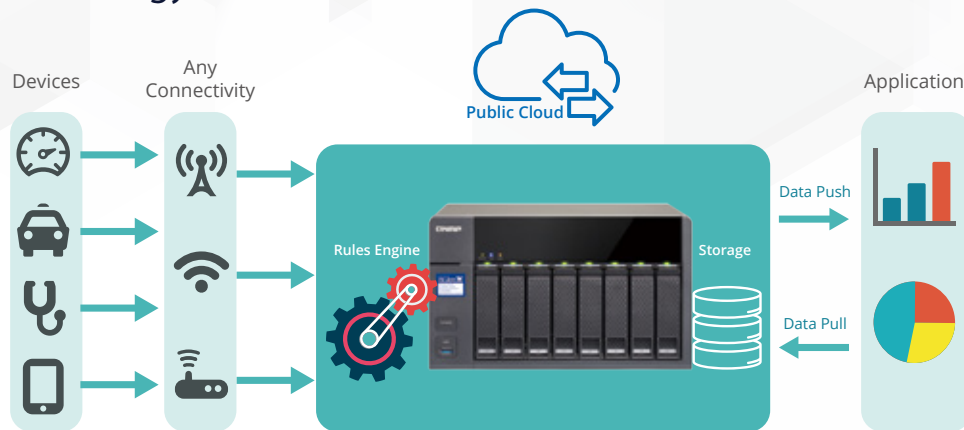
Although IoT technologies appear to be diverse and varied, they are essentially based on the existing perception, network and application software and other technologies. Businesses can tap into IoT resources by simply integrating and connecting in one step.
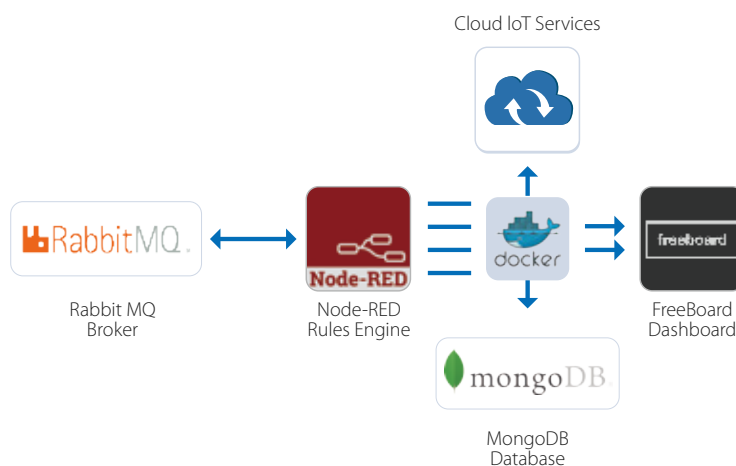
Container apps designed specially for IoT
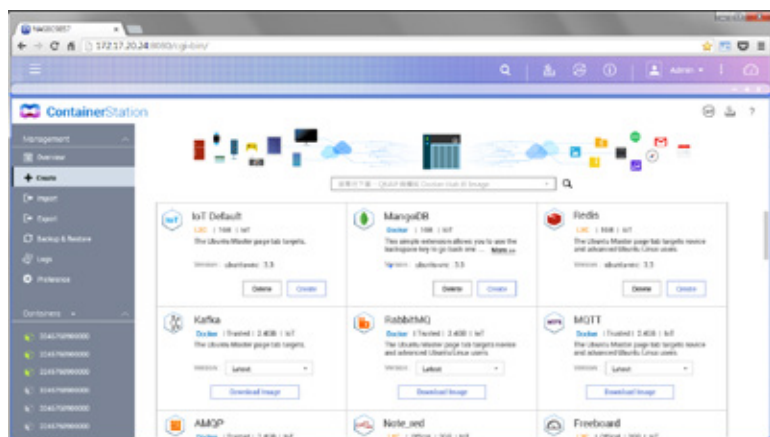
Container Station provides recommended IoT applications, such as :
— Kafka
— RabbitMQ
— MQTT
— Freeboard
— Node-RED
— Redis
— MongoDB
— Ponte
— Dashing

Rapid development experience:
Use RabbitMQ, Node-RED,
MongoDB, and Freeboard network architectures.

Cloud IoT Services

Rabbit MQ Broker

Node-RED Rules Engine

FreeBoard Dashboard

MongoDB Database

Experience the simple and intuitive QTS 4.2 NAS OS

Multi-tasking and multi-display modes

The new QTS operating system dramatically improves your efficiency in multitasking, and enables you to work in multi-window, multi-desktop, and multi-display modes. You can start new tasks without completing the ones in hand. Just as with conventional computers, you can minimize running apps and switch between them by clicking on the desired app on the task bar. The multi-desktop design of QTS allows you to drag and drop desired icons from the Control Panel or Main Menu to the desktop to create shortcuts. You can also drag and drop desktop icons on top of one another to place them within the same group for a more organized and personalized desktop for greater work efficiency.
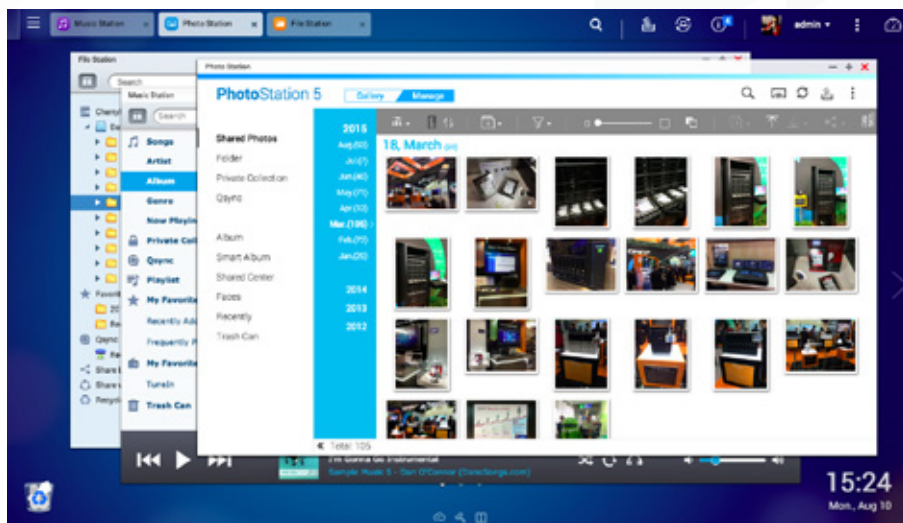
Smart dashboard

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, as well as real-time information on the device and firmware. Additionally, to monitor important information in real-time, simply drag and drop the required dashboard tool to the desktop. In the event of a critical system failure, the smart dashboard will flash and prompt the system administrator to take immediate action to recover data and prevent data loss.


Recycle Bin

The Recycle Bin allows you to recover files that have been accidentally deleted. Right-click the Recycle Bin to empty it or to access its full range of functions.

Allocate user accounts and access privileges flexibly

Home Folder

When IT administrators enable the Home directory feature, a personal folder will be automatically created when the user logs into the QNAP NAS for the first time. With the Home Folder feature, IT administrators no longer have to create folders and set permissions for each local and domain user separately. All home folders will be listed in the "homes" folder in File Station, making it easy for IT administrators to perform backups. The user's Home folder can be automatically mapped as a drive letter in the Windows AD environment for easy access.
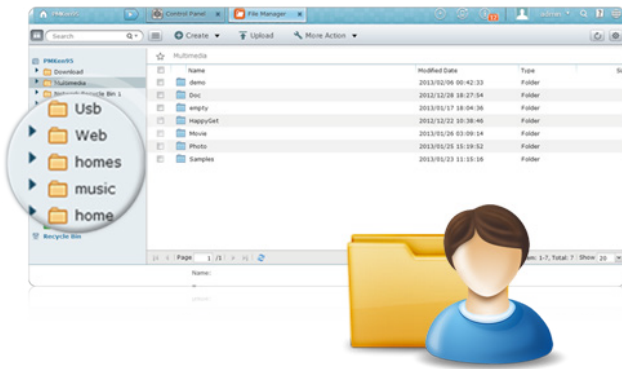
Windows ACL

QNAP NAS supports Windows ACL, and enables IT administrators to leverage the Windows system to manage shared folders permissions on the QNAP NAS, and set access restrictions. It allows sophisticated shared folder permission settings and simplifies IT management for businesses with a large number of users. By enabling Windows ACL, basic permissions and 13 advanced permissions can be configured in Windows File Explorer and synchronized with the QNAP NAS shared folder permission settings. In addition to sub-folder permissions, file-level permissions settings can also be configured. Additionally, apply permission settings to Samba, FTP, AFP file sharing, and File Station by enabling "Advanced Folder Permissions".

Centralized access rights verification

Windows Active Directory (AD) ⟩⟩⟩

The QNAP NAS can be easily integrated with Windows AD for efficient user account management. Domain users can use the same Windows AD account name and password to connect to different QNAP NAS on the local network, and IT administrators can save time by using centralized access rights verification. The QNAP NAS supports large-scale AD deployment of up to 200,000 AD users and groups.

SAMBA v4 ⟩⟩⟩

The QNAP NAS can now act as a domain controller for Windows. IT administrators can easily configure the QNAP NAS as the centerpiece of an organization's domain directory service to store user account information, manage user authentication and enforce security for a Windows domain.

LDAP Directory Service ⟩⟩⟩

QNAP's LDAP protocol support allows QNAP NAS to be added to LDAP-based directory services, such as OpenLDAP. IT administrators no longer need to create and manage the same user account on each server within the network. Instead, users are authenticated centrally by the LDAP server, and can use the same LDAP account name and password to access any QNAP NAS that has been added to the LDAP server, significantly reducing IT deployment time and increasing business productivity. The built-in and easy-to-use LDAP Server on the QNAP NAS reduces deployment costs and load. Simply enable the LDAP Server function, and all other LDAP-enabled devices and applications can use the QNAP NAS to centrally authenticate users and groups.

# File Station Web File Management

File or folder operation and management

Just like the File Explorer on Windows computers, you can perform simple tasks such as rename, copy, move, delete and compress/uncompress using File Station. Drag and drop files from a Windows PC/Mac to the File Station to upload these files to the NAS. Furthermore, the File Station thumbnail display facilitates managing large numbers of multimedia files, such as photos, music, and videos.
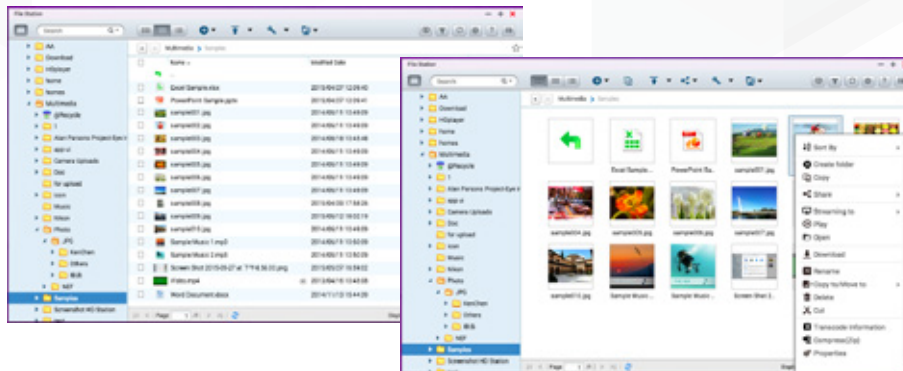

Multimedia Streaming

File Station supports VLC player for multimedia streaming. Just click on your photos, music and videos to play. You can also transcode videos into suitable resolutions and universal file formats so that they can be smoothly viewed and shared on multiple devices at a later date.
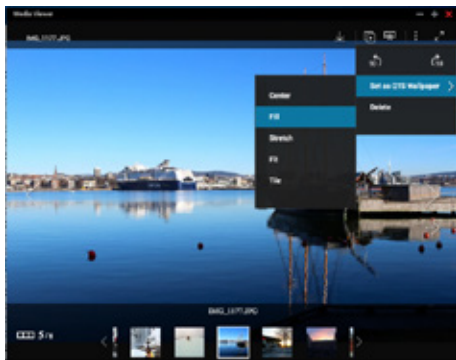
## Remote device connection and cloud storage access

File Station not only mounts data on remote devices with Microsoft Network Protocol (CIFS) and FTP protocol, it can also access cloud storage such as Google Drive, Dropbox, Microsoft OneDrive, Box, Amazon Drive, and Yandex Disk. File transfer has never been easier!
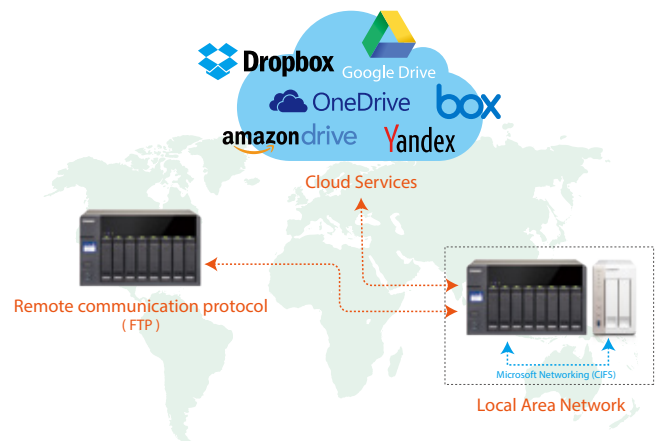
Connect to Cloud Drive must be installed from the App Center before connecting to cloud services

Direct browsing of file contents

Preview Microsoft Office files using File Station in Chrome (after installing the Office Editing for Docs, Sheets & Slides Chrome extension from the Chrome Web Store). You can also preview files using Office Online and Google Docs.
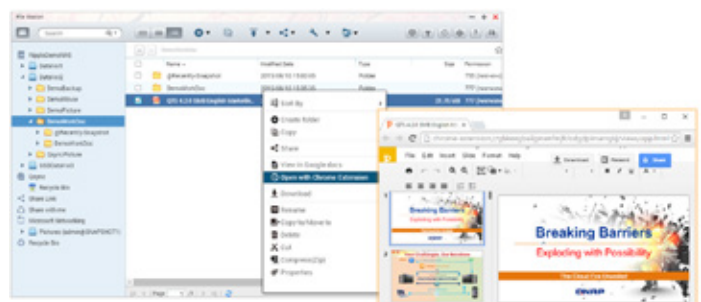
Productivity tools to increase overall value

myQNAPcloud connection
Create your private cloud easily with remote connection services

The myQNAPcloud setup wizard will guide you in creating your private cloud. myQNAPcloud website uses a simple, multi-functional management interface that displays connection information for multiple QNAP NAS. You can download, move, copy, and share files, or perform other operations through the home page for QNAP NAS.

CloudLink Remote Connection

CloudLink allows you to connect to QNAP devices over the Internet via the myQNAPcloud website (www.myqnapcloud.com) without the need for complex router settings. You can log in to your myQNAPcloud ID (QID) at the myQNAPcloud website or connect via Qfile / Qmanager (QNAP Mobile App) or Qsync (PC Utility).

Value-added services: myQNAPcloud SSL Secure Connection credentials

QNAP provides an optional myQNAPcloud SSL service that can be used for establishing a secure channel between the browser and the QNAP NAS, for server authentication and data transfer encryption. The channel can ensure the security of all data exchange between QNAP NAS and browser.

Qsync Central Station - A private cloud solution that integrates central management with folder sharing

QNAP's private cloud file synchronization solution uses QNAP NAS with Qsync Central Station and Qsync client synchronization tools to build large capacity and low cost cloud space to accommodate an enterprise or organization's large daily data output. Employees can synchronize files across multiple devices to increase productivity, share files without restrictions, and share and exchange data in a centralized manner to facilitate collaboration. When your computer is offline, you can edit (or view) the files in the local Qsync folder. When you're back online, the system will continue with smart data synchronization. The personalized sync settings provide you with the option of never deleting Qsync files from your QNAP NAS. This helps conserve storage space on your local device.

Control your device settings for simpler management

The administrator can create default settings on Qsync Central Station and apply them to Qsync clients. You don't need to set up individual clients separately anymore. Administrators can also monitor user settings to strengthen enterprise-wide IT management and file filtering control, and eliminate the risk of accidentally deleting files on a QNAP NAS during synchronization. By using different permissions settings on each device, administrators can manage devices individually, providing centralized control with flexible customization.
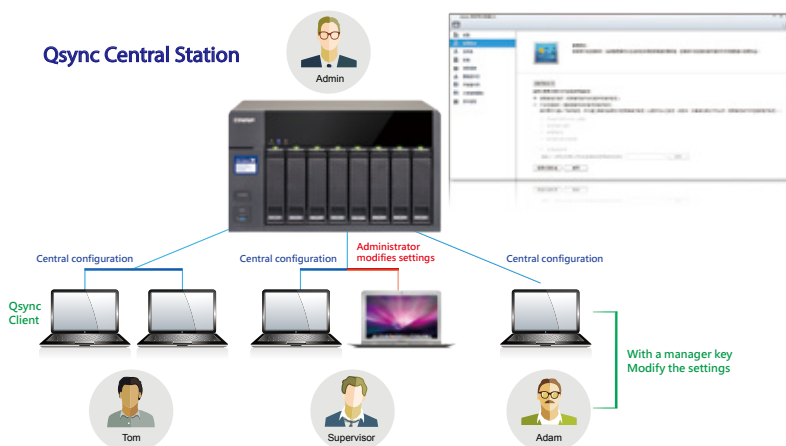
Remotely wipe data from lost devices to prevent the loss of confidential information

With the new remote erase function, the Qsync folder can be remotely erased* to prevent access of sensitive or confidential data by unauthorized users. Once the computer/device is recovered, Qsync can easily restore the data that was deleted, offering you the perfect balance between security and convenience.

Hybrid cloud with comprehensive backup and synchronization features

Backup from computer to NAS

Windows users can use the free QNAP NetBak Replicator to back up data from a PC to one or more NAS, schedule backups and automate backup jobs. Mac users can also use Time Machine to back up data on their computers.

Local backup 〉〉〉

Connect a USB device such as a storage device or camera to the front-panel USB port and press the "Copy" button to instantly back up data to or from these devices.

Third-party backup software 〉〉〉

QNAP NAS is compatible with many well-known backup software such as Acronis® True Image, Symantec® Backup Exec, etc.

*Acronis True Image® has powerful backup features that allow you to back up your entire computer image and all your data. If a disaster should occur, just click on the file you want to restore, and you will be able to quickly restore a specific file (or a whole system and all its files) in the backup. With this application and QNAP NAS, you no longer need to worry about the lack of space in a computer. You can use one serial number with three computers, and schedule backups, so it's very cost-efficient. For more information on Acronis True Image application, please visit http://www.acronis.com/
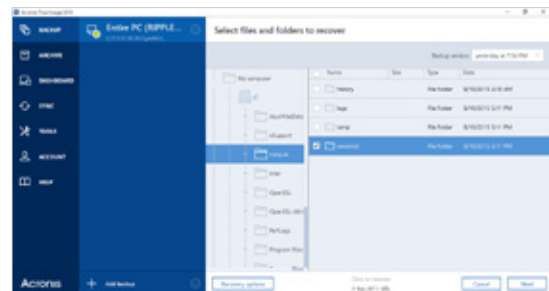
Hybrid Backup Sync

Hybrid Backup Sync integrates data backup, recovery and synchronization functions to easily back up or synchronize data to QNAP NAS, remote NAS and cloud storage (Amazon® Cloud Drive, Google™ Drive, Dropbox™, Microsoft® OneDrive®, Yandex Disk™, Box). Hybrid Backup Sync not only supports compressed backup, regular deletion or filtering of user-defined files and sparse file detection, but also provides SSL connectivity and military-grade AES 256-bit data encryption. Multi-task processing and multi-thread data transfer improves file transmission speed and efficiency by breaking large files into smaller ones before uploading. You can also preview files in the cloud and download individual files instead of the entire folder.

💬 WebDAV App does not support multi-thread data transfer.

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

Proprietary technology, accurate search

Qsirch uses fine-grained indexing techniques with its full-text search capabilities to support searching for over 6,000 file types. Powered by TF-IDF algorithm and a near real-time search engine, Qsirch enables users to search while typing and sort through files faster and more precisely.

Qsirch browser add-on for Google Chrome

Install the Qsirch add-on to use it with your Chrome browser. To search Google and your QNAP NAS at the same time simply click the Qsirch icon on the right of the address bar. Search results from Qsirch and Google will be displayed side-by-side for quick and convenient comparison.

• Chrome外掛程式 - Qsirch 快搜

Content preview

Whether you're searching for images, music, videos, or PDF files, the thumbnail view feature enables you to quickly view your content, tag your keywords, and show context. It enables you to immediately confirm the file contents to enhance the browsing experience.

Clear presentation of file distribution

Search results can be filtered and organized according to file type, including photos, music, videos, documents and other types of files. Results can also be sorted based on date modified, file size, and many other file descriptors.

Share directly from your search results

Qsirch provides sharing capabilities, so file search and sharing can be performed all at once, making it much more convenient.
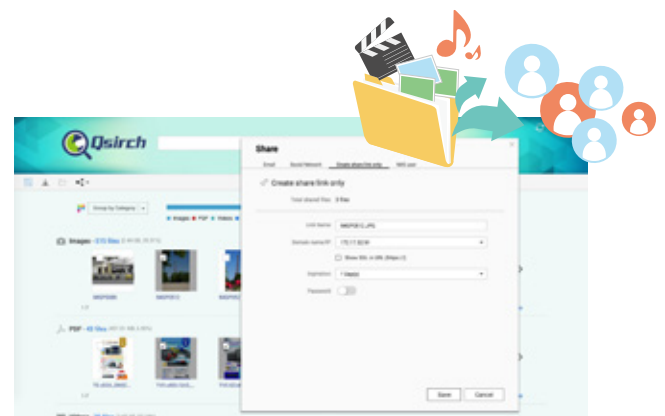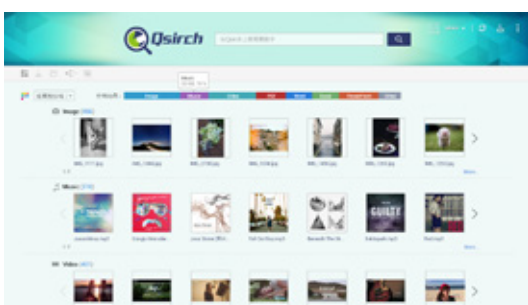
# Flexible permissions management and data security

Network environment protection

You can allow or deny connection to the QNAP NAS from specific IP addresses or subnets by creating whitelists and blacklists for filtering IP addresses. Servers with blocked IP addresses will not be able to connect to the NAS.

Data encryption protection

QTS offers volume encryption to protect the data stored on the NAS. The system will ask for the encryption key when a user starts QNAP NAS and attempts to mount the encrypted volume, and the data will be inaccessible without the key. It also provides USB storage volume encryption and virus protection.
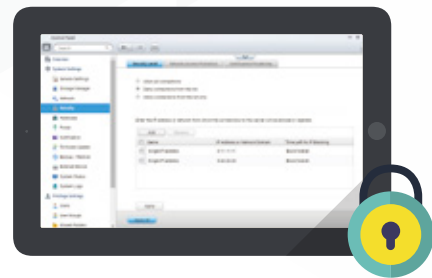
## Account security and system notifications

Two-step Verification requires users to sign in to the QNAP NAS with their password and a 6-digit one-time password (OTP) generated by an authenticator app. If there is NAS system failure or another error or warning message, you will receive important push messages through a mobile device in addition to emails and SMS.

💬 The following app needs to be installed on your device: Google Authenticator (Android, iOS, BlackBerry) or Authenticator (Windows Phone)
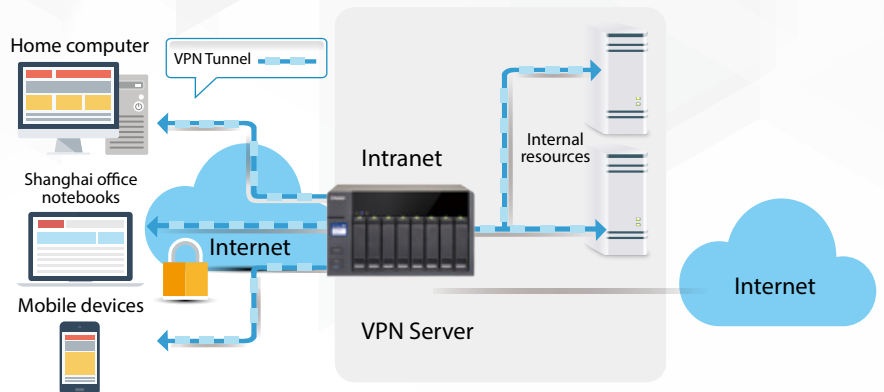
Service Binding

Service Binding lets you control data access by allowing specific services or web interfaces, or denying specific services or web interfaces to ensure system security. Meanwhile, by connecting specific network services to fixed network ports, you can also ensure that important business services can enjoy the most optimal bandwidth.
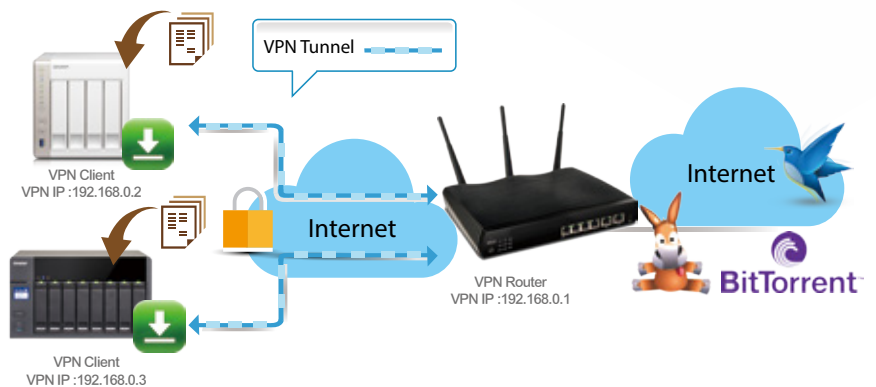
SMB

SMB   WEB   QTS   SSH
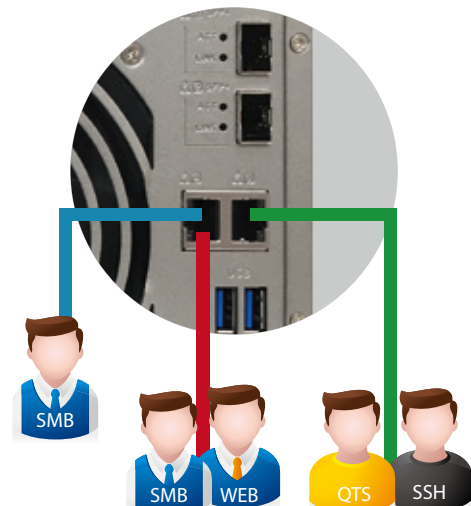
VPN and Proxy server

Virtual Private Network (VPN)

Whether you are an individual or a business user, you can create an affordable and secure virtual private network environment by selecting a VPN server (L2TP/IPsec, PPTP, or OpenVPN) on your NAS. 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 VPN server also comes with account and connection managers to help you manage VPN services. Furthermore, a VPN can help you access resources that may otherwise be restricted by your network environment.

Home computer
VPN Tunnel
Shanghai office notebooks
Internet
Mobile devices
Intranet
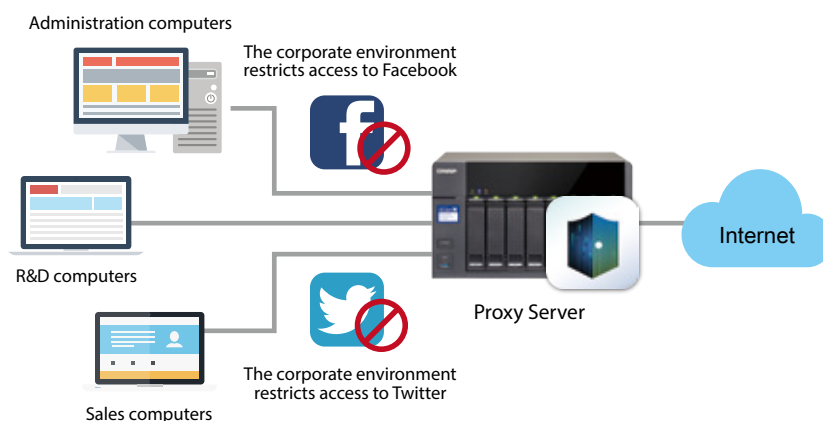Internal resources
VPN Server
Internet

When the NAS acts as a VPN client, VPN can provide secure data transmission. When you use a download service (such as BT, eMule, Thunder), VPN connection can protect the privacy of your information. You can also create a safe network channel for overseas support. For example, 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 remote locations.

VPN Client
VPN IP :192.168.0.2
VPN Tunnel
Internet
VPN Router
VPN IP :192.168.0.1
Internet
BitTorrent
VPN Client
VPN IP :192.168.0.3

Proxy Server

Proxy uses storage space on the device as temporary cache to conserve external connection bandwidth and enhance network efficiency. In addition to the settings provided on the UI, you can also use the Squid command under advanced settings to customize your proxy server.

— Use symbols or colors to represent sub-lists

— Set the cache to increase access speeds and conserve bandwidth: the contents of visited web pages and other supported transfer protocols can be cached so that you can read these directly without using bandwidth.

— Set powerful content control mechanisms: restrict your employees' access to Facebook or limit connection to the Internet or proxy servers to specific computers. All these can be achieved through the Proxy server.

— Maintain logs: Proxy servers can record the users' activities in log files, which can be used to analyze the users' habits and interests as network settings reference.

— Antivirus: QNAP is integrated with ClamAV, an antivirus suite for proxy servers, which will scan each package received through the proxy server, to ensure the safety of the user's connection.

— Supported file and account whitelist setting allows you to select trusted content.

Administration computers
The corporate environment restricts access to Facebook
R&D computers
Sales computers
The corporate environment restricts access to Twitter
Proxy Server
Internet

# A cloud video surveillance system with no blind spots

Surveillance Station 5

In the Storage Manager, you can configure a dedicated storage pool for Surveillance Station, and configure a separate disk array, then you will be able to use NVR dedicated storage pool separately with NAS.
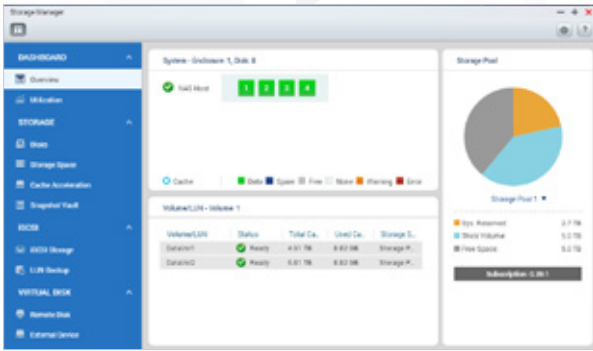
Set alerts and notifications

When your camera detects motion or when an alarm is triggered, Surveillance Station will automatically send a notification to up to five different email addresses.
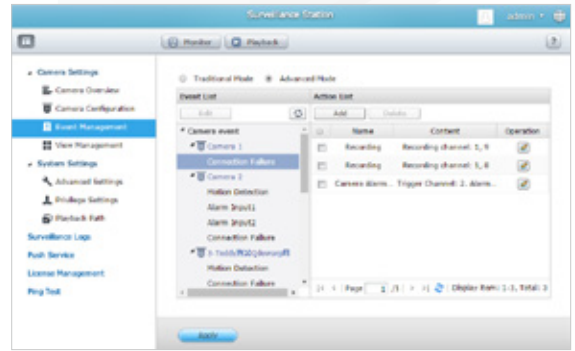

Fast forward, rewind, adjust speed, and frame-by-frame playback

The shuttle button can be dragged left or right to go backwards or forwards for quickly finding desired frames. When it's near the event, you can change to frame view to check the event's details.

## Monitor camera deployment statuses on an electronic map

After the images of the area under surveillance are uploaded to the Surveillance Station, drag and drop the camera icon onto the installation site. In event of an alarm, the camera icon will flash in warning. Click the icon to view real-time images, or take necessary actions.
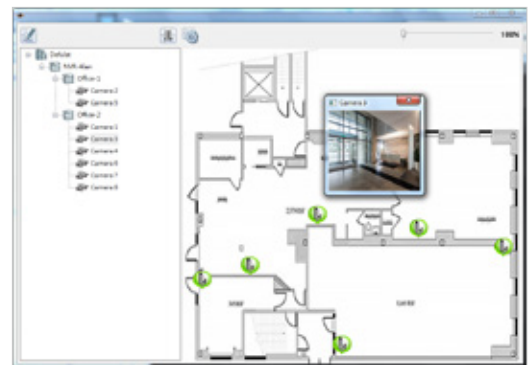
Fisheye Reduction (Qdewarp)

Qdewarp is compatible with all supported fisheye cameras. You can 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.

Surveillance Station
Camera License
2 channels, up to 30 channels
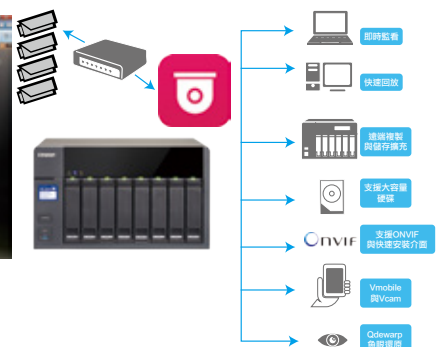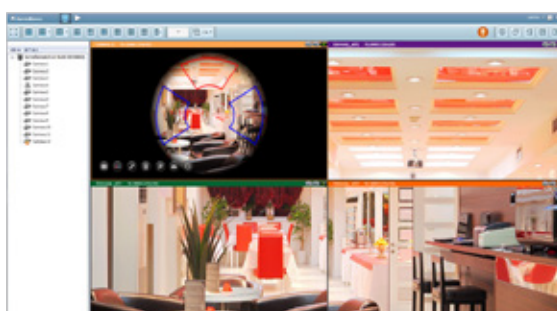
NAS offers 2 free IP channel licenses, and you can purchase additional licenses to expand up to 30 channels.

17

A wide range of apps for limitless NAS potential

Boost the functionality of your NAS with the dedicated App Center

The built-in App Center provides hundreds of apps developed by QNAP and trusted third-party developers for backup, file management, communications, downloads, entertainment and more. When an app has a newer version, you can also directly update it through the App Center. QNAP has created a secondary development platform in the spirit of open source code, allowing programmers to develop all kinds of applications, so the possibilities for your TS-531X / TS-831X are limitless.
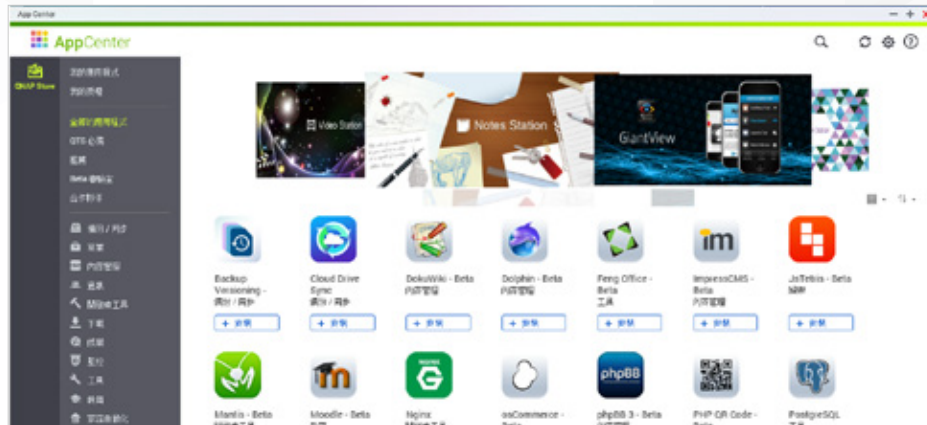

Photo Station

The Photo Station user interface allows intuitive operation and management of your photos. You can easily upload photos, create albums, change display modes, set up slideshows, tag photos, add descriptions, and set up sharing through email, social networking sites or a sharing link. Now you can take as many photos as you want and keep them safely in the QNAP NAS.
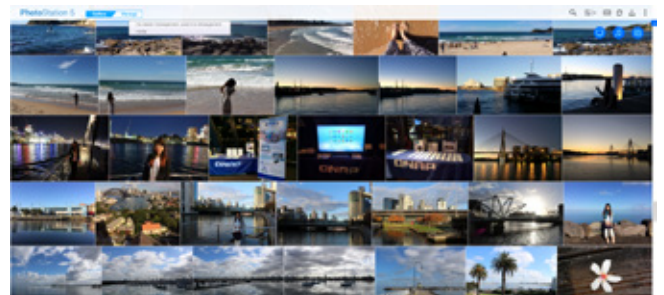
DLNA, Airplay, Chromecast streaming

You can transform your mobile device into a remote control by installing QNAP Apps (Qfile, Qmusic, Qphoto or Qvideo). With these apps you can control the QNAP NAS and stream multimedia files to devices that support DLNA, Airplay or Chromecast.

AirPlay   DLNA   Chromceast   USB DAC
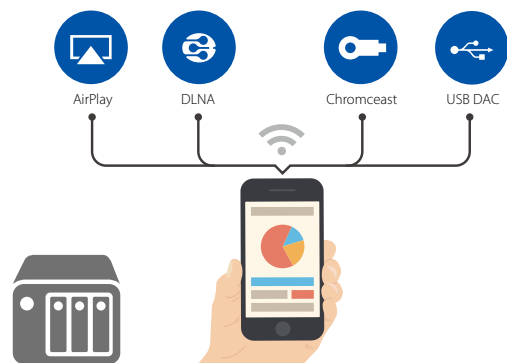
Music Station

Music Station is your personal cloud music center that lets you to play stored music on your computer and mobile devices via the Internet. You can enjoy the music stored on your NAS at any time and any place just by connecting to the Internet.
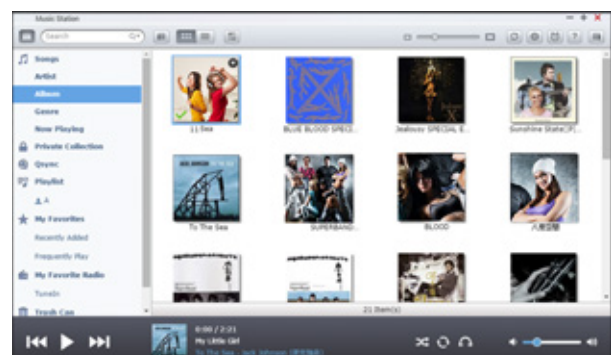
# A wide range of utilities for enhancing work efficiency

Qfinder Pro

Qfinder Pro helps you search, connect and install a QNAP NAS on the LAN. It generates thumbnails to let you preview the files before uploading them, saving time and conserving NAS CPU resources.

Supports Windows®, Mac, Linux, and Chrome web browser.

Are you finding it difficult to connect your NAS to a Chromebook™? Qfinder for Google Chrome™ can help you find and connect to a QNAP NAS over LAN connection quickly. Just download Qfinder from the Chrome™ Web Store and enjoy easy access to your QNAP NAS. Qfinder is also compatible with the Google Chrome browser, so you can perform quick searches on both Mac and Windows computers. Download Qfinder now!
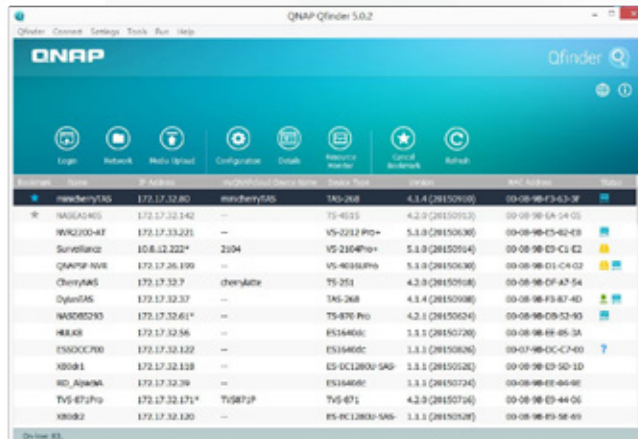
NetBak Replicator

Schedule backups for files on your computer (running on Windows®) to the QNAP NAS, or back them up immediately.

Supports Windows®.

myQNAPcloud Connect

As a VPN application, it is designed for all Windows users and supports all VPN connection options to a QNAP NAS (including L2TP/IPsec, PPTP and OpenVPN).

Supports Windows®.

Qsync

With Qsync, you can synchronize files between different devices and share data with different groups or communities. This saves you a lot of time from copying and pasting files between different devices.

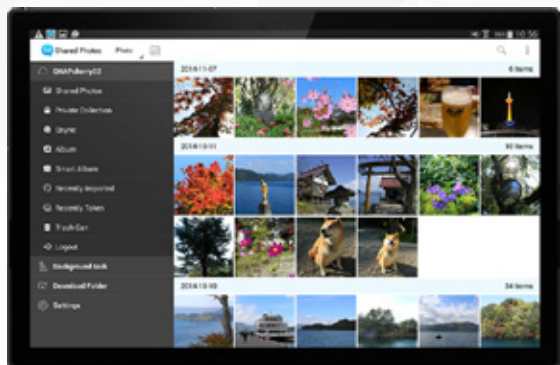Supports Windows® and Mac OS.

Qsnap

Perform instant screen captures on your computer, and then edit, save and share the images, which can be used for quick note-taking and productive communication.

Supports Windows®.

Use mobile apps to complete your digital lifestyle

Qfile

Use Qfile to remotely manage your files on QNAP NAS, upload and download files, stream videos/music, share documents, as well as synchronize files with mobile devices.

Qphoto

Browse and share your photo collection in timelines, thumbnails, lists or folders.

Qmanager

Monitor all system statuses, backup statuses, important system information, and manage system services.

Qvideo

Download and play videos on the QNAP NAS or share your videos with others.

Qmusic

Browse and play your music collection from your QNAP NAS.

Qget

Find web resources, set new download tasks to the QNAP NAS, and manage all download tasks.

Qnotes

Create and share your beautifully illustrated digital notes.

Vmobile

Remotely manage the cameras connected to Surveillance Station, and play back recorded videos.

Vcam

In place of expensive web cameras, Vcam lets you record videos at any time and save them to the QNAP NAS.

Hardware specifications and optional accessories

Light: Status, USB, network
Power Button
USB One Touch Backup
USB 3.0

Kensington Security Slot
PCIe expansion slot
2 x 10GbE SFP+
2 x 1GbE
2 x USB3.0
System Maintenance Port

	TS-531X		TS-831X v2		
Ordering SKU	TS-531X-2G	TS-531X-8G	TS-831X-4G	TS-831X-8G	TS-831X-16G
CPU	AnnapurnaLabs Alpine AL-314 quad-core 1.4 GHz ARM® Cortex-A15 CPU		AnnapurnaLabs Alpine AL-314 quad-core 1.7 GHz ARM® Cortex-A15 CPU (V2 upgraded to 1.7 GHz version)		
Hardware Encryption Engine	✓		✓		
System Memory	2GB DDR3 (1 x 2GB)	8GB DDR3 (1 x 8GB)	4GB DDR3 (1 x 4GB)	8GB DDR3 (1 x 8GB)	16GB DDR3 (2 x 8GB)
Maximum Memory	16GB				
Total memory slots	2 x SODIMM DDR3 (For dual-DIMM configurations, you need to install an identical pair of DDR3 RAM modules)				
Flash Memory	512MB				
Drive Type	5 x 3.5"/2.5" SATA 6Gb/s HDDs/SSDs		8 x 3.5"/2.5" SATA 6Gb/s HDDs/SSDs		
10GbE LAN port	2 x 10Gigabit SFP+ LAN ports				
GbE LAN ports	2 x Gigabit RJ45 LAN ports				
USB Port	3 x USB 3.0 ports (Front: 1, Rear: 2)				
PCIe expansion slot	1 x PCIe Gen2 (x2)				
LED Indicators	Status/Power, LAN, USB, HDD 1-5		Status/Power, USB, HDD 1-8		
Button	Power / status, USB one-touch backup, system reset				
Other slots	Kensington Security Slot, System Maintenance port				
Dimension	185 x 210.6x 235.4 mm 7.28 x 8.29 x 9.27 inches (HxWxD)		185.2 x 298.2 x 235 mm 7.29 x 11.74 x 9.25 inches (HxWxD)		
Weight	Net Weight: 4.4 kg (9.7 lbs) Gross Weight: 6.00 kg (13.23 lbs)		Net weight: 7.3 kg (16.08 lbs) Gross weight: 7.61 kg (16.78 lbs)		
Operating temperatures	0 ~ 40°C				
Relative Humidity	5 ~ 95% RH non-condensing; wet bulb: 27°C				
Sound Level	20.1 dB(A)		20.6 dB(A)		
Power Consumption	HDD Sleep: 19.47W General operation: 46.36W (based on 5 1TB drives)		HDD Sleep: 30.17W General operation: 47.68W (based on 8 1TB drives)		
Power	ATX 240W, Input: 100V-240V ~ / 3.5A, 47Hz-63Hz				
Fan	1 x 12cm quiet cooling fan (12V DC)		2 x 12cm quiet cooling fan (12V DC)		
Bundled items	NAS, power cord, Quick Installation Guide, two network cables, hard drive mounting screw kit				

Accessories

Type		Ordering SKU	Description
Expansion Unit		UX-800P	QNAP 8-bay expansion unit Dimensions (H x W x D): 185.2 x 298.2 x 235.4 mm Net Weight: 7.3 kg
		UX-500P	QNAP 5-bay expansion unit Dimensions (H x W x D): 185.2 x 210.6 x 235.4 mm Net Weight: 5.1 kg
Expansion Card		LAN-10G1SR	Single-port 10GbE SFP+ NIC
		LAN-1G2T-I210	Dual-port Gigabit network card
Memory		RAM-2GDR3-SO-1600	2GB DDR3-1600 SO-DIMM
		RAM-4GDR3-SO-1600	4GB DDR3-1600 SO-DIMM
		RAM-8GDR3-SO-1600	8GB DDR3-1600 SO-DIMM
Cable		CAB-DAC15M-SFPP-A02	1.5M SFP + 10GbE high-speed cable DAC (Twinaxial Direct Attach Cable)

Software Specifications

Operating System
• QTS 4.2 (embedded Linux)

Power Management
• Wake on LAN
• Internal hard drive standby mode
• Scheduled power on/off
• Automatic power on after power recovery
• USB and network UPS support with SNMP management

Storage Management
• QNAP flexible Volume/LUN with thin provisioning and space reclaim
• Volume types: RAID 0/1/5/6/10, + hot spare, single, JBOD
• Supports storage pools
• Online volume expansion & storage pool expansion
• Online RAID capacity expansion and online RAID level migration
• SMART data migration
• Storage expansion via max 2 QNAP UX-500P/UX-800P expansion units
• JBOD enclosure roaming
• SSD read-only/read-write cache
• Bad block scan, recovery, and hard drive S.M.A.R.T.
• RAID recovery
• Bitmap support

Supported Client OS
• Windows 7 (32/64-bit), Windows 8 (32/64-bit), Windows Server 2003/2008 R2/2012/2012R2,
• Apple Mac OS X,
• Linux & UNIX

Supported Browsers
• Microsoft Internet Explorer 10+,
• Mozilla Firefox 8+,
• Apple Safari 4+
• Google Chrome

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

Networking
• TCP/IP (IPv4 & IPv6: Dual Stack)*
• NICs with jumbo frame (failover, multi-IP settings, port trunking/NIC teaming)
• Service binding based on network interfaces
• Squid Proxy server
• Proxy client
• DHCP client, DHCP server
• Protocols: CIFS/SMB, AFP (v3.3), NFS(v3), FTP, FTPS, SFTP, TFTP, HTTP(S), Telnet, SSH, iSCSI, SNMP, SMTP, and SMSC
• UPnP & Bonjour Discovery
• USB Wi-Fi Adapter Support

Qsync
• Syncs files across multiple devices with SSL support
• Selective synchronization for only syncing specific folders
• Use team folders as a file center for greater team collaboration (maximum sync tasks:32)
• Shares files by links via e-mail
• Policy settings for conflicting files and file type filter support
• Version control: up to 64 versions.
• Incremental synchronization for HDD space saving
• Unified privilege management
• Unified configuration management
• Supports central configuration mode
• Supports remote erase / restore
• Supports shared folders sync
• Supports Windows & Mac OS

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

Web Administration
• Movable Icons and personalized desktop

• Smart toolbar and dashboard for neat system status display
• Smart fan Control
• Dynamic DNS (DDNS)
• SNMP
• Resource monitor
• Network recycle bin for file deletion via CIFS/SMB, AFP, and File Station
- Automatic Cleanup
- File Type Filter
• Comprehensive logs (events & connection)
• Syslog client/server
• System settings backup and restore
• Restore to factory default
• Mobile app: Qmanager for remote system monitoring & management

Security
• Network access protection with auto-blocking: SSH, Telnet, HTTP(S), FTP, CIFS/SMB, AFP
• CIFS host access control for shared folders
• AES 256-bit volume-based data encryption*
• AES 256-bit external drive encryption*
• Importable SSL certificates
• Instant alert via E-mail, SMS, beep,and push service
• 2-step verification
 -Data encryption functions may be unavailable in accordance with the legislative restrictions of some countries.

Domain Authentication Integration
• Microsoft Active Directory (AD) & Domain Controller support
• LDAP server, LDAP client
• Domain users login via CIFS/SMB, AFP, FTP, and File Station

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

Web Administration
• Movable Icons and personalized desktop
• Smart toolbar and dashboard for neat system status display
• Smart fan Control
• Dynamic DNS (DDNS)
• SNMP
• Resource monitor
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File Server
• File sharing across Windows, Mac, and Linux/UNIX
• Windows ACL
• Advanced folder permissions for CIFS/SMB, AFP, FTP
• Shared folder aggregation (CIFS/SMB)

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

myQNAPcloud Service
• Private cloud storage and sharing
• Free host name registration (DDNS)
• Supports myQNAPcloud SSL certificates (DDNS)
• Auto router configuration (via UPnP)
• Web-based file manager with HTTPS 2048-bit encryption
• CloudLink for remote access without any complicated router setup
• myQNAPcloud connect for easy VPN connection (Windows VPN utility)

FTP Server
• FTP over SSL/TLS (Explicit)
• FXP support
• Passive ftp port range control

Surveillance Station
• Supports over 3,000 IP cameras
• Includes 2 free camera licenses, up to 30 camera channels via additional license purchase
• Instant playback to check recent events
• Online editing to edit cameras during live view
• Visual aid by e-mail
• Playback and speed control using the shuttle bar
• Video preview on playback timeline
• Intelligent video analytics (IVA) for advanced video searching
• Surveillance client for Mac
• Mobile surveillance app: Vmobile (iOS and Android)
• Mobile recording app: Vcam (iOS and Android)

AirPlay & Chromecast
• Streams videos, photos and music from NAS to Apple TV or Chromecast via File Station, Music Station, Photo Station, Video Station or mobile app (Qfile, Qmusic, Qphoto or Qvideo).
• Note: Media Streaming add-on app from the App Center is required

Photo Station
• Show photos by thumbnails, list, timeline, or folder view
• Supports virtual/smart albums
• Validity control for sharing albums
• Tag photos with text, colors, and ratings
• Slideshows with background music and different transition effects
• Geotag photos and display them on Google maps
• Advanced search by tags, metadata, etc
• Supports uploading photos/videos to Picasa, Flickr, Weibo, YouTube
• Share slideshows links to social websites or by email
• Supports Facebook friends login
• Backup/Restore album configuration

Backup Station
• Remote replication server (over rsync)
• Real-time remote replication (RTRR) to another QNAP NAS or FTP server
• Works as both RTRR server & client with bandwidth control
• Real-time & scheduled backup
• Backup versioning for RTRR
• Snapshot support for RTRR/Rsync
• Encryption, compression, file filter, and transfer rate limitation
• Encrypted replication between QNAP NAS servers
• Desktop backup with QNAP NetBak Replicator for Windows
• Apple Time Machine backup support
• Data backup to multiple external storage devices
• Synchronizes with cloud storage: Amazon S3, ElephantDrive, Dropbox, and Google Drive
• Third party backup software support: Acronis True Image, Arcserve backup, emc retrospect, Symantec Backup Exec, etc.

File Station
• Supports mounting a Cloud Drive (such as Google Drive, Dropbox, Microsoft OneDrive, Amazon Cloud Drive, Yandex Disk and Box).
• Supports mounting remote shared folders through FTP or Microsoft networking (SMB/CIFS)
• Supports opening documents via Office Online, Google Docs or Chrome Extension (Edit Office files in Google Docs, Sheets, and Slides)
• Supports ISO Mounting (Up to 256 ISO Files)
• Supports thumbnail display of multimedia files
• Supports sharing download links and upload links
• Supports sharing to other NAS users
• Drag-n-drop Files via Chrome and Firefox Browsers
• Photo, music, and video preview and playback
• File Compression (ZIP or 7z)
• Supports displaying subtitles (*.SRT, UTF-8 format)
• Supports slideshow playback in media viewer
• Mobile App: Qfile for file browsing and management

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

VPN Client
• Supported VPN protocols: PPTP & OpenVPN services

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

Download Station
• PC-less BT, FTP/FTPS, and HTTP/HTTPS, Thunder, FlashGet and qqdl download (up to 500 Tasks)
• BT download with Magnet Link and PT support
• Scheduled download and bandwidth control
• RSS subscription and download (broadcatching)
• BT search
• Proxy support for BT download
• Mobile app: Qget for downloads browsing and management

Storage Plug & Connect
• Creating and mapping shared folders by QNAP Windows Qfinder Pro
• Creation of and connection to iSCSI target/LUN

iTunes Server
• Audio and video sharing for Windows & Mac iTunes

Container Station
• Supports LXC and Docker
• Supports CPU/Memory management
• Download applications from the built-in Docker Hub Registry
• Supports one-click installation, container export/import & console mode
• Supports mounting NAS shared folders and data-only containers
• Supports auto port forwarding
• Supports auto-start containers
• Supports downloading Docker certificates

DLNA Server
• Supports DLNA/UPnP TVs and players such as PlayStation 4 and Xbox One
• Supported audio formats: AIFF, APE, DSD (DSF, DFF), FLAC, M4A, M4A Apple Lossless (ALAC), MP3, OggVorbis, WAV (PCM, LPCM), WMA, WMA PRO, WMA VBR*
• Support CUE indexing file for APE, FLAC audio format.
*DRM-protected content is not supported.

iSCSI (IP SAN)
• iSCSI target with multi-LUNs per target (Up to 256 targets/LUNs combined)
• Supports LUN mapping & masking
• Online LUN capacity expansion
• Support for SPC-3 persistent reservation
• Supports MPIO & MC/S
• iSCSI LUN backup, one-time snapshot, and restoration
• iSCSI connection and management by QNAP Windows Qfinder Pro
• Virtual disk drive (via iSCSI initiator)
• Max No. of virtual disk drives: 8

Video Station
• Supports virtual/smart collections
• Tag videos with text, color, and ratings
• Share video links to social websites or through email
• Sort videos automatically into defined classifications
• Display movie posters from IMDB or user upload
• Supports displaying subtitles (*.SRT,*.ASS, *.SSA)
• Supports Facebook friends login
• Supports custom video classification
• Supports multi-zone video display
• Mobile app: Qvideo for online video browsing and management

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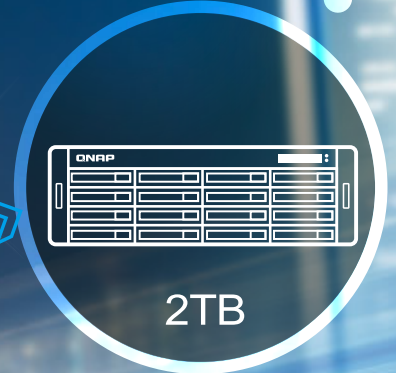• IP-based and domain name-based privilege control

App Center
• Official and community software add-ons such as Signage Station and Notes Station

Design and specifications are subject to change without notice.

Turbo NAS

TS-831X TS-531X

Redefining the Premium 10GbE Standard

Fast ultra-high-speed 10Gbps SFP + dual network ports

1TB

500GB

2TB

Virtual JBOD storage expansion
Share storage space across all your QNAP NAS

TS-531X

TS-831X

QNAP Systems, Inc.

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TEL：+49-89-381562991

China
Email：cnsales@qnap.com.cn
TEL：+86-400-028-0079

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