

TBS-464

—— Quad-core ——

4-bay M.2 NVMe SSD NASbook

Compact & Versatile

intel.











2 × 2.5G LAN



8GB RAM



Maker x Backup x Sharing x Work x Entertainment everywhere

Thin & light; use it everywhere

740g/1.63lbs

Light weight for portability

B5 size

30 x 230 x 165 mm 1.18 x 9.06 x 6.50 inch (H x W x D)



M.2 SSD for the best performance



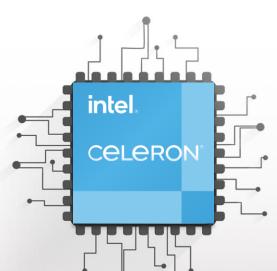
QTS 5.0 + Linux kernel 5.10

To provide the best performance of Intel® Celeron® N5105/N5095, TBS-464 is shipped with QTS 5.0, using the new Linux kernel 5.10. QTS 5.0 optimizes overall system performance and NVMe SSD over-provisioning & cache performance to enhance TBS-464 functionality.

AES-NI encryption Volume & folder support

N5105/ N5095 Jasper Lake

> 2.9_{GHz} Burst

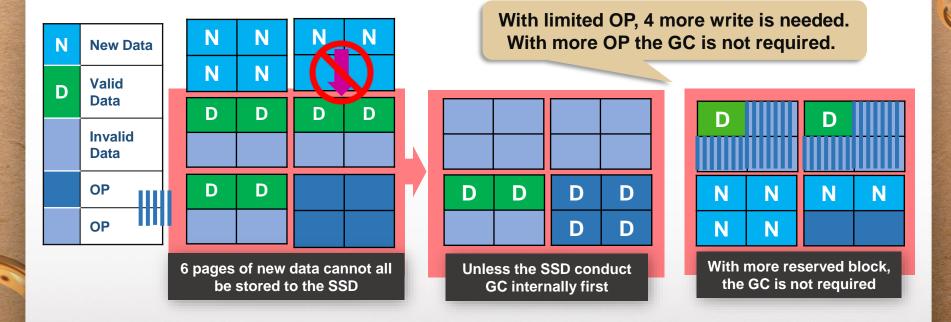


GPU up to 800 MHz UHD Graphics

4-core 4-thread

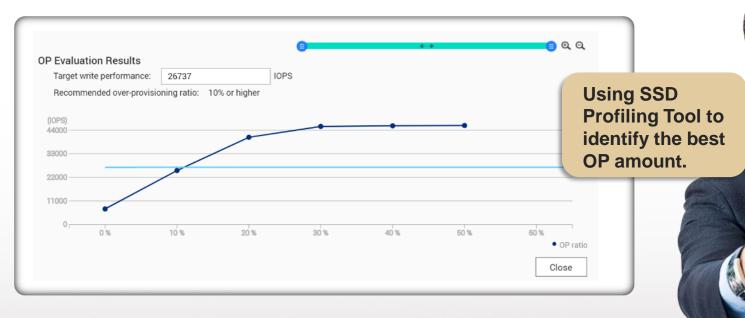
What is SSD over-provisioning

- SSD Over-provisioning reserves space in the SSD to decrease write amplification & increase consisted performance and endurance.
- Reason: to avoid Garbage Collection in any giving point of time



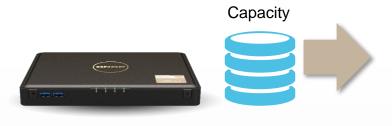
Choosing SSD is hard, choosing QNAP is simple

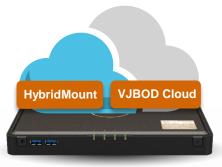
SSD consisted performance can only be observed after long time of usage. QNAP has provided the unique SSD Profiling Tool to help user measure the performance difference with different over-provisioning amounts. Not just IT manager, home user can also evaluate the capability of SSD.

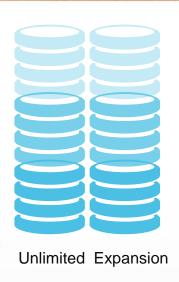


Create a tighter hybrid cloud system

Light storage in NAS + Unlimited storage in Cloud = Everything is Possible







File-level Gateway

HybridMount

Block-level Gateway

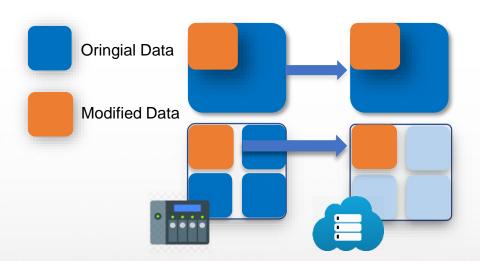
VJBOD Cloud

HybridMount: enable cache to enhance cloud experience



VJBOD Cloud + public cloud frees the private cloud from its limitation

Using the public cloud storage space just like a volume (or iSCSI LUN) on the NAS. Compared to file-level HybridMount, the block-level VJBOD Cloud increase the efficiency of transferring random data and large files to the cloud to provide business-level gateway solution.



In file-level, a modified file need to be re-upload in full.

In block-level, only the modified block needs to be uploaded to the cloud.

With Block-level solution · the uploaded data cannot be recongized by the cloud or its applications

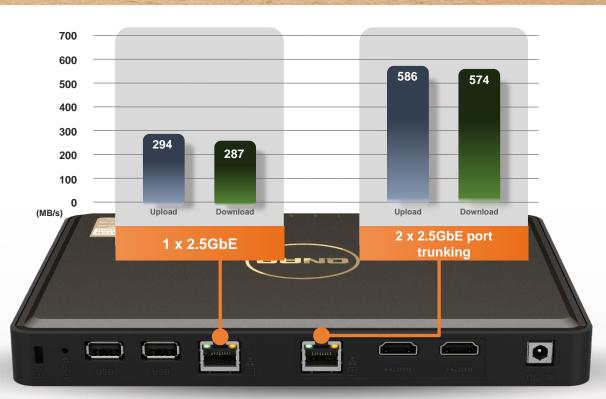
Using VJBOD Cloud to create a reliable database

Even the best RAID protection cannot stand again physical shock! For files, they can be upload to cloud, how about iSCSI LUN?

With VJBOD Cloud, an iSCSI LUN can be created at Cloud and shared via NAS. Using the edge solution to accelerate performance while allowing new device to connect & share the LUN at any time!

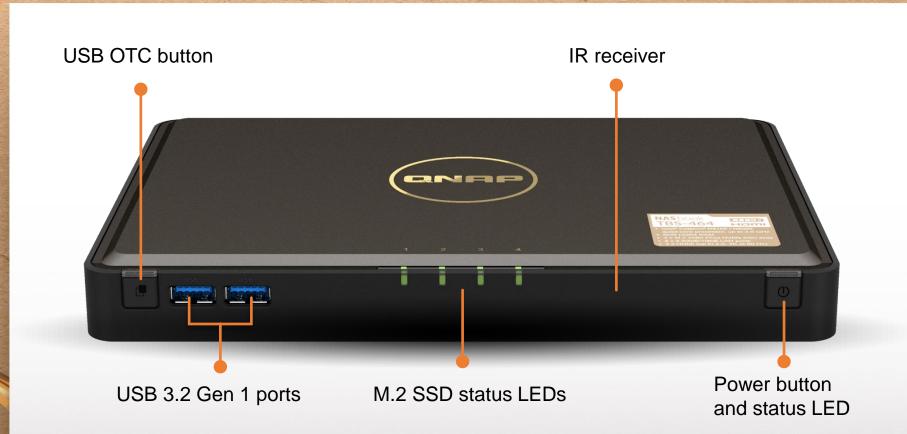


2.5GbE Bandwidth brings out SSD potential



Test environment: TBS-464: 4 x Seagate Ironwolf 510 M.2 2280 NVMe SSD, RAID 5, QTS 5.0, onboard 8GB RAM Client PC: Windows Server 2019, Intel Xeon W-1250, 32GB RAM, onboard 2.5GbE (Intel i225)

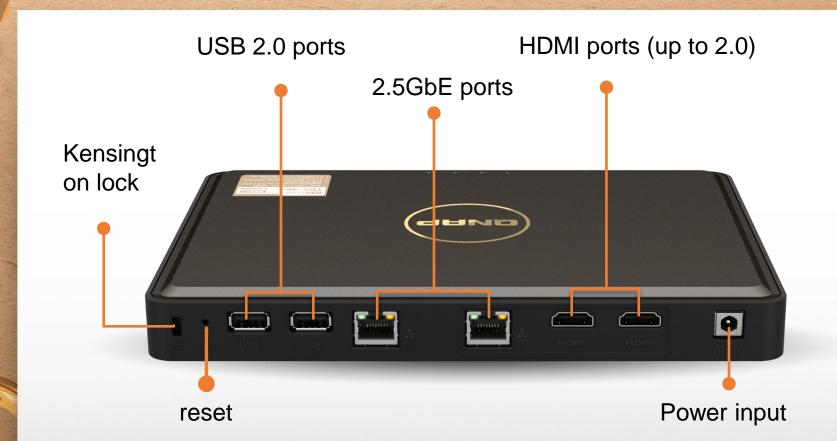
TBS-464 front view



TBS-464 side views



TBS-464 rear views



M.2 NVMe SSD installation

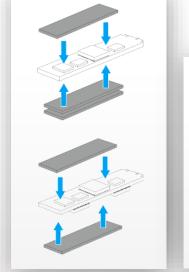


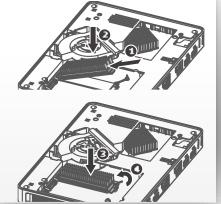
Smart 'n quiet fan with optimal thermal design

Include thermal pads for single & dual-sided M.2 SSD



Brand new M.2 SSD heatsink





Air flow brings out excessive heat



HDMI 2.0 4K 60FPS sharp picture quality



HybridDesk Station for various A/V needs



Versatile HybridDesk Station apps

System Mgmt.

- QTS
- FileStation HD

Multimedia

- HD Player
- Clementine
- Spotify
- TuneIn Radio

Surveillance

QVR Pro Client

Multimedia Mgmt.

- PhotoStation HD
- VideoStation HD
- MusicStation HD

Comm. & Social

- Skype
- Facebook

Browser & Productivity

- Chrome
- Firefox
- LibreOffice



Qbutton: customize remote button actions



Play your favorite music playlist with a single button or set other buttons to play the previous or next song



View pre-selected channels on Surveillance Station for quick surveillance monitoring



Set a button to restart or power off your NAS for greater convenience



Linux Station turns NAS into a Ubuntu PC



Connect a USB keyboard and a mouse to the NAS to start using Ubuntu

Streaming & accelerated transcoding

- 4K H.264 decoding & encoding for real-time or offline 4K video transcoding on various client players for smooth playback and support more clients
- HDMI output for 4K Ultra HD (3840 x 2160, 60FPS) content
- Stream content through DLNA, AirPlay, Chromecast and Plex



Use PLEX to stream media collections



Backup or sync data at your choice

macOS



- Time Machine
- Qsync

Windows



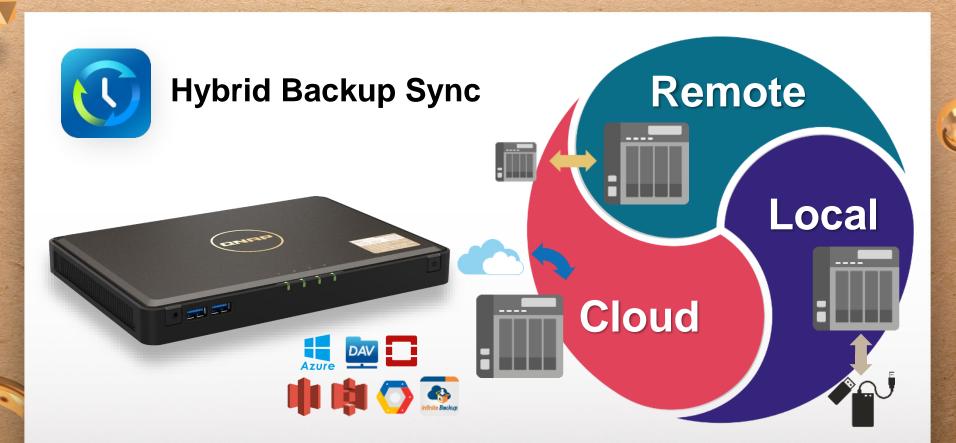
- NetBak Replicator
- Qsync



Business-level snapshot



Backup the NAS data



QVR Pro 24/7 surveillance solution



6,000+ IP cameras

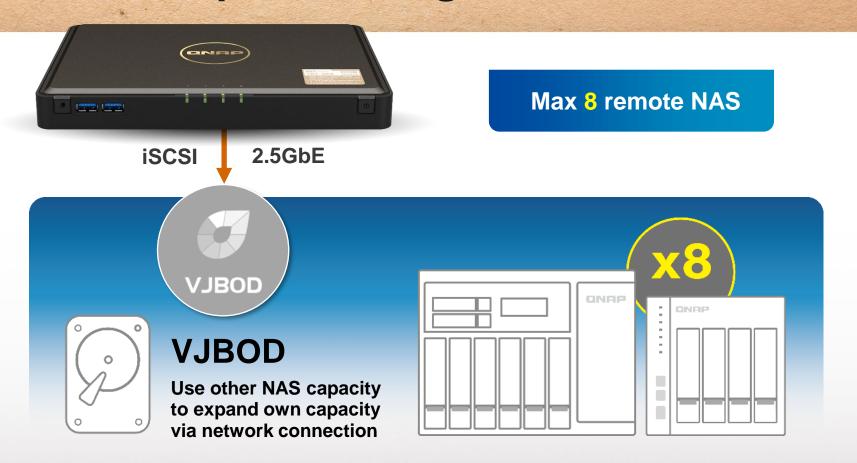
8 free channels

128 ch max channels (license)

QUSBCam2 for webcam recording



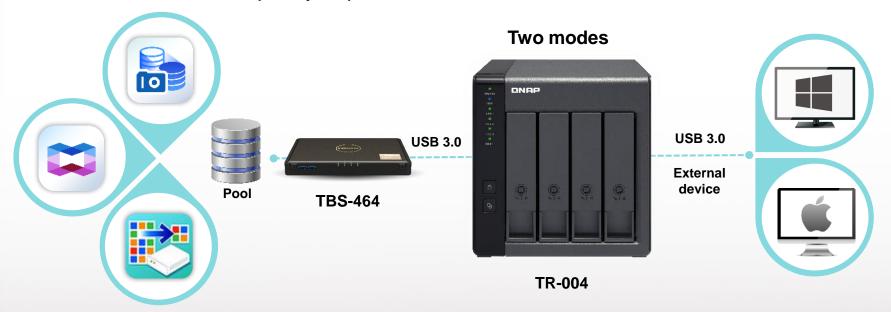
Expand storage via VJBOD



TR-004 RAID box for expansion or data sharing

Two use cases:

- 1. NAS, Windows, macOS & Linux cross-platform external device mode
- 2. QNAP NAS capacity expansion mode

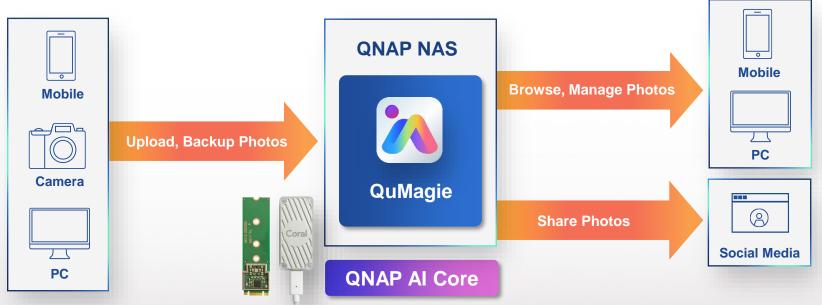


QuMagie

What is QuMagie?

QuMagie is an AI-powered photo management solution with flexible storage space

QuMagie is a free application within QNAP NAS system



Coral M.2 Accelerator B+M key

Coral M.2 Accelerator B+M key

Coral P/N: G650-04686-01

4 TOPS total peak performance (int8)

2 TOPS per watt (TOPS = trillion operations per second)

M.2 2280 B+M key form factor

PCIe Gen 2 x 1 interface

QNAP P/N: G650-04686-01-QNAP

Package contents

Coral M.2 Accelerator B+M key

QNAP Heatsink

NAS Installation guide





Coral USB Accelerator

Coral USB Accelerator

Coral P/N: **G950-06809-01** & **G950-01456-01**

4 TOPS total peak performance (int8)

2 TOPS per watt (TOPS = trillion operations per second)

No extra power adapter needed

USB 3.2 Gen 1 (USB 3.0) Type-C interface (data/power)

QNAP P/N: **G950-06809-01-QNAP**

Package contents

Coral USB Accelerator

NAS installation guide



30 mm (1.18 inches)



65 mm (2.56 inches)

QVR Face / Human

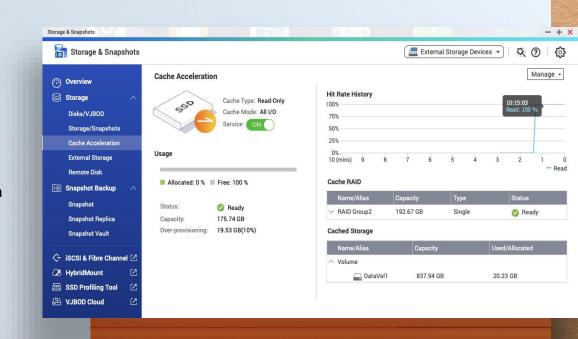


- QVR Face helps users build intelligent face recognition
- QVR Human proactively calculates the number of people passing through a specific region



Improve NVMe SSD Performance

- With the new kernel, NVMe usage efficiency is greatly improved
- Optimized cache module, SSD space can be used more efficiently, and memory usage is less then before
- Improve the efficiency of multi-users access to the same folder



Increase the level of security

- Support TLS 1.3
- The admin account is disabled by default
- Advanced encryption suite support
- adjusted safety settings and more stronger safety protection options
- SSH Key login
- Firmware automatic updates (recommended updates, automatic updates)
- App automatic updates (recommended updates, automatic updates)



TBS-464 v.s. TBS-453DX





Model	TBS-464	TBS-453DX
CPU	Intel® Celeron® N5105/N5095 4-core/4-thread processor, burst up to 2.9 GHz	Intel® Celeron® J4115 4-core/4-thread processor, burst up to 2.5 GHz
M.2 slots	4 x M.2 2280 NVMe Gen3 x2 slots	4 x M.2 2280 SATA 6Gb/s slots
Ethernet ports	2 x 2.5GbE	1 x 10GbE 1 x 1GbE
HDMI output	2 x HDMI (up to 2.0 resolution 3840 x 2160 @ 60Hz)	1 x HDMI 2.0 (up to resolution 3840 x 2160 @ 60Hz)



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4 x M.2 NVMe SSD



2 x 2.5G LAN



8GB RAM



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