QNAP

4-bay Thunderbolt 3 NAS

TS-453BT3

THUNDERBOLT

Total acceleration

2x front-panel Thunderbolt™ 3 ports
Fast and secure RAID data storage for Mac and Windows computers

2x M.2 SATA SSD slots and 10GBASE-T
Features a QM2 expansion card for dual-port M.2 SSD caching/Qtier auto-tiering and 10 GbE-ready high-performance storage

10GbE

TS-453BT3

4K

Online 4K video editing
10GbE connectivity and Thunderbolt 3 provide up to 600 MB/s performance for editing high-resolution videos without needing to save them on your workstation.

Thunderbolt 3 NAS is ideal for professional media editing, with dual-port M.2 SSD slots and 10GBASE-T connectivity

Flexible processing

The Quad-core Intel® Celeron® J3455 processor (with burst up to 2.3 GHz) provides AES-NI encryption acceleration and 4K video hardware decoding.

QTS 4.3 smart operating system

QTS 4.3 is an app-driven, easy-to-use operating system that provides various applications for increasing productivity and streamlining day-to-day tasks

Various virtualization applications

Supports Virtualization Station, Linux Station and Container Station with HDMI output and remote access to meet various virtualization needs
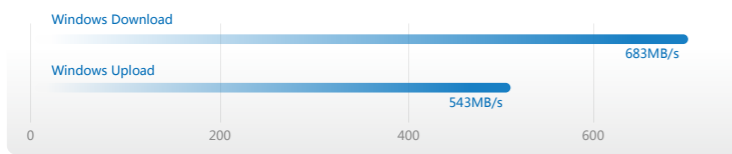
Landmark technical design

Tool-less installation, OLED screen with capacitive touch buttons, and vocal system alerts

HDMI HIGH-DEFINITION MULTIMEDIA INTERFACE

4K 2K UHD Q vPC Technology

ubuntu

dlna

Windows Server 2012 R2 Certified

CITRIX ready

vmware READY
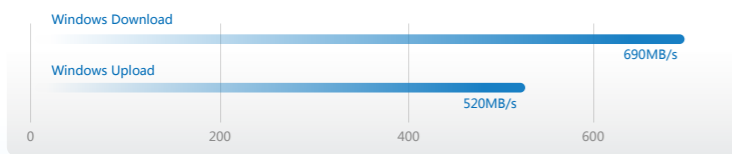
intel CELERON inside

Up to 2.3 GHz quad-core

The TS-453BT3 is powered by an Intel® Celeron® J3455 quad-core 1.5GHz processor (up to 2.3 GHz) and up to 8GB of DDR3L dual-channel memory for superior processing performance. With a single 10GbE 10GBASE-T and dual Gigabit ports, the TS-453BT3 is capable of achieving up to 683MB/s read and 516MB/s write performance. With AES-NI 256-bit NAS encryption enabled, the TS-453BT3 is capable of providing up to 690 MB/s read and 520 MB/s write performance - ensuring that confidentiality does not sacrifice performance. The TS-453BT3's Thunderbolt ™ 3 ports provide up to 514 MB/s read and 356 MB/s write performance for high-speed access to files. The Thunderbolt 3 USB Type-C interface also allows large files (such as photos and videos) to be quickly transferred between devices to provide quicker workflows for multimedia projects.
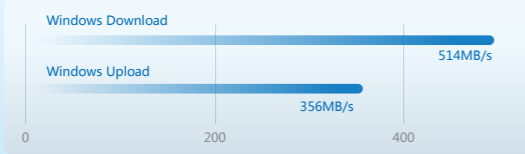
Windows File Transfer, 1 x 10GbE

Windows Download — 683MB/s
Windows Upload — 543MB/s

(0, 200, 400, 600)

Windows Encrypted File Transfer, 1 x 10GbE

Windows Download — 690MB/s
Windows Upload — 520MB/s

(0, 200, 400, 600)

Thunderbolt™ 3 Transfer (MacBook Pro uses AJA speed test software)

Windows Download — 514MB/s
Windows Upload — 356MB/s

(0, 200, 400)

Tested in QNAP Labs. Performance may vary depending on usage environment.
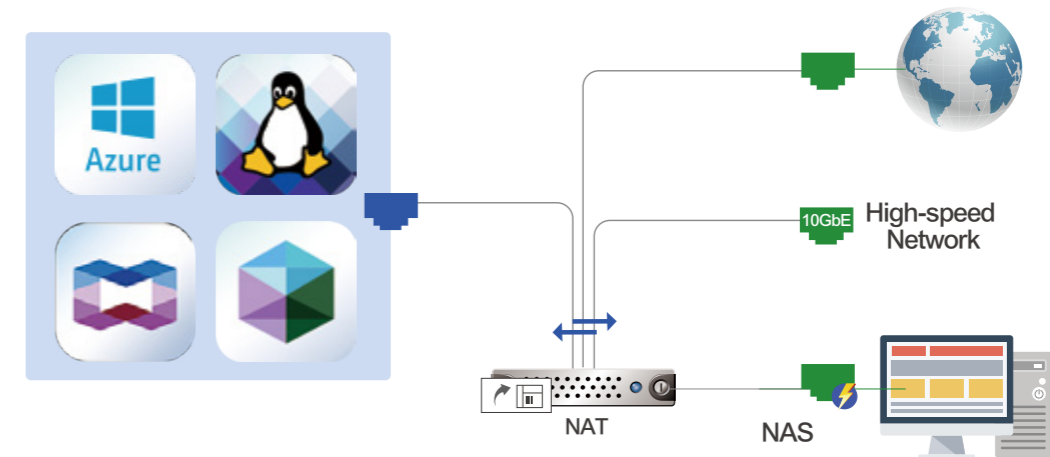
10GbE transmission

Test environment:
NAS: TS-453BT3-8G
OS: QTS 4.3.4
Disk Group: RAID 0; 4 x Intel SSDSC2BB240G4 SSD
Client PC:
Windows 10, Intel Core i7-6700 3.4 GHz, 32GB RAM, QNAP LAN-10G2T-X550 Network Card

Thunderbolt ™ 3 transmission

Test environment:
NAS: TS-453BT3-8G
OS: QTS 4.3.4
Disk Group: RAID 0 w/ 4 x Intel SSDSC2BB240G4 SSD
Client:
MacBook Pro, Intel® Core ™ i7 2.9GHz CPU, macOS 10.12.6, 16GB RAM.
With AJA System Test 12.4.3 and SMB File Transfer Protocol; single file 16GB with disk caching turned off; resolution 5120x2700 5K RED and 10-bit YUV codec

Tested in QNAP Labs. Performance may vary depending on usage environment.

Mac and Windows multimedia collaboration workstations

The TS-453BT3 is the perfect fit for Thunderbolt ™ 3 Mac users (and is compatible with Thunderbolt 2 Mac devices by using adapters). With immense transfer speeds, Thunderbolt ™ 3 enables smoother video editing and faster sharing, and is especially suitable for multimedia professionals working with 4K and 3D content. The TS-453BT3 can connect to two Thunderbolt ™ 3 devices to handle real-time media editing simultaneously without affecting NAS performance. As Final Cut Pro® X 10.3 supports SMB protocol file sharing, Windows® users and other devices connected via Thunderbolt ™ 3 or network ports can join the audio-visual editing workflow.

MacBook Pro   SMB/CIFS   QNAP   SMB/CIFS   Windows PC
Type-C

Note: Thunderbolt ™ 3 (USB-C) to Thunderbolt 2 adapters may have compatibility issues with some Windows PCs. Users should confirm compatibility before purchasing adapters. It is highly recommended to use a Thunderbolt ™ 3 certified cable (purchased separately) and to configure a RAID 5 with high-efficiency SSD for optimal file transfer and storage performance.

Access 10GbE network resources with a Mac

The TS-453BT3 provides an innovative T2E Converter (Thunderbolt-to-Ethernet Converter) that allows Macs to access 10GbE networks through the Thunderbolt ™ 3 interface on the TS-453BT3. It is especially suitable for team collaboration in 10GbE network environments.

Azure

10GbE High-speed Network

NAT   NAS

Note: After being converted through the virtual switch, the T2E connection may impact network transmission speed.

Features the QM2 card for M.2 SSD caching and 10GbE connectivity

The pre-installed QM2 expansion card provides 10GbE connectivity and supports two M.2 2280 SATA SSD (sold separately). This allows users to benefit from SSD caching or by enabling Qtier to optimize their storage utilization and NAS performance. The 10GBASE-T LAN port provides connectivity with 10GbE networks, allowing the TS-453BT3 to fit in your existing 10GbE infrastructure or to futureproof the TS-453BT3 for eventual 10GbE adoption.

Dual M.2 SSD Slots*
Up to two M.2 22110/2280 SSDs can be installed. (M.2 SSD is not included)

10GbE 10GBASE-T network port*
Comes with RJ45 copper wire 10GBASE-T module. Easy to deploy and backwards compatible with 5GbE, 2.5GbE, 1GbE, or 100MbE connections.

M.2 SSD LED indicators
Monitor M.2 SSD performance.

M.2 SSD thermal sensor
Monitor M.2 SSD temperature in real time.

Custom aluminum heatsink
Prevent overheating and thermal throttling to ensure high SSD performance.

Smart and quiet fan
Fan speed auto-adjusts based on SSD and system temperature.

Adjustable screws for varied SSD thickness
 Can fit single and dual-sided M.2 SSD.

Note: The pre-installed QM2 expansion card (QM2-2S10G1TB) is exclusive to the TS-453BT3. The TS-453BT3 also supports other QM2 expansion cards: QM2-2S, QM2-2P, QM2-2S10G1T, QM2-2P10G1T.

Simple and stylish design

The TS-453BT3's new slider design and tool-less 3.5-inch hard drive installation allows for easy installation and maintenance. The OLED screen design shows the TS-453BT3's status at a glance, including CPU operation, system temperature, fan speed, hard disk capacity and temperature, Volume and LUN capacity and other information. The capacitive touch button design is not only dustproof, but also provides a variety of settings to allow you easily wake up the screen, change network IP settings and host password, restart or shutdown the system.

Improved backup strategy

QNAP provides reliable, resilient backup and disaster recovery solutions to help users organize their data backup tasks cost-effectively and efficiently.

Windows® and Mac® backups

Back up and restore data on Windows® computers with the free QNAP NetBak Replicator backup tool. Time Machine® is supported for Mac® users to protect their data.

Hybrid Backup Sync

By integrating data backup, recovery and synchronization functions (including RTRR, rsync, FTP, and CIFS/SMB), Hybrid Backup Sync helps backup or synchronize data from TS-453BT3 to another QNAP NAS, remote server, or cloud storage for centralized management of backup and disaster recovery plans.

Volume and LUN snapshots

Snapshots are important for backing up data, allowing users to easily revert files and data to when the snapshots were taken. Snapshots are essential for businesses and organizations - and are especially useful for mitigating the threat posed by ransomware. The TS-453BT3 supports up to 256 snapshots of a single Volume/LUN and up to 1024 snapshots in total.

Virtual machine backup

The TS-453BT3 provides high-capacity storage, integrated virtualization applications, supports mainstream third-party virtualization solutions, and provides snapshot capabilities to fully capture system states. It is the best choice for virtual machine backup.

QTS 4.3 - The smart, intuitive NAS operating system

The QNAP NAS operating system - QTS - provides applications and features that empower business users, personal productivity, and multimedia enjoyment. With multiple smart agent services and automation tools, users can manage their QNAP NAS more easily, flexibly and efficiently. The built-in App Center also provides a variety of applications to extend NAS functionality. QTS breaks barriers between different devices, platforms and geography, providing unlimited freedom in your cloud experience.

File sharing and synchronization

The TS-453BT3 supports SMB, NFS and AFP, allowing you to quickly share files between Windows® , Mac® , Linux®/UNIX® and other devices. With QNAP Qsync, the TS-453BT3 is turned into a large-capacity and secure data store. Any file uploaded to the TS-453BT3 is available on your desktops, laptops, and mobile devices that are connected to the TS-453BT3. You can also synchronize sharing folders, enhance group collaboration and share files in a flexible manner.

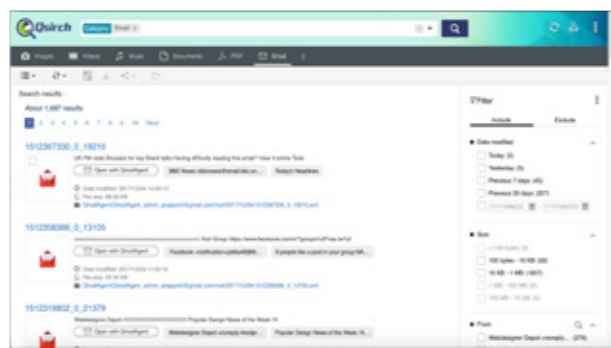## 4K HDMI output and real-time video transfer and sharing

The TS-453BT3 can easily become a HTPC by using its native 4K HDMI output and free remote control. Both Linux Station and HD Station can be used with HDMI output for enjoying multimedia, browsing the internet, or using virtual machines. The buttons on the remote control can also be customized by using QButton. Individual buttons can have common tasks assigned to them, such as listening to music, shutting down the NAS, or watching a surveillance channel. The TS-453BT3 uses the powerful 9th-generation Intel® HD Graphics that supports 2 channel 4K (H.264) video hardware decoding playback and transcoding, allowing videos to be converted to universal formats for viewing on various devices.* When working on video projects, this allows you to quickly convert your work to various resolutions for sharing with clients and partners - who may be viewing on various devices or be bandwidth-constrained.

Note: The TS-453BT3 hardware specifications provides H.264 and hardware acceleration decoding, encoding, and transcoding. Video rendering quality may vary depending on the player software, file format, system resource usage, and network bandwidth.

Smart file searching and organization with Qsirch & Qfiling

The Qsirch full-text search engine supports searching through over 6,000 file types and provides more than 30 filters to customize search results. Suggested results are also displayed with actual results to provide a greater search scope. Qfiling helps to archive files scattered across folders, reducing the time needed to manually organize files and folders and making a search-friendly file structure for increased productivity. You can customize the scheduling program to periodically move new files into designated folder.s The "suggested recipes" feature allows you to save frequently-used archive conditions as exclusive recipes, so that you can save time for repeat setup, and complete filing tasks with a simple keystroke.

24/7 Security monitoring solution

Surveillance Station supports more than 3,000 IP camera models with broad compatibility and scalable IP camera channel licenses. With Surveillance Station, you can easily set up a professional security monitoring center and use IP cameras for real-time monitoring, video recording and playback. With the Vmobile mobile app (available for iOS® and Android) you can monitor your surveillance system from anywhere on your mobile device. You can also install the Vcam mobile app to turn your mobile device into a camera and instantly record footage to your NAS. The TS-453BT3 provides 4 free IP camera channel licenses. Additional licenses (up to 40 channels) can be purchased as-needed. QVR Pro (Beta Edition) creates exclusive video storage space on the TS-453BT3 while enjoying the benefits of NAS storage expansion and QTS storage management. You can freely adjust the ratio and position of each camera screen and click on the timeline in live monitoring mode to quickly switch the video screen to the correct time point. You can also view real-time videos and video playback of different channels in a single interface. QVR Pro also has camera batch addition and editing capabilities, and support for cross-network segment auto-search, thus substantially reducing monitoring system setup time and maintenance costs. With QUSBCam2, you can turn the USB webcam into an ONVIF camera and connect to the NAS to see real time footage. By using USB webcams, you can bolster your surveillance system without a large budget.

Natively run virtual machines and software containers

Virtualization Station can run multiple Windows®, Linux®, UNIX®, and Android ™ virtual machines on the TS-453BT3 and manage them in a web browser or VNC connection. Virtualization provides organizations with vast potential in running various applications and consolidating their IT infrastructure.

Container Station integrates LXC and Docker,® two lightweight virtualization technologies. Users can access the thousands of apps from around the world at the Docker Hub,® easily import/export software containers, and benefit from the easy installation and great potential that containerization provides.

More productivity apps

IFTTT Agent
Create your own rules and automate everyday tasks with IFTTT (If This Then That) Agent. This popular automation service allows you to combine your NAS with your favorite apps and services to streamline and automate your digital life.

QmailAgent
Centrally manage and quickly switch between different email accounts. Send and receive emails on your NAS, back up your emails, attach files to outgoing emails directly from the NAS, and protect your email security and personal privacy.

DJ2 Live
Livecast through the QNAP NAS and stream to public video platforms. As all your live broadcasts are saved on your NAS, it is ideal for repeat viewing and creating a series of videos.

Browser Station
Establish a remote connection without needing complex settings, break geoblocking restrictions, and smoothly access the network resources on your LAN.

QIoT Suite Lite
Combine the security and high potential storage capacity of QNAP NAS to create a private cloud IoT solution. Rapidly develop IoT applications in a simple three-step process.

Companion mobile apps

Connect to your NAS at any time by using QNAP's mobile apps. A variety of companion apps are available to fit every need, from NAS management, to downloading, multimedia, note-taking, and surveillance.

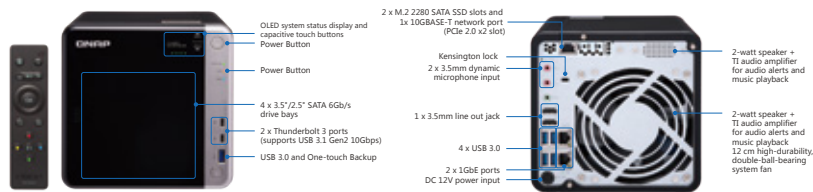| Qfile	Qget	Vmobile	QmailClient	Qnotes	Qmanager

Easily expand your storage space

The TS-453BT3 can connect up to six TX-800P or TX-500P Thunderbolt 2 storage expansion enclosures or one UX-800P or UX-500P USB 3.0 storage expansion enclosure*. With VJBOD (Virtual JBOD) the unused storage capacity of a QNAP NAS can be used to expand another QNAP NAS. The storage capacity from up to eight NAS can be connected and mounted to the TS-453BT3 as virtual hard disks **. VJBOD can also be combined with 10GbE and Port Trunking (multiple LAN and IP address) technology to set up a stable high-speed storage space.

VJBOD   USB 3.0

Maximum: 8   Maximum: 1   Maximum: 6

Other QNAP NAS   Other QNAP NAS   UX-800P / UX-500P   TX-800P / TX-500P

*A Thunderbolt 3 (USB-C) to Thunderbolt 2 adapter is required to connect a Thunderbolt ™ 2 storage expansion enclosure.
**The other QNAP NAS must support iSCSI services and storage pools, and it is recommended to upgrade the firmware to QTS 4.2.1 (or later).

Hardware Specifications

NAS Model	TS-453BT3-8G
CPU	Intel® Celeron® J3455 Quad Core Processor 1.5 GHz, up to 2.3 GHz
Encryption Acceleration Engine	✓ · (AES-NI)
Graphics processor	Intel® HD Graphics 500
Standard system Memory	8GB DDR3L (2 x 4GB)
Expand up to Memory	8GB
Memory Slots	2x DDR3L SODIMM slot (For dual-DIMM configurations, you must use identical DDR3L modules)
Supported Supported drive types	SATA 6Gb/s, 4x 3.5-inch or 2.5-inch HDD/SSD + 2x M.2 2280 SSD
Gigabit LAN	2x 1Gigabit RJ45 LAN ports
10GbE	1x 10GBASE-T RJ45 10GbE network port
USB 3.0	5x Type-A ports
PCIe	1x PCIe 2.0 x2 slot (includes pre-installed QM2-2S10G1TB01 M.2 / 10GbE card)
HDMI output	2x (supports up to 3846 x 2160, 30Hz)
Audio output	2x 3.5mm microphone jacks, speaker, 3.5mm line out jack
OLED panel	0.96-inch monochrome OLED panel
LED Indicators	status / power, network, USB, hard drive, SD memory card, USB QuickAccess
Button	Power / status, USB one-touch backup button, system reset, capacitive touch buttons (confirmation button and selection button)
Infrared (IR) receiver	comes with RM-IR004 remote control
Other slots	Kensington security lock
Dimension (Height x Width x Depth)	168 x 170 x 226 mm 6.61 x 6.69 x 8.90 in
Net Weight	2.51 kg (5.53 lbs)
Operating temperatures	0 ~ 40°C (32°F ~ 104°F)
Power Consumption	HDD Sleep: 26.22W General operation: 38.10W
Power	120W AC adapter, 100-240V
Fan	1 x 12cm

Package Contents

NAS, quick installation manual, power supply, power cord, 2x 1GbE RJ45 network cables, remote control, 2.5-inch hard drive mounting screws

Software Specifications

Supported disk group types	RAID 0/1/5/6/10, RAID 1/5/6/10 + spare, single, JBOD
Storage Manager	Flexible disk area and LUN configuration; storage pool online RAID capacity expansion and configuration migration
Supported client systems	Windows 7, Windows 8, Windows 10, Windows Server 2003/2008 R2/2012/2012R2, Apple Mac OS 10.6+, Linux & UNIX
Internal file system	EXT4
External file systems	EXT4, EXT3, NTFS, HFS+, FAT32, exFAT (exFAT support requires the purchase of a license)
Supported protocols	CIFS/SMB, AFP (v3.3), NFS(v3), FTP, FTPS, SFTP, TFTP, HTTP(S), Telnet, SSH, iSCSI, SNMP, SMTP, and SMSC
File sharing	Maximum number of users: 4096; Maximum number of user groups: 512; Maximum shared folder: 512; maximum number of simultaneous connections: 800
Video surveillance	Surveillance Station comes with 4 camera channel licenses. Additional licenses can be purchased separately (for up to 40 channels) (http://license.qnap.com)
Other Features	File Station, Photo Station, Music Station, Video Station, Download Station, Qsync, Notes Station, HD Station, FTP Server, Printer Server, VPN Server / Client, Qtier, Anti-Virus, Qsirch, Qcontactz, QmailAgent , Qfiling, Network & Virtual Switch with Thunderbolt to Ethernet functionality
Streaming server	DLNA server, Airplay, Chromecast, iTunes server
Video playback and conversion	Features hardware acceleration, supports up to 4K H.264 transcoding
Remote access	myQNAPcloud

Accessories

Type	Ordering SKU	Description
Expansion Enclosure	TX-800P	QNAP 8-bay Thunderbolt 2 expansion enclosure
	TX-500P	QNAP 5-bay Thunderbolt 2 expansion enclosure
	UX-800P	QNAP 8-bay expansion enclosure
	UX-500P	QNAP 5-bay expansion enclosure
Memory	RAM-4GDR3LA0-SO-1866	4GB DDR3L 1866MHz SODIMM RAM
M.2 SSD	SSD-M2080-256GB-A01	256GB M.2 2280 SATA 6Gb/s SSD (Must use QM2 expansion card)
Expansion Card	QM2-2S10G1TB01	Supports two M.2 2280 SATA SSDs and provides a single 10GBASE-T 10 GbE network port
	LAN-10G1SR	Single-port 10GbE SFP+ NIC
	LAN-10G2SF-MLX	Single-port 10GbE SFP+ NIC
Remote Control	RM-IR004	Infrared Remote Control (included)
Cable	CAB-TBT320M-40G-LINTES	Thunderbolt ™ 3 cable (40 Gbps), 2m (Sold separately)
	CAB-TBT305M-40G-LINTES	Thunderbolt ™ 3 cable (40 Gbps), 0.5m (Sold separately)
	CAB-DAC15M-SFPP-A02	SFP + Direct attach network cable 1.5m
	CAB-DAC30M-SFPP-DEC01	SFP + Direct attach network cable 3m
	CAB-DAC50M-SFPP-DEC01	SFP + Direct attach network cable 5m

Note : NAS models with 10GbE SFP + networking must have a 10GbE SFP + network port or compatible 10GbE SFP + network card

* Visit www.qnap.com for more hardware and software specifications. Design and specifications are subject to change without notice.

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