

10GbE NAS for SMB

# TS-x31X

Integrated 10GbE SFP+ LAN ports, AnnapurnaLabs Alpine Dual/Quad-core 1.7 GHz processors, and up to 16GB RAM

TS-831X



TS-531X

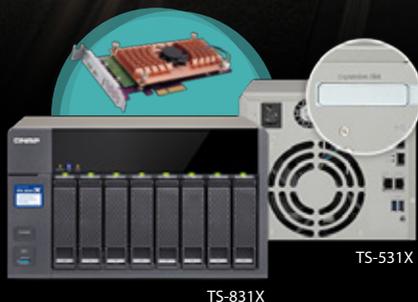


TS-431X



## Qm2 M.2 SSD/10GbE Expansion Card

Supports SSD caching for enhanced storage performance



TS-831X

## Container Station

Enjoy IoT App Virtualization Services



## 10GbE Connectivity

Lightning fast throughput for high-bandwidth applications



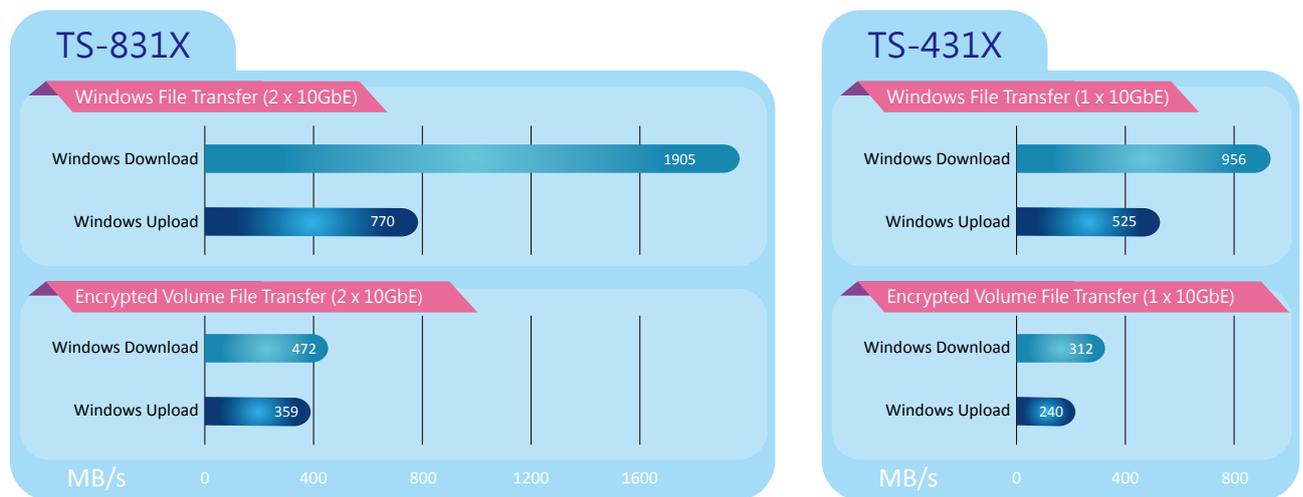
- Manage, share, and back up business data with Hybrid Backup Sync
- VJBOD allows using the TS-x31X to expand the storage capacity of other QNAP NAS
- Enhanced hardware-accelerated encryption engine provides volume encryption speed of over 472MB/s (TS-831X)
- Quickly locate files with Qsirch, a full-text search engine
- TS-x31X can expand storage by up to 8 drives with a QNAP UX-800P 8-bay expansion enclosure

Expanding NAS capacity normally requires dedicated expansion enclosures. With the Virtual JBOD (VJBOD) feature, unused storage space of a TS-x31X series NAS can be used to expand the capacity of other QNAP NAS units. You can create virtual storage pools and volumes directly on the TS-x31X and use them as you would with a local machine. You can also expand the size of the virtual storage pool for centralized use and management via the same interface. With a NAS serving as both a workstation and expansion unit, the TS-x31X is the most cost-effective choice for users.



## ▶ Energy-efficient dual or quad-core processor and hardware encryption engine

Available in 4, 5, and 8-bay models, the TS-x31X series offers a full range of NAS solutions with built-in 10GbE SFP+ network ports. The TS-531X and TS-831X feature a low-power, high-performance AnnapurnaLabs Alpine AL-314 quad-core 1.7 GHz processor and memory expandable to 16GB. The TS-431X features an AnnapurnaLabs Alpine AL-212 dual-core 1.7 GHz processor and memory up to 8GB. The encryption engine of the TS-x31X series provides remarkable data access speeds when using AES-256-bit encryption (the TS-831X can reach up to 472MB/s), maintaining high system efficiency while protecting sensitive documents.



Test environment

NAS:  
OS: QTS 4.2.2 (TS-831X); QTS 4.3.2 (TS-431X)  
Disk Groups: RAID 5; 4 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.

## ▶ Supports 10GbE networks, enabling bandwidth-demanding applications

TS-x31X series has built-in 10GbE SFP+ network ports (TS-431X: 1 x 10GbE, TS-531X/TS-831X: 2 x 10GbE). In addition, the TS-531X and TS-831X can be upgraded with an extra 10GbE PCIe single-port network expansion card to provide up to three 10GbE ports. TS-x31X supports a variety of Port Trunking modes. In addition to bandwidth integration, network transmission acceleration, it also provides network fault tolerance to ensure continuous service. It meets the needs of enterprise for high-bandwidth operations such as file access, backup and recovery.



## ▶ QM2 expansion card redefines NAS functionality

QNAP's QM2 is a PCIe expansion card that features dual M.2 SSD slots and 10GbE connectivity\* (individual cards may vary in functionality). This allows users to easily set up SSD caching or to optimize NAS performance. The QM2 also provides one extra 10GbE port for deployment with data-intensive applications. Equipped with a dedicated cooling module, the QM2 can maintain its high performance even when tasked with the highest workloads.

✍ 10GbE connectivity is only provided by the QM2-2S10G1T and QM2-2P10G1T.

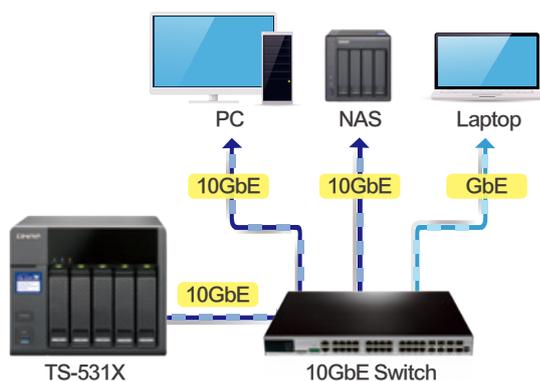


## ▶ QM2 expansion cards

- QM2-2S: 2 x M.2 22110/2280 SATA SSD slots
- QM2-2P: 2 x M.2 22110/2280 PCIe SSD slots
- QM2-2S10G1T: 2 x M.2 2280 SATA SSD slots + 1 x 10GBASE-T
- QM2-2P10G1T: 2 x M.2 2280 PCIe SSD slots + 1 x 10GBASE-T

## ▶ Drive multiple applications and boost business productivity with 10GbE

10GbE enables various data-intensive applications and helps businesses to meet the increasing demands for bandwidth-intensive file transmission and backup tasks. Use the cost-effective TS-x31X with a 10GbE switch to instantly construct the corporate high-speed networking environment. Or, use the TS-x31X with a Wireless AP or a router to build a workstation which allows direct connection or Wi-Fi transfer.



Direct connection over the 10GbE switch



Wireless AP-powered 10GbE workstation

## ▶ SSD caching

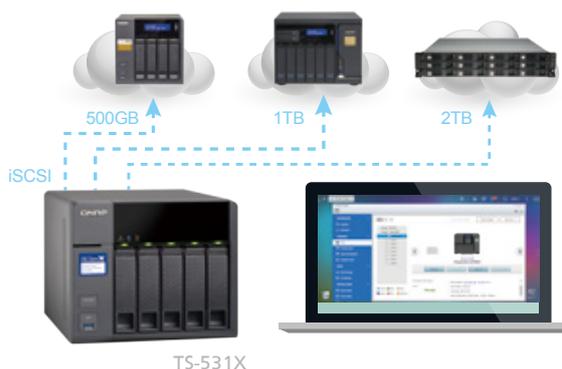
TS-x31X supports SSD caching to enhance IOPS performance and accelerate disk access, increasing system operation efficiency. It is especially suitable for applications that require high IOPS performance. By combing SSDs and HDDs, system performance is increased in a cost-efficient manner.



## ▶ VJBOD to maximize storage utilization

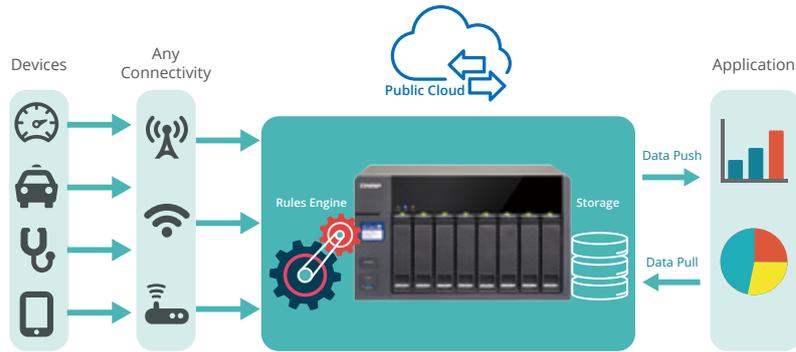
With VJBOD (Virtual JBOD), you can share the storage space of a TS-x31X with another QNAP NAS as if it were a local machine. By using the iSCSI network protocol, VJBOD can create a stable high-speed storage space with its built-in 10GbE and Port Trunking technology. VJBOD features excellent fault mitigation features and can automatically recover and re-connect from failure. Easy set-up, quick setup in one interface, one-click activation, one-step to use.

✍ The remote QNAP NAS must support iSCSI services and storage pools, and it is recommended to upgrade the operating system to QTS 4.2.1 (or later).



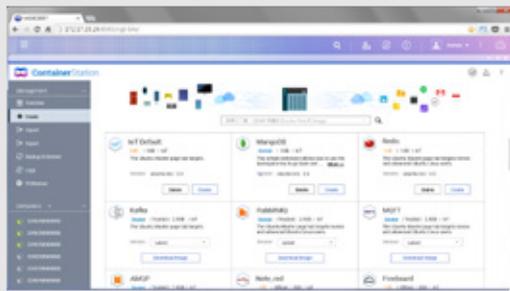
## ▶ Rapidly deploy IoT applications with Container Station

QNAP Container Station features two lightweight virtualization technologies: LXC and Docker®. You can run a full Linux® virtual machine on TS-x31X and download thousands of applications from the Docker Hub® online marketplace. It is the best private cloud platform for developers to easily deploy IoT applications.

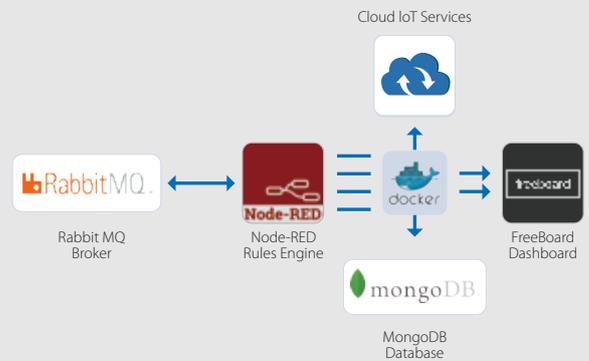


Container Station provides recommended IoT applications, such as:

- |           |         |
|-----------|---------|
| Kafka     | Redis   |
| RabbitMQ  | MongoDB |
| MQTT      | Ponte   |
| Freeboard | Dashing |
| Node-RED  |         |



Rapid development experience: Use RabbitMQ, Node-RED, MongoDB, and Freeboard to implement IoT architecture.



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## ▶ 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.



## ▶ Instantly preview files

File Station brings together various preview tools for documents, emails and other files. It also features a multimedia browser - Media Viewer - to play multimedia files without having to download them or to use plug-ins such as VLC.

### Documents

With the Google office extension\*, you can open Office files (.doc .docx .xls .xlsx .ppt .pptx) and browse their contents directly in File Station. You can also view Office files by right-clicking them and selecting Office Online or Google Docs.

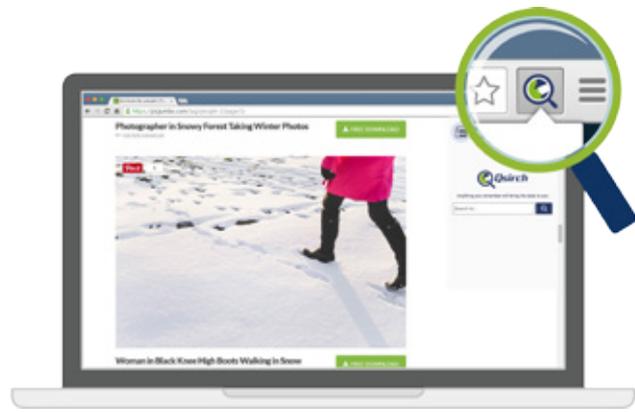
\* Only for Google Chrome. You must install "Office Editing for Docs, Sheets & Slides" from the Chrome Web Store.

### Email

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

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

Qsirch helps you find your files quickly, and allows you to preview search results by thumbnail, summary, keyword annotations and more. Install the Qsirch add-on to use it with your Chrome browser. To search on Google and your QNAP NAS at the same time, simply click the Qsirch icon on the right of the address bar. Qsirch is fully integrated into QmailAgent to provide a powerful email search function. You can quickly search through all the saved email files (.eml) stored on your NAS for better work efficiency.



## QmailAgent

QmailAgent allows you to centrally manage multiple email accounts. You can log in to your email accounts from a single platform and quickly switch between them. In addition to writing, browsing, and managing emails, you can also directly attach files from the NAS.



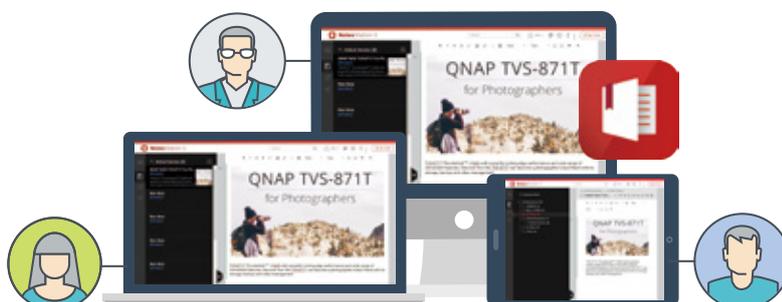
## Qcontactz

Qcontactz helps you centralize and manage contact information for all your friends, family and colleagues. Qcontactz has multiple methods of importing contacts. It can sync with your Google Account contacts and manually add contacts, and can also import (and export) CSV and vCARD 3.0 files.



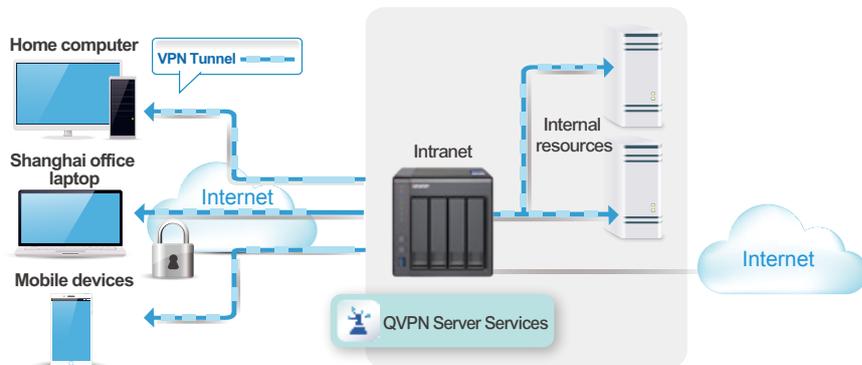
## Notes Station

Notes Station allows TS-x31X users to edit notes collaboratively, and provides version management for tracking changes. The built-in sharing feature lets you instantly share your notes. Notes Station also features password protection to prevent unauthorized users from accessing your notes.



## QVPN - Cost-effective, virtualized private network

The TS-x31X offers the QVPN service that supports L2TP/IPSec, OpenVPN and PPTP protocols and encryption verification. You can easily connect to private networks to access and share data while enjoying greater security. Users can securely connect to home or corporate servers, and access shared resources or other VPNs (the NAS can be connected to several VPNs at the same time). The TS-x31X also offers account and connection management features and supports both local and remote user connections. You can effectively manage accessibility to private VPN services. The TS-x31X can also serve as a QVPN client, establishing connections to the QVPN server on a different NAS or other VPN servers to bypass region blocking.



## Centralized management of file backup, recovery and synchronization with Hybrid Backup Sync

Hybrid Backup Sync integrates data backup, recovery and synchronization functions (via RTRR, rsync, FTP, CIFS/SMB protocols) in a single application to help you easily backup or synchronize data from TS-x31X to another QNAP NAS, remote server, or cloud backup space. Hybrid Backup Sync supports multi-version backup, flexible work scheduling, file compression backup and more.



## Easily sync files with Qsync Central Station

With Qsync, all of the files uploaded to a TS-x31X can be synced with other computers and mobile devices. Qsync is a great tool for those who are frequently away from their NAS to access up-to-date files and data.



## Surveillance Station

Surveillance Station is a professional network security monitoring solution that supports over 3,000 IP camera models and allows users to easily set up a professional-quality surveillance center for real-time monitoring, video recording, and playback.

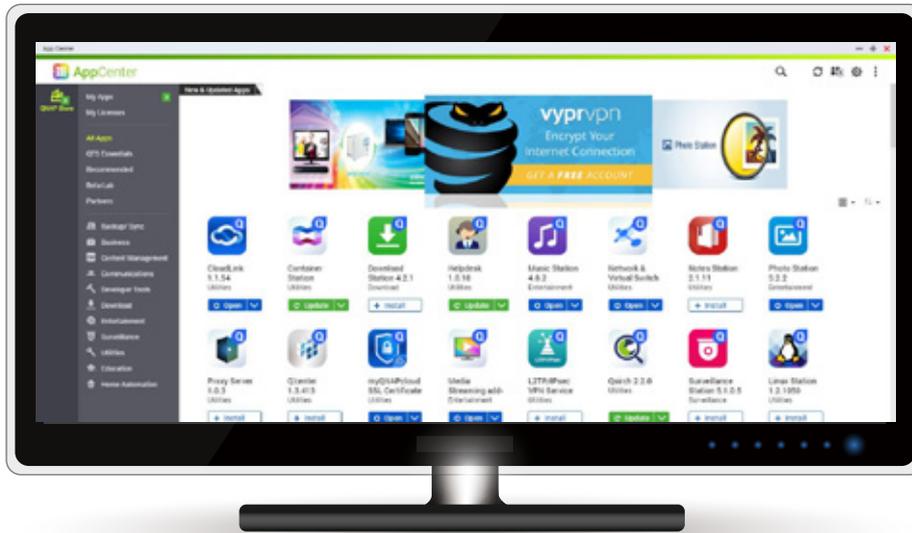
Surveillance Station

Camera License:  
**2** free channels  
 up to **25** (TS-431X)  
 & **30** channels (TS-531X/831X)



## 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.



## Mobile Apps



### Qfile

Remotely manage your files on the NAS, upload and download files, stream videos and music, and share documents.



### QmailClient

This companion app for QmailAgent allows you to read all your emails from a single app on your mobile device.



### 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 recorded videos.



### Qmanager

Use Qmanager to remotely monitor system status and manage your QNAP NAS anytime, anywhere.

## Hardware Specifications



	TS-431X		TS-531X		TS-831X		
Ordering SKUs	TS-431X-2G	TS-431X-8G	TS-531X-2G	TS-531X-8G	TS-831X-4G	TS-831X-8G	TS-831X-16G
CPU	AnnapurnaLabs Alpine AL-212 Dual-core 1.7 GHz ARM® Cortex-A15 processor		AnnapurnaLabs Alpine AL-314 Quad-core 1.7 GHz ARM® Cortex-A15 processor (Newly upgraded from 1.4 GHz)				
Encryption Engine	✓						
System Memory	2GB DDR3 (1 x 2GB)	8GB DDR3 (1 x 8GB)	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	8GB		16GB				
Total Memory Slots	1 x SODIMM DDR3		2 x SODIMM DDR3				
Flash Memory	512MB						
Drive Types	4 x 3.5"/2.5" SATA 6Gb/s HDDs/SSDs		5 x 3.5"/2.5" SATA 6Gb/s HDDs/SSDs		8 x 3.5"/2.5" SATA 6Gb/s HDDs/SSDs		
10GbE LAN Ports	1 x 10Gigabit SFP+ LAN port		2 x 10Gigabit SFP+ LAN ports				
GbE LAN Ports	2 x Gigabit RJ45 LAN ports						
USB Ports	3 x USB 3.0 ports (Front: 1, Rear: 2)						
PCIe	Not expandable		1 x PCIe Gen2 (x2)				
Dimensions	169 x 160 x 219 mm 6.65 x 6.3 x 8.62 inches (H x W x D)		185 x 210 x 235 mm 7.29 x 8.29 x 9.27 inches (H x W x D)		185 x 298 x 235 mm 7.29 x 11.74 x 9.27 inches (H x W x D)		
Power	External Adapter 90W,12V		ATX 250W, Input: 100V-240V ~ / 3.5A, 50~60Hz				
Fan	1 x 12cm fan (12V DC)		1 x 12cm fan (12V DC)		2 x 12cm fan (12V DC)		
Package Contents	NAS, power cord, Quick Installation Guide, two Gigabit RJ45 Ethernet cables, drive screws						
Optional QNAP Accessories	Expansion units: UX-500P, UX-800P; Memory: DDR3 2GB, 4GB, 8GB RAM; QNAP 10GbE network expansion cards (only for TS-531X & TS-831X); 10GbE SFP+ DAC cables.						

## Software Specifications

Supported Disk Group Types	TS-431X: RAID 0/1/5/6/10, 5 + hot spare, single, JBOD TS-531X & TS-831X: RAID 0/1/5/6/10, + hot spare, single, JBOD
Supported Protocols	CIFS/SMB, AFP (v3.3), NFS(v3), FTP, FTPS, SFTP, TFTP, HTTP(S), Telnet, SSH, iSCSI, SNMP, SMTP, and SMSC
File Sharing	Maximum number of users: 4096; Maximum number of user groups: 512; Maximum number of shared folders: 512; Maximum simultaneous connections: 700
Other Features	File Station, Photo Station, Music Station, Video Station, Download Station, Qsync, Notes Station, FTP Server, Print Server, VPN Server, VPN Client, Antivirus Protection
Streaming Server	DLNA Server, Airplay, Chromecast, iTunes Server

✍ Model specifications are subject to change without notice. Please refer to [www.qnap.com](http://www.qnap.com) for the latest information.

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