



TBS-h574TX

User Guide

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1. Important Information

Original Packaging

Please keep the original packaging and packaging materials. If you want to return the product or send it for repairs, please use the original packaging to avoid damage.

QNAP reserves the right not to provide a refund or warranty service for products that are damaged due to improper packaging.

Hardware Defects

If your QNAP product has hardware defects, return the product to QNAP or a QNAP-authorized service center for maintenance or replacement. Any attempt to repair or perform maintenance procedures on the product by you or an unauthorized third party 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](#).

Safety information

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

General Instructions

- The device 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 device.
- 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.
- To avoid serious injuries, a trained service technician must disconnect all PSU cords from the device before installing or replacing system components.

System Battery

- This product contains a button battery.
- If swallowed, a lithium button battery can cause severe or fatal injuries within 2 hours.
- Keep batteries out of reach of children.
- If you think batteries may have been swallowed or placed inside any part of the body, seek immediate medical attention.

- 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.

- The device is not suitable for use in locations where children are likely to be present.

2. Product Overview

This chapter provides basic information about your QNAP device.

About the TBS-h574TX

The compact TBS-h574TX NASbook is powered by an Intel® Core™ i3-1320PE or Intel® Core™ i5-1340PE processor and supports 12 GB or 16 GB of non-expandable memory. Equipped with one 10GBASE-T Ethernet port and one 2.5 Gigabit Ethernet port, the NASbook also provides multimedia support through an HDMI 1.4b port and high-bandwidth data transfer through two Thunderbolt™ 4 ports. In addition to its five E1.S NVMe/M.2 NVMe SSD drive bays, the TBS-h574TX features one USB 2.0 Type-A port and two USB 3.2 Gen 2 Type-A ports, one of which supports One Touch Copy.

Hardware specifications


Tip

Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

Component	TBS-h574TX-i3-12G	TBS-h574TX-i5-16G
Processor		
CPU	Intel® Core™ i3-1320PE	Intel® Core™ i5-1340PE
Frequency	8-core/12-thread 1.7 GHz base/4.5 GHz turbo	12-core/16-thread 1.8 GHz base/4.5 GHz turbo
Architecture	x86 64-bit	
Encryption engine	AES-NI	
Memory		
Pre-installed memory	12 GB (not expandable)	16 GB (not expandable)
Flash memory	5 GB (dual-boot OS protection)	
Storage		
Drive bays	5 x E1.S NVMe / PCIe NVMe Gen 3 x2 Note Each drive bay is preinstalled with a QDA-E1SM adapter for installing M.2 SSDs.	
Drive compatibility	- E1.S NVMe solid-state drives (up to 15 mm height) - M.2 2280 PCIe NVMe solid-state drives Tip For the list of compatible drive models and expansion cards, go to https://www.qnap.com/compatibility.	
SSD cache acceleration support	This device supports SSD cache acceleration for all drives.	
Hot-swapping	The device supports hot-swapping drives except for the following: SSD cache drives	
Network		

Component	TBS-h574TX-i3-12G	TBS-h574TX-i5-16G
10 Gigabit network interface	1 x 10GBASE-T RJ45 Note The 10GBASE-T port supports the following network connectivity speeds: 10 GbE, 5 GbE, 2.5 GbE, 1 GbE, and 100 Mbps.	
2.5 Gigabit network interface	1 x 2.5 GbE RJ45	
Wake-on-LAN	Yes	
External I/O Ports & Expansion Slots		
USB ports	• 2 x USB 3.2 Gen 2 Type-A port • 1 x USB 2.0 Type-A port Note The USB 3.2 Gen 2 Type-A port on the front panel supports One Touch Copy.	
Thunderbolt™ ports	2 x Thunderbolt™ 4 (5V/3A output) Note The Thunderbolt™ 4 ports support data transfer only.	
HDMI ports	1 x HDMI 1.4b	
Interface		
Buttons	• Power • Reset • USB One Touch Copy	
LEDs		
System	• Status • USB One Touch Copy • Drive LEDs	
Ports	• Activity • Speed	
Dimensions		
Form factor	Compact	
Dimensions (H x W x D)	60 x 215 x 199 mm (2.36 x 8.46 x 7.83 in)	
Net weight	2.24 kg (4.94 lbs)	
Others		
Power supply unit	Power adapter, 120W, 100-240V, DC, 50/60 Hz	
Fans	• System: 2 x 40 mm, 12V DC fans • CPU: 1 x 70 mm, 12V DC fan	
Operating temperature	0°C to 40°C (32°F to 104°F)	

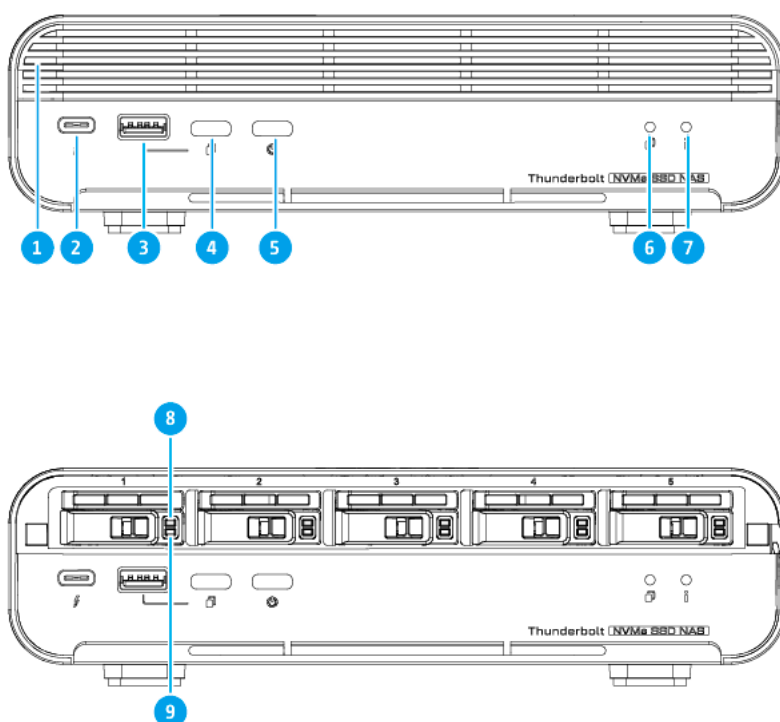
Component	TBS-h574TX-i3-12G	TBS-h574TX-i5-16G
Relative humidity	- Non-condensing relative humidity: 5% to 95% - Wet-bulb temperature: 27°C (80.6°F)	

Package contents

Item	Quantity
TBS-h574TX	1
AC power adapter	1
Power cord	1
Ethernet cables	1 x 10GBASE-T Ethernet cable
Quick Installation Guide (QIG)	1

Components

Front panel



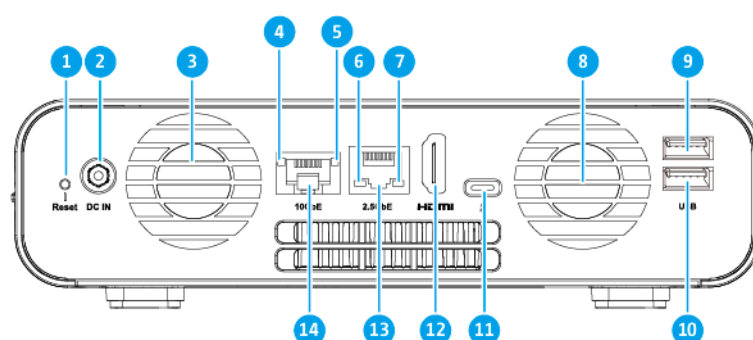
Note

The second image shows the device without the front cover.

No.	Component	No.	Component
1	Front cover	6	USB One Touch Copy LED

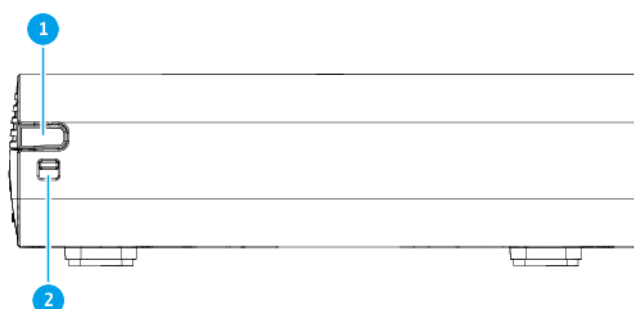
No.	Component	No.	Component
2	Thunderbolt™ 4 port  Note This port supports data transfer only.	7	System status LED
3	USB 3.2 Gen 2 One Touch Copy Type-A port	8	Drive error LED
4	USB One Touch Copy button	9	Drive activity LED
5	Power button	10	-

Rear panel



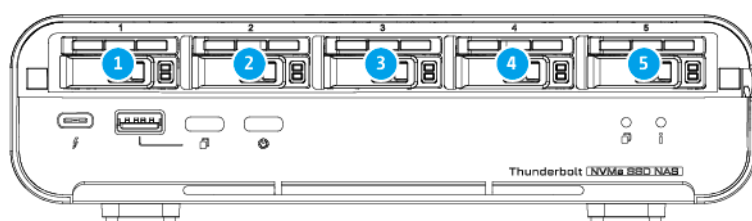
No.	Component	No.	Component
1	Reset button	8	System fan
2	Power input	9	USB 2.0 Type-A port
3	System fan	10	USB 3.2 Gen 2 Type-A port
4	10 Gigabit Ethernet activity LED	11	Thunderbolt™ 4 port  Note This port supports data transfer only.
5	10 Gigabit Ethernet speed LED	12	HDMI 1.4b port
6	2.5 Gigabit Ethernet activity LED	13	2.5 Gigabit Ethernet port (RJ45)
7	2.5 Gigabit Ethernet speed LED	14	10GBASE-T port (RJ45)

Right panel



No.	Component	No.	Component
1	Front cover latch	2	Front cover lock

Drive numbering



Note

This image shows the device without the front cover.

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 - Free from objects that may obstruct device ventilation or apply pressure to the device or power cord

Category	Item
Hardware and peripherals	• Storage drives For the list of compatible drive models, go to https://www.qnap.com/compatibility. • Network cable • Qfinder Pro installer • Computer
Tools	• Phillips #1 or #2 screwdriver • Flat head screwdriver • Anti-static wrist strap

Setting up the NAS



Important

Read all safety requirements and 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. Verify that the intake vents on the bottom of the case are unobstructed.
3. Install drives.
For details, see the following:
 - [Installing M.2 solid-state drives](#)
 - [Installing 5.9 mm E1.S solid-state drives](#)
 - [Installing 9.5 mm and 15 mm E1.S solid-state drives](#)
4. Optional: Connect expansion units.
For details, see [Connecting a USB expansion unit](#).
5. Connect the power cord and all applicable cables.
6. Power on the NAS.
7. Install QuTS hero.
For details, see [QuTS hero installation](#).
8. Log on to QuTS hero.

3. Installation and Configuration

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

Hardware installation

This section provides information on installing drives and expansion units.

Drive installation

The NAS is compatible with M.2 solid-state drives and E1.S solid-state drives with heights of up to 15 mm.

Installing M.2 solid-state drives

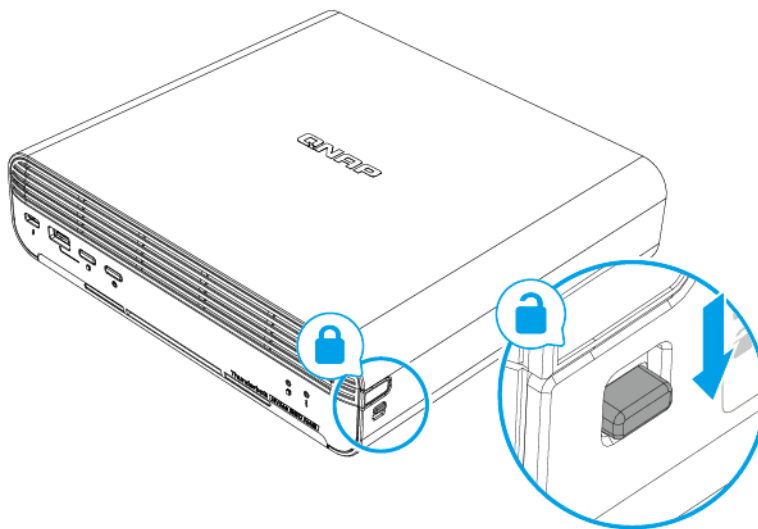
For a list of compatible M.2 SSDs, go to <https://www.qnap.com/compatibility>.



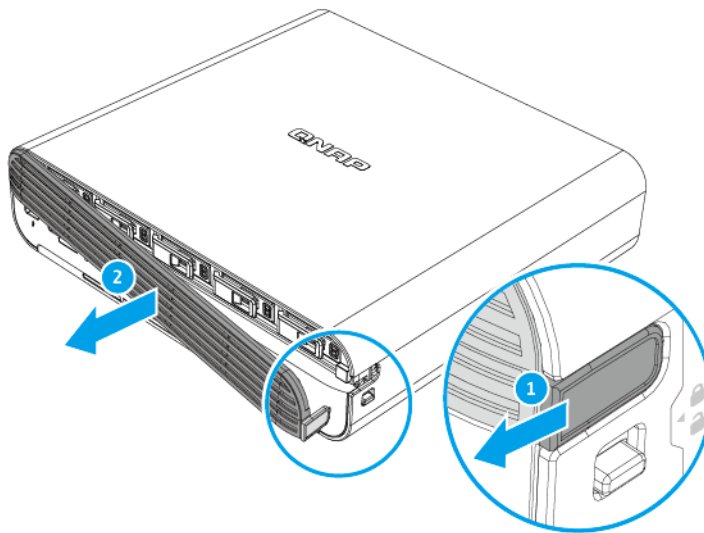
Warning

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

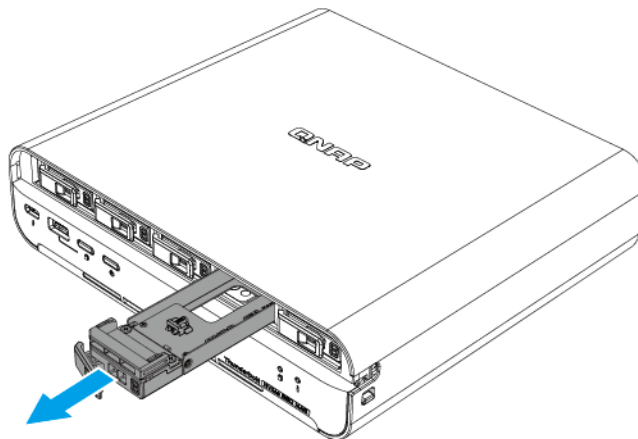
1. Remove the front cover.
 - a. Locate the locking mechanism on the right side of the device.
 - b. Slide the lock down to release the front cover.



- c. Slide the front cover latch forward.
- d. Pull the front cover away from the device.



2. Remove the drive tray.
 - a. Pull the tray handle outward.
 - b. Pull the tray out.

**Note**

The drive tray comes preinstalled with a QDA-E1SM adapter for installing M.2 SSDs.

3. Optional: Install a heatsink on the M.2 SSD.

**Note**

- Heatsinks are not included with the NAS and must be purchased separately. For details, contact an authorized reseller or go to <https://shop.qnap.com/>.

- The QNAP HS-M2SSD-07 heatsink is recommended.
- Heatsinks must not exceed a height of 4.5 mm.

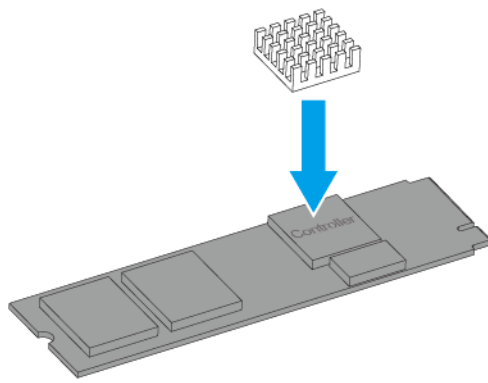
a. Locate the controller on the M.2 SSD.



Note

The controller location varies depending on the model and manufacturer of the M.2 SSD. For details, refer to the documentation or contact the manufacturer.

- b. Remove the protective film from the heatsink.
- c. Install the heatsink on the controller.



4. Optional: Install one or more thermal pads on the drive tray.



Note

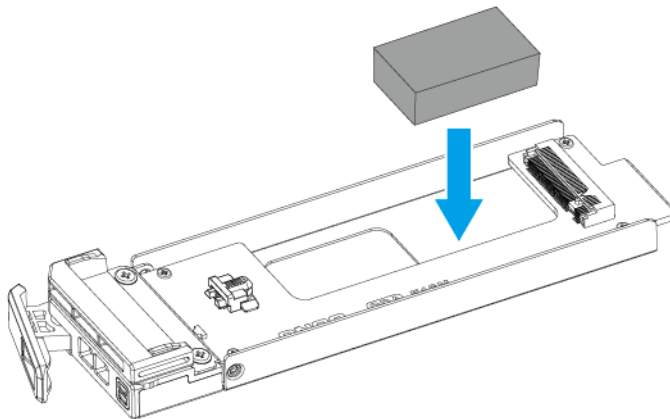
- Thermal pads are not included with the NAS and must be purchased separately. For details, contact an authorized reseller or go to <https://shop.qnap.com>.
- The QNAP TPAD-M2SSD-04 thermal pads are recommended. The TPAD-M2SSD-04 includes thick and thin thermal pads for installing single-sided and double-sided SSDs.



Important

Do not install thermal pads directly on the SSD. The M.2 SSD adapter does not have sufficient space to accommodate an SSD with thermal pads attached. Install thermal pads on the drive tray in the area unobstructed by the adapter.

- a. Install a thick thermal pad on the drive tray.

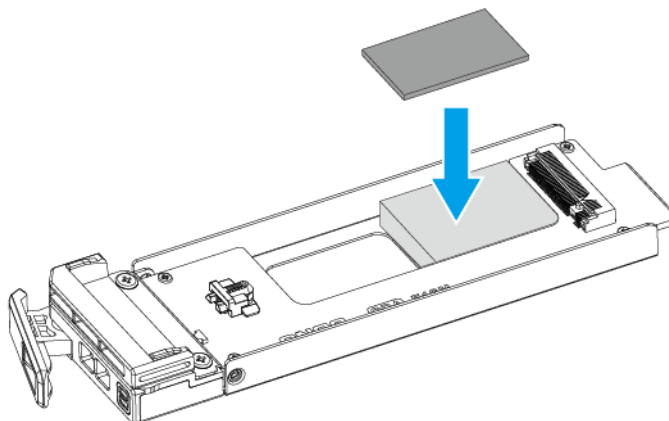


- b.** Install a thin thermal pad on top of the thick thermal pad.



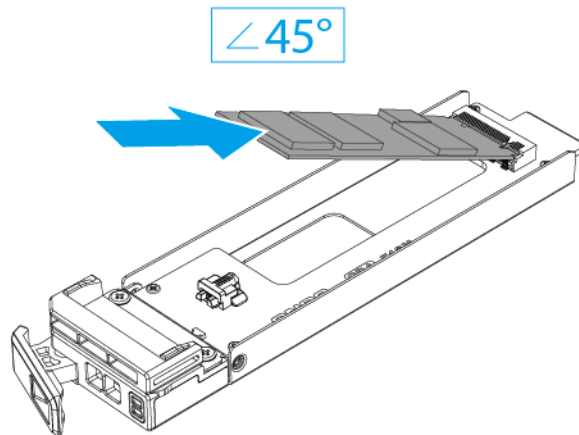
Note

This step is for single-sided SSDs only. Skip this step if you are installing a double-sided SSD.

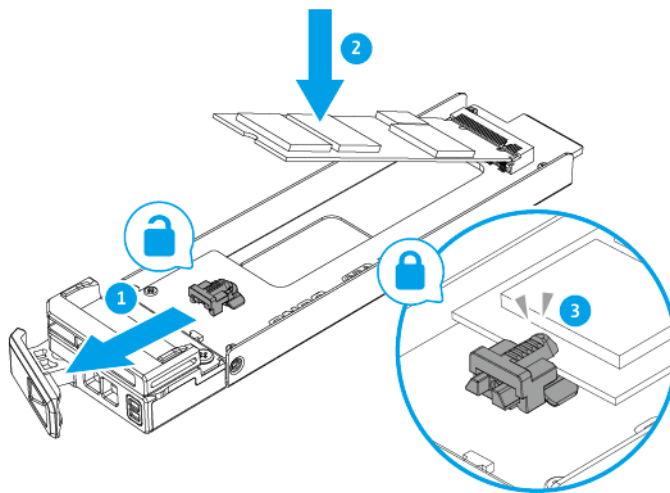


- 5.** Install the M.2 SSD.

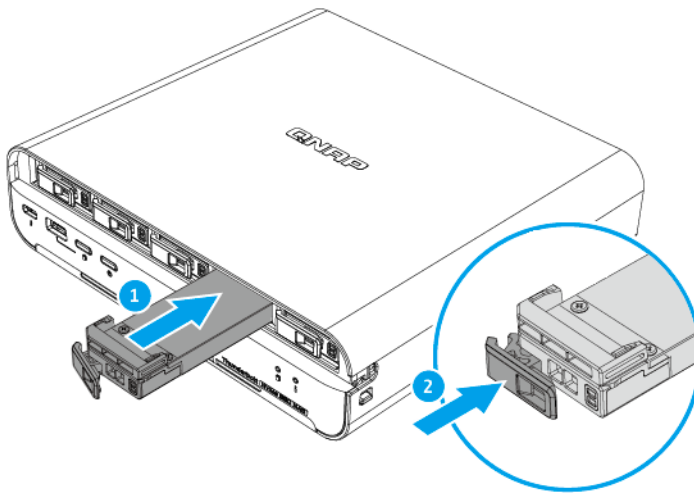
- a.** Insert the M.2 SSD into the slot.



- b.** Pull the locker and hold it in place.
- c.** Carefully press down the M.2 SSD.
- d.** Release the locker to secure the M.2 SSD.

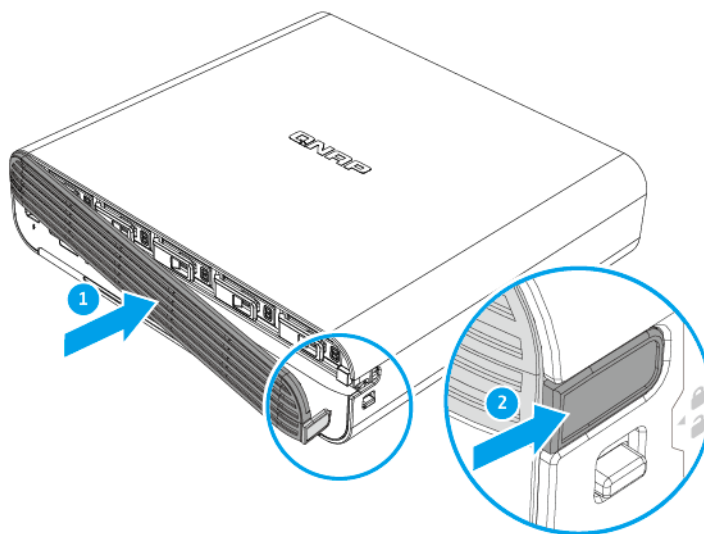


- 6.** Load the tray into the bay.
 - a.** Insert the tray into the bay.
 - b.** Push the handle to secure the tray in place.

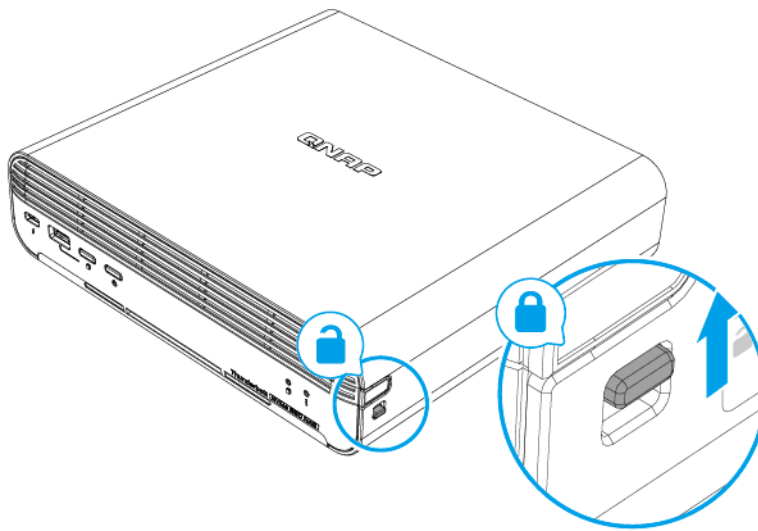


7. Attach the front cover.

- a.** Insert the left end of the front cover.
- b.** Slide the front cover latch into the groove on the right side of the device.



- c.** Slide the lock up to secure the front cover.



Installing 5.9 mm E1.S solid-state drives

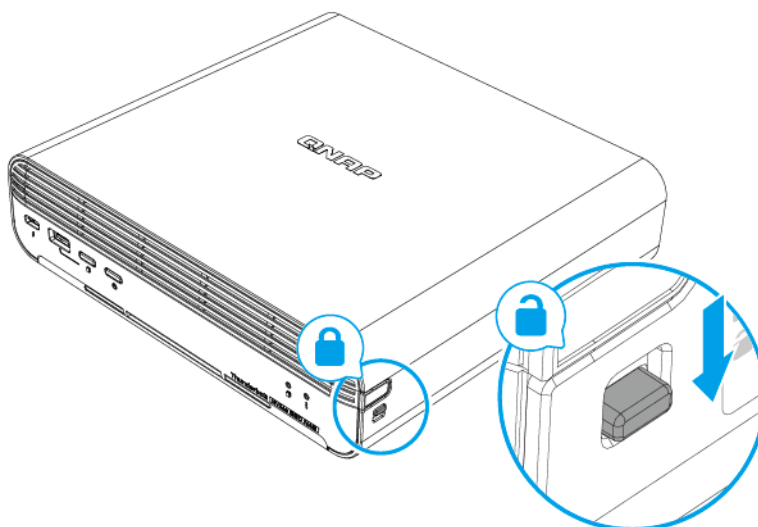
For a list of compatible E1.S SSDs, go to <https://www.qnap.com/compatibility>.



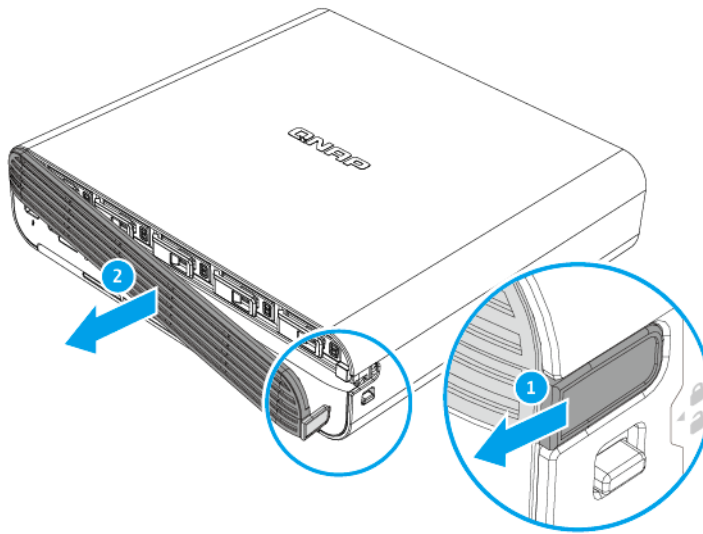
Warning

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

1. Remove the front cover.
 - a. Locate the locking mechanism on the right side of the device.
 - b. Slide the lock down to release the front cover.

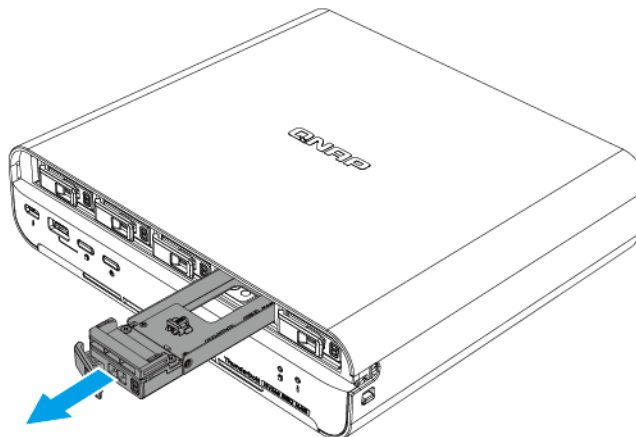


- c. Slide the front cover latch forward.
- d. Pull the front cover away from the device.



2. Remove the drive tray.

- a. Pull the tray handle outward.
- b. Pull the tray out.



3. Install the E1.S SSD.

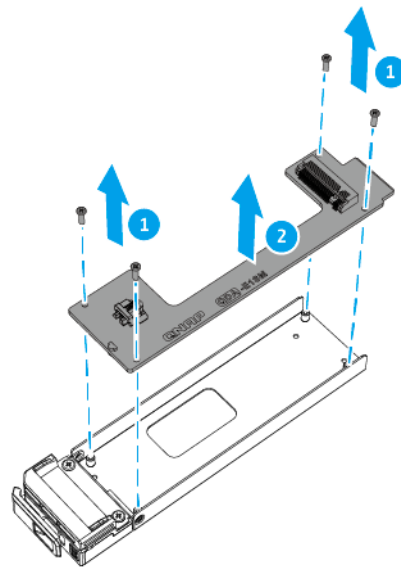
- a. Remove the screws that secure the M.2 SSD adapter to the tray frame.



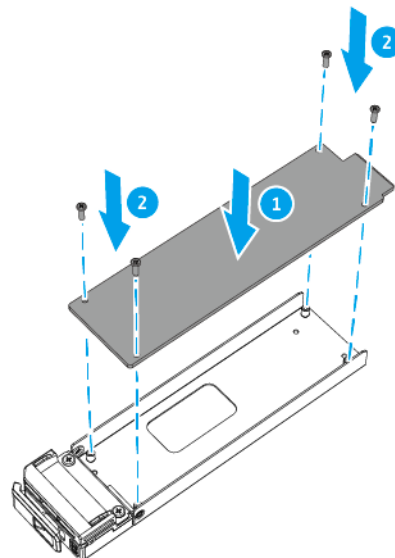
Note

The drive tray comes preinstalled with a QDA-E1SM adapter.

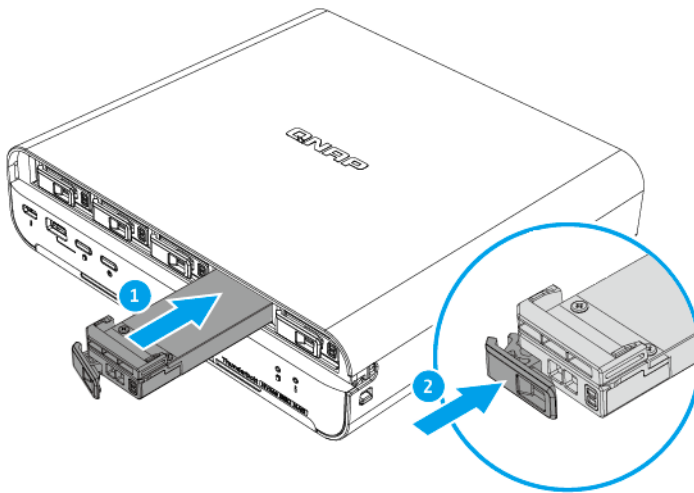
- b.** Remove the M.2 SSD adapter.



- c.** Place the drive on the tray frame so that the holes on the drive align with the holes on the tray frame.
- d.** Attach the screws that secure the drive to the tray frame.

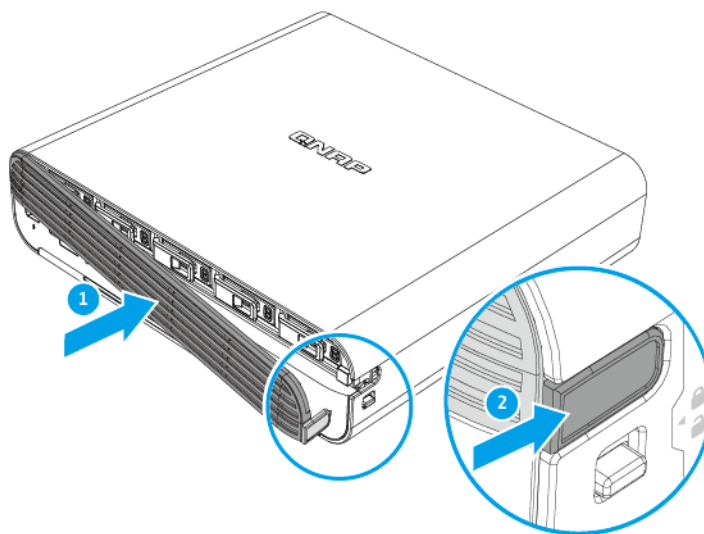


- 4.** Load the tray into the bay.
- a.** Insert the tray into the bay.
- b.** Push the handle to secure the tray in place.

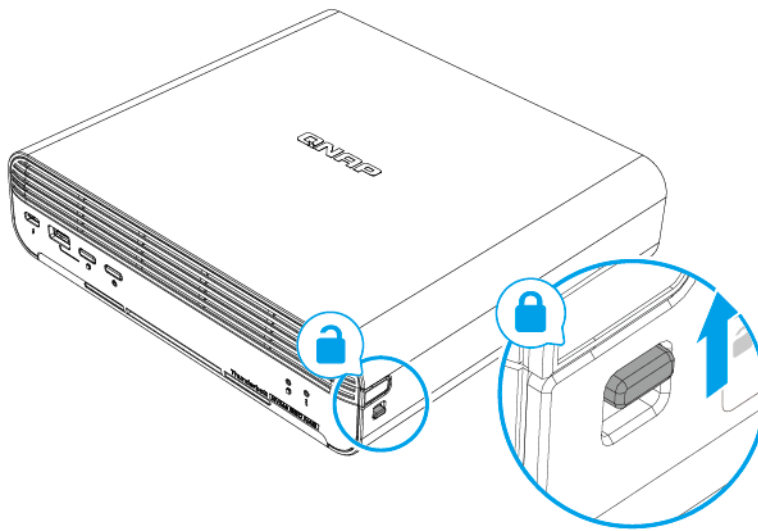


5. Attach the front cover.

- a.** Insert the left end of the front cover.
- b.** Slide the front cover latch into the groove on the right side of the device.



- c.** Slide the lock up to secure the front cover.



Installing 9.5 mm and 15 mm E1.S solid-state drives

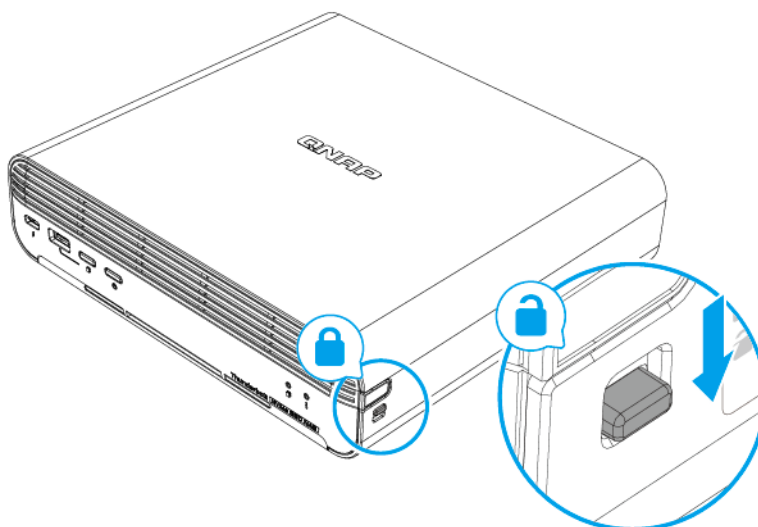
For a list of compatible E1.S SSDs, go to <https://www.qnap.com/compatibility>.



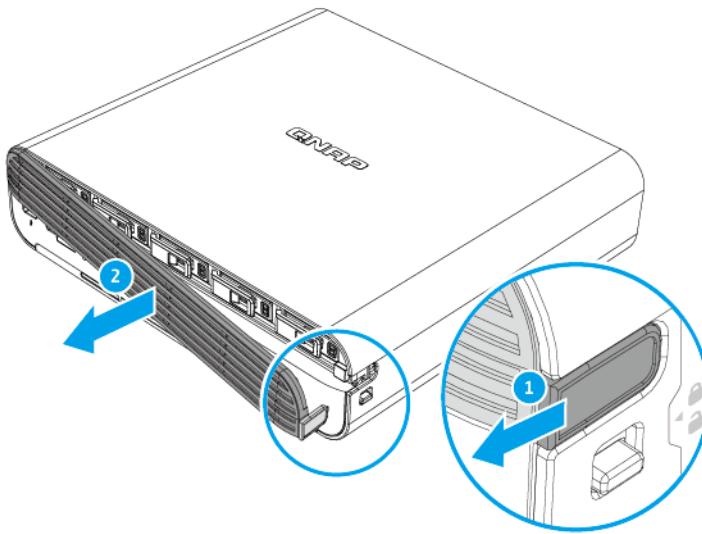
Warning

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

1. Remove the front cover.
 - a. Locate the locking mechanism on the right side of the device.
 - b. Slide the lock down to release the front cover.

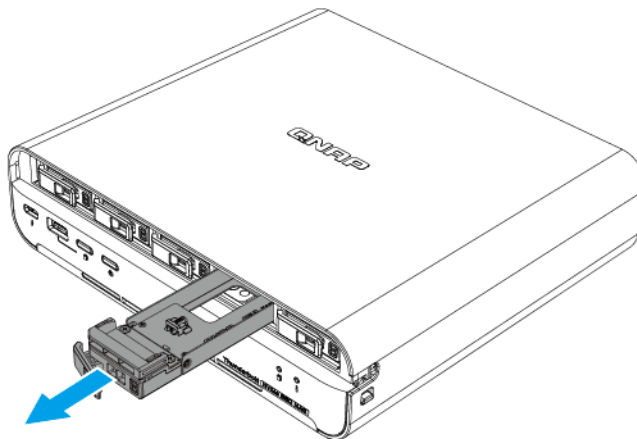


- c. Slide the front cover latch forward.
- d. Pull the front cover away from the device.



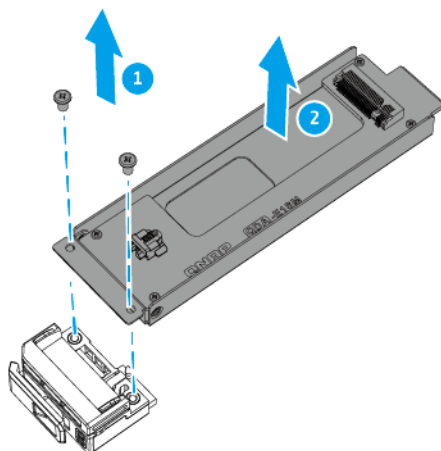
2. Remove the drive tray.

- a. Pull the tray handle outward.
- b. Pull the tray out.

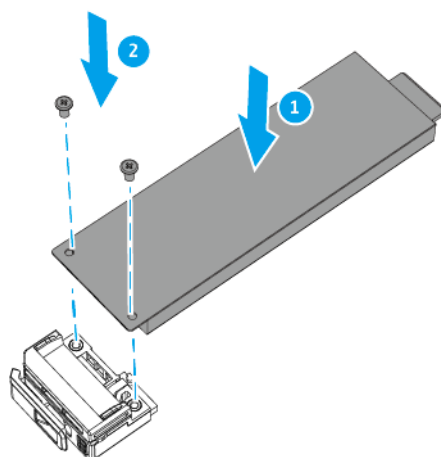


3. Install the E1.S SSD.

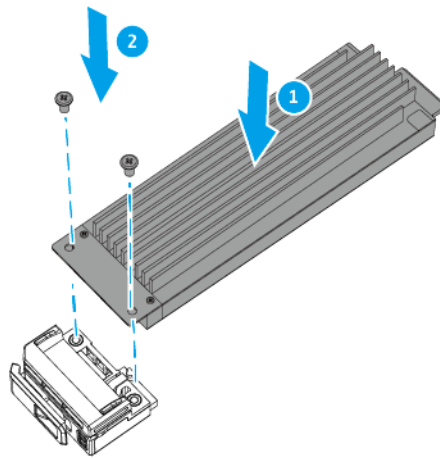
- a. Remove the screws that secure the tray frame to the tray base.
- b. Remove the tray frame.



- c. Place the drive on the tray base so that the holes on the drive align with the holes on the tray base.
- d. Attach the screws that secure the drive to the tray base.

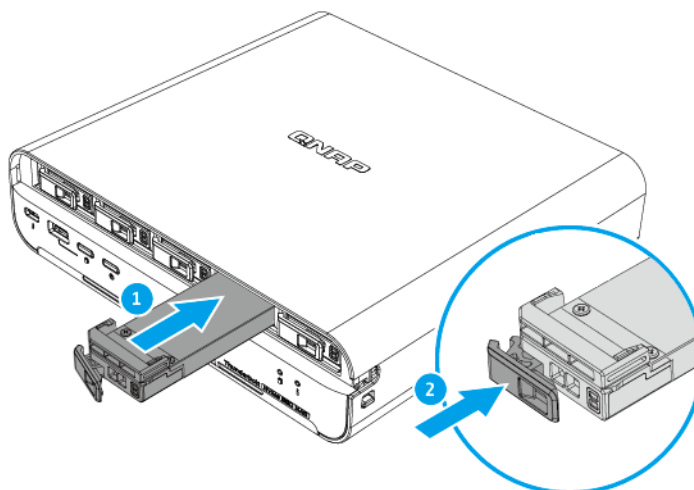


Attaching a 9.5 mm E1.S SSD

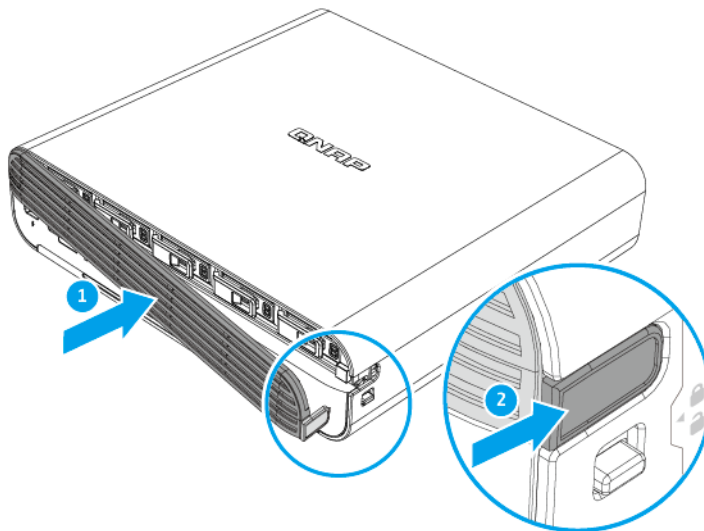


Attaching a 15 mm E1.S SSD

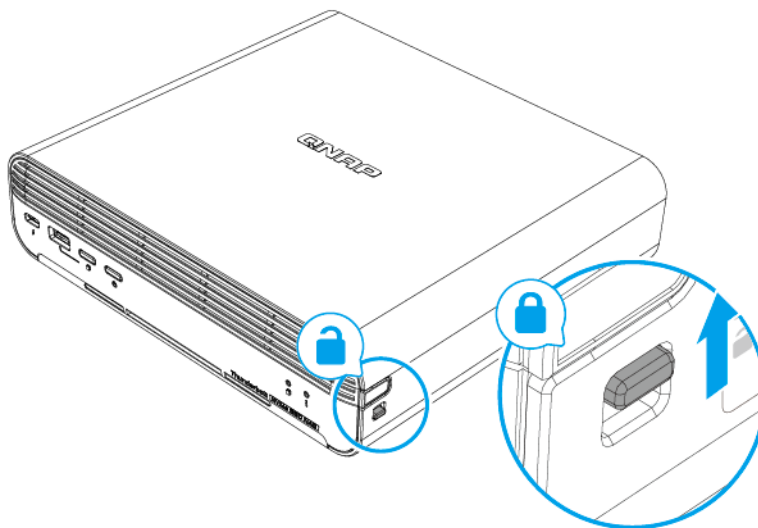
4. Load the tray into the bay.
 - a. Insert the tray into the bay.
 - b. Push the handle to secure the tray in place.



5. Attach the front cover.
 - a. Insert the left end of the front cover.
 - b. Slide the front cover latch into the groove on the right side of the device.



- c. Slide the lock up to secure the front cover.



Connecting a USB expansion unit

The NAS supports USB expansion units. For details, please see the 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 <https://www.qnap.com/go/compatibility-expansion>.

Expansion Unit Model	Description	Required Accessories
TR-002	• Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA HDD/SDD	• USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TR-004	• Uses a USB 3.2 Gen 1 Type-C interface • Supports SATA HDD/SDD	• USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TR-004U	• Uses a USB 3.2 Gen 1 Type-C interface • Supports SATA HDD/SDD	• USB 3.2 Gen 1 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable • RAIL-B02
TL-D800C	• Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA HDD/SDD	• USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TL-R1200C-RP	• Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA HDD/SDD	• USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable • RAIL-B02

To connect the NAS to a USB expansion unit, a USB Type-A to USB Type-C cable is required.

1. Power off the NAS.
2. Connect the expansion unit to the NAS.
 - a. Connect the USB cable to the USB Type-C port on the expansion unit.
 - b. Connect the USB cable to the USB 3.2 Gen 2 Type-A port on the rear panel of the NAS.
3. Power on the expansion unit.
4. Power on the NAS.
5. Verify that the expansion units are recognized by the NAS.
 - a. Log on to QuTS hero as administrator.
 - b. Go to **Main Menu > Storage & Snapshots > Overview > System**.
 - c. Verify that the expansion unit is listed.

QuTS hero installation

The TBS-h574TX uses the QNAP QuTS hero operating system. You can install QuTS hero using any of the following methods.

You can also install the QNAP QTS operating system. If your NAS is connected to the internet, the option to install QTS will appear in the Smart Installation Guide wizard using any of the methods in the table. You can also manually download the QTS firmware from <https://download.qnap.com>.

Method	Description	Requirements
Qfinder Pro installation (Recommended)	If the NAS is connected to your local area network, you can do the following: • Locate the NAS using Qfinder Pro. • Complete the steps in the Smart Installation Guide wizard. For details, see Initializing QuTS hero using Qfinder Pro.	• Computer • Network cable • Qfinder Pro installer
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. For details, see Initializing QuTS hero using the cloud installation website.	• Computer or mobile device • myQNAPcloud account • Cloud Key

Initializing QuTS hero using Qfinder Pro

You can initialize QuTS hero using Qfinder Pro, which is a utility designed to help you locate and manage QNAP devices on your network.



Warning

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

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



Note

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. The **Smart Installation Guide** opens in the default web browser.
5. If the screen shows a different operating system, click **QuTS hero**.



Note

This step is only required if the NAS supports installing more than one operating system and the default operating system for installation is not QuTS hero.

The NAS restarts and the smart installation screen shows QuTS hero as the operating system to install.

6. Click **Start Smart Installation Guide**.
The **Install Firmware** window appears.

7. Install firmware using any of the following methods:

Installation methods	Steps
Automatic	Click Start . Automatically searches for available firmware updates and installs firmware.
Manual installation	a. Click Manual Installation. The Install Firmware window appears. b. Click Browse. The upload file window appears. c. Select file. d. Click Open. Starts firmware installation.
Skip	Click Skip . Skips firmware installation.

8. 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.
- **Username:** Specify an administrator username that contains 1 to 32 characters. The name can contain letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), multi-byte Chinese, Japanese, Korean, and Russian characters.
The username cannot contain the following special characters: grave accent (`), asterisk (*), equal sign (=), plus sign (+), square brackets ([]), curly brackets ({}), slash (/), vertical bar (|), semicolon (;), colon (:), apostrophe ('), quotation mark ("), comma (,), less than sign (<), greater than sign (>), backslash (\), question mark (?), percent sign (%), dollar sign (\$), and the space character.



Important

To protect your NAS from brute force attacks, create a new system administrator account during QuTS hero initialization to disable the default "admin" account.

- **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.

9. Click **Next**.

10. 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.

11. Click **Next**.
The **Configure the network settings** screen appears.
12. Select **Obtain an IP address automatically (DHCP)**.
13. Click **Next**.
14. Review the settings.

15. Click **Apply**.
A confirmation message appears.



Warning

Clicking **Initialize** deletes all data on the drive before installing QuTS hero.

16. Click **Initialize**.
QuTS hero initialization starts. It may take a few minutes to complete the process.
After the initialization, you can click **Go to NAS Management** to start using QuTS hero and configuring other settings.

Initializing QuTS hero using the cloud installation website

You can initialize QuTS hero on the cloud installation website, which is designed to help you set up QNAP devices.



Warning

Initializing QuTS hero deletes all data on the drives. Back up your data before proceeding.

1. Power on the device.
2. Connect the device to the internet.
3. Go to the QNAP Cloud Installation website using one of the following methods:
 - On your computer, go to the website dedicated to your region.
 - Global: <https://install.qnap.com>
 - China: <https://install.qnap.com.cn>
 - Or 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**.



Tip

If your NAS is connected to the Internet, you can also go to <https://install.qnap.com/set> to enter the Cloud Key printed on the NAS. This allows you to initialize the NAS even if your NAS and your computer are not on the same network.

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 QuTS hero through LAN and then installing myQNAPcloud Link.

7. Click **Next.**

The **Smart Installation Guide** opens in the default web browser.

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**.
- If the screen shows a different operating system, click **QuTS hero**.
The NAS restarts and the smart installation screen shows QuTS hero as the operating system to install.

9. Click **Start Smart Installation Guide.**

The **Install Firmware** window appears.

10. Install firmware using any of the following methods:

Installation methods	Steps
Automatic	Click Start . Automatically searches for available firmware updates and installs firmware.
Manual installation	a. Click Manual Installation. The Install Firmware window appears. b. Click Browse. The upload file window appears. c. Select file. d. Click Open. Starts firmware installation.
Skip	Click Skip . Skips firmware installation.

11. 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.
- **Username:** Specify an administrator username that contains 1 to 32 characters. The name can contain letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), multi-byte Chinese, Japanese, Korean, and Russian characters.
The username cannot contain the following special characters: grave accent (`), asterisk (*), equal sign (=), plus sign (+), square brackets ([]), curly brackets ({ }), slash (/), vertical bar (|), semicolon (;), colon (:), apostrophe ('), quotation mark ("), comma (,), less than sign (<), greater than sign (>), backslash (\), question mark (?), percent sign (%), dollar sign (\$), and the space character.

**Important**

To protect your NAS from brute force attacks, create a new system administrator account during QuTS hero initialization to disable the default "admin" account.

- **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.

12. Click **Next.**

13. 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.

14. Click **Next**.
The **Configure the network settings** screen appears.
15. Select **Obtain an IP address automatically (DHCP)**.
16. Click **Next**.
17. Review the settings.
18. Click **Apply**.
A confirmation message appears.

**Warning**

Clicking **Initialize** deletes all data on the drive before installing QuTS hero.

19. Click **Initialize**.
QuTS hero initialization starts. It may take a few minutes to complete the process.
After the initialization, you can click **Go to NAS Management** to start using QuTS hero and configuring other settings.

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
Basic system reset	Press and hold the button for 3 seconds.	The following settings are reset to default: - System administrator password: The default password is the first MAC address in uppercase letters without special characters. For example, if the first MAC address is 00-08-9B-F6-15-75, then the admin password would be 00089BF61575.  Tip You can find the first MAC address with Qfinder Pro or attached to a label on the device listed as MAC1. - The admin account is automatically enabled. - TCP/IP configuration: - Obtain IP address settings automatically via DHCP - Disable jumbo frames - If port trunking is enabled (multi-LAN models only), the port trunking mode is reset to "Active Backup (Failover)". - 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 10 seconds.	The default factory settings are restored. To retrieve old data after an advanced system reset, recreate the previous folder structure on the NAS.

USB One Touch Copy button

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

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

To configure the behavior of the button when an external device is connected to the button's USB port, install and use Hybrid Backup Sync on your QNAP operating system. For details, see the [Hybrid Backup Sync](#) documentation.

LEDs

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

For details on the location of the LEDs, see [Components](#).

System Status LED

Status	Description
Flashes green and red alternately every 0.5 seconds	• A drive is being formatted. • The device 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. • The firmware is being updated.  Important When updating the firmware, do not remove the power cord or USB cable, and do not force-exit the application.
Red	• A drive is invalid. • A shared folder has reached its full capacity. • A shared folder is about to reach its full capacity. • A system fan is not functioning. • An error occurred when accessing (read/write) the data. • A bad sector is detected on a drive. • The device 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.

Status	Description
Flashes red every 0.5 seconds	The device is in degraded mode (one member drive failed in RAID 1, RAID 5, or RAID 6).
Green	The device is ready.
Flashes green every 0.5 seconds	- The device is not configured. - A drive is not formatted. - The device is starting up.
Flashes orange	The device is in sleep mode.
Off	- All drives are in standby mode. - The device is powered off.

Drive Error LED

Status	Description
Red	A drive error was detected.
Off	No drive errors were detected.

Drive Activity LED

Status	Description
Green	The drive is ready.
Flashes green	The drive is being accessed.
Off	No drive was detected.

USB One Touch Copy LED

Status	Description
Flashes blue every 0.5 seconds	- A USB device connected to the USB One Touch Copy port is being accessed. - A USB device connected to the USB One Touch Copy port is being removed from the device.
Blue	A USB device connected to the USB One Touch Copy port is detected.
Off	No USB device is detected.

10GBASE-T Ethernet Activity LED

Status	Description
Orange	A network connection has been established.
Flashes orange	Data is being transmitted.
Off	There is no network connection.

10GBASE-T Ethernet Speed LED

Status	Description
Green	The network connection is operating at 10 Gbps.

Status	Description
Orange	The network connection is operating at 5 Gbps, 2.5 Gbps, 1 Gbps, 100 Mbps, or 10 Mbps.
Off	There is no network connection.

2.5 Gigabit Ethernet Activity LED

Status	Description
Orange	A network connection has been established.
Flashes orange	The device is being accessed from the network.
Off	There is no network connection.

2.5 Gigabit Ethernet Speed LED

Status	Description
Green	The network connection is operating at 2.5 Gbps.
Orange	The network connection is operating at 1 Gbps.
Off	- The network connection is operating at 100 Mbps or 10 Mbps. - There is no network connection.

Audio alert

Duration	Frequency	Description
Short beep (0.5 seconds)	1	- The NAS is starting up. - When the reset button is pressed for 3 seconds, the NAS resets configurations. - When the reset button is pressed for 10 seconds, the NAS resets configurations and reboots. - The operating system was updated. - The NAS is starting USB One Touch Copy.
	2	An external storage device has been removed from the USB One Touch Copy port.
	3	- Cannot detect installed disk. - The firmware was updated.

Duration	Frequency	Description
Long beep (1.5 seconds)	3 (every 5 minutes)	• A power error occurred. • A system fan is not functioning. • A fan module has been removed. • The NAS data cannot be copied to the external storage device connected to the USB One Touch Copy port.
	2	• A storage pool is about to reach full capacity. • A storage pool has reached full capacity. • A storage pool status error occurred. • A shared folder is about to reach its full capacity. • A shared folder has reached its full capacity. • The drives are in degraded mode. • A drive is rebuilding. • An external storage device has been removed from the USB One Touch Copy port. • A shared folder status error occurred. • A drive is plugged in or out. • The iSCSI is about to reach full capacity.
	1	• The NAS was powered off by force shutdown (hardware shutdown). • The NAS was powered on successfully and is ready.
Long and short beeps	1 long and 2 short beeps	The JBOD expansion unit has been removed.

5. NAS Migration

You can migrate data and settings from your current NAS to another NAS model with minimal disruptions by installing all the hard drives from the source NAS to the destination NAS. RAID configuration and other settings are retained on the destination NAS after migration.

QTS NAS migration

NAS migration requirements

You can only migrate drives to specific NAS models, depending on your source NAS. For the list of NAS models compatible with direct NAS migration, see <https://www.qnap.com/go/nas-migration>.

Your device must meet the following requirements:

- QTS NAS supports several types of NAS migration:
 - ARM NAS to an ARM NAS
 - x86 NAS to an x86 NAS
 - ARM NAS to an x86 NAS



Note

You cannot migrate from an x86 NAS to an ARM NAS.

- The destination NAS must run on the same QTS version as the source NAS (or later).



Important

Due to incompatibilities in file system, system migration between QTS NAS and QuTS hero NAS is not supported.



Warning

Migrating drives between QTS NAS and QuTS hero NAS can cause data corruption.

- The destination NAS must have sufficient free drive bays to accommodate all the drives that you are migrating from the source NAS.

For NAS models that do not support NAS migration, you can migrate existing data using HBS 3. For details, see [Migrating NAS data using HBS 3](#).

Status and setting changes after NAS migration

The status of NAS data and settings varies after migration.

Data and Settings	After NAS Migration
Registered myQNAPcloud name	Your registered myQNAPcloud name is not migrated.
Encrypted disk volumes	If the NAS does not support file system encryption, encrypted disk volumes are not migrated.  Warning To prevent data loss, back up and save the encryption keys of encrypted disk volumes in a safe place. You can also choose to decrypt disk volumes before migration.

Data and Settings	After NAS Migration
Shared folders	All shared folders and the downloaded files stored in them are retained.  Warning To prevent data loss, back up and save encryption keys or passwords of encrypted shared folders in a safe place before migration.  Important Folder permissions on the destination NAS must be reconfigured after migration.
Network	• If the number of network ports or network port specifications on the destination NAS is different from the source NAS, the following network and virtual settings may change and require reconfiguration: port trunking, virtual machines, Thunderbolt, USB QuickAccess, and more. • You must reconfigure network settings when the source NAS is running on QTS 4.3.5 or earlier versions.
Windows AD configuration	Windows AD configurations must be reconfigured.
Licenses	Licenses are not migrated.  Warning To prevent losing all your software licenses, QNAP recommends deactivating licenses on the source NAS before data migration.
Applications	If the destination NAS has less RAM than the source NAS, the following features and applications might not function: Virtualization Station, Qsirch, and Snapshots.
Services	Only services supported by the destination NAS are available.
Multimedia features	Some multimedia features are disabled by default.

Migrating a NAS



Important

Before performing NAS migration, ensure that you understand all requirements and possible changes after migration.
For details see the following topics:

- [NAS migration requirements](#)
- [Status and setting changes after NAS migration](#)

1. Power off the source NAS and the destination NAS.
2. Remove the drives.



Important

QNAP recommends following the source NAS drive order when installing the drives. Take note of the drive tray order when removing the drives.

- a. Remove the drives from the source NAS.

- b.** Remove the drive trays from the destination NAS.
- 3.** Install the drives.
 - a.** Install source NAS drives onto the destination NAS drive trays.
 - b.** Insert the drive trays into the destination NAS.
- 4.** Power on the destination NAS.
- 5.** Log on to QTS as an administrator on the destination NAS.
The destination NAS automatically checks for the latest firmware update.

Migrating NAS data using HBS 3

For NAS models that do not support direct migration, you can initialize the destination NAS then copy data from the source NAS to the destination NAS using HBS 3.

Preparing the destination NAS

- 1.** Log on to QTS.
- 2.** Create one or more storage pools.
For details, see the Creating a Storage Pool topic in the QTS user guide.
- 3.** Create one or more volumes.
For details, see the Volume Creation topic in the QTS user guide.
- 4.** Create shared folders on the destination NAS.
For details, see the Creating a Shared Folder topic in the QTS user guide.
- 5.** Install HBS 3 onto the destination NAS.
 - a.** Go to **App Center**.
 - b.** Search for HBS 3.
 - c.** Click **Install**.
HBS 3 is installed on the destination NAS.
- 6.** Enable the remote server settings on the destination NAS.
 - a.** Go to **App Center > HBS 3 > Services > RTRR Server**.
 - b.** Click **Enable RTRR Server**.
The RTRR server settings window appears.
 - c.** Specify the **RTRR Server** settings.

Setting	Description
Password	Specify a password that contains 1 to 16 characters from any of the following groups: - Letters: A to Z, a to z - Numbers: 0 to 9 - Special characters: . - _ ~ ! @ # \$ % ^ & () { } - Does not start or end with a space.
Port	Specify a port number to access the RTRR server.

- Click **Apply**.
A confirmation window appears.
- Click **OK**.
The remote server settings are completed.

Creating a one-way sync job

- On the source NAS, go to **App Center > HBS 3 > Sync**.
- Click **Sync Now**.
- Select **One-way Sync Job**.
The **Create a Sync Job** window appears.
- Click **Remote NAS**.
- Click **Add New Account**.
The **Create a Storage Space** window appears.
- Select the destination NAS as the destination storage space and specify the following:

Setting	Description
Name	The name used to identify the storage space.
IP address / Host name	The IP address or hostname used to access the storage space.  Tip Click  to scan for available devices.
Port	The port number used to access the storage space. This value must be between 1 to 65535.
Password	The password used to access the storage space.
Use SSL connection	Requires SSL connection when accessing the remote NAS.

- Optional: Test the connection.

Test	Description
Detect Server	Tests the accessibility of the selected storage space.
Speed Test	Tests the network connection speed of the selected storage space.

- Click **Create**.
- Click **Select**.

10. Select the paired folders.



Important

- All subfolders and files in the selected folder are selected.
- You can only sync up to 16 paired folders per job.

- a. Under the source, click **+**.
A dialog box opens.
- b. Select a folder.
- c. Click **OK**.
The dialog box closes.
- d. Under the destination, click **+**.
A dialog box opens.
- e. Select a folder.
- f. Click **OK**.
- g. Optional: Add more paired folders if necessary.

11. Click **Next**.
The **Schedule** screen appears.

12. Select **Sync now**.

13. Click **Next**.
The **Rules** screen appears.

14. Optional: Configure job rules.

15. Click **Next**.
The **Summary** screen appears.

16. Review the job summary.

17. Click **Create**.
The source NAS runs the created one-way sync job.



Note

It may take several minutes to migrate shared folders from the source NAS to the destination NAS.

Importing local users or group settings to the destination NAS

1. Power on the source NAS.
2. Back up the users or group settings from the source NAS.
 - a. Log on to QTS.
 - b. Go to **Control Panel > Privilege > Users**.
 - c. Click **Create**, and then click **Import/Export Users**.
The **Import/Export Users** window appears.

- d. Select **Export user and user group settings**.
 - e. Click **Next**.
The NAS user and user group settings are exported as a file and downloaded onto your computer.
3. Import user settings on the source NAS to the destination NAS.
 - a. On the destination NAS, log on to QTS.
 - b. Go to **Control Panel > Privilege > Users**.
 - c. Click **Create**, and then click **Import/Export Users**.
 - d. Select **Import user and user group settings**.

**Note**

You can select whether to send a notification mail to newly created users or overwrite duplicate users.

- e. On your computer, select the user settings file exported from the source NAS.
The source NAS user settings file is imported to the destination NAS.

QuTS hero NAS migration

NAS migration requirements

You can only migrate drives and system settings to specific NAS models, depending on your source NAS. For the list of NAS models compatible with direct NAS migration, see <https://www.qnap.com/en/nas-migration>.

Your device must meet the following requirements:

- The destination NAS must run on the same QuTS hero version as the source NAS (or later).

**Important**

Due to incompatibilities in file system, system migration between QTS NAS and QuTS hero NAS is not supported.

**Warning**

Migrating drives between QTS NAS and QuTS hero NAS can cause data corruption.

- The destination NAS must have sufficient free drive bays to accommodate all the drives that you are migrating from the source NAS.

For NAS models that do not support NAS migration, see [How to Migrate Data and Folder Permissions between QTS and QuTS hero with HBS3](#).

Status and setting changes after NAS migration

The status of NAS data and settings varies after migration.

Data and Settings	After NAS Migration
Registered myQNAPcloud name	Your registered myQNAPcloud name is not migrated.

Data and Settings	After NAS Migration
Encrypted shared folders	If the NAS does not support file system encryption, encrypted shared folders are not migrated.  Warning To prevent data loss, back up and save the encryption keys of encrypted shared folders in a safe place. You can also choose to decrypt shared folders before migration.
Shared folders	All shared folders and the downloaded files stored in them are retained.  Warning To prevent data loss, back up and save encryption keys or passwords of encrypted shared folders in a safe place before migration.  Important Folder permissions on the destination NAS must be reconfigured after migration.
Network	If the number of network ports or network port specifications on the destination NAS is different from the source NAS, the following network and virtual settings may change and require reconfiguration: port trunking, virtual machines, Thunderbolt, and more.
Windows AD configuration	Windows AD configurations must be reconfigured.
Licenses	Licenses are not migrated.  Warning To prevent losing all your software licenses, QNAP recommends deactivating licenses on the source NAS before data migration.
Applications	If the destination NAS has less RAM than the source NAS, the following features and applications might not function: Virtualization Station, Qsirch, and Snapshots.
Services	Only services supported by the destination NAS are available.
Multimedia features	Some multimedia features are disabled by default.

Migrating a NAS



Important

Before performing NAS migration, ensure that you understand all requirements and possible changes after migration.
For details see the following topics:

- [NAS migration requirements](#)
- [Status and setting changes after NAS migration](#)

1. Power off the source NAS and the destination NAS.
2. Remove the drives.

**Important**

QNAP recommends following the source NAS drive order when installing the drives. Take note of the drive tray order when removing the drives.

- a. Remove the drives from the source NAS.
 - b. Remove the drive trays from the destination NAS.
3. Install the drives.
 - a. Install source NAS drives onto the destination NAS drive trays.
 - b. Insert the drive trays into the destination NAS.
4. Power on the destination NAS.
5. Log on to QuTS hero as an administrator on the destination NAS.
The destination NAS automatically checks for the latest firmware update.

6. Troubleshooting

This chapter describes basic troubleshooting information.

Forcing Qfinder Pro or myQNAPcloud to locate the NAS

If Qfinder Pro or myQNAPcloud is unable to locate the NAS during QuTS hero 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 QuTS hero installation.

Hot-swapping failed drives

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

RAID Type	Number of Disks	Situation
RAID 1	2	One member drive fails.
RAID 5	≥ 3	One member drive fails.
RAID 6	≥ 4	One or two member drives fail.
RAID 10	≥ 4 (Must be an even number)	One or two member drives in two different pairs fail. • One member drive fails. • Two member drives in two different pairs fail.
Triple Mirror	Multiple of 3. (For example, 3, 6, 9, 12 disks and so forth.)	One or two member drives fail.
RAID-TP	≥ 5	One, two, or three member drives fail.

1. Log on to QuTS hero.
2. Go to **Main Menu > Storage & Snapshots > Storage > Disks/VJBOD**.
3. Locate the failed drive.
4. Prepare a new drive with a capacity that is the same as or larger than the failed drive.
5. Remove the failed drive from the device.
6. Wait for 20 seconds or until the device 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 > Storage/Snapshots**.

11. Locate the storage pool that contains the new drive and then verify that the status is **Rebuilding**.

Recovering unintentionally removed healthy drives

The NAS supports exclusive RAID recovery technology to recover failed RAID groups from unintentional disconnection or removal of drives. Users can recover an inactive RAID 1, RAID 5, RAID 6, RAID 10, Triple Mirror, and RAID-TP group from degraded mode.

RAID Type	RAID Recovery Support	Number of Disks	Disk Failure Tolerance
Single	No	1	N/A
JBOD	Yes	≥ 2	N/A
RAID 0	Yes	≥ 2	N/A
RAID 1	Yes	2	1
RAID 5	Yes	≥ 3	1
RAID 6	Yes	≥ 4	2
RAID 10	Yes	≥ 4 (Must be an even number)	One disk per subgroup fails.
Triple Mirror	Yes	Multiple of 3. (For example, 3, 6, 9, 12 disks and so forth.)	2
RAID-TP	Yes	≥ 5	3

Support and other resources

QNAP provides the following resources:

Resource	URL
Documentation	https://download.qnap.com
Compatibility List	https://www.qnap.com/compatibility
NAS Migration Compatibility	https://www.qnap.com/go/nas-migration
Expansion Unit Compatibility	https://www.qnap.com/go/compatibility-expansion
Service Portal	https://service.qnap.com
Product Support Status	https://www.qnap.com/go/product/eol.php
Downloads	https://download.qnap.com
Community Forum	https://forum.qnap.com
QNAP Accessories Store	https://shop.qnap.com

7. Glossary

Cloud Key

Unique 8-digit code assigned to each NAS device

myQNAPcloud

Provides various remote access services such as DDNS and myQNAPcloud Link

myQNAPcloud Link

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

Qfinder Pro

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

QTS

QNAP NAS operating system

QuTS hero

QNAP NAS operating system featuring ZFS file system

8. Notices

This chapter provides information about warranty, disclaimers, licensing, and federal regulations.

Limited warranty

QNAP offers limited warranty service on our products. Your QNAP-branded hardware product is warranted against defects in materials and workmanship for a period of one (1) year or more from the date printed on the invoice. ("Warranty Period"). Please review your statutory rights at www.qnap.com/warranty, which may be amended from time to time by QNAP in its discretion.

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SJ/T 11364-2006



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