QNAP

# TS-855X

Powered by Intel Atom® C5125 8-core 2.8GHz processor, support up to 128GB memory, hybrid storage architecture suitable for small and medium-sized enterprises backup and monitoring applications

intel. ATOM

10 GBASE-T

# Powered by server-grade Intel 8-core CPU strong performance and expandability

## Intel 8-core CPU

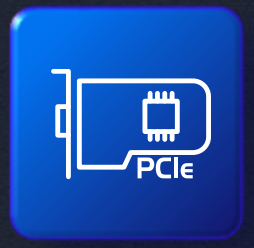
Server-grade Intel Atom® C5125 2.8GHz 8-core processor provides powerful NAS performance

## 1 x 10GBASE-T & 2 x 2.5GbE

Integrated 10GBASE-T & dual 2.5 GbE network ports, provide smooth data transmission experience

## Dual M.2 PCIe SSD slots

Two PCIe Gen3 x4 M.2 2280 slots for optimal configuration of NVMe SSD and 3.5" SATA HDD




## 2 x PCIe Gen3 x4 slots

Provide a variety of expansions including 10G/25GbE network card, M.2, HBA and other expansion cards

## Maximum 128 GB memory

Pre-installed 8 GB non-ECC memory with 4 x DDR4 UDIMM slots, optionally support highly reliable ECC memory modules

## Hybrid architecture

6 x 3.5”/2.5” SATA HDD + 2 x 2.5” SATA SSD provide a hybrid NAS with high cost performance ratio

# Choose between QTS and ZFS based QuTS hero

TS-855X is shipped with the QTS operating system, which has powerful data transmission performance and more efficient memory usage, and enjoys the Qtier automatic tiered storage function. You can also change to the QuTS hero operating system according to your needs

| | QuTS hero | QTS |
|---|---|---|
| **Filesystem** | ZFS | Ext4 |
| **SSD cache** | Read Cache | Read/Write Cache<br>Read Cache<br>Write Cache |
| **Inline Compression** | Yes<br>(LZ4 compression, ideal for RAW files and document files) | No |
| **Inline Deduplication** | Yes<br>(At least 16 GB RAM required) | No |
| **HBS with QuDedup for Remote Backup** | Yes | Yes |
| **Power Failure Protection (Software)** | ZIL<br>Copy-on-Write | No |
| **Permission Management** | Rich ACL (14 types) | POSIX ACLs (3 types) + certain special permissions |
| **Capacity Expansion** | Upgrade RAID capacity<br>Change higher capacity disk drives<br>Attach expansion enclosures/JBODs | Add a disk drive to a RAID group<br>Upgrade RAID capacity<br>Change higher capacity disk drives<br>Attach expansion enclosures/JBODs |
| **Data Security** | Better<br>(Self-Healing & Copy-on-Write) | Standard |
| **Recommendation SSD Configuration for Video Editing Applications** | Use SSD Pools<br>Note: Set the block size 128K when creating Folders/LUNs | Editing (from original/RAW files): Use SSD Pools<br>Post production: Enable Read/Write cache<br>Note: Set the block size to 32K or 64K when creating Volumes, and choose “All I/O” for cache mode. |

# Support Intel QAT and SR-IOV to increase efficiency

SR-IOV

## SR-IOV Network I/O Virtualization

Install a PCIe network card that supports SR-IOV technology, and directly allocate the bandwidth resources of the physical network card to the virtual machine.

QAT

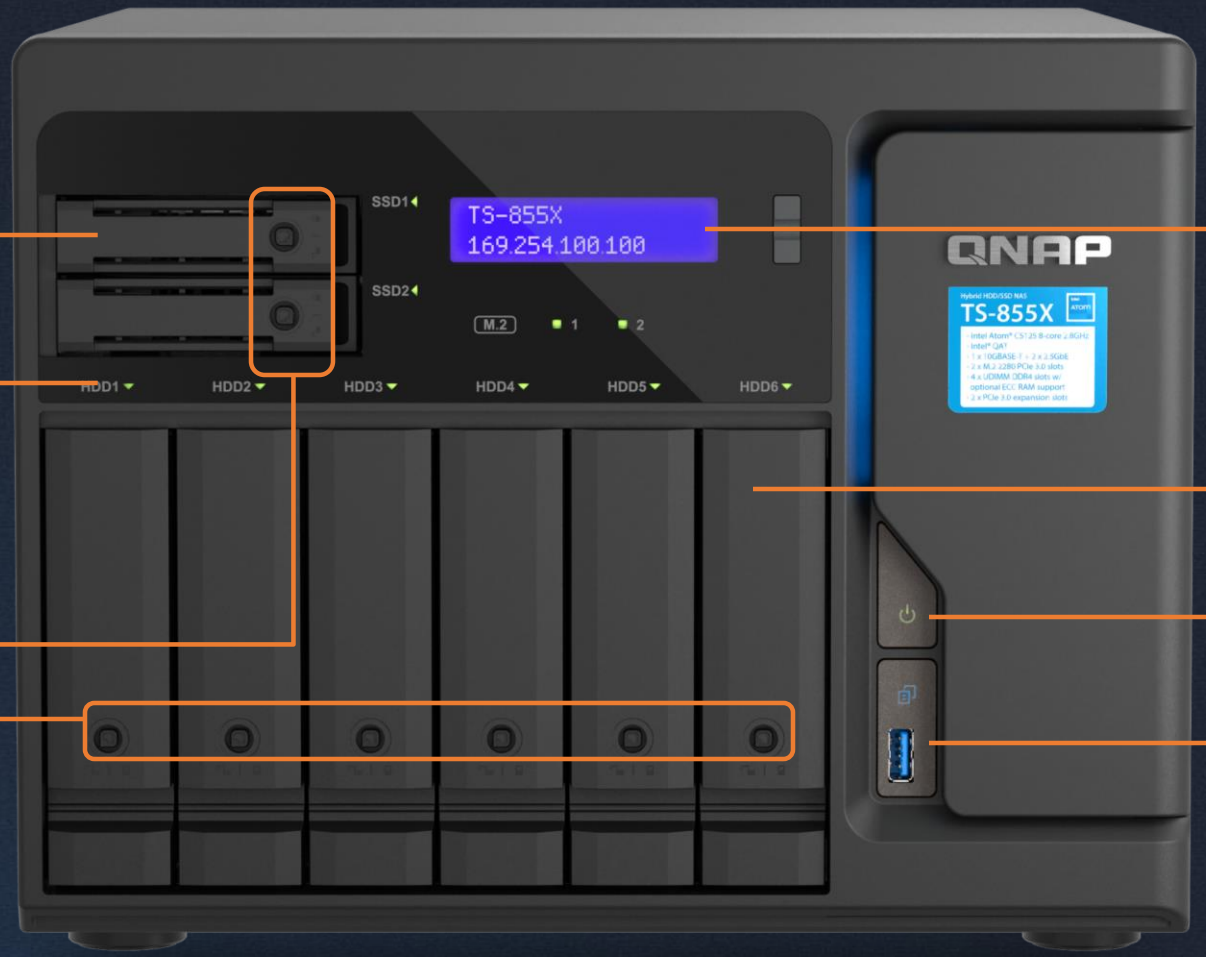
## Intel® QAT hardware acceleration

Supports the Intel® QuickAssist hardware acceleration engine (Intel® QAT), which accelerates data compression/decompression, and can greatly improve the performance of encryption and decryption transmission operations

# Hardware

TS-855X | 8-bay Hybrid HDD/SSD NAS

# TS-855X front view




2 x 2.5”SATA 6Gb/s SSD tray

HDD port LEDs

Lockable tray with 2 keys provided

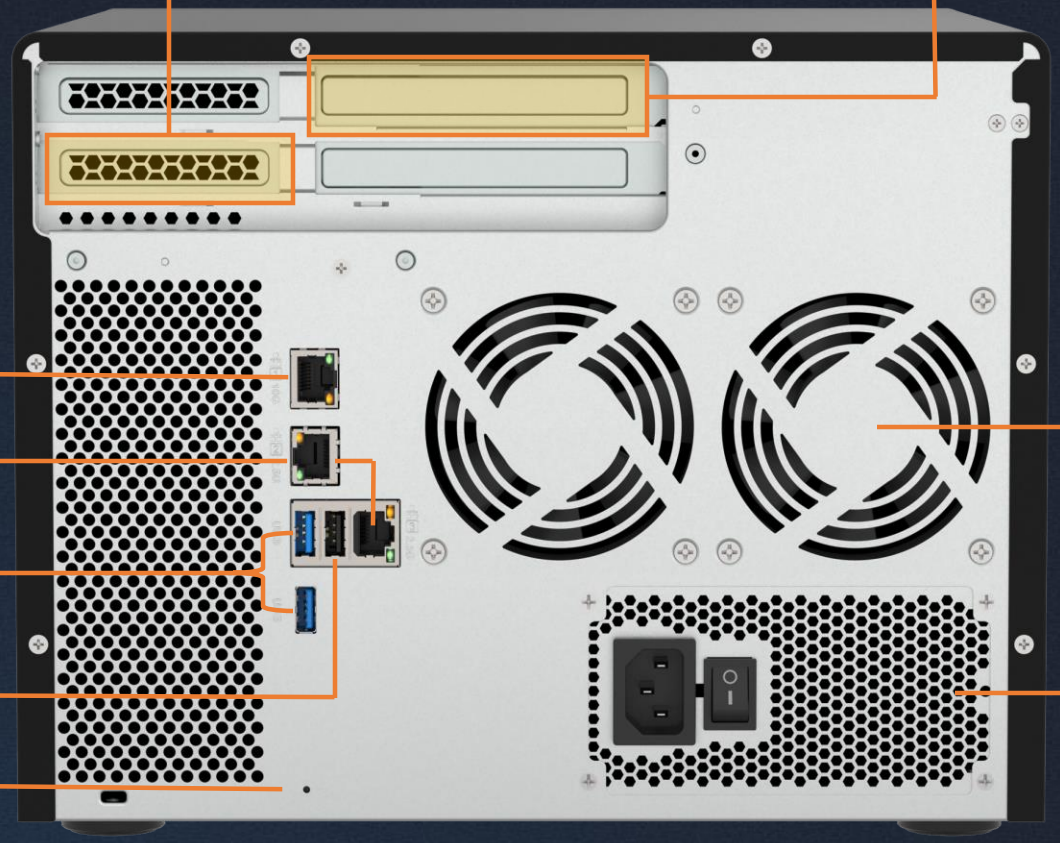
LCD panel and buttons

6 x 3.5"/ 2.5”SATA 6Gb/s HDD/SSD tray

Power button

1 x USB 3.2 Gen 1 & OTC button

# TS-855X rear view



# Internal design

4 x DDR4
UDIMM slots

2 x M.2 2280 PCIe
Gen3 x4 slots

1 x PCIe Gen3 x4 slot

1 x PCIe Gen3 x4 slot

# Support ECC Memory (Error Correcting Code)

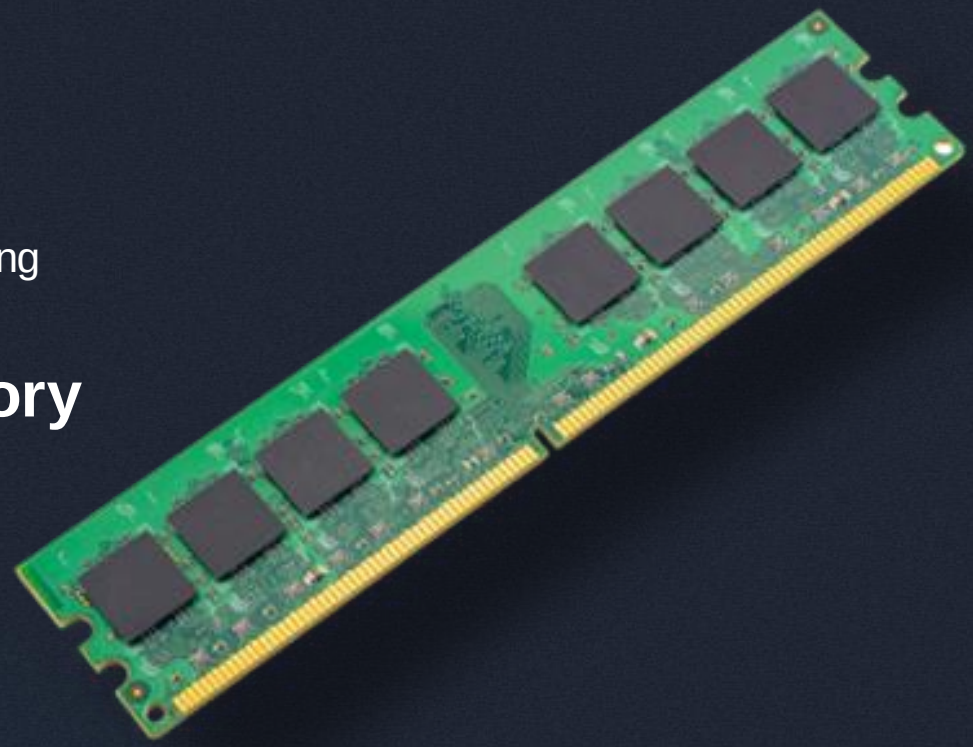
**Reliable memory and avoiding data corruption**

**ECC**

TS-855X supports ECC memory, automatically detecting and timely correcting single-bit errors

## System supports up to 128GB (4 x 32GB) memory

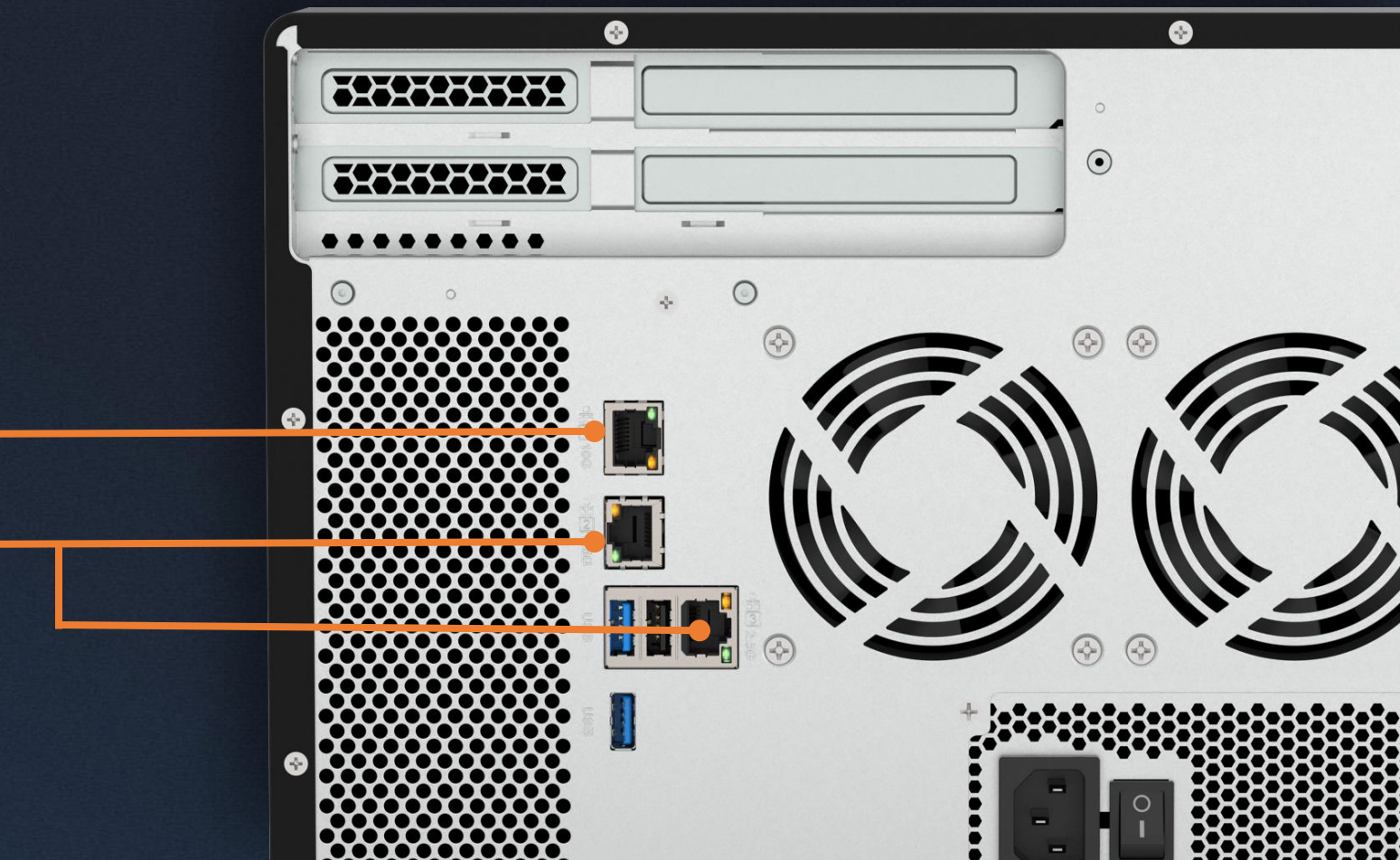
- The NAS is pre-installed with a 8GB non-ECC UDIMM memory by default.
- ECC memory and non-ECC memory modules cannot be installed together



# Features 10GBASE-T & 2.5GbE connectivity

## 1 x 10GBASE-T + 2 x 2.5GbE ports

Sufficient 10GBASE-T & Dual 2.5 GbE network ports, provide smooth data transmission experience



# Compared to the previous model

| | TS-855X NEW | TS-h886 | TS-673A |
|---|---|---|---|
| **SKU** | TS-855X-8G | TS-h886-D1602-8G | TS-673A-8G |
| **CPU** | Intel ® Atom® C5125 8-core processor, 2.8GHz | Intel® Xeon® D-1602 2-core/4-thread processor, up to 3.2 GHz | AMD Ryzen™ Embedded V1500B 4-core/8-thread 2.2 GHz processor |
| **Drive bay** | 6 x 3.5-inch SATA 6Gb/s + 2 x 2.5-inch SATA 6Gb/s | | 6 x 3.5-inch SATA 6Gb/s |
| **O.S.** | QTS (Pre-installed) / QuTS hero | QuTS hero (Pre-installed) / QTS | QTS (Pre-installed) / QuTS hero |
| **Memory** | 8 GB UDIMM DDR4 (1 x 8 GB)<br>Max 128GB ( Support ECC ) | 8 GB UDIMM DDR4 ECC (2 x 4 GB)<br>Max 128 GB ( Support ECC ) | 8 GB SODIMM DDR4 (1 x 8GB)<br>Max 64GB ( Support ECC ) |
| **LAN** | 1 x 10GBASE-T<br>2 x 2.5 Gigabit Ethernet Port (2.5G/1G/100M) | 4 x 2.5 Gigabit Ethernet Port (2.5G/1G/100M) | 2 x 2.5GbE (2.5G/1G/100M) |
| **PCIe Slot** | 2 x PCIe Gen3 x4 | 2 x PCIe Gen3 x8 | 2 x PCIe Gen3 x4 |
| **M.2** | 2 x M.2 2280 PCIe Gen 3 x4 | 2 x M.2 22110/2280 NVMe PCIe Gen3 x4 | 2 x M.2 2280 PCIe Gen3 x1 |
| **I/O** | • 1 x USB 2.0<br>• 3 x USB 3.2 Gen 1 | • USB 3.2 Gen 1 | • 3 x USB 3.2 Gen 2 Type-A<br>• 1 x USB 3.2 Geb 1 Type-C |

# Live Demo

Hardware introduction and RAM expansion

QNAP

# QTS 5.1.0

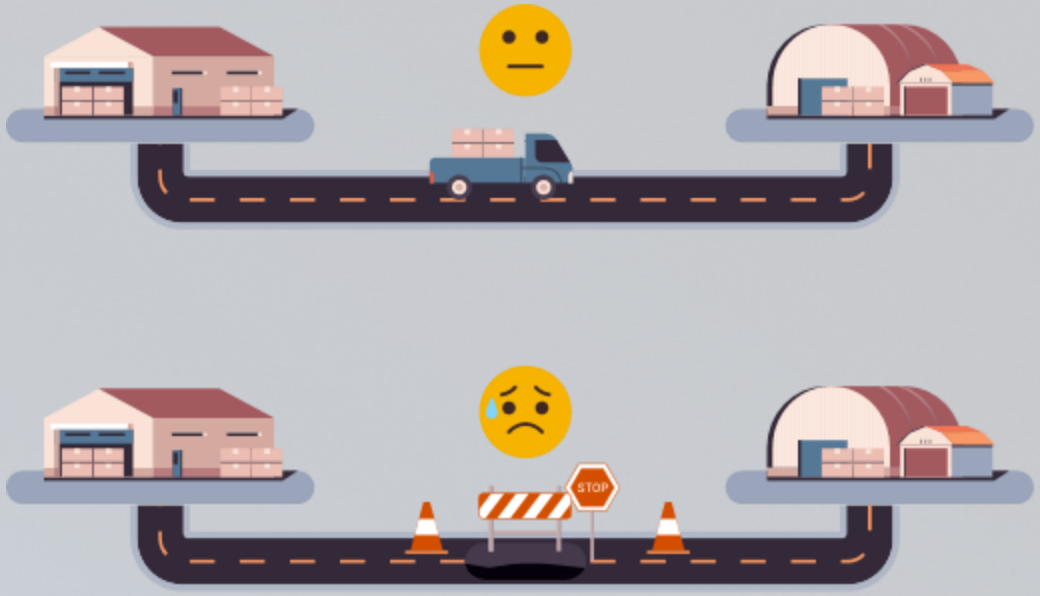
## Boosted performance, flexible management, and higher security

# SMB Multichannel for doubled speed

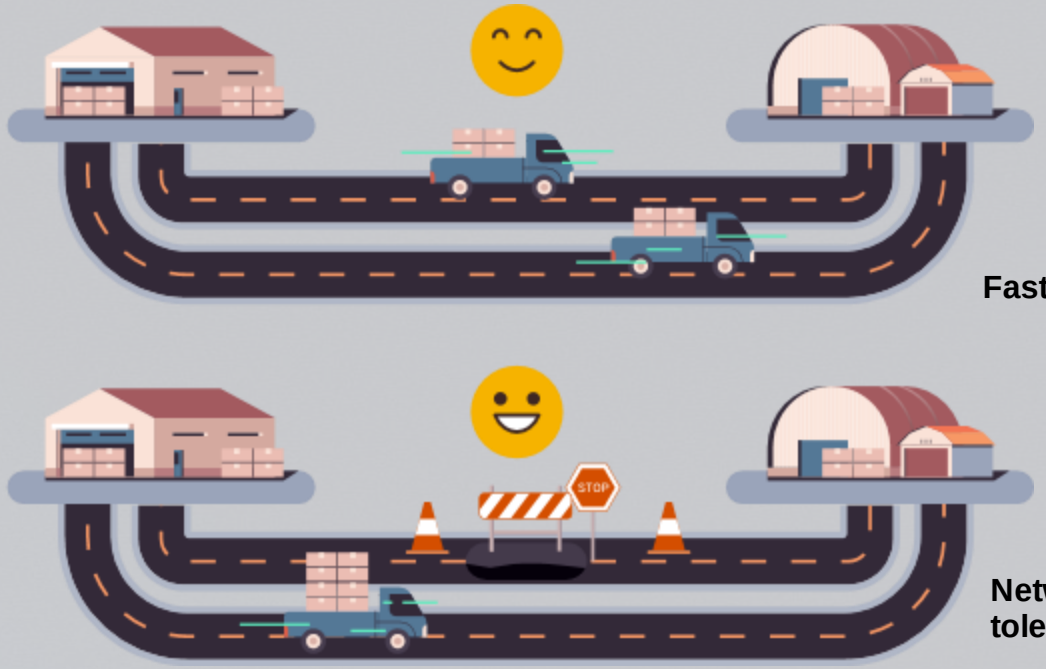
A SMB 3 client automatically establishes multiple connections to the SMB server for a single SMB session. The connection also provides bandwidth aggregation and network fault tolerance.

Requirement: Both NAS and Client device support SMB 3.0 protocol. NAS: QTS 5.1.0 (or later), QuTS hero h5.1.0 (or later). Clients: Windows Server 2012 (or later), macOS Big Sur 11.3.1 (or later)

## Without Multichannel




## With Multichannel

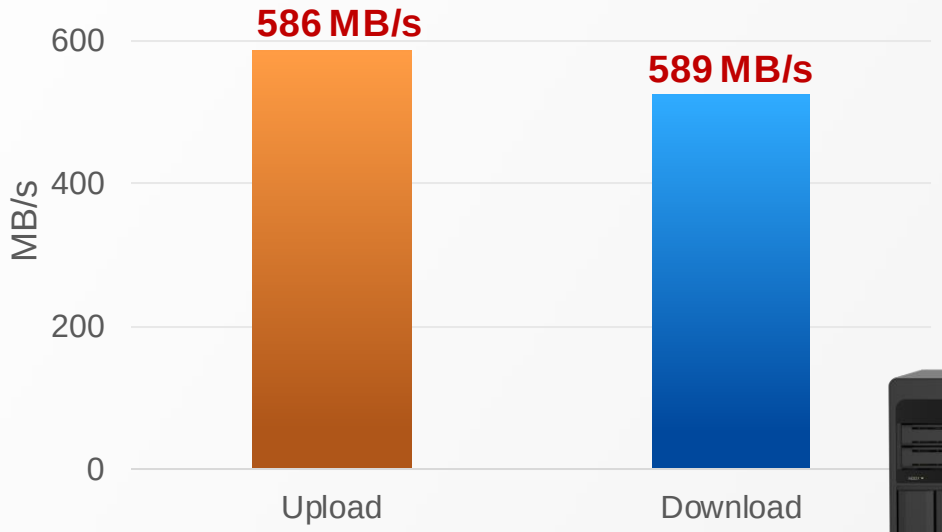



Faster!

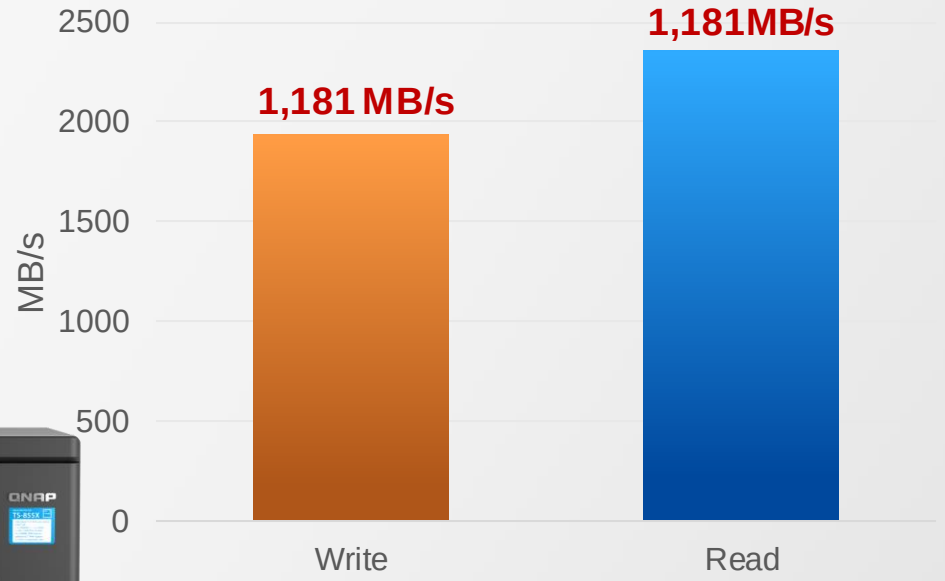
Network fault tolerance!

# Built in 10GBASE-T and dual 2.5 GbE ports bring essential performance out of the box

## 2 x 2.5GbE Windows File Transfer



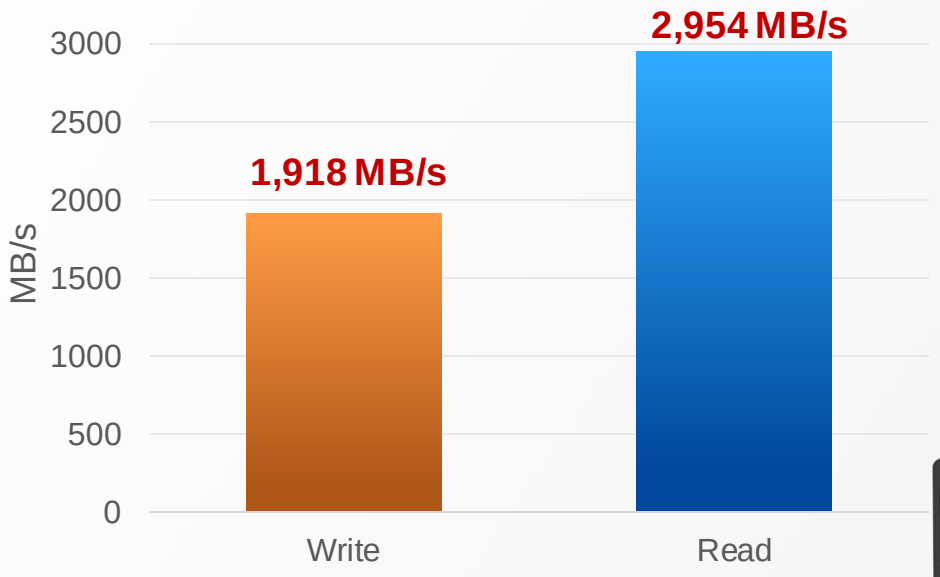
## 1 x 10GbE SMB Sequential Throughput (1MB)



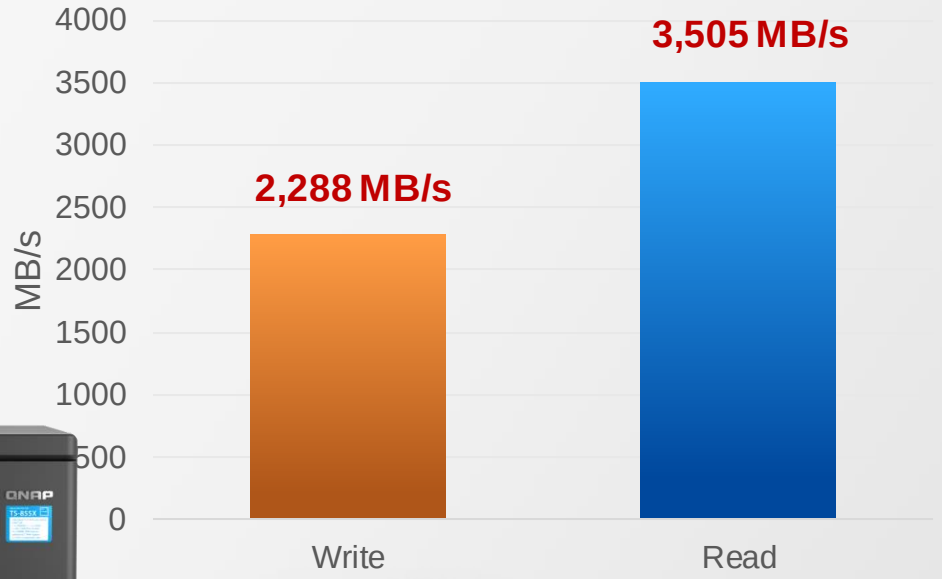

Test environment:
NAS: TS-855X
OS：QTS 5.0.1
Volume type: RAID 5; 8 x Samsung 860 EVO 1TB
Client PC: Windows Server 2016, Intel i7-6700 3.4GHz, 64GB RAM,
IOmeter：RAM*4, 30-sec ramp up time, 3-min seq. run time, 1 worker, 32-outstanding

# Dual PCIe Gen3 slots for 25GbE network expansion

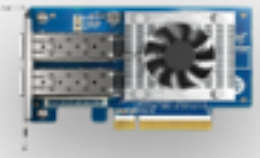
## 1 x 25GbE SMB Sequential Throughput (1MB)




## 2x 25GbE SMB Sequential Throughput (1MB)



Test environment :
NAS: TS-855X
OS : QTS 5.0.1
Volume type: RAID 5; 8 x Samsung 860 EVO 1TB
Client PC: Windows Server 2016, Intel i7-6700 3.4GHz, 64GB RAM,
IOmeter : RAM*4, 30-sec ramp up time, 3-min seq. run time, 1 worker, 32-outstanding



QXG-25G2SF-CX6
2 x 25GbE SFP28 NIC

# Certified for enterprises & virtualization, 8-core NAS for data storage & surveillance

## Intel® 8-Core server-grade CPU

High performance processor suitable for virtual machines and multitasking

Virtualization station

Container station

## 6 x SATA HDD + 2 x SATA SSD hybrid storage

Suitable for multi-device file backup and as a surveillance host

QVR Elite

Qsync

HBS3

HDD+SSD

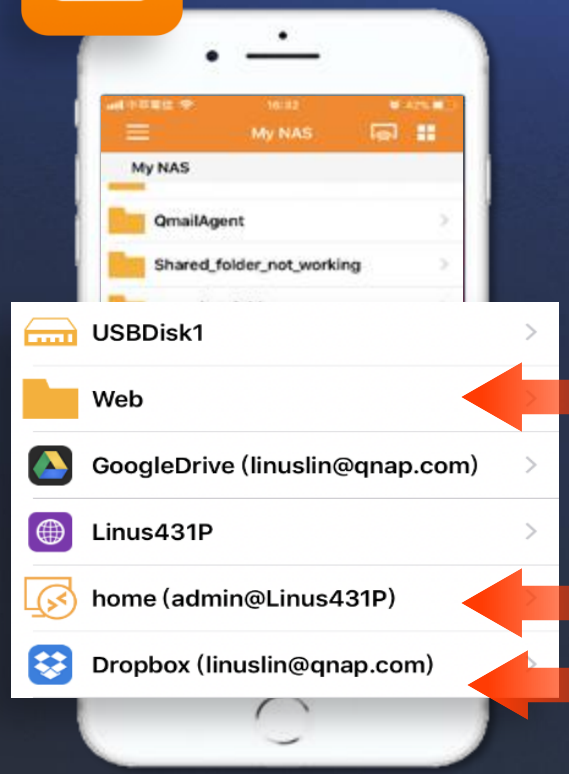
## Certified for virtualization

**Microsoft Hyper-V / Citrix ready / VMware ready / Veeam ready**

# File Station is the ultimate and user-friendly web & iOS/Android-based file explorer

File Station is a file management tool in QTS that enables QNAP NAS users to intuitively access shared folder content through web browsers.

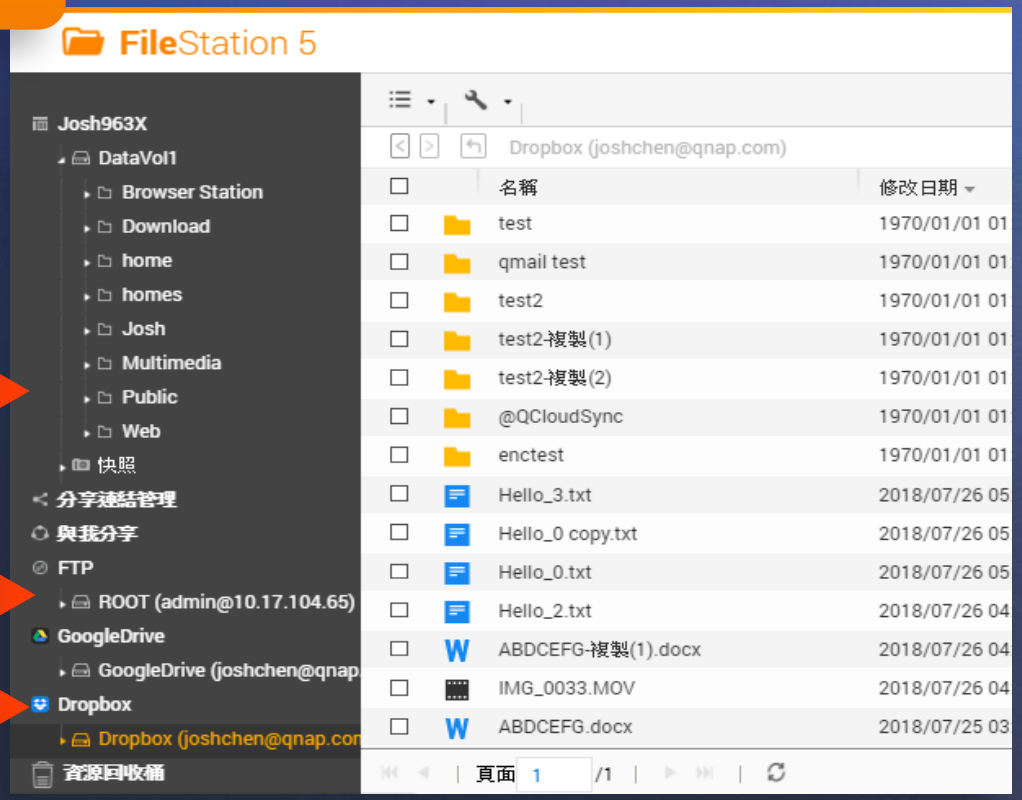
## Qfile




Local NAS

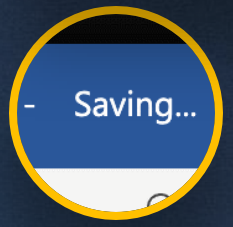
Remote NAS Cloud Storage

## File Station



# Easily make NAS your team collaboration portal with File Station

| | Edit with Office Online | View in Google Docs | Open with Google Chrome Extension |
|---|---|---|---|
| **Requirement** | CloudLink needs to be enabled | CloudLink needs to be enabled | Use Chrome with extension “Office Editing for Docs, Sheets & Slides” to open |
| **Supported formats** | .docx, .pptx, .xlsx | .doc, .ppt, .xls .docx, .pptx, .xlsx | .doc, .ppt, .xls .docx, .pptx, .xlsx |
| **Capabilities** | •File collaboration<br>•Auto save to NAS in real time | •Document preview<br>•Convert to Google docs for editing & saving in your Google Drive | •Document preview<br>•Convert to Google docs for editing & saving in your Google Drive |

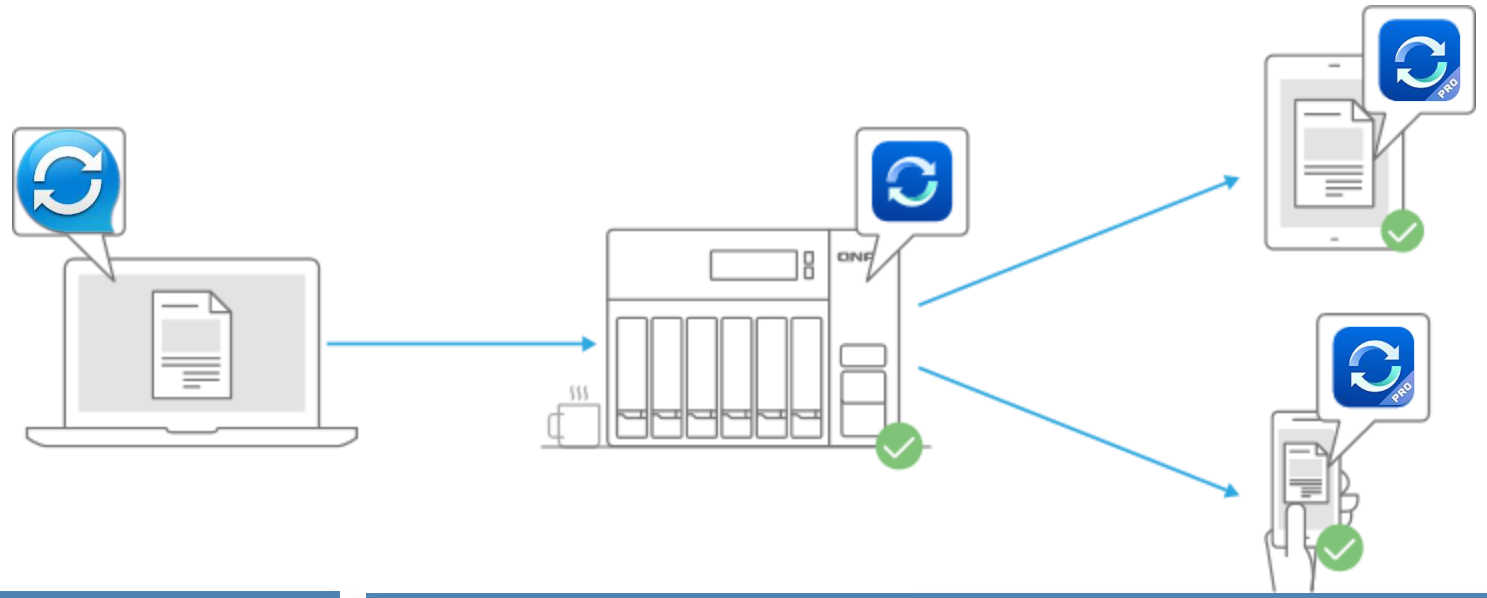


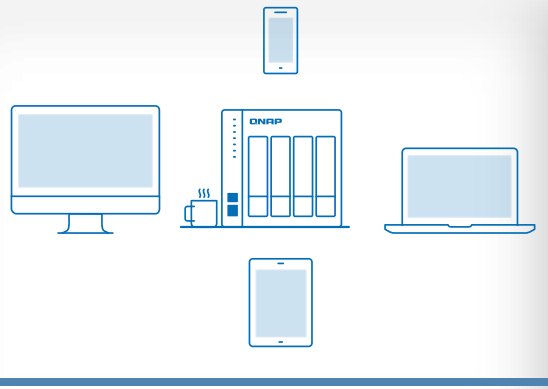

Save to NAS in real time

Multi-user online editing

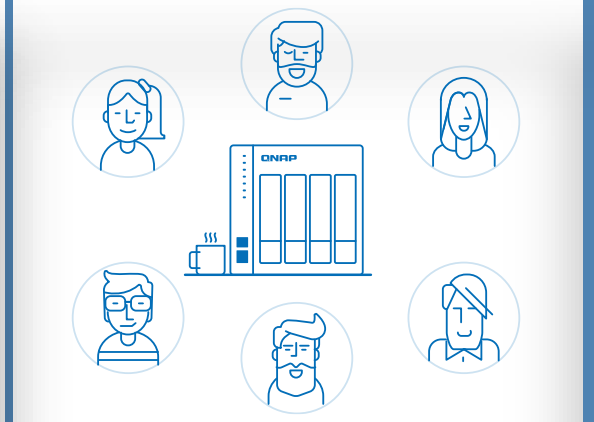
# Qsync 5.0 – Cross-device file sync for individuals and teams

Qsync enables efficient file synchronization between a QNAP NAS and linked devices such as computers, laptops, and mobile devices.
With Qsync, you can easily access data across all your devices and share it among your team members.





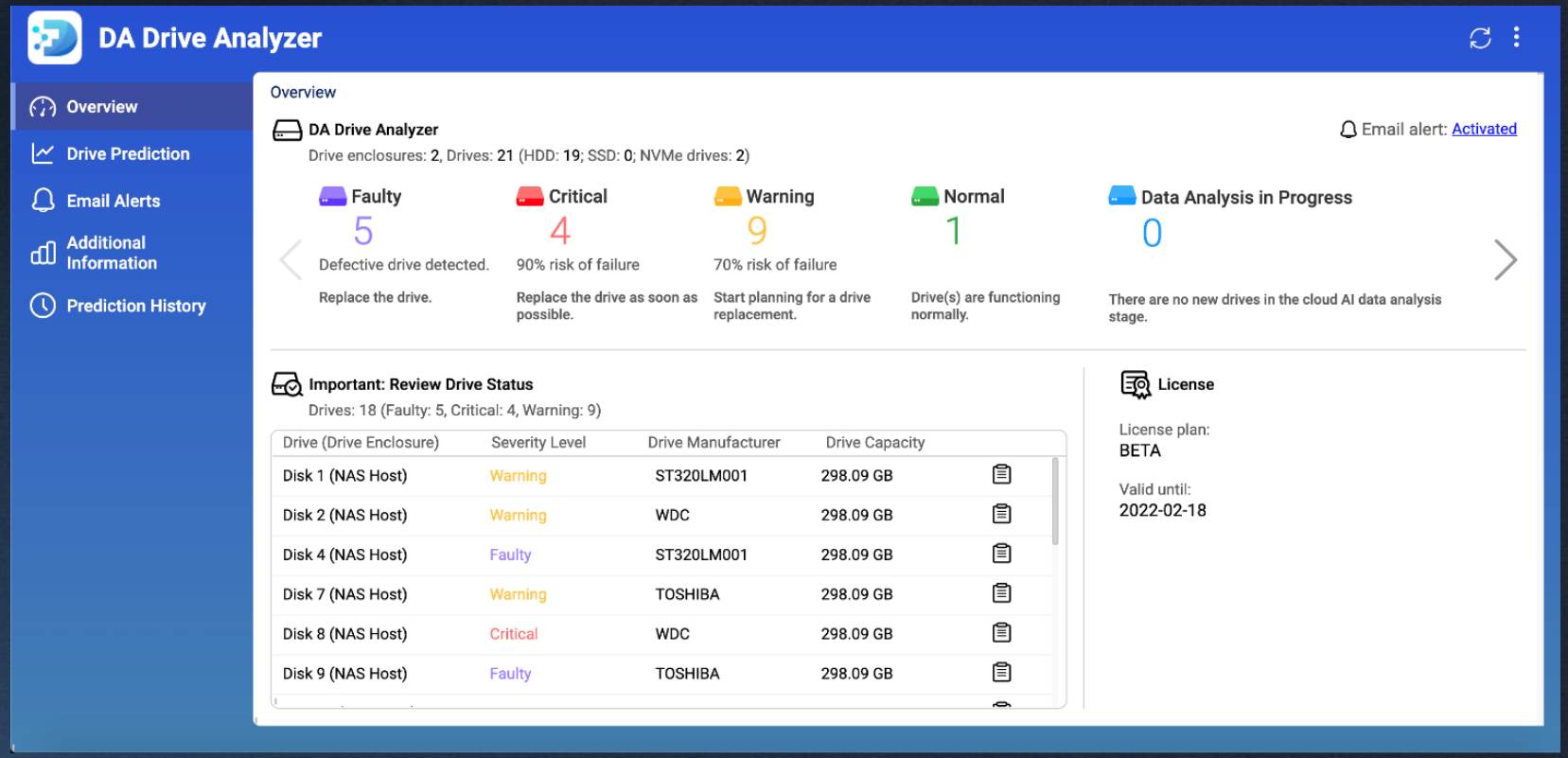
If you own many devices, any file changed on one device will be automatically synchronized with the others.



For team works, any file changed will be automatically distributed to your teams' devices, accelerating and streamlining your workflows.

# DA Drive Analyzer disk failure prediction

**Each NAS can perform one disk prediction for free, and you can also pay to subscribe to enhance protection for all disks.**




## Disk health analysis and failure prediction

DA Drive Analyzer integrated ULINK AI predict technology can warn you before disk failure, help you protect valuable data

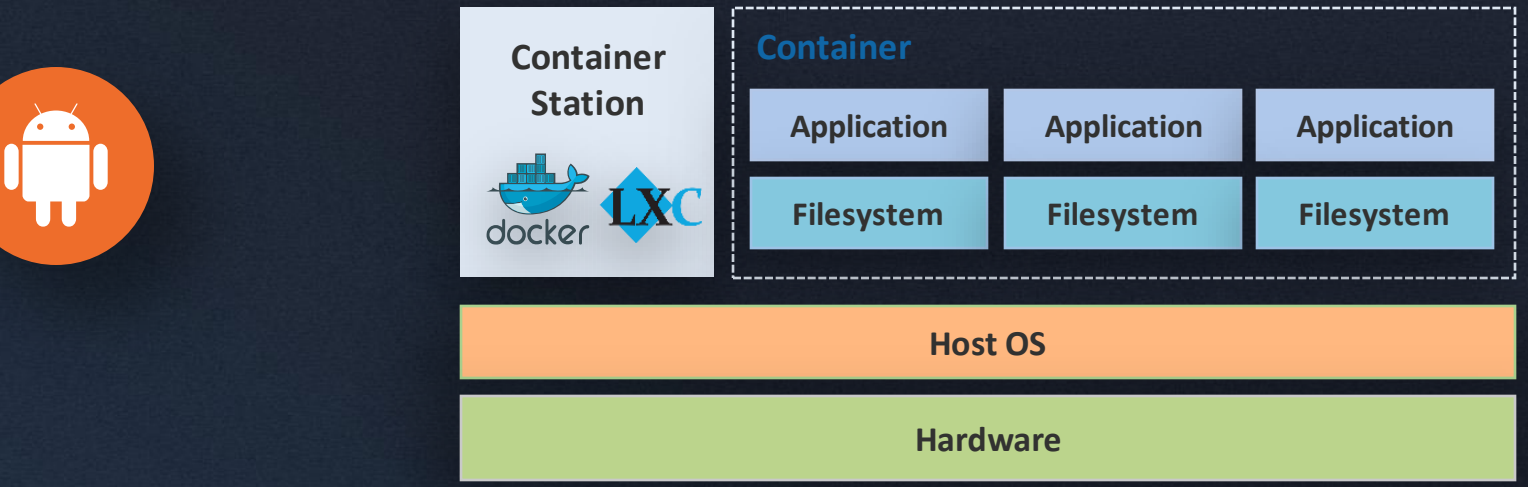
# All-in-one solution for hosting virtual machines and containerized apps

## Virtualization Station

Virtualization Station allows you to create virtual machines (VM) on Turbo NAS, supporting Windows®、Linux® operating systems.

## Container Station

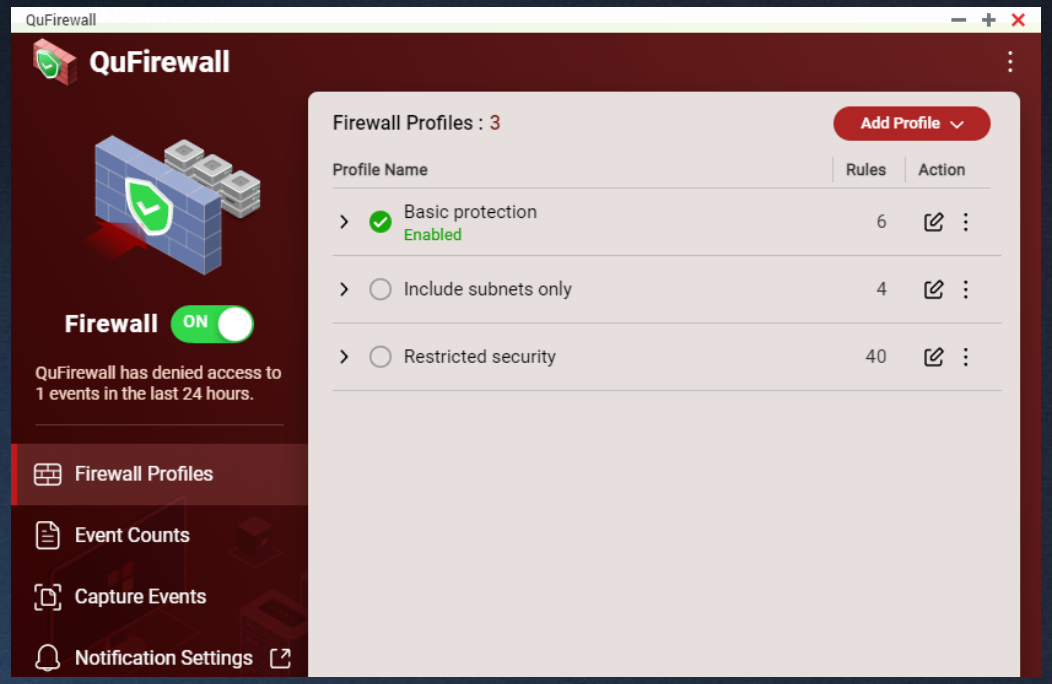
Experience LXD and Docker® lightweight virtualization technologies, download apps from the Docker Hub Registry®, import/export containers, and create abundant microservices.



# Data security

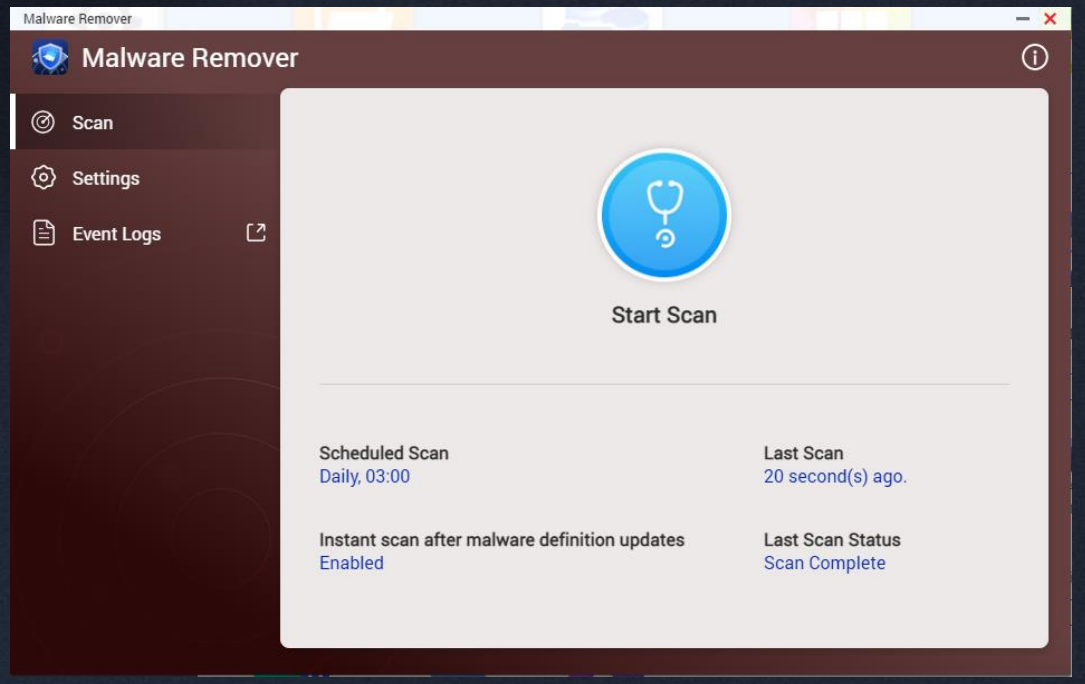
## QuFirewall

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




## Malware Remover

Protect your NAS data against malware attacks



# Snapshots Help You Fight with Ransomware Threats

TS-855X supports Snapshot , like taking a photo - within seconds the complete status of your NAS system and data is recorded.

QTS supports up to **1,024** snapshots, QuTS hero supports up to **65,536** snapshots

**Mitigate the growing threat of ransomware**

**Step 1**

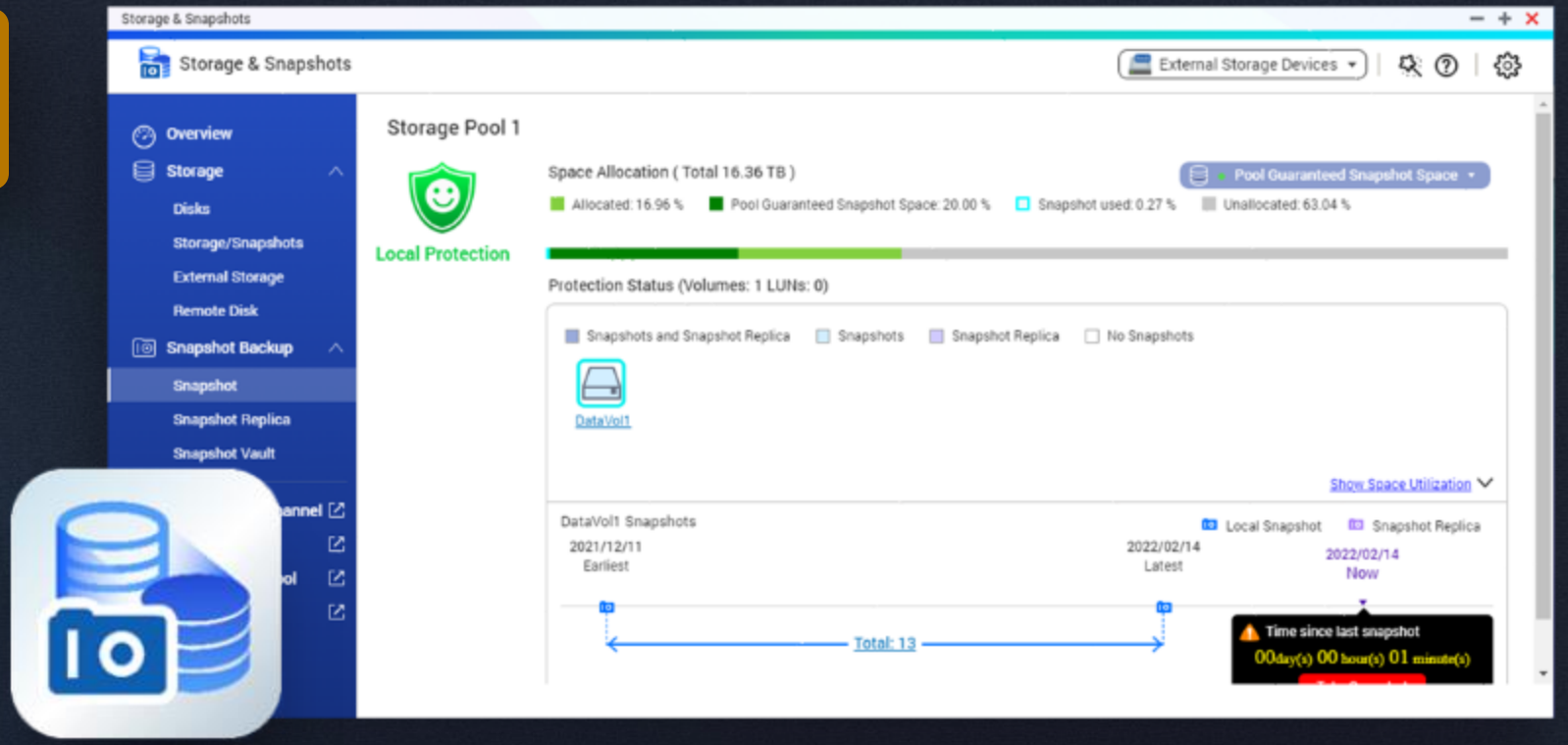
Regularly update, and use Malware Remover

**Step 2**

Routinely back up to your NAS, and create multi-version snapshots

**Step 3**

Back up snapshots to another QNAP NAS



# Your NAS is also a surveillance server

## QVR Pro

- 6,000+ Compatible cameras
- 8 embedded monitoring channels
- Expand to 36 channels by purchasing QVR Pro licenses
- View USB camera images through QUSBCam2

## QVR Elite

The flexible subscription QVR Elite can be expanded to a maximum of 54 channels by purchasing licenses

## QVR Pro Client

- iOS & Android mobile devices
- Support cross-platform ： Windows, Mac, Ubuntu
- Use HDMI output and USB keyboard and mouse to control the NAS through installing Graphic card

# Compatible with a huge amount of camera models

## over 190 brands

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

## over 6000 Models

## ONVIF Profile Supported

ONVIF® | S

**RTSP Stream Input / Output**

**RTMP Stream Input**

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

# Supports up to 24 more HDDs with two JBOD units, add nearly 500TB ( 24 x 22TB ) of storage space

## USB

TR-002

TR-004

TL-D800C

TR-004U

TL-R1200C-RP

| Maximum of JBOD / RAID expansion enclosures | |
|---|---|
| TR-002 | 2 |
| TR-004 | 2 |
| TR-004U | 2 |
| TL-D800C | 1 |
| TL-R1200C-RP | 1 |
| TL-D400S | 2 |
| TL-D800S | 2 |
| TL-D1600S | 2 |
| TL-R400S | 2 |
| TL-R1200S-RP | 2 |

## SATA

TL-D400S

TL-D800S

TL-D1600S

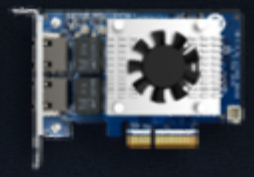
TL-R400S

TL-R1200S-RP

Note: These expansion units can only be used as an individual storage pool or volume on the NAS. Their storage pool or volume cannot be combined into the connected NAS. NAS applications cannot be installed on the them.

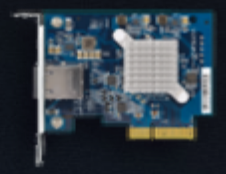
# QNAP 16/32Gb Fibre Channel cards for a reliable, scalable and budget-friendly FC SAN storage solution

## 10GbE NIC



QXG-10G2TB

2 x RJ45



QXG-10G1T

1 x RJ45

QXP-16G2FC : Dual ports 16Gbps

QXP-32G2FC : Dual ports 32Gbps

(FC HBA with 16/32Gb FC transceivers)

## 25GbE NIC

QXG-25G2SF-CX6
(Support 25GbE SFP28, 10GbE SFP+)

2 x SFP28 25Gb/s

## 5GbE NIC

QXG-5G1T-111C

QXG-5G2T-111C

QXG-5G4T-111C

1/2/4 x RJ45

For more, please check :
https://www.qnap.com/go/compatibility/

# 3-year standard warranty covering hardware repair and support services

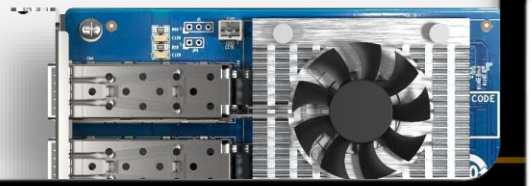
TS-855X is backed by a 3-year warranty at no additional cost.

You can also purchase a warranty extension that extends your warranty coverage up to 5 years total (2-year extended warranty P/N: EXTW-BROWN-2Y).

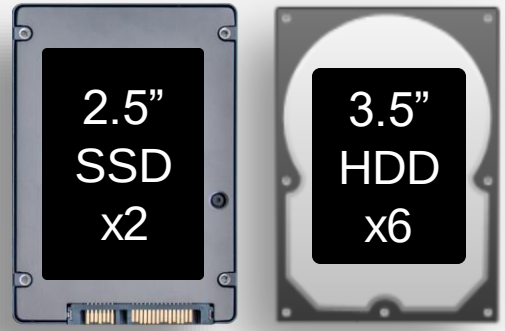
SKU：**TS-855X**

Intel Atom® C5125 8-core CPU 2.8 GHz, , 8 GB DDR4 (1 x 8 GB)

Support 5/10/25GbE NICs



Hybrid storage : SATA HDD + SSD




Supports both

QTS

QuTS hero edition

Support multiple

JBOD

10

Direct connection 2.5GbE

intel ATOM

C5125 2.8 GHz

8-core

CPU

# TS-855X

intel Quick Assist Technology

USB 3.2 Gen1 (5Gbps) & One-Touch-Copy

1 x 10GBASE-T + 2 x 2.5GbE

Availability at least until

2027

128GB ECC Memory

QVR Elite Surveillance solution

2

PCIe Gen3 x4 slots

PCIe Gen3 x4

SR-IOV

Up to 5 years warranty

QNAP

# TS-855X

Powered by Intel Atom® C5125 8-core 2.8GHz processor, support up to 128GB memory, hybrid storage architecture suitable for small and medium-sized enterprises backup and monitoring applications

Copyright© 2023 QNAP Systems, Inc. All rights reserved. QNAP® and other names of QNAP Products are proprietary marks or registered trademarks of QNAP Systems, Inc. Other products and company names mentioned herein are trademarks of their respective holders.