# Hardware Specifications



| | TVS-EC1080+-E3-32G | TVS-EC1080-E3-16G/<br>TVS-EC1080-E3-8G | TVS-EC1080-i3-8G | TVS-EC880-E3-16G/<br>TVS-EC880-E3-8G |
|---|---|---|---|---|
| CPU | Intel® Xeon® E3-1245 v3 (3.4 GHz)<br>Quad-Core Processor or above | | Intel® Core™ i3-4150 (3.5 GHz)<br>Dual-Core Processor or above | Intel® Xeon® E3-1245 v3 (3.4 GHz)<br>Quad-Core Processor or above |
| Memory (RAM) | 32 GB DDR3 RAM | TVS-EC1080-E3-16G：16 GB DDR3<br>TVS-EC1080-E3-8G：8 GB DDR3<br>Expandable：up to 32 GB (8GB x4) | 8 GB DDR3 RAM<br>Expandable：up to 32 GB (8GB x4) | TVS-EC880-E3-16G：16 GB DDR3 RAM<br>TVS-EC880-E3-8G：8 GB DDR3 RAM<br>Expandable：up to 32 GB (8GB x4) |
| Flash | 512MB DOM | | | |
| Internal Cache Slot | Build-in 256 GB (128 GB x2)<br>mSATA Cache | 2 mSATA cache slots (The standard system is shipped without mSATA flash) | | |
| Internal Hard Drive | 10 x 2.5" or 3.5" SATA 6Gb/s, 3Gb/s HDDs/SSDs | | | 8 x 2.5" or 3.5" SATA 6Gb/s,<br>3Gb/s HDDs/SSDs |
| Hard Drive Tray | 10 x Hot-swappable and lockable tray | | | 8 x Hot-swappable and lockable tray |
| 10GbE Network Adapter | Two 10GBASE-T ports<br>(pre-installed with a QNAP LAN-10G2T-D 10GBASE-T network | Yes (optional purchase) | | |
| Gigabit LAN Ports | 4 x Gigabit RJ-45 Ethernet port | | | |
| LED Indicators | Status, 10GbE, LAN, USB, eSATA | | | |
| USB 3.0/2.0 | 3/6 | | | |
| Buttons | Power, Reset | | | |
| Dimensions | 217.5(H) x 327(W) x 321.2(D) mm<br>8.56(H) x 12.8(W) x 12.65(D) inch | | | |
| Weight | Net weight (NAS only): 12.52 kg/27.61 lb<br>Gross weight (with packing and accessories): 19.75 kg/43.54 lb | | | |
| Noise Level (dB) | Standby: 30.4 dB; In Operation: 31.6 dB | | | |
| Power Consumption (W) | Sleep mode: 68W; In Operation: 130W | | | |
| Temperature | 0-40°C | | | |
| Humidity | 5~95% non-condensing, wet bulb: 27°C | | | |
| Power Supply Specification | Input: 100-240V AC, 50-60Hz,<br>Output: 350W | | | |
| Expansion Slots | 1* PCIe Gen3 x8 (Pre-installed a dual-port 10GbE network card) | 1* PCIe Gen3 x8 | | |
| Fan | 2 x 12 cm smart cooling fan | | | |

## Accessories

| Category | Order P/N | Description |
|---|---|---|
| RAID Expansion Enclosure | REXP-1000 Pro | Tower 10-bay RAID expansion enclosure |
| SAS Card | SAS-6G2E-D | Dual-wide-port storage expansion card, SAS 6Gbps, for tower model, desktop bracket |
| LAN Card | LAN-1G2T-D | Dual-port 1GbE network expansion card tower model, desktop bracket |
| mSATA Flash | FLASH-256GB-MSATA | 128 GB mSATA flash module x 2 |
| RAM | RAM-4GDR3-LD-1600 | 4GB DDR3 RAM, 1600MHz, long-DIMM |
| RAM | RAM-8GDR3-LD-1600 | 8GB DDR3 RAM, 1600MHz, long-DIMM |
| Cable | CAB-SAS10M-8088 | MiniSAS external cable (SFF-8088 to SFF-8088), 1.0m |
| Cable | CAB-SAS05M-8088 | MiniSAS external cable (SFF-8088 to SFF-8088), 0.5m |

All specifications are subject to change without notice.
For more information, please go to www.qnap.com

## 10GbE network adapter compatibility list    10GBASE-T Interface

| Category | Order P/N | Description |
|---|---|---|
| QNAP | LAN-10G2T-D | QNAP dual-port 10 Gigabit Network Expansion Card for Tower Model (10GBASE-T interface) |
| QNAP | LAN-10G1T-D | QNAP single-port 10 Gigabit Network Expansion Card for Tower Model (10GBASE-T interface) |
| Emulex | Oce11102-NT | Dual-port 10GbE network expansion card for rackmount models, cat6A cable |
| Intel | X520-T2 (E10G42BT) | Dual-port 10GbE network expansion card for tower models, desktop bracket, cat6A cable |

### SFP+ OPTIC Interface

| Category | Order P/N | Description |
|---|---|---|
| QNAP | LAN-10G1SR | QNAP single-port 10 Gigabit Network Expansion Card for Tower Model (10G SFP+ interface) |
| Emulex | OCe11102-NM | Dual-port 10 Gigabit network adapter, short range optical cable |
| Emulex | OCe11102-IM | |
| Intel | X520-SR2 (10G42BFSR) | |

### SFP+ DAC (Direct Attach Copper) Interface

| Category | Order P/N | Description |
|---|---|---|
| Emulex | OCe11102-NX | Dual port 10 Gigabit network adapter, SFP+ direct attach copper cable |
| Emulex | OCe11102-IX | |
| Intel | X520-DA2 (E10G42BTDA) | |

# Software Specifications

### Operating System
- QTS 4.1.2 (embedded Linux)

### Supported Clients
- Windows XP, Vista, Windows 7 (32/64-bit), Windows 8 (32/64-bit), Windows Server 2003/2008 R2/2012, Apple Mac OS X, Linux & UNIX

### Supported Browsers
- Google Chrome
- Microsoft Internet Explorer 10+
- Mozilla Firefox 8+
- Apple Safari

### Multilingual Support
- Chinese (Traditional & Simplified), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese (Brazil), Romanian, Russian, Spanish, Swedish, Thai, Turkish

### File System
- Internal Hard Drive: EXT4
- External Hard Drive: EXT3, EXT4, NTFS, FAT32, HFS+

### Networking
- TCP/IP (IPv4 & IPv6: Dual Stack)
- Quad Gigabit NICs with jumbo frame (failover, multi-IP settings, port trunking/NIC teaming)
- Service binding based on network interfaces
- Proxy server (Squid available in App Center)
- Proxy client
- DHCP client, DHCP server
- Protocols: CIFS/SMB, AFP (v3.3), NFS(v3), FTP, FTPS, SFTP, TFTP, HTTP(S), Telnet, SSH, iSCSI, SNMP, SMTP, and SMSC
- UPnP & Bonjour Discovery
- USB Wi-Fi Adapter Support

### Security
- Network access protection with auto-blocking: SSH, Telnet, HTTP(S), FTP, CIFS/SMB, AFP
- CIFS host access control for shared folders
- FIPS 140-2 validated AES 256-bit volume-based data encryption*
- AES 256-bit external drive encryption*
- Importable SSL certificates
- Instant alert via eE-mail, SMS, beep, and LCD panel
- * SomeThe data encryption functions may not available in accordance with the legislative restrictions of some countries.

### Storage Management
- QNAP flexible Volume/LUN with thin provisioning and space reclaim
- RAID 0,1, 5, 6, 10, + hot spare
- Supports storage pool
- Online volume expansion
- Online storage pool expansion
- Online RAID capacity expansion and online RAID level migration
- SMART data migration
- Storage expansion via QNAP REXP-1000 Pro expansion unit
- Bad block scan and hard drive S.M.A.R.T.
- Bad block recovery
- RAID recovery
- Bitmap support

### Power Management
- Wake on LAN
- Internal hard drive standby mode
- Scheduled power on/off
- Automatic power on after power recovery
- USB and network UPS support with SNMP management
- System sleep mode (S3)

### Access Right Management
- Batch users creation
- Import/export users
- User quota management
- Local user access control for CIFS, AFP, FTP, and WebDAV
- Application access control for Photo Station, Music Station, Video Station, and Multimedia Station
- Subfolder permissions support for CIFS/SMB, AFP, FTP, and File Station

### myQNAPcloud Service
- Private cloud storage and sharing with myQNAPcloud id (QID)

- Free host name registration (DDNS)
- Auto router (via UPnP) configuration
- Web-based file manager with HTTPS 2048-bit encryption
- Cloudlink for remote access without complicated router setup
- myQNAPcloud connect for easy VPN connection (Windows VPN utility)

### Qsync
- Syncs files among multiple devices with SSL support
- Selective synchronization for syncing specific folders only
- Share team folder as a file center for team collaboration (Maximum sync tasks: 32)
- Shares files by links via emaile-mail
- Policy settings for conflicted files and file type filter support
- Version control: up to 64 versions.
- Incremental synchronization for HDD space saving
- Supports Windows & Mac OS

### Web Administration
- Multi-window, multi-tasking based system management
- Movable Icons and personalized desktop
- Smart toolbar and dashboard for neat system status display on system status
- Smart fan Control
- Dynamic DNS (DDNS)
- SNMP (v2 & v3)
- Resource monitor
- Network recycle bin for file deletion via CIFS/SMB, AFP, and File Station
  - Automatic Cleanup
  - File Type Filter
- Comprehensive logs (events & connection)
- Syslog client/server
- System settings backup and restore
- Restore to factory default
- Mobile app: Qmanager for remote system monitoring & management

### File Server
- File Sharing across Windows, Mac, and Linux/UNIX
- Windows ACL
- Advanced folder permission for CIFS/SMB, AFP, FTP
- Shared folder aggregation (CIFS/SMB)

### FTP Server
- FTP over SSL/TLS (Explicit)
- FXP support
- Passive ftp port range control

### File Station
- Supports ISO Mounting (Up to 256 ISO Files)
- Supports thumbnail display of multimedia files
- Supportsed sharinge download links and upload links
- Drag-n-drop Files via Google Chrome and Mozilla Firefox Browsers
- Photo, music, and video preview and playback with hardware- accelerated transcoding
- File Compression (ZIP or 7z)
- Creation of and sending download links for sharing public files with expiration time and password protection
- Support for displaying subtitles display (*.SRT, UTF-8 format)
  - Video seeking support for video playback during on-the-fly transcoding
  - Support slideshow playback in media viewer
- Mobile App: Qfile for file browsing and management

### Backup Station
- Remote replication server (over rsync)
- Real-time remote replication (RTRR) to another QNAP NAS or FTP server
- Works as both RTRR server & client with bandwidth control
- Real-time & scheduled backup
- Encryption, compression, file filter, and transfer rate limitation
- Encrypted replication between QNAP NAS servers
- Desktop backup with QNAP NetBak Replicator for Windows
- Apple Time Machine backup support
- Data backup to multiple external storage devices
- Third party backup software support: Veeam backup & replication, Acronis True Image, Arcserve backup, EMC retrospect, Symantec Backup Exec, etc.

### Cloud Storage Backup
- Amazon S3
- Amazon Glacier
- WebDAV-based cloud storage
- Microsoft Azure
- Open Stack
- Google Drive
- Dropbox
- ElephantDrive
- Symform

### Print Server
- Max. number of printers: 3
- Support for Internet Printing Protocol
- Print job display and management
- IP-based and domain name-based privilege control

### Virtualization Station
- Support Virtual Machine (VM) creation to run an operating system such as Windows, Linux, Unix and Android
- Support importing VM from the other virtual platform, e.g. VirtualBox, VMware Workstation
- Support exporting VM with *.ovf, *.qvm formats
- VM clone
- VM snapshot
- HTML5-based shared remote console
- User-based permission setting
- Support USB device pass-through
- Support VM console display via HDMI

### HD (HybridDesk) Station 2.0
- Playbacks videos, music, photos on yout TV tv with XBMC xbmc via HDMI hdmi output
- Watch various online contents such as YouTtube, Flickr, Picasa, Shoutcast, and more, etc.
- Web browser (Chrome, Firefox)
- Supports USB U.S. keyboard and mouse
- Supports QNAP Qremote app and the official XBMC remote app
  - 4 new desktop themes
  - Supports user login permissions

### Signage Station
- Supports dynamic content includinges videos, images, music, and text messages
- Supports multi- users collaboration
- Supports searching via keywords,
- Supports sharing via email and social networks sharing
- Supports design software - iArtist Lite
- Supports account authority management
- Supports various web browsers for playback (Chrome, Firefox, IE, Safari)
- Supports most- viewed, latest- released and different categories content list

### iSCSI (IP SAN)
- iSCSI target with multi-LUNs per target (Up to 256 targets/LUNs combined)
- Support for LUN mapping & masking
- Online LUN capacity expansion
- Support for SPC-3 persistent reservation
- Support for MPIO & MC/S
- iSCSI LUN backup, one-time snapshot, and restoration
- iSCSI connection and management by QNAP Windows Qfinder
- Virtual disk drive (via iSCSI initiator)
- Stack chaining master
- Max No. of virtual disk drives: 8

### Server Virtualization & Clustering
- Server Virtualization & Clustering
- VMware vSphere (ESXi 5.x)
- VMware VAAI for iSCSI and VAAI for NAS
- vSphere Plug-in
- Citrix XenServer (6.2)
- Windows Server 2012 R2 Hyper-V
- Supports Microsoft ODX
- QNAP SMI-S provider for Microsoft SCVMM

### Surveillance Station
- Supports over 2,100 IP ip cameras
- Includes 8 free camera licenses, up to 80 camera channels via additional license purchase
- Instant playback to check the recent events
- Online editing to change edit cameras when in live view
- Visual aid by using e-maps
- Playback and speed control by shuttle bar
- Video preview using on playback timeline
- Intelligent Vvideo Aanalytics (IVAiva) for advanced video search
- Surveillance client for Mac

- Mobile surveillance app: Vvmobile (iOS and Android)
- Mobile recording app: Vvcam (iOS and Android)

### Notes Station
- Graphical web-based editor for taking notes
- Integrate with NAS file system: insert attachment or image from NAS file system
- Event calendar and to-do list
- Image editor: a easy way to highlight the focus in your image
- Support note publishing with a single link
- Support key word search
- Provide Chrome Extension: Notes Station Clipper
- Clip web page content to your note
- Mobile app: Qnotes

### VPN Server
- Secure remote access: PPTP & OpenVPN VPN services
- Max number of clients: 30

### VPN Client
- Supported VPN protocols: PPTP & OpenVPN services
- PPTP Authentication: PAP, CHAP, MS-CHAP, MS-CHAPv2
- PPTP Encryption: None, AES 40/128 bit, AES 256 bit
- OpenVPN Encryption: None, AES 40/128 bit, AES 256 bit
- Transmission package monitor
- OpenVPN port control
- OpenVPN link compression

### Domain Authentication Integration
- Microsoft Active Directory (AD)
- Domain controller
- LDAP server, LDAP client
- Domain users login via CIFS/SMB, AFP, FTP, and File Station

### AirPlay & Chromecast
- Streams videos, photos and music from the NAS to Apple TV via Qfile or QAirPlay&Chromecast's web-based controller
- Streams videos, photos and music from the NAS to TV with a Chromecast dongle via Qfile , Qvideo or QAirPlay&Chromecast's web-based controller

### App Center
- More than 100 official and community software add-ons (ex: Dropbox, Google Drive Sync, McAfee, WordPress, HappyGet II, etc.)
- Photo Station
- Music Station
- Video Station
- iTunes Server
- DLNA Server
- AirPlay: Streams videos, photos and music from NAS to Apple TV via Qfile or QAirPlay's web-based controller
- Digital TV Station
- Download Station
- HD Station + XBMC media player + Google Chrome

### Mobile Apps
- Qfile: iOS, Android, Windows Phone 8+
- Qfile HD: iPad version
- Qmanager: iOS, Android
- Qmusic:  iOS, Android
- Qremote:  iOS, Android
- Qget: Android
- Vmobile: iOS, iPad, Android

### PC Utilities
- Qfinder: Windows, Mac, Linux
- myQNAPcloud Connect: Windows
- Qsync: Windows, Mac
- NetBak Replicator: Windows
- QGet: Windows, Mac, Linux
- vSphere Client plug-in: Windows
- Qsnap: Windows

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