

# QNAP TS-664

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Artikel	130330
Herstellernummer	TS-664-8G
EAN	4711103082317
QNAP	

## TS-664

Intel quad-core dual-port 2.5GbE NAS supports M.2 SSD caching and PCIe expandability for high-speed transmission and Virtualization applications

Powered by an Intel® Celeron® N5105/N5095, quad-core processor (burst up to 2.9GHz), the TS-664 features two 2.5GbE RJ45 ports and Port Trunking for up to 5Gbps combined bandwidth. With M.2 PCIe Gen3 and PCIe Gen 3 slots, the TS-664 provides flexibility in extending NAS functionality, allowing you to install a QM2 card for M.2 SSD caching, or Edge TPU for AI image recognition and various 10GbE/5GbE network cards. The TS-664 comes with 4GB RAM for running light VMs and Containers, and supports multi-cloud backup, cloud storage gateways, 4K HDMI output and real-time transcoding, alongside expandable storage capacity and feature-rich apps to perform as a cost-efficient, reliable 2.5GbE NAS.

### Quad-core high performance and up to 16GB RAM

The TS-664 is powered by an Intel Celeron N5105 / N5095 quad-core processor and supports up to 16 GB DDR4 memory, two 2.5GbE ports and SATA 6 Gb/s drives. The integrated Intel® AES-NI encryption engine also helps protect confidential data without impacting system performance.

### Accelerate AI-powered image recognition and caching with TPU and PCIe expansion

The TS-664 has two M.2 PCIe Gen3 slots, enabling SSD caching or SSD storage pools for improved performance, or Edge TPU for AI image recognition.

Install M.2 NVMe SSDs for cache acceleration or efficient tiered storage

The TS-664 supports SSD caching and features two M.2 slots that support M.2 PCIe NVMe SSDs<sup>1</sup> with 2280 form factors (sold separately) for boosting overall NAS performance. Qtier™ technology can also be used to empower the TS-664 with auto tiering that helps continuously optimize storage efficiency across all installed storage devices.

Accelerate AI-powered image recognition with TPU

By leveraging a Google Edge TPU to QNAP AI Core (the AI-powered engine for image recognition), the TS-664 can perform high-speed face and object recognition. Google Edge TPU enables QuMagie to quickly process thousands of photos with high-speed AI Image recognition and classification, and QVR Face to analyze real-time video for instant facial recognition.

### SSD caching and auto-tiering enable 24/7 optimized storage efficiency

While SSD prices continue to fall, and SSD capacity and performance continue to increase, organizations can easily take advantage of SSD strengths. The TS-664 supports numerous SSD-aware features that significantly maximize NAS performance with high cost-effectiveness.

### Streamline large file transfers and video editing with 2.5GbE

The TS-664 comes with two 2.5GbE RJ45 (2.5G/1G/100M) LAN ports that allow you to use existing CAT5e cables to upgrade network speeds from 1 Gigabit to 2.5 Gigabit. The dual 2.5GbE ports also support Port Trunking for up to 5 Gbps transmission speeds, improving the efficiency of bandwidth-hungry business applications such as large file transfers, fast backup/restore, and

multimedia transfer & editing.

### **Future-proof your IT infrastructure for high-speed networks**

The TS-664 is ideally matched with QNAP's managed and unmanaged 2.5GbE/10GbE switches to form high-speed, secure, and scalable network environments without going over budget. QNAP also provide 2.5GbE/5GbE/10GbE PCIe cards and USB 5GbE adapters for Windows®/Linux® workstations, allowing you to easily build a high-speed network environment for productive team collaboration.

### **Enhance productivity with multiple USB ports**

With two USB 3.2 Gen 2 (10Gbps) ports and two USB 2.0 (480Mbps) ports, you can quickly backup and transfer large files to/from the TS-664. UPS and other compatible USB devices can also be connected for greater functionality and application potential.

### **Abundant I/O capabilities with PCIe expansion**

The TS-664 has one PCIe Gen 3 x2 slot that allow for installing various expansion cards for expanding application potential.

### **Direct 4K HDMI output for multimedia and virtual machine display**

The TS-664 features Intel® UHD Graphics that supports dual-channel hardware decoding and real-time transcoding\*. The HDMI 2.0 output supports up to 4K, providing great benefits for applications like video production/editing or industrial design that demands high resolution and color realism as well as intensive media storage, transfer, and display. By connecting the TS-664 to an HDMI display, you can directly watch multimedia content saved on the NAS, or use the TS-664 as a versatile workstation by directly outputting virtual machines from Virtualization Station or Ubuntu Linux Station.

### **Faster image identification with integrated Intel® OpenVINO™ AI engine.**

With integrated Intel® OpenVINO™ AI computing resources, the TS-664 accelerates AI image recognition performance without impacting other applications or services. QNAP AI Core primarily works with the QuMagie application.

### **QTS 5, Fast, smooth, and easy-to-use!**

The TS-664 comes with the QTS 5 operating system as standard, providing a next-generation usage experience with an updated system kernel, optimized user interface, and advanced security features.

Brighter. Smoother. You'll like it.

When navigating QTS 5, you will notice a finer attention to detail for a superior browsing experience. Enjoy a smoother NAS experience, comfortable visual design, and find your favorite apps quicker.

Get started with the notice board

When performing first-time installation, the notice board guides you through the setup process. Simply follow the step-by-step instructions for a quick and easy setup.

Smooth and reactive user interface

Whether clicking buttons, switching between apps, expanding/collapsing windows – every action is much smoother. The search bar in the main menu also assists in quickly finding desired apps.

### **Comprehensive backup and disaster recovery solution**

The TS-664 supports various apps that cover all your backup needs. Practice safe IT habits by regularly backing up files and device content, allowing them to be easily restored when needed.

PC/Laptop backup

For Windows®, install NetBak Replicator to back up your PC to QNAP NAS. In macOS®, just set up the built-in Time Machine® to secure your data.

Remote backup for NAS

Hybrid Backup Sync makes it easy to back up data from a TS-664 to another QNAP NAS or remote server to fulfill your 3-2-1 backup strategy.

VM backup

Enjoy license-free VMware® and Hyper-V VM backup with source-side incremental backup, global deduplication, and recovery compression.

SaaS backup

Safeguard enterprise cloud data by backing up/syncing files, emails, calendars, and contacts from Google™ Workspace and Microsoft® Office 365® to the NAS.

Cloud backup for NAS

Hybrid Backup Sync supports mainstream cloud storage for NAS data backup. For backup to object cloud storage, VJBOD Cloud is especially useful to reduce bandwidth usage and backup time.

#### QuDedup technology

Hybrid Backup Sync eliminates redundant data at the source and then backs up the deduplicated data, helping to save time and storage costs while providing efficient multi-version backups.

#### Multi-version snapshots mitigate ransomware threats

The TS-664 supports block-based snapshots that record the state of the system at any time. It helps protect data, which can be restored back to a specific point of time, greatly helping in mitigating the threat of ransomware.

#### Volume and LUN snapshots

Take snapshots in seconds and revert the entire volume/LUN back to a specific point in time to prevent loss of important data.

#### Instantly restore snapshots

Snapshot content can be quickly restored to a local NAS, or restored on a folder/file basis to a local/remote NAS or cloud storage. You can also conveniently view and restore snapshots from the client side.

#### Back up snapshots

Multiply data protection by backing up snapshot files! Replicate volume/LUN snapshots in the TS-664 to a remote NAS (Snapshot Replica) by copying only the changes made. This helps save time & bandwidth, and can be run manually or on a scheduled basis.

#### All-in-one solution for hosting virtual machines and containers

By running multiple virtual machines and containers on the TS-664, you can deploy multi-tenant environments and applications to increase management efficiency and save hardware costs. Coupled with the Network & Virtual Switch app that boosts interoperability between virtual machines, containers, QNAP NAS, and other physical devices on the network, you can flexibly allocate physical and virtual network resources to simplify network deployment.

#### Virtualization Station

Run multiple Windows®, Linux®, UNIX®, Android™, and QuTScoud virtual machines and access them via a web browser or Virtual Network Computing (VNC). Businesses can run virtualized server applications on a single NAS without needing additional physical servers.

#### Container Station

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

#### Linux Station

Run Linux® applications (including apps from the Software Center) directly on the NAS and remotely access the Linux® desktop from a web browser. The open-source Linux® platform is also ideal for Internet of Things development.

#### Comprehensive security and privilege settings

The TS-664 is loaded with flexible privilege settings and security measures. Besides IP blocking, 2-step verification, HTTPS connection, there are more apps that help ensure optimal NAS protection against threats like malware and hackers.

#### myQNAPcloud secures remote access

myQNAPcloud allows convenient connection to the TS-664 through the Internet without any complex DDNS settings. To ensure your remote access service is secure, myQNAPcloud strengthens keys on SSL Certificates to 2048-bits.

#### Simplified privilege settings

The TS-664 supports comprehensive access right settings for shared folders, Azure Active Directory Domain Services (Azure AD DS), LDAP, and Windows ACL to help IT staff efficiently manage user accounts and access rights for multiple NAS systems.

#### QuFirewall protection

Supports IPv6, firewall access lists, and GeoIP filtering to restrict access based on geographical locations for higher NAS network security.

#### Superior security with QVPN

A virtual private network (VPN) allows secure access to network resources and services across public networks. QVPN supports creating a VPN client, using the TS-664 as a VPN server, and WireGuard® VPN service with an easy-to-use interface for setting up a secure connection.

#### QuWAN SD-WAN

To facilitate digital transformation, multi-site expansion and remote working, QuWAN SD-WAN helps automatically mesh multi-site VPN. It features IPsec encryption and cloud-centric management, allowing secure multi-site network including QNAP NAS and VMware ESXi platforms.

#### Security Counselor

A security portal for the TS-664 to check for weaknesses and offer recommendations for enhancing NAS security. It also integrates

anti-virus and anti-malware scanning software.

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Regularly scan your TS-664 using the latest malware definitions. If infected files are detected, they will be immediately removed to ensure NAS data security.

#### The best file storage and collaboration center

The TS-664 integrates rich apps for storing, managing, synchronizing, searching, and archiving files. It supports SMB/CIFS, AFP, and NFS protocols for streamlined file sharing across Windows®, Mac®, and Linux®/UNIX®, and provides the smartest NAS solution for professionally managing your files.

#### Smart surveillance solution for 24/7 security

QVR Elite is QNAP's subscription-based smart surveillance solution, allowing you to easily build a surveillance system with lower TCO and higher scalability. Recordings are saved as MP4 files, allowing playback on nearly every device. QVR Elite also integrates QNAP AI-based solutions to build smart facial recognition for retail and door access systems with QNAP NAS. You can arrange a dedicated, independent storage space for surveillance data on the TS-664 and enjoy simplified camera management, storage space allocation, camera live viewing and playback.

#### Flexible and economical storage expansion

QNAP provides easy ways to expand your storage capacity. Here are several ways to expand your TS-664 storage as needed to accommodate data and business growth.

##### Attach QNAP expansion enclosures

Connect expansion enclosures to the TS-664, and manage NAS storage expansion with the user-friendly Storage & Snapshots Manager app.

##### Mount cloud storage or remote file servers

Mount cloud storage or remote file servers to expand the capacity of the TS-664 while also centrally managing files on the NAS, cloud storage, and remote devices.

##### Migrate to a new NAS

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## Zusammenfassung

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QNAP TS-664, NAS, Tower, Intel® Celeron®, N5095, 8 GB, DDR4

QNAP TS-664. Type: NAS. Chassis type: Tower. Device class: Small & Medium Business. Processor family: Intel® Celeron®, Processor model: N5095, Processor frequency: 2 GHz. Internal memory: 8 GB, Internal memory type: DDR4. Total installed storage capacity: 0 TB. Operating system installed: QNAP QTS

## Merkmale

## Packaging content

External power adapter	Yes
Cables included	AC, LAN (RJ-45)

## Operational conditions

Operating temperature (T-T)	0 - 40 °C
Operating relative humidity (H-5 - 95% H)	
Storage temperature (T-T)	-20 - 70 °C

## Weight & dimensions

Width	235 mm
Depth	226 mm
Height	168 mm
Weight	2.9 kg
Package weight	4.56 kg

## Memory

Internal memory	8 GB
Internal memory type	DDR4
Maximum RAM supported	16 GB
Memory slots	2
Memory form factor	SO-DIMM
Flash memory	4000 MB

## Ports & interfaces

USB port	Yes
USB 2.0 ports quantity	2
USB 3.2 Gen 2 (3.1 Gen 2)	2
Type-A ports quantity	
HDMI ports quantity	1
HDMI version	2.1
Ethernet LAN (RJ-45) ports	2

## Network

Ethernet LAN	Yes
Ethernet LAN data rates	10,100,1000,2500 Mbit/s
DHCP server	Yes
Jumbo frames support	Yes
iSCSI support	Yes
Wake-on-LAN ready	Yes
Dynamic DNS (DDNS)	Yes

## Power

Power supply location	External
Power supply unit (PSU) capacity	120 W
Number of power supply units	1
Power consumption (typical)	44.02 W

## Processor special features

Enhanced Intel SpeedStep Technology	Yes
Idle States	Yes
Intel 64	Yes
Intel Trusted Execution Technology	No
Intel Virtualization Technology (VT-x)	Yes
Intel Virtualization Technology for Directed I/O (VT-d)	Yes
Intel VT-x with Extended Page Tables (EPT)	Yes

## Software

Operating system installed	QNAP QTS
Operating system version	5.0.0
Windows operating systems supported	Windows 10, Windows 10 Education, Windows 10 Education x64, Windows 10 Enterprise, Windows 10 Enterprise x64, Windows 10 Home, Windows 10 Home x64, Windows 10 IoT Core, Windows 10 IoT Enterprise, Windows 10 Pro, Windows 10 Pro x64, Windows 10 x64, Windows 11, Windows 11 x64, Windows 7, Windows 7 Enterprise, Windows 7 Enterprise x64, Windows 7 Home Basic, Windows 7 Home Basic x64, Windows 7 Home Premium, Windows 7 Home Premium x64, Windows 7 Professional, Windows 7 Professional x64, Windows 7 Starter, Windows 7 Starter x64, Windows 7 Ultimate, Windows 7 Ultimate x64, Windows 7 x64, Windows 8, Windows 8 Enterprise x64, Windows 8 Pro, Windows 8 Pro x64, Windows 8 x64
Linux operating systems supported	Ubuntu 14.04
Mac operating systems supported	Mac OS X 10.10 Yosemite, Mac OS X 10.11 El Capitan, Mac OS X 10.12 Sierra, Mac OS X 10.13 High Sierra, Mac OS X 10.14 Mojave, Mac OS X 10.15 Catalina, Mac OS X 10.15.3 Catalina, Mac OS X 11.0 Big Sur, Mac OS X 12.0 Monterey, Mac OS X 13.0 Ventura
Server operating systems supported	Windows Server 2008, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019
Other operating systems supported	Solaris 10

## Design



Power consumption (sleep)	23.22 W
AC input voltage	100 - 240 V
Fan voltage	12 V

Chassis type	Tower
Cooling type	Active
Product colour	Black, Bronze
Number of fans	2 fan(s)
Fan diameter	9 cm
LED indicators	HDD, LAN, Power, Status, USB
Cable lock slot	Yes
Cable lock slot type	Kensington

## Processor

Processor manufacturer	Intel
Processor family	Intel® Celeron®
Processor model	N5095
Processor frequency	2 GHz
Processor boost frequency	2.9 GHz
Processor cores	4
Processor threads	4
CPU configuration (max)	1
Number of processors supported	1
On-board graphics card model	Intel® UHD Graphics

## Storage

Supported storage drive interfaces	M.2, Serial ATA III
Storage drive sizes supported	2.5,3.5,M.2
Number of M.2 (M & B) slots	2
RAID support	Yes
RAID levels	0, 1, 5, 6, 10, 50, JBOD
Online RAID migration	Yes
Online RAID expansion	Yes
RAID rebuild	Yes
Hot-swap drive bays	Yes
Supported file systems	FAT32, HFS+, NTFS, ext3, ext4
Storage drives installed	No
Total installed storage capacity	0 TB
Number of storage drives supported	6
Installed storage drive type	No
Supported storage drive types	HDD & SSD
Bad block scan	Yes
Disk roaming	Yes

## Performance

Type	NAS
Device class	Small & Medium Business
Backup function	Yes
Backup features	Cloud, iSCSI LUN
Buzzer	Yes
Multilingual support	Yes
Snapshot	Yes
Management protocols	SNMP V2, V3
Share folder access right management	Yes
Security algorithms	FIPS 140-2, HTTPS, SNMPv2, SNMPv3, SSH
Access Control List (ACL)	Yes
Reset button	Yes
On/off switch	Yes
Built-in FTP server	Yes

Browser supported	Apple Safari, Google Chrome, Microsoft Edge, Mozilla Firefox
System log	Yes
Hot spare	Yes
Disk scan	Yes
S.M.A.R.T. support	Yes
Share folder	Y
Backup button	Yes
USB copy function	Yes

Preisänderungen und Irrtümer vorbehalten. Alle Produkte solange der Vorrat reicht.