

# QNAP TS-464

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QNAP	

## TS-464

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-464 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-464 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-464 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-464 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-464 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-464 supports SSD caching and features two M.2 slots that support M.2 PCIe NVMe SSDs with 2280 form factors (sold separately) for boosting overall NAS performance. Qtier™ technology can also be used to empower the TS-464 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-464 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-464 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-464 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-464 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-464. 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-464 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-464 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-464 to an HDMI display, you can directly watch multimedia content saved on the NAS, or use the TS-464 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-464 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-464 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-464 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-464 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-464 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-464 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-464, 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-464 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-464 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-464 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-464 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-464 to check for weaknesses and offer recommendations for enhancing NAS security. It also integrates

anti-virus and anti-malware scanning software.

#### **Malware Remover**

Regularly scan your TS-464 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-464 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-464 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-464 storage as needed to accommodate data and business growth.

#### **Attach QNAP expansion enclosures**

Connect expansion enclosures to the TS-464, 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-464 while also centrally managing files on the NAS, cloud storage, and remote devices.

#### **Migrate to a new NAS**

Install your NAS hard drives into a larger QNAP NAS and retain all your existing data and configurations.

#### **Upgrade RAID capacity**

Hot-swap lower-capacity drives with larger-capacity drives to expand your NAS capacity so it can grow with your business.

#### **More productivity-boosting applications**

The TS-464 provides an App Center that includes feature-rich apps to expand your NAS potential!

#### **QuObjects**

Run a high-performance S3 compatible development environment on your TS-464 to simplify service development workflows from testing to production. You can also move cold data from the cloud to an on-premises QuObjects to save cloud storage costs.

#### **Notification Center**

Consolidates all system events, alerts, and notifications for smooth and easy NAS management, keeping you always informed of your NAS status.

#### **Proxy Server**

By using a high-capacity TS-464 as a proxy server, online resources can be efficiently accessed with greater cost-savings and productivity, while network security is also enhanced at the same time.

#### **QmailAgent**

The best email backup solution that allows you to easily backup/recover and manage multiple email accounts in their native format with strong security and data integrity.

#### **Qcontactz**

Centrally manage all your contacts, import contacts from Google™, import/export contact information using CSV or vCard files, and enjoy an always-online database of contact information.

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The TS-464 can perform as an FTP server featuring SSL/TLS encryption, QoS bandwidth controls, and permission settings for efficiently and securely transferring large amounts of data. FTP Client is also supported.

#### **A health check for your hard drives**

Hard drives are at the heart of your NAS, and ensuring their long-term health and reliability is absolutely crucial. QNAP provides various methods and tools to help you monitor hard drive health, ensuring that you can take proactive decisions to safeguard your

data and files.

### **S.M.A.R.T. and back block scanning**

If any of the S.M.A.R.T. values are reported as abnormal, or bad blocks are detected, you can take early action and replace drives before potential data loss occurs.

### **DA Drive Analyzer**

The DA Drive Analyzer leverages ULINK cloud-based AI to predict the expected lifespan of drives, assisting you in planning future drive replacements to protect against NAS downtime and data loss.

### **Seagate® IronWolf™ Health Management**

When using supported IronWolf™ or IronWolf Pro™ hard drives, overall system reliability is improved by providing you with actionable prevention, intervention, and recovery options.

## **Zusammenfassung**

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### **TS-464**

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QNAP TS-464, NAS, Tower, Intel® Celeron®, N5095, 8 GB, DDR4

QNAP TS-464. Type: NAS. Chassis type: Tower. Device class: Small & Medium Business. Processor family: Intel® Celeron®, Processor model: N5095. Internal memory: 8 GB, Internal memory type: DDR4. Total installed storage capacity: 0 TB. Operating system installed: QNAP QTS

Merkmale

Operational conditions

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

Packaging content

External power adapter	Yes
Cables included	AC, LAN (RJ-45)
Power cables quantity	1
Quick start guide	Yes
Number of screws	24

Weight & dimensions

Width	170 mm
Depth	226 mm
Height	168 mm
Weight	2.26 kg
Package weight	3.6 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

Network

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

Power

Power supply location	Built-in
Power supply unit (PSU) capacity	90 W
Number of power supply units	1
Power consumption (typical)	40.536 W
Power consumption (sleep)	21.618 W
AC input voltage	100 - 240 V
Fan voltage	12 V

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

Design

Chassis type	Tower
Cooling type	Active
Product colour	Black
Number of fans	1 fan(s)
Fan diameter	12 cm
LED indicators	Yes
Cable lock slot	Yes
Cable lock slot type	Kensington

Processor

Processor manufacturer	Intel
Processor family	Intel® Celeron®
Processor model	N5095
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
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## 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	2.0
Ethernet LAN (RJ-45) ports	2

## Software

Operating system installed	QNAP QTS
Operating system version	5.0.1
Windows operating systems supported	Windows 10, Windows 11, Windows 7, Windows 8
Linux operating systems supported	Yes
Mac operating systems supported	Mac OS X 10.10 Yosemite, 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
Server operating systems supported	Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019

## Storage

Supported storage drive interfaces	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, JBOD
Online RAID migration	Yes
Online RAID expansion	Yes
RAID rebuild	Yes
Supported file systems	FAT32, HFS+, NTFS, ext3, ext4
Storage drives installed	No
Total installed storage capacity	0 TB
Number of storage drives supported	4
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, USB drive, 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.