QNAP

Launching the first ARMv8 64-bit NAS that supports Linux VMs

In collaboration with MARVELL

Quad-core, 16-bay, with high capacity & high expandability

Virtualization Edge Station

TS-1635AX

PCIe 10GbE
2 x PCIe slots

2 x M.2 SSD slots

Qtier

QNAP x Marvell excels

The first QNAP ARM NAS supporting Linux virtual machines

Huge 12 + 4 + 2 bay capacity

12 x 3.5” SATA HDD +
4 x 2.5” SATA SSD +
2 x M.2 SATA SSD (2280)

Cost effective Linux VM NAS is here

NAS with quad-core (and increasing) ARM processors provide a lower total cost of ownership than x86-based NAS

TS-1635AX-4G
4C Cortex-A72 1.6GHz, 4GB RAM (1x 4GB

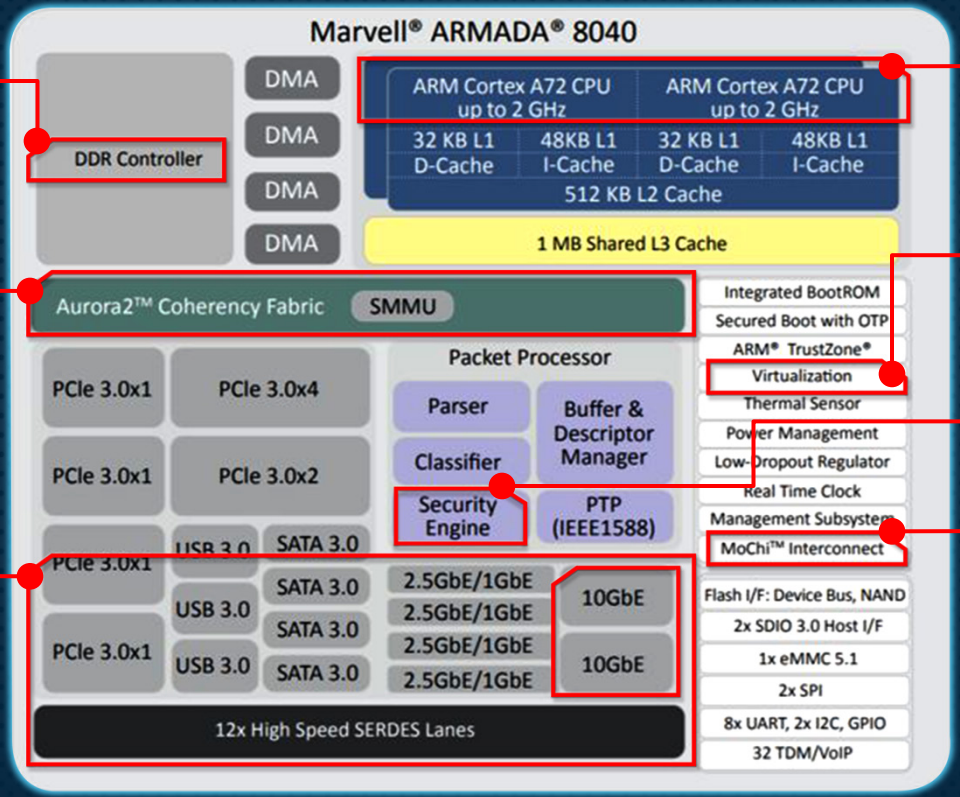
TS-1635AX-8G
4C Cortex-A72 1.6GHz, 8GB RAM (1x 8GB)

The best ARM NAS to date

DDR4 high-speed memory controller

2nd generation Aurora2 high speed, coherency sync can effectively combine the CPU clusters and MCI interface to achieve higher performance

12 high speed lanes for 10GbE, PCIe slots, USB and drive bays



4 x 64-bit ARMv8 Cortex-A72 1.6 GHz embedded processor (SoC)

QNAP's 1st ARM NAS with Linux virtual machines
Virtualization
Edge Station

Up to AES 256-bit encryption engine

Unique MoChi modular technology can agilely support various functional customization requirements

Source: 2018.04.13 https://www.marvell.com/documents/zjpkrnvwlqmrkdfcmbwb/

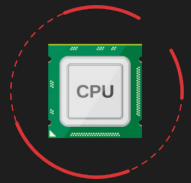
First ARM-based NAS hypervisor

Host multiple VMs and enrich your NAS capacity

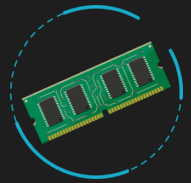
Virtualization Edge Station

Dedicated resources

4 cores

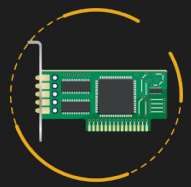


4 GB



250 GB

*2



APP 1 | APP 2

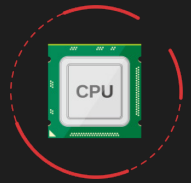
bins/libs | bins/libs

Guest OS | Guest OS

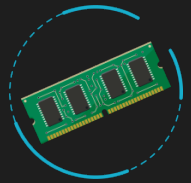
Virtualization Edge Station

Host Operating System

infrastructure

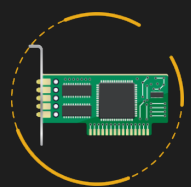


2 cores



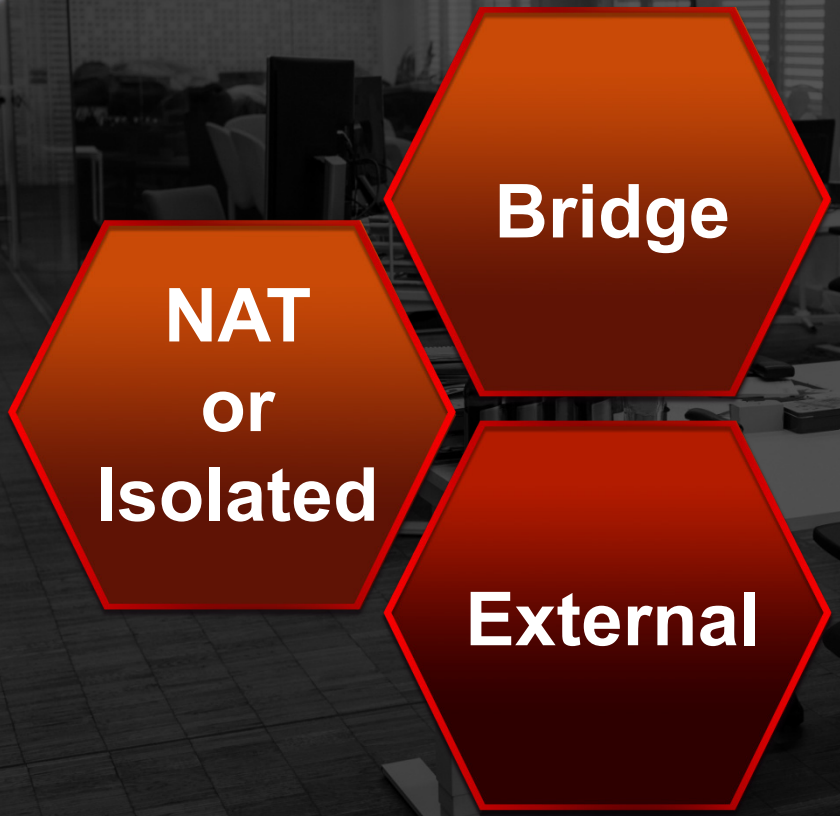
1 GB

50 GB



*1

Flexibly define different network modes



Bridge mode

Bridges different types or segments

NAT or Isolated

Improves safety and security with network address translation (NAT) available

External

Exclusive access to all available bandwidth

QNAP

Your feedback Our improvement

Live Demo

Virtualization Edge Station

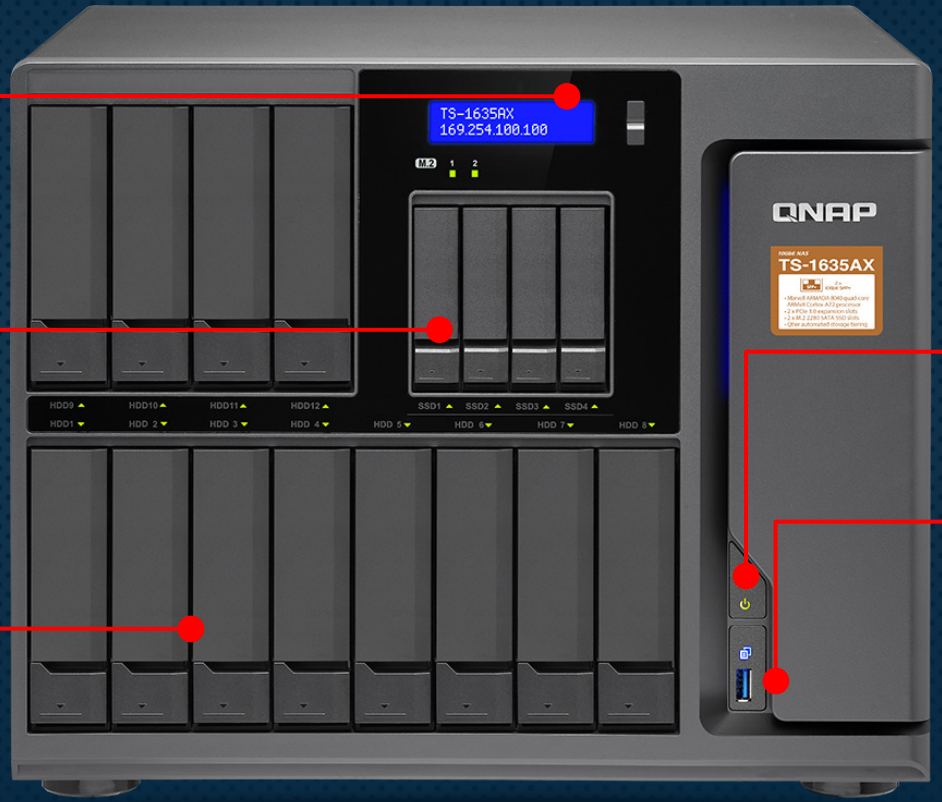
Beta Program soon

TS-1635AX front view

LCD with
Enter & Select buttons

4 x 2.5" SATA 6 Gbps SSD slots, supporting Qtier auto tiering & SSD cache

12 x 3.5"/2.5" SATA 6 Gbps HDD/SSD slot (3.5" HDD installation is toolless)



Power button

USB 3.1 Gen 1 & One Touch Copy button

TS-1635AX internal view

2 x M.2 SATA SSD slots (2280 form factor)

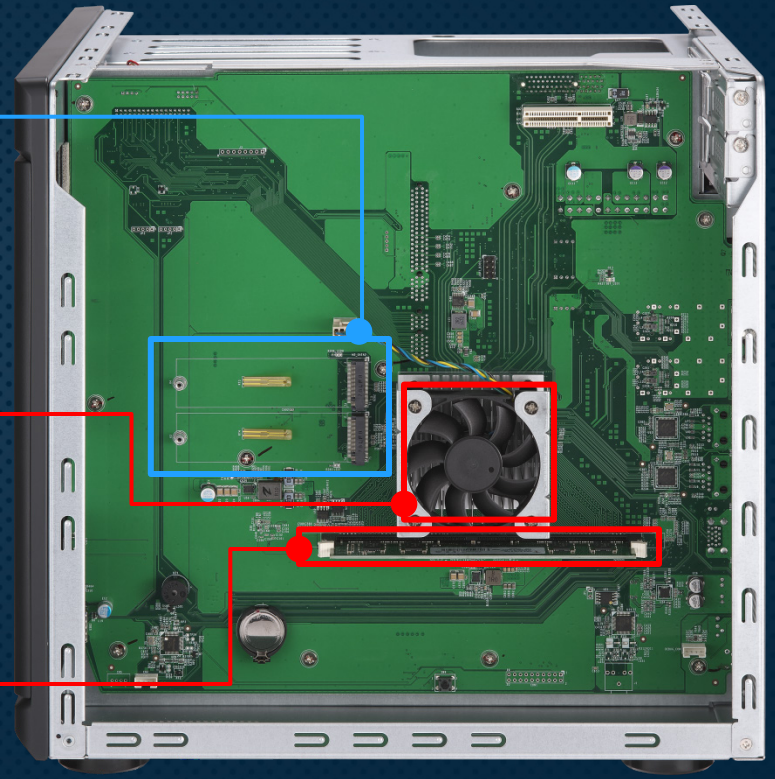
Thermal sensor & Qtier / SSD cache

Compartmentalized smart cooling

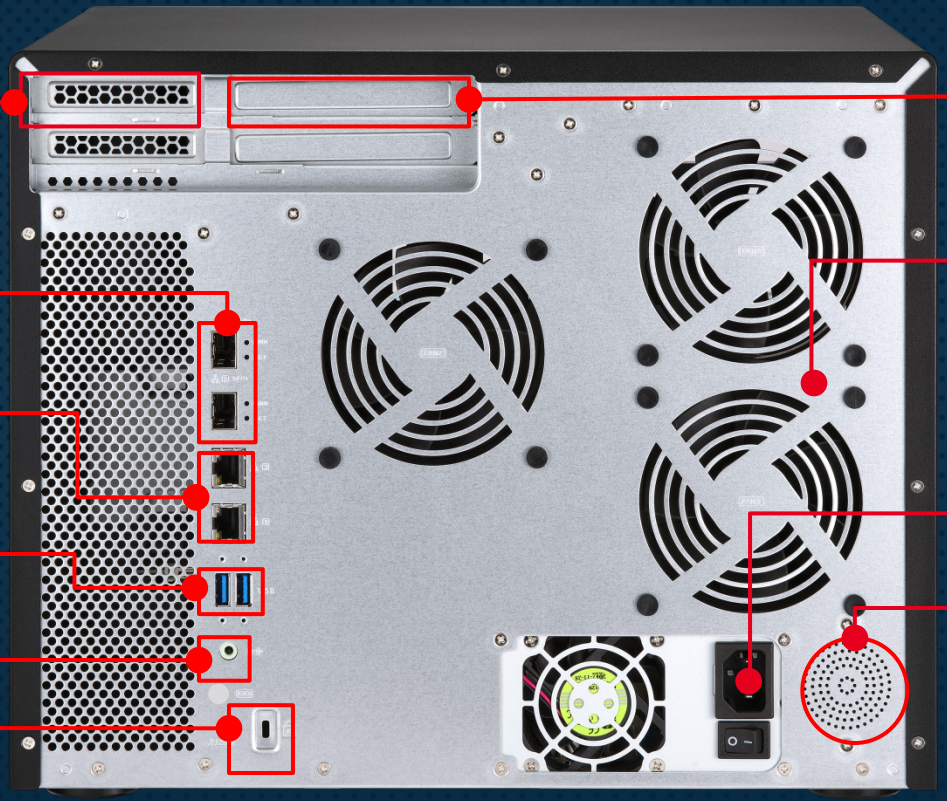
Separately detects the CPU and hard drive temperatures to dynamically control fan speeds for more quiet operations.

Up to 16 GB DDR4

1 x DDR4 Long-DIMM memory slot



TS-1635AX rear view



- 1 x PCIe 3.0 x1
- 2 x 10GbE SFP+
- 2 x GbE LAN
- 2 x USB 3.0 Type-A
- 1 x line out
- Kensington security slot
- 1 x PCIe 3.0 x2
- 3 x 9.2cm system fan
- 250 W power supply
- Speaker

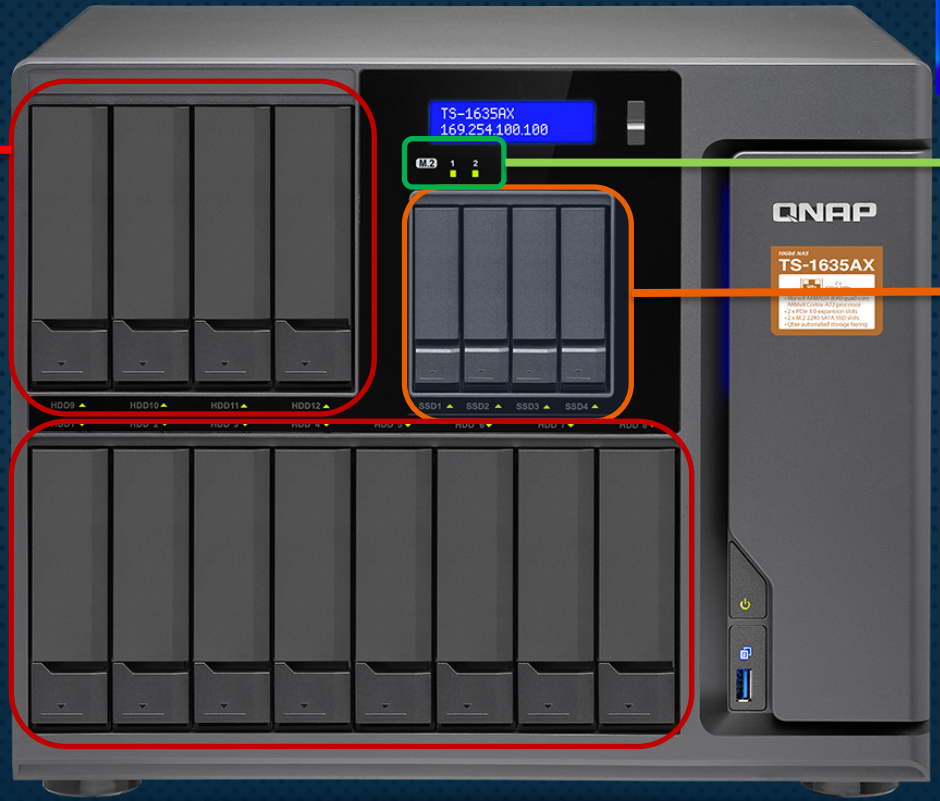
Qtier with hybrid HDD/SSD design

Boost both performance and capacity

12 x 3.5”HDD

2 x M.2 SATA SSD (2280)

4 x 2.5”SSD



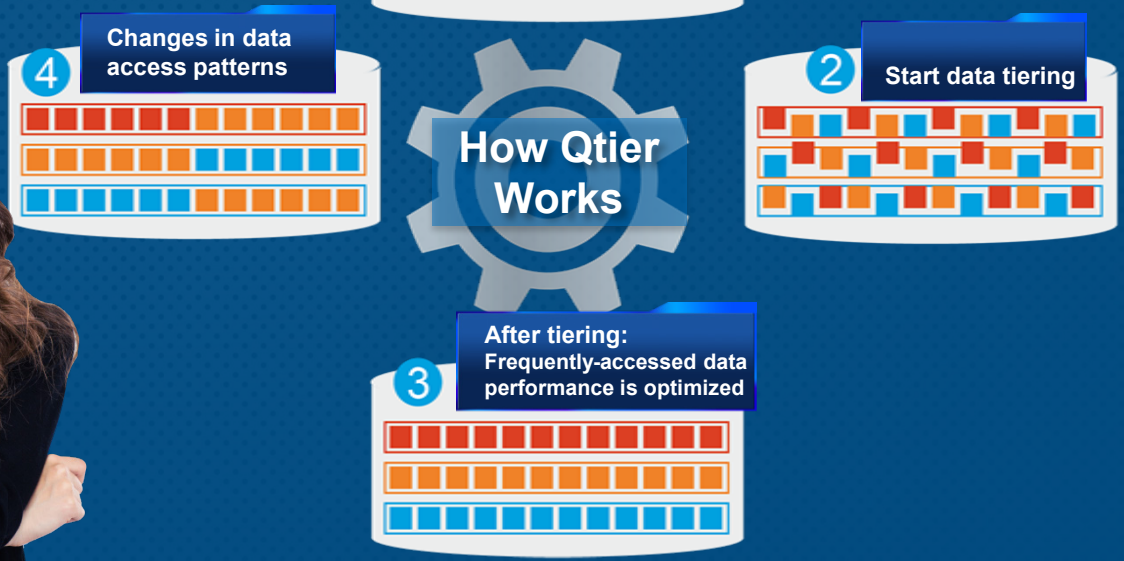
Qtier™ a multi-tier storage management system, automatically moves the most active data to high-performance drives while less active data is migrated to high-capacity drives.

Qtier with hybrid HDD/SSD design

Automatically moves data between different tiers

SSD cache capacity will not be limited by the RAM size

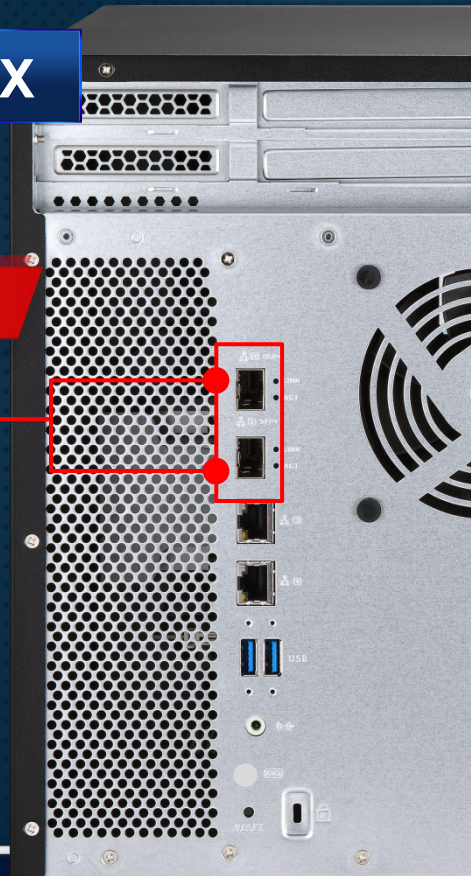
- Frequently-accessed data
- Infrequently-accessed data
- Rarely-accessed data



Dual 10GbE SFP+ ports & 10G switch

QSW-1208-8C

TS-1635AX



Connect to a 10G switch with a DAC cable or a transceiver module

CAB-DAC15M-SFPP-DEC01

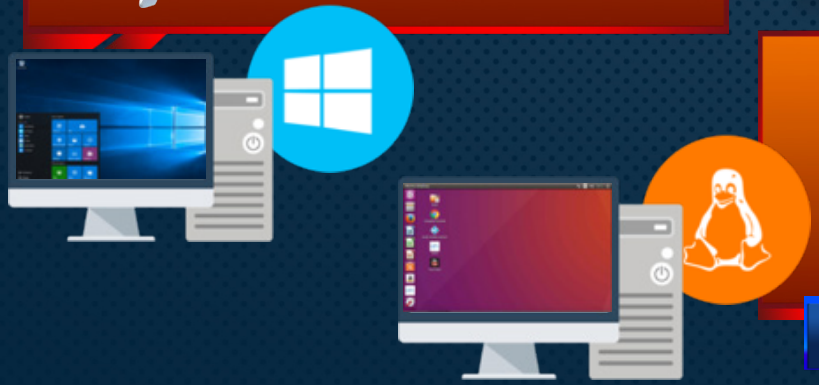
TRX-10GSFP-SR-MLX

Dual 10GbE SFP+ ports & 10G PC

LAN-10G2SF-MLX

TS-1635AX

Connect to a 10G PC/Server with a DAC cable



CAB-DAC15M-SFPP-DEC01

10GbE VJBOD expands capacity of other NAS

QNAP VJBOD (Virtual JBOD) is network-based JBOD, allowing you to expand the storage of a QNAP NAS with multiple QNAP NAS units. The TS-1635AX can provide virtual storage pools and volumes on virtual disks for operating NAS services.

Using VJBOD over 10GbE iSCSI networks is faster than USB /eSATA connections!

Born with 10GbE performance

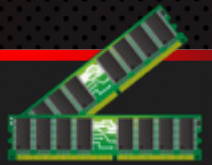
- TS-1635AX integrates 2 x 10GbE SFP+ ports already
- Dual PCIe slots supporting QNAP QXG-10G1T 10GBASE-T card

Tested in QNAP Labs. Figures may vary by environment.

1 x 10GbE iSCSI test environment：
NAS： TS-1635AX
OS：QTS 4.3.4
Volume：RAID 5; 12 x Intel SSDSC2BB240G4 SSD

Client PC：Windows 10, Intel Core i7-6700 3.4 GHz, 32GB RAM, QNAP LAN-10G2SF-MLX, IOMeter iSCSI 2M

Components upgrade and 10GbE performance

- Upgrade memory 
- Install M.2 SATA SSD
- 10GbE iSCSI performance test

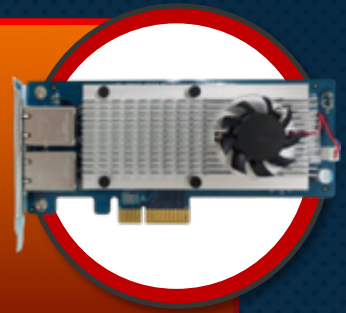
2 PCIe 3.0 slots for expansion

QM2 card

Provides 2 x M.2 SSD ports and 10GBASE-T LAN port for Qtier and SSD cache

10G/ 1G NIC

Provides high bandwidth, lower latency for efficient business productivity

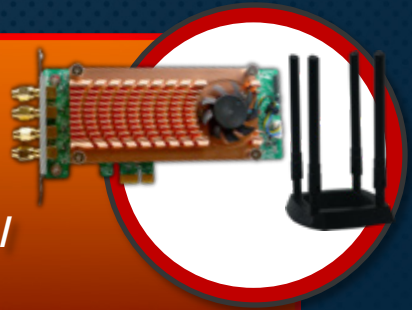


USB 3.1 Gen 2 card

Up to 10Gb/s with USB Type-A ports for legacy USB 3.1 Gen 1/2.0 device compatibility

DBDC wireless card

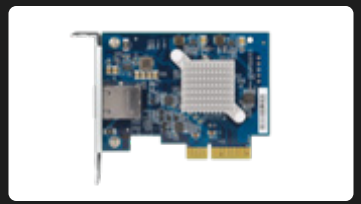
QWA-AC2600 + WirelessAP Station turn NAS into 2.4 GHz / 5 GHz access point



Plenty of PCIe expansion cards

10GbE/1GbE NIC

LAN-10G2SF-MLX



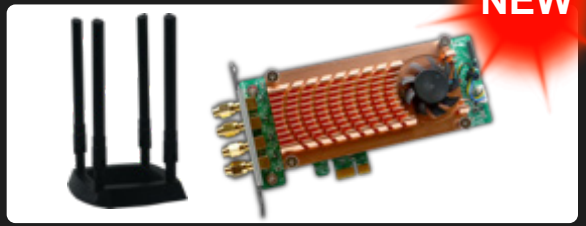
QXG-10G1T

LAN-10G1TA

LAN-1G2T-I210

Wireless network card

NEW



QWA-AC2600

USB-A 3.1 10G card

USB-U31A2P01

Turn into a wireless access point

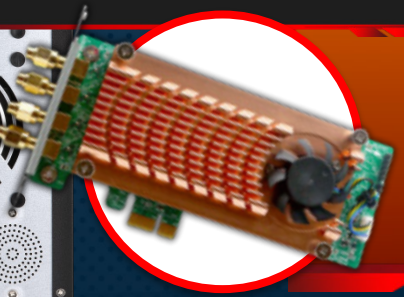
Install WirelessAP Station, and let wireless devices connect to NAS

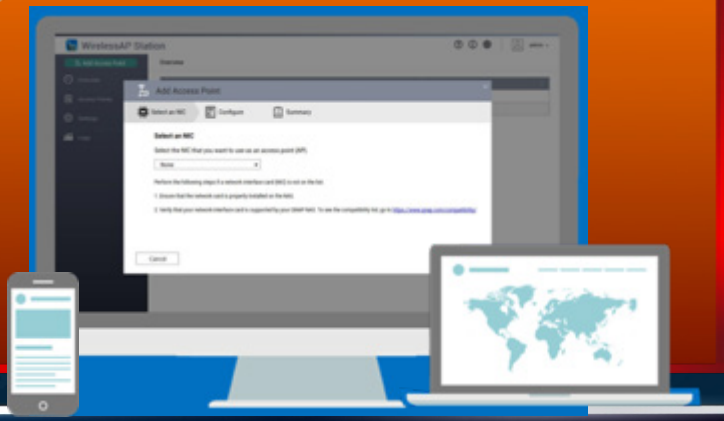
Independent traffic, bandwidth reservation (IoT/VM/Container)

High-performing quad-core 1.6GHz, supporting 2 cards

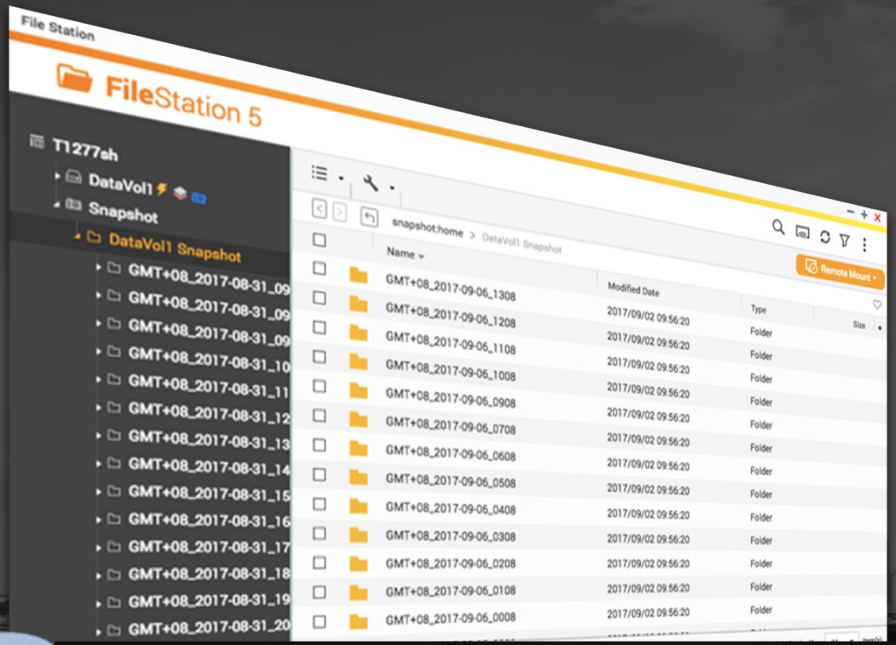
QWA-AC2600 wireless card

4 x 4 MIMO AC2600 2.4G/5G Dual Band Dual Concurrent





Snapshot for data security



4GB/8GB RAM

Max snapshot per NAS	256
Max snapshot per Volume/LUN	64

Block level; data recovery & protection from ransomware threats!

Container Station for IoT deployment

Integrates Docker® container & LXC

Surveillance with super-high capacity potential

Surveillance Station 5.1
Free: 8 channel licenses
Max: 40 ch (optional license)

QVR Pro
Free: 8 channel licenses
Max: 16 ch (optional license)

QUSBCam2
Up to 1080p USB Webcam recording

Expand NAS capacity with a UX unit

UX-800P

UX-500P

SS
USB 3.0

Connect max 1
UX-800P/UX-500P expansion unit

A solid leap from the predecessor

NAS model	TS-1635AX	TS-1635
Processor	64-bit ARMv8 Cortex-A72 Marvell ARMADA 8040 4C 1.6 GHz	32-bit ARMv7 Cortex-A15 Annapurna Labs 4C AL-514 1.7 GHz
Memory	Up to 16GB DDR4	Up to 16GB DDR3
PCIe slot	2 (1 x 3.0 x2, 1 x 3.0 x1)	1 (1 x Gen2 x2)
1GbE LAN port	2 x RJ45	2 x RJ45
10GbE LAN port	2 x SFP+	2 x SFP+
Qtier auto tiering	Yes	Yes (since QTS 4.3.4)
Linux virtual machines	Yes	---

QNAP

The flagship ARM quad-core processor NAS & the new era of ARM-based NAS hypervisor

Virtualization Edge Station

TS-1635AX

MARVELL

PCIe 10GbE
2 x PCIe slots

2 x M.2 SSD slots

Qtier