QNAP

Silent 2.5" SSD NAS

TS-410E

Supports 2.5-inch SATA 6Gb/s SSD
Fanless and Full-aluminum chassis
for sound-sensitive environments

intel. CELERON

HDMI

4K

2.5GbE

SATA SSD

2.6 GHz

8 GB

Main Features of TS-410E 2.5-inch SATA SSD silent NAS

2.5-inch SATA SSD

It supports four 2.5-inch SATA SSD slots, providing sufficient data capacity

Dual 2.5 GbE network ports

2.5 GbE network bandwidth for smooth data transfer experience

Fanless, silent design

Easy to install and use NAS in sound-sensitive environments

4K HDMI

Provides one HDMI output for monitoring or as a PC screen

Built-in 8GB memory

Sufficient memory makes NAS applications more flexible

Quad-core processor

High-efficiency Intel Celeron J6412 4-core burst 2.6Hz processor fully supports various applications of NAS workstations

Silent NAS: Avoid noise damage to health and productivity

Noise has obvious hazards to human health and even work efficiency. According to the WHO noise guidelines for Europe released (2018), tonal noise in ventilation systems can negatively impact human health. Studies have shown that long-term exposure to this sound increases the risk of high blood pressure, cardiac arrest, tinnitus, hearing damage, sleep problems, and stress. That noise also negatively impacts children's cognitive development. See also Interface (2019), a global commercial flooring company, conducted workplace research revealing how sound and acoustics affect employees in commercial environments. The survey, conducted in partnership with Radius Global Market Research, revealed that noise affects and negatively affects 69% of employees' focus, productivity, and creativity. Most NAS have installed fans. It will make a noise. QNAP has designed a TS-410E 2.5-inch SSD NAS that is completely silent and suitable for various sound-sensitive environments, eliminating all doubts about the above hazards.

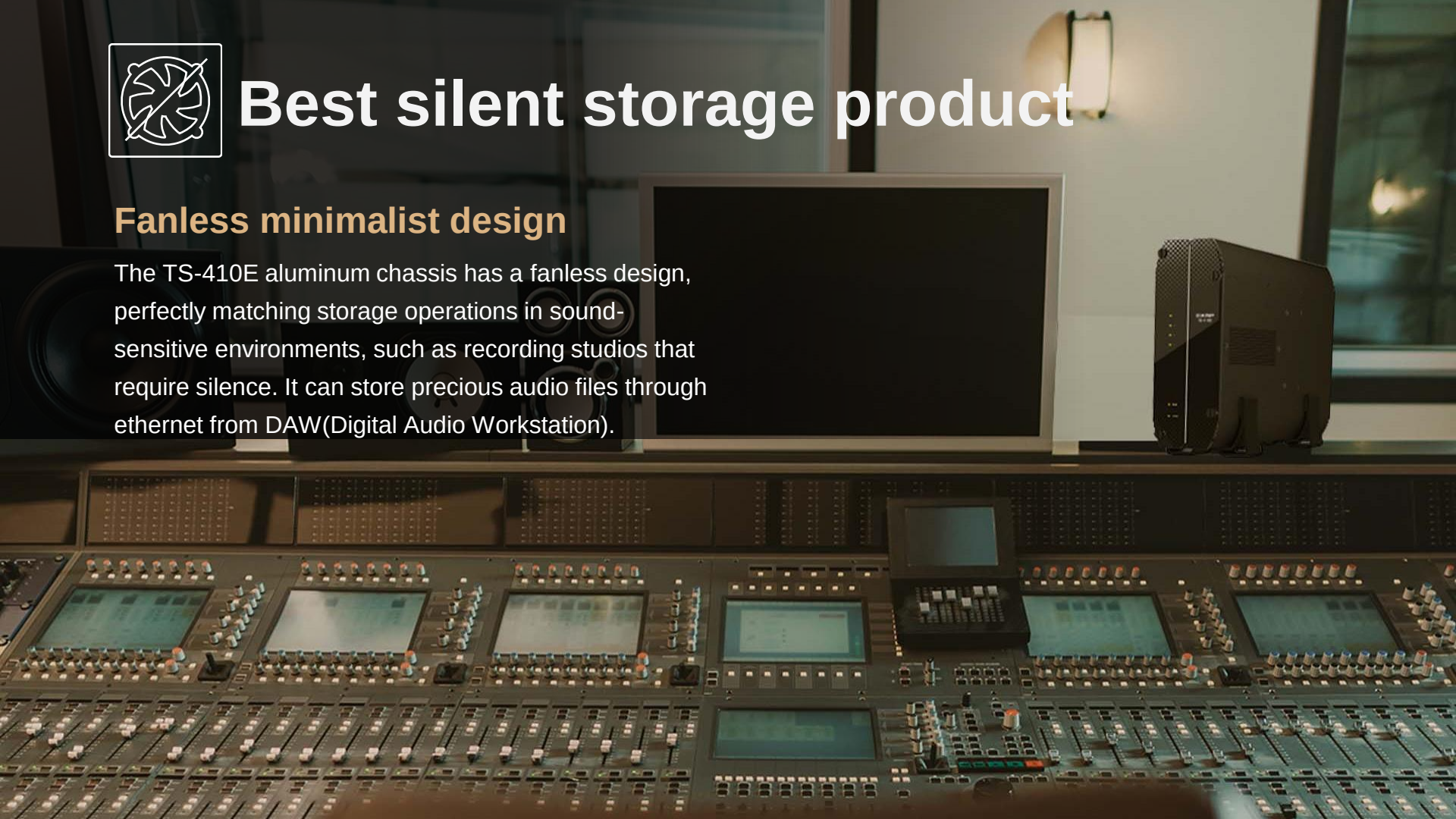
Link: https://www.who.int/europe/health-topics/noise#tab=tab_1

https://www.interface.com/US/en-US/about/press-room/Acoustics-Office-Study

Hearing loss

Health hazard

Low productivity



Best silent storage product

Fanless minimalist design

The TS-410E aluminum chassis has a fanless design, perfectly matching storage operations in sound-sensitive environments, such as recording studios that require silence. It can store precious audio files through ethernet from DAW(Digital Audio Workstation).

Silent NAS for installation in sound-sensitive office environments

First choice for data storage in sound-sensitive environments

Set up TS-410E in the office for data backup and storage, which no longer have to endure the fan noise of general NAS. QNAP offers a better economical option than expensive soundproofed cabins in space-constrained and sound-sensitive environments.

Compact chassis with anti-skid stands

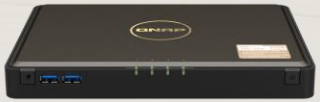
Anti-skid stands

The special vertical stands with anti-skid rubber can be placed on the desktop without taking up space so that the desktop space can be effective. Moreover, its compact chassis can place anywhere in the office.

Equipped vertical anti-skid stand in the pack.

How to Choose a Desktop Dual 2.5 GbE Low Noise NAS

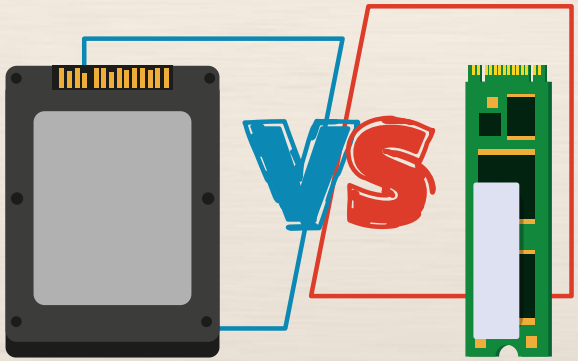
QNAP provides three desktop low-noise NAS supporting dual-port 2.5GbE for customers. This time, the main recommendation is the new TS-410E, which supports 2.5-inch SSD and has a fanless design, especially suitable for sound-sensitive NAS surroundings. The HS-264 is also a fanless design, and users usually choose this model because it supports 3.5-inch large-capacity hard drives. Finally, TBS-464 supports PCIe NVMe SSD and has the highest drives access performance and the thinnest size.

2.5 GbE NAS	HS-264	TBS-464	TS-410E
			NEW
Noise	Good	Better	Best (noiselessness)
Capacity	Biggest	Mid	Big
Size	Thin	Thinnest	Compact and vertical

Why choose the 2.5-inch SATA SSD drive for NAS?

2.5-inch SATA SSD advantages

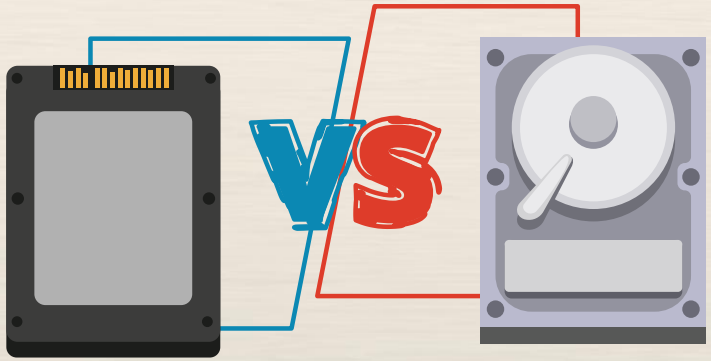
Compared with M.2 NVMe PCIe SSD, 2.5-inch SATA SSD has more space for placing flash chips, thus higher data storage capacity. In addition, it has better heat dissipation performance and does not require additional heat sinks. The 2.5-inch SATA SSDs provide a balanced choice between high capacity and performance.



2.5吋SATA SSD　　NVMe M.2 PCIe SSD

2.5-inch SSD is reliable and silent

The traditional HDD which rotates the disk plates to read/write the data is not suitable in any place with vibration. HDD can also be easily damaged due to movement and collision. 2.5-inch SATA SSD stores data in flash chip without disk head and therefore it is better against shock & vibration. The performance of SSD is also much faster than HDD.



SSD　　HDD

Recommended WD Red SA500 4TB 2.5”SATA SSD

Western Digital

Western Digital is an innovator and leader in the storage industry. They are producing reliable and high-performance mechanical hard drives and solid-state drives through their leading technology. Their products are suitable for deployment in offices, mobile fields, data centers, embedded systems, and consumers in electronic devices.

WD Red SA500 SSD series

WD Red™ SSD’s superior endurance can handle the heavy read and write loads demanded by NAS for 24/7 operation. It with high performance and high response speed. There are several capacity options for customers to choose from 500GB, 1TB, 2TB, and 4TB. We are recommended for installation in the TS-410E Silent NAS, providing sufficient performance and longevity.

TS-410E provides four 2.5" SATA slots

Quad-core Intel Celeron J series, up to 2.6GHz

Wide operating temperature range, long-term supply until at least 2029

When small and medium-sized businesses are are buying data storage equipment, they need flexible and long-term implementation according to the demand of the project stage. When the initial budget is relatively limited, the NAS is purchased for the creation of related applications. However, when they want to deploy or expand, they often found out that the originally purchased NAS model was discontinued because the CPU was end of life (EOL). Therefore, they need to re-evaluate a new NAS model. The TS-410E uses the Intel Celeron J6412 CPU with long-term availability until at least 2029, solving customers' long-standing problems.

J6412
Elkhart Lake

AES-NI encryption
Volume & folder support

2.6GHz
Burst

4-core
4-thread

TDP
10W

Which RAID mode to use in a 4-bay NAS for data protection?

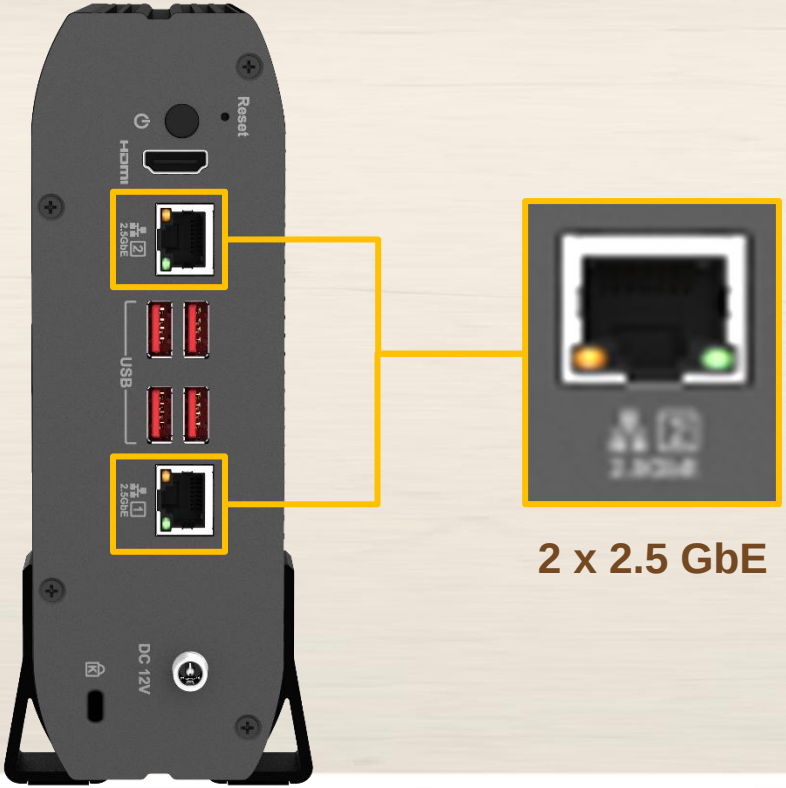
RAID (Redundant Array of Independent Disks) is a technology that uses more than two disks to form a fault-tolerant protection mechanism, which can protect data when a certain number of disks are damaged. When protection is the priority using four disks to create an array in TS-410E, we recommend RAID 6. If you think performance is the priority, we recommend RAID 10.

	Single	JBOD	RAID 0	RAID 1	RAID 5	RAID 6	RAID 10
Minimum number of disks	N/A	1	2	2	3	4	4
Allow number of disks fault	0	0	0	N-1	1	2	Each group of RAID 0 allow one
Capacity equals several disks	1	N	N	1	N-1	N-2	N/2
Protection	N/A			High	Mid and lower	Upper Mid	Upper Mid
Performance	Single		High	Single	Mid	Mid and lower	Upper Mid

Dual 2.5 GbE Network ports are enterprise network standard

Dual 2.5 GbE Network ports

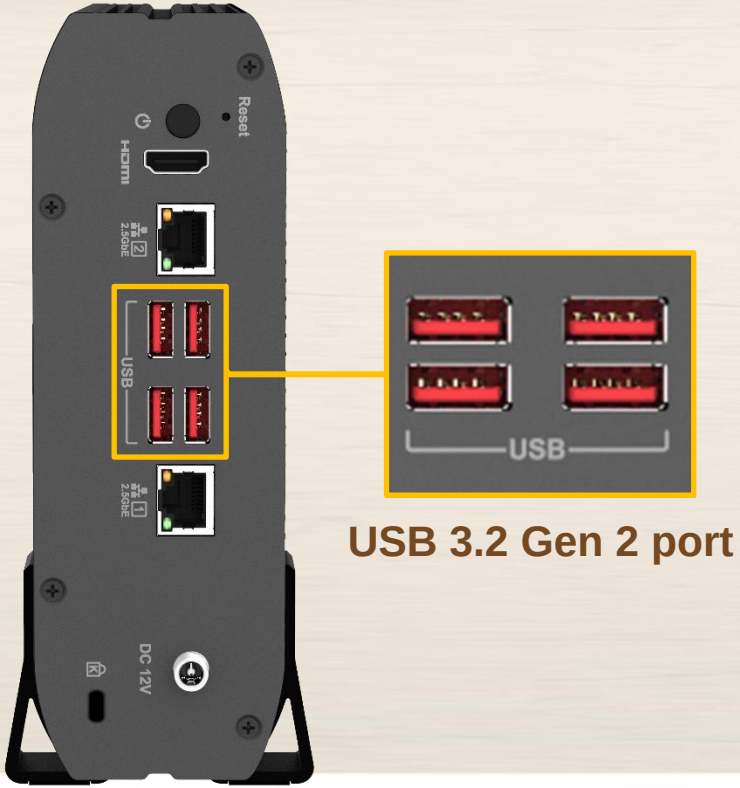
The general network 1GbE network speed can no longer fit the basic storage needs of today's enterprises. Therefore, the new TS-410E NAS is standard equipped with two 2.5 GbE network ports. In addition, through Port Trunking network link aggregation, the NAS can provide up to 5 Gbps data transmission bandwidth in a multi-client environment.



4 ports USB 3.2 Gen 2 (10Gbps)

4 ports USB 3.2 Gen 2

In addition to connecting to QNAP TL USB JBOD for capacity expansion or backup, it provides a smoother file transfer experience than a general NAS. You can use HDMI to connect the screen, and the USB interface can also be connected to a keyboard and mouse to operate directly or as a PC. It can also be connected to a UPS to keep the system continue. A sufficient number of USB ports to meet the needs of various situations.

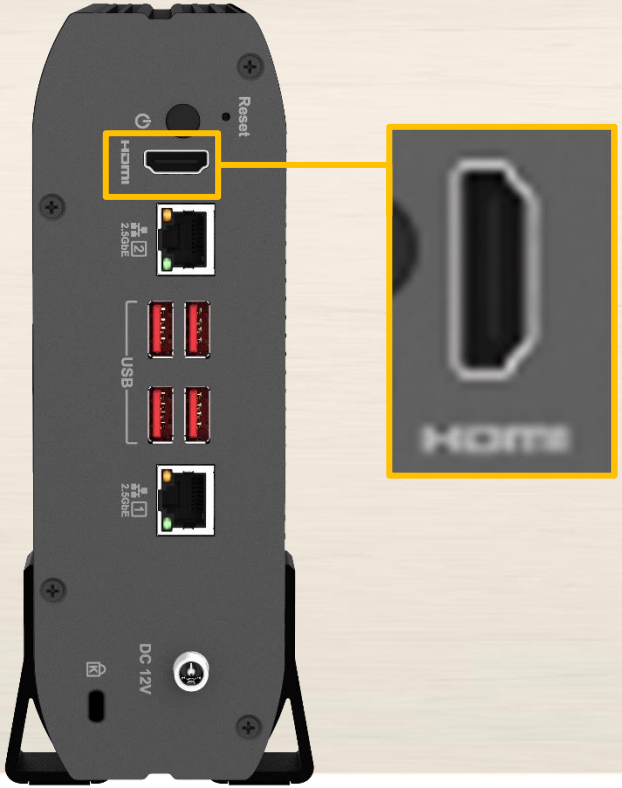


USB 3.2 Gen 2 port

Support HDMI 4K screen output

HDMI monitor output with 4K resolution

The HDMI connects to the screen as a monitor. When USB connects to a keyboard and mouse simultaneously, it can use as a PC, and the HybridDesk Station can install to turn it into a home theater.

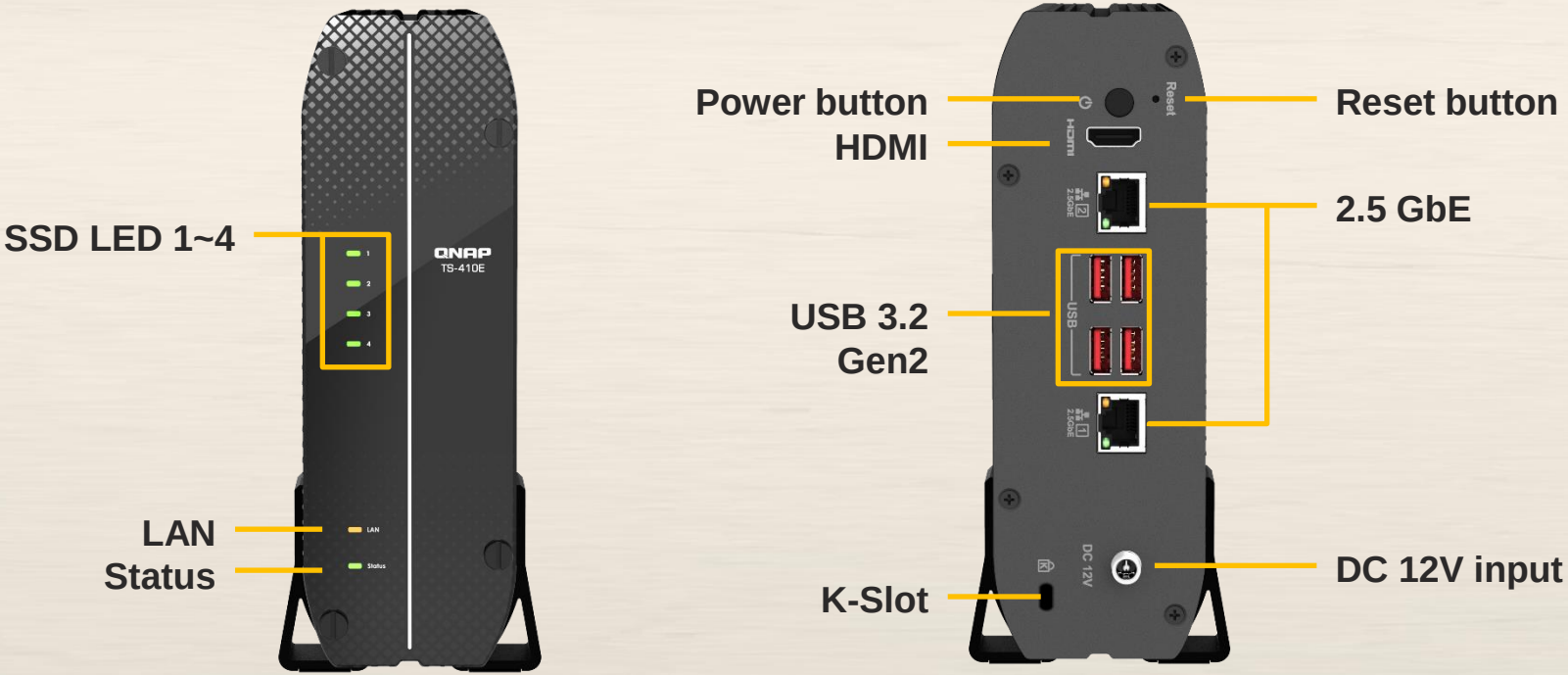


Supports four SATA SSD slots

Four 2.5" SSD slots are visible after removing the front cover

Hot-swappable SATA slots

TS-410E I/O and size



60 (H) x 180 (W) x 254 (D) mm / 2.36 (H) x 7.09 (W) x 10 (D) inch

Optional storage expansion unit that supports USB JBOD & RAID

TR-002

2-bay
Desktop USB 3.2 Gen 2 JBOD
Supports hardware RAID

TR-004

4-bay
Desktop USB 3.2 Gen 1 JBOD
Supports hardware RAID

TL-D800C

8-bay
Desktop USB 3.2 Gen 2 JBOD

TR-004U

4-bay
Rackmount USB 3.2 Gen 1 JBOD
Supports hardware RAID

TL-R1200C-RP

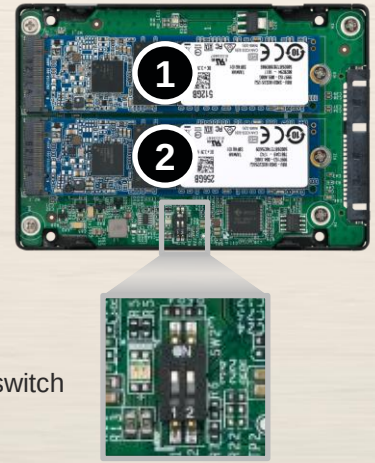
12-bay
Rackmount USB 3.2 Gen 2 JBOD
Redundant power supply

TS-410E supports the maximum number of JBODs	
TR-002	2
TR-004	2
TL-D800C	1
TR-004U	2
TL-R1200C-RP	1

Optional hardware RAID QDA-A2MAR

Dual M.2 SATA SSD to single 2.5" SATA drive enclosure, supports hardware RAID function

The TS-410E supports QDA-A2MAR for expansion. This adapter can insert two M.2 SATA SSDs and convert them to a 2.5-inch SATA disk. No need to install any driver. It will make NAS achieve higher performance and additional hardware RAID protection benefits. Let an economical and flexible storage solution to have immediately.



QDA-A2MAR

2x M.2 SATA SSD slot to 2.5" SATA interface

RAID 0/1 switch

Optional network switch

QSW-1108-8T (unmanaged)

8 x 2.5G
RJ45 Multi-Gig

Fanless and
Metal Chassis

QSW-1208-8C (unmanaged)

8 x 10G/5G/2.5G
RJ45 Multi-Gig

QSW-308-1C (unmanaged)

1 x 10G/5G/2.5G
RJ45 Multi-Gig

QSW-M408-4C (managed)

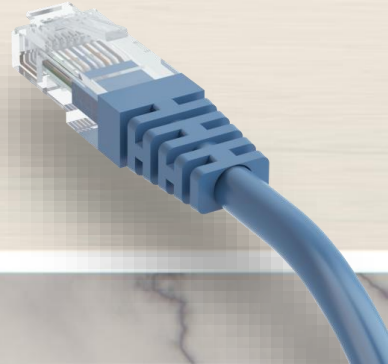
4 x 10G/5G/2.5G
RJ45 Multi-Gig

QSW-M2108R-2C (managed)

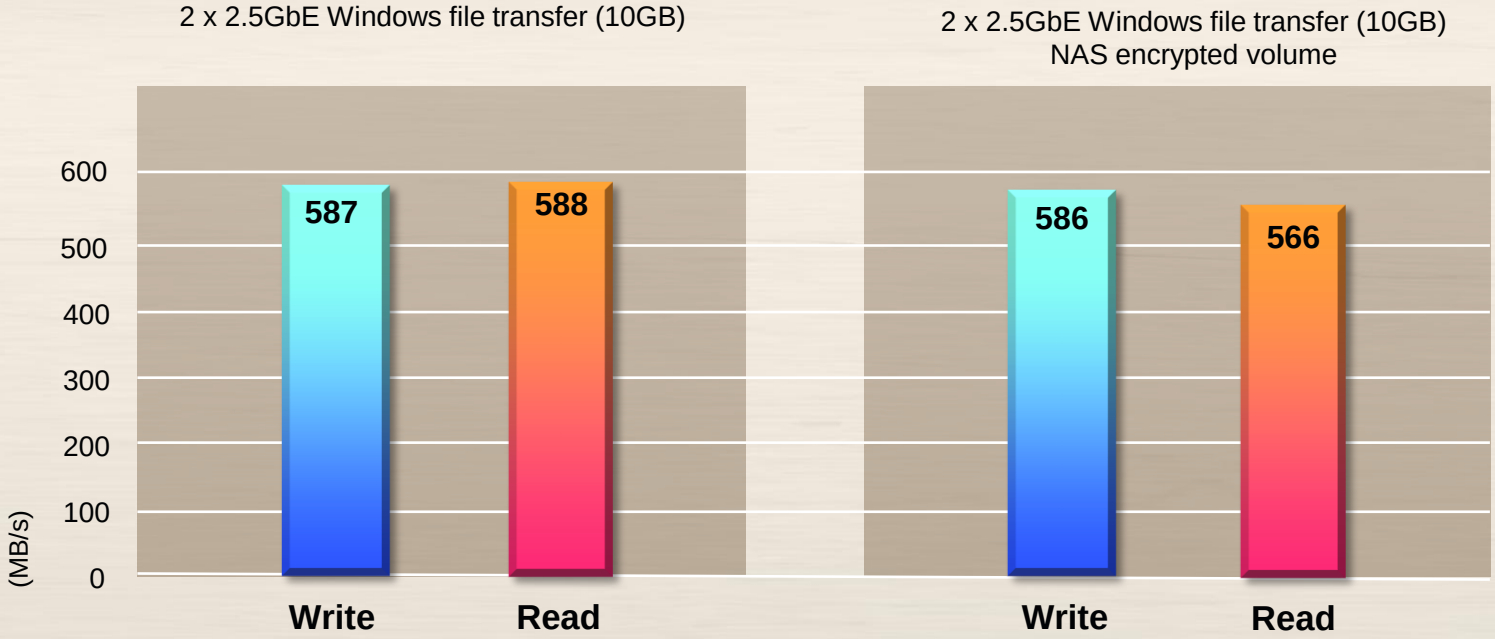
2 x 10G/5G/2.5G
RJ45 Multi-Gig

No need to replace existing wiring upgrade to 2.5 GbE

	CAT 5e	CAT 6	CAT 6A
100M	✓	✓	✓
1G	✓	✓	✓
2.5G	✓	✓	✓
5G	✓	✓	✓
10G	X	✓(55m)	✓



2 x 10 GbE for 10GB file transfer performance

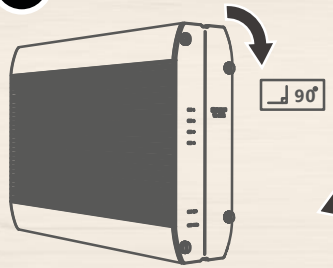


Environment:
NAS | TS-410E, QTS 5.0, 4 x Samsung 860 Pro 512GB, RAID 5, thick volume
PC | Windows Server 2019 Standard, Intel Core i7-6700 3.4 GHz, 32GB RAM

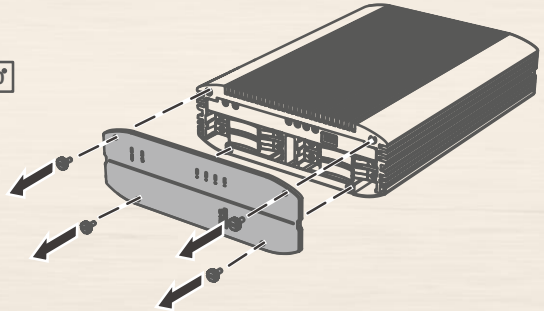
Tested in QNAP Labs. Figures may vary by environment.

2.5-inch SATA SSD installation

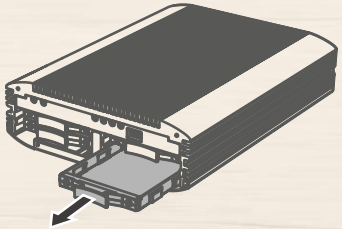
1 Put it flat



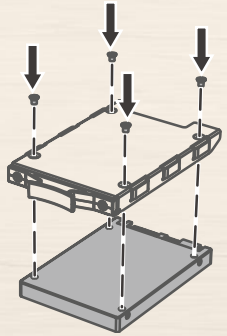
2 Loosen screws



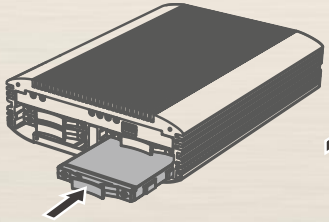
3 Take out SSD Trays



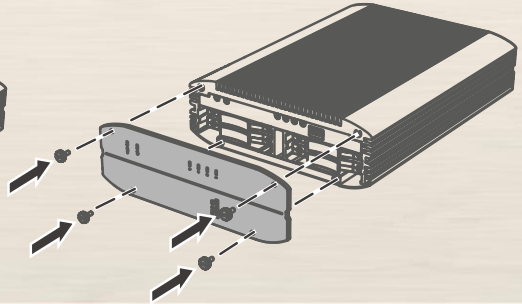
4 Locked the drives



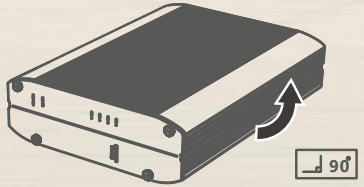
5 Insert trays



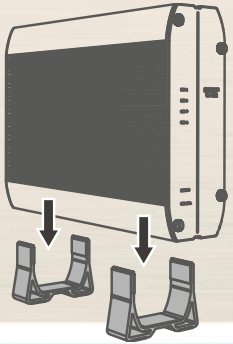
6 Locked the cover



7 Turn to vertical



8 Put it on stands

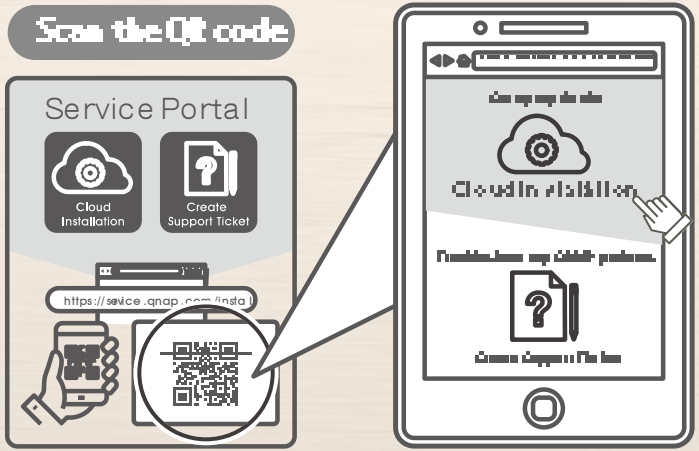


2:45 PM
TV • MARTIN FAMILY
Atlanta
Season 1
Better Things
Season 1
Below Deck Me...
Dead of Su
Seasor
MOVIES • MARTIN FAMILY
HEARTLAND
ANDROID IN LA LA LAND
QNAP
TS-410E

LIVE DEMO

NAS quick installation

1. Scan the QR Code with your mobile phone to install

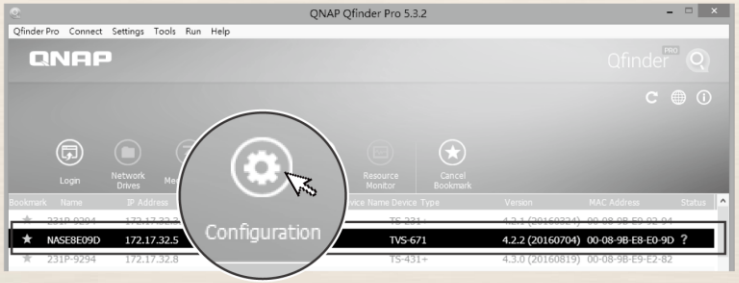


2. Download the Qfinder Pro program on your computer and install

Qfinder Pro

Windows Mac Linux

http://www.qnap.com/qfinderpro



Build-in QTS 5.0 NAS multifunctional operating system

Supports WireGuard VPN

Safe and convenient connection

Upgraded Linux Kernel 5

Strengthen security to protect data assets

Improve overall NAS performance

Make NAS related applications more agile

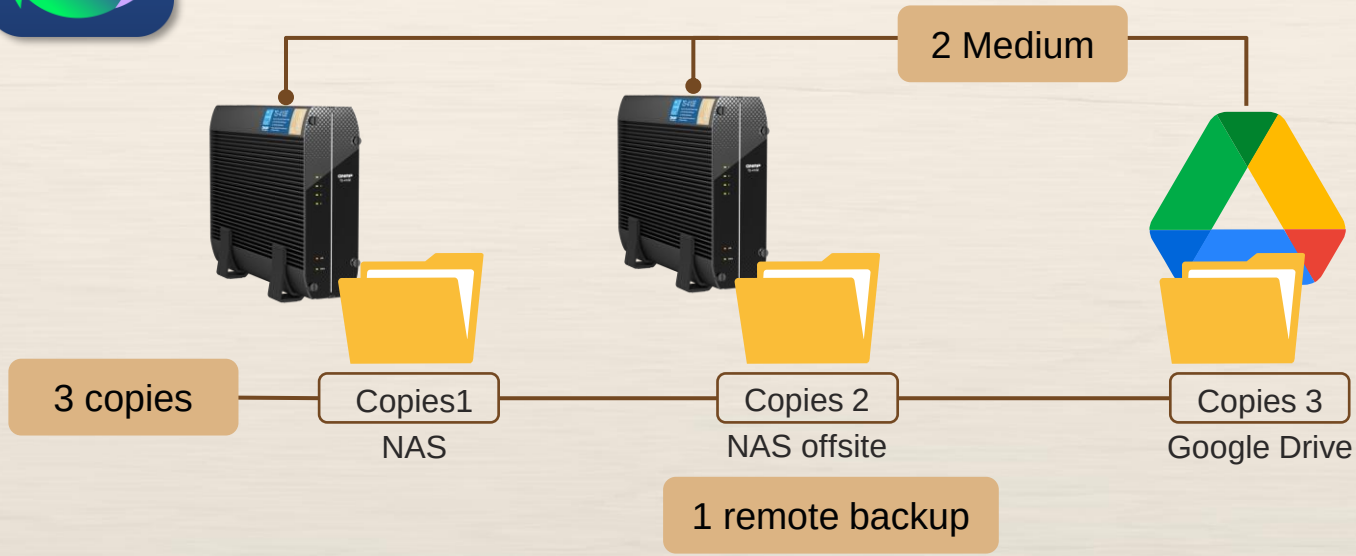
Brand new UI

Simple, aesthetic, and smooth experience

license-free HBS 3 (Hybrid Backup Sync 3)

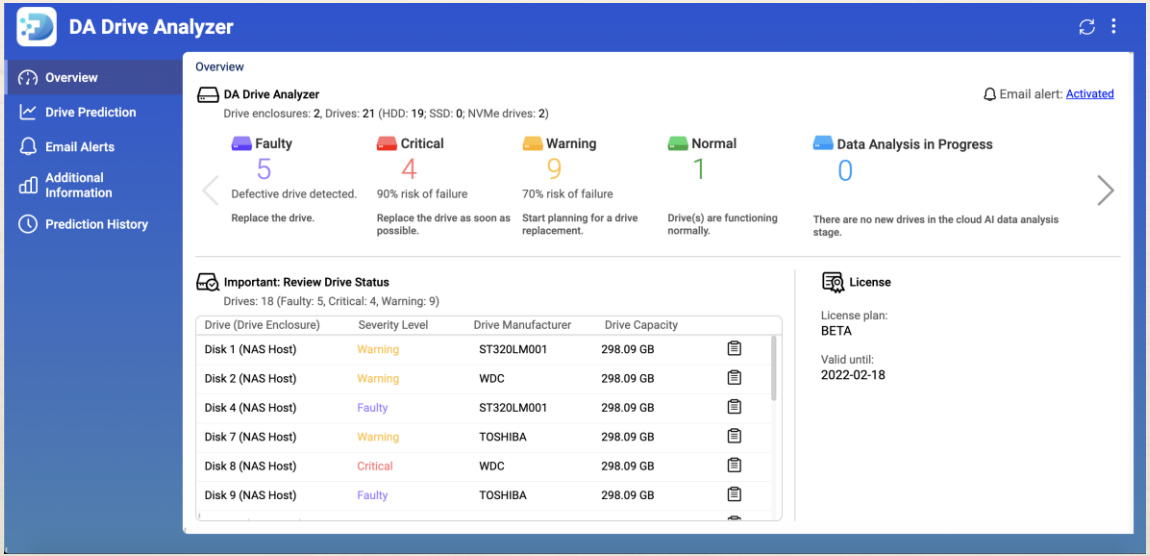
Three steps to the best data backup strategy

Simple 3-2-1 backup strategy (3 copies, 2 media, 1 remote backup)



DA Drive Analyzer for disk failure prediction

Each NAS can support one disk prediction for free, and you can also have a paid subscription to support all disks.



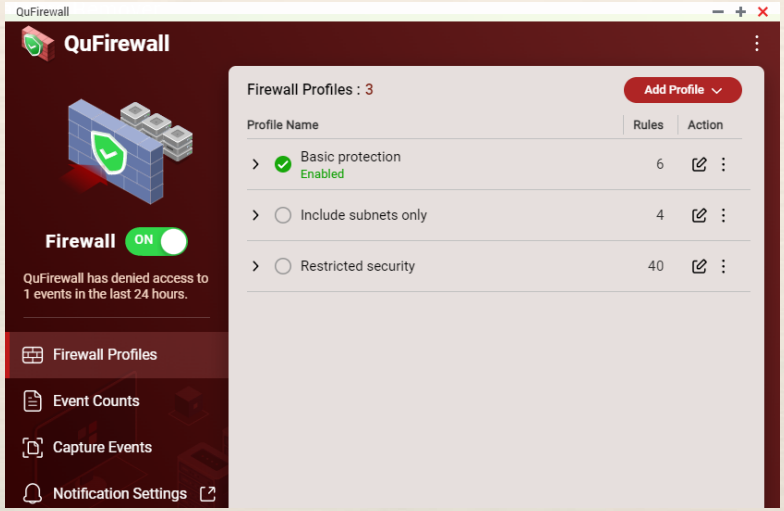
Disk health analysis and failure prediction

DA Drive Analyzer integrates ULINK AI prediction technology which can warn you before disk failure and help you protect valuable data.

Data security: safeguard your NAS data

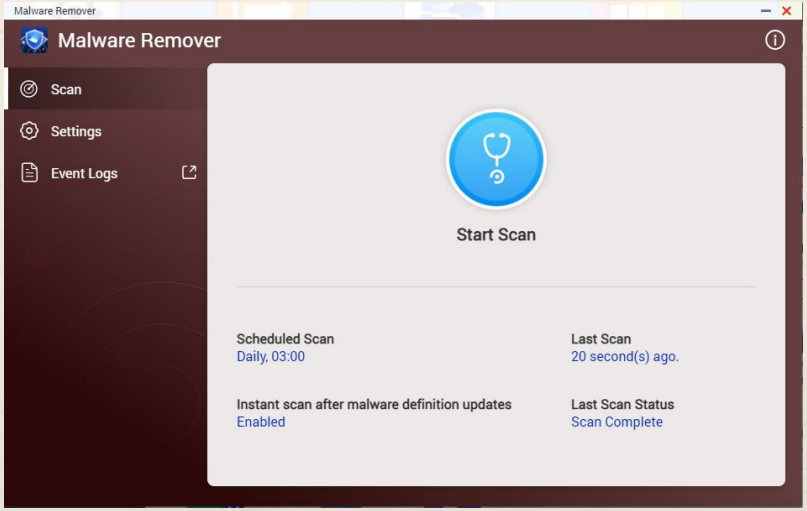
QuFirewall

You can allow/deny IP addresses and regions to prevent unauthorized access and brute force attacks for safeguarding data and service security.

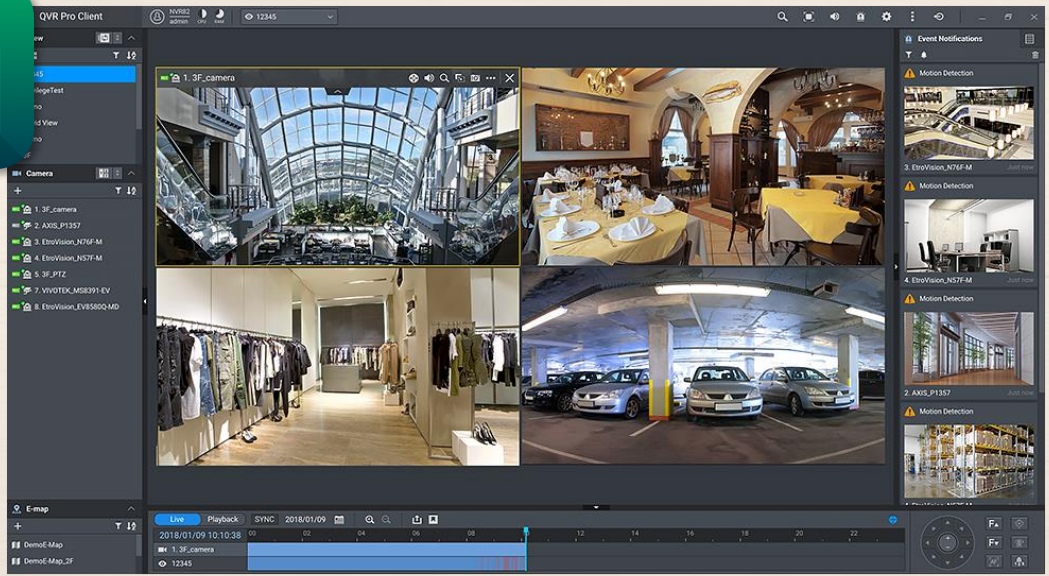


Malware Remover

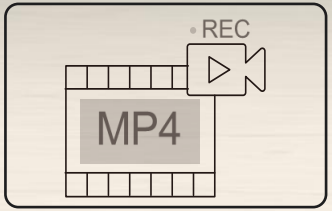
Regularly scan your NAS check for and download the latest malware definitions. Then, when attacked, the infected files can be excluded in real-time, helping to improve the level of NAS data security.



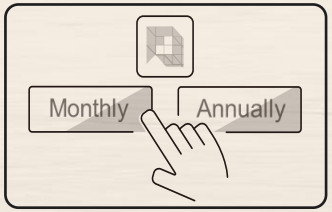
QVR Elite- Surveillance System



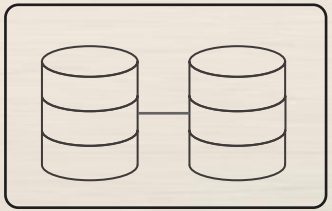
Base embedded channels
(Flexible expansion)



MP4 Recording Format



Flexible Subscription



Expandable Capacity

Compatible with a huge amount of camera models

Over 180 Brands

GeoVision
VIVOTEK BUILT WITH RELIABILITY
Panasonic
AXIS COMMUNICATIONS
MOBOTIX
Canon
HIKVISION
alhua TECHNOLOGY
Honeywell
Brickcom

Over 6,700 Models

ONVIF Profile Supported

ONVIF® | S

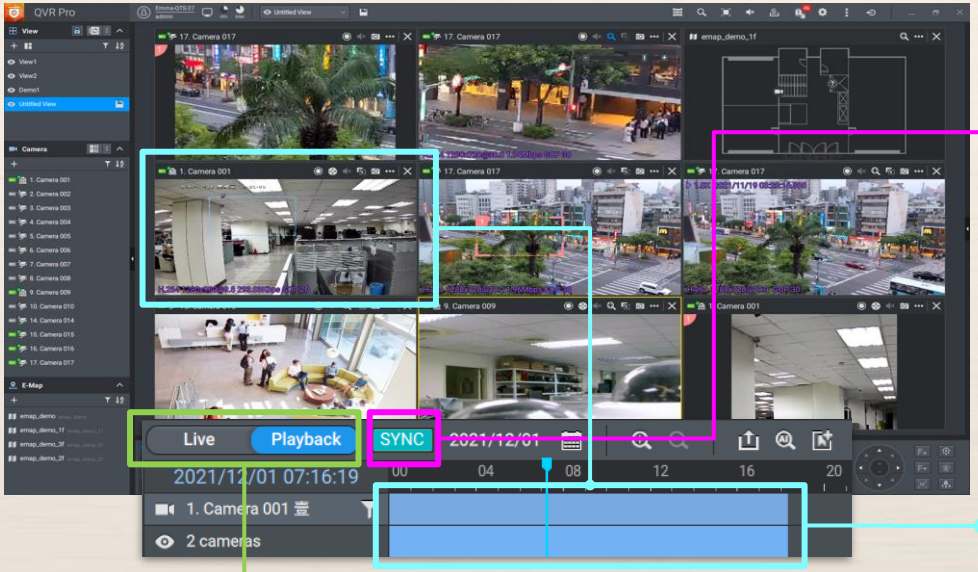
RTSP Stream Input / Output

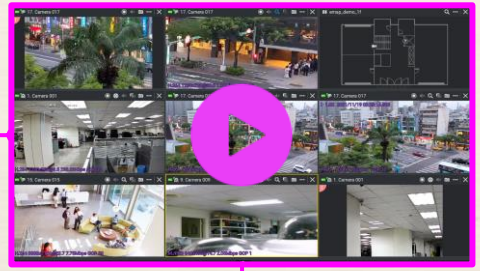
RTMP Stream Input

https://www.qnap.com/en/compatibility-qvr-pro

Unified interface for live view & playback, anywhere with a PC or mobile device

Monitor the live view of multiple channels and playback on 1 single interface.





1-click to sync playback all video views

1 click to jump to the previous playback time

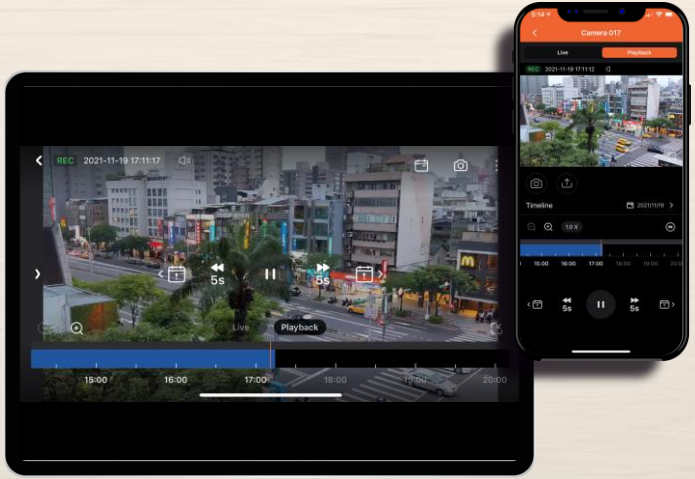
1 click to switch between Live & Playback

Surveillance Client for mobile and home environment

QVR Pro Client

Mobile device recording and playback

Mobile device recording and playback protect important people, things, and objects anytime, anywhere.



QVR Viewer

Apple TV Monitoring App

The new Apple TV monitoring application is a convenient APP installed on Apple TV for monitoring and playback.

Qsirch full-text search tool for browsers

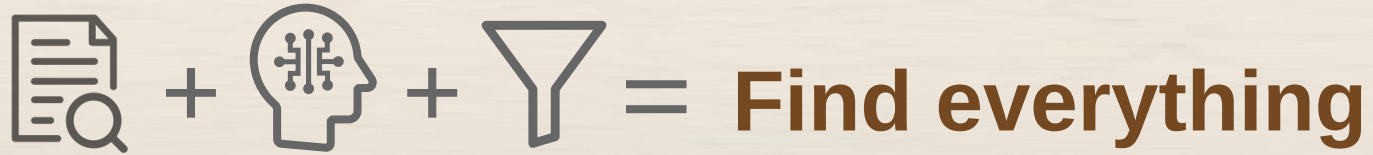
NAS Edition

Search massive data in the NAS.

PC Edition

The most powerful search engine that integrate with NAS and PC local search.

Qsirch is a fast, full-text search engine that enables you to find files based on filename, content, and metadata. Qsirch's search functions are also available using a companion mobile app, browser extension, and Mac® Finder.



Full-text search + **AI search** + **Multiple filters** = **Find everything**

Qfiling auto archive and filing

Qfiling automates your file organization. All you need to do is categorize your files, set a schedule, and Qfiling will do the rest. It’s easy, smart, and efficient!

Flexible

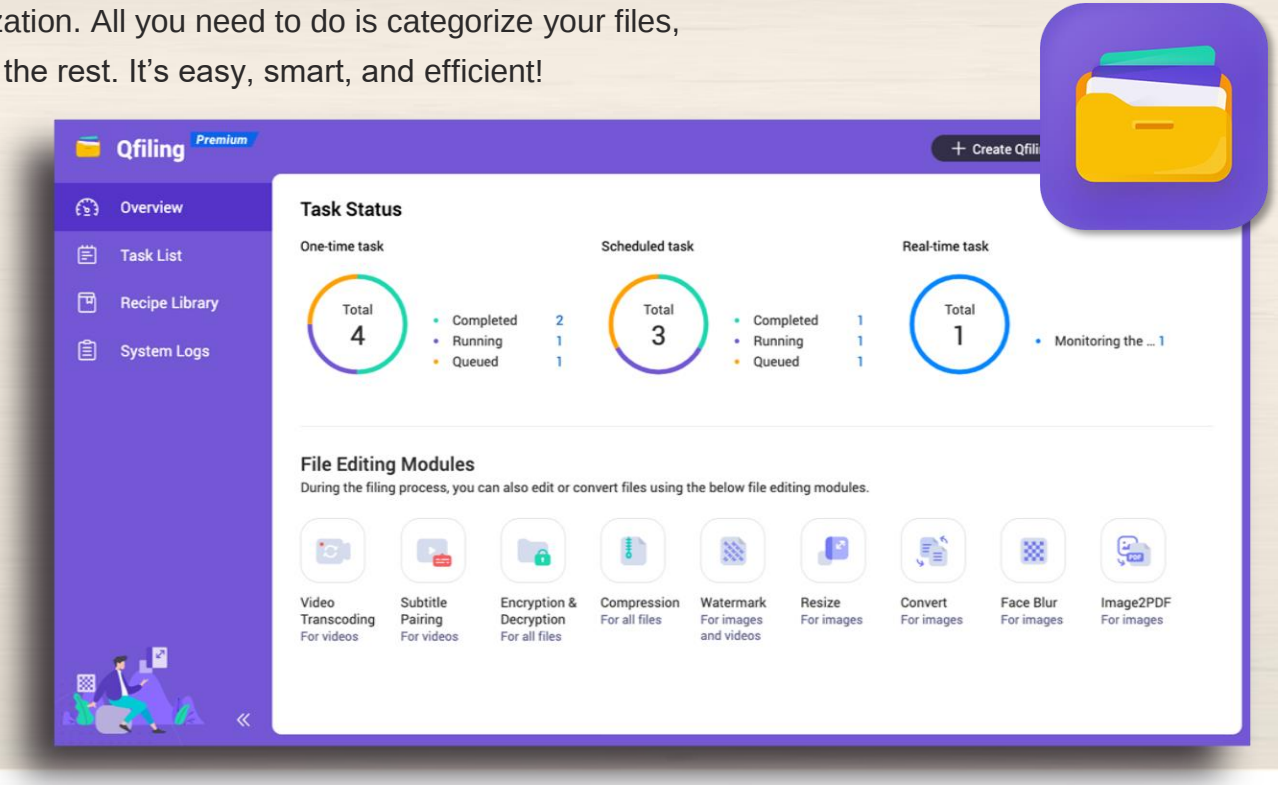
Customize the filing and batch editing rules.

Efficient

Scheduling for auto filing.

Total Control

With system logs, filing status is easily accessible.



For video streaming and suitable as a multimedia server

Various multimedia files, such as photos, music, and video files, can be easily centrally stored. Enjoy your NAS collections on your phone, tablet, or TV.

Use Cinema28 to stream multimedia to various AV playback devices.

Stream/Transform Multimedia to Various AV Devices with Plex

Play via Qmedia on Apple TV/Fire TV/Roku/Android TV

QuMagie AI smart album, automatic face recognition, and object classification

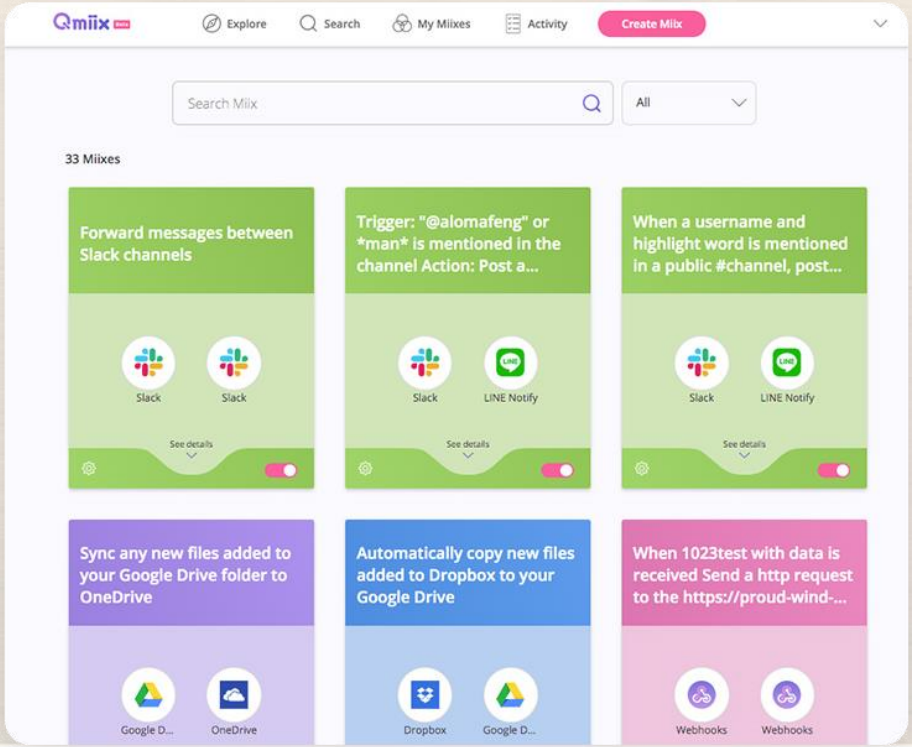
Customize and automate workflows

across multiple clouds, NAS, and applications to help save time and cost

Qmiix

Cross-Platform Workflow Automation Solutions

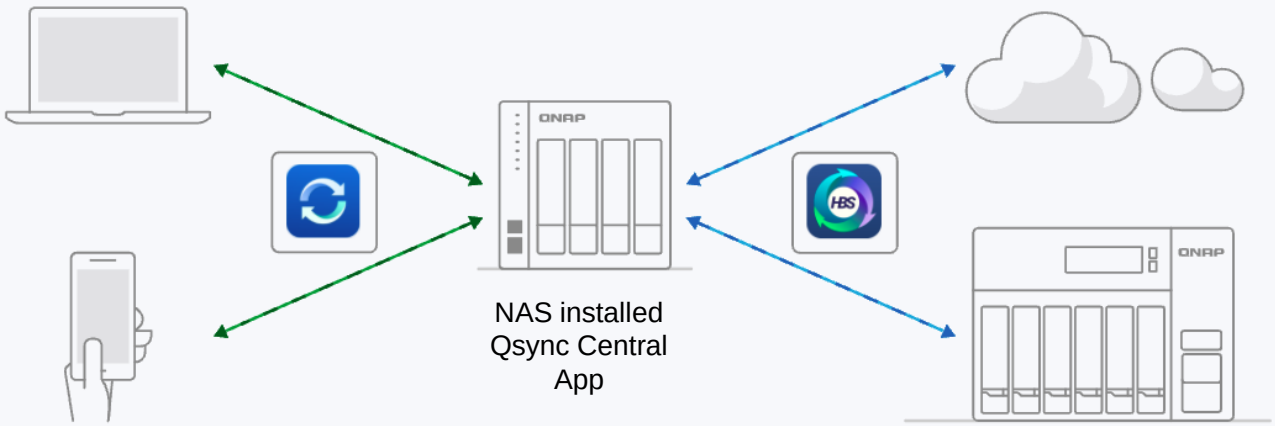
Qmiix can connect and automate workflows between QNAP NAS, cloud services, social networking, and communication software, simplifying routine tasks such as backup, document posting, and event notification. In addition, Qmiix provides efficient communication channels and a flexible multi-cloud backup environment to enhance the productivity of SMEs and collaborative teams.



Qsync cross-device file synchronization technology for individual and team collaboration

Qsync allows you to conveniently synchronize real-time files between your QNAP NAS and bound devices, suitable for desktops, laptops, and mobile devices. As a result, you can access the newest data on all your devices and easily share it with your work team or family members.

- Centralized management of binding devices to improve security and management efficiency
- Sync files to other NAS or cloud with Hybrid Backup Sync

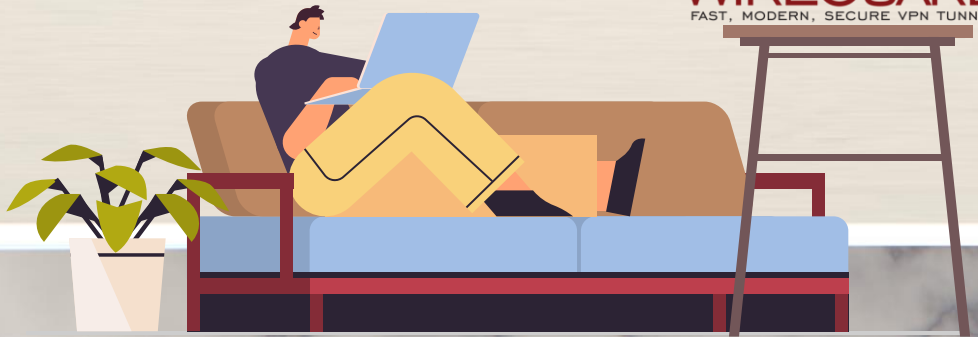


NAS installed Qsync Central App

- Central control mode and user-defined mode flexible configuration
- Up to 64 version-controlled, restore data at any time
- Remote erase to delete synced files from lost devices

Lighter, faster VPN service for personal use

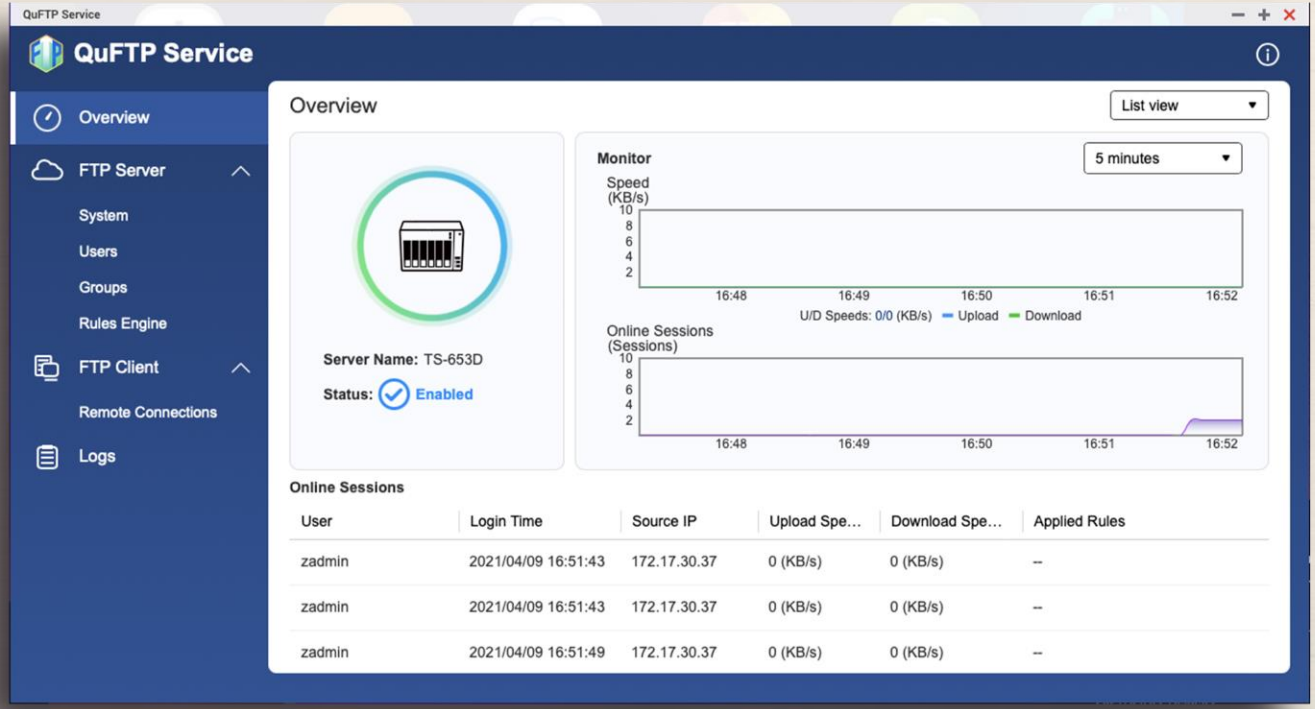
- The new QVPN supports WireGuard VPN, which is lighter, easier to set up, supports multiple user platforms, and greatly improves the speed. It is an essential tool for personal users and works from home.
- The Kernel layer processes the VPN encrypt packet directly, and the transmission speed is faster.
- Login with key only. (No general account management)



WIREGUARD
FAST, MODERN, SECURE VPN TUNNEL

QuFTP remote file FTP access service

- Can be updated independently
- Supports FTP server
- Supports TLS settings
- Supports QoS settings
- Support specification setting
- Supports FTP client



Turn the NAS into a local computer

through Ubuntu Linux Station, or connect at any time through the remote

Remotely connect to Ubuntu Linux Station anytime

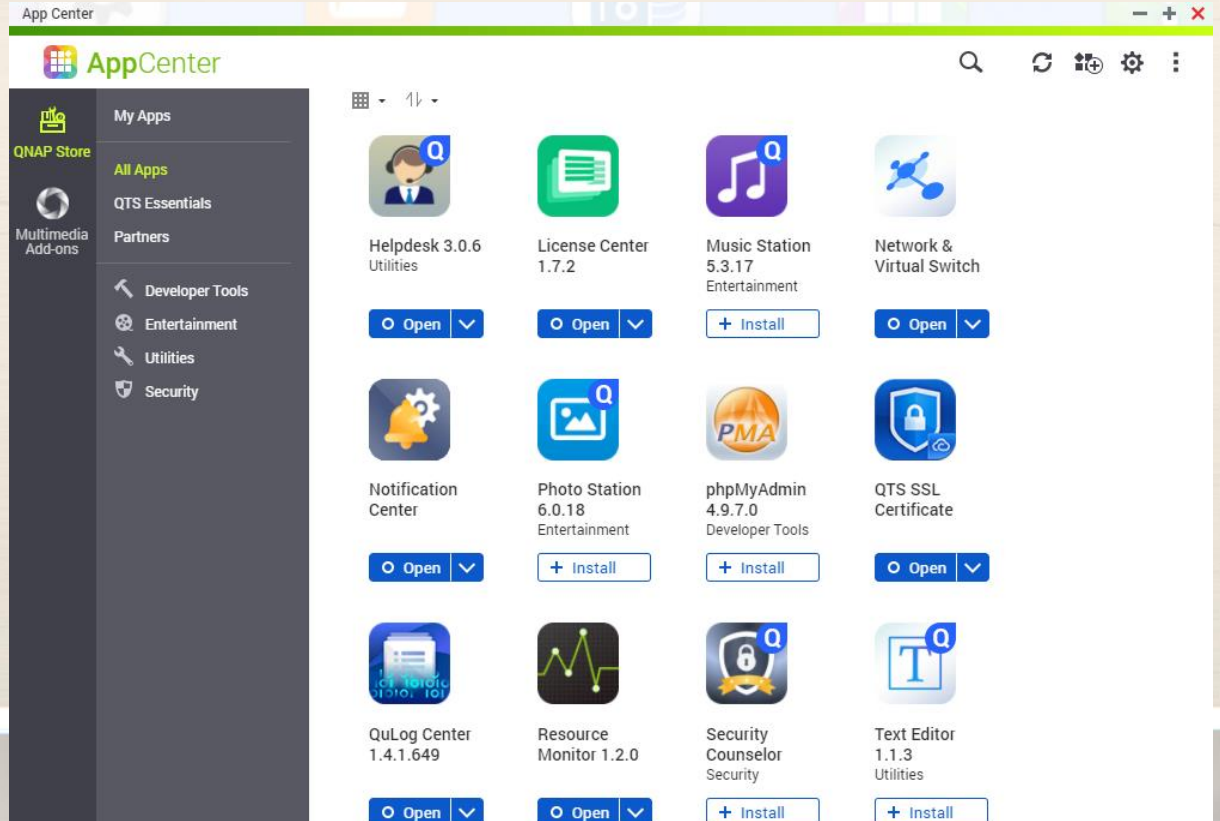
Using a remote connection, you can connect to the Ubuntu operating system at any time through the Internet

Ubuntu Linux Station turns a NAS into a computer

Connect a keyboard, mouse and HDMI monitor to your NAS and instantly turn it into an Ubuntu computer

App Center

Wide variety of applications



NAS functions beyond imagination

QNAP APP Center includes various applications. You can install and expand multiple functions of the NAS on-demand. QNAP keeps developing products and seeks cooperation with related application software. We evolve every second, care about users' needs, and continuously try various forward-looking ideas. It is the only constant persistence of QNAP in the rapidly changing AI era.

https://www.qnap.com/zh-tw/app_center/

Extended warranty up to 5 years

The TS-410E comes with a 3-year warranty. However, if you need a longer warranty period, you can purchase the QNAP Extended Warranty Service (QEWS) to stretch your warranty coverage to up to 5 years.

QNAP

Silent 2.5" SSD NAS

TS-410E

Pure quietness,
giving you a fresh experience.

intel. CELERON

4K

HDMI

2.5GbE

SATA SSD

2.6 GHz

8 GB

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