

# TS-1232PXU-RP

**Brand:** QNAP

**Product Code:** TS-1232PXU-RP

**Availability:** 10

**Weight:** 28.53lb

**Dimensions:** 3.49in x 17.01in x 20.12in

**Call for Price:**



## Short Description

QNAP 12 Bay rackmount NAS TS-1232PXU-RP-4G

## Description

With 10GbE SFP+ and 2.5GbE network ports, the TS-1232PXU-RP delivers high network bandwidth to streamline team collaboration and file access. A PCIe Gen 2 ×2 slot allows for installing a QNAP expansion card to add network connectivity, SSD caching capabilities, or wireless connectivity. The TS-1232PXU-RP supports file backup and synchronization, secure snapshot protection, and Google™ Workspace and Microsoft 365® enterprise account backup services, while providing instant recovery whenever needed. Coupled with the support for cloud gateways, building a new hybrid cloud storage solution has never been easier. The TS-1232PXU-RP also features a redundant power supply to ensure uninterrupted operation of mission-critical applications.

## 1

Two 10GbE SFP+ and two 2.5GbE RJ45 network ports accelerate file sharing.

## 2

HBS (Hybrid Backup Sync) backs up and syncs data to other NAS, servers and cloud storage for comprehensive disaster recovery planning.

## 3

Boxafe provides an extra layer of protection by backing up emails, cloud drives, contacts, and calendars of Google™ Workspace and Microsoft 365®.

## 4

Snapshots fully record system status and data, allowing you to protect files and data from accidental deletion and malware attacks.

## 5

Expand the application potential of the TS-1232PXU-RP by installing a compatible PCIe card.

## 6

Increase the storage capacity of the TS-1232PXU-RP with QNAP TR RAID expansion enclosures or TL JBOD.

## Available Models

**TS-1232PXU-RP-4G**

## **TS-1232PXU-RP-4G**

AnnapurnaLabs Alpine AL324 64-bit ARM® Cortex-A57 4-core 1.7GHz processor, 4 GB UDIMM DDR4 (1 x 4 GB), redundant power supply

### **Higher performance x faster throughput**

The TS-1232PXU-RP is powered by an Annapurna Labs Alpine AL-324 ARM® Cortex®-A57 quad-core 1.7 GHz processor with 4GB DDR4 RAM (expandable to 16GB) and SATA 6Gb/s drives to deliver higher performance. With two 10GbE SFP+ and two 2.5GbE network ports, the TS-1232PXU-RP provides incredible bandwidth to fulfil high-speed file access, backup/restoration and media transfer, while also allowing the flexible allocation of network resources for individual applications and services.

Windows File Transfer (2 x 2.5 GbE, 10 GB file)

Read

579 MB/s

Write

489 MB/s

Windows File Transfer (2 x 10 GbE, 10 GB file)

Read

1946 MB/s

Write

643 MB/s

Tested in QNAP Labs. Figures may vary by environment.

Test Environment :

NAS: TS-1232PXU-RP-4G, OS: QTS 4.4.3

Volume Type: 12 x Samsung 850 Pro 512 GB SSD (RAID 5), thick volume

Client PC: Windows 10, Intel Core i7-6700 3.4 GHz, 64 GB RAM, 10 GB file transfer

IOmeter: RAM\*4, 30-sec ramp up time, 3-min seq. run time, 2 workers, 64-outstanding

## **Supports AES-128-GMAC for SMB signing acceleration**

SMB signing (also known as security signatures) is a security mechanism in the SMB protocol. For business applications that demand high-level security, SMB signing helps enhance file sharing security by protecting against interception attacks. However, SMB signing can also negatively impact data transmission performance. QTS 5.1.0 supports AES-128-GMAC signing acceleration (only in Windows Server 2022 and Windows 11 clients) that not only greatly increases data signing efficiency over SMB 3.1.1 but also enhances the CPU utilization of the NAS system - providing the best balance of security and performance.

### **x86 64-bit NAS**

#### **2X Faster**

AES-CMAC: 619 MB/s Read  
AES-128-GMAC: 1238 MB/s Read

### **ARM 64-bit NAS**

#### **10X Faster**

AES-CMAC: 68 MB/s Read  
AES-128-GMAC: 738 MB/s Read

Test environment:

Crystal Disk Mark 1MB throughput

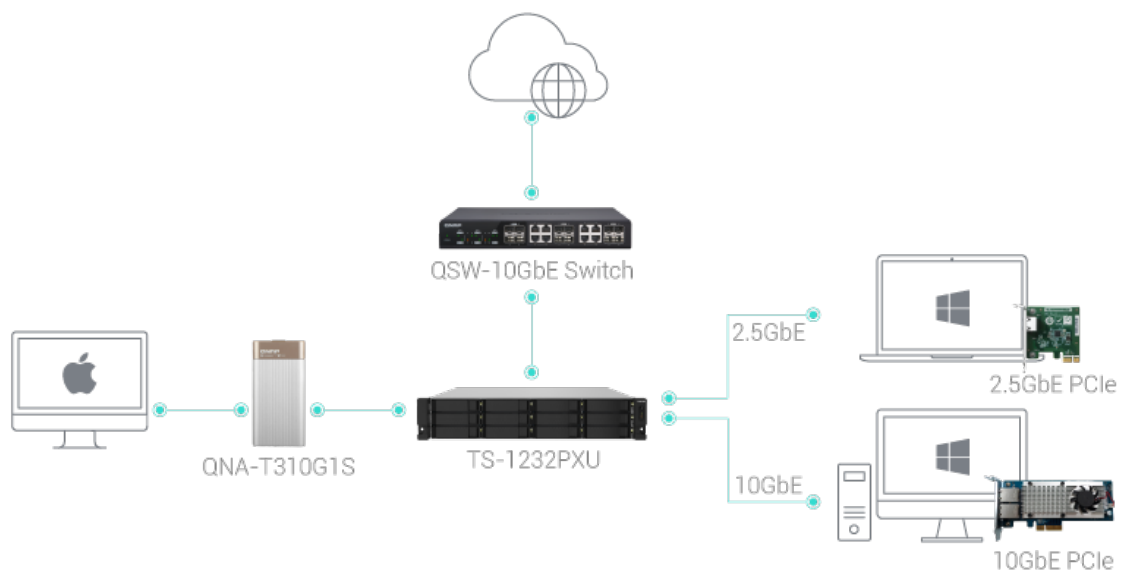
Client: Windows Server 2022 (AMD EPYC 7232P 3.0GHz, DDR4 128GB) with 10GbE NICs

x86 NAS: TS-h1887XU-RP-E2336-32G, QTS 5.1.0 (GMAC), QTS 5.0.1 (CMAC),

Samsung 870 EVO 1TB, RAID 50, onboard Aquantia X550 10GbE NIC  
ARM NAS: TS-1232PXU-RP-4G, QTS 5.1.0 (GMAC), QTS 5.0.1 (CMAC), Samsung  
860PRO 512GB, RAID 5, onboard Annapurna SFP+ 10GbE NIC

## Upgrade your network to increase team efficiency

QNAP provides various high-speed network solutions at attainable price points. The QSW network switches provide managed and unmanaged 10GbE and 2.5GbE options for building high-speed networks. QNAP also offers 10GbE / 5GbE / 2.5GbE network expansion cards and a USB to 5GbE adapter for Windows® / Linux® devices, allowing all of your workstations to take advantage of high-speed networks.

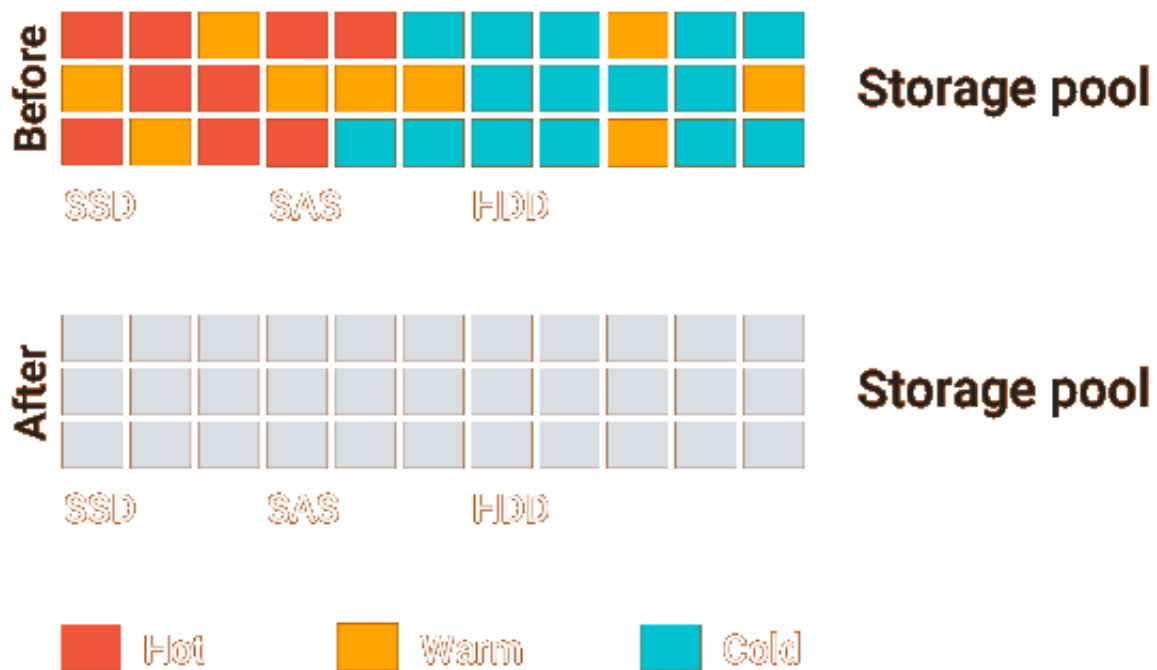


## Boost NAS performance with SSDs

As SSDs become more affordable, using SSDs on NAS can improve performance without requiring a heavy investment. The TS-1232PXU-RP supports SSD cache technology, Qtier™ auto-tiering storage, and SSD over-provisioning, helping you to balance storage performance, storage allocation, and IT expenses.

## Balance performance and capacity

Boost NAS performance by enabling SSD caching. Coupled with Qtier™ auto-tiering technology, you can find the perfect storage configuration between high-performance SSD and high-capacity HDD while balancing performance and cost.



## Extend SSD lifespan

SSD Extra Over-provisioning allows for adding 1~60% reserved space to avoid performance degradation, helping to increase system stability and extend SSD lifespan.



## Multi-point file backup, access and sync

HBS (Hybrid Backup Sync) consolidates data backup, recovery, and data synchronization. With high-speed 10GbE connectivity, you can easily back up or sync data to another QNAP NAS, remote server or cloud storage to build a reliable disaster recovery solution. Qsync turns the TS-1232PXU-RP into a secure, high-capacity data center for file synchronization. Any file uploaded to the TS-1232PXU-RP will be made available for all linked devices, such as computers, laptops, and mobile devices. You can also sync shared folders or create team folders to enhance team collaboration.

## Easily find and automatically organize files and photos

The TS-1232PXU-RP provides greater convenience in file management. You can quickly find files using Qsirch, organize photos using QuMagie and auto-archive them with Qfiling.





## **File search**

Qsirch quickly finds images, music, videos, documents, emails, and other files by using keywords, colors and different filters.



## **Photo management**

QuMagie identifies people and objects in photos and supports automated photo categorization, allowing you to easily find similar photos.

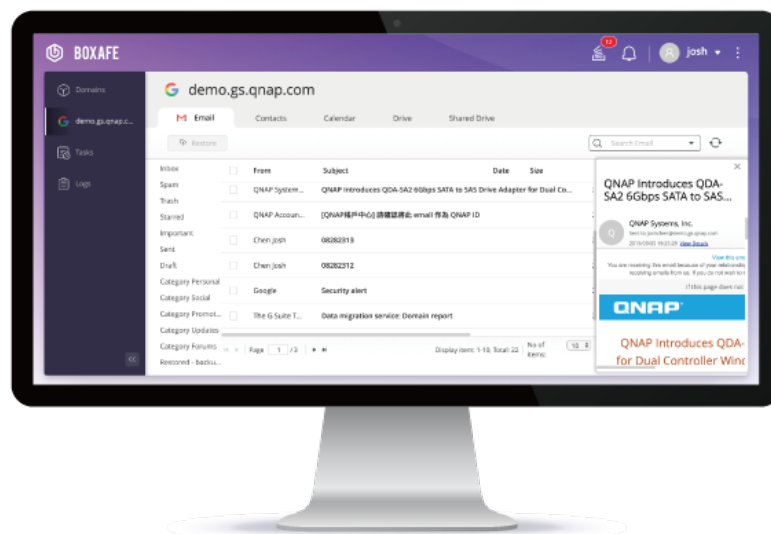


## **Auto archiving**

Qfiling automates file organization or recycling based on self-configured rules, greatly improving work efficiency.

## Secure Google™ Workspace and Microsoft 365® backup

The convenience of Software as a Service (SaaS) solutions such as Google™ Workspace and Microsoft 365® has led to its adoption by many businesses and organizations. However, many users fail to protect this cloud data against data loss, data recovery limitations, and human error. The TS-1232PXU-RP includes QNAP Boxafe, allowing you to back up files, emails, calendars and contacts from Google™ Workspace and Microsoft 365® to provide an extra layer of data protection for business cloud data.



## Low Latency Access to Cloud Data with Cloud Storage Gateways

By deploying cloud storage gateways and enabling local caching on the TS-1232PXU-RP, you can seamlessly use the cloud for storage, backup, and data recovery with low-latency access, providing an innovative hybrid cloud experience.



### **HybridMount File-Based Cloud Gateway**

Flexibly expand your storage capacity by connecting to cloud storage. You can leverage QTS apps to manage and edit your cloud files or monitor multimedia files. HybridMount is ideal for file server online collaboration and file-level data analysis.



### **VJBOD Cloud Block-Based Cloud Gateway**

VJBOD Cloud supports backing up NAS data to block-based cloud storage. Block-based data transmission uploads random data and large files to the cloud in blocks, and only block-based volume or LUN changes are transmitted. This is ideal for backing up LUN, databases, and confidential files.

### **Flexibly expand storage capacity whenever needed**

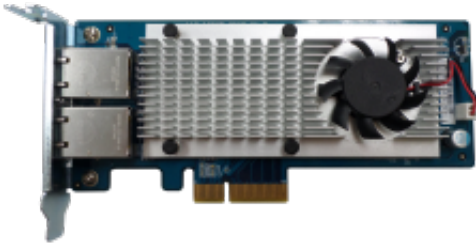
The storage capacity of the TS-1232PXU-RP can be easily expanded to meet growing

data demands. Simply connect a QNAP TR RAID expansion enclosure or TL JBOD to expand storage space on demand. With QNAP's Virtual JBOD (VJBOD) technology, the unused space of the TS-1232PXU-RP can also be used to expand the storage space of other QNAP NAS.



## PCIe expandability for greater application potential

The TS-1232PXU-RP includes a PCIe Gen 2 x2 slot, enabling you to expand its application potential by installing a compatible PCIe card.



## Network Adapter

Add additional 2.5GbE/ 5GbE/ 10GbE network ports to boost bandwidth-demanding tasks, such as massive data transmission and fast backup/restoration.



## QM2 Card

Add M.2 SSD caching or 10GbE (10GBASE-T) connectivity to the NAS for optimized performance and bandwidth.

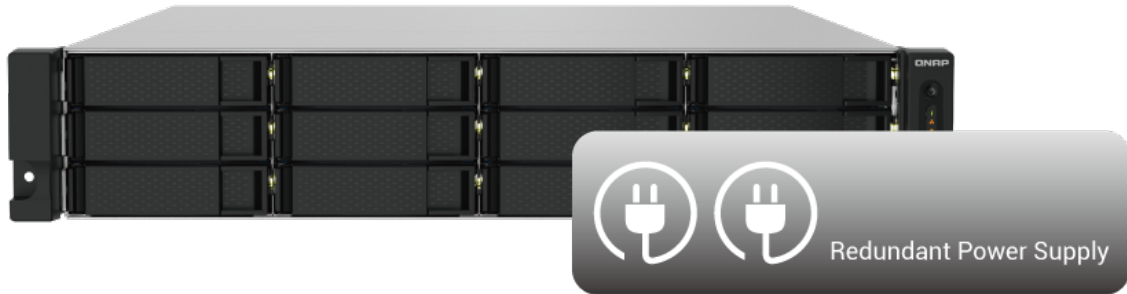


## USB Card

Add QNAP USB 3.2 Gen 2 expansion card to benefit from 10Gbps data transfer performance with newer, faster USB devices for transferring large media files.

## Redundant power for dependable services

The TS-1232PXU-RP is equipped with a redundant power supply to ensure maximum service uptime. Combined with dual 10GbE SFP+ and dual 2.5GbE ports, your businesses can easily maintain 24/7 operations, guaranteeing a cost-effective and reliable storage solution.



## Software Specs

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 pool	128
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"> <li>1. LUN Mapping (LUN can be moved between iSCSI and FC)</li> <li>2. LUN Masking</li> <li>3. WWPN Aliases Import/Export</li> <li>4. FC Port Group</li> <li>5. FC Port Binding</li> <li>6. Multipath IO (MPIO)</li> <li>7. Online LUN capacity expansion</li> <li>8. LUN snapshot</li> <li>9. LUN snapshot replication and clone</li> </ol>

Auto Tiering ?

Requires minimum 2GB memory.

RAID Type	<ol style="list-style-type: none"> <li>1. 8-bay (and more): JBOD, Single, RAID 0, 1, 5, 6, 10, 50, 60</li> <li>2. 6-bay: JBOD, Single, RAID 0, 1, 5, 6, 10, 50</li> </ol>
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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 System)	<a href="#">Check maximum number of snapshots of your NAS</a>
Maximum Snapshot (Per Volume / LUN)	<a href="#">Check maximum number of snapshots of your NAS</a>
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	<a href="#">Check your QNAP NAS cache capacity and RAM requirements</a>
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"> <li>1. File sharing across Windows, Mac, and Linux/UNIX</li> <li>2. Microsoft networking (CIFS/SMB)</li> <li>3. Apple networking (AFP)</li> <li>4. NFS version 3/4 services</li> </ol>
FTP Server	<ol style="list-style-type: none"> <li>1. QuFTP</li> <li>2. FTP, SFTP and TFTP protocols</li> <li>3. FTP over SSL/TLS (explicit FTPS)</li> <li>4. FXP support</li> </ol>
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"> <li>1. Recover files deleted using AFP, CIFS/SMB, and File Station</li> <li>2. Automatic cleanup and file type filter</li> </ol>
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	?
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)] Apple Time Machine Backup	?
[HBS (Hybrid Backup Sync)]	?

External drive backup  
 [HBS (Hybrid Backup Sync)] 400  
 Maximum number of backup  
 job  
 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  
 Antivirus (free) ?  
 QVPN Service ?

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

[QVPN Service] Remote ?  
 Access  
 [QVPN Service] Supportedd ?  
 utility and mobile app  
 [QVPN Service] Supported 100  
 maximum clients  
 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	?
Container Station	?

Note: At least 1 GB RAM is required.

[Container Station] Supported type	LXC/LXD and Docker
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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	?
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 streams	H.264
[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	?

## Specification

NAS	
CPU Model	AnnapurnaLabs Alpine AL324 64-bit ARM® Cortex-A57 4-core 1.7GHz processor
CPU Architecture	64-bit ARM
Hardware Encryption Engine	?
Memory	4 GB UDIMM DDR4 (1 x 4 GB)
Drive Bays	12
Compatible Drive Type	3.5-inch bays: 3.5-inch SATA hard disk drives 2.5-inch SATA hard disk drives 2.5-inch SATA solid state drives
Hot Swappable Drive	? (Not supported M.2 SSD)
USB 3.2 Gen 1 Port	4
System Fan	2 x 70mm, 12VDC
Power Supply Unit / Adapter	250W (x2) PSU, 100 - 240V
Total Memory Slots	1 x UDIMM DDR4
Maximum Memory Capacity	16 GB (1 x 16 GB)
M.2 Drive Slots	Optional via a PCIe adapter
PCIe Expansion	1 Slot 1: PCIe Gen 2 x2 PCIe bandwidth limitations will restrict the NAS 10GbE performance. Card dimensions for PCIe slot?220 x 68.9x 18.76 mm / 8.67 x 2.71 x 0.74 inches.
Form Factor (RU)	2U Rackmount
Floating Point Unit	?
Flash Memory	512 MB (Dual boot OS protection)
Wake on LAN (WOL)	? Only the 2.5GbE port
Jumbo Frame	?
LED Indicators	HDD 1-12, Status, LAN, Storage expansion
Buttons	Power, 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)
System Warning	Buzzer



Max. Number of  
Concurrent Connections  
(CIFS) - with Max.  
Memory

700

**Product Gallery**

