



QNAP

TVS-675

User Guide



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1. Preface





About This Guide

This guide provides information about the device 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.
	Important notes provide information on required configuration settings and other critical information.
	Tips provide recommendations or alternative methods of performing tasks or configuring settings.
	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 device.

About the TVS-675

The TVS-675 is a high-performance NAS powered by a KX-U6580 processor and supports up to 64 GB of DDR4 memory. It features an HDMI port for external displays and a USB One Touch Copy port for quick backup and data transfer, with a built-in 2.5GbE connectivity port that provides multiple network speeds for greater reliability. The TVS-675 also supports M.2 NVMe or SATA SSDs for cache acceleration and two PCIe expansion slots to expand the NAS application capacity.

Hardware Specifications



Warning

- 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](#).









Tip

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

Ordering P/N	CPU	Memory	Power supply
TVS-675-8G	KX-U6580	8 GB	Single

Component	TVS-675-8G
Processor	
CPU	KX-U6580
Frequency	8-core 2.5 GHz
Architecture	x86 64-bit
Encryption engine	AES-NI
Memory	
Pre-installed memory	8 GB RAM: 1 x 8 DDR4 SODIMM

Component	TVS-675-8G
Memory slots	2 x DDR4 SODIMM  Important <ul style="list-style-type: none"> • Use only QNAP memory modules to maintain system performance and stability. For NAS devices with more than one memory slot, use QNAP modules with identical specifications. • Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.
Maximum memory	64 GB RAM: 2 x 32 GB
Flash memory	5 GB (dual-boot OS protection)
Storage	
Drive bays	6 x 3.5-inch SATA 6 Gbps  Tip The drive bays are backward compatible with SATA 3 Gbps drives.
Drive compatibility	3.5-inch bays: <ul style="list-style-type: none"> • 3.5-inch SATA hard disk drives • 2.5-inch SATA hard disk drives • 2.5-inch SATA solid-state drives  Important To avoid damaging the disk connectors, do not ship the NAS with the hard drives.
M.2 SSD slots	2 x PCIe Gen 3 x1  Note The M.2 SSD slots also support SATA 6 Gbps.  Tip You can install an M.2 SSD expansion card in the PCIe slot.
M.2 SSD form factor	2280
SSD cache acceleration support	<ul style="list-style-type: none"> • 3.5-inch drive bays 1 to 6 • M.2 SSD slots 1 to 2
Hot-swapping	The device supports hot-swapping drives except for the following: M.2 SSDs
Network	
2.5 Gigabit Ethernet ports	2 x 2.5 GbE RJ45
Wake-on-LAN	Yes (2.5 GbE RJ45)
External I/O Ports & Expansion Slots	
PCIe slots	2 x PCIe 3.0 x4

Component	TVS-675-8G
USB ports	Front: 1 x USB 3.2 Gen 2 Type-A  Note This USB port supports One Touch Copy. Rear: <ul style="list-style-type: none"> • 2 x USB 3.2 Gen 1 Type-A • 1 x USB 3.2 Gen 2 Type-A
HDMI ports	1 x HDMI 2.0b (up to 3840 x 2160 resolution at 60 Hz)
Interface	
Buttons	<ul style="list-style-type: none"> • Power • Reset • USB One Touch Copy
Dimensions	
Form factor	Tower
Dimensions (H x W x D)	188.2 x 263.9 x 280.8 mm (7.41 x 10.39 x 11.06 in)
Net weight	6.2 kg (13.7 lbs)
Others	
Power supply unit	250W, 100-240V AC, 50/60 Hz
System battery	CR2032 lithium battery (3V, 225 mAh)
Sound level	20.2 dB(A)
Fans	System: 3 x 80 mm, 12V DC fan
Operating temperature	0°C to 40°C (32°F to 104°F)
Relative humidity	<ul style="list-style-type: none"> • Non-condensing relative humidity: 5% to 95% • Wet-bulb temperature: 27°C (80.6°F)
Security slot	Kensington security slot

**Tip**

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

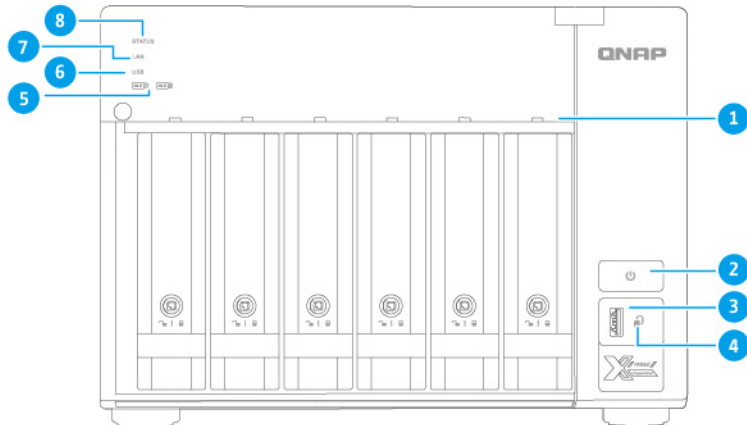
Package Contents

Item	Quantity
TVS-675 NAS	1
Power cord	1
Ethernet cable	1x Cat 5e
Screws for 3.5-inch drives	18
Screws for 2.5-inch drives	18
Heatsinks for M.2 SSDs	2
Drive tray keys	2

Item	Quantity
Quick Installation Guide (QIG)	1

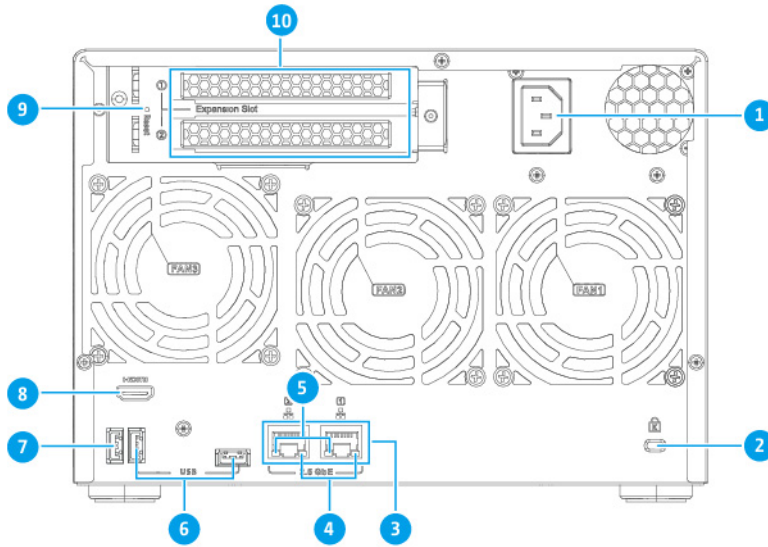
Components

Front Panel



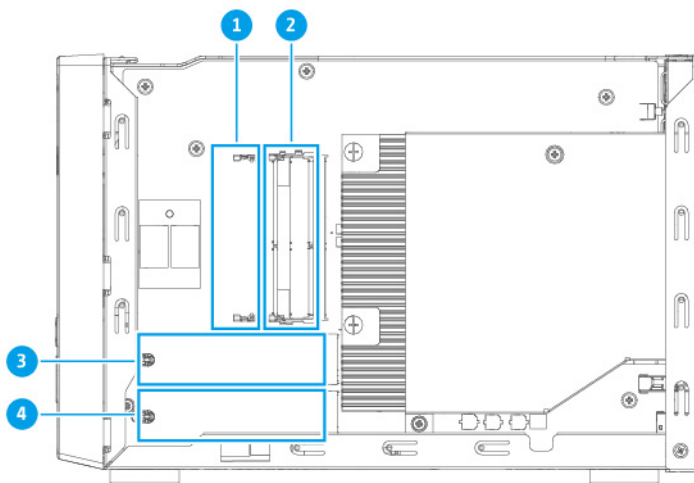
No.	Component	No.	Component
1	Drive LEDs	5	M.2 SSD LEDs
2	Power button	6	USB LED
3	USB 3.2 Gen 2 One Touch Copy Type-A port	7	LAN LED
4	USB One Touch Copy button	8	Status LED

Rear Panel



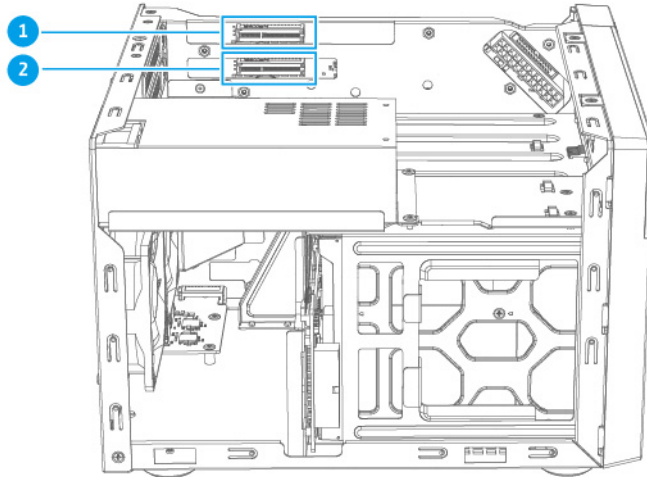
No.	Component	No.	Component
1	Power input	6	USB 3.2 Gen 1 Type-A ports
2	Kensington security slot	7	USB 3.2 Gen 2 Type-A ports
3	2.5 Gigabit Ethernet ports (RJ45)	8	HDMI 2.0 port
4	2.5 Gigabit Ethernet activity LED	9	Reset button
5	2.5 Gigabit Ethernet speed LED	10	PCIe Gen 3 x4 slots

Right Panel



No.	Component	No.	Component
1	Channel B, DIMM 1	3	M.2 SSD slot 1
2	Channel A, DIMM 1	4	M.2 SSD slot 2

Left Panel



No.	Component	No.	Component
1	PCIe slot 1 (PCIe 3.0 x4)	2	PCIe slot 2 (PCIe 3.0 x4)

Drive Numbering



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

- 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.

Installation Requirements

Category	Item
Environment	<ul style="list-style-type: none"> 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
Hardware and peripherals	Storage drives  Tip For the list of compatible drive models, go to https://www.qnap.com/compatibility .
Tools	<ul style="list-style-type: none"> Phillips #1 or #2 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.

- Place your NAS device in an environment that meets the requirements.
- Install the drives.
For details, see the following topics:
 - [Installing 3.5-inch Drives on 3.5-inch Trays](#)
 - [Installing 2.5-inch Drives on 3.5-inch Trays](#)
 - [Installing M.2 Solid-State Drives](#)
- Optional: Install expansion cards.
For details, see [Installing Expansion Cards](#).
- Optional: Connect the expansion units.
For details, see [Expansion Unit Installation](#).
- Replace the memory modules.
For details, see [Replacing Memory Modules](#).
- Connect the power cord and all applicable cables.
- Power on the NAS.
- Install QTS.
For details, see [QTS Installation](#).
- Log on to QTS.

3. Hardware Installation

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

Drive Installation

The TVS-675 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 3.5-inch Trays



Warning

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

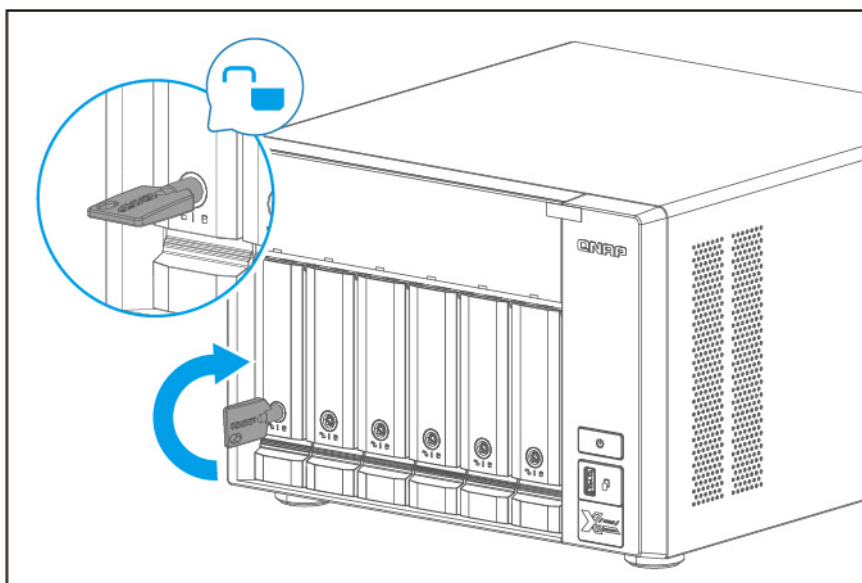


Moving fan blades: Keep your hands and other body parts away from moving fan blades.



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.



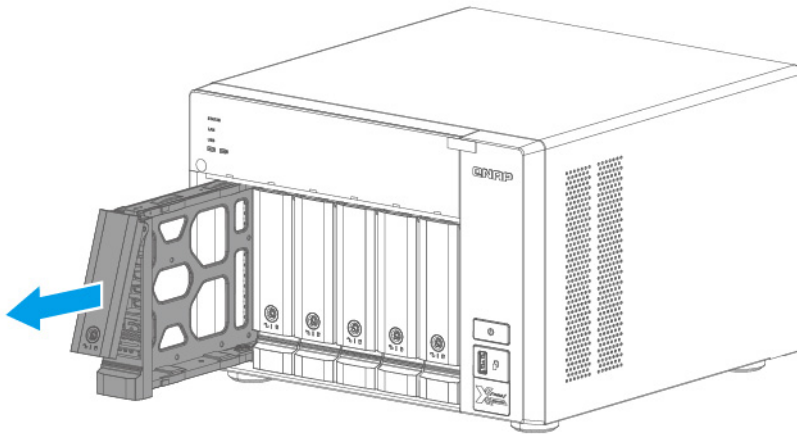
**Note**

The preinstalled drive trays come unlocked.

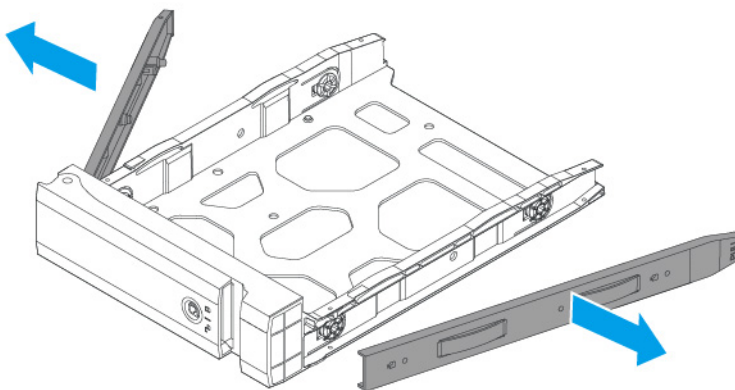
**Important**

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

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

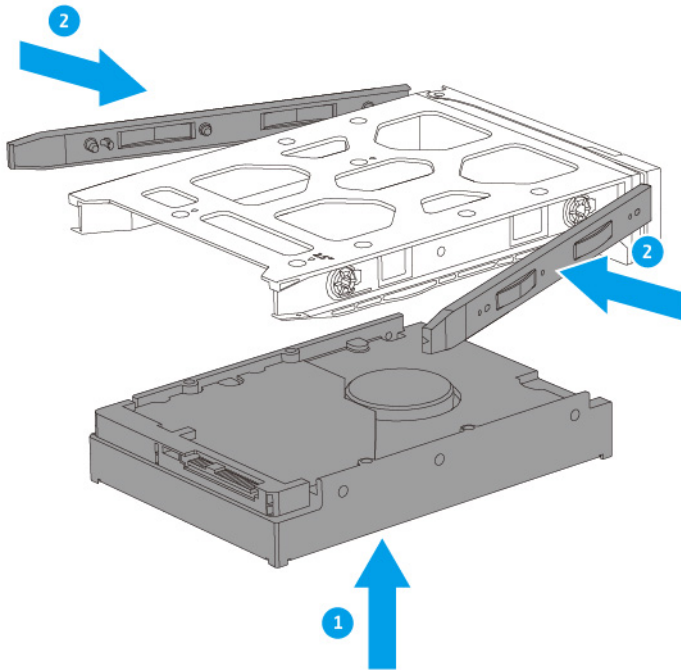
**3. Install a drive on the tray.**

- a. Remove the fastening panels from the sides of the drive tray.

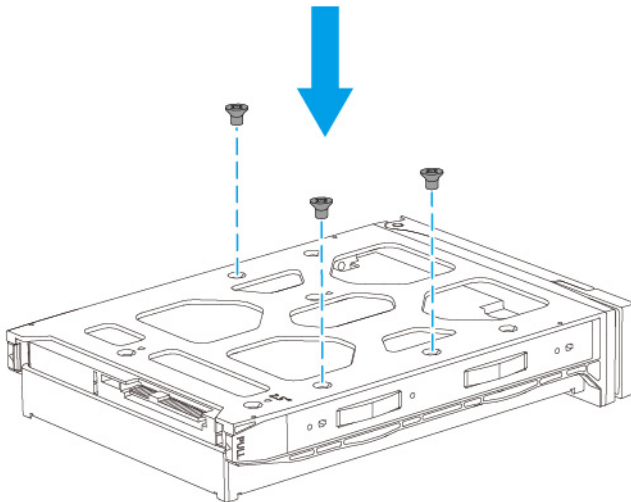


- b. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.

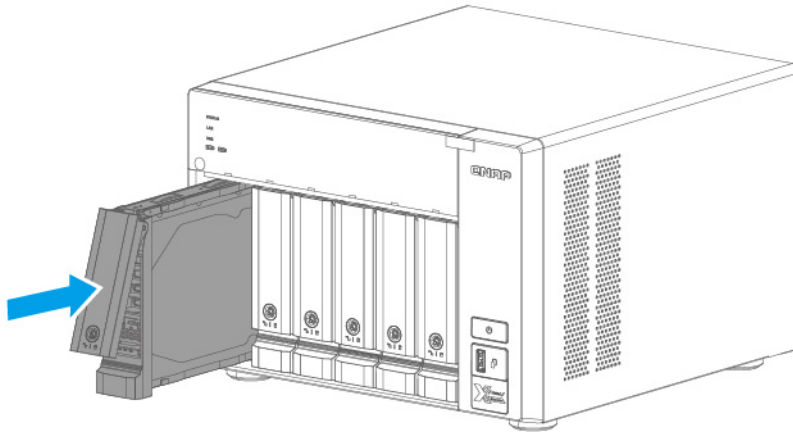
- c. Attach the fastening panels to lock the drive to the tray.



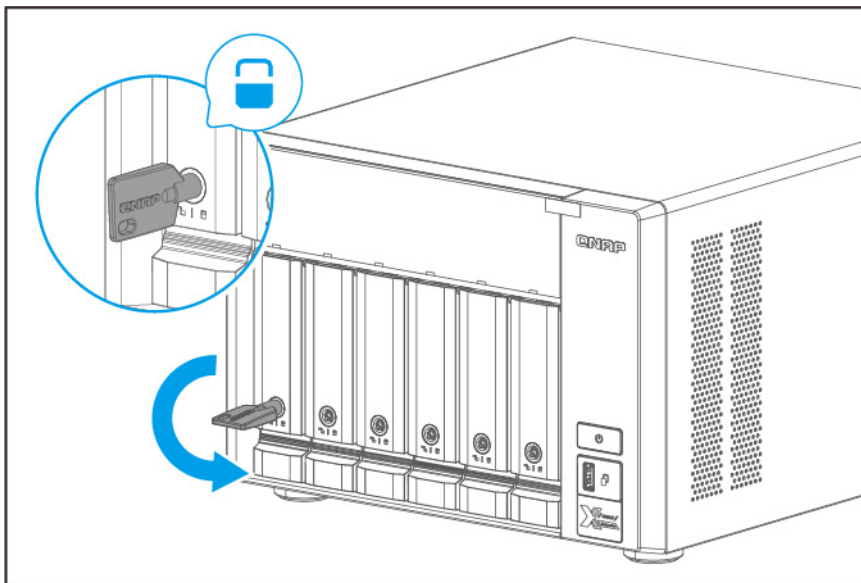
- d. Optional: Attach the screws.



4. Load the tray into the bay.
- Insert the tray into the bay.
 - Push the handle.



c. Lock the tray.



5. Power on the NAS.

Installing 2.5-inch 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.



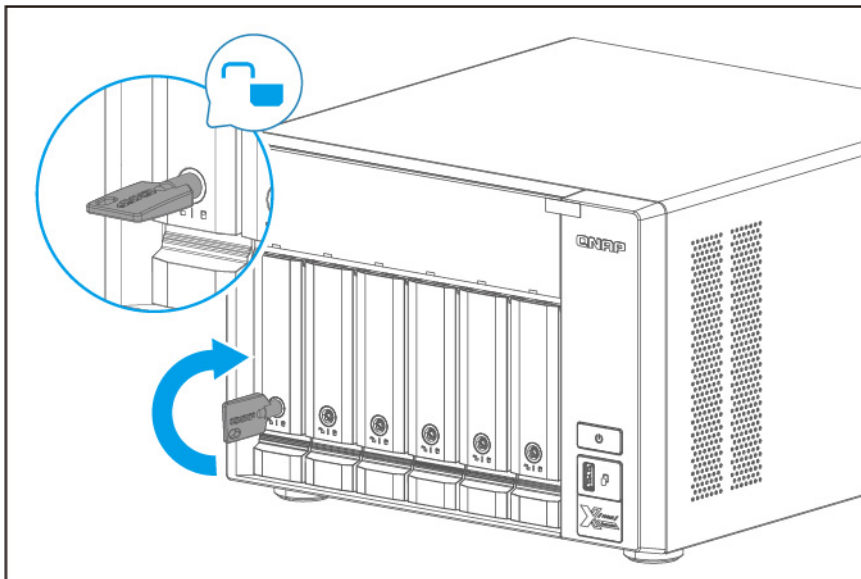
Note

The preinstalled drive trays come unlocked.

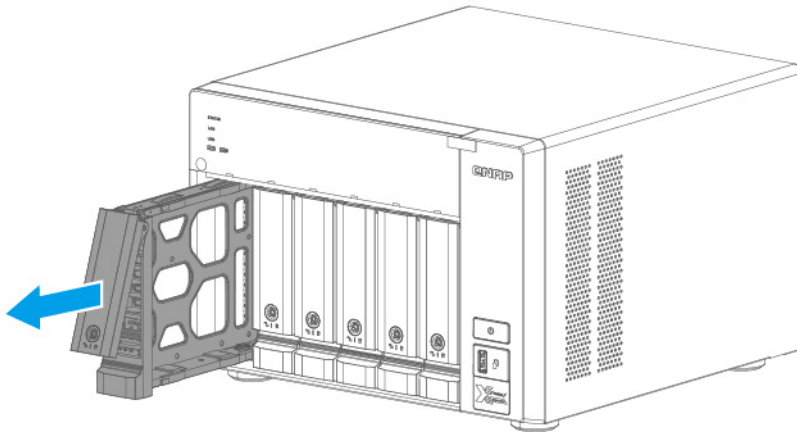


Important

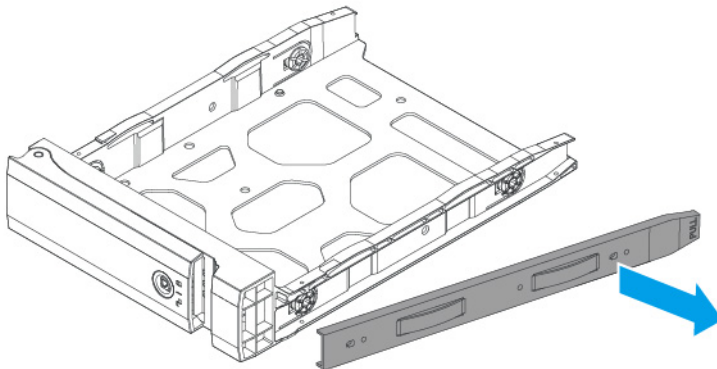
Ensure the drive tray keys are stored in a safe place.



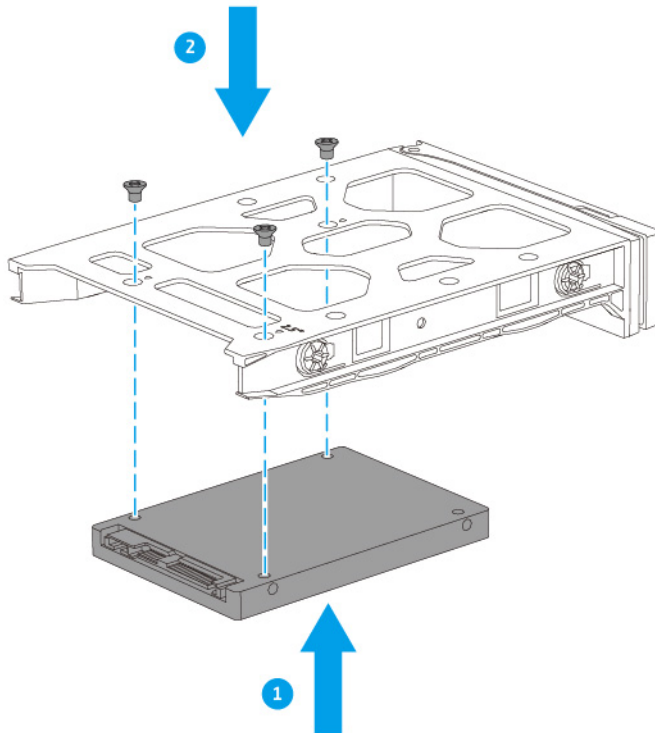
- b. Pull the handle to release the tray.
- c. Pull the tray out.



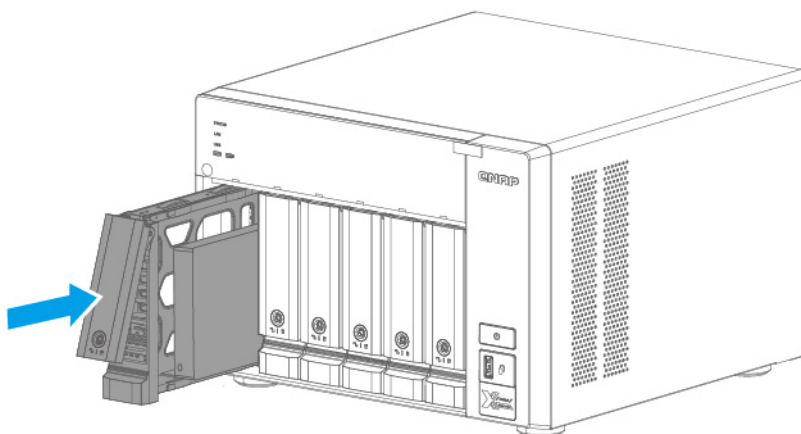
- 3.** Install a drive on the tray.
 - a.** Remove the right fastening panel from the drive tray.



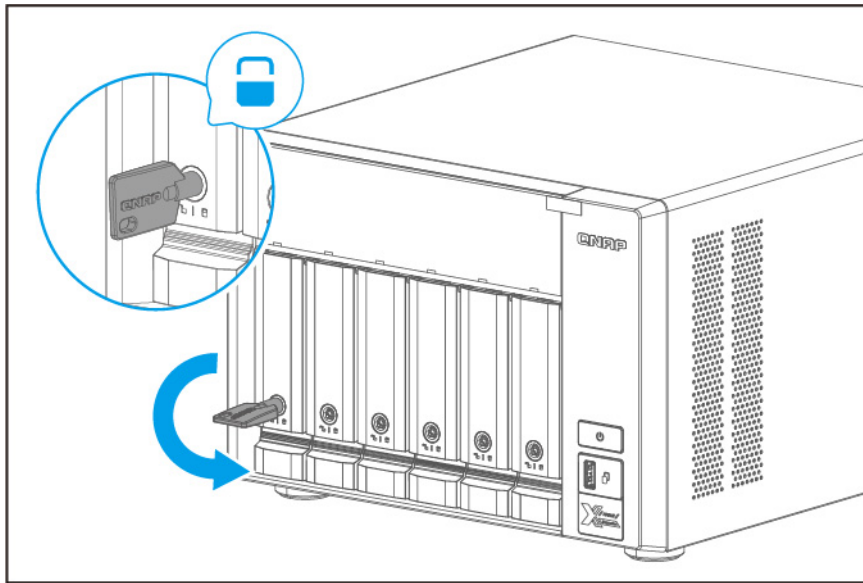
- b.** Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.
 - c.** Attach the screws.



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



- c. Lock the tray.



5. Power on the NAS.

Installing M.2 Solid-State Drives

The device has two M.2 SSD slots on the right panel.

For details, see [Right Panel](#).

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



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.

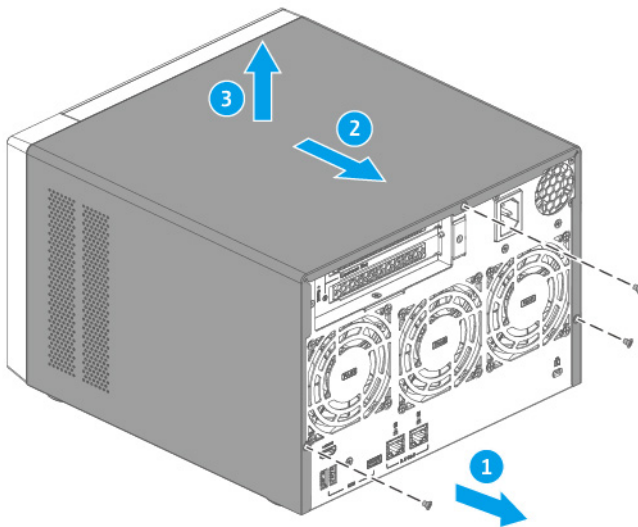


Note

- QNAP recommends installing heatsinks on the M.2 SSD controllers to enhance cooling efficiency and to ensure consistent performance.

- Before installing non-QNAP heatsinks, ensure that they are of the appropriate size and shape.

1. Power off the device.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
 - a. Loosen the screws.
 - b. Slide the cover back.
 - c. Lift the cover off the device.

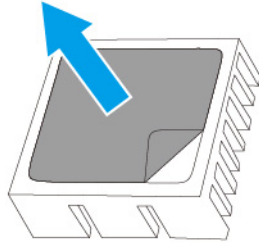


5. Place the device on its left side.
6. Install a heatsink on the M.2 SSD.
 - a. Locate the controller on the M.2 SSD.

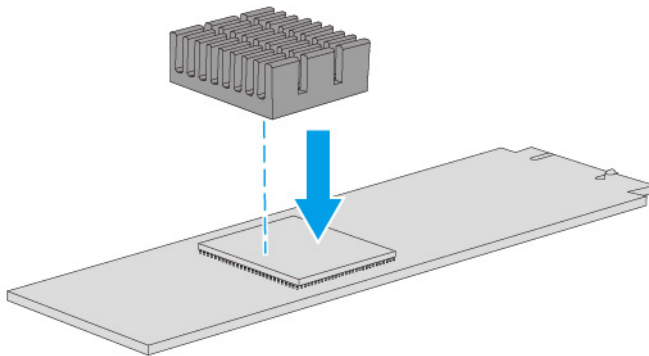
**Note**

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.

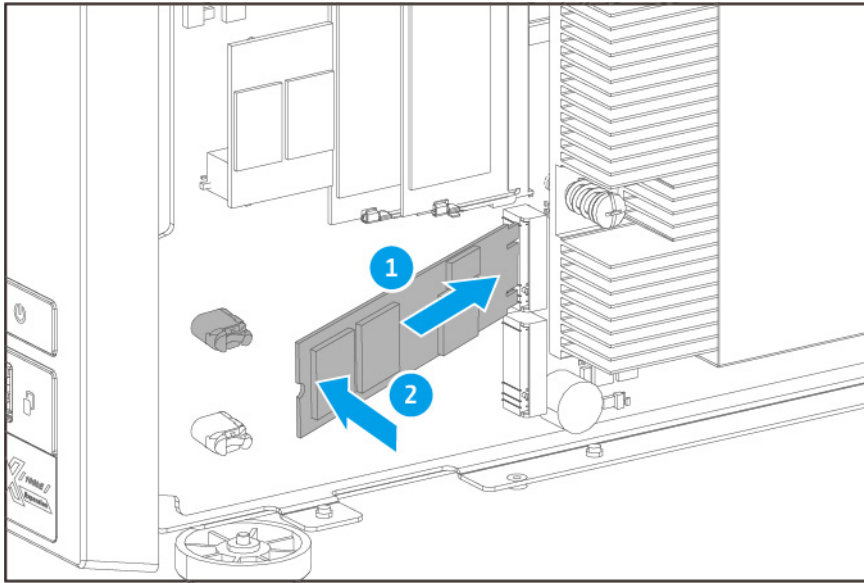


- c.** Install the heatsink on the controller.

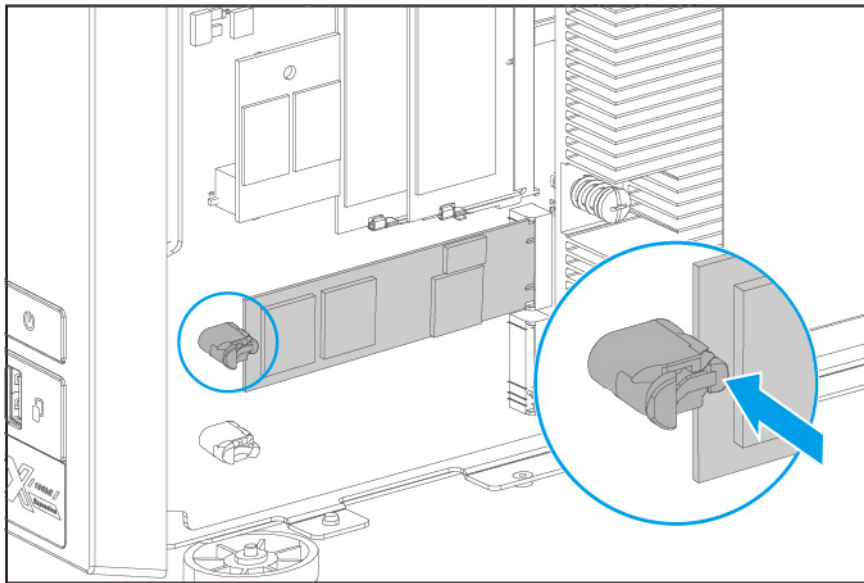


7. Install the M.2 SSD.

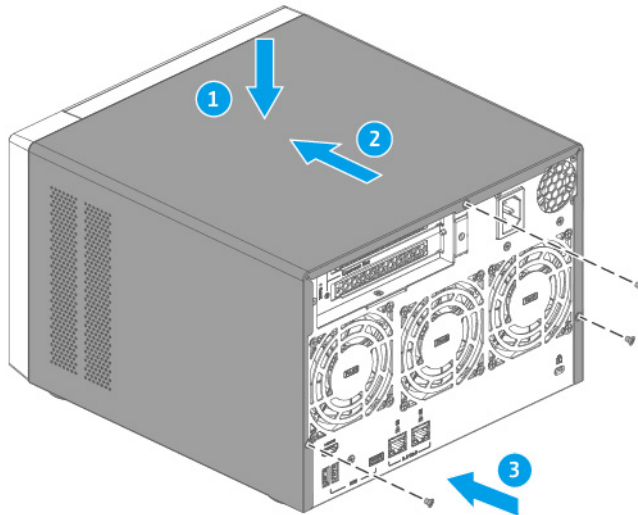
- a.** Verify the M.2 SSD connector is aligned with the slot.



- b.** Carefully press down the M.2 SSD until the pushpin locks the drive into place.



- 8.** Place the device in its normal upright position.
- 9.** Attach the case cover.
 - a.** Place the cover on the device.
 - b.** Slide the cover forward.
 - c.** Tighten the screws.



10. Connect all cables and external attachments.
11. Connect the power cord to the electrical outlet.
12. Power on the device.

Replacing Memory Modules

The TVS-675 has two memory slots. You can increase the memory capacity of the NAS by upgrading memory modules.

Use only QNAP memory modules to maintain system performance and stability. You can purchase QNAP memory modules from authorized resellers.



Warning

-



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

-

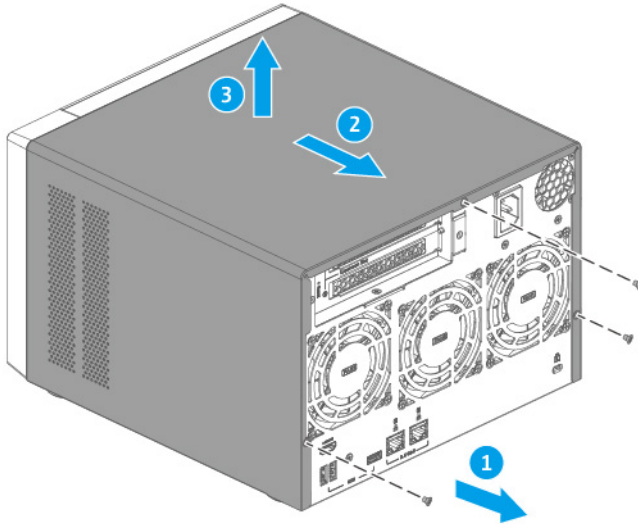


Other moving components: Keep your hands and other body parts away from other moving components.

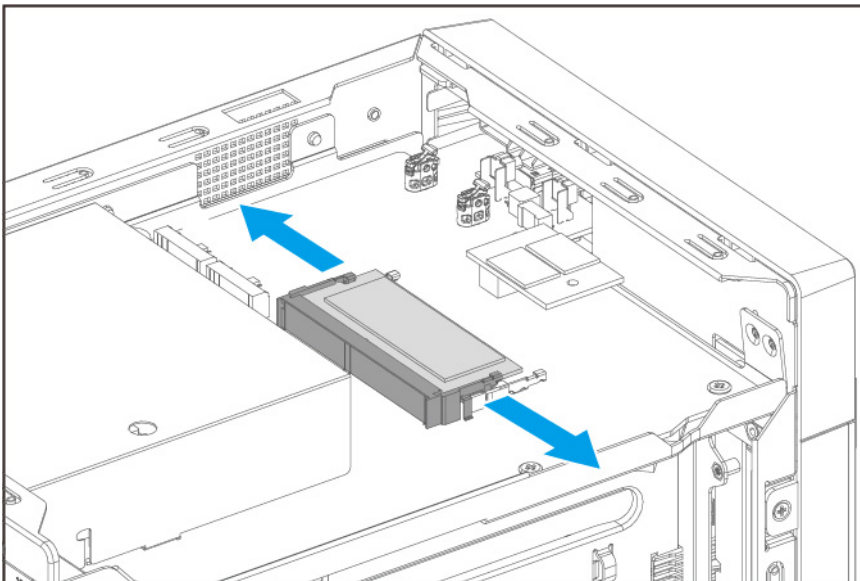
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. Power off the device.
2. Disconnect the power cord from the electrical outlet.

3. Disconnect all cables and external attachments.
4. Remove the case cover.
 - a. Loosen the screws.
 - b. Slide the cover back.
 - c. Lift the cover off the device.



5. Place the device on its left side.
6. Optional: Remove an existing module.
 - a. Push the retention clips outward simultaneously to release the module.

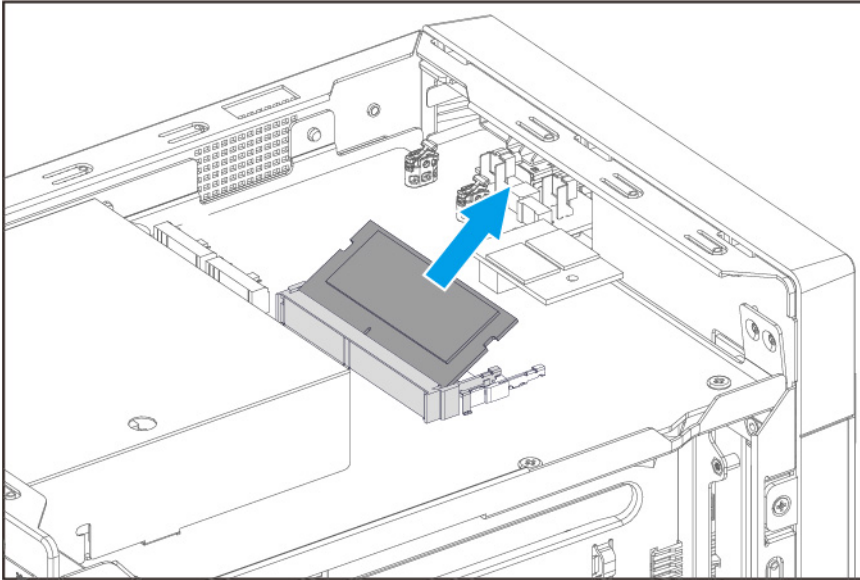


- b. Verify that the module has tilted upward and is completely released from the slot.

**Warning**

Attempting to remove a module that is not completely released may damage the module and the motherboard.

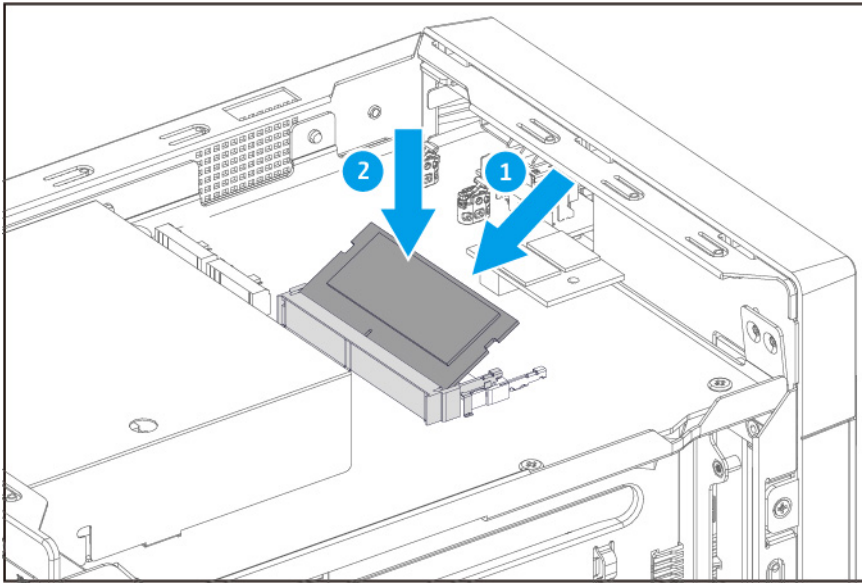
- c. Hold the module by the edges.
- d. Carefully slide the module out of the slot.

**Warning**

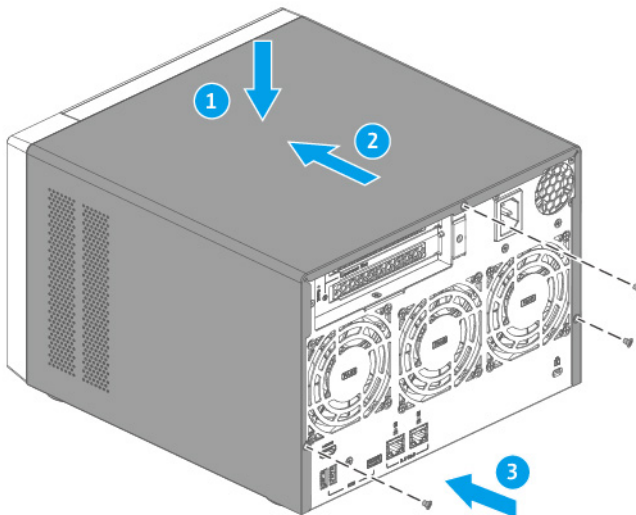
- Do not touch the internal components, particularly the metal connectors.
- Do not bend the module.

7. Install a new module.

- a. Align the notch with the ridge in the slot.
- b. Insert the module into the slot.
- c. Verify that the metal connectors are completely inserted into the slot.
- d. Carefully press down on the module until the retention clips lock the module into place.



8. Place the device in its normal upright position.
9. Attach the case cover.
 - a. Place the cover on the device.
 - b. Slide the cover forward.
 - c. Tighten the screws.



10. Connect all cables and external attachments.
11. Power on the device.
12. Verify that the module is recognized by the device.
 - a. Log on to QTS as administrator.

- b. Go to **Control Panel > System > System Status > Hardware Information** .
- c. Check the value for **Total memory**.

Installing Expansion Cards

The device supports selected expansion cards, some of which require QNAP PCIe brackets. QNAP-branded expansion cards purchased from the company website are shipped with the brackets necessary to fit the device.



Warning

-



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

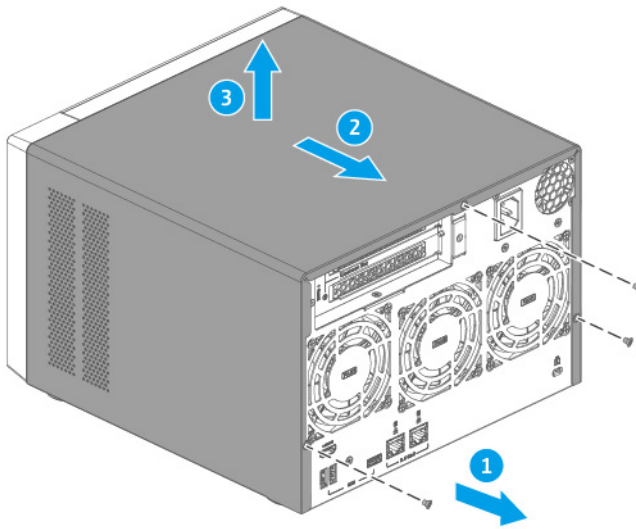
-



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

- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. Check the expansion cards and brackets supported by your model on the QNAP website.
 - a. Go to www.qnap.com/compatibility.
 - b. Click **Search by NAS**.
 - c. Specify the number of bays and the specific model of your NAS.
 - d. Under **Category**, select the component or device type.
 - e. Locate a specific component or device model in the list.
 - f. Optional: Click the corresponding **Note** icon to view more information.
2. Power off the device.
3. Disconnect the power cord from the electrical outlet.
4. Disconnect all cables and external attachments.
5. Remove the case cover.
 - a. Loosen the screws.
 - b. Slide the cover back.
 - c. Lift the cover off the device.

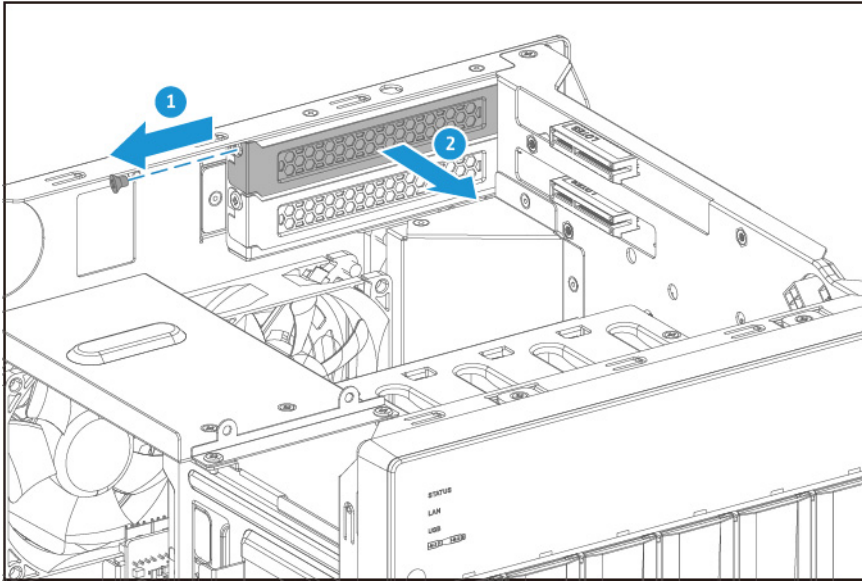


6. Remove the power supply unit.

**Warning**

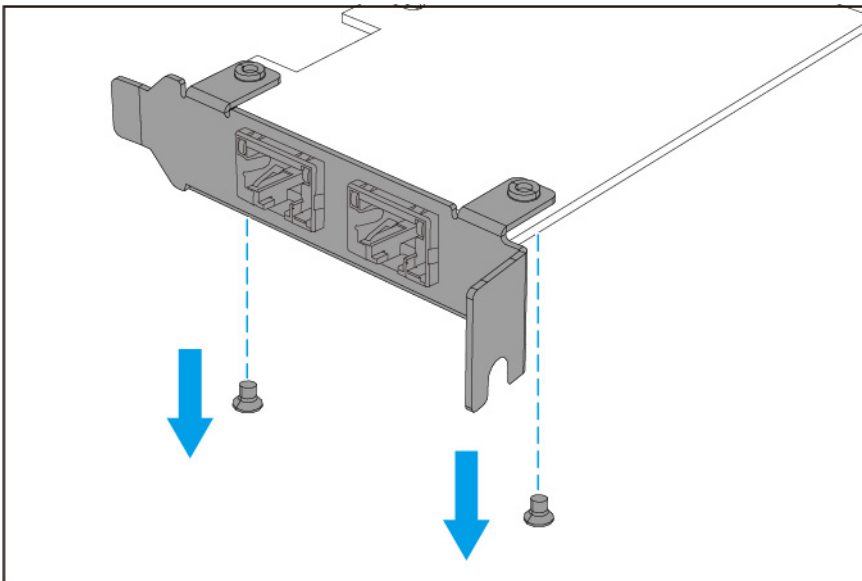
To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.

- a. Disconnect the power supply cables.
 - b. Remove the screws that secure the unit to the chassis.
 - c. Remove the unit from the chassis.
7. Remove the PCIe cover.
 - a. Remove the screw that secures the cover to the bracket.
 - b. Pull the cover away from the slot.

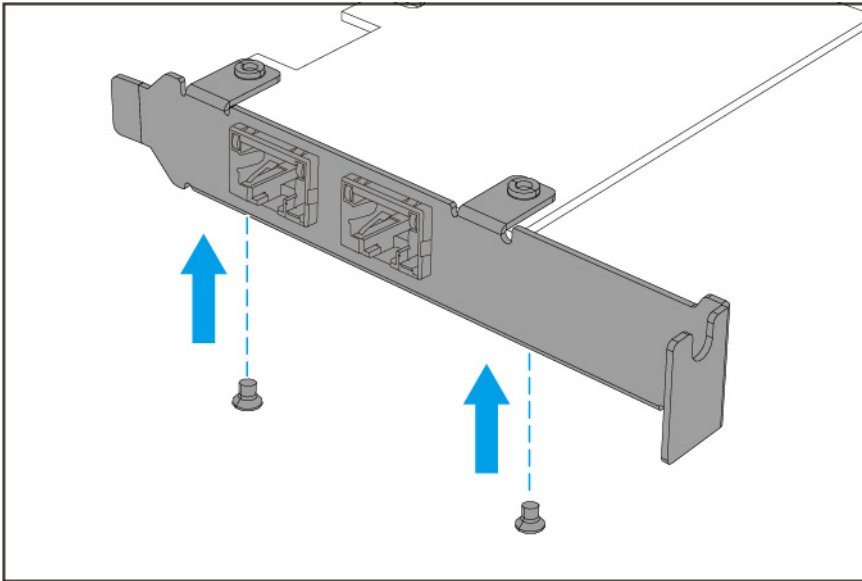


8. Optional: Attach the QNAP bracket to the expansion card.

- a.** Remove all screws of the existing bracket.



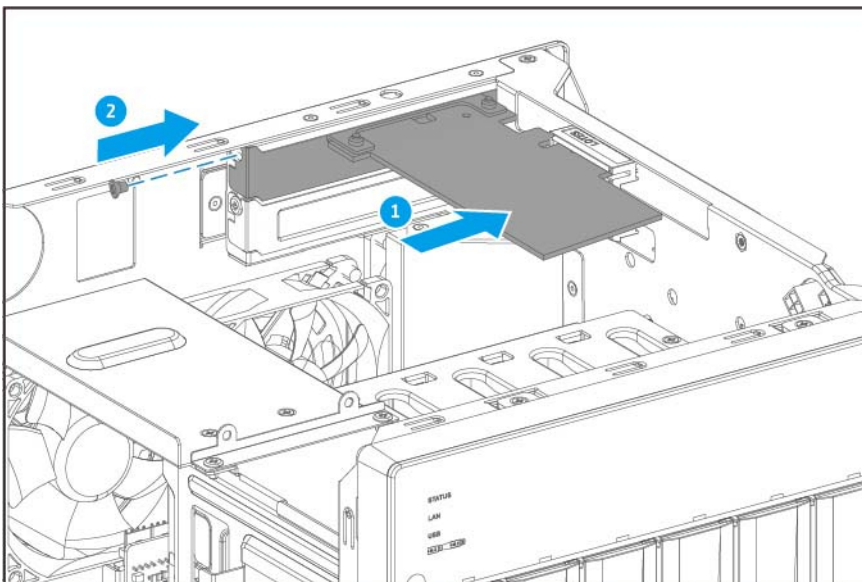
- b.** Carefully pull the bracket away from the card.
- c.** Attach the QNAP bracket to the card using the same screws.



d. Verify that the bracket does not move.

9. Install the expansion card.

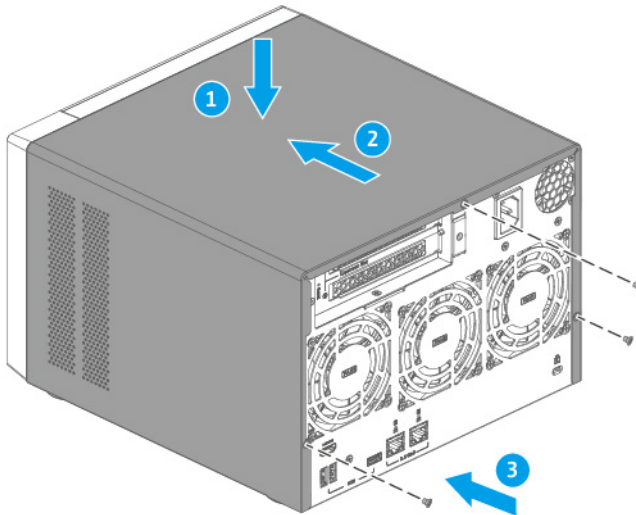
- a. Hold the card by the edges.
- b. Insert the card into the slot.
- c. Attach the screw.



10. Install the power supply unit.

- a. Install the unit on the chassis.
- b. Attach the screws that secure the unit to the chassis.
- c. Connect the power supply cables.

11. Attach the case cover.
 - a. Place the cover on the device.
 - b. Slide the cover forward.
 - c. Tighten the screws.



12. Connect all cables and external attachments.
13. Connect the power cord to the electrical outlet.
14. Power on the device.

Expansion Unit Installation

The device supports SATA JBOD expansion units and 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 <http://www.qnap.com/go/compatibility-expansion>.

Expansion Unit Model	Description	Required Accessories
TL-D400S	<ul style="list-style-type: none"> • Uses a SATA 6 Gbps (SFF-8088) interface • Supports SATA/HDD/SSD 	<ul style="list-style-type: none"> • 1 x SFF-8088 connector cable • QXP-400eS-A1164 host bus adapter
TL-D800S	<ul style="list-style-type: none"> • Uses a SATA 6 Gbps (SFF-8088) interface • Supports SATA/HDD/SSD 	<ul style="list-style-type: none"> • 2 x SFF-8088 connector cables • QXP-800eS-A1164 host bus adapter

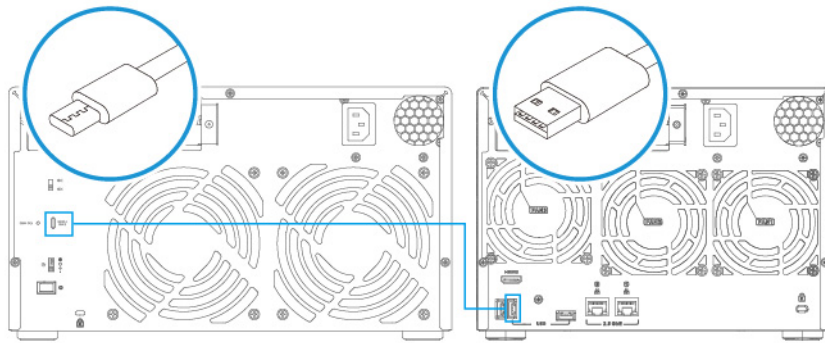
Expansion Unit Model	Description	Required Accessories
TL-D1600S	<ul style="list-style-type: none"> • Uses a SATA 6 Gbps (SFF-8088) interface • Supports SATA/HDD/SSD 	<ul style="list-style-type: none"> • 4 x SFF-8088 to SFF-8644 connector cables • QXP-1600eS host bus adapter
TL-R400S	<ul style="list-style-type: none"> • Uses a SATA 6 Gbps (SFF-8088) interface • Supports SATA/HDD/SSD 	<ul style="list-style-type: none"> • 1 x SFF-8088 connector cable • QXP-400eS-A1164 host bus adapter
TL-R1200S-RP	<ul style="list-style-type: none"> • Uses a SATA 6 Gbps (SFF-8088) interface • Supports SATA/HDD/SSD 	<ul style="list-style-type: none"> • 3 x SFF-8088 to SFF-8644 connector cables • QXP-1600eS host bus adapter
TR-002	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA drives 	<ul style="list-style-type: none"> • USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TR-004	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 1 Type-C interface • Supports SATA drives 	<ul style="list-style-type: none"> • USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TR-004U	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 1 Type-C interface • Supports SATA drives 	<ul style="list-style-type: none"> • USB 3.2 Gen 1 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TL-D800C	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA drives 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA drives 	<ul style="list-style-type: none"> • USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable • RAIL-B02

Connecting USB Expansion Units

To connect the device to USB expansion units, USB Type-A to USB Type-C cables are required.

For required accessories details, see [Expansion Unit Installation](#).

1. Verify that the NAS is powered off.
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 a USB port on the NAS.



3. Power on the expansion units.
4. Power on the NAS.
5. 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.

Connecting SATA Expansion Units

To connect the TVS-675 to SATA JBOD expansion units, a host bus adapter must be installed on the NAS.

For required accessories details, see [Expansion Unit Installation](#).

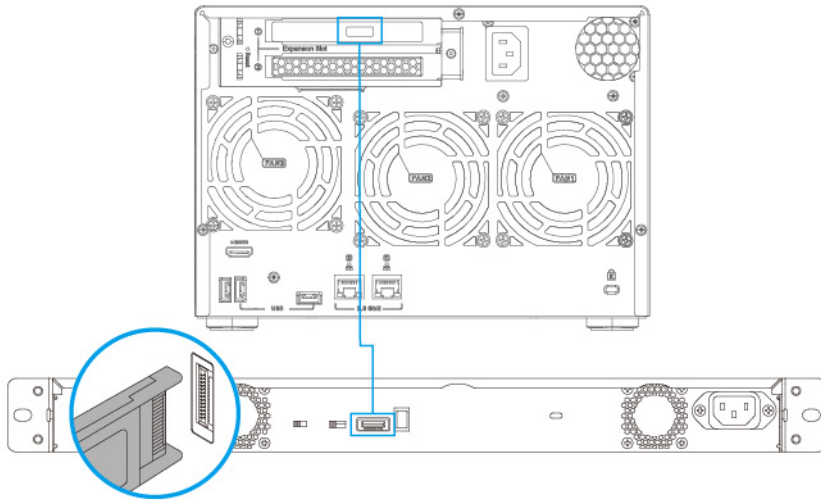
1. Power off the NAS.
2. Install a host bus adapter on the PCIe slot.
For details, see [Installing Expansion Cards](#).



Note

The QNAP QXP host bus adapter is required for connecting the SATA JBOD enclosure to a host device. Third-party host bus adapters are not compatible with QNAP JBOD enclosures.

3. Connect the expansion units to the NAS using the following topology.



4. Power on the SATA JBOD expansion units.
5. Power on the NAS.
6. 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.

4. QTS Installation

The TVS-675 uses the QNAP QTS operating system. You can install QTS using any of the following methods.

Method	Description	Requirements
Qfinder Pro installation (Recommended)	If the NAS is connected to your local area network, you can do the following: <ul style="list-style-type: none"> • Locate the NAS using Qfinder Pro. • Complete the steps in the Smart Installation Guide wizard. 	<ul style="list-style-type: none"> • Computer • Network cable • Qfinder Pro installer
Cloud installation	If the NAS is connected to the internet, you can do the following: <ul style="list-style-type: none"> • 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 style="list-style-type: none"> • Computer or mobile device • myQNAPcloud account • Cloud Key
Local installation	If the NAS supports HDMI output, you can do the following: <ul style="list-style-type: none"> • Connect the NAS to the required hardware. • Complete the steps in the Smart Installation Guide wizard. 	<ul style="list-style-type: none"> • Monitor • HDMI cable • USB keyboard or Remote control (not available on all models)

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



Warning

QuTS hero and QTS use different file systems. Switching operating systems will reset the NAS and delete all data.

Installing QTS Using Qfinder Pro



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 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. Click **Start Smart Installation Guide**.
The **Enter the NAS name and administrator's password** screen appears.
6. 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.
7. Click **Next**.
The **Set the date and time** screen appears.
8. 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.

9. Click **Next**.
The **Configure the network settings** screen appears.
10. Select **Obtain an IP address automatically (DHCP)**.
11. Click **Next**.
The **Cross-platform file transfer service** screen appears.
12. Select the types of devices that you will use to access shared folders on the NAS.
13. Click **Next**.
The **Summary** screen appears.
14. Review the settings.
15. Click **Apply**.
A confirmation message appears.



Warning

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

16. 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**.



Note

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**.

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

8. Click **Start Smart Installation Guide**.

9. 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.

10. Click **Next**.

The **Set the date and time** screen appears.

11. 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.

12. Click **Next**.

The **Configure the network settings** screen appears.

13. Select **Obtain an IP address automatically (DHCP)**.

14. Click **Next**.

The **Cross-platform file transfer service** screen appears.

15. Select the types of devices that you will use to access shared folders on the NAS.

16. Click **Next**.
The **Summary** screen appears.
17. Review the settings.
18. Click **Apply**.
A confirmation message appears.

**Warning**

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

19. Click **Confirm**.
QTS is installed.

Installing QTS Using an HDMI Connection

**Warning**

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

1. Connect an HDMI display to the NAS.
2. Connect a USB keyboard to the NAS or prepare the QNAP IR remote control (not available on all models).
3. Power on the NAS.
The **Welcome** screen of the Smart Installation Guide appears.
4. Select **Start Smart Installation Guide**.
5. Select **No, skip this process**.
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.
For details on enabling multimedia functions on QTS, see the System Administration section of the QTS User Guide.
6. Select **Configure later**.
For details on configuring disks, see the Storage & Snapshots section of the QTS User Guide.
7. Review the settings.
8. Click **Next**.
The **Summary** screen appears.
9. Review the settings.
10. Click **Next**.
The **Confirm** screen appears.

**Warning**


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

11. Click **Next**.
QTS is installed.


5. 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 1.5 seconds.	The device powers off.
Force power off	Press and hold the button for 5 seconds.	The device powers off.  Note 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: <ul style="list-style-type: none"> • 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 will be 00089BF61575.  Tip You can find the first MAC address using Qfinder Pro. A label attached to the device also lists the address as MAC1. <ul style="list-style-type: none"> • TCP/IP configuration: <ul style="list-style-type: none"> • Obtain IP address settings automatically via DHCP • Disable jumbo frames • System port: 8080 (system service port) • Security level: Low (Allow all connections) • LCD panel password: (blank)

Operation	User Action	Result
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 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.

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](#).

LED	Status	Description
System Status	Flashes green and red alternately every 0.5 seconds	<ul style="list-style-type: none"> The 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.
	Red	<ul style="list-style-type: none"> 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 occurred when accessing (read/write) the data. A bad sector is detected on the hard 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).
	Flashes red every 0.5 seconds	The device is in degraded mode (one member drive failed in RAID 1, RAID 5, or RAID 6).
	Flashes red once	The device has received a command from the remote control.
	Green	The device is ready.
	Flashes green every 0.5 seconds	<ul style="list-style-type: none"> The device is not configured. A drive is not formatted.
	Off	<ul style="list-style-type: none"> All drives are in standby mode. The device is powered off.
Drive	Flashes red	The data is being accessed and a read/write error occurs during the process.
	Red	A drive read/write error occurred.
	Flashes green	Data is being accessed.
	Green	The drive is ready.
	Off	No drive was detected.
LAN	Orange	The network connection is operating.

LED	Status	Description
2.5 Gigabit Ethernet speed	Green	The network connection is operating at 2.5 Gbps.
	Orange	The network connection is operating at 1 Gbps.
	Off	<ul style="list-style-type: none"> The network connection is operating at 100 Mbps. There is no network connection.
2.5 Gigabit Ethernet activity	Yellow	A network connection has been established.
	Flashes yellow	The device is being accessed from the network.
	Off	There is no network connection.
USB	Blue	A USB device connected to the front USB port is detected.
	Off	No USB expansion unit has been detected.

Audio Alert

Duration	Frequency	Description
Short beep (0.5 seconds)	1	<ul style="list-style-type: none"> 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.
	3	<ul style="list-style-type: none"> The firmware was updated. Cannot detect installed disk.
Long beep (1.5 seconds)	3 (every 5 minutes)	The system fan is not functioning.
	2	<ul style="list-style-type: none"> 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.
	1	<ul style="list-style-type: none"> The NAS was powered off by force shutdown (hardware shutdown). The NAS was powered on successfully and is ready.

6. 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.

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).
- 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	<p>If the NAS does not support file system encryption, encrypted disk volumes are not migrated.</p> <div style="border-left: 2px solid red; padding-left: 10px; margin-top: 10px;">  <p>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.</p> </div>

Data and Settings	After NAS Migration
Shared folders	<p>All shared folders and the downloaded files stored in them are retained.</p> <p> Warning To prevent data loss, back up and save encryption keys or passwords of encrypted shared folders in a safe place before migration.</p> <p> Important Folder permissions on the destination NAS must be reconfigured after migration.</p>
Network	<ul style="list-style-type: none"> 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	<p>Licenses are not migrated.</p> <p> Warning To prevent losing all your software licenses, QNAP recommends deactivating licenses on the source NAS before data migration.</p>
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: <ul style="list-style-type: none"> • 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.

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

Creating a One-Way Sync Job

1. On the source NAS, go to **App Center > HBS 3 > Sync**.
2. Click **Sync Now**.
3. Select **One-way Sync Job**.
The **Create a Sync Job** window appears.
4. Click **Remote NAS**.
5. Click **Add New Account**.
The **Create a Storage Space** window appears.
6. 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.

7. 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.

8. Click **Create**.
9. 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.

7. 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 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.

Hot-swapping Failed Drives

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.
RAID 50	≥ 6	One disk per subgroup fails.
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 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 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 Space** .

11. Locate the volume 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 disk volumes from unintentional disconnection or removal of drives. Users can recover an inactive RAID 1, RAID 5, RAID 6, RAID 10, RAID 50, or RAID 60 volume from degraded mode.

Disk Volume	RAID Recovery Support	Number of Disks	Maximum Number of Removed Drives
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	No	≥ 4 (Must be an even number)	One or two member drives in two different pairs fail.
RAID 50	Yes	≥ 6	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/en/nas-migration
Expansion Unit Compatibility	http://www.qnap.com/go/compatibility-expansion
Service Portal	https://service.qnap.com
Product Support Status	https://www.qnap.com/en/product/eol.php
Downloads	https://download.qnap.com
Community Forum	https://forum.qnap.com
QNAP Accessories Store	https://shop.qnap.com

8. 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

QNAP ID

User account that enables you to use myQNAPcloud remote access and other QNAP services

Qfinder Pro

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

QTS

QNAP NAS operating system

9. Notices

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Version 3, 29 June 2007

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UKCA Notice



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FCC Notice

FCC Class B Notice



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

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2. This device must accept any interference received, including interference that may cause undesired operation.

**Note**

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- 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**

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VCCI Notice

VCCI-B

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R33B77
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SJ/T 11364-2006



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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。

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。