

# TS-x31K

TS-131K TS-231K

**TS-431K** 

**User Guide** 

Document Version: 5 02/09/2021

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# 1. Preface

# **About This Guide**

This guide provides information on the QNAP TS-x31K NAS and step-by-step instructions on installing the hardware. It also provides instructions on basic operations and troubleshooting information.

# **Audience**

This document is intended for consumers and storage administrators. This guide assumes that the user has a basic understanding of storage and backup concepts.

# **Document Conventions**

Symbol	Description
	Notes provide default configuration settings and other supplementary information.
1	Important notes provide information on required configuration settings and other critical information.
	Tips provide recommendations or alternative methods of performing tasks or configuring settings.
A	Warnings provide information that, when ignored, may result in potential loss, injury, or even death.

# 2. Product Overview

This chapter provides basic information about the QNAP TS-x31K NAS.

# About the TS-x31K

The TS-x31K is powered by Annapurna Labs Alpine AL-214 ARMv7 processors for multi-tasking. The TS-x31K ensures data security and performance with built-in AES 256-bit encryption engines. It features a USB One Touch Copy port for quick and convenient backup and data transfer. The TS-x31K is available in 1-drive bay, 2-drive bay, and 4-drive bay models that support SATA 6 Gbps data transfer. The TS-x31K series NAS with the exception of the 1-drive bay model, offers two Gigabit Ethernet ports (two GbE RJ45 ports) for optimal throughput and streaming multimedia content while on the move.

# **Hardware Specifications**



# Warning

- If your QNAP product has hardware defects, return the product to QNAP or a QNAPauthorized service center for maintenance or replacement. Any attempt to repair or perform maintenance procedures on the product by you or an unauthorized thirdparty invalidates the warranty.
- QNAP is not responsible for any damage or data loss caused by unauthorized modifications and installation of unsupported third-party applications.
   For details, see the QNAP Warranty Terms and Conditions.

Ordering P/N	Drive bays	Memory	Power supply
TS-131K	1	1 GB	Single
TS-231K	2	1 GB	Single
TS-431K	4	1 GB	Single

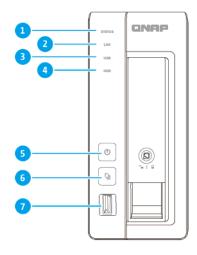
Component	TS-131K TS-231K TS-431K					
Processor						
CPU	Annapurnalabs Labs Alpir	Annapurnalabs Labs Alpine AL-214 ARMv7				
Frequency	4-core 1.7 GHz					
Architecture	ARM 32-bit					
Encryption engine	AES-256					
Memory						
Pre-installed memory	1 GB RAM: 1GB DDR3					
	Note This memory is not expandable.					
Maximum memory	1 GB RAM: 1GB					
Flash memory	512 MB (Dual boot OS protection)					
Storage						
Drive bays	1 x 3.5-inch SATA 6 Gbps 2 x 3.5-inch SATA 6 Gbps 4 x 3.5-inch SATA 6 Gbps					

Component	TS-131K	TS-231K TS-431K					
Drive compatibility	3.5-inch bays:	nch bays:					
	3.5-inch SATA hard disk drives						
	2.5-inch bays:						
	• 2.5-inch SATA hard dis	k drives					
	• 2.5-inch SATA solid-sta	ate drives					
SSD cache acceleration support	• 3.5-inch drive bays:1	• 3.5-inch drive bays:1 • 3.5-inch drive bays:1 to 2					
Hot-swapping	Supported						
Network							
Gigabit Ethernet ports	1 x GbE RJ45	2 x GbE RJ45					
External I/O Ports & Expar	nsion Slots						
USB ports	Front: 1 x USB 3.2 Gen 1 (5 Gbps  Note This USB port supp	) ports One Touch Copy.					
	Rear: 1 x USB 3.2 Gen 1 (5 Gbps	)					
Interface							
Buttons	• Power						
	• Reset						
	USB One Touch Copy						
Dimensions							
Form factor	Tower						
Dimensions (H x W x D)	169 x 73 x 219 mm 6.65 x 2.87 x 8.62 in	169 x 102 x 219 mm 6.65 x 4.02 x 8.62 in	169 x 160 x 219 mm 6.65 x 6.3 x 8.62 in				
Net weight	1.04 kg (2.29 lbs)	1.28 kg (2.82 lbs)	3 kg (6.61 lbs)				
Others							
Power supply unit	36W, 100-240V DC, 50/60 Hz	60W, 100-240V DC, 50/60 Hz	90W, 100-240V DC, 50/60 Hz				
System battery	CR2032 lithium battery (3)	/, 225 mAh)					
Sound level	16.0 dB(A)	22.1 dB(A)	23.2 dB(A)				
	Note The sound level was tested at a bystander position, which is within one meter of the NAS. The test NAS operated at low speed with the maximum number of drives installed.						
Fans	System: 1 x 50 mm, 12V System: 1 x 70 mm, 12V System: 1 x 120 mm, 12V DC smart fan DC smart fan DC smart fan						
Operating temperature	0°C to 40°C (32°F to 104°F)						
Relative humidity	Non-condensing relative humidity: 5% to 95%						
	• Wet-bulb temperature: 27°C (80.6°F)						

Component	TS-131K	TS-231K	TS-431K
Security slot	Kensington security slot		

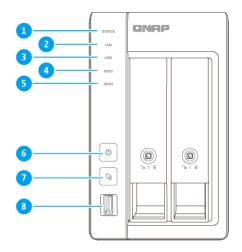
# Components

# **Front Panel**



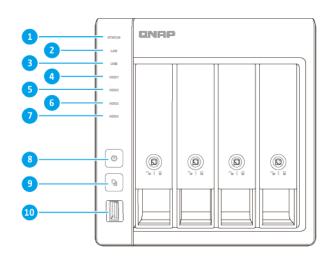
# TS-131K

No.	Component	No.	Component
1	Status LED	5	Power button
2	LAN LED	6	USB One Touch Copy button
3	USB LED	7	USB 3.2 Gen 1 One Touch Copy Type-A port
4	Drive LED	-	-



# TS-231K

No.	Component	No.	Component
1	Status LED	5	Drive 2 LED
2	LAN LED	6	Power button
3	USB LED	7	USB One Touch Copy button
4	Drive 1 LED	8	USB 3.2 Gen 1 One Touch Copy Type-A port

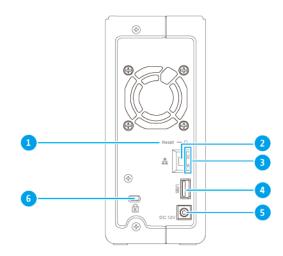


# TS-431K

No.	Component	No.	Component
1	Status LED	6	Drive 3 LED
2	LAN LED	7	Drive 4 LED

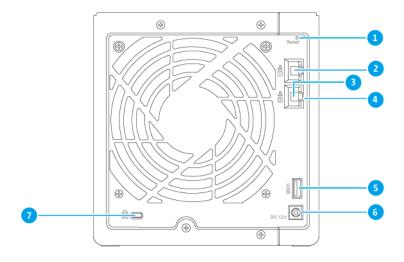
No.	Component	No.	Component
3	USB LED	8	Power button
4	Drive 1 LED	9	USB One Touch Copy button
5	Drive 2 LED	10	USB 3.2 Gen 1 One Touch Copy Type-A port

# **Rear Panel**



TS-131K

No.	Component	No.	Component
1	Reset button	4	USB 3.2 Gen 1 Type-A port
2	Gigabit Ethernet Port (RJ45)	5	Power input
3	Gigabit Ethernet LEDs	6	Kensington security slot



TS-231K, TS-431K

No.	Component	No.	Component
1	Reset button	5	USB 3.2 Gen 1 Type-A port
2	Gigabit Ethernet Port 1 (RJ45)	6	Power input
3	Gigabit Ethernet Port 2 (RJ45)	7	Kensington security slot
4	Gigabit Ethernet LEDs	-	-

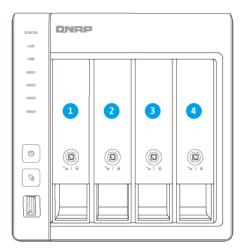
# **Drive Numbering**



TS-131K



# TS-231K



# TS-431K

# **Package Contents**

Item	Quantity
TS-x31K	1
AC power adapter	1
Power cord	1
Ethernet cable	1 x 1GbE (Cat 5e)

Item	Quantity
Screws for 3.5-inch drives	• TS-131K:4
	• TS-231K:8
	• TS-431K:16
Screws for 2.5-inch drives	• TS-131K:3
	• TS-231K:6
	• TS-431K:12
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# **Safety Information**

The following instructions help ensure personal safety and environmental safety. Read these instructions carefully before performing any operations.

#### **General Instructions**

- The NAS should be stored in a secure location with restricted access, controlled through the use of a tool, lock and key, or any means of security.
- Only qualified, skilled, and authorized persons with knowledge of all restrictions, safety precautions, and installation and maintenance procedures should have physical access to the NAS.
- · To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.
- Observe electrostatic discharge (ESD) procedures to avoid potential injury or damage to components.

# **Power**

• To reduce the risk of fire or electric shock, ensure that you only connect the power cord to a properly grounded electrical outlet.



The device may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords before installing or replacing system components.

# **System Battery**

- To avoid potential battery explosion, causing injury or damage to components, ensure that you replace the existing battery with a battery of the same type.
- Dispose of used batteries properly according to local regulations or the instructions of the battery manufacturer.

# **Moving Parts**



Moving fan blades: Keep your body parts away from moving fan blades while the device is connected to a power source.



**Moving components:** Keep your body parts away from other moving components.

# **Installation Requirements**

Category	Item	
Environment	• Room temperature: 0°C to 40°C (32°F to 104°F)	
	Non-condensing relative humidity: 5% to 95%	
	• Wet-bulb temperature: 27°C (80.6°F)	
	Flat, anti-static surface without exposure to direct sunlight, liquids, or chemicals	
	<ul> <li>Free from objects that may obstruct NAS ventilation or apply pressure to the NAS or power cord</li> </ul>	
Hardware and peripherals	Storage drives     For the list of compatible drive models, go to https://www.qnap.com/compatibility.	
	Network cable	
Tools	Phillips #1 or #2 screwdriver	
	Flat head screwdriver	
	Anti-static wrist strap	

# **Setting Up the NAS**



# **Important**

Read all safety requirements and information in Safety Information carefully before setting up the NAS or installing NAS components.

- **1.** Place your NAS device in an environment that meets the requirements. For details, see Installation Requirements.
- **2.** Install the drives.

For details, see the following topics:

- Installing 3.5-inch Hard Drives on 3.5-inch Trays
- Installing 2.5-inch Hard Drives or Solid-State Drives on 3.5-inch Trays

For the list of compatible drive models, go to https://www.qnap.com/compatibility.

- **3.** Connect the NAS to the network.
- **4.** Optional: Connect USB expansion units. For details, see Connecting USB Expansion Units.

- **5.** Connect the power cord and all applicable cables.
- **6.** Power on the NAS. For details, see Front Panel.
- **7.** Install QTS. For details, see QTS Installation.

# 3. Installation and Configuration

This chapter provides specific hardware and firmware installation and configuration steps.

# **Hardware Installation**

This section provides information on installing drives, memory modules, and expansion cards.

# **Drive Installation**

The TS-x31K is compatible with 3.5-inch hard drives, 2.5-inch hard drives, and 2.5-inch solid-state drives.

# **Installing 3.5-inch Drives on a 3.5-inch Tray**



# Warning

- Installing a drive deletes all data on the drive.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

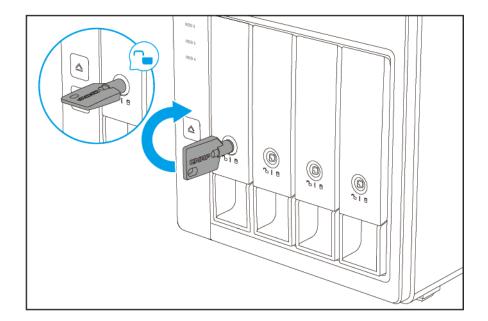


**Moving fan blades:** Keep your hands and other body parts away from moving fan



**Other moving components:** Keep your hands and other body parts away from other moving components.

- **1.** Power off the NAS.
- 2. Remove the drive tray.
  - a. Optional: Unlock the tray.





# Note

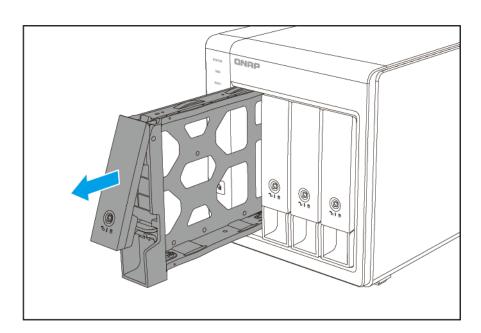
The preinstalled drive trays come unlocked.



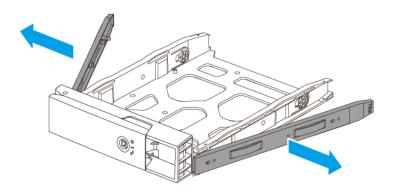
# **Important**

Ensure the drive tray keys are stored in a safe place.

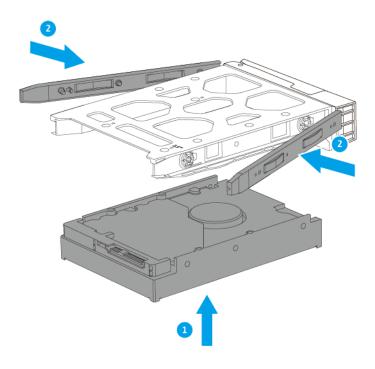
- **b.** Pull the handle to release the tray.
- **c.** Pull the tray out.



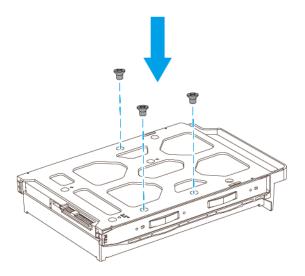
- **3.** Install a drive on the tray.
  - **a.** Remove the fastening panels from the sides of the drive tray.



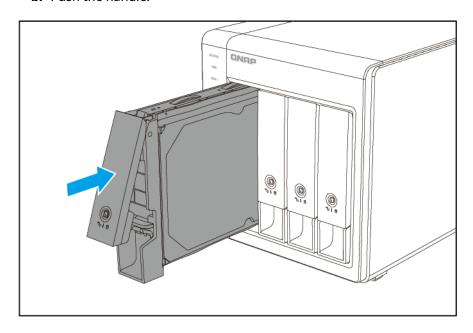
- **b.** Place the drive on the tray so that the holes on the sides of the drive are aligned with the holes on the sides of the tray.
- **c.** Attach the fastening panels.



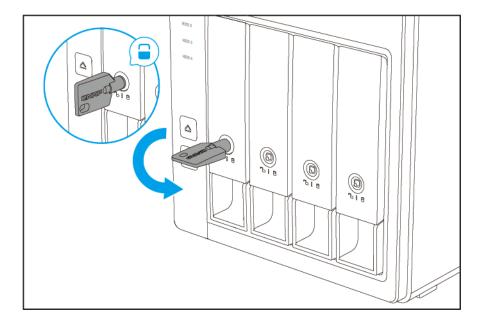
**d.** Optional: Attach the screws to further secure the drive.



- **4.** Load the tray into the bay.
  - **a.** Insert the tray into the bay.
  - **b.** Push the handle.



**c.** Optional: Lock the tray.



**5.** Power on the NAS.

# **Installing 2.5-inch Hard Drives and Solid-State Drives on 3.5-inch Trays**



# Warning

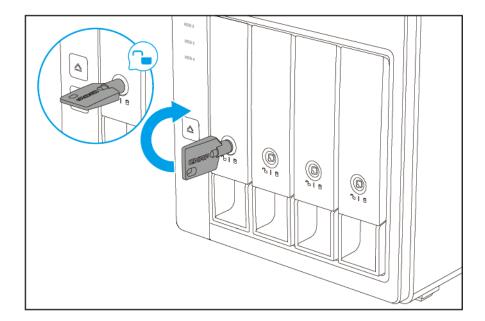
- Installing a drive deletes all data on the drive.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

**Moving fan blades:** Keep your hands and other body parts away from moving fan blades.



**Other moving components:** Keep your hands and other body parts away from other moving components.

- **1.** Power off the NAS.
- 2. Remove the drive tray.
  - **a.** Optional: Unlock the tray.





# Note

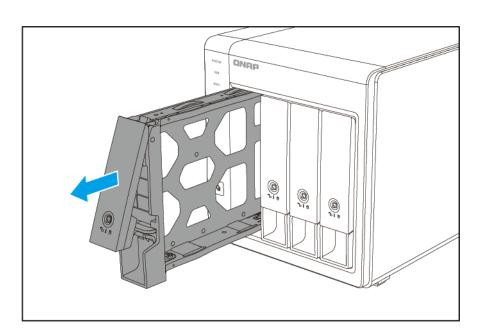
The preinstalled drive trays come unlocked.



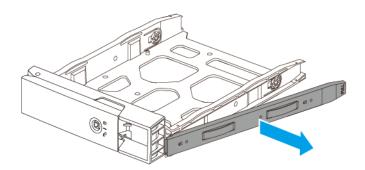
# **Important**

Ensure the drive tray keys are stored in a safe place.

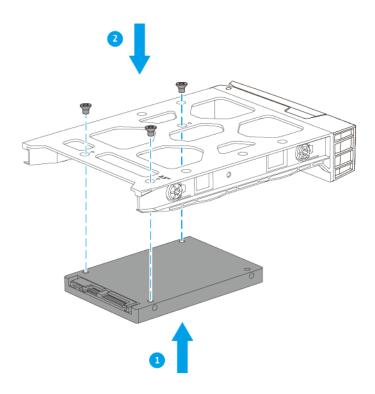
- **b.** Pull the handle to release the tray.
- **c.** Pull the tray out.



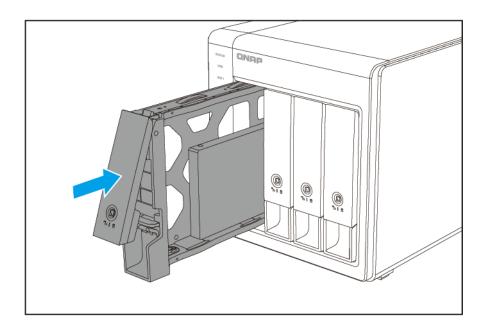
- **3.** Install a drive on the tray.
  - ${\bf a.}\;$  Remove the right fastening panel from the drive tray.



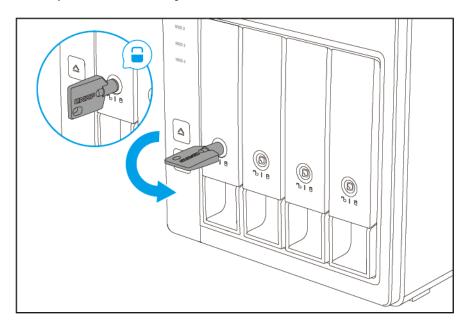
- **b.** Place the drive on the tray so that the holes on the sides of the drive are aligned with the holes on the sides of the tray.
- **c.** Attach the screws.



- **4.** Load the tray into the bay.
  - **a.** Insert the tray into the bay.
  - **b.** Push the handle.



# **c.** Optional: Lock the tray.



# **Connecting USB Expansion Units**

The TS-x31K supports USB expansion units. For details, please see table below.

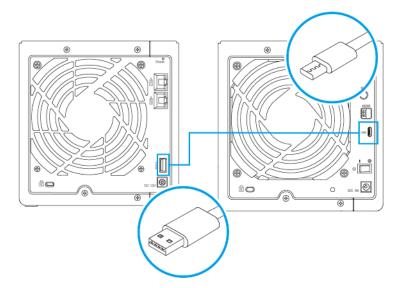
You can purchase storage expansion accessories from QNAP or an authorized reseller.

For details, go to https://shop.qnap.com/.

For the list of compatible expansion units and the maximum number of applicable expansion units, go to http://www.qnap.com/go/compatibility-expansion.

Expansion Unit Model	Description	Required Accessories
TR-002	<ul> <li>Uses a USB 3.2 Gen 2 Type-C interface</li> </ul>	USB 3.2 Gen 2 Type-A to Type-C cable
	<ul> <li>Supports SATA</li> </ul>	
TR-004	<ul><li>Uses a USB 3.2 Gen 1 Type-C interface</li><li>Supports SATA</li></ul>	USB 3.2 Gen 1 Type-A to Type-C cable
TL-D800C	<ul><li>Uses a USB 3.2 Gen 2 Type-C interface</li><li>Supports SATA</li></ul>	USB 3.2 Gen 2 Type-A to Type-C cable

- **1.** Connect the expansion unit to the NAS.
  - **a.** Connect the USB cable to the USB Type-B or USB Type-C port on the expansion unit.
  - **b.** Connect the USB cable to a USB 3.2 Gen 1 Type-A port on the NAS.



- **2.** Power on the expansion units.
- **3.** Verify that the expansion units are recognized by the NAS.
  - **a.** Log on to QTS as administrator.
  - **b.** Go to Main Menu > Storage & Snapshots > Overview > System .
  - **c.** Verify that the expansion units are listed.

# **QTS Installation**

Method	Description	Requirements
Qfinder Pro installation (Recommended)	<ul> <li>If the NAS is connected to your local area network, you can do the following:</li> <li>Locate the NAS using Qfinder Pro.</li> <li>Complete the steps in the Smart Installation Guide wizard.</li> </ul>	<ul><li>Computer</li><li>Network cable</li><li>Qfinder Pro installer</li></ul>
Cloud installation	If the NAS is connected to the internet, you can do the following:  • Scan the QR code on the NAS.  • Specify the Cloud Key.  • Log into your myQNAPcloud account.  • Use myQNAPcloud Link to remotely access your NAS.  • Complete the steps in the Smart Installation Guide wizard.	<ul> <li>Computer or mobile device</li> <li>myQNAPcloud account</li> <li>Cloud Key</li> </ul>

# **Installing QTS Using Qfinder Pro**



Installing QTS deletes all data on the drives. Back up your data before proceeding.

- 1. Power on the NAS.
- **2.** Connect the NAS to your local area network.
- **3.** Run Qfinder Pro on a computer that is connected to the same local area network.



To download Qfinder Pro, go to https://www.qnap.com/utilities.

- **4.** Locate the NAS in the list and then double-click the name or IP address.
- **5.** Perform any of the following actions.
  - To check for the latest available version, click **Start**. The wizard downloads the latest available version, and then the NAS restarts after the download is complete. If a newer version is not available, the wizard automatically displays the Smart **Installation Guide.**
  - To install the out-of-the-box version, click **Skip**.
- 6. Click Start Smart Installation Guide.
- **7.** Specify the following information.
  - NAS name: Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.

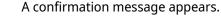
- Password: Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.
- 8. Click Next.
- **9.** Specify the time zone, date, and time.



### Tip

QNAP recommends connecting to an NTP server to ensure that the NAS follows the Coordinated Universal Time (UTC) standard.

- 10. Click Next.
- 11. Select Obtain an IP address automatically (DHCP).
- 12. Click Next.
- **13.** Select the types of devices that you will use to access shared folders on the NAS.
- 14. Click Next.
- **15.** Review the settings.
- 16. Click Apply.





Clicking **Confirm** deletes all data on the drive before installing QTS.

17. Click Confirm. QTS is installed.

# **Installing QTS Using the Cloud Key**



#### Warning

Installing QTS deletes all data on the drives. Back up your data before proceeding.

- 1. Power on the NAS.
- **2.** Connect the NAS to the internet.
- **3.** Go to the QNAP Cloud Installation page using one of the following methods:
  - On your computer, go to http://install.qnap.com/.
  - Scan the QR code on the NAS using a mobile device.

The web page lists all the uninitialized QNAP NAS devices on the local network.

**4.** Find your NAS from the list and then click **Initialize**.



If your NAS is not listed, follow the instructions on the web page to specify the Cloud Key on the NAS.

The installation wizard opens in the default web browser.

**5.** Create an account or sign in to myQNAPcloud.



#### Note

You must return to this page to complete the installation after creating an account.

**6.** Specify the myQNAPcloud device name for the NAS.



### Note

- The myQNAPcloud device name is used when remotely accessing the NAS.
- For security purposes, the myQNAPcloud Link remote connection service will be disabled on your NAS after initialization. You can enable it by connecting to QTS through LAN and then installing myQNAPcloud Link.
- 7. Click Next.
- **8.** Perform any of the following actions.
  - To check for the latest available version, click Start. The wizard downloads the latest available version, and then the NAS restarts after the download is complete. If a newer version is not available, the wizard automatically displays the Smart Installation Guide.
  - · To install the out-of-the-box version, click Skip.
- 9. Click Start Smart Installation Guide.
- **10.** Specify the following information.
  - NAS name: Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
  - Password: Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.
- 11. Click Next.
- **12.** Specify the time zone, date, and time.



### Tip

QNAP recommends connecting to an NTP server to ensure that the NAS follows the Coordinated Universal Time (UTC) standard.

- 13. Click Next.
- 14. Select Obtain an IP address automatically (DHCP).
- 15. Click Next.
- **16.** Select the types of devices that you will use to access shared folders on the NAS.
- 17. Click Next.
- **18.** Review the settings.
- 19. Click Apply.

A confirmation message appears.



Clicking **Confirm** deletes all data on the drive before installing QTS.

20. Click Confirm. QTS is installed.

# **4. Basic Operations**

This chapter describes basic NAS operations.

# **Power Button**

Operation	User Action	Result
Power on	Press the button once.	The device powers on.
Power off	Press and hold the button for 3 seconds.	The device powers off.
Force power off	Press and hold the button for 10 seconds.	The device powers off.
		Important Use this method only when the device is unresponsive.

# **Reset Button**

Operation	User Action	Result	
Operation  Basic system reset	Press and hold the button for 3 seconds.	Result  The following settings are reset to default:  • System administrator password: MAC address of adapter 1 without special characters. For example, if the MAC address of adapter 1 is 11:22:33:44:55:66, then the admin password will be 112233445566.  Tip You can find the MAC address of adapter 1	
		<ul> <li>using Qfinder Pro. A label attached to the device also lists the address as MAC1.</li> <li>TCP/IP configuration:</li> <li>Obtain IP address settings automatically via DHCP</li> </ul>	
		Disable jumbo frames	
		<ul> <li>If port trunking is enabled (multi-LAN models only), the port trunking mode is reset to "Active Backup (Failover)".</li> </ul>	
		System port: 8080 (system service port)	
		Security level: Low (Allow all connections)	
		LCD panel password: (blank)	
		VLAN: Disabled	
Advanced system reset	Press and hold the button for 15 seconds.	The default factory settings are restored.	
		<ul> <li>To retrieve old data after an advanced system reset, recreate the previous folder structure on the NAS.</li> </ul>	

# **LEDs**

LEDs indicate system status and related information when the NAS is powered on. The following LED information applies only when the drive is correctly installed and when the NAS is connected to the network.

For details on the location of the LEDs, see Components.

LED	Status	Description
System Status	Flashes green and red alternately every 0.5 seconds	The drive is being formatted.
		The NAS is being initialized.
		The operating system is being updated.
		RAID rebuilding is in progress.
		Online RAID Capacity Expansion is in progress.
		Online RAID Level Migration is in progress.
	Red	The drive is invalid.
		The disk volume has reached its full capacity.
		The disk volume is about to reach its full capacity.
		The system fan is not functioning.
		An error occured when accessing (read/write) the data.
		A bad sector is detected on the hard drive.
		The NAS is in degraded read-only mode (two member drives failed in RAID 5 or RAID 6 but the data can still be read).
		A hardware self-test error occurred.
	Flashes red every 0.5 seconds	The NAS is in degraded mode (one member drive failed in RAID 1, RAID 5, or RAID 6).
	Flashes green every 0.5 seconds	The NAS is starting up.
		The NAS is not configured.
		A drive is not formatted.
	Green	The NAS is ready.
	Off	All drives are in standby mode.
LAN	Orange	A read/write error occurred while another device is accessing data.
	Flashes orange	The NAS is being accessed from the network.
Drive	Flashes red	The drive is being accessed and a read/write eror occurs during the process.
	Red	A drive read/write error has occurred.
	Flashes green	The data is being accessed.
	Green	The drive can be accessed.

LED	Status	Description
USB	Flashes blue every 0.5 sec	<ul> <li>A USB device (connected to the front USB port) is detected.</li> </ul>
		<ul> <li>A USB device (connected to the front USB port) is being removed from the NAS.</li> </ul>
		<ul> <li>A USB device (connected to the front USB port of the NAS) is being accessed.</li> </ul>
		Data is being copied to or from a USB or eSATA device.
	Blue	A USB device is being detected in the front USB port.
	Off	No USB device is detected.
		<ul> <li>The NAS has finished copying data to or from the USB device connected to the front USB port.</li> </ul>

# **USB One Touch Copy Button**

The USB One Touch Copy button allows you to copy data backups from a USB device to the NAS or from the NAS to a USB device.

This feature supports incremental backups. The NAS only copies files that were modified or added after the last backup.

# **Audio Alert**

Duration	Frequency	Description
Short beep (0.5 seconds)	1	The NAS is starting up.
		The NAS is being reset (reset button).
	3	The firmware was updated.
Long beep (1.5 seconds)	1	The NAS was powered on successfully and is ready.
		When the power button is pressed for 3 seconds, the NAS powers off.
	2	The NAS was powered off by force shutdown (hardware shutdown).
		The disk volume is about to reach its full capacity.
		The disk volume has reached its full capacity.
		The drives are in degraded mode.
		The drive is rebuilding.
		A drive is plugged in or out.
	3 (every 5 minutes)	The system fan is not functioning.

# 5. Troubleshooting

This chapter describes basic troubleshooting information.

# **Hot-swapping Failed Drives**

The NAS supports hot-swapping of drives in the following situations:

- RAID 1: One member drive fails
- · RAID 5: One member drive fails
- RAID 6: One or two member drives fail
- 1. Log on to QTS.
- 2. Go to Main Menu > Storage & Snapshots > Storage > Disks/VJBOD .
- 3. Locate the failed drive.
- **4.** Prepare a new hard drive with a capacity that is the same as or larger than the failed hard drive.
- 5. Remove the failed drive from the NAS.
- **6.** Wait for 20 seconds or until the NAS beeps twice.
- **7.** Remove the failed drive from the drive tray.
- **8.** Insert the new drive into the drive tray.
- 9. Install the new drive. The NAS beeps twice.
- 10. Go to Main Menu > Storage & Snapshots > Storage Space.
- 11. Locate the volume that contains the new drive and then verify that the status is Rebuilding.

# Forcing Qfinder Pro or myQNAPcloud to Locate the NAS

If Qfinder Pro or myQNAPcloud is unable to locate the NAS during QTS installation, the drives or data may be faulty.

- 1. Power off the NAS.
- **2.** Remove all drives.
- 3. Power on the NAS.
- **4.** Locate the NAS using Qfinder Pro or myQNAPcloud.
- 5. Reinsert the drives.
- **6.** Continue with the QTS installation.

# **Recovering Unintentionally Removed Healthy Drives**

The NAS supports exclusive RAID recovery technology to recover failed RAID disk volumes from unintentional disconnection or removal of drives. Users can recover an inactive RAID 1, RAID 5, or RAID 6 volume to degraded mode, or an inactive RAID 0 and JBOD configuration to normal.

Disk Volume	RAID Recovery Support	Maximum Number of Removed Drives
Single	No	N/A
JBOD	Yes	1
RAID 0	Yes	1
RAID 1	Yes	1
RAID 5	Yes	2
RAID 6	Yes	3
RAID 10	No	N/A

# **Support and Other Resources**

QNAP provides the following resources:

Resource	URL		
Documentation	https://docs.qnap.com		
Service Portal	https://service.qnap.com		
Downloads	https://download.qnap.com		
Community Forum	https://forum.qnap.com		

# 6. Glossary

# **Cloud Key**

Unique 8-digit code assigned to each NAS device

# myQNAPcloud Link

Enables you to access the NAS over the internet without configuring complex port forwarding settings

# myQNAPcloud

Provides various remote access services such as DDNS and myQNAPcloud Link

# myQNAPcloud ID

Email address that was used to register for a myQNAPcloud account

# **Qfinder Pro**

QNAP utility that lets you locate and access QNAP NAS devices in your local area network

# **QTS**

QNAP NAS operating system

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#### **17.** Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### **18.** Interpretation of Sections 16 and 17.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

#### **END OF TERMS AND CONDITIONS**

# **CE Notice**



This QNAP NAS complies with CE Compliance Class B.

# **FCC Notice**

#### **FCC Class B Notice**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- **1.** This device may not cause harmful interference.
- **2.** This device must accept any interference received, including interference that may cause undesired operation.



# Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.



# **Important**

Any modifications made to this device that are not approved by QNAP Systems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

# **VCCI Notice**



VCCI-B

# **BSMI Notice**



# SJ/T 11364-2006



本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS

本产品上会附有"环境友好使用期限"的标签,此期限是估算这些物质"不会有泄漏或突变"的年限。本产品可能包含有较短的环境友好使用期限的可替换元件,像是电池或灯管,这些元件将会单独标示出来。

部件名称	有毒有害物质或元素							
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)		
売体	0	0	0	0	0	0		
显示	0	0	0	0	0	0		
印刷电路板	0	0	0	0	0	0		
金属螺帽	0	0	0	0	0	0		
电缆组装	0	0	0	0	0	0		
风扇组装	0	0	0	0	0	0		
电力供应组装	0	0	0	0	0	0		
电池	0	0	0	0	0	0		

O:表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

部件名称	有毒有害物质或元素							
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)		
X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。								