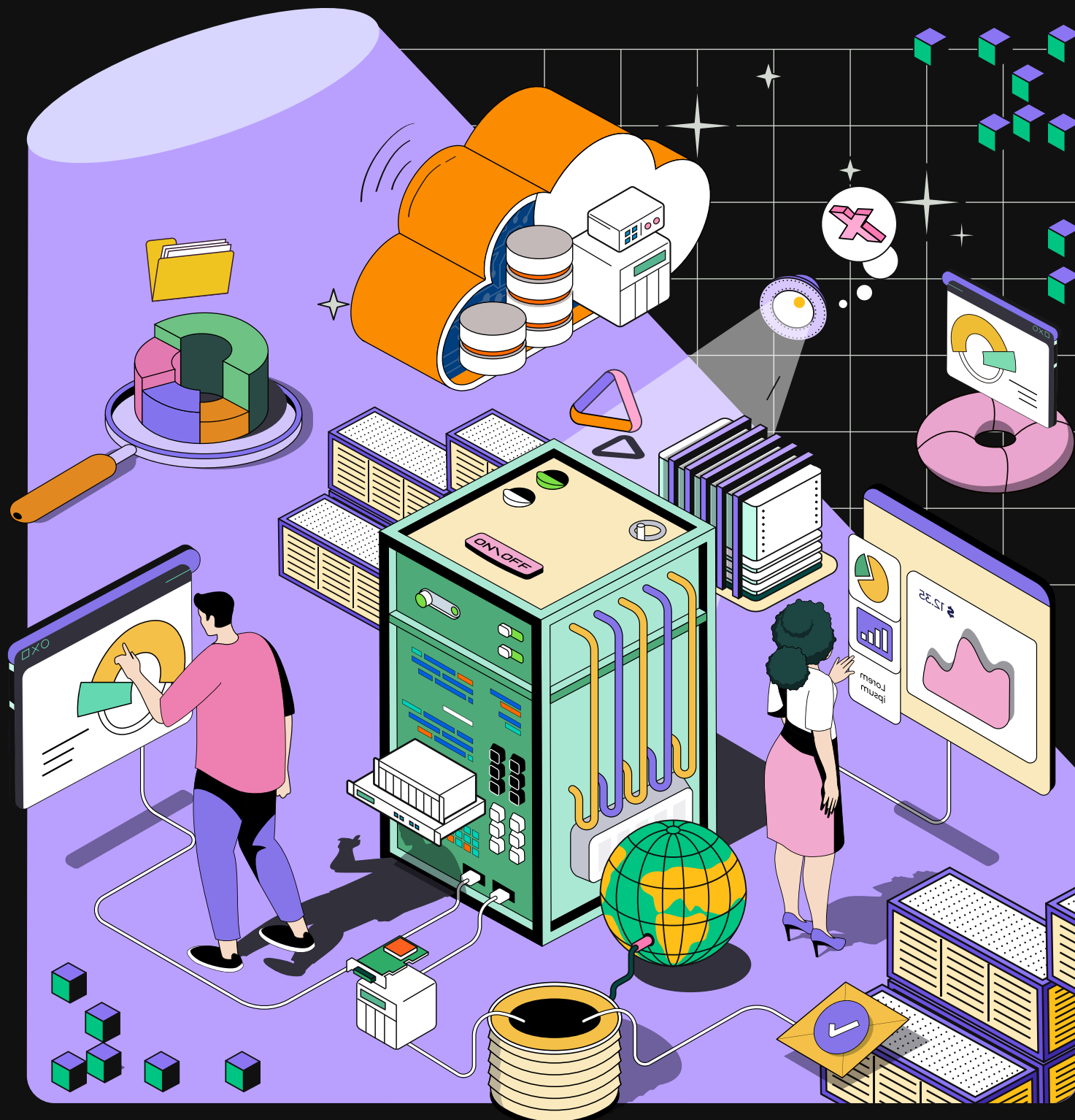


Backup Solution Guide

Backup solutions for various use cases

QNAP



Inquiry

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QNAP

Backup Solution

QNAP NAS supports backing up various devices. Apps can be easily installed from the QTS or QuTS hero App Center. Business and home users can use backup solutions with enterprise-level security, safety, and reliability. This Solution Guide describes all the backup solutions offered by QNAP. For more information about each feature, please visit <https://www.qnap.com>.

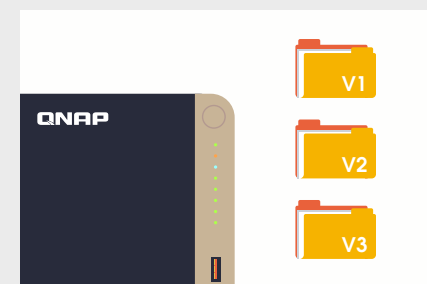


Backup Strategy to Prevent Data Loss: 3-2-1 Backup Rule

With the growing possibility of data loss due to hardware failure, natural disasters, or ransomware attacks, you can minimize the risk of data loss by protecting your family photos, videos, and corporate data with the 3-2-1 backup rule.

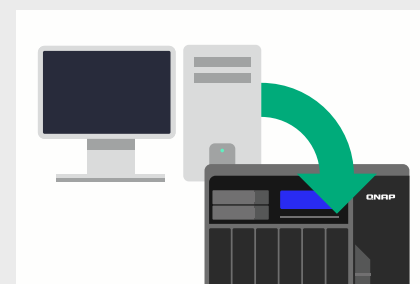


What is the difference between Snapshots, backup, and sync?



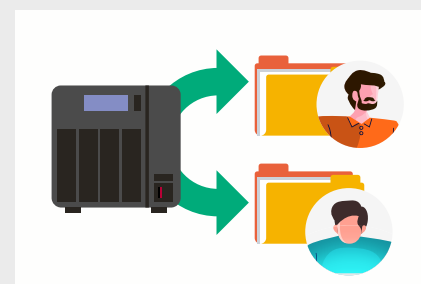
Snapshots

- Store in the same file system
- Keep multiple versions
- Run by schedule
- Data cannot be accessed if the hardware fails



Backup

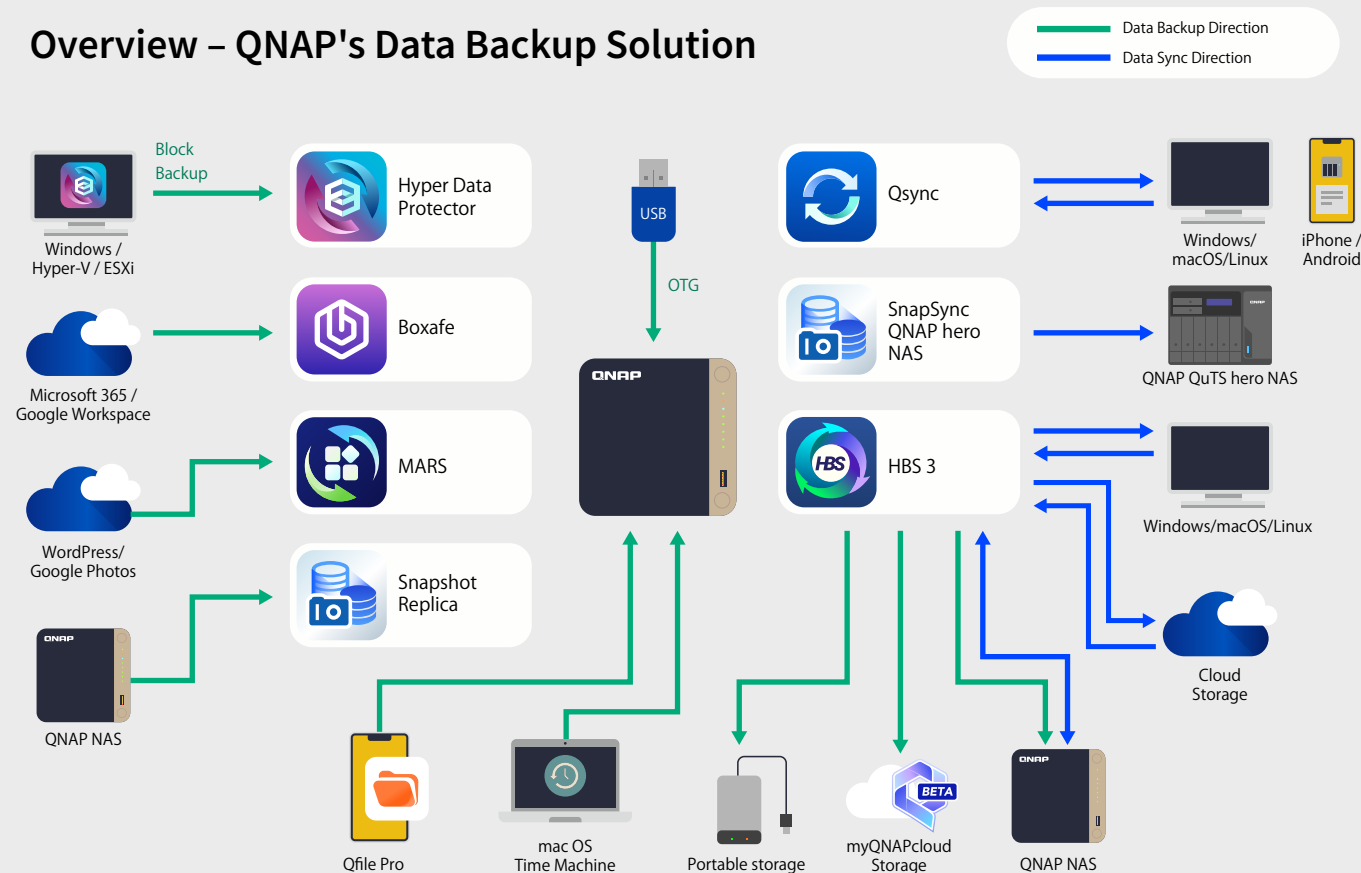
- One-way
- Keep multiple versions
- Run by schedule
- Data can be accessed after restoration



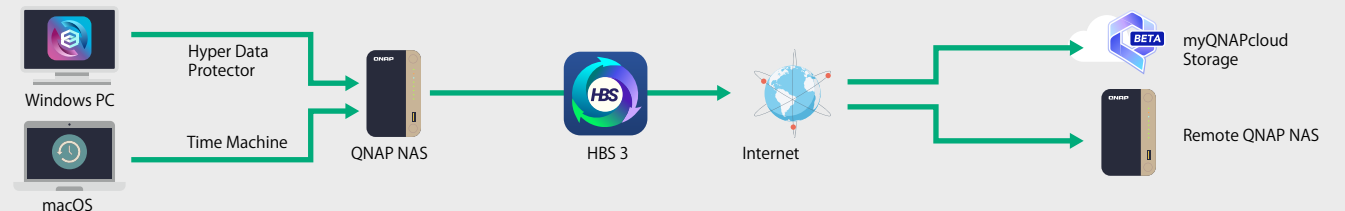
Sync

- One-way and two-way
- Keeps only the latest version
- Real-time
- Data can be accessed in the synced storage

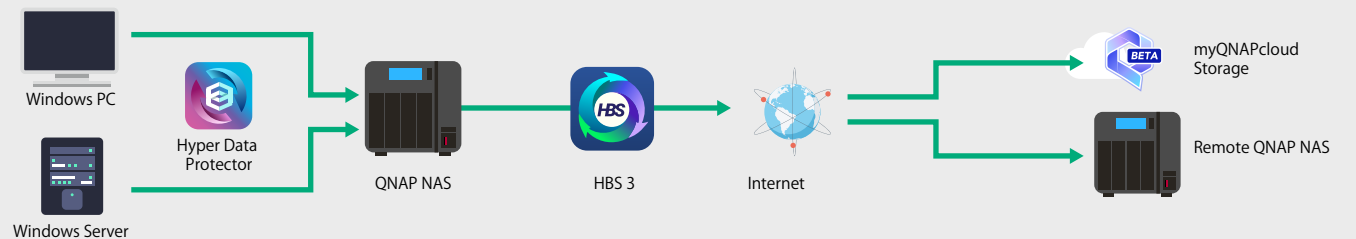
Overview – QNAP's Data Backup Solution



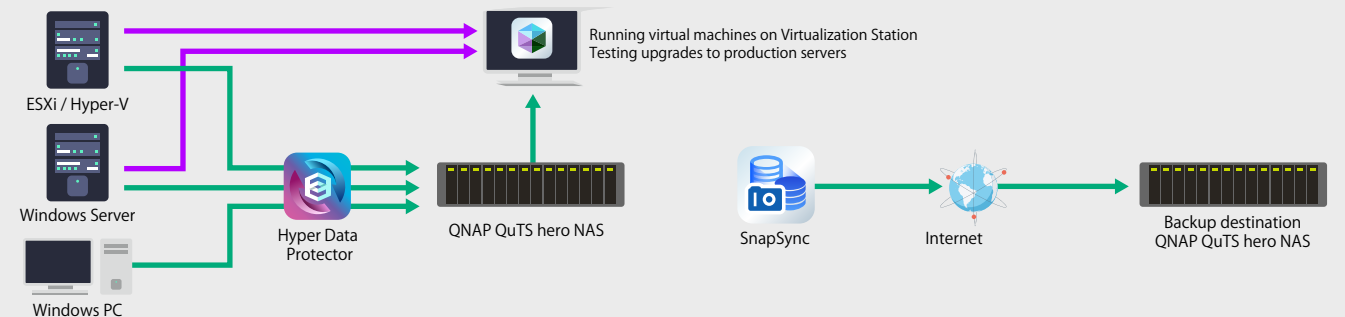
Home & SOHO Users (1-10 devices) : File Backup



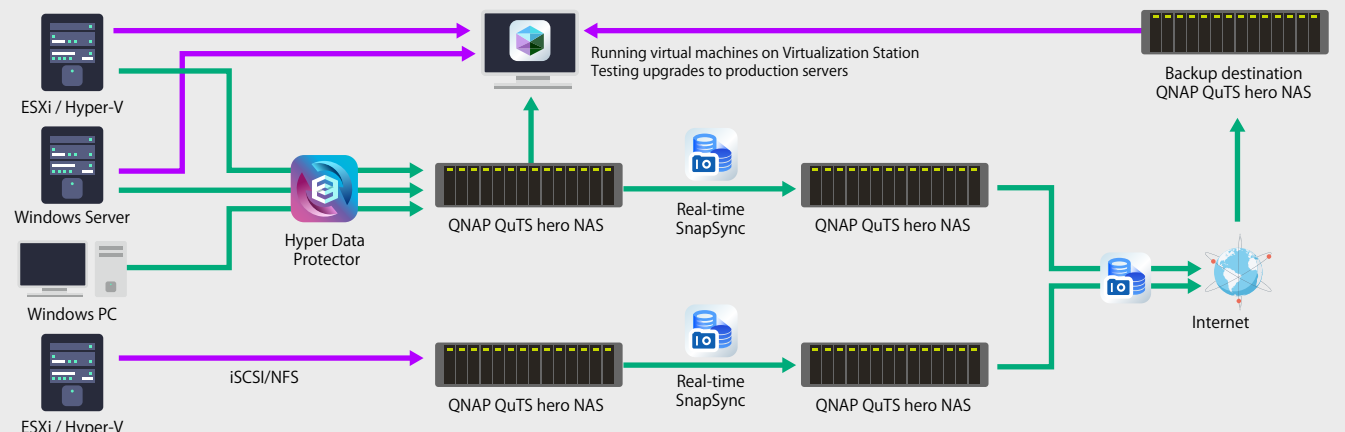
Small workgroups (11-50 devices): Complete file & system backup



SMB & Cross Office (51-200 devices) : Complete File & System Backup



Enterprise (200+ devices): Files, LUNs, full backup



Backup PC / Server to NAS

Your home PCs, company PCs and servers, and virtual machines can all be protected by QNAP NAS.



Hyper Data Protector



Qsync

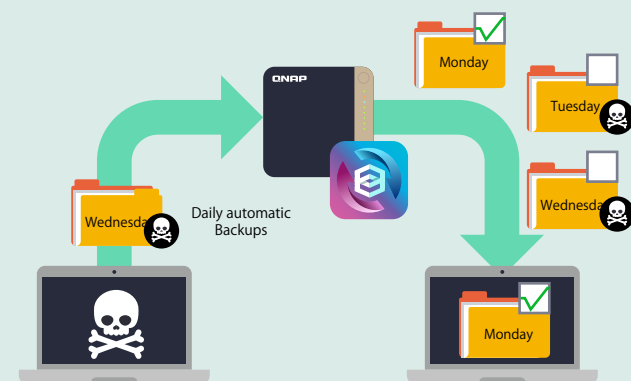
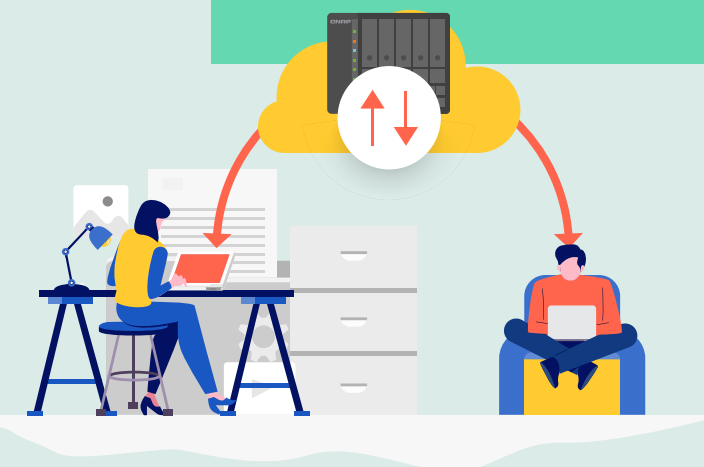
A user-friendly wizard to process full PC/server backup

- License-free backup solution lowers total cost of ownership (TCO).
- Incremental backups and global deduplication save time and storage space.
- Supports encryption and compression on restore, allowing you to perform recovery tasks quickly and securely.
- Simultaneous backup of multiple virtual machines, greatly improving efficiency and data integrity.



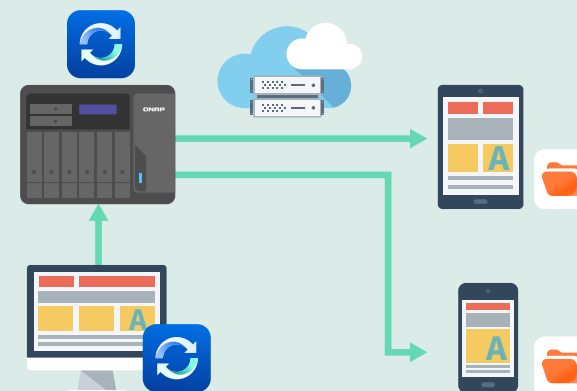
Access anywhere, whether in the office or out and about

Use myQNAPcloud for Qsync to remove accessibility barriers so you can access NAS files from anywhere. Get the latest file versions, even when on the go, and never miss out on a business opportunity. Files sync with your laptop, so you can access files saved in NAS, even without access to WiFi.



Supports Windows full-system backup

- Set up regular backups to prevent forgetting backups without even thinking about it.
- Backup and recovery of business applications such as email and accounting software, including their settings, eliminates the need for reinstallation.
- In case of ransomware, you can restore a clean system by specifying the version that was in use prior to infection.
- Supports global deduplication and compression and when backing up similar systems, such as in-house PCs, you can back up by using capacity efficiently.

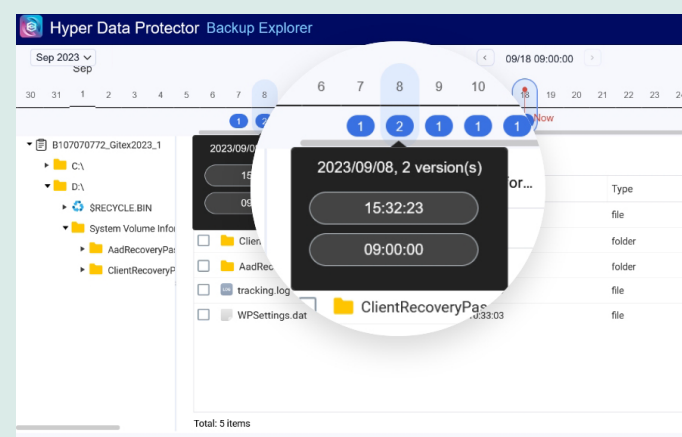


Have you ever saved something only on your desktop? That's no longer a problem.

Files saved in folders set to "sync" are automatically synchronized with your NAS once you connect to the internet. Even in the unlikely event you lose your laptop or phone, if the data was synced, you won't face the problem of only having saved on your desktop.

You can easily recover to the status you want

- Follow the wizard to create USB boot drives required for startup during recovery.
- Features recovery by drive, folder, and file, and flexibly supports backup strategies.
- Supports encryption and compression. Helps shorten RTO (target recovery time) by significantly and safely reducing recovery time.



Cross-device synchronization

Have you ever been frustrated that you can't access files saved on your laptop from your phone? Qsync synchronization feature on the Qfile Pro mobile app works between multiple devices. Seamlessly view photos taken with your phone from your laptop, improve productivity, and make your workflow even better.



Back up from cloud services to a local NAS

Backs up cloud storage and cloud service data to an on-premise QNAP NAS.



Backs up everything including Google Workspace, Microsoft 365 contacts, and calendar

Even cloud storage is not immune from data loss, and there may be limitations on data recovery. There is always the possibility of massive loss to your company caused by human error, neglect, malintent, data corruption, and server attacks. Use Boxafe to back up Google Workspace and Microsoft 365 emails, calendars, contacts, chat history, and more, to an on-premise QNAP NAS, allowing you to restore to the cloud as necessary.

Google™ Workspace

Gmail
All Gmail emails and attachments are backed up.

Google Drive
All Google Drive file versions are backed up and My Drive/Shared Drives are supported.

Contacts
Back up all Google Contacts information.

Calendar
All Google Calendar events and attachments are backed up.

Microsoft 365®

Outlook
All Outlook emails and attachments are backed up.

OneDrive
OneDrive files, including OneNote, are backed up.

SharePoint
Backs up entire document libraries, including subsites, site contents, pages, assets and apps. You can recover any files you'd like from within the Sharepoint website.

Calendar
All Outlook Calendar events and attachments are backed up

Contacts (People)
Backs up all contacts in Outlook People.

Teams
Backs up all contents in the Teams Site including conversations, calendar, document library, pages and OneNote in Teams.

Access and recover backup data

Set up users that are allowed to access and recover on-premise backup data. This allows data recovery without the need of dedicated IT staff. Recovery is also possible for replacement users when restoring account data of former employees. There is no need to leave extra IDs on the cloud and they can be deleted immediately, ensuring security.

Simple End User Management

The administrator can create individual cloud accounts on QNAP NAS and set it up so users can recover data without the support of the IT department. Users are restricted to only accessing their own data and accounts.



Transfer Data to Other Users

Data recovery and transfer from a previous employee to another employee's account. Files from Google Shared Drives and Microsoft SharePoint can also be transferred.



Backs up WordPress data to an on-premise QNAP NAS

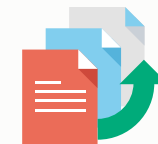
WordPress accounts for 40% of the world's websites. We support website backups for business and individual WordPress users to protect your important digital assets from malware and server malfunction.



Manual Backups
WordPress files and database backups can be saved to the QNAP NAS.



Automatic and Regular Backups
Backups are scheduled based on website update frequency (daily, weekly, monthly, etc.).



Version Control
The version prior to each backup copy is saved so it can be recovered at any time.



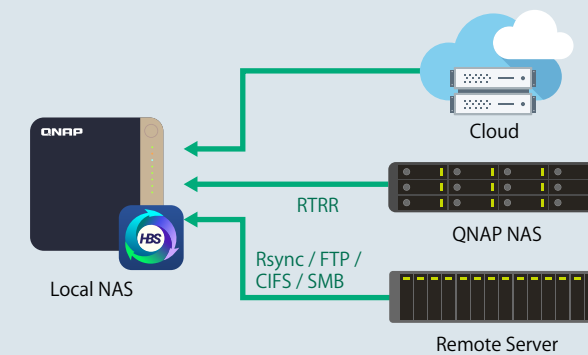
Site Recovery
Moves to the original host server or new Wordpress host and recovers.

Backs up Google Photos data to an on-premise QNAP NAS

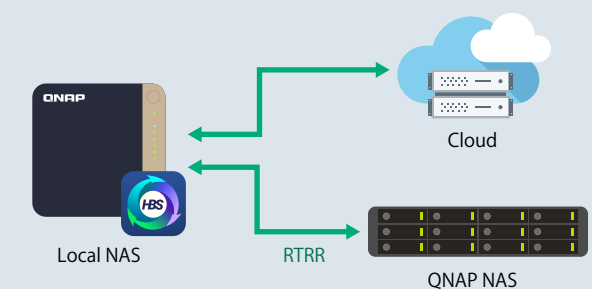
Connect to your Google Photos account to start backing up photos and video from Google Photos to NAS. After the initial setup, scheduled backups are activated. This allows you to not worry about your Google Photos storage running out of space. Also, by saving images to QNAP NAS, you can link them with various apps like QuMagie.

Supports syncing data from the cloud. Get a sense of security by duplicating files on the premises

HBS 3 supports one-way and two-way sync from cloud storage. Even if you are suddenly unable to access cloud storage, all files are left on the QNAP NAS so you can continue working. Setting bidirectional syncing allows updated files to automatically sync with the cloud after you are once again able to access cloud storage.



Active sync (cloud to NAS)



Two-way sync (between cloud and NAS)

Backs up data saved to NAS

Backs up various data saved to QNAP NAS to various data to protect data from natural disasters and ransomware.



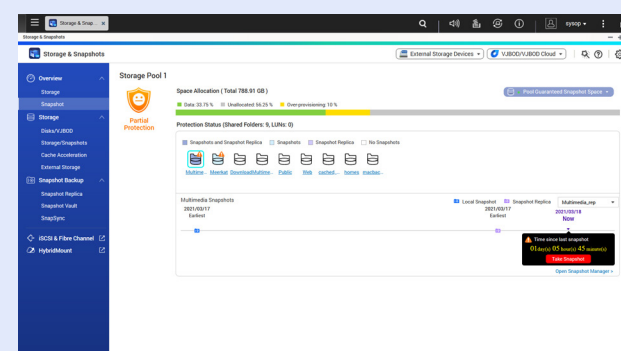
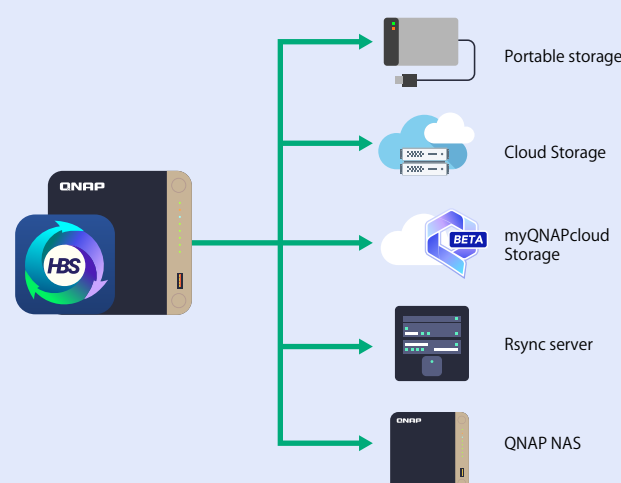
HBS 3
(Hybrid Backup Sync)



Snapshot

Back up NAS data to other devices and services

- Start protecting your data using various media with just 3 simple steps.
- Easily create and run recovery jobs from backup jobs. You will never be faced with “Having a backup but being unable to access it.”
- Use deduplication to efficiently back up data.
- Data transfer and encryption
- Congestion control using TCP BBR allows you to effectively use network bandwidth to back up with congestion control.



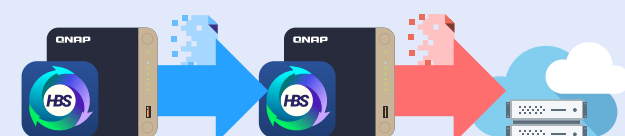
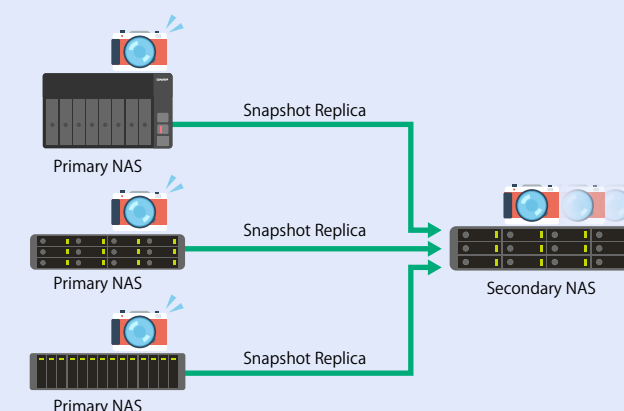
Snapshots

- All QNAP NAS models support snapshots.
- Snapshot versions and latest snapshot time are accurately recorded.
- Up to 65,536 snapshots are supported. Protects files from being deleted due to ransomware attack and human error.
- You can use the Windows “Previous version” function to easily recover data from a snapshot.

Snapshot Replica

Duplicate and save snapshot data

- Duplicates snapshot files to the Snapshot Vault on the Backup NAS.
- As only the changes made since the most recent snapshot are added as an additional copy, you can save time and bandwidth.
- You can also manually run once. Or, you can run based on a schedule.
- The snapshot file recovers directly to NAS.



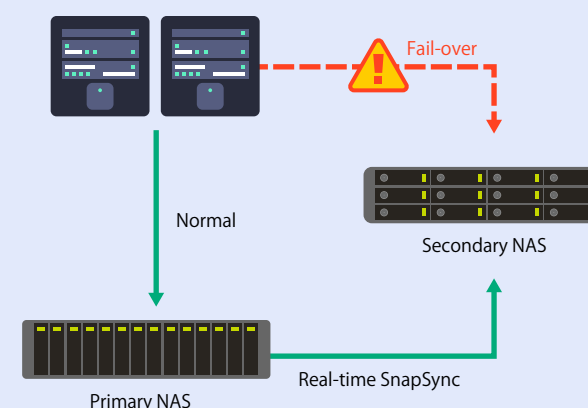
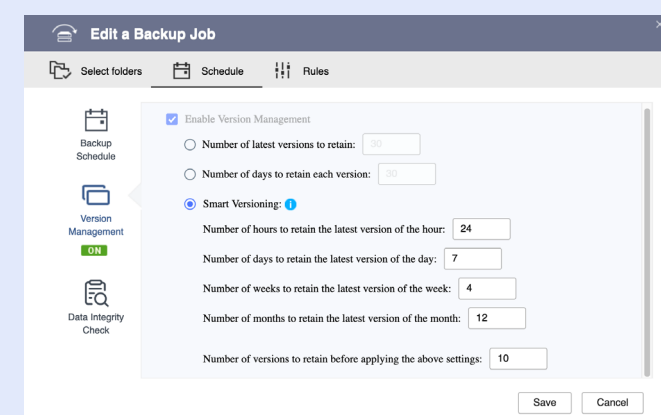
After the **Blue** task is complete, run the **Red** task, avoiding multiple execution of tasks so you can maintain integrity.

Efficient sequential backup tasks

Have you ever faced the issue of running backup tasks simultaneously, only for neither of them to complete? This supports the “job after” function in the QNAP NAS. After NAS-to-NAS backup is complete, backing up to the cloud from the NAS backup destination can be done in order.

Smart versioning

- You can keep backups using space efficiently, such as leaving a backup everyday for the past week, only one per week prior to that, then one every 30 days prior to the past month.
- You can easily select the necessary version when running recovery jobs.



Real-time SnapSync

Replication is complete when writing is complete.

- The real-time SnapSync immediately syncs the changed file with the secondary NAS, and always maintains identical details with the primary NAS.
- If the primary NAS goes offline, IT staff can prevent data loss just by adjusting the secondary NAS privilege settings to maintain operations.
- This allows for failure restoration in real time and minimizes RPO.

*Only QuTShero supports SnapSync.

*We recommend using in an environment with 10 ms or lower round-trip delay.

Other Backup Functions



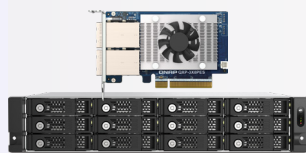
Time Machine backup

When using an Apple Mac, you can select QNAP NAS as the Time Machine backup destination. We recommend creating a volume for Time Machine with about 3 times the capacity of the Mac you're using and making it the backup destination.



Air gap backup

On QNAP NAS, connection with UNITEX's USB-LTO is supported. Export data to LTO tape and save it isolated from the network so that even in the unlikely event of ransomware, the data exported to LTO will be unaffected. Also, LTO tape is a backup media that is also suitable for long-term saving. For important data that requires a long save period we recommend saving to LTO tape.



Petabyte-scale storage archive

We provide support for scaling up the capacity of QNAP NAS by connecting JBOD and expansion enclosures. When it is necessary to save big image files as a library of warm data as it is in M&E (Media & Entertainment) production sites, you can use an enclosure to construct PB (petabyte)-level storage.



Qfile Pro

Smartphone photo backup

If you use Qfile Pro, you can automatically upload and save photos taken on a mobile device to the NAS. Photos uploaded to NAS can be viewed sequentially with the QuMagie photo management software. You can also use AI-based sorting to view photos based on people, events, and things in the photos as well as the shooting location.

	PC/server backup		Cloud service/ storage backup		NAS data backup		
Feature	Hyper Data Protector	Qsync	Boxafe	MARS	HBS 3	Snapshot Replica	SnapSync
Available QNAP models	x86-based CPU 4GB RAM (or higher)	All	x86-based CPU 4GB RAM (or higher)	All	All	All	QuTS hero
Backup source	Windows/ Hyper-V/ ESXi	Windows/ macOS/Android/ iPhone	Microsoft 365/Google Workspace	WordPress/ Google Photos	QNAP NAS	QNAP NAS	QNAP QuTS hero NAS
Backup destination	QNAP NAS	QNAP NAS	QNAP NAS/ QuTScldoud	QNAP NAS	QNAP NAS/cloud storage/portable storage/rsync server	QNAP NAS	QNAP QuTS hero NAS
Backup mode	Incremental	Multiversion mirroring	Incremental	Google Photos: Incremental WordPress: Full	Incremental/ Mirroring	Incremental	Incremental
Maximum number of versions:	VM: 9999 PC: 65536	64	Settings allowed	99	65536	QTS: 256 QuTS hero: 65536	1
Version retention/ rotation policy	Simple versioning	—	Settings allowed	Simple versioning	Simple versioning Smart versioning	Smart versioning with Snapshot count and number of saved days	—
Backup frequency	Schedule by date or time	When changing or scheduling	Schedule by date or time	Schedule by date or time	Schedule by date or time	Schedule by date or time	When changing or scheduling
Data compression	—	—	—	—	—	—	—
Data Encryption	—	—	Volume encryption	—	—	—	—
Compressed transfers	—	—	—	—	—	—	—
Encrypted transfers	—	—	—	—	—	—	—
Deduplication	—	—	—	—	—	—	—
Show version	—	—	—	—	—	—	—

