

TS-464



Brand: QNAP

Product Code: TS-464

Availability: 10

Weight: 2.26kg

Dimensions: 165.00mm x 170.00mm x
226.50mm

Call for Price:

Short Description

QNAP 4 Bay NAS TS-464-8G

Description

TS-464 is a compact 4-bay NAS with superior performance. Supporting up to 72 TB storage and 4 TB M.2 SSD caching* at an affordable price, the TS-464 fulfills your multitasking challenges for file management, backup, collaboration, and video conversion.

The TS-464 uses the QTS operating system by default. You will be able to switch to using the QuTS hero operating system. QuTS hero provides benefits such as ZFS data integrity and WORM technology to prevent data tampering. (Switching to QuTS hero is supported starting from QTS 5.2.1)

? Using four 3.5-inch 24 TB hard drives in RAID 5 and two 2 TB M.2 SSDs. Hard drives and SSD sold separately.



2.5GbE is a must!

TS-464 is as fast as a single-port 10GbE NAS with up to 589 MB/s transfer speeds by setting port trunking with the two built-in 2.5GbE (2.5G/1G/100M) ports.

Quad-core for multitasking

Perform additional tasks, stream more media, and have more services running with an Intel® quad-core processor optimized for multitasking.

Smooth video conversion

Built-in GPU for enhanced video conversion, allowing videos to be smoothly streamed from the NAS to mobile devices.

Upgrade to dual-port 10GbE

Futureproof your network connection by installing a PCIe dual-port 10GbE network card that delivers up to 1,647 MB/s transfer speed.

Faster USB transfer

Two USB 3.2 Gen 2 (10Gbps) ports allow faster backup to/from USB devices.

More M.2 NVMe SSDs

If two M.2 slots aren't enough, install a QM2 PCIe expansion card for more M.2 SSD slots.

2.5GbE NAS is a must in 2024

With increasing availability on switches, motherboards, and laptops, 2023 is the year of 2.5GbE. The 2.5GbE TS-464 NAS is as fast as a single-port 10GbE NAS. By setting port trunking with the two built-in 2.5GbE (2.5G/1G/100M) ports to unleash network potential and increase fault tolerance, TS-464 delivers up to 589 MB/s transfer speeds.



New-generation quad-core processor for optimized performance

Processor

Intel® Celeron® N5095 quad-core processor, burst up to 2.9 GHz

Memory

Built-in 8 GB DDR4 memory

GPU

Built-in Intel® UHD Graphics to speed up video processing and graphical computing

Encryption Engine

Features Intel® AES-NI 256 hardware-accelerated encryption to boost system performance while securing sensitive data



Upgrade to dual-port 10GbE with a PCIe network card

With a superior hardware design, you can install a dual-port 10GbE network card [QXG-10G2TB](#) in the TS-464. Combining 10GbE networking, quad-core processor, and M.2 SSD caching, the TS-464 unleashes its full performance potential.



Expand storage capacity up to 16 hard drives

TS-464 supports a storage capacity of up to 72 TB by installing four 3.5-inch 24 TB hard drives in RAID 5. By connecting a [TL-D1600S](#) QNAP storage expansion unit, you can add an additional twelve hard drives to the TS-464 to achieve up to 330TB storage space to meet growing storage requirements.



Accelerate AI-powered image recognition and caching with TPU and PCIe expansion

TS-464 has two M.2 PCIe Gen 3 slots for installing NVMe SSD (including Apacer®, Micron®, Seagate®, WD®, and more) or Edge TPU.

? M.2 SSDs are sold separately. As M.2 SSD operations can easily generate excessive heat, it is recommended to install a heatsink on M.2 SSDs.



Install M.2 NVMe SSDs for cache acceleration or efficient tiered storage

If you have a huge number of small files requiring read/write operations, you can easily boost IOPS of TS-464 by configuring its two M.2 SSDs as a cache disk.

When transmitting bigger files, you can create a storage pool with two M.2 SSDs. With Qtier automatically moving hot data to SSD and cold data to hard drives, TS-464 allows you to enjoy exceptional application performance.

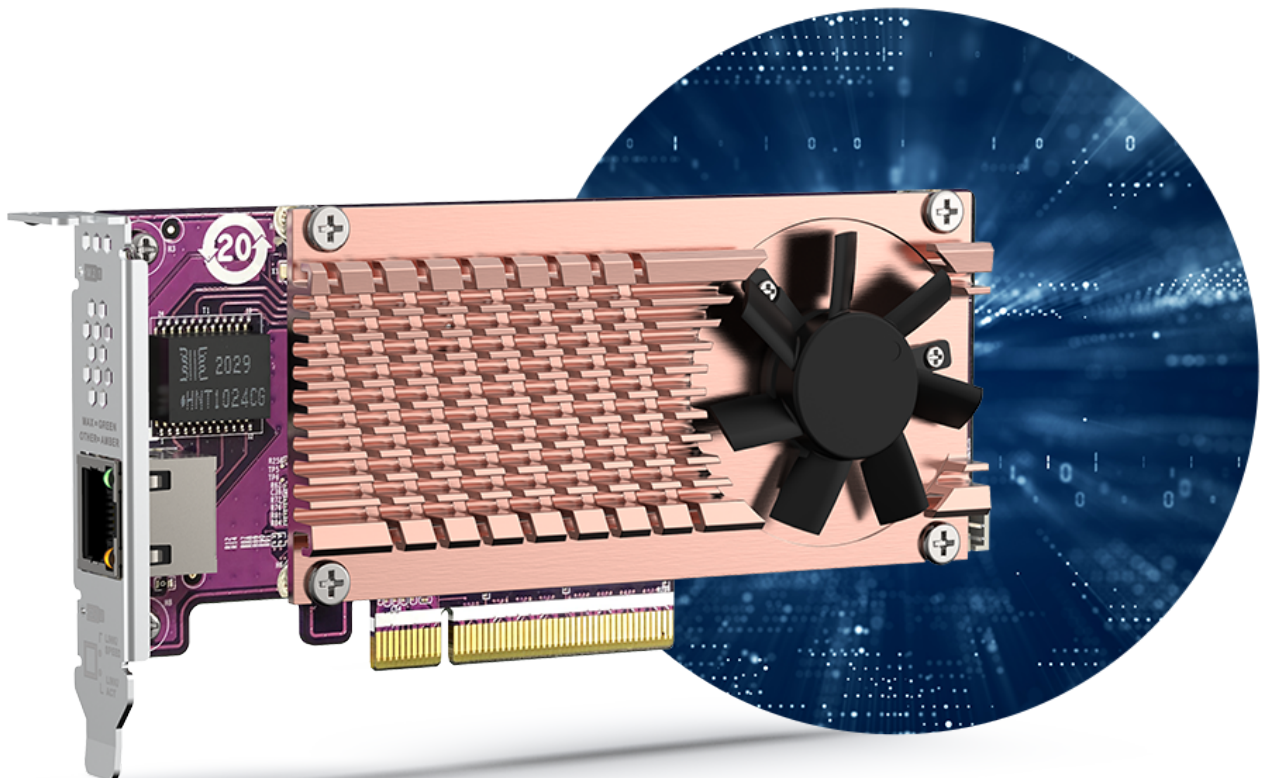
Accelerate AI-powered image recognition with TPU

By leveraging a Edge TPU to QNAP AI Core (the AI-powered engine for image recognition), the TS-464 can perform high-speed face and object recognition. Edge TPU

enables QuMagie to quickly process thousands of photos with high-speed AI Image recognition and classification, and QVR Face to analyze real-time video for instant facial recognition.

Abundant I/O capabilities with PCIe expansion

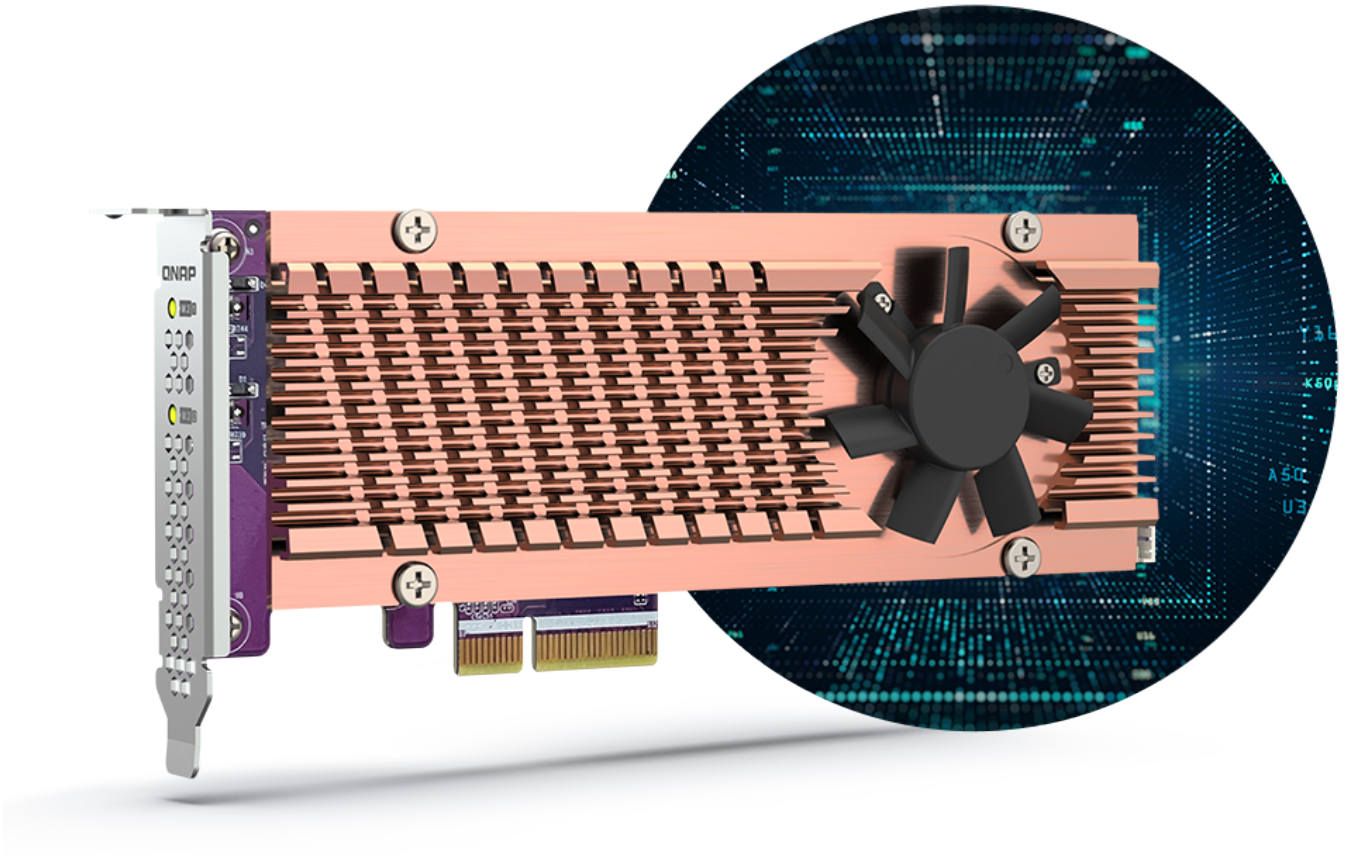
QNAP offers a wide range of expansion cards to add versatile functions to your NAS. The TS-464 has one PCIe Gen 3 x2 slot that supports various expansion cards for expanding application potential.



QM2 card

QM2-2P10G1TB

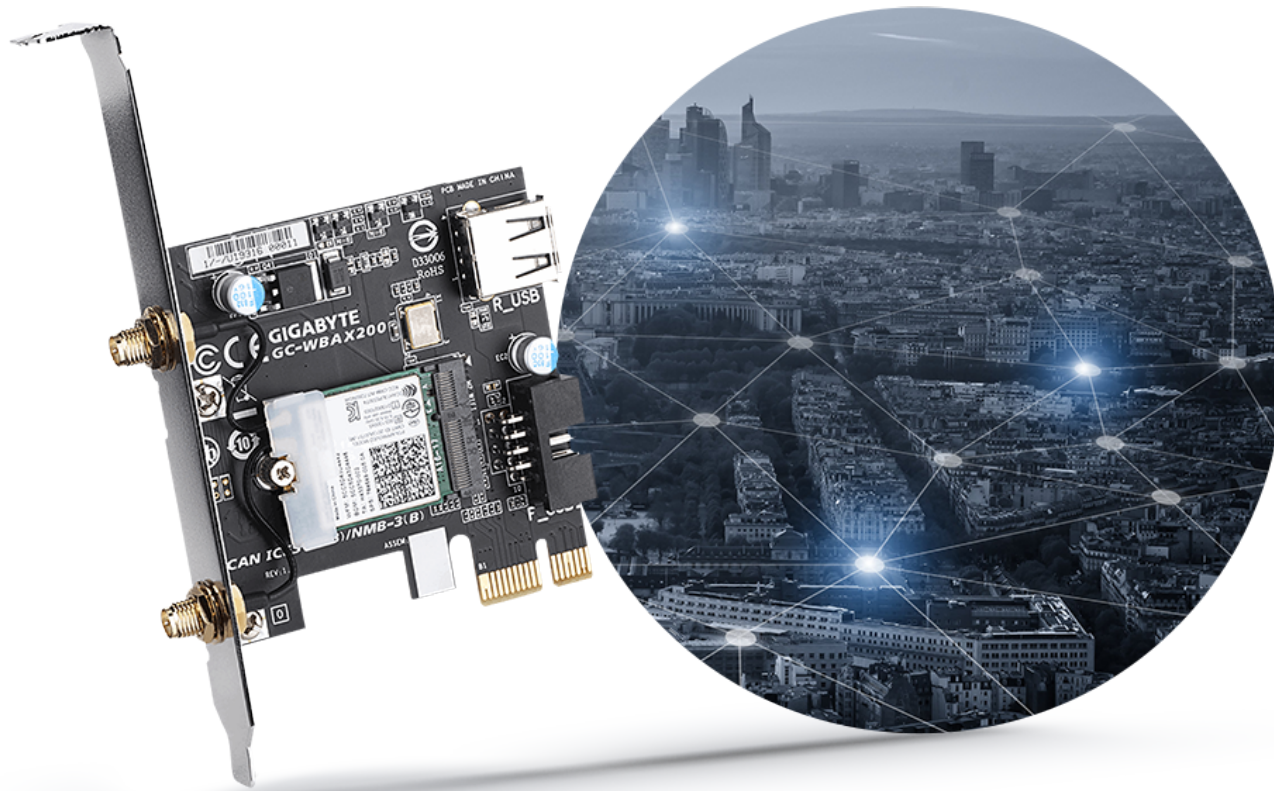
Add a 10GbE port and two M.2 SSD slots at the same time.



QM2 card

QM2-2P-344A

Add two M.2 SSDs to create a storage pool with larger capacity caching with the built in M.2 SSDs.

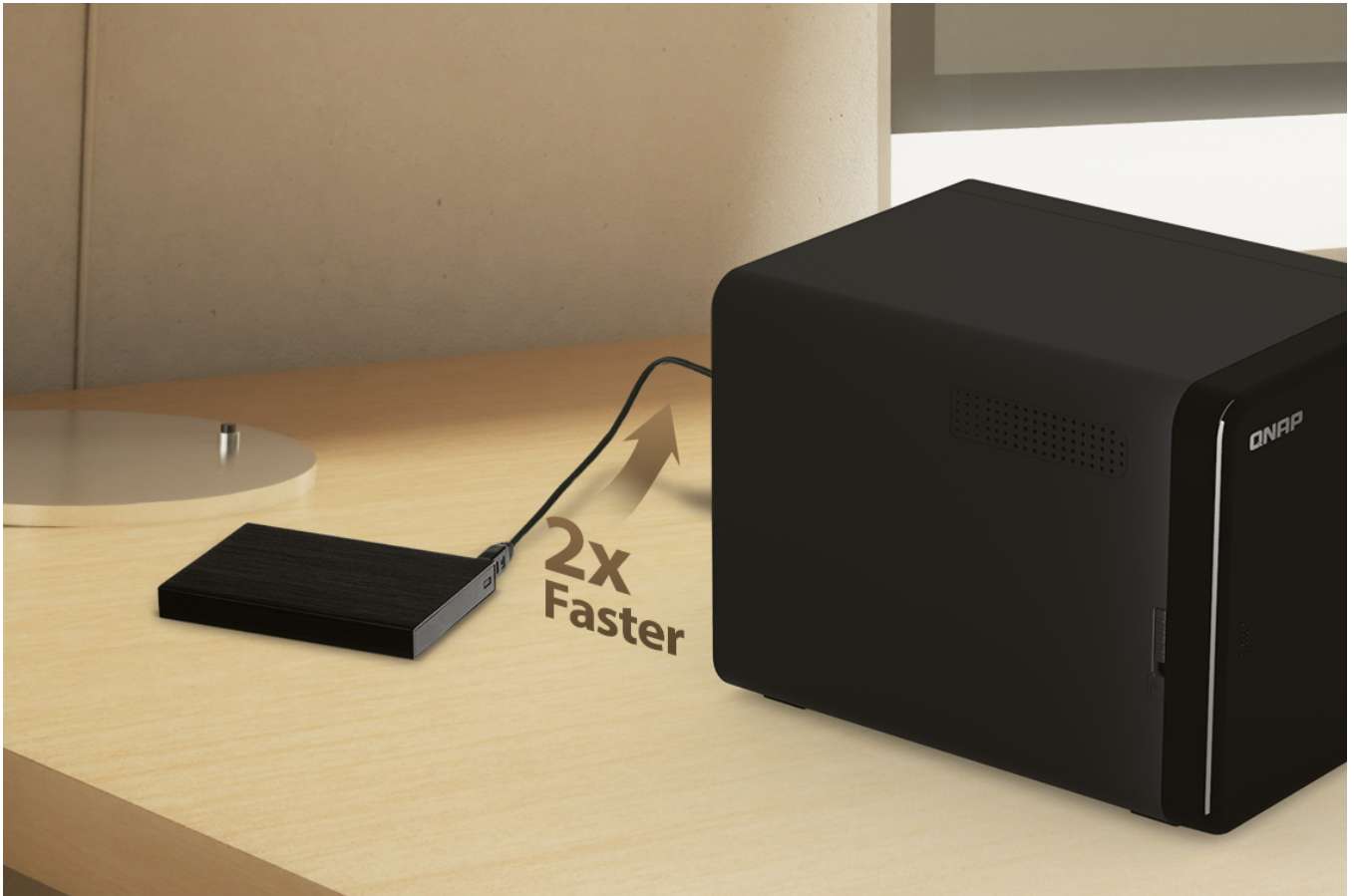


Wi-Fi 6 adapter

Install a Wi-Fi 6 adapter to turn the TS-464 into a Wi-Fi NAS, allowing accessing NAS data via wireless network.

One Touch Copy backup with USB 3.2 Gen 2

TS-464 provides two 10Gbps USB 3.2 Gen 2 ports for faster file transfer to/from USB 3.2 Gen 2 devices. The One Touch Copy button also allows you to back up the contents of USB devices to the TS-464 with a single button press.



Smoother mobile experience with GPU

Taking a lot of photos with your smartphone? [Qfile](#) mobile app will help you free up space by automatically backing up photos to the TS-464. With Intel® UHD Graphics, the TS-464 greatly speeds up converting videos to 1080p / 720p, allowing for smooth streaming to mobile devices over varying mobile network speeds.



Use your NAS like a PC

QNAP's exclusive [Virtualization Station](#) enables running multiple Windows®/Linux® virtual machines. By connecting a keyboard, mouse, and HDMI™ monitor, you can easily use the TS-464 as a PC.

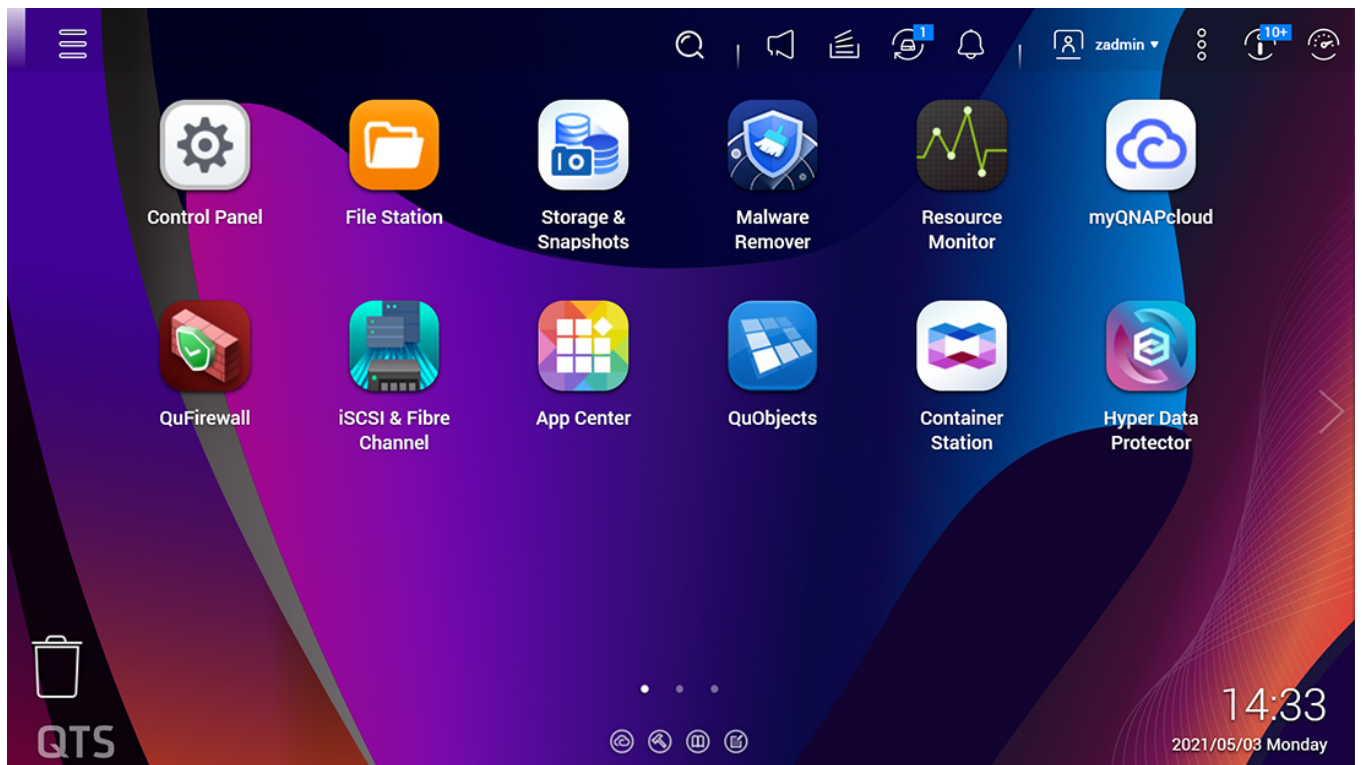


QTS 5, Fast, smooth, and easy-to-use!

The TS-464 comes with the QTS 5 operating system as standard, providing a next-generation usage experience with an updated system kernel, optimized user interface, and advanced security features.

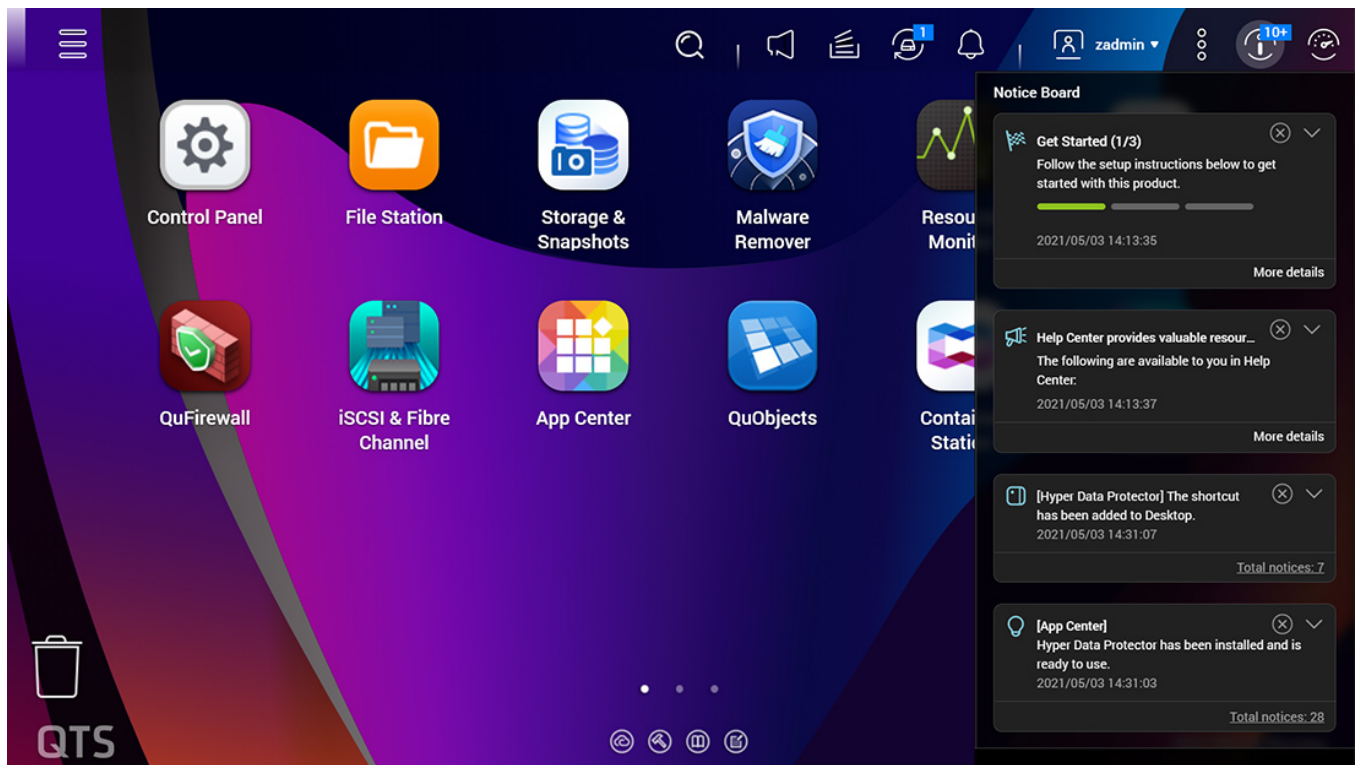
Brighter. Smoother. You'll like it.

When navigating QTS 5, you will notice a finer attention to detail for a superior browsing experience. Enjoy a smoother NAS experience, comfortable visual design, and find your favorite apps quicker.



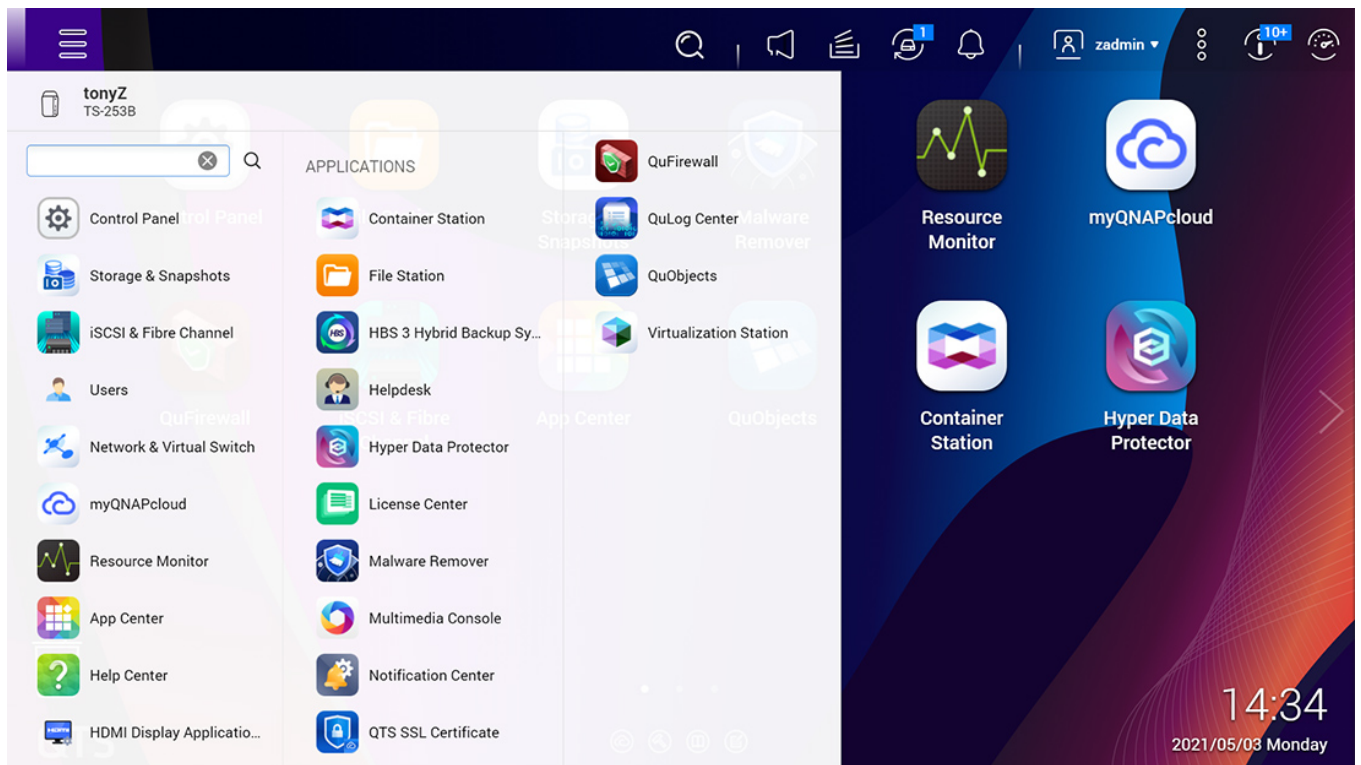
Get started with the notice board

When performing first-time installation, the notice board guides you through the setup process. Simply follow the step-by-step instructions for a quick and easy setup.



Smooth and reactive user interface

Whether clicking buttons, switching between apps, expanding/collapsing windows – every action is much smoother. The search bar in the main menu also assists in quickly finding desired apps.



Switch to QuTS hero operating system

for optimal data integrity and reliability

The TS-464 also supports QuTS hero - QNAP's ZFS-based NAS operating system, providing end-to-end data integrity, WORM protection, data reduction (inline data deduplication, compression, and compaction), and much more.



Welcome to the QTS Smart Installation system!

Thank you for choosing QNAP. Smart Installation will guide you through the installation process. This process may take a few minutes depending on the installed hard drives.

Start Smart Installation

Switch OS

QuTS hero

QTS

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Backup ? Storage ? Surveillance

QNAP is your best choice.

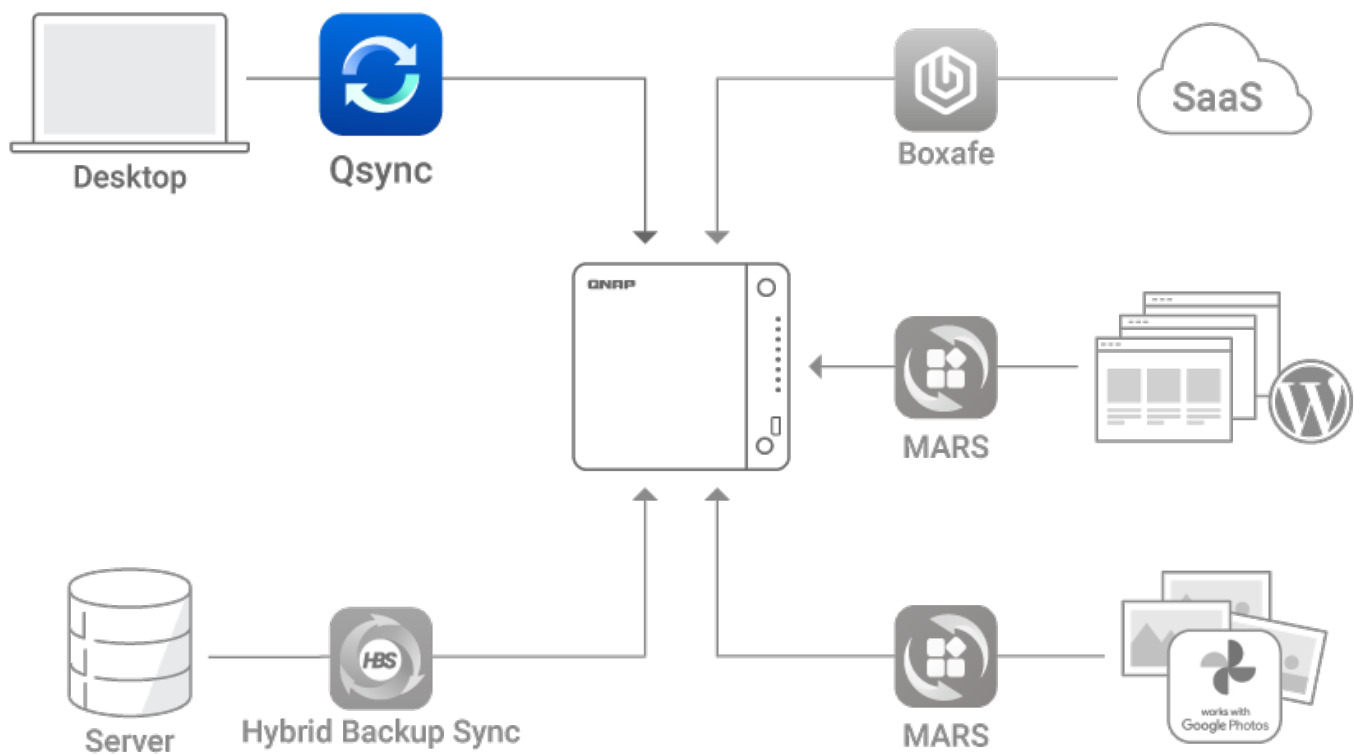
Simple Backup

Superior hardware performance with an [all-in-one Backup Solution](#) to speed up backup/recovery tasks.

Back up all your devices

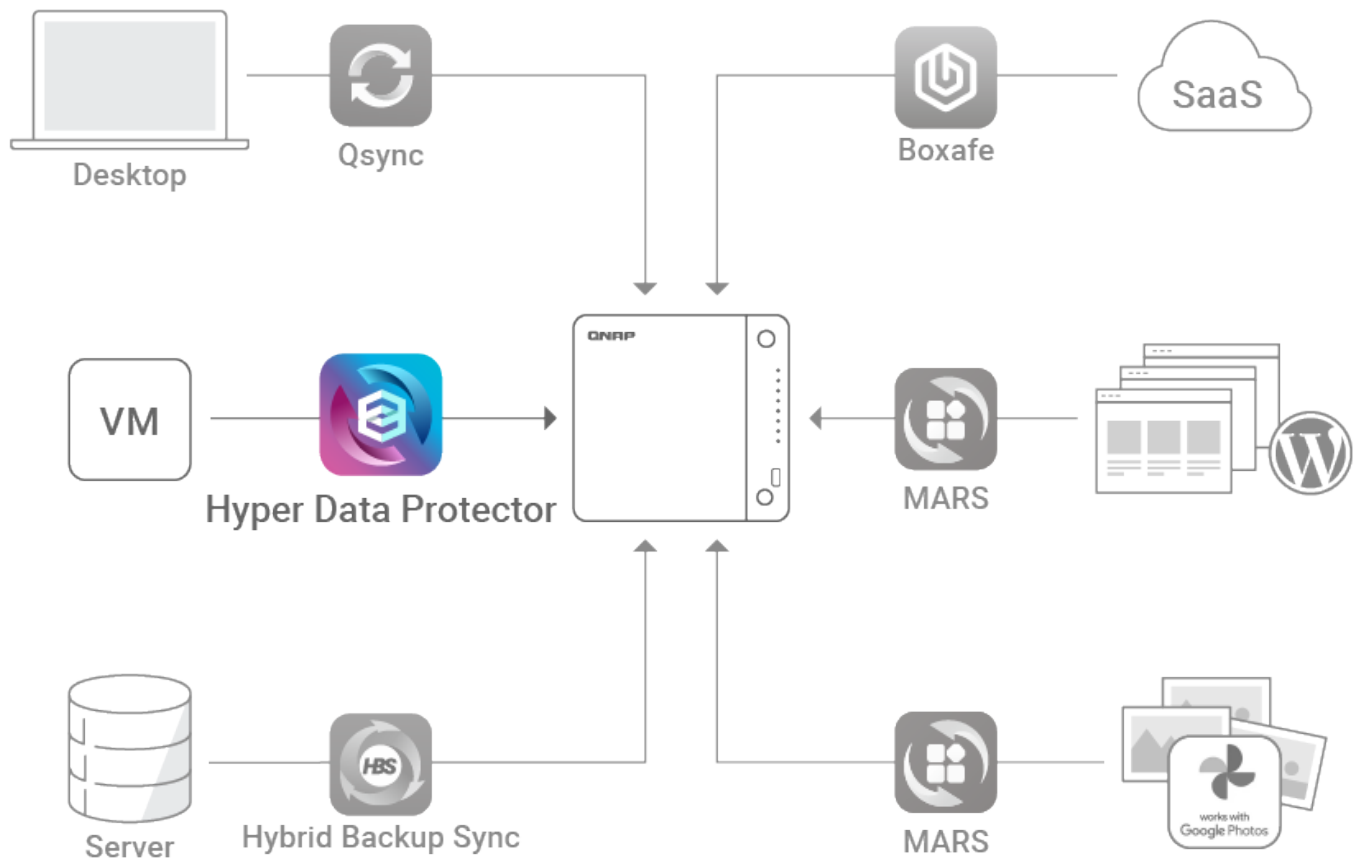
PC and Mac backup

Sync your computer files to NAS with Qsync. TS-464 also supports Time Machine for Mac computers.



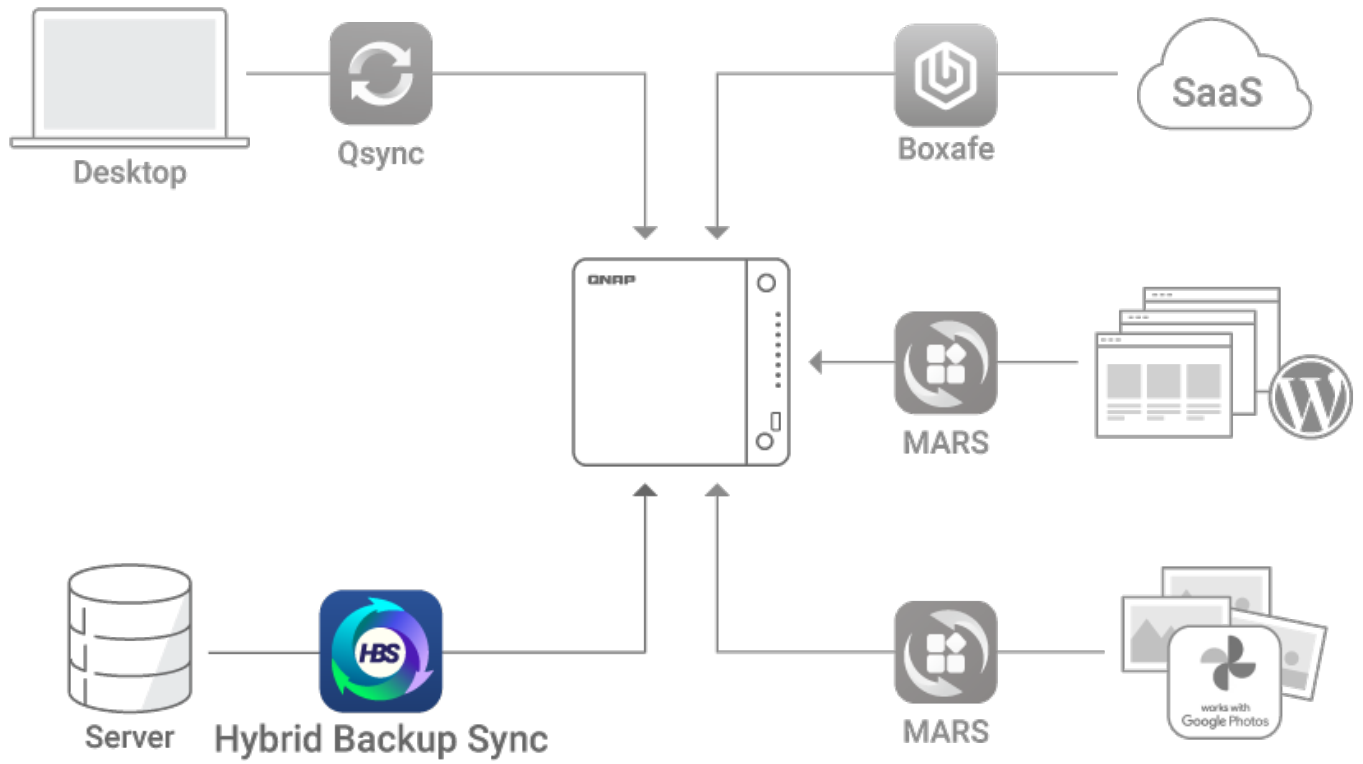
License-free VM backup

Back up multiple VMware® and Hyper-V™ VMs using Hyper Data Protector.



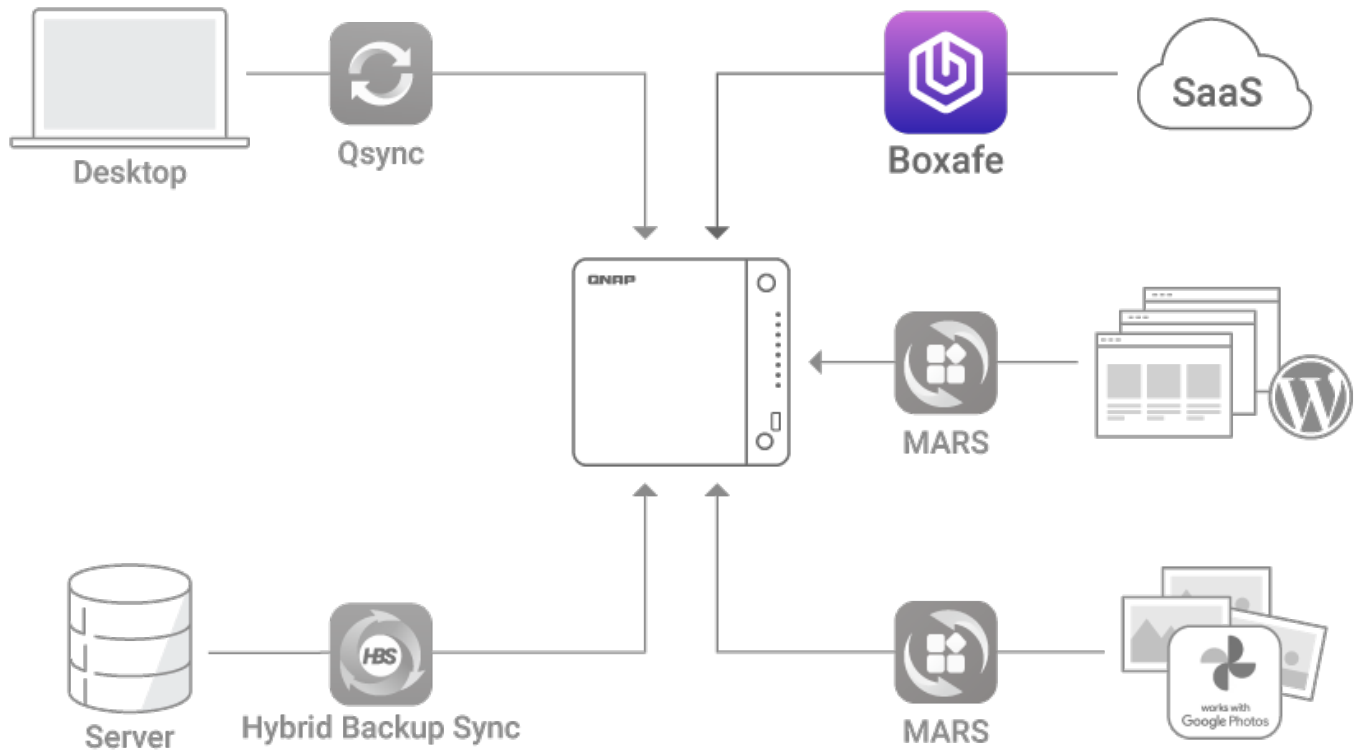
File server backup

Supports multiple protocols such as Rsync, FTP and CIFS for backing up different file servers.



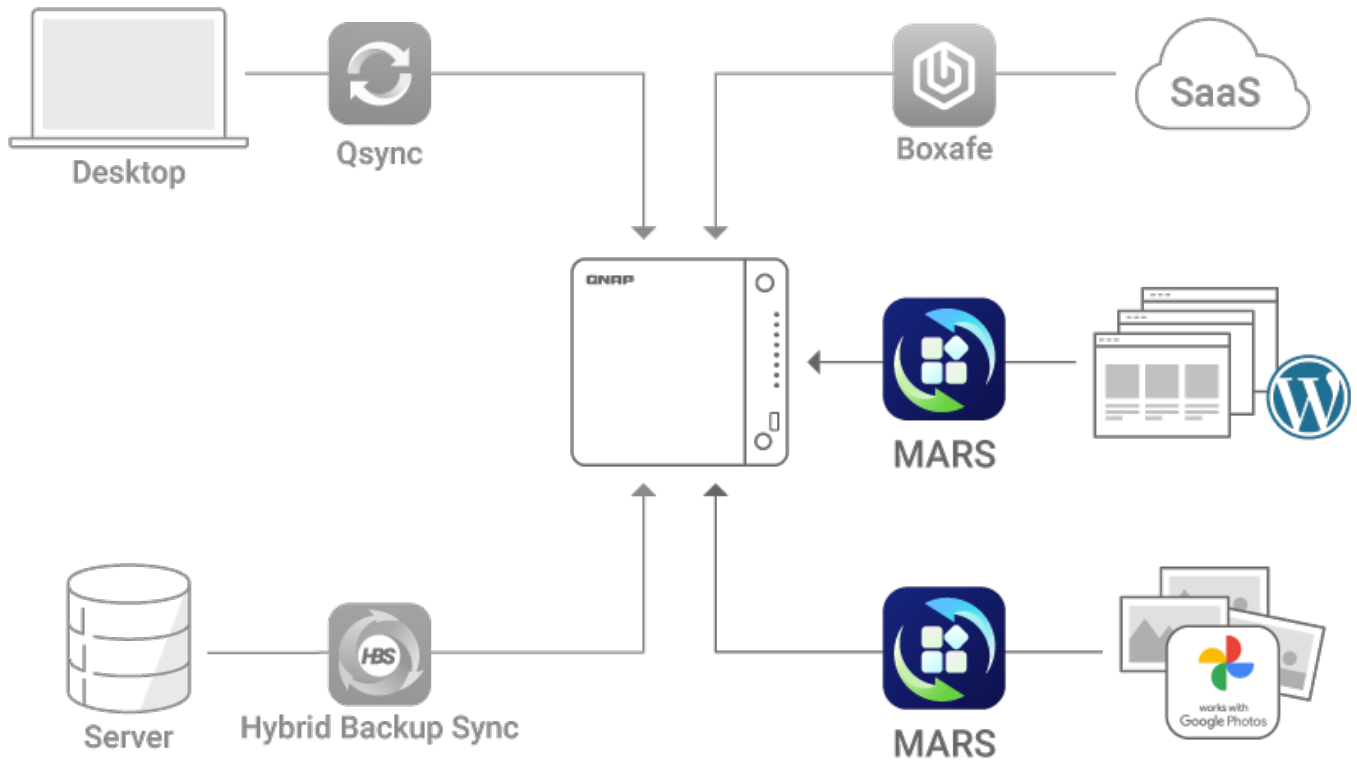
SaaS Business Backup Solution

Use Boxafe to easily back up Google™ Workspace and Microsoft 365® business account data.



Google Photos and WordPress backup

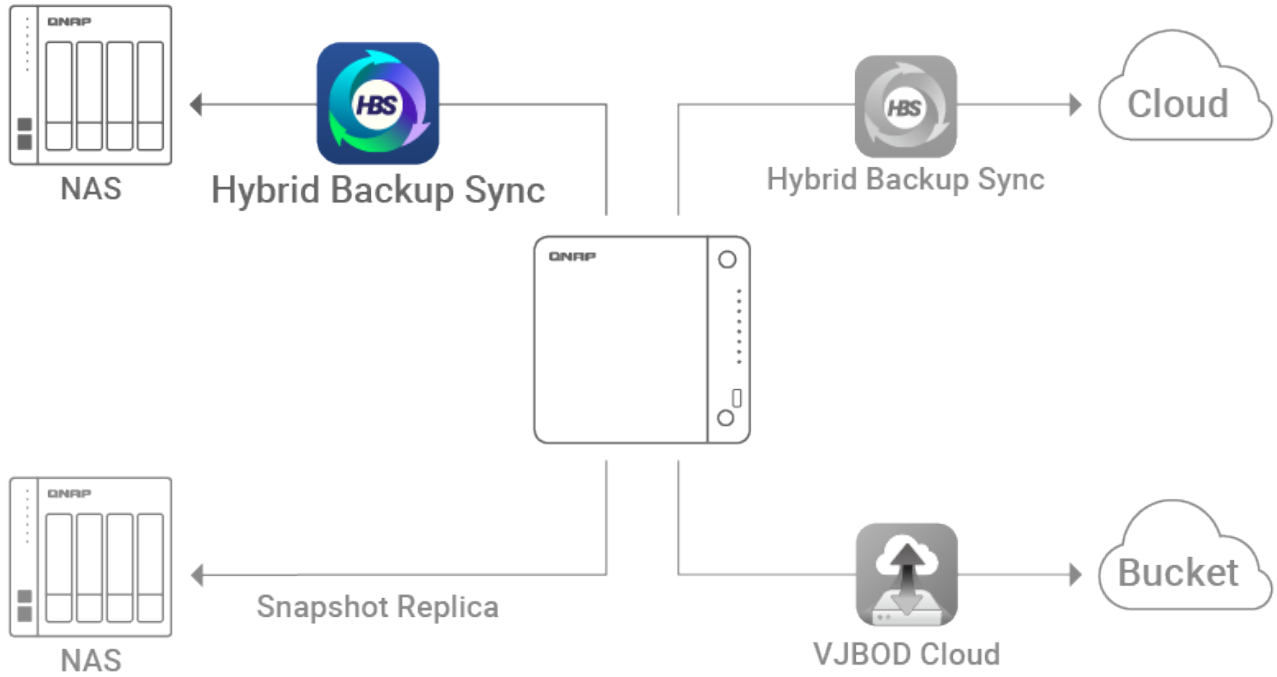
The exclusive MARS service enables backing up Google Photos and WordPress databases and files to NAS.



Remote Replication for NAS data

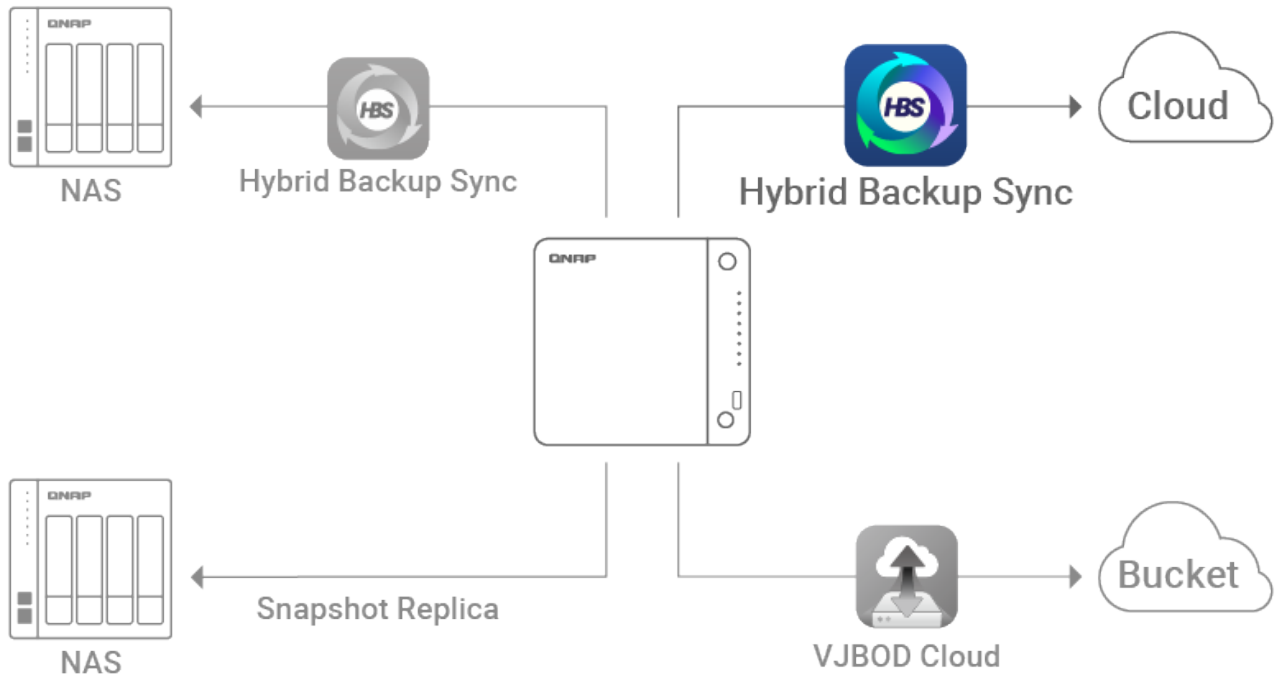
Back up data from one NAS to another NAS

Back up data on a local NAS to another remote NAS using [Hybrid Backup Sync](#). You can also deduplicate your backup using QuDedup to save time and storage space.



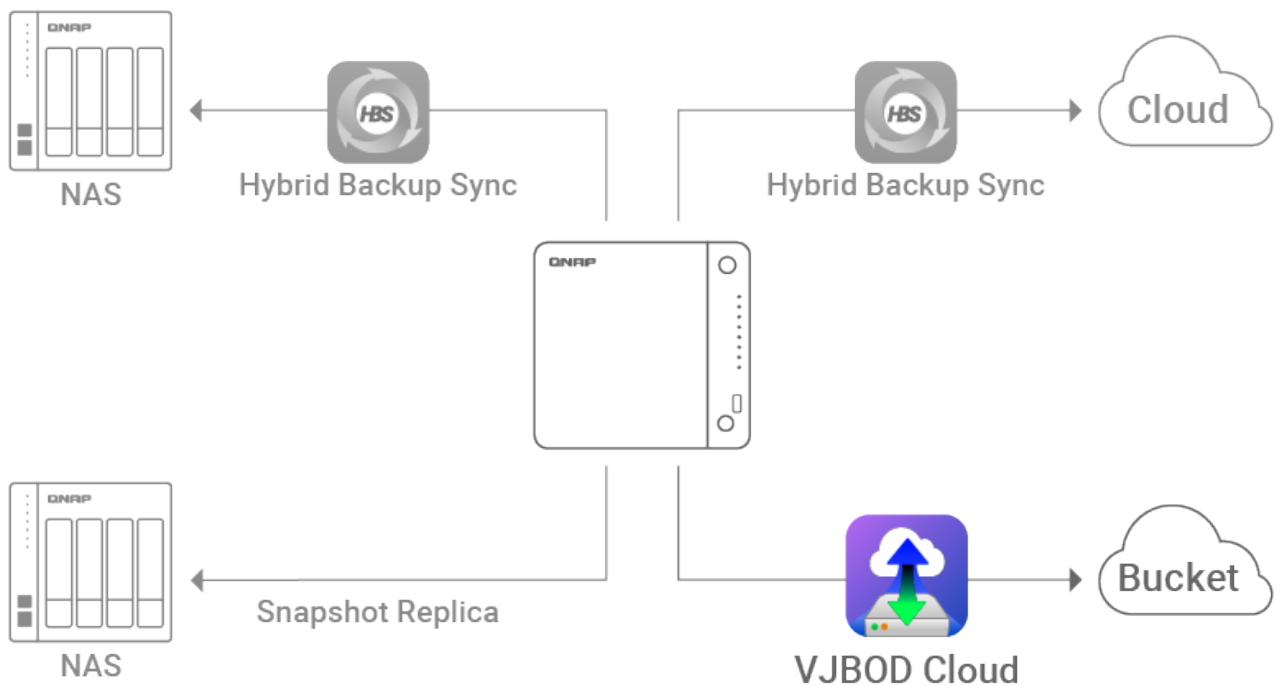
Back up NAS data to the Cloud

Hybrid Backup Sync supports mainstream public cloud services for backing up or syncing data from NAS to Cloud.



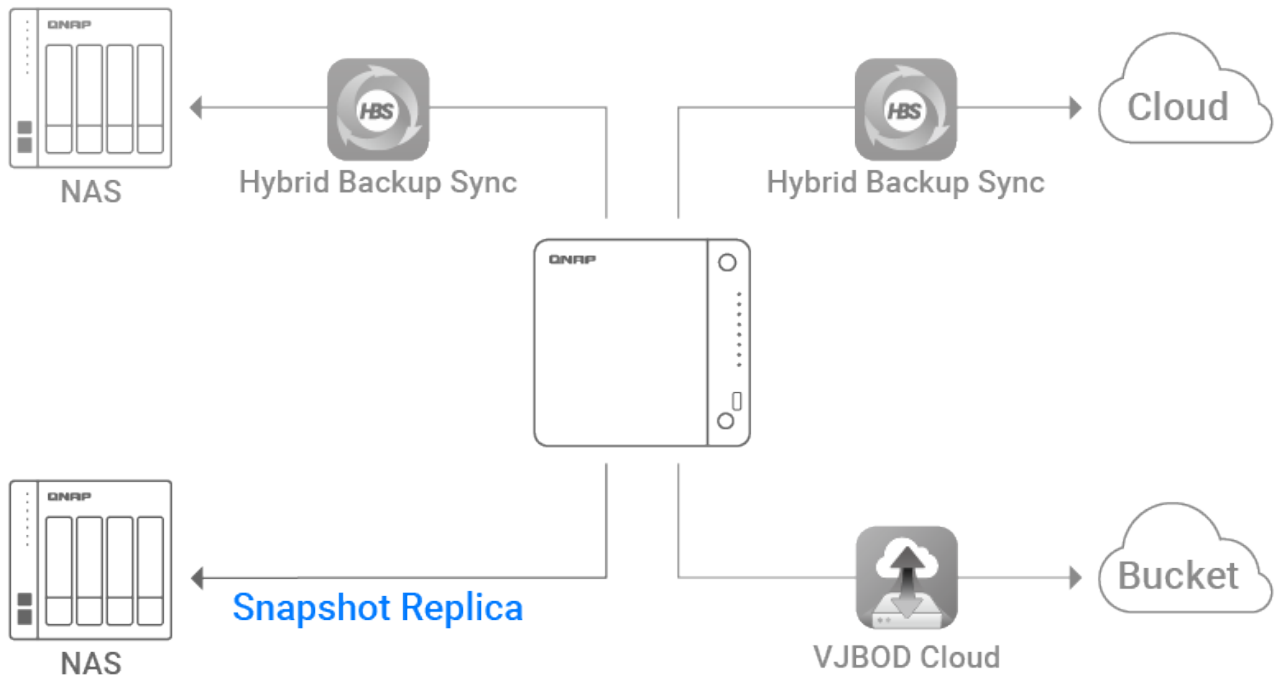
Cloud Storage Gateway

VJBOD Cloud connects cloud object storage (Bucket) and back up data from NAS to the cloud.



Back up NAS snapshots

Use Snapshot Replica to back up NAS snapshots to another NAS and recover when needed.



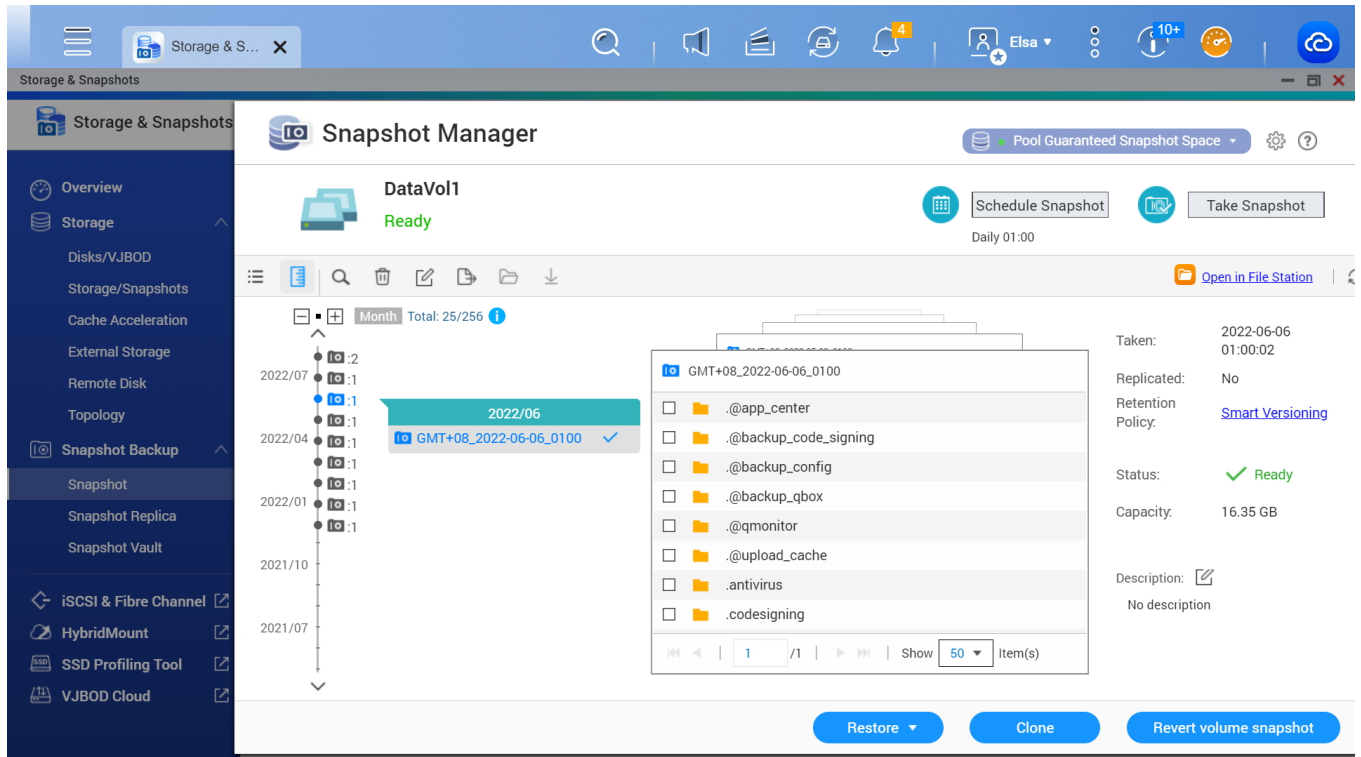
Smart storage

QNAP's exclusive apps provide easy-to-use file storage and collaboration tools. Snapshots also help protect important data from Ransomware.

Snapshots protection

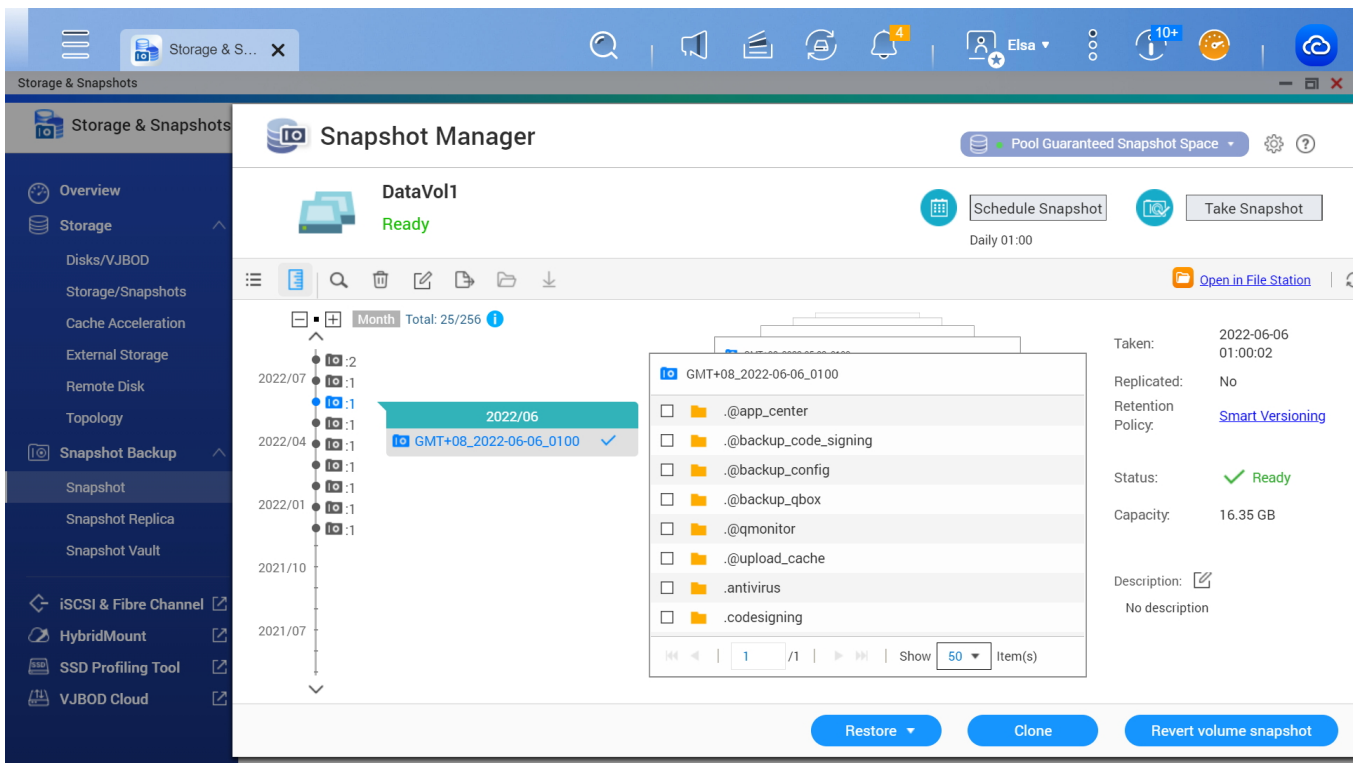
Volume and LUN snapshots

”Snapshots” record the complete status of your NAS system and data. Certain data and files can be reverted when needed.



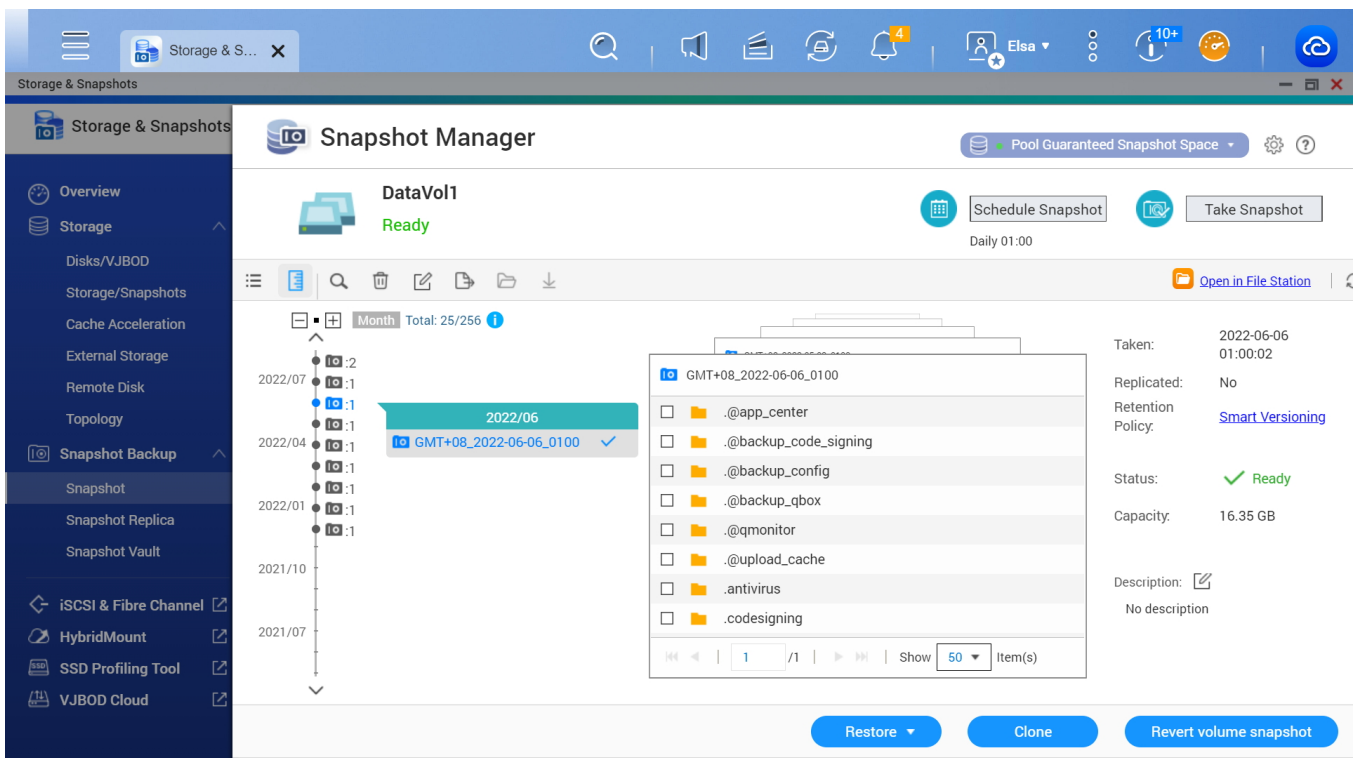
Versioning

Regularly create snapshots. The more snapshots you have, the lower the risk of data loss.



Smart snapshot space management

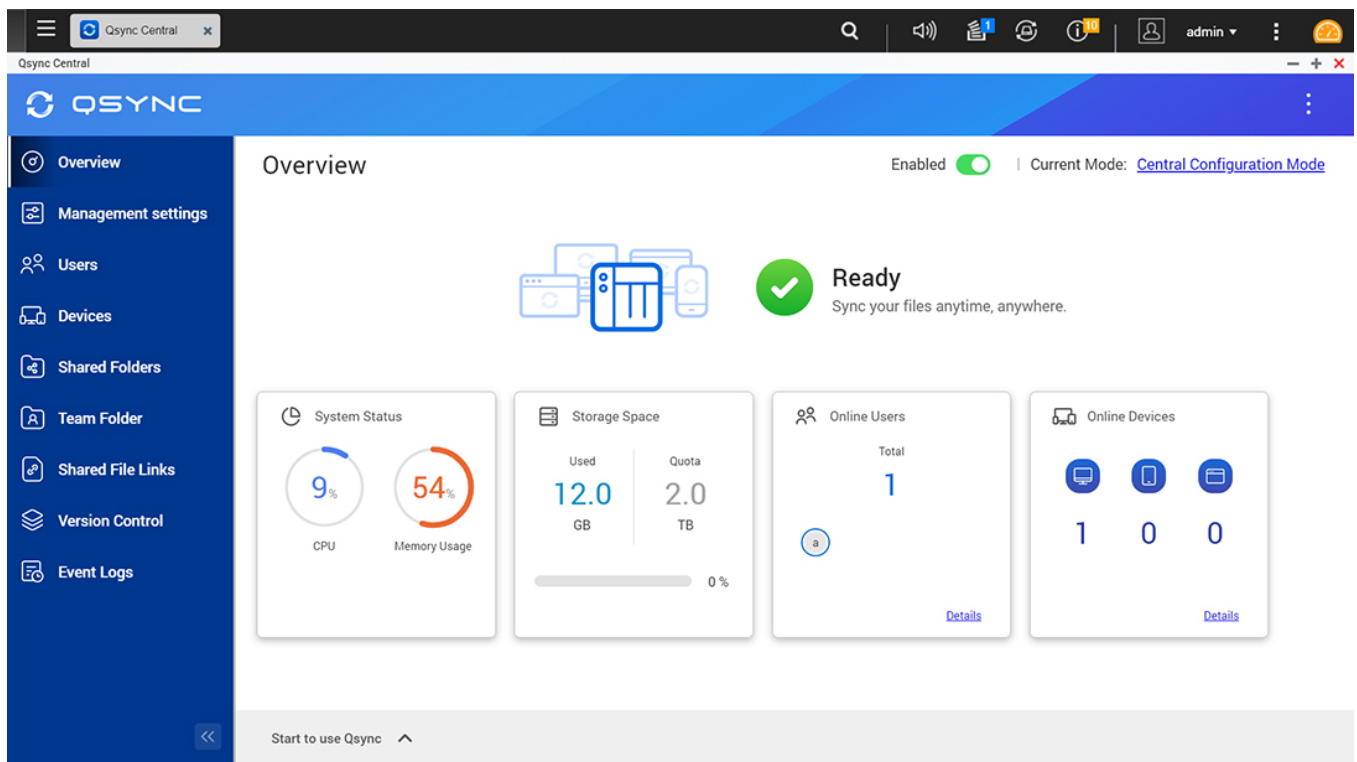
QNAP supports smart snapshot space management to ensure there is enough storage space for new snapshots.



Boost production efficiency

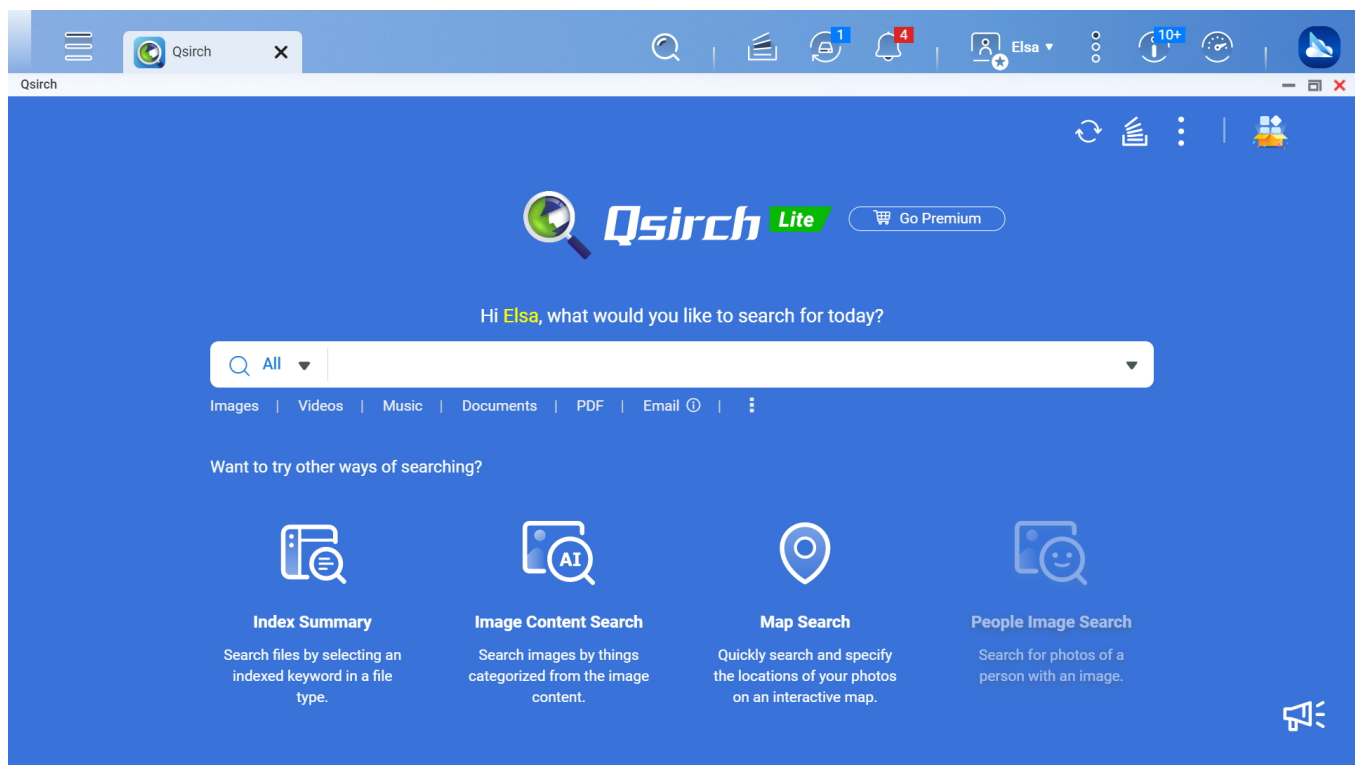
Qsync

Sync files between NAS and multiple computers or mobile devices.



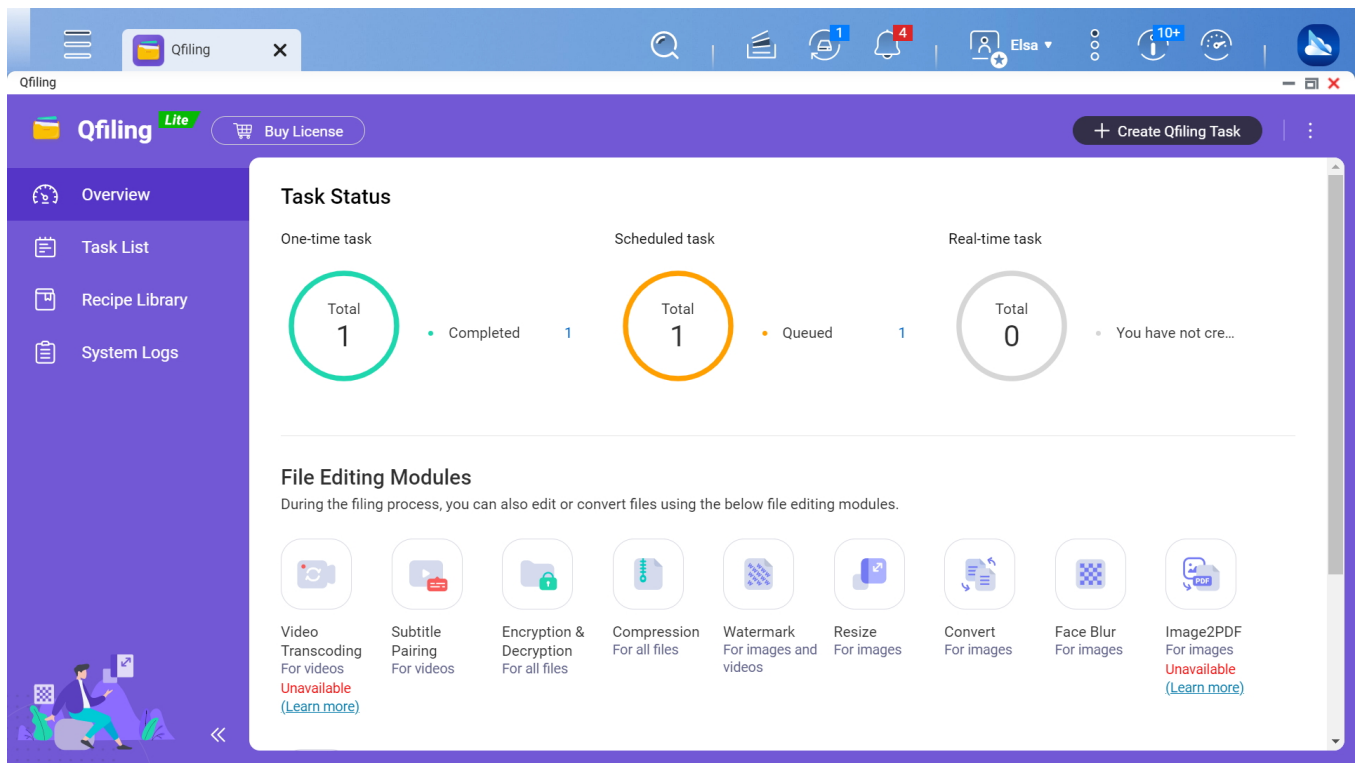
Qsirch

Quickly find documents, media files, and emails using key words, colors, or faces.



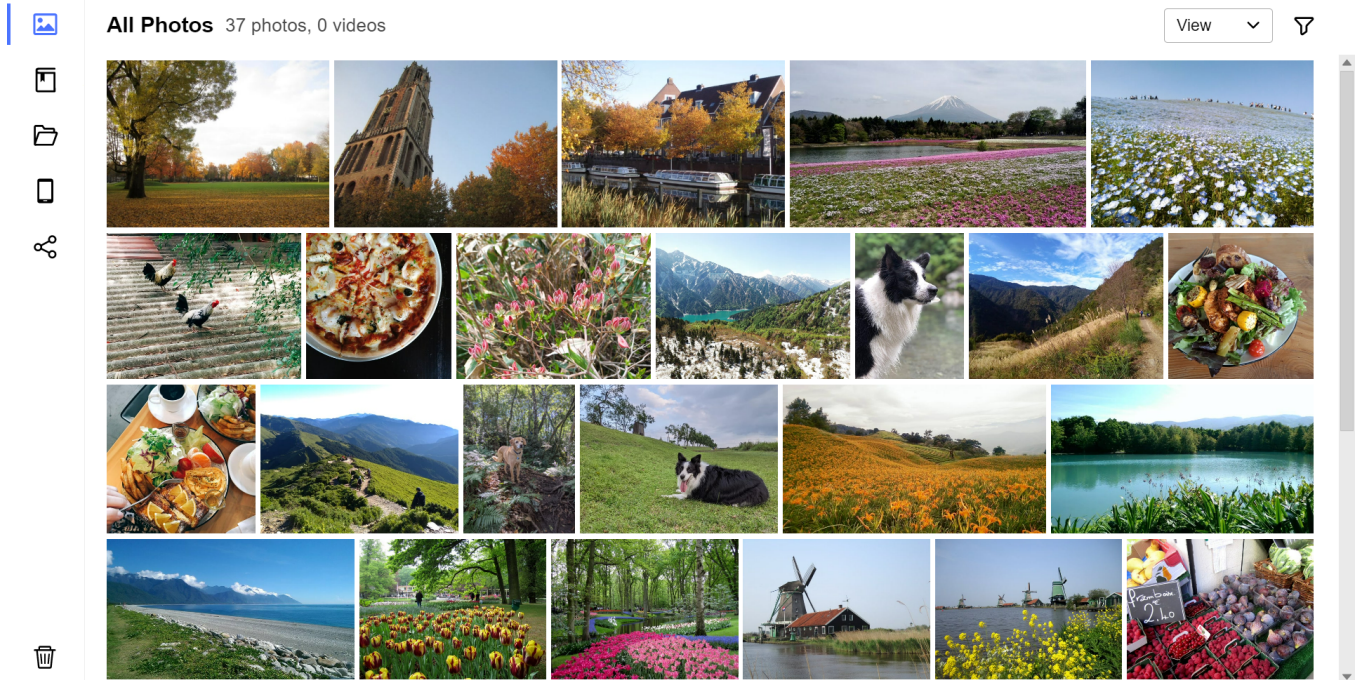
Qfiling

Create filing rules and set schedules to automatically archive files into dedicated folders based on their category.



QuMagie

TS-464 leverages powerful AI photo management and creates smart photo albums based on people, objects, locations, and events, making photos easy to find and share.



Smart surveillance

TS-464 provides a professional surveillance NAS solution, compatible with 6,000+ IP cameras of 190+ brands and thousands of ONVIF network cameras.

Build surveillance with affordable deployment costs

All-in-one surveillance

Say goodbye to expensive and complicated PC NVR. QNAP's integrated surveillance NAS solution offers a [subscription licensing](#) solution or [perpetual licensing solution](#) for flexible deployment based on your needs.

Connect to HDMI™ monitor

TS-464 supports has HDMI™ output for direct surveillance video playback, removing the need for a dedicated workstation.

Surveillance failover

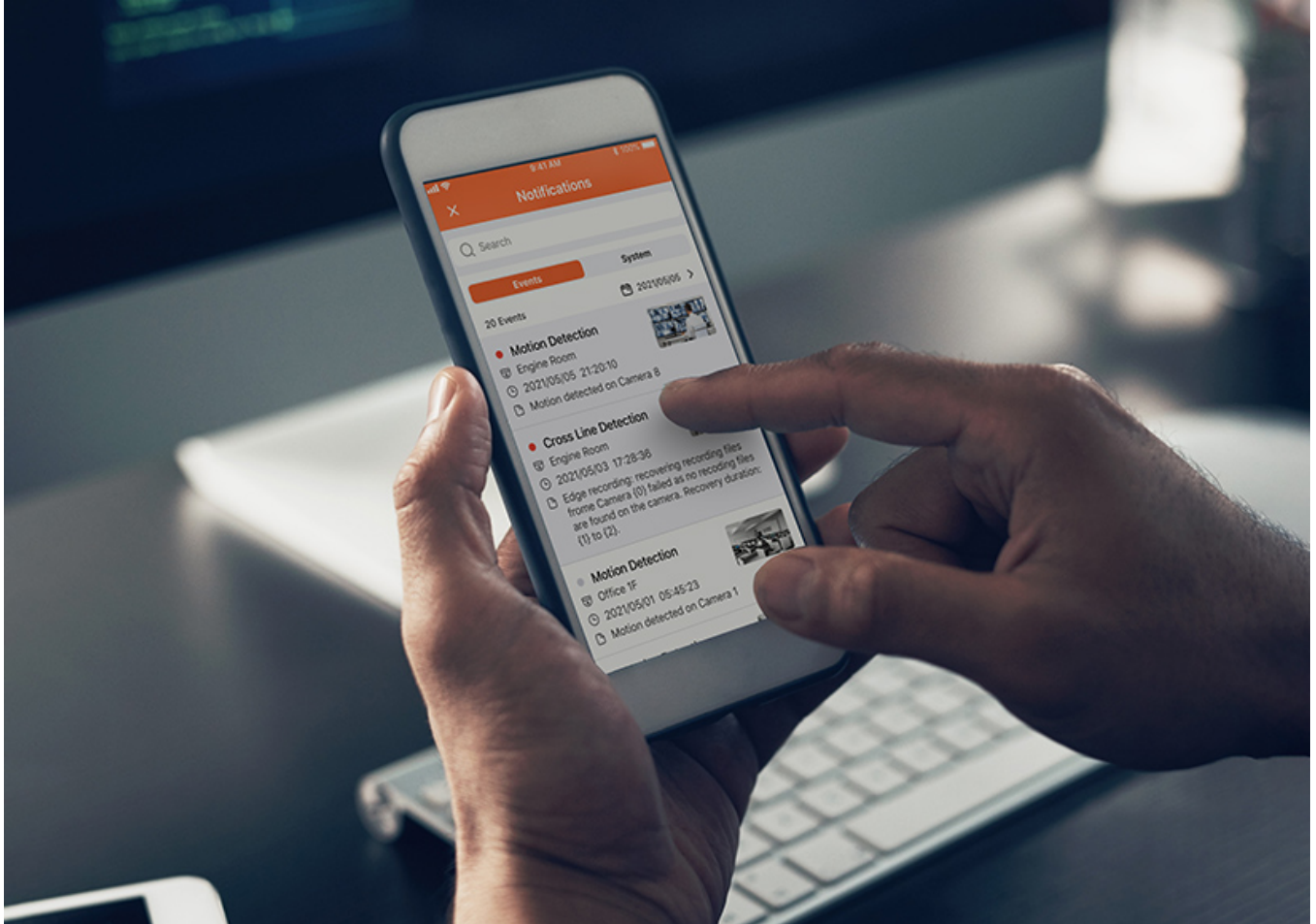
Install the high-availability [QVR Guard](#) app to automatically takeover recording tasks if a QVR Pro server fails.



Live surveillance monitoring, remote management, and smart AI

Live surveillance video monitoring

Monitor live feeds and receive alert event notifications from client applications on PCs or mobiles.



Large-scale central management

Centrally control up to 256 Surveillance NAS (licenses sold separately) in different locations via [QVR Center](#).



AI surveillance event search

Instead of manually searching through a whole day of event videos, [QVR Smart Search](#) helps you efficiently search through hundreds of hours of video recordings from hundreds of cameras to find specific events.



MP4 surveillance videos

With GPU-accelerated video conversion, surveillance videos can be converted to various file formats or resolutions for smooth playback on multiple devices.



All-in-one solution for hosting virtual machines and containers

By running multiple virtual machines and containers on the TS-464, you can deploy multi-tenant environments and applications to increase management efficiency and save hardware costs. Coupled with the Network & Virtual Switch app that boosts interoperability between virtual machines, containers, QNAP NAS, and other physical devices on the network, you can flexibly allocate physical and virtual network resources to simplify network deployment.

Virtualization Station

Run multiple Windows®, Linux®, UNIX®, Android™, and QuTScloud virtual machines and access them via a web browser or Virtual Network Computing (VNC).

Container Station

Experience Docker®, LXD, and Kata Containers lightweight virtualization technologies, download apps from the built-in Docker Hub Registry®, import/export containers, and create abundant microservices.

Linux Station

Run Linux® applications directly on the NAS and remotely access the Linux® desktop from a web browser. The open-source Linux® platform is also ideal for Internet of Things development.

Enhanced cybersecurity and data protection

TS-464 is loaded with comprehensive privilege settings and security measures. Besides, there are abundant apps that help ensure optimal NAS protection against threats like malware and hackers.

Account security

Supports Azure Active Directory Domain Services (Azure AD DS), LDAP, and Windows ACL to help IT staff efficiently manage user accounts and access rights for multiple NAS systems. Use 2-Step Authentication for all user accounts to protect against brute force attacks.

Secure remote access

[myQNAPcloud Link](#) allows convenient remote connection to NAS through the Internet. Or you can use [QVPN](#) to set up a VPN connection to the NAS with enhanced security.

NAS Firewall

QuFirewall restricts and blocks suspicious packets sent by proxy servers and the onion routing (Tor) based on user rules. QuFirewall also dynamically updates its block list based on detected malicious packets.

Malware Protection

Regularly scan your TS-464 using the latest malware definitions. If infected files are detected, they are immediately removed to ensure NAS data security.

A health check for your hard drives

Hard drives are at the heart of your NAS, and ensuring their long-term health and reliability is absolutely crucial. QNAP provides various methods and tools to help you monitor hard drive health, ensuring that you can take proactive decisions to safeguard your data and files.

S.M.A.R.T. and bad block scanning

If any of the S.M.A.R.T. values are reported as abnormal, or bad blocks are detected, you can take early action and replace drives before potential data loss occurs.

Storage & S... X

1

10+

admin

10+

Storage & Snapshots

External Storage Devices

Overview

Storage

Disks/VJBOD

Storage/Snapshots

Cache Acceleration

External Storage

Remote Disk

Topology

Snapshot Backup

Snapshot

Snapshot Replica

Snapshot Vault

iSCSI & Fibre Channel

HybridMount

SSD Profiling Tool

VJBOD Cloud

Disks/VJBOD | NAS and Enclosure: 1 | Disks: 12 , Unused Slot: 2

VJBOD

Disk Health

Monitor disk health, temperature, and usage status using the disk S.M.A.R.T. mechanism.

NAS Host

3.5" SATA SSD 4

Summary

IronWolf Health Man...

SSD Features

SMART Information

Test

Settings

Advanced

ID	Description	Value	Wor...	Thre...	Raw Value	Status
1	Raw_Read_Error_Rate	100	100	050	0	Good
9	Power-On_Hours	100	100	000	4401	Good
12	Power_Cycle_Count	100	100	000	25	Good
16	Gas_Gauge	100	100	000	2965	Good
17	Unknown_Attribute	100	100	000	2965	Good
168	Unknown_Attribute	100	100	000	0	Good
170	Reserve_Block_Count	100	100	010	126	Good
173	SSD_Wear_Leveling_Count	100	100	000	4939350...	Good

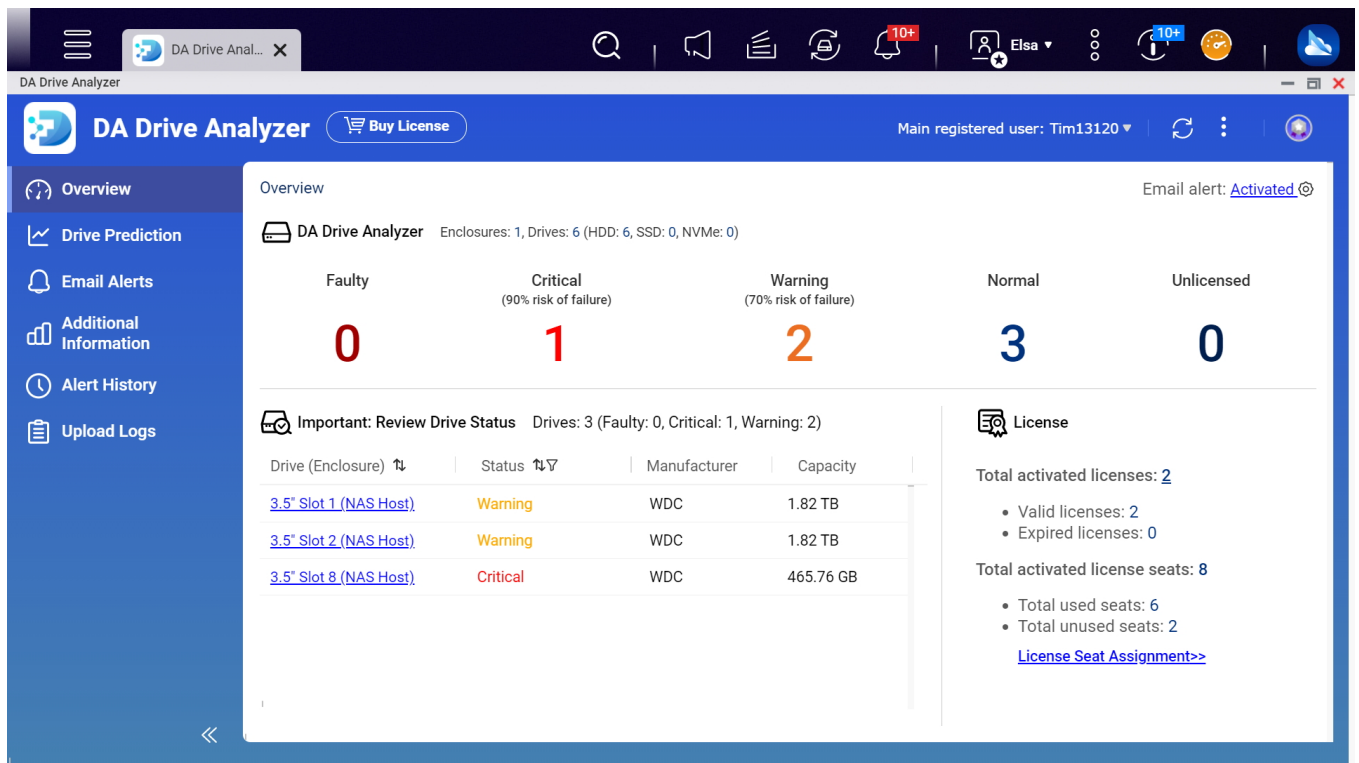
Good

Disk SMART Information: Good

Estimated Life Remaining: 93 %

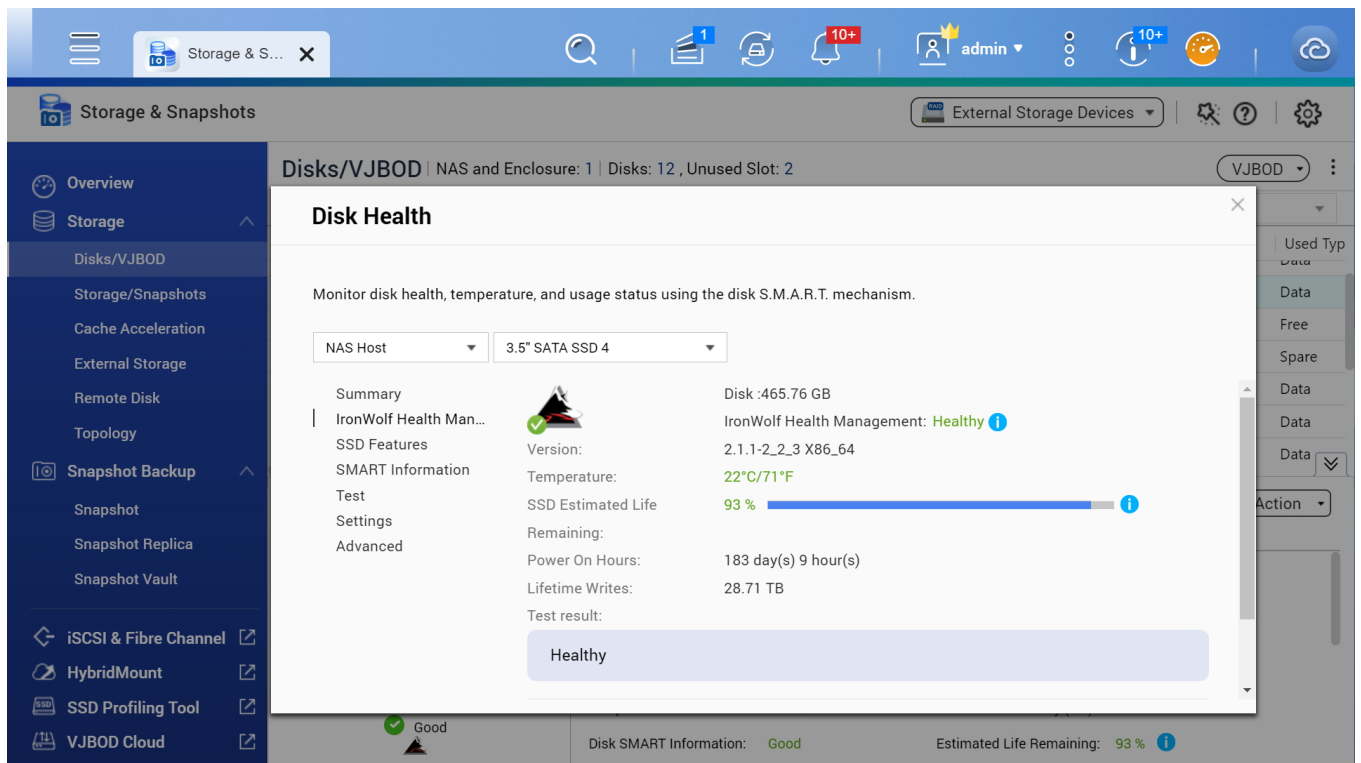
DA Drive Analyzer

The DA Drive Analyzer leverages ULINK cloud-based AI to predict the expected lifespan of drives, assisting you in planning future drive replacements to protect against NAS downtime and data loss.



Seagate® IronWolf™ Health Management

When using supported IronWolf™ or IronWolf Pro™ hard drives, overall system reliability is improved by providing you with actionable prevention, intervention, and recovery options.



Software Specs With QTS

Operating System

QTS 5.2.3

Supported Client Operating Systems

1. Apple Mac OS 10.10 or later
2. Ubuntu 14.04, CentOS 7, RHEL 6.6, SUSE 12 or later Linux
3. IBM AIX 7, Solaris 10 or later UNIX
4. Microsoft Windows 7, 8, 10 and 11
5. Microsoft Windows Server 2008 R2, 2012, 2012 R2, 2016, 2019 and 2022

Supported Browsers

1. Apple Safari (latest version)
2. Google Chrome (latest version)
3. Microsoft Edge (latest version)
4. Mozilla Firefox (latest version)

Supported Languages

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

Storage Pool

??

SED Storage Pool

??

Maximum Pool size

308 TB

Maximum number of storage

128

pool	
Volume Type	Thick, Thin, Static
Maximum volume size	250 TB
	Note: At least 4 GB RAM is required.
Maximum number of volume	128
Maximum shared folder size	250 TB
Maximum number of shared folder	512
JBOD Expansion	??
VJBOD / VJBOD Cloud	??
iSCSI Service	??
Fibre Channel Service	??
LUN Type	Thick, Thin
File-based iSCSI LUN	??
Block-based iSCSI LUN	??
Maximum LUN size	250 TB
	Note: At least 4 GB RAM is required.
Maximum number of targets	128
LUN	
LUN feature	<ol style="list-style-type: none"> 1. LUN Mapping (LUN can be moved between iSCSI and FC) 2. LUN Masking 3. WWPN Aliases Import/Export 4. FC Port Group 5. FC Port Binding 6. Multipath IO (MPIO) 7. Online LUN capacity expansion 8. LUN snapshot 9. LUN snapshot replication and clone
Auto Tiering	??
	Requires minimum 2GB memory.
RAID Type	<ol style="list-style-type: none"> 1. 8-bay (and more): JBOD, Single, RAID 0, 1, 5, 6, 10, 50, 60 2. 6-bay: JBOD, Single, RAID 0, 1, 5, 6, 10, 50 3. 4-bay: JBOD, Single, RAID 0, 1, 5, 6, 10 4. 2-bay: JBOD, Single, RAID 0, 1
RAID Group	??

To ensure data security, system stability, and storage performance, the maximum number of drives for a single RAID group is now 16 (applicable to RAID 5, RAID 6, RAID TP, and subgroups of RAID 50 and RAID 60). Nevertheless, users can combine multiple RAID groups into a large storage pool that contains more than 16 drives, using RAID 50, RAID 60, or RAID 10 as the RAID configuration. This enhancement will only be applied to new RAID groups. All existing RAID groups and storage systems will not be affected.

RAID Level Migration	??
RAID Expansion (by adding Disk)	??
RAID Expansion (by replacing bigger Disks)	??
Storage Pool Expansion (by adding RAID Group)	??
RAID Hot Spare	Global, Local
RAID Sync/Rebuild/Scrubbing	??
Internal drive	EXT4
External drive	EXT3, EXT4, NTFS, FAT32, HFS+, and exFAT (optional for ARM model)

Note: To use exFat in certain models you must purchase an exFAT driver license from License Center.

Disk, Enclosure Locate	??
Disk S.M.A.R.T. Scan	??
Disk S.M.A.R.T. Data Migration	??
Ironwolf Health Management	??
Secure Erase	??
SSD Trim	??
SSD Life Estimation	??
Disk Roaming	??
Disk Standby	??
Volume Snapshot	??
LUN Snapshot	??
Maximum Snapshot (Per	Check maximum number of snapshots of

System)	your NAS
Maximum Snapshot (Per Volume / LUN)	Check maximum number of snapshots of your NAS
Minimum Snapshot Interval	5 minutes
Snapshot Retention Policy	??
Self-serve Snapshot Recovery	??
Application Consisted	??
Snapshot	
Snapshot Full Clone	??
Snapshot Replica / Vault	??
SSD read-only Cache	??
SSD read-write cache	??
SSD write-only cache	??
SSD Cache Maximum Size	Check your QNAP NAS cache capacity and RAM requirements
SSD Cache RAID	0, 1, 5, 6, 10
SSD profiling tool	??
External Device Management	??
Mount Smart Phone (MTP)	??
External RAID Device (QNAP ?? so on) Management (External Device Mode)	
External RAID Device (QNAP ?? so on) Management (NAS Mode)	
File Server	<ol style="list-style-type: none"> 1. File sharing across Windows, Mac, and Linux/UNIX 2. Microsoft networking (CIFS/SMB) 3. Apple networking (AFP) 4. NFS version 3/4 services
FTP Server	<ol style="list-style-type: none"> 1. QuFTP 2. FTP, SFTP and TFTP protocols 3. FTP over SSL/TLS (explicit FTPS) 4. FXP support
Maximum FTP connection	1024
File Station (Web)	??
Object Storage	??
Local user account	4,096
Local group account	512
Domain user/group account	200,000
Domain Security	??
Domain Controller	??

Shared folder permission	??
Advanced folder permission	??, (AFP, CIFS/SMB, FTP, and File Station)
Windows ACL	??, (CIFS/SMB)
User quota	??
Group quota	??
Folder quota	??, (Snapshot shared folder)
Home folder	??
Resource Monitor	??
SNMP	V2, V3
Network recycle bin	<ol style="list-style-type: none"> 1. Recover files deleted using AFP, CIFS/SMB, and File Station 2. Automatic cleanup and file type filter
System Log & Notification Center	Log recording: 3,000 event per second
Smart Fan	??
Schedule on/off	??
Internet protocol	IPv4, IPv6
Virtual Switch	??
Port trunking	??, (7 modes)
VLAN	??
DHCP Server	??
DDNS (Dynamic Domain Name Service)	??
Network access protection with auto-blocking	SSH, Telnet, HTTP(S), FTP, CIFS/SMB, and AFP
Security Counselor	??
Malware Remover	??
AES 256-bit Volume Encryption validated by FIPS 140-2 CAVP	??
2-step verification	??
Allow/Deny List	??
Access Protection	??
Service binding	??
Firewall	??
VMware vSphere Ready	??
vSphere Web Client Plug-in	??
VMware vSphere VAAI for iSCSI	??
VMware vSphere VAAI for	??

NAS

Windows ODX	??
Windows/VMware Snapshot	??
Agent	
HTTP/HTTPS Connections	TLS 1.0/1.1/1.2/1.3
Supports WebDAV	??
Connection	
Supports Virtual Hosts	32
Qsync	??

Note: At least 1 GB RAM is required.

[Qsync] Management Mode	User customization, Central
[Qsync] Qsync client supported platforms	Windows, macOS, Ubuntu, Android, and iOS
[Qsync] Maximum number of version control	64
HybridMount	??

Note: At least 1 GB RAM is required.

[HybridMount] File Cloud Gateway	Concurrent Connections = 20 Upload & 20 Download
[HybridMount] Network Drive Mount	??
[HybridMount] Free cloud gateway sessions	2
HBS (Hybrid Backup Sync)	??

Note: At least 1 GB RAM is required.

[HBS (Hybrid Backup Sync)] NAS to NAS backup	??
[HBS (Hybrid Backup Sync)] Cloud Backup	??
[HBS (Hybrid Backup Sync)] Cloud Sync	??
[HBS (Hybrid Backup Sync)] 2-way and Active Sync	??
[HBS (Hybrid Backup Sync)] Backup Deduplication	??
[HBS (Hybrid Backup Sync)] Apple Time Machine Backup	??
[HBS (Hybrid Backup Sync)] External drive backup	??

[HBS (Hybrid Backup Sync)]	400
Maximum number of backup job	
Hyper Data Protector	??
Boxafe	

Note: At least 4 GB RAM is required.

[Boxafe] Office 365 Backup	??
[Boxafe] Google Workspace Backup	??
[Boxafe] Full-text search	??
Qsirch	??

Note: This feature is supported by all QNAP NAS devices with at least 2 GB of memory
Photos, music, videos, PDFs, Gmail, and others

[Qsirch] Previews	
[Qsirch] Integrate Mac Finder	??
[Qsirch] Advanced picture search	??
[Qsirch] Search filters	??
QuMagie	??

Note: At least 1 GB RAM is required.

[QuMagie] Browse photos	??
[QuMagie] Virtual and smart albums	??
[QuMagie] AI-assisted photo management	People, things, places, and others
Antivirus (free)	??
McAfee (License)	??
QVPN Service	??

Note: At least 1 GB RAM is required.
PPTP, L2TP/IPSec, OpenVPN, WireGuard, QBelt (QNAP proprietary)

[QVPN Service] Remote Access	
[QVPN Service] Supported utility and mobile app	Windows, macOS, iOS, and Android
[QVPN Service] Supported maximum clients	100
HD Station	??
LDAP Server	??

RADIUS	??
SQL server	??
License Center	??
Multimedia Console	??
Photo Station	??
Music Station	??
Video Station	??
Download Station	??
Notes Station	??
Qfiling	??
Media Streaming add-on	??
QmailAgent	??
QuWAN	??
DA Driver Analyzer	??
Q'center	??

Note: The application is available in the App Center and in virtual appliance marketplaces (VMware vSphere ESXi and Microsoft Hyper-V).

Q'center Server	??
Q'center Agent	??
Connect to Q'center	??
Virtualization Station	??

Note: At least 4 GB RAM is required.
Windows, Linux, Unix, and Android

[Virtualization Station]
Supports Virtual machine
instances

[Virtualization Station] VM All function is Fine.
importing, exporting, cloning,
snapshot capturing, backup,
and restoration

[Virtualization Station] Virtual Can create a virtual switch
switches

[Virtualization Station] GPU Not support GPU
pass-through

[Virtualization Station] 4
Suggested number of virtual
machine instances

The actual number of virtual machine
instances may vary by the memory installed
on NAS (e.g. 1 VM= 1 thread for 1 vCPU

and 1GB memory). Please expend memory if needed.

Container Station

??

Note: At least 1 GB RAM is required.

[Container Station] Supported LXC/LXD and Docker type

Note: LXD has been supported after Container Station 2.4

[Container Station] Docker Hub Registry

??

[Container Station] Container importing and exporting

??

[Container Station] Console mode

??

Linux Station

??

Notification: At least 4 GB RAM is required.

[Linux Station] Supports Ubuntu versions

18.04, and 20.04

Linux Station Center

??

QVR Pro

??

Note: At least 4 GB RAM is required. The maximum number of channels supported varies by NAS model, network configuration, and camera settings. For more information,

visit <https://www.qnap.com/go/qvr-nas-selector>.

[QVR Pro] Recording Technique

Index database based

[QVR Pro] License Type

Perpetual

[QVR Pro] User-defined trigger events

??

[QVR Pro] Metadata

??

[QVR Pro] QVR Pro Client (Desktop)

Windows, macOS, and QNAP HybridDesk Station

[QVR Pro] QVR Pro Client (Mobile)

Android and iOS

[QVR Pro] Recording camera

H.264

streams	
[QVR Pro] Free built-in camera channels	8
QVR Elite	??

Note: At least 1 GB RAM is required. The maximum number of channels supported varies by NAS model, network configuration, and camera settings. For more information, visit <https://www.qnap.com/go/qvr-nas-selector>.

[QVR Elite] Recording Technique	Standard MP4 file based
[QVR Elite] License Type	Subscription-based
[QVR Elite] User-defined trigger events	??
[QVR Elite] QVR Pro Client (Desktop)	Windows, macOS, and QNAP HybridDesk Station
[QVR Elite] QVR Pro Client (Mobile)	Android and iOS
[QVR Elite] Recording camera streams	H.264
[QVR Elite] Free built-in camera channels	2
QVR Pro Client	??
[QVR Pro Client] Dynamic View Layout	??
[QVR Pro Client] Windows	??
[QVR Pro Client] Mac	??
[QVR Pro Client] HybridDesktop	??
[QVR Pro Client] iOS	??
[QVR Pro Client] Android	??
QVR Center	??

Note: At least 4 GB RAM is required.

[QVR Center] Log management	??
[QVR Center] Central monitoring across multiple servers	??

QVR Guard

Note: At least 4 GB RAM is required.

[QVR Guard] Failover design	??
[QVR Guard] Viewing task details	??
[QVR Guard] Automatic switch between Standby and Takeover modes	??
QVR Human	??
QVR Face	??

The maximum number of channels supported varies by NAS model, network configuration, and camera settings. For more information,

visit <https://www.qnap.com/solution/qvr-face/en-us/>

QVR DoorAccess	??
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Software Specs With QuTS hero

Operating System	QuTS hero h5.2.3
Supported Client Operating Systems	<ol style="list-style-type: none">1. Apple Mac OS 10.10 or later2. Ubuntu 14.04, CentOS 7, RHEL 6.6, SUSE 12 or later Linux3. IBM AIX 7, Solaris 10 or later UNIX4. Microsoft Windows 7, 8, 10, and 115. Microsoft Windows Server 2008 R2, 2012, 2012 R2, 2016, 2019, and 2022
Supported Browsers	<ol style="list-style-type: none">1. Apple Safari (latest version)2. Google Chrome (latest version)3. Microsoft Edge (latest version)4. Mozilla Firefox (latest version)
Supported Languages	Chinese (Traditional & Simplified), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese (Brazil), Romanian, Russian, Spanish, Swedish, Thai, and Turkish
Storage Pool	??

SED Storage Pool	??
Maximum Pool size	5 PB
Maximum number of storage pool	128
Shared Folder Type	Thick, Thin
Maximum shared folder size	5 PB
Maximum number of shared folder	256
JBOD Expansion	??
VJBOD / VJBOD Cloud	??
iSCSI Service	??
Fibre Channel Service	??
LUN Type	Thick, Thin
Block-based iSCSI LUN	??
Maximum LUN size	1024 TB
Maximum number of targets LUN	256
RAID Type	<ol style="list-style-type: none"> 1. 8-bay (and more): Single, RAID 0 (Stripe), 1, 5, 6, 10, 50, 60, Triple Mirror, Triple Parity 2. 6-bay: Single, RAID 0 (Stripe), 1, 5, 6, 10, 50, Triple Mirror, Triple Parity 3. 4-bay: Single, RAID 0 (Stripe), 1, 5, 6, 10, Triple Mirror, Triple Parity 4. 3-bay: Single, RAID 0 (Stripe), 1, 5, Triple Mirror, Triple Parity 5. 2-bay: Single, RAID 0 (Stripe), 1
RAID Group	??

To ensure data security, system stability, and storage performance, the maximum number of drives for a single RAID group is now 16 (applicable to RAID 5, RAID 6, RAID TP, and subgroups of RAID 50 and RAID 60). Nevertheless, users can combine multiple RAID groups into a large storage pool that contains more than 16 drives, using RAID 50, RAID 60, or RAID 10 as the RAID configuration. This enhancement will only be applied to new RAID groups. All existing RAID groups and storage systems will not be affected.

RAID Expansion (by replacing ?? bigger Disks)	
Storage Pool Expansion (by ?? adding RAID Group)	
RAID Hot Spare	Global, Local
RAID Sync/Rebuild/Scrubbing??	
End-to-End data integrity	??
Silent error detection and self- healing	??
Internal drive	ZFS
External drive	EXT3, EXT4, NTFS, FAT32, HFS+, and exFAT
Disk, Enclosure Locate	??
Disk S.M.A.R.T. Scan	??
Disk S.M.A.R.T. Data	??
Migration	
Ironwolf Health Management	??
Secure Erase	??
SSD Trim	??
SSD Life Estimation	??
Disk Roaming	??
Disk Standby	??
Shared Folder Snapshot	??
LUN Snapshot	??
Maximum Snapshot (Per System)	Check maximum number of snapshots of your NAS
Maximum Snapshot (Per Volume / LUN)	Check maximum number of snapshots of your NAS
Minimum Snapshot Interval	1 minute
Snapshot Retention Policy	??
Self-serve Snapshot Recovery	??
Application Consisted	??
Snapshot	
Snapshot Full Clone	??
Snapshot Instant Clone	??
Snapshot Replica / Vault	??
SSD read-only Cache	??
SSD read & write log cache	??
SSD dedicated ZIL cache	??
SSD Cache Maximum Size	Check your QNAP NAS cache capacity and RAM requirements
SSD Cache RAID	0, 1, 10 (journal)

External Device Management	??
Mount Smart Phone (MTP)	??
External RAID Device (QNAP	??
so on) Management (External Device Mode)	
External RAID Device (QNAP	??
so on) Management (NAS Mode)	
File Server	<ol style="list-style-type: none"> 1. File sharing across Windows, Mac, and Linux/UNIX 2. Microsoft networking (CIFS/SMB) 3. Apple networking (AFP) 4. NFS version 3/4 services
FTP Server	<ol style="list-style-type: none"> 1. FTP, SFTP and TFTP protocols 2. FTP over SSL/TLS (explicit FTPS) 3. FXP support
Maximum FTP connection	1024
Shared Folder Data Compression	??
Shared Folder Data Deduplication	??
Shared Folder WORM	??
File Station (Web)	??
Object Storage	??
Local user account	16,000
Local group account	512
Domain user/group account	200,000
Domain Security	??
Domain Controller	??
Shared folder permission	??
Windows ACL	??
User quota	??
Group quota	??
Folder quota	??
Home folder	??
Resource Monitor	??
SNMP	V2, V3
Network recycle bin	<ol style="list-style-type: none"> 1. Recover files deleted using AFP, CIFS/SMB, and File Station 2. Automatic cleanup and file type filter
System Log & Notification	Log recording: 3,000 event per second

Center	
Smart Fan	??
Schedule on/off	??
Internet protocol	IPv4, IPv6
Virtual Switch	??
Port trunking	??, (7 modes)
VLAN	??
DHCP Server	??
DDNS (Dynamic Domain Name Service)	??
Network access protection with auto-blocking	SSH, Telnet, HTTP(S), FTP, CIFS/SMB, and AFP
Security Counselor	??
Malware Remover	??
AES 256-bit Folder Encryption validated by FIPS 140-2	??
CAVP	
2-step verification	??
Allow/Deny List	??
Access Protection	??
Service binding	??
Firewall	??
VMware vSphere Ready	??
vSphere Web Client Plug-in	??
VMware vSphere VAAI for iSCSI	??
VMware vSphere VAAI for NAS	??
Windows ODX	??
Windows/VMware Snapshot Agent	??
HTTP/HTTPS Connections	TLS 1.0/1.1/1.2/1.3
Supports WebDAV Connection	??
Supports Virtual Hosts	32
Qsync	??
	Note: At least 1 GB RAM is required.
[Qsync] Management Mode	User customization, Central
[Qsync] Qsync client supported platforms	Windows, macOS, Ubuntu, Android, and iOS
[Qsync] Maximum number of	64

version control

HybridMount ??

Note: At least 1 GB RAM is required.

[HybridMount] File Cloud Concurrent Connections = 80 Upload & 80
Gateway Download

[HybridMount] Network Drive ??
Mount

[HybridMount] Free cloud 2
gateway sessions

HBS (Hybrid Backup Sync) ??

Note: At least 1 GB RAM is required.

[HBS (Hybrid Backup Sync)] ??

NAS to NAS backup

[HBS (Hybrid Backup Sync)] ??

Cloud Backup

[HBS (Hybrid Backup Sync)] ??

Cloud Sync

[HBS (Hybrid Backup Sync)] ??

2-way and Active Sync

[HBS (Hybrid Backup Sync)] ??

Backup Deduplication

[HBS (Hybrid Backup Sync)] ??

Apple Time Machine Backup

[HBS (Hybrid Backup Sync)] ??

External drive backup

[HBS (Hybrid Backup Sync)] 400

Maximum number of backup

job

Hyper Data Protector ??

Boxafe ??

Note: At least 4 GB RAM is required.

[Boxafe] Office 365 Backup ??

[Boxafe] Google Workspace ??

Backup

[Boxafe] Full-text search ??

Qsirch ??

Note: This feature is supported by all QNAP
NAS devices with at least 2 GB of memory

[Qsirch] Previews	Photos, music, videos, PDFs, Gmail, and others
[Qsirch] Integrate Mac Finder	??
[Qsirch] Advanced picture search	??
[Qsirch] Search filters	??
QuMagie	??

Note: At least 1 GB RAM is required.

[QuMagie] Browse photos	??
[QuMagie] Virtual and smart albums	??
[QuMagie] AI-assisted photo management	People, things, places, and others
Antivirus (free)	??
McAfee (License)	??
QVPN Service	??

Note: At least 1 GB RAM is required.

[QVPN Service] Remote Access	PPTP, L2TP/IPSec, OpenVPN, QBelt (QNAP proprietary)
[QVPN Service] Supported utility and mobile app	Windows, macOS, iOS, and Android
[QVPN Service] Supported maximum clients	100
HD Station	??
LDAP Server	??
RADIUS	??
SQL server	??
License Center	??
Multimedia Console	??
Photo Station	??
Music Station	??
Video Station	??
Download Station	??
Notes Station	??
Qfiling	??
Media Streaming add-on	??
QmailAgent	??
QuWAN	??
DA Driver Analyzer	??
Q'center	??

Note: The application is available in the App Center and in virtual appliance marketplaces (VMware vSphere ESXi and Microsoft Hyper-V).

Q'center Server	??
Q'center Agent	??
Connect to Q'center	??
Virtualization Station	??

Note: At least 4 GB RAM is required.
Windows, Linux, Unix, and Android

[Virtualization Station]
Supports Virtual machine
instances

[Virtualization Station] VM All function is Fine.
importing, exporting, cloning,
snapshot capturing, backup,
and restoration

[Virtualization Station] Virtual Can create a virtual switch
switches

[Virtualization Station] GPU GPU function is fine
pass-through

[Virtualization Station] 4
Suggested number of virtual
machine instances

The actual number of virtual machine
instances may vary by the memory installed
on NAS (e.g. 1 VM= 1 thread for 1 vCPU
and 1GB memory). Please expend memory
if needed.

Container Station ??

Note: At least 1 GB RAM is required.

[Container Station] Supported LXC/LXD and Docker
type

Note: LXD has been supported after
Container Station 2.4

[Container Station] Docker ??
Hub Registry

[Container Station] Container ??
importing and exporting

[Container Station] Console ??
mode

Linux Station ??

	Notification: At least 4 GB RAM is required.
[Linux Station] Supports Ubuntu versions	16.04, 18.04, and 20.04
Linux Station Center	??
QVR Elite	??
	Note: At least 1 GB RAM is required. The maximum number of channels supported varies by NAS model, network configuration, and camera settings. For more information, visit https://www.qnap.com/go/qvr-nas-selector .
[QVR Elite] Recording Technique	Standard MP4 file based
[QVR Elite] License Type	Subscription-based
[QVR Elite] User-defined trigger events	??
[QVR Elite] QVR Pro Client (Desktop)	Windows, macOS, and QNAP HybridDesk Station
[QVR Elite] QVR Pro Client (Mobile)	Android and iOS
[QVR Elite] Recording camera streams	H.264
[QVR Elite] Free built-in camera channels	2
[QVR Elite] Expandable camera channels	Developing
QVR Center	??
	Note: At least 4 GB RAM is required.
[QVR Center] Log management	??
[QVR Center] Central monitoring across multiple servers	??

Specification

NAS	
CPU Model	Intel® Celeron® N5095 4-core/4-thread processor, burst up to 2.9 GHz

CPU Architecture	64-bit x86
Memory	8 GB SODIMM DDR4 (1 x 8 GB)
Drive Bays	4
Compatible Drive Type	3.5-inch SATA hard disk drives 2.5-inch SATA solid state drives
Hot Swappable Drive	??(Not supported M.2 SSD)
System Fan	1 x 120mm, 12VDC
Power Supply Unit / Adapter	90W adapter, 100-240V
Total Memory Slots	2 x SODIMM DDR4
Maximum Memory Capacity	16 GB (2 x 8GB)
M.2 Drive Slots	2 x M.2 2280 PCIe Gen 3 x1 Compatible with NVMe SSD PCIe Gen 3 and above. Please refer to https://www.qnap.com/compatibility/ for compatibility.
PCIe Expansion	1 Slot 1: PCIe Gen 3 x2 Card dimensions for PCIe slot?190 x 68.9x 18.76 mm / 7.48 x 2.71 x 0.74 inches.
Form Factor (RU)	Tower
Hardware Encryption Engine (AES-NI) old	?? (AES-NI)
Graphic Processors	Intel® UHD Graphics
Floating Point Unit	??
Hardware-accelerated Transcoding	??
Flash Memory	4GB (Dual boot OS protection)
Wake on LAN (WOL)	??
Jumbo Frame	??
USB 3.2 Gen 2 (10Gbps) Port	2 x Type-A
HDMI™ Output	1, HDMI™ 2.1 (up to 4096 x 2160 @ 60Hz)
LED Indicators	Power/Status, LAN, USB, HDD1-4
Buttons	Power, USB copy, Reset
Operating Temperature	0 - 40 °C (32°F - 104°F)
Storage Temperature	-20 - 70°C (-4°F - 158°F)
Relative Humidity	5-95% RH non-condensing, wet bulb: 27°C (80.6°F)
Power Consumption: Disk Standby Mode	21.618
System Warning	Buzzer
Max. Number of	1500

Concurrent Connections
(CIFS) - with Max.
Memory

Kensington Security Slot ??

Product Gallery



