



A New Era of NAS

## High Performance Dual Core NAS with On-the-fly Video Transcoding

Celeron® dual-core 2.41GHz CPU, burst up to 2.58GHz



## TS-x51 Series

TS-451

TS-251

- Dual-core Intel® 2.41GHz CPU and 1GB DDR3L RAM, delivering up to 220MB/s read & write speed
- On-the-fly and offline Full HD hardware accelerated video transcoding
- Built-in virtual machines technology with Virtualization Station
- Up to 7.1 channel audio passthrough and high-quality multimedia playback via HDMI
- Personal cloud for creating a multimedia library with DLNA, AirPlay, and Plex support
- Centralized storage, file sharing and backup
- Economical storage expansion with scale-up solution by UX-800P or UX-500P, maximum 8 hard drives with 48TB more storage capacity



**W**ith the growing popularity of smartphones and cameras, a staggering amount of digital media is being created and downloaded every day. This media is also becoming increasingly larger in size, with Full HD movies available to download for mobile devices and 4K on the horizon for HDTVs and download services. This rise in file size makes it impossible for limited mobile devices to store large amounts of media, and also forces users to sacrifice quality for storage space.

With the new TS-x51 Series, QNAP offers customers a NAS with a large & scalable storage solution with a powerful Intel Dual-core processor and HDMI connectivity for home entertainment and hardware-accelerated transcoding that allows mobile devices to enjoy media with optimized resolutions and saving their local storage space.

The TS-x51 Series also features an integrated hypervisor, allowing users to operate virtual machines to greatly increase the functionality of the NAS, making it the perfect all-round NAS for home users.



Built-in VMs



HDMI Local Display



Hardware Accelerated Transcoding



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### Hardware Introduction

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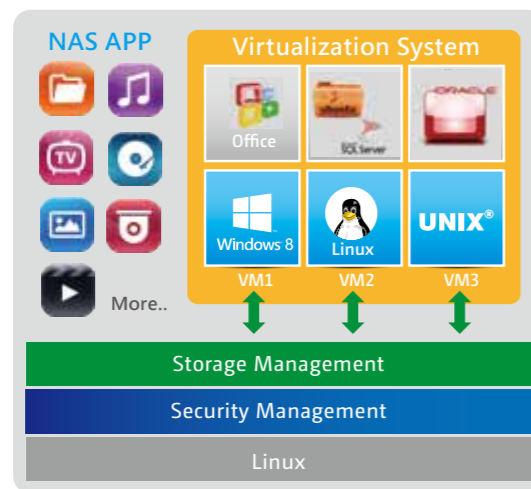


# Virtualization Station

## Multi-purpose on a Machine (Virtualization Station)

### Introduction

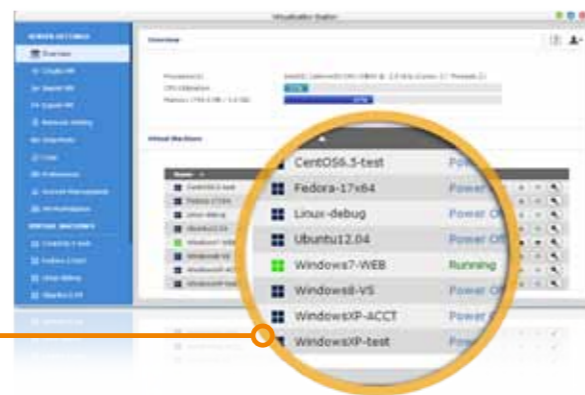
The TS-x51 Series is the world's first consumer-grade NAS that supports Intel VT-x and virtual machine applications. Just download the Virtualization Station App from App Center, and you can install & operate multiple operating systems with Windows, Linux, and UNIX. The virtual machines can be used in a variety of different ways to boost the functionality of your Turbo NAS.



Virtualization technology is normally solely used in enterprise environments, but with the growing needs of a digital household, virtualization is slowly becoming part of our everyday applications. Many households have printers, and when users want to print out the photos stored on their Turbo NAS, but have a printer with Windows-only drivers, they would need to startup their PC just for this simple task.

With the Virtualization Station, you can install these drivers on a Windows-based virtual machine, allowing you to easily print out documents & photos stored on the Turbo NAS.

Creating multiple VMs and running only one on TS-x51 at the same time.



You can carry out the aforementioned scenario using the below steps.

- 1 Download the Virtualization Station from the App Center and create a Windows-based VM (you will need at least two Ethernet cables connected to the Turbo NAS)\*
- 2 Install the printer drivers in the VM
- 3 Download the QNAP mobile app "Qfile" from the App Store (iOS) or Play Store (Android) and set a destination folder on the Turbo NAS for uploading photos
- 4 Map the destination folder into the VM
- 5 Access the VM remotely via web browser to select a photo and then print it instantly

\*The network usage of Virtualization Station is separated from the Turbo NAS. One Ethernet cable is reserved for the Turbo NAS to use, so you will need at least another one for the Virtualization Station to use.



How to map the destination folder into a Windows VM? Please follow these steps:

- A (Using Windows 7 as an example) Please go to "Computer" and click [Map network drive]
- B Please insert the IP address of your Turbo NAS and click [Browser]. Select the folder you want to use and click [Finish].
- C This folder you want to use will appear as a network drive on your "Computer"



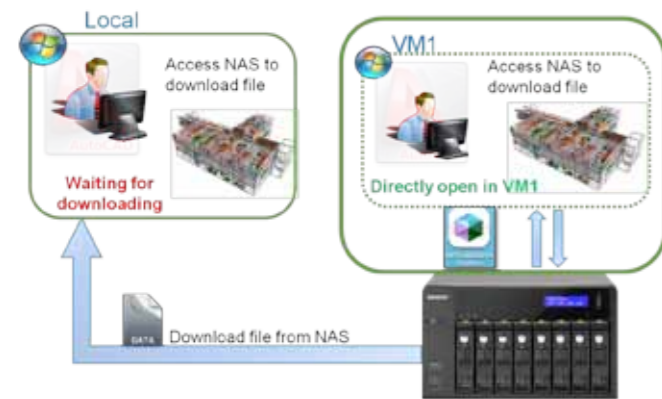
To use Virtualization Station, we recommend that you buy a TS-x51-Series model with 4GB RAM (TS-x51-4G). If you purchased a TS-x51 Series model with 1GB RAM you will need to upgrade the RAM to at least 2GB (recommended: 4GB) before you can use Virtualization Station.

# Virtualization Station

## The Highlights of QNAP Exclusive Virtualization Technology

### Direct access to files & data via VM

Specific file formats cannot be opened directly by the Turbo NAS, but the Virtualization Station makes it possible. Administrators can install Windows, Linux, and UNIX on the Turbo NAS to run any supported application or file.

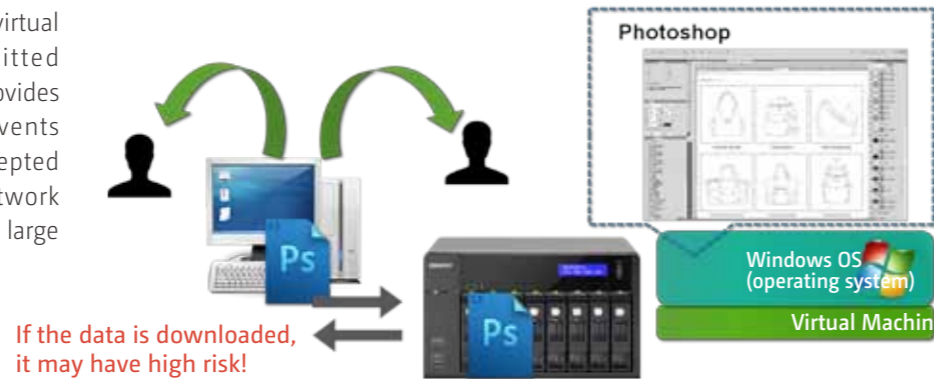


### Save bandwidth & time

As you download a large amount of data to a local PC, it has the potential to take a long time and to use up network bandwidth. When accessing data on the Turbo NAS through virtual machines on the Virtualization Station, you can enjoy secure data transmission and save bandwidth & time, as the data is not transmitted via physical network cables.

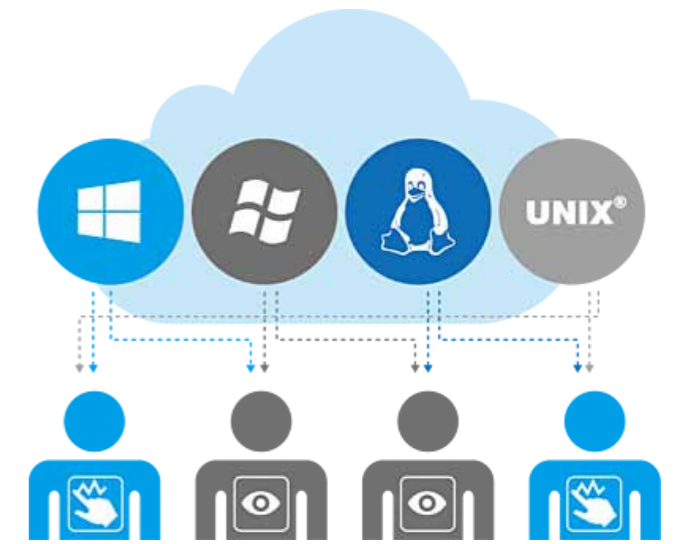
### Enhance security and save bandwidth

When accessing files & data on a virtual machine they are not transmitted outside of the Turbo NAS. This provides a secure environment that prevents sensitive data from being intercepted and also saves bandwidth & network resources when you need to access large files.



### User-based permissions settings

The Virtualization Station administrator can assign VMs to users and set different permissions to them such as power control, snapshot, advanced VM settings and the VM's view-only console. According to the purpose of VMs and the user demands, administrators can easily and efficiently allocate VM's resources to users.



### Auto Start

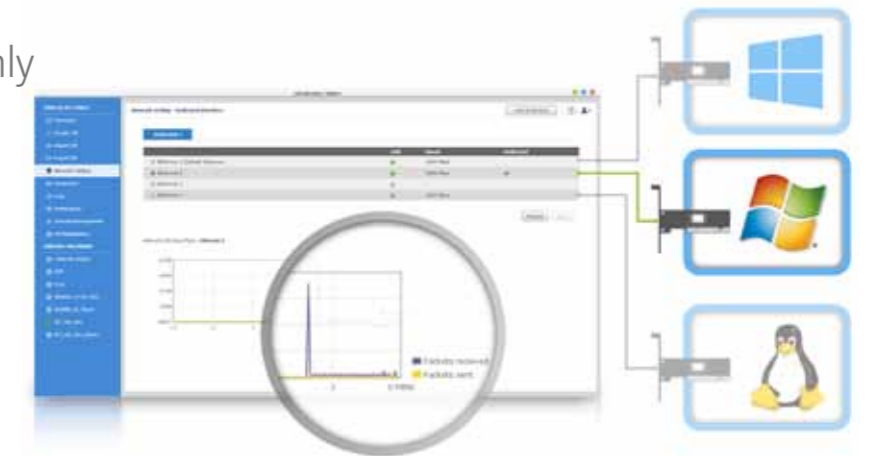


### VM auto-start

Once NAS restart, VMs can be automatically started by setting up a certain timeframe.

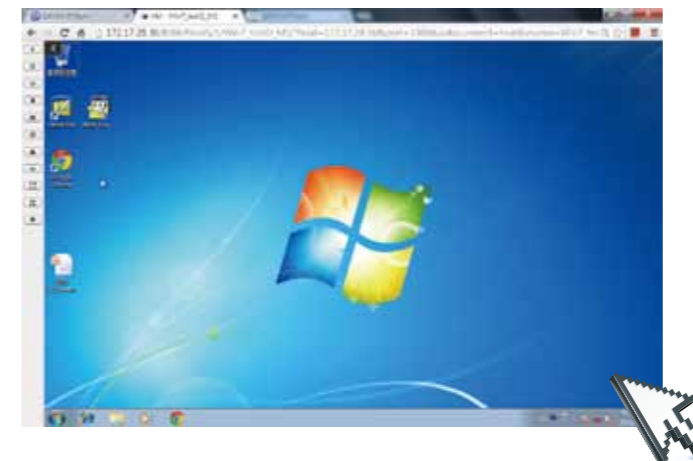
### Dedicated network for VM only

The Virtualization Station provides functions for network monitoring. You can monitor all NIC (network interface controller) traffic and assign a specific NIC exclusively to a single VM.



### Operate VMs as remote desktops

You can operate VMs using remote desktops to enjoy the utmost convenience. A list of buttons is provided on the left side of individual VM pages allowing you to suspend, shutdown, force shutdown, reset, use function keys, take snapshots, and to use Ctrl+Alt+Del for the VMs.





# Transcoding Center



## Comprehensive Hardware Accelerated Transcoding Center

Due to the increasing use of HD videos (720p, 1080p), video files are becoming increasingly large in size and can use lots of network bandwidth to share or play them over a network.

### Transcode Management

On-the-fly Transcoding and Background Transcoding allows you to convert videos to lower resolutions to accommodate slower/restricted network environments and device limitations.



### Why We Need Transcoding?

With the popularity of high-definition smartphones and digital cameras, the resolution of videos is getting higher. A higher resolution means larger file sizes and more bandwidth. Transcoding can provide lower resolution videos when sharing and watching, saving bandwidth, but also retains the unaltered original video on the Turbo NAS.

### Smart Transcoding Adapts to Suit Different Bandwidth

The TS-x51 Series provides a range of resolutions to play/share videos according to different bandwidth limits. Higher resolutions need more bandwidth, and you can select the right resolution for your network environment to get the best viewing experience.

Resolution / Network	240P	360P	480P	720P	1080P
Ethernet					
Wi-Fi					
4G (LTE)					
3G					

### Multi-mode Transcoding Function

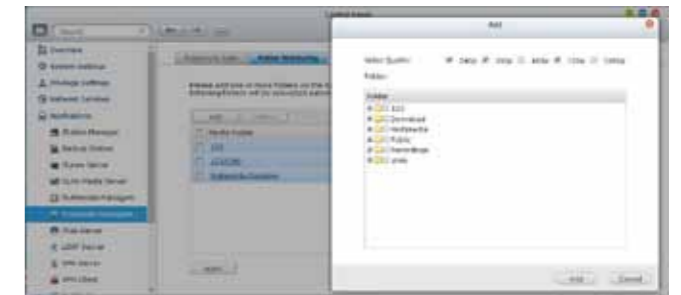
TS-x51 Series provide multiple transcoding functions for you to have the best video experience.

#### Background hardware accelerated transcoding

You can add videos to a transcoding list and use the Turbo NAS to convert the original high resolution video for use with multiple resolutions. Then you can select an appropriate resolution to match your environment when sharing or watching.

#### Auto transcoding

When you set a Turbo NAS folder as an auto transcoding folder, the Turbo NAS will automatically convert the videos in this folder to the resolution you have set. For example, if you set the folder to 360P, the video will auto transcode to this resolution when you upload to this folder as a background task.



#### On-the-fly transcoding

If you have many high-resolution videos, but did not transcode in advance, you can use on-the-fly transcoding. This will adapt to meet bandwidth limits, with the Turbo NAS transcoding in real time for watching the video directly. For this hardware based transcoding technology, up to **5** users can watch videos streamed simultaneously from the same Turbo NAS.

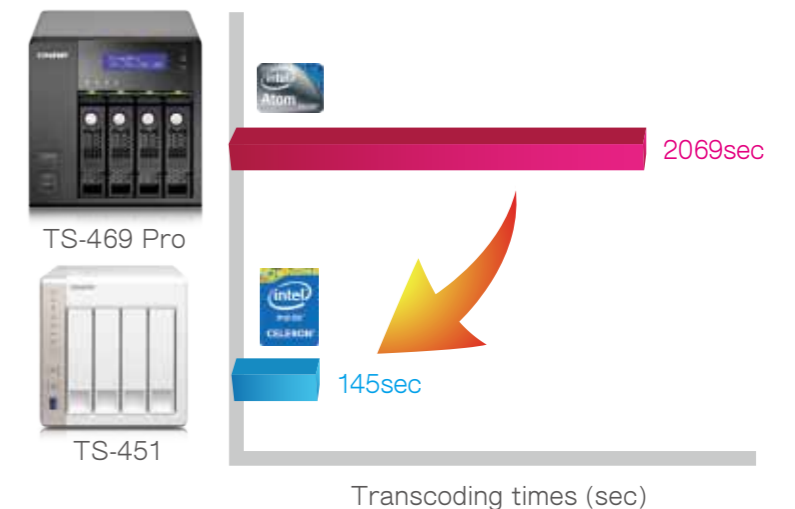


#### Hardware-accelerated transcoding technology

With Intel® HD Graphics video creation & conversion is faster, easier and can significantly reduce transcoding time while handling multiple on-the-fly transcode tasks.

#### Performance

Compare the transcoding time between the TS-x51 and TS-x69L / TS-x69 Pro with using the same high resolution (1080p) video.



**Results:** The performance of Hardware-accelerated Transcoding is **18 times** better than Software Transcoding.

## Intuitive & Simple

Based on Linux, QTS is designed to be simple and flexible, and centralizes multiple applications efficiently in the App Center.

QTS kernel highlights:

- › Multi-Window: Simultaneous multi-window operation, ease of usage.
- › Multi-Task: Perform multiple tasks at the same time, improve work efficiency.
- › Multi-Device: Synchronize cross multiple devices anytime, anywhere.
- › Multi-App: Download apps, easy to manage.

## Intelligent Desktop

The QTS 4.1's intelligent desktop offers an intuitive, sleek, and easy-to-follow graphic user interface, simplifying the whole Turbo NAS experience. It allows you to open multiple application windows and run multiple tasks simultaneously. Application windows can be minimized to the toolbar which allows you to see an overview of the opened applications and switch between running applications.

**Smart toolbar**  
Background tasks  
External device  
Event notifications  
Quick search

### Main menu

All your applications, system preferences, and additional apps installed from the App Center are neatly presented for you to find your desired app quickly. Drag and drop frequently used icons to the desktop as shortcuts for quick access.

### Multiple desktops

This extended desktop workspace is designed specifically to improve your productivity. You can separate the apps onto different desktops according to their nature or genre and switch between the desktops freely.

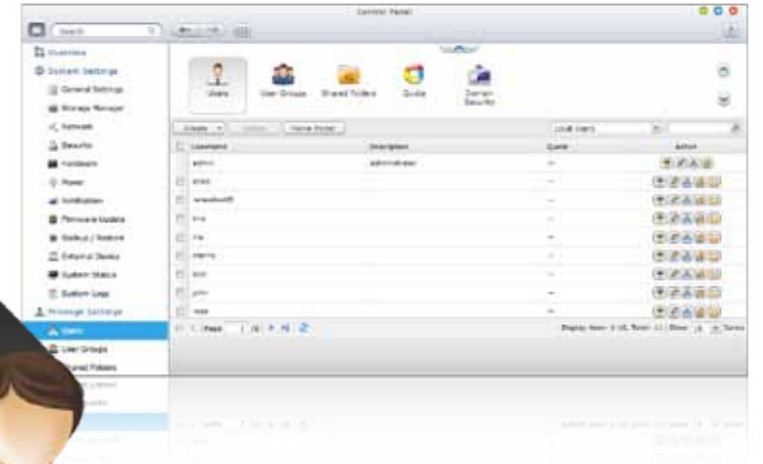
### Smart dashboard

In one click the smart dashboard presents all important system information in a single panel. Drag any status to the desktop for constant monitoring.

## System Management

### Privileges Settings

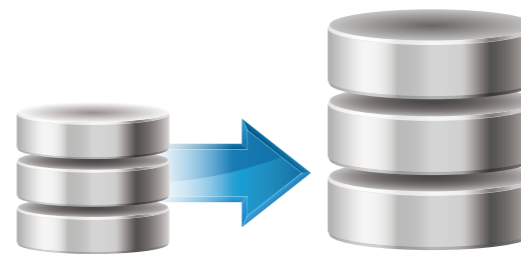
You can create multiple user accounts and shared folders, and authorize each user to different shared folders with the system support of privilege settings and Windows ACL advanced permissions.



### Storage Management

#### RAID configurations

The Turbo NAS supports comprehensive RAID configurations to have better data protection. Based on the number of hard drives of different Turbo NAS, you can choose from RAID 0, 1, 5, 6, 10, 5+hot spare, 6+hot spare, and 10+hot spare configurations. Considering the performance gain and extra redundancy, you can choose the most appropriate RAID configuration to effectively reduce the risk of data loss caused by unexpected hard disk failure.



RAID 5

RAID 5

#### RAID volume expansion

TS-x51 makes RAID volume expansion convenient and easy. At initial setup of the Turbo NAS, you can create RAID volumes by using small-sized hard drives. You can still replace the hard drives with larger ones anytime in need because RAID volume expansion can be done easily with the Turbo NAS. All the actions of expanding the volume capacity can be done online, without turning off the server and with all the data retained.



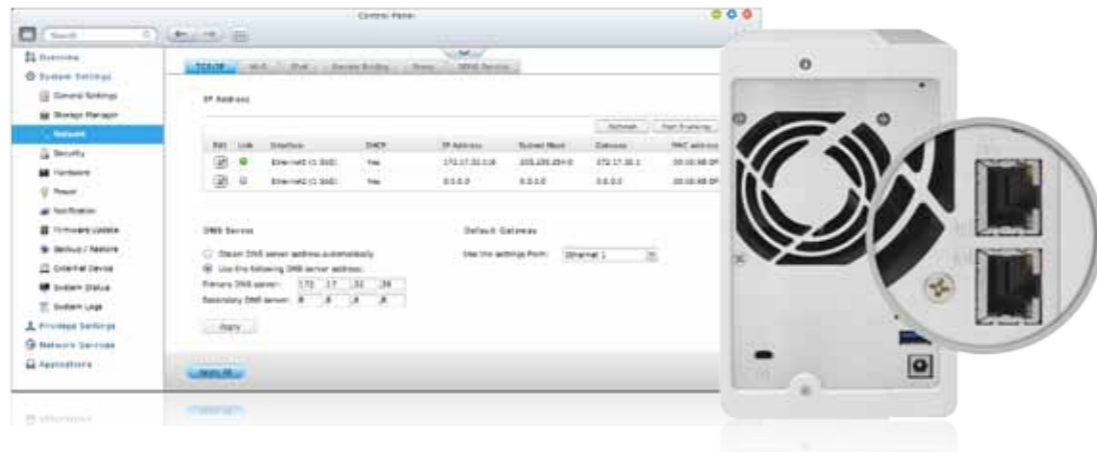
You can install the Qmanager app on your mobile device to conveniently manage your Turbo NAS and monitor the system status on the go.





## Network Settings

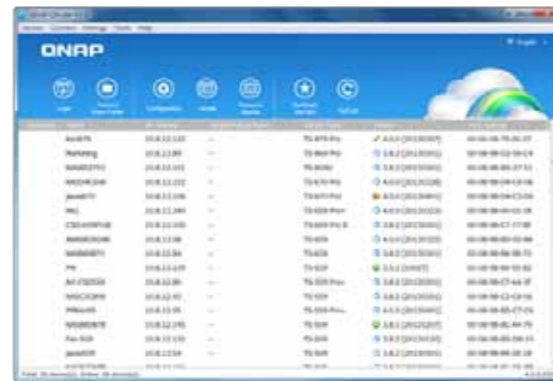
Setup the network under control panel. The TS-x51 Series support multiple port-trunking modes, enabling administrators to set up link aggregation to increase total data transmission capability. Failover is also supported to ensure continuous system operations. The supported port-trunking modes include: Balance-rr (Round-Robin), Active Backup, Balance XOR, Broadcast, IEEE 802.3ad, Balance-tlb (Adaptive Transmit Load Balancing) and Balance-alb (Adaptive Load Balancing).



## Qfinder

Connect and set up NAS easily

Qfinder is a utility, available for Windows, Mac, and Linux, to quickly find and access the Turbo NAS over the LAN. Install the Finder on your computer, open it, and double click your Turbo NAS name, and the login page is ready for you.



## Easily access the NAS by Storage Plug & Connect

Windows version of Qfinder provides a convenient way to connect to the Turbo NAS and map a network drive or a virtual disk. By creating a shared folder on the Turbo NAS and mapping it as a network drive, you can use it as an additional drive and store files on it as it is a local drive of the computer.



Qfinder is a utility, available for Windows, Mac, and Linux, to quickly find and access the Turbo NAS over the LAN. Install the Finder on your computer, open it, and double click your Turbo NAS name, and the login page is ready for you.

## myQNAPcloud SmartLink Service



## myQNAPcloud Connection

It's so easy to create your personal cloud or private cloud. With the myQNAPcloud service, you can always enjoy the Turbo NAS services safely and conveniently.



## myQNAPcloud ID (QID)

Access your Turbo NAS by signing into your myQNAPcloud portal with "QID", a unique ID for you to access your Turbo NAS and securely share your private data and files.

## Web-based file management

The myQNAPcloud portal enables you to manage multiple Turbo NAS units in one place. With the easy-to-use management interface, you can simply download, move, and copy files on your Turbo NAS, lessening the difficulty in accessing multiple Turbo NAS servers. All you need is to sign myQNAPcloud.

## Trustworthy file protection

To ensure the security of remote access service, myQNAPcloud strengthens keys on SSL Certificates to 2048-bits. The files on the Turbo NAS are 100% under the NAS owner's control.

## Publish and share

myQNAPcloud is an easy-to-setup service that simplifies the steps in publishing Turbo NAS contents over the Internet. On QTS myQNAPcloud, you can select numerous web-based Turbo NAS services, such as Photo Station, Music Station, and File Station to be published to the myQNAPcloud.com website. Likewise, you can easily view friends' public services on myQNAPcloud.com website too.



## myQNAPcloud Connect

myQNAPcloud Connect application is designed for Windows PC users. By installing the myQNAPcloud Connect, users will be able to connect to the Turbo NAS and easily manage files by drag-and-drop within the Windows Explorer. It's a great remote VPN gateway to access restricted websites via the NAS remotely.

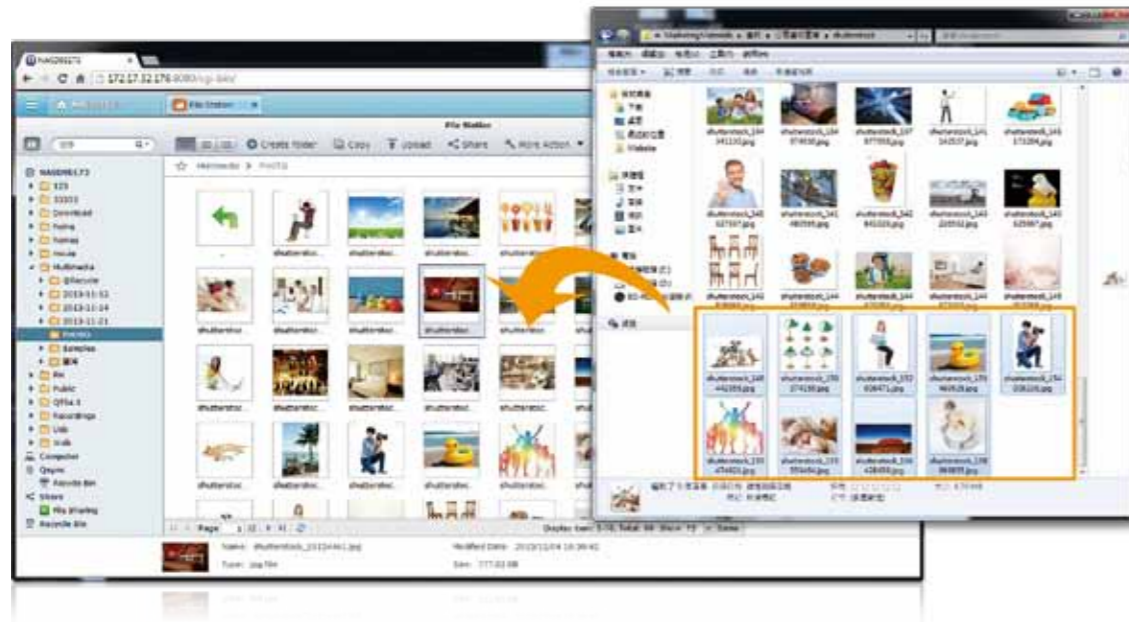


## File Management



### File Station

With the File Station, you can easily manage, upload, download, share files, and enjoy media playback anywhere with a web browser. The File Station brings conventional file operations performed on the computer desktop to the web browser.



#### File upload

Move files from local PC/Mac to File Station by drag-and-drop to easily upload the files to the Turbo NAS.

#### Mutual file sharing

You can easily share a bunch of files in a shared folder with friends via a Share Link. By activating the file upload function, your friends will be granted the privilege to upload files to your File Station without a user account required. You can even set an expiration time for shared files.

#### Photo slideshow

Right-click the selected photos to play the slideshow smoothly.

#### Media streaming & playing

The File Station supports VLC player for multimedia streaming. Just click on your photos, music and videos to directly play the contents. The slideshow display helps gather the media files in an organized manner for you to preview and play.

#### Click and play the videos

Real-time transcoding allows immediate and smooth video, music, and photo playback. No need to wait for the files to be converted in advanced.



#### Advanced quick search

The File Station provides smart filters for file searching and browsing by file size, modified date, file name, and so on. The pop-up thumbnails enable you to quickly and clearly preview the files. File browsing is more intuitive and effortless with the File Station.



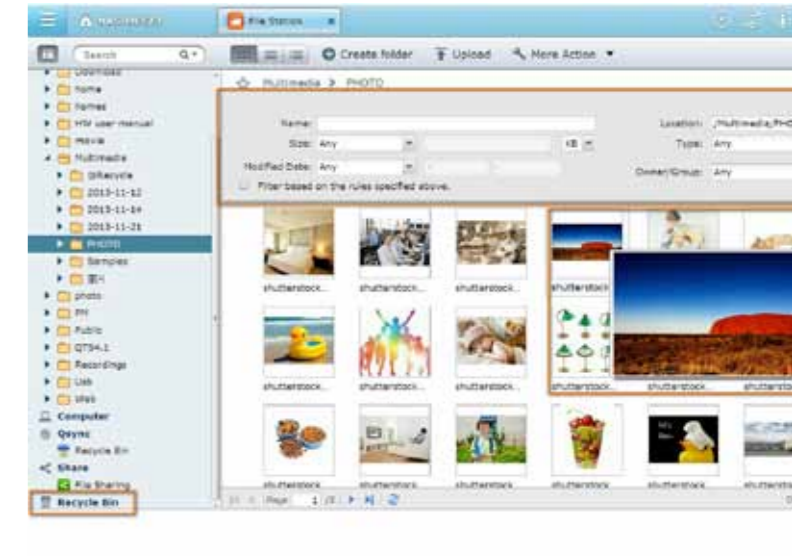
#### Photo thumbnails preview

The File Station shows thumbnails of photos, music and videos, making management easier.



#### Recycle bin

The recycle bin helps retrieve files accidentally deleted. It is categorized by shared folders to increase efficiency on file retrieval.



#### Compress/Extract multiple files

Choose multiple files on File Station and select "More Action>Compress (Zip)" to compress the files to a Zip. Or you can extract a Zip to files. How easy it is!







## Qfile: Share Files with Mobile Devices

You can install the Qfile app on your mobile device to browse and manage files stored on your Turbo NAS anytime, anywhere.

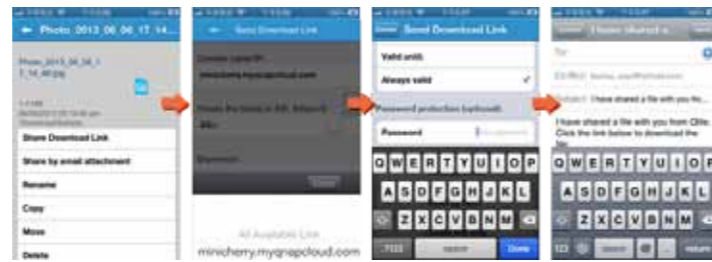
Follow below steps to start:

### 1. Share a file by the download link (email or SMS)

Once you finish managing download tasks, just turn off the computer. The download tasks will keep going until they are finished. Easy, and power-saving.

1) Tap the "➔" icon next to the file you want to share.

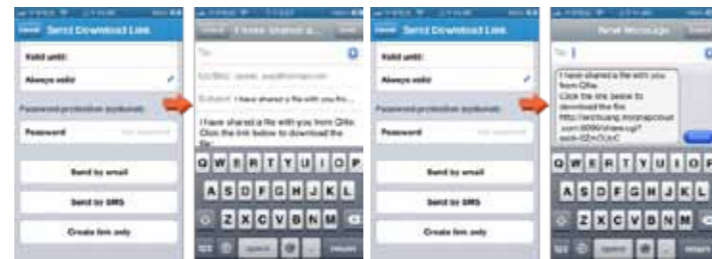
(2) Select a download link address. To allow your friends to download the file from the Internet, select myQNAPcloud, DDNS, or WAN IP.



(3) Specify the expiry time.

(4) Share the link via email or SMS.

(5) Specify the recipients and send your message



### 2. Share a file by email (attachment)

ou can share a file on the NAS as an email attachment.



An email attachment cannot exceed 20MB. Qfile will download the file to your handheld device and send it via the default email function. Please make sure there is enough space on your device to save the file.



Install the Qfile app on your mobile device to browse and manage files stored on your Turbo NAS anytime, anywhere.



# Download Center



## Download Station

The Download Station provides offline download so you can shut down your PC after configuring download tasks. The Turbo NAS will go on downloading even without your PC on. It is energy-saving and eco-friendly.



### Your 24/7 download center

Once you finish managing download tasks, just turn off the computer. The download tasks will keep going until they are finished. Easy, and power-saving.

### Powerful BT search engine

Search for a certain file using the built-in BT search engine to add download task easily.

### Wide range of download types

Supports BT, PT, Magnet, FTP/FTPS and HTTP/HTTPS downloads, as well as RSS download.



## QGet for Remote Download Tasks Management

You can manage download tasks of the Turbo NAS even you are away from home. QGet is available for Windows and Mac computers, and can connect multiple Turbo NAS units to search, add, remove or watch BT download through the Internet. QGet supports intuitive drag and drop of torrent files, HTTP or FTP URL to the software interface for convenient adding of download tasks.



Install Qget app to easily search download sources, download contents to the Turbo NAS, and manage download tasks on android mobile devices.





## Qsync: Your Personal Synchronization Tool

The Qsync utility provides file synchronization feature similar to Dropbox, with even larger storage capacity. You can easily upload files in one place and access from multiple devices, and share files with different groups flexibly and effortlessly.



### Cross-device synchronization

The Turbo NAS is your data center for photos, documents, videos and any file. Any newly added file to the Qsync folder will be automatically accessible on your computers, notebooks, smart phones, tablet devices, or File Station. You can easily enjoy the flexible file access, and the storage capacity is bigger than Dropbox.

### Team folders sharing

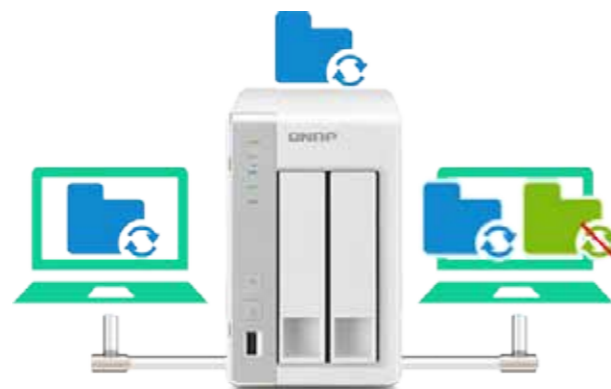
You can create sub-folders within the Qsync folder, and share each with different groups of Turbo NAS users as a file exchange center. Everyone in the same sub-folder is always kept up-to-date with the latest version of the files.

### Flexible ways for sync

You can select different sync modes and the shared folders to sync. It effectively decreases the storage consumption and solves the problem of limited space provided by computers.

### Auto-upload from mobile devices

Enable the auto-upload function of the Qfile. Whenever you take new photos or videos, the Qfile will automatically upload the files to the Turbo NAS. It works as a real-time backup of your precious photos and videos.



## Multimedia Center

QTS Photo Station, Music Station and Video Station provide intuitive user interfaces to simplify the multimedia applications and make them more fun. All the multimedia files are safely stored and classified to be easily shared, even being shared via social networking sites. You can use the powerful Download Station to enrich your video collections and have more fun.



## Photo Station

QTS Photo Station helps you archive your life and memories, easily manage, and quickly share with the easiest way. The unique Private Collections safeguard your private photos with the highest level of protection.

### Centralized management

No matter by drag-n-drop uploading or by Qsync synchronization, all the photos, including RAW photos, can be centrally managed via the Photo Station.

### Convenient virtual albums

Freely drag and drop photos from your photo gallery to arrange various virtual albums. These virtual albums are convenient for you to enjoy photos in an organized way and make them easier to share. Feel free to create as many virtual albums as possible as they don't take up additional storage space.

### Review photos on Google Maps

You can use the geo-tagging function to pinpoint the locations of the photos on Google Maps to identify where the photos were taken. In each photo album, you can review the history of your photos on Google Maps to rediscover your path around the world.

### Preview by video thumbnails

You can quickly identify the video content by the dynamic thumbnails without opening the videos.

### Private collection

You can create albums in the "Private Collection" to archive private photos. Whenever accessing the private albums, the user account and password are required. Your private photos and videos are well protected.

### Play by slideshows

View the photos by slideshow with dazzling transition effects. Turn on the background music to add more fun while enjoying the photos.

### Group photo sharing

Just arrange the sub-folders in the Qsync folder as Team Folders, and move photos to the Team Folders, people with access right to the Team Folders can browse those photos in their Photo Station.



Install Qphoto Lite app on your mobile device to enjoy the photos and to share the best moment anytime, anywhere.



Available on the App Store



Google play







## Music Station

Build a home music center easily and enjoy your music collection on the go. Your Turbo NAS is your music center in the cloud.



### Organize huge music collection

You have 4 ways to browse the music collection, and can create max. 200 playlists to enjoy and rate each song. The highest rating titles will be added to "My Favorites" collection.

### Personal music cloud

The Music Station allows you to play stored music on PC and mobile devices via the Internet, acting as your personal music cloud. With the Internet, you can enjoy the terabytes of music on the Turbo NAS anywhere.



### Sing along with lyrics

You can enter the lyrics of each song, and feel free to sing out loud when listening to your music collection on the Turbo NAS.

### Thousands of Internet radio stations

With the built-in TuneIn radio, you can listen to thousands of local and global online radio programs. You can also add new radio stations manually.



### Share your taste of music

Simply choose the music to share, and enjoy the flexibility of being able to share it via email, a download link, or social networking sites such as Facebook, Google+, and Twitter.

### Audio output

Want to enjoy the music on the Turbo NAS with a USB speaker? Just set the "NAS audio output" and enjoy the fantastic music playing.



The free Qmusic mobile app allows you to listen to your terabytes of music collection on the Turbo NAS anytime and anywhere. Scan the QR Code to download!



Available on the App Store



Google play



## Video Station

QTS Video Station is your personal video library with more friendly functions to enhance your video experience. Now, organizing video collections becomes much easier, and sharing videos more fun!



### Build a personal video website

The Video Station is great for archiving and playing your personal video collection online. Just upload videos, and the Video Station will smoothly play the video with appropriate resolution according to the available bandwidth environment.

### Easily classify your videos

You can classify your videos into categories such as home videos, movies, TV shows, and music videos. You can also manually adjust the classification by individual videos.

### Movie information sourcing

You can right click the videos classified as movies, and look up the information automatically obtained from the Internet, such as director and cast member. You can also manually modify the movie title to re-obtain the movie information.

### Organize by tags and labels

Use video tags to efficiently manage video collection using words, rating, and color labels. It's also convenient to collect videos by categories and labels. Archiving and browsing your personal video collection online is easy.



### Smart collection

You can create a smart collection of videos that match your predefined criteria such as names and ratings. The smart collections automatically collect videos with the same criteria, making it easier to find the videos you want to watch.

### More fun with sharing

Video sharing is easy on the Video Station. Simply choose the video and share via email, social networking sites such as Facebook, Google+, and Twitter or a sharing link.



Mobile app Qvideo is coming soon. With Qvideo, you can watch videos with mobile devices on the go.





# Home Theater Entertainment

You can enjoy the multimedia content stored on the Turbo NAS with a TV, using the feature of AirPlay, DLNA and HDMI.



## AirPlay Support

### AirPlay

You can use the Qfile app on an iOS device to browse videos and photos stored on the Turbo NAS and play on the TV via AirPlay-enabled devices such as Apple TV.

### QAirplay

Available in the App Center, QAirplay allows you to stream your media content directly on TV via Apple TV. The media contents are streaming on Apple TV, bypassing your mobile device, thus saves the energy of your mobile device.



## DLNA

### Media streaming and playing

You can use DLNA-compatible devices such as Smart TV sets, Sony® PS3, Microsoft® Xbox 360 and Hi-Fi system to enjoy HD quality videos stored on the Turbo NAS.



## HD Station

### Full HD movie experience

With the built-in HDMI port and the XBMC media player, the HD Station allows you to easily enjoy video, photo and music collections stored on the Turbo NAS, and have a wonderful family time.



### Enjoy YouTube on TV

The HD Station allows you to play YouTube contents directly on a big TV. Just sit on the sofa, kick back and enjoy the wonderful TV entertainment!

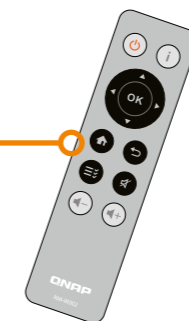
### Surf the Web on TV

The HD Station supports Google Chrome browser. You can surf the Internet or visit social networking sites to gain more fun, or download from the Internet and save files in the Turbo NAS directly.

### Turn you mobile into a remote

Android & iOS device users can download and install the Qremote app from App Store to control the HD Station and the playback of videos, music and photos stored in the Turbo NAS remotely. iOS® and Android™ users can download Official XBMC Remote app to turn the mobile devices into a remote control too.

QNAP Remote Control (RM-IR002)







## Signage Station

The Signage Station is a free app for the Turbo NAS, allowing shop owners to create menu boards, advertising posters, or business profiles by themselves, and easily display the eye-catching works on tablet devices to attract more customers.



### Drive business growth, increase revenue

Your designed contents can be presented on a web browser. When on the go, you can even show business profile, business cards or product catalogs on smart phones or tablet devices, and share on Facebook. The Turbo NAS with the Signage Station is your ideal tool to present creativity and drive business growth.

### Instantly publish, and conveniently revise

With iArtist Lite, you can save designed contents as different projects, and upload to multiple Turbo NAS with the Signage Station installed. Whenever you want to revise the content, just open iArtist Lite to update and publish instantly. You can fully control all the content in a timely way.

### Absolutely easy-to-use

iArtist Lite provides drag-and-drop user interface that allows you to flexibly embed videos, marquees, pictures, and PowerPoint slides on the canvas panel. With the layer-concept playlist and timeline features, you can freely arrange the order of media objects. Moreover, iArtist Lite offers numerous templates for various business types and scenarios, saving you lots of time and effort. Useful widgets such as audio, clock, RSS are available to add to the designed content.

### Collaboration increasing efficiency

The original design contents can be saved in local computer or the Turbo NAS with the help of the connection wizard. Content saved on the Turbo NAS are accessible for all authorized users. It helps increase work efficiency in projects involving multiple members.



## iArtist Lite (Running on Windows PC): Create Your Advertising Content Easily

### How to make advertising content on iArtist Lite?

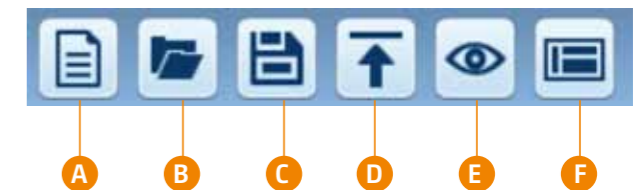
The concept of dynamic multimedia content is quite simple, just drag & drop media files to canvas on iArtist Lite, and you can create professional content quickly.

First of all, choose the device that you want to display, such as tablet, TV or smartphone. After selecting the device resolution you can select the landscape for vertical or horizontal content.



### Introduction of function kit

- A** Add new content
- B** Open previous content
- C** Save content
- D** Upload to Turbo NAS
- E** Preview the design
- F** Online template support



### Introduction of iArtist Lite windows-based tools:

- Video, photo, and music: Add file to the canvas from Windows.
- Digital & analog clock: Supports multiple styles of clocks and formats, just drag and drop to canvas.
- Background image: Choose a background color or choose a background image.
- Mask: Add an image mask to the content.
- Text & banner: Edit the text on the banner you'd like to promote.
- RSS: Get an RSS link from a website for sharing messages from the feed.
- Digital menu board: Use the digital menu board function to design a neat menu board, and edit the price and picture anytime, anywhere.
- Combo menu board: Just select the template and add the price and picture.
- HTML: Drop a whole website to the canvas for the most direct promotion.
- PPT and PDF: Easily add documents to the canvas including slideshows – retaining the animations from the PPT.



### Intuitive user interface with timeline view

After dragging and dropping from the left panel to the canvas, each media file will have a corresponding timeline at the bottom of the canvas to allow users to understand the details of dynamic content.



## Surveillance Station

The Surveillance Station is professional network surveillance Video Management System (VMS). Being one of the Turbo NAS standard applications, the Surveillance Station can be activated on the QTS App Center to turn the Turbo NAS into a professional Network Video Recorder (NVR) system for real-time monitoring, recording, playback, alarm notifications, Intelligent Video Analytics (IVA), and management to safeguard your assets and property when used with supported IP cameras. The TS-x51 series comes with **2** free camera channels, allowing users to easily build a home surveillance system.



### The most professional NVR system

#### Wide range of supported IP cameras

The Surveillance Station is compatible with over 2,600 IP camera models of over 90 brands and ONVIF specifications, including those support advanced features such as multi-streaming and fisheyedewarping.

#### Comprehensive Turbo NAS product spectrum

TS-x51 offers 2 free IP camera channels, and can be expanded to 24 channels, fulfilling all kinds of surveillance deployment needs.

#### Cross-platform support

The Surveillance Station works with all major web browsers such as Google Chrome, Mozilla Firefox and Internet Explorer. With QNAP Surveillance Client for Mac, users can also enjoy a similar experience on their Macs.

#### Advanced RAID storage technology

The Surveillance Station is installed on the Turbo NAS platform and is protected against loss, theft, and damage of recorded videos with the help of QTS security features and RAID technology.

### Live-view

#### Various remote monitoring modes

The Surveillance Station supports various monitoring modes to display 1, 4, 6, 8, 9, 10, 12, 16, 20, 25, 36, 42, and 64 channels on a single screen. Users can also choose to sequentially display each channel or use dual displays to have a wider view.

#### PTZ (Pan/Tilt/Zoom) control

On the Surveillance Station web interface, you can directly adjust the PTZ (Pan/Tilt/Zoom) functions of supported cameras, greatly enhancing the convenience in remote monitoring of desired corners.

#### Instant playback

On the Live-view page, whenever you want to look back to check suspicious events of a camera channel you just missed, just hit 'Instant Playback' button to bring up the window to review recent feeds.

#### Visual aid by E-map

Just upload the pictures of the monitoring locations to the Surveillance Station and drag and drop the IP camera icons to the right place on the E-map. Once an alarm event happens, the camera icons will flash to indicate the event type for you to be alerted immediately and take necessary actions.

#### Instant notification

When the alarm recording is enabled and an event occurs, an alarm icon will be shown instantly on the monitoring page. The alert details can be viewed by clicking the icon.



### Playback

#### Preview recordings by thumbnails

You can move the mouse cursor over the timeline to preview the video thumbnails to quickly identify and search the event. No need to play the video from the start and wait long just to find a short video clip.

#### Intelligent Video Analytics (IVA)

IVA is an advanced way to quickly search videos corresponding to particular modes, greatly saving the time & effort of manually screening out matching videos. IVA includes motion detection, foreign object, missing object, out-of-focus and camera occlusion.

#### Real-time watermarking

The support of digital watermarking helps prove that the exported videos and snapshots are genuine without any falsification. The Watermark Proof utility developed by QNAP can verify the credibility of the exported videos and snapshots by showing the exact recording date and time, camera name and the Turbo NAS model name. This is rather useful when the videos could be raised as evidence in a relative investigation or in court.

#### Playback and speed control by shuttle bar

With the speed control shuttle bar, you are able to fast-forward the video playback by dragging the button to the right and rewind to the left at the speed you like, helping you quickly find the desired screenshots.



### Flexible Management

#### Flexible camera access control

You can create up to 32 user accounts on the Surveillance Station and flexibly assign them to different user groups with different rights for monitoring, playback, PTZ control, and audio monitoring.

#### Expendable license management

The Surveillance Station comes with at least one free IP camera license for each Turbo NAS by default. Administrators can expand the channel number based on demands by purchasing additional licenses. This provides a flexible and cost-effective way of scaling the surveillance needs.

#### Advanced event management

The system starts alarm recording when alarm events occur. Administrators can configure events and assign 7 types of event actions, including recording, PTZ Control, alarm output, email notification, SMS notification, buzzer notification, and user-defined actions, ensuring to be alerted immediately.

#### Manage large-scale camera

By connecting multiple Turbo NAS units, you can manage, monitor and play back up to 128 IP cameras managed by the Turbo NAS at the same time from a single unit.

### Mobile apps

#### VMobile – Anytime anywhere surveillance

The VMobile mobile app enables you to monitor the Surveillance Station anytime and anywhere using iOS and Android devices. It provides camera live-view, PTZ control, instant event notifications, video snapshot, video playback, and video search by date and time.



#### Vcam – Turn your mobile device into camera

The Vcam mobile app can turn your mobile device into a network camera. With the Vcam mobile app, you could record any moment around you to your Turbo NAS, saving the budget of expensive IP cameras.



# App Center & Developers



## App Center

QTS App Center provides various apps for you to install on demand, enjoying more applications and lowering the cost of purchase.

### Powerful and, Rich-in-content

The App Center provides more than 100 add-on apps, including backup/sync, business, content management, communications, developer tools, download, entertainment, surveillance and utilities.

### Install on Demand

Find what you need and install it immediately with just one click.

### Upgrade Reminder

If newer versions of your installed apps are available, an upgrade reminder will show on the QTS desktop to help you keep your Turbo NAS applications up-to-date.



### ★ Most Popular Apps:



## Dropbox App

The Dropbox service is a cloud-based storage service that allows you to access your photos, documents, and videos anywhere, anytime with easy sharing. The free space from the Dropbox service is limited however, and to make it more efficient you can connect it with your Turbo NAS to store files.

### How to use Dropbox App?

The QNAP Dropbox app can synchronize your Dropbox account and your Dropbox folder on the Turbo NAS in both directions and in real-time. After you install the Dropbox QPKG and log into your Dropbox account, a Turbo NAS folder called "Dropbox" will be created and the synchronization process will start. With Real Time Remote Replication (RTRR), a built-in Turbo NAS function, you can easily back up files from your Dropbox account.



## Google Drive Sync App

Google Drive is a cloud storage service provided by Google that lets users save their files online for accessing them anywhere. By installing the Google Drive Sync QPKG on QNAP Turbo NAS you can select a shared folder on the Turbo NAS to synchronize the data with Google Drive or simply use Google Drive as a backup destination.



## 3rd party Development Platform

The open-source Linux kernel of the QTS makes it a friendly development platform with features including RAID technology, backup security and cloud storage, allowing software developers to develop all kinds of applications. Coupled with rich applications of QTS and the leading Turbo NAS hardware design, developers can enjoy the much more efficient process for R&D.

### Fully supportive customer services, sales and R&D

QNAP NAS applications can be developed using the following three approaches:

#### Development Toolkit (API & SDK)

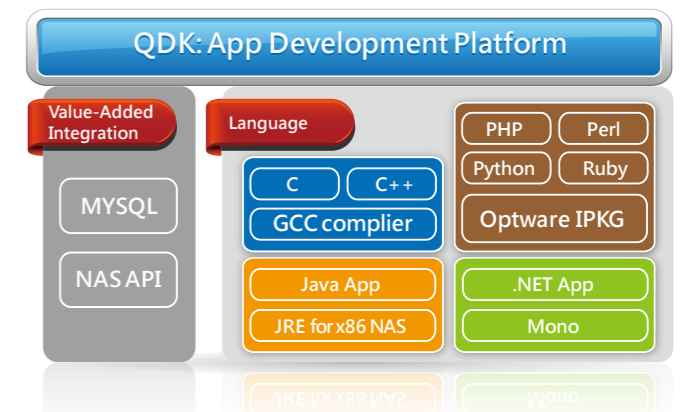
Developers can use QNAP Development Toolkit (API & SDK) to design applications that can run on a client's device (such as a smart phone or PC), and remotely manage and access files and documents stored on the NAS.

#### NAS App (QPKG) Development

Developers can design add-ons or applications running on the Turbo NAS and have the applications and related data integrated on the same platform. Also, through the built-in App Center on QNAP Turbo NAS, users can easily install and manage those applications.

#### VM Integration

Ever wanted to run non-Linux based applications on the Turbo NAS? No problem! VM integration is the solution for you to install a different OS and non-Linux based applications on the Turbo NAS.



# App Center & Developers

## ★ Success Stories :



### ■ Nextep

Nextep allows you to easily manage your private cloud using a mobile device. Photos, documents, and webpages can all be displayed in the windows-like interface, and you can also use the built-in browser to save documents, photos or videos to your private cloud, using a “lazy bag” or TeamSync feature to drag & share different types of contents.

#### Features

- **TeamSync**  
A simple “drag” approach to sharing information exclusively with team members from a mobile device via the team private cloud improves team efficiency and security of information exchange no matter where you are.
- **Speedy Synchronization**  
Nextep synchronizes content with your private cloud. Whether it is external information gathering via Nextep, or quickly uploading files from PC, all of the data can be presented side by side immediately in Nextep App or downloaded to PC. This allows you to get the latest information anytime, anywhere.
- **Ultimate Storage**  
Nextep integrates different types of information & content from different sources on your mobile device, and displays it side by side immediately. Documents, images, and webpage content can be stored in the private cloud for solving the problem of scattered information.
- **Nextep Lazy Bag**  
Freely pack different types of files on mobile devices, share via email, LINE, WeChat, Facebook, Twitter, LinkedIn, and view/download it on another mobile device or computer.
- **Cross-platform, Cross-device**  
Whether your web browser is Internet Explorer, Chrome, or Safari or your mobile device is iOS or Android: shared contents can be viewed and downloaded.



### ■ GiantView

GiantView creates a web platform or mobile app and lets you use video & communications anytime, anywhere, on any device to meet business, training and learning requirements. It also provides private and public business communication for meeting environments.

You can reduce wasted time and cost from travel/transport to the same place at fixed times. You can deal with more business, services and work more efficiently. It also provides the best communicating tool for your business and career:

#### Features

- **Time Cost:**  
You can greatly reduce the time & cost of meetings and communication.
- **Transportation costs:**  
You can save round trip traveling costs and accommodation expenses.
- **Training costs:**  
You can train your employees anytime, anywhere and on any device without specific equipment or venue.
- **Investment costs:**  
You can use the host device, virtual machine, and Turbo NAS to become a multi-purpose conference communications platform.



### ■ BitTorrent Sync

BitTorrent Sync uses the P2P (peer-to-peer) protocol to synchronize an unlimited number of files (stored on the Turbo NAS) between your devices. Your data is not stored on a server in the cloud but is protected using private keys during file transmission.



#### Features

- **Access your files anywhere.**  
Create a Sync folder for your QNAP Turbo NAS. Open QTS and access docs, share photos, and start working from anywhere.
- **Free for all.**  
Sync, send and share as much as you want. There are no file size limits, or caps on creativity. It's as simple as that.
- **Send and sync, without speed limits.**  
BitTorrent Sync skips the cloud to deliver your files at lightning speed. no matter where you are.



# TS-x51 Series Hardware Introduction

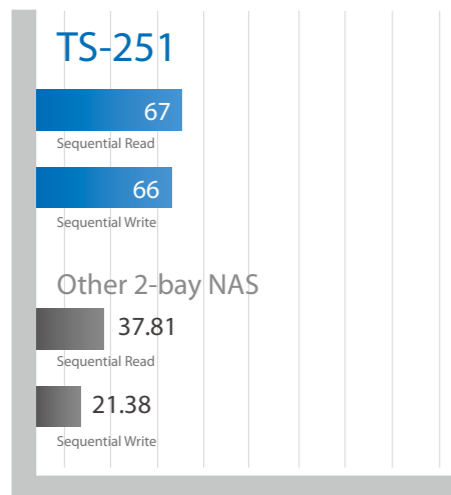
## Features

### 2X the processing power

Powered by a dual-core Intel® Celeron® 2.41GHz processor (burst up to 2.58GHz), 1GB (expandable to 8GB) energy-efficient DDR3L RAM and dual LAN ports: the TS-x51 is a powerful home NAS with the highest-standard hardware that delivers unrivaled performance with up to 220MB/s read/write speeds. The TS-x51's fast encryption performance provides transfer speeds of up to 67MB/s with AES-256bit volume encryption that boosts system performance & security while ensuring the safety of personal sensitive data stored in the TS-x51.

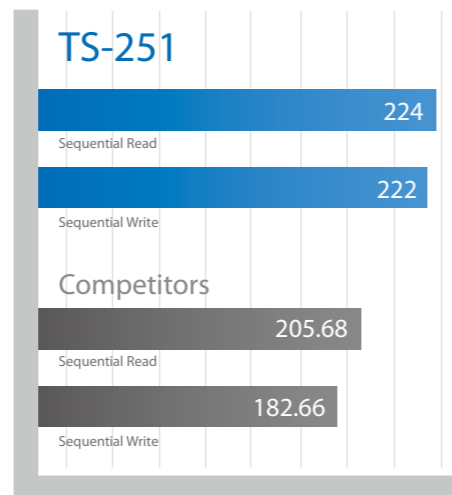
### AES 256-bit Encryption

Windows Upload/Download, 5GB file



### Throughput (Dual-LAN Link Aggregation)

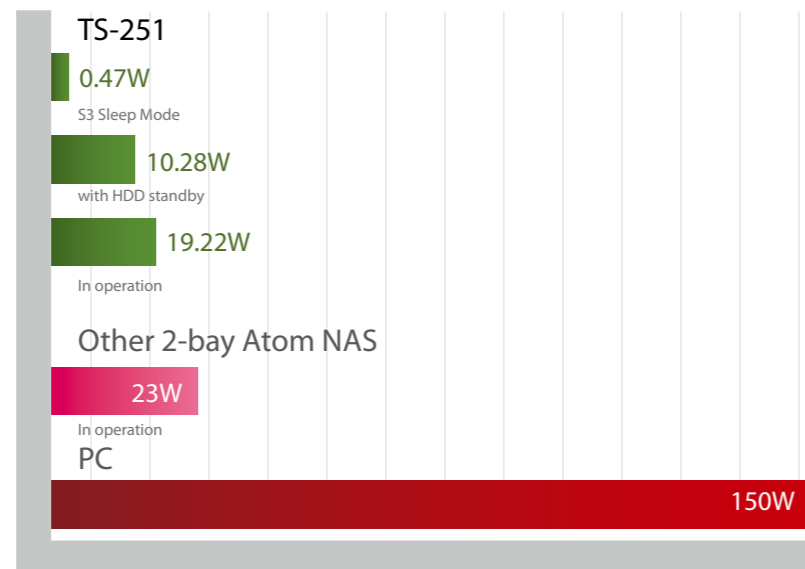
Windows Upload/Download, 5GB file, IO Meter 8 worker settings



### Eco-friendly design

The TS-x51 provides high performance with minimal power requirements and reduced heat generation with a cutting-edge 22nm processor and low-voltage, low-power DDR3L RAM. Other eco-friendly designs include scheduled power on/off, hard disk standby mode, and Wake on LAN.

### Power Consumption



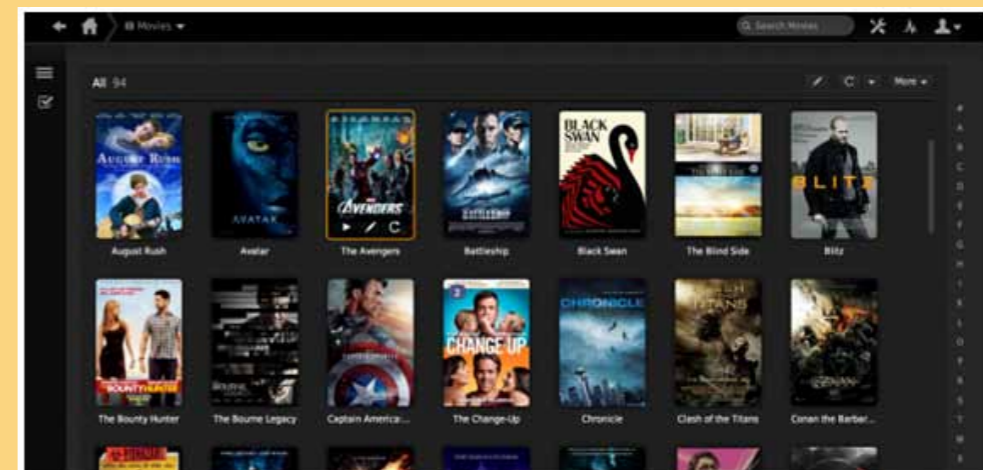
### Economical storage expansion with scale-up solution

The TS-x51 offers a high performance yet affordable storage solution to fulfill the needs of small/home offices in archiving rapidly growing data & large files. The TS-x51 supports online capacity expansion by connecting a QNAP expansion enclosure. With the QNAP scale-up solution, the raw storage capacity can be expanded on demand, making the TS-x51 an ideal file center with large storage capacity for personal video collections.



## Plex Media Server

Plex Media Server is the back-end media server component of Plex. Plex Media Server for TS-x51 Series is used to host the content and plugins that are then streamed to Plex Media Center and Plex mobile app clients, either on the same machine, the same local area network or over the Internet. Plex Media Server can be configured to index content in any directory on the NAS. Content may be transcoded by the server before it is streamed in order to reduce bandwidth requirements or for compatibility with the device being streamed to. Plex Media Server allows extensibility through the addition of plug-ins. Many of these plug-ins are available through the built-in Plex Online digital distribution service. The library organizer gives you the best browsing and watching experience through different platforms.



# TS-x51 Series Hardware Introduction

The maximum raw storage capacity available by connecting QNAP expansion enclosures

Turbo NAS Model	RAID Expansion Enclosure	No. of RAID Expansion Enclosure	Total HDD No.	Max. Raw Capacity (TB)
TS-851 (8 bay)	UX-800P	1	16 (8+8)	96
	UX-500P	1	13 (8+5)	78
TS-651 (6 bay)	UX-800P	1	14 (6+8)	84
	UX-500P	1	11 (6+5)	66
TS-451 (4 bay)	UX-800P	1	12 (4+8)	72
	UX-500P	1	9 (4+5)	54
TS-251 (2 bay)	UX-800P	1	10 (2+8)	60
	UX-500P	1	7 (2+5)	42

# The maximum capacity is calculated by using 6TB hard drives.

## Accessories

Category		Order P/N	Description
RAM		RAM-1GDR3L-SO-1600	1GB DDR3L-1600 RAM Module SODIMM
RAM		RAM-2GDR3L-SO-1600	2GB DDR3L-1600 RAM Module SODIMM
RAM		RAM-4GDR3L-SO-1600	4GB DDR3L-1600 RAM Module SODIMM
RAM		RAM-8GDR3L-SO-1600	8GB DDR3L-1600 RAM Module SODIMM
Remote Control		RM-IR002	QNAP Infrared (IR) Remote Control

## Hardware Specification



Model	TS-251 / TS-251-4G	TS-451 / TS-451-4G	TS-651 / TS-651-4G	TS-851 / TS-851-4G
CPU	Dual-Core Intel® Celeron® 2.41GHz (Burst up to 2.58GHz)			
Memory (RAM)	1GB SO-DIMM DDR3L-1333 / 4GB SO-DIMM DDR3L-1333			
Flash	512MB (DOM)			
Number of RAM Slots	2 (Max 8 GB)			
Max. number of HDDs/SSDs	2 x 2.5" or 3.5" SATA 6Gb/s, 3Gb/s; hot-swappable	4 x 2.5" or 3.5" SATA 6Gb/s, 3Gb/s; hot-swappable	6 x 2.5" or 3.5" SATA 6Gb/s, 3Gb/s; hot-swappable	8 x 2.5" or 3.5" SATA 6Gb/s, 3Gb/s; hot-swappable
Expansion Enclosure Support	1 (UX-800P, UX-500P)			
Gigabit LAN Ports	2			
USB Ports	USB 3.0: 2, USB 2.0: 2	USB 3.0: 2, USB 2.0: 2	USB 3.0: 3, USB 2.0: 2	USB 3.0: 3, USB 2.0: 2
IR Sensor (MCE Remote)	Yes	Yes	Yes	Yes
HDMI	1	1	1	1
LED Indicators	Power/Status, LAN, USB, HDD1-2	Power/Status, LAN, USB, HDD1-4	Power/Status, USB, LAN, HDD 1-6	Power/Status, USB, LAN, HDD 1-8
Buttons	Power, Reset, USB Auto Copy			
Form Factor	Tower	Tower	Tower	Tower
Dimensions (HxWxD)	168.5 x 102 x 225 mm 6.63 x 4.02 x 8.86 inch	177 x 180 x 235 mm 6.97 x 7.09 x 9.25 inch	175 x 257 x 235 mm 6.89 x 10.12 x 9.25 inch	185.2 x 298.2 x 235.4 mm 7.29 x 11.74 x 9.27 inch
Weight (Net/ Gross)	1.28 kg (2.82 lbs) / 2.32 kg (5.11 lbs)	3 kg (6.61 lbs) / 4.3 kg (9.48 lbs)	"6.18 kg (13.62 lbs) / 6.9 kg (15.21 lbs)"	"7.83 kg (17.26 lbs) / 8.9 kg (19.62 lbs)"
Temperature and Humidity	0 - 40 ° C, 5 - 95% R.H	0 - 40 ° C, 5 - 95% R.H	0 - 40 ° C, 5 - 95% R.H	0 - 40 ° C, 5 - 95% R.H
Power Supply Specification	External Power Adapter, 60W, 100-240V	External Power Adapter, 90W, 100-240V	ATX 250W, Input: 110-240 Vac~, 50-60Hz, 5A	ATX 350W, Input: 110-240 Vac~, 50-60Hz, 5A
Power Consumption: HDD Sleep (W)	10.28	15.85	21.08	26.81
Power Consumption: Typical Operation (W)	19.22	31.07	39.42	56.79
Power off: S3 Sleep (W)	0.47	0.55	0.41	0.72
Windows Upload / Download - Link Aggregation (MB/s)	222 / 224	216 / 224	223 / 224	223 / 224
AES 256-bit Encrypted Windows Upload / Download (MB/s)	67 / 68	68 / 68	68 / 69	68 / 69
File System: Internal Hard Drive	EXT4			
File System: External Hard Drive	EXT3, EXT4, NTFS, FAT32, HFS+			
RAID Recovery	Yes			
Online RAID Capacity Expansion	Yes			
Online RAID Level Migration	Yes			
RAID Type	Single Disk, RAID 0, RAID 1, JBOD	Single Disk, RAID 0, RAID 1, RAID 5, RAID 6, RAID 10, RAID 5 + Spare, JBOD	Single Disk, RAID 0, RAID 1, RAID 5, RAID 6, RAID 10, RAID 5/6/10 + Spare, JBOD	
Global Hot Spare	-		Yes	
USB One-Touch-Copy Backup	Yes			
Surveillance Station - Default IP Cameras	2			
Surveillance Station - Max IP Cameras	24 (optional license purchase)			
Virtualization Station	Yes (Max 1 running VM; RAM of NAS >= 2 GB)			
VPN Server (PPTP + OpenVPN)	Yes			
Max. Number of Users	4096			
Max. Number of User Groups	512			
Max. Number of Shared Folders	512			
Max. Number of Concurrent Connections	600			



with Intel Dual-Core  
Celeron 2.4GHz

Goodbye **Atom**, Hello **Celeron**<sup>®</sup>  
with **HDMI & Virtualization**

**Supreme Value  
Great Performance**

- Real-time/offline transcoding
- HDMI connectivity
- World's first NAS with built-in Virtualization Station
- Personal cloud and intuitive QTS 4.1
- Online file editing & sharing
- Up to 220MB/s with dual GbE LAN ports
- Fast 68MB/s with AES-256bit encryption
- Supports up to 8GB DDR3L RAM



**All New Tubro QNAP NAS  
TS-251 / TS-451 NAS**

**Virtualization Station**



- Supports Windows, Linux and UNIX
- Import/Export VMs
- Snapshots for backup & restore
- Compatible with VM markets

**HDMI Local Display**



- Integrated XBMC media player
- Full HD 1080p output
- 7.1 audio passthrough
- Watch YouTube & browse the web on your TV

**Hardware-accelerated  
Transcoding**



- On-the-fly & offline transcoding
- Auto/Manual media conversion
- VOD streaming
- Compatible with multi-device

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