



QNAP

TS-855eU

**TS-855eU
TS-855eU-RP**

User Guide

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1. Product Overview

This chapter provides basic information about the QNAP device.

About the TS-855eU

The TS-855eU is powered by a high-performance Intel® Atom® C5125 8-core processor, and features two DDR4 SODIMM slots which can be scaled up to 64 GB of memory. The NAS supports connecting expansion units through four native USB 3.2 Gen 1 Type-A ports. Additionally, the TS-855eU supports SATA 6 Gbps drives (backward compatible with SATA 3 Gbps), and is equipped with two 2.5 Gigabit Ethernet ports and two PCIe 3.0 x4 slots for various applications and expansion options.

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	Drive bays	Memory	Power supply
TS-855eU-8G	8	8 GB	Single
TS-855eU-RP-8G	8	8 GB	Redundant

Component	TS-855eU-8G	TS-855eU-RP-8G
Processor		
CPU	Intel® Atom® C5125	
Frequency	8-core/8-thread 2.8 GHz	
Architecture	x86 64-bit	
Encryption engine	AES-NI	
Memory		
Pre-installed memory	8 GB RAM: 1 x 8 GB DDR4 SODIMM	

Component	TS-855eU-8G	TS-855eU-RP-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.  Note This device supports ECC memory modules.	
Maximum memory	64 GB RAM: 2 x 32 GB	
Flash memory	5 GB (dual-boot OS protection)	
Storage		
Drive bays	8 x 3.5-inch SATA 6 Gbps  Tip The drive bays are backward compatible with SATA 3 Gbps drives.	
Drive compatibility	<ul style="list-style-type: none"> • 3.5-inch SATA hard disk drives • 2.5-inch SATA solid-state drives 	
M.2 SSD slots	2 x PCIe Gen 3 x4	
M.2 SSD form factor	2280	
SSD cache acceleration support	Supported	
Hot-swapping	The device supports hot-swapping drives except for the following: M.2 SSDs	
Network		
2.5 Gigabit network interface	2 x 2.5 GbE RJ45  Note The 2.5 Gigabit Ethernet port provides 4 network connection speeds: 2.5 Gbps, 1 Gbps, 100 Mbps, and 10 Mbps.	
Wake-on-LAN	Yes (2.5 GbE RJ45)	
External I/O Ports & Expansion Slots		
PCIe slots	2 x PCIe Gen 3 x4	
USB ports	4 x USB 3.2 Gen 1 (5 Gbps) Type-A	
Interface		
Buttons	<ul style="list-style-type: none"> • Power • Reset 	
Dimensions		
Form factor	2U Rackmount	

Component	TS-855eU-8G	TS-855eU-RP-8G
Dimensions (H x W x D)	89 x 432 x 297.4 mm (3.5 x 17 x 11.7 in)	
Net weight	7.61 kg (16.78 lbs)	8.15 kg (17.97 lbs)
Others		
Rail compatibility	RAIL-B02  Note <ul style="list-style-type: none"> • Rail kits are not included with the NAS and must be purchased separately. For details, contact an authorized reseller or go to https://shop.qnap.com. • Information on rail kit installation can be found in the installation guide included in the rail kit package. 	
Power supply unit	250W, 100-240V AC, 50/60 Hz	2 x 300W, 100-240V AC, 50/60 Hz
System battery	CR2032 lithium battery (3V, 225 mAh)  Warning <ul style="list-style-type: none"> • This battery is 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. • 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. 	
Fans	System: 3 x 60mm, 120V DC  Warning  To avoid potential injury or damage to components, do not touch the fans while the NAS is connected to a power source.	
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) 	

**Tip**

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

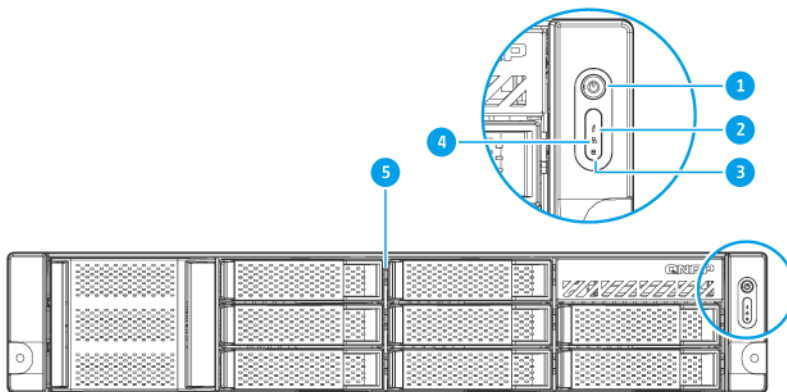
Package contents

Item	Quantity
TS-855eU	1
Power cord	<ul style="list-style-type: none"> • TS-855eU-8G: 1 • TS-855eU-RP-8G: 2

Item	Quantity
Ethernet cable	1 Cat5e
Screws for 3.5-inch drives	32
Screws for 2.5-inch drives	24
Quick Installation Guide (QIG)	1

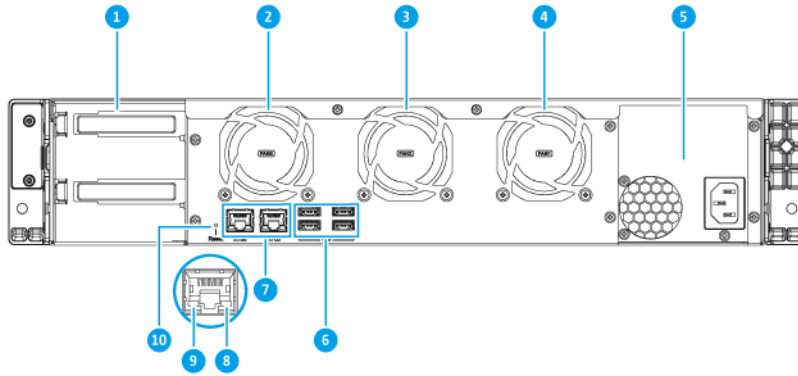
Components

Front panel




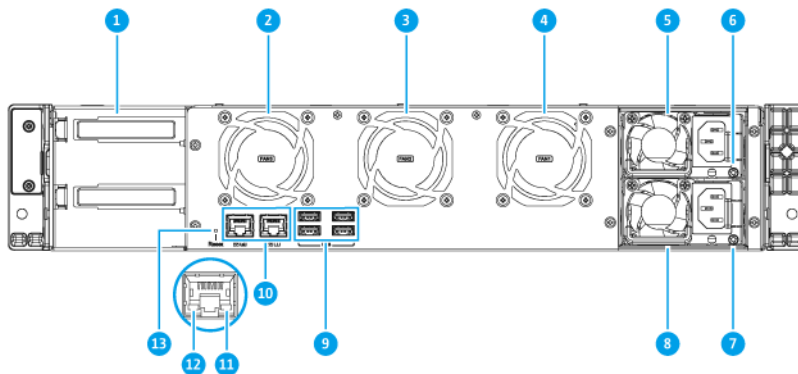
No.	Component	No.	Component
1	Power button	4	LAN LED
2	System status LED	5	Drive LED
3	Expansion unit LED	-	-

Rear panel




TS-855eU-8G

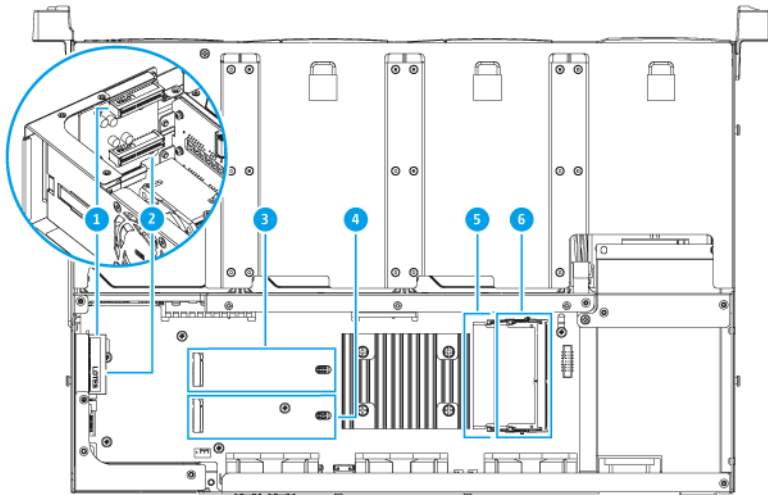
No.	Component	No.	Component
1	PCIe low-profile covers	6	USB 3.2 Gen 1 Type-A ports
2	System fan 3	7	2.5 Gigabit Ethernet ports (RJ45)
			 Note These Gigabit Ethernet ports support Wake-on-LAN configurations.
3	System fan 2	8	Gigabit Ethernet activity LED
4	System fan 1	9	Gigabit Ethernet speed LED
5	Power input	10	Reset button



TS-855eU-RP-8G

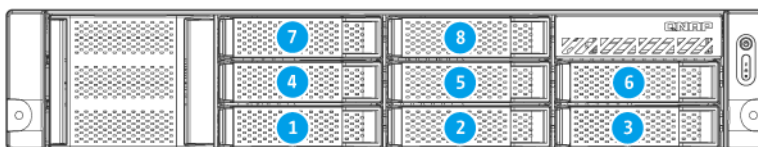
No.	Component	No.	Component
1	PCIe low-profile covers	8	Power supply unit 2
2	System fan 3	9	USB 3.2 Gen 1 Type-A ports
3	System fan 2	10	2.5 Gigabit Ethernet ports (RJ45)
			 Note These Gigabit Ethernet ports support Wake-on-LAN configurations.
4	System fan 1	11	Gigabit Ethernet activity LED
5	Power supply unit 1	12	Gigabit Ethernet speed LED
6	Power supply unit 1 LED	13	Reset button
7	Power supply unit 2 LED	-	-

System board



No.	Component	No.	Component
1	PCIe slot 2 (PCIe 3.0 x4)	4	M.2 SSD slot 2
2	PCIe slot 1 (PCIe 3.0 x4)	5	Memory slot 1
3	M.2 SSD slot 1	6	Memory slot 2

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.



Devices with redundant power supply may have one or more power supply unit (PSU) cords. 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.

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	<ul style="list-style-type: none"> • Storage drives For the list of compatible drive models, go to https://www.qnap.com/compatibility. • Network cable
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.

1. Place your NAS device in an environment that meets the requirements.
For details, see [Installation requirements](#).
2. Install drives.
For details, see the following topics:
 - [Installing 2.5-inch solid-state drives](#)
 - [Installing 3.5-inch hard drives](#)
 - [Installing M.2 solid-state drives](#)

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

3. Optional: Replace or install additional memory modules.
For details, see [Replacing memory modules](#).
4. Optional: Install expansion cards.
For details, see [Installing expansion cards](#).
5. Connect the NAS to the network.
6. Optional: Connect expansion units.
For details, see the following topics:
 - [Connecting SAS expansion units](#)
 - [Connecting SATA JBOD Expansion Units](#)
 - [Connecting USB Expansion Units](#)

- 7.** Connect the power cord and all applicable cables.
- 8.** Power on the NAS.
- 9.** Install QTS.
For details, see [QTS installation](#).
- 10.** Log on to QTS.

2. Installation and Configuration

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

Hardware installation

This section provides information on installing drives, memory modules, expansion cards, power supply units, expansion units, and rail kits.

Drive installation

The TS-855eU is compatible with 3.5-inch and 2.5-inch hard drives, and 2.5-inch solid state drives.

Installing 2.5-inch solid-state drives



Tip

For the list of compatible drive models, 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.

•



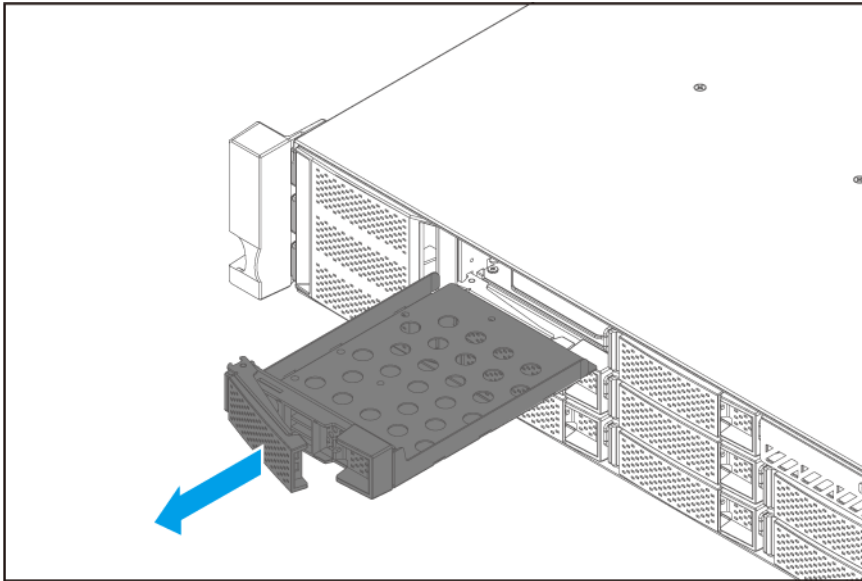
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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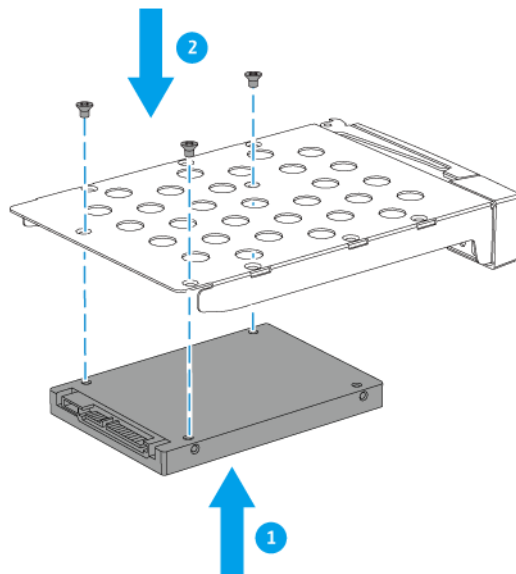
Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. Remove the drive tray.
 - a. Pull the tray handle outward.
 - b. Pull the tray out.



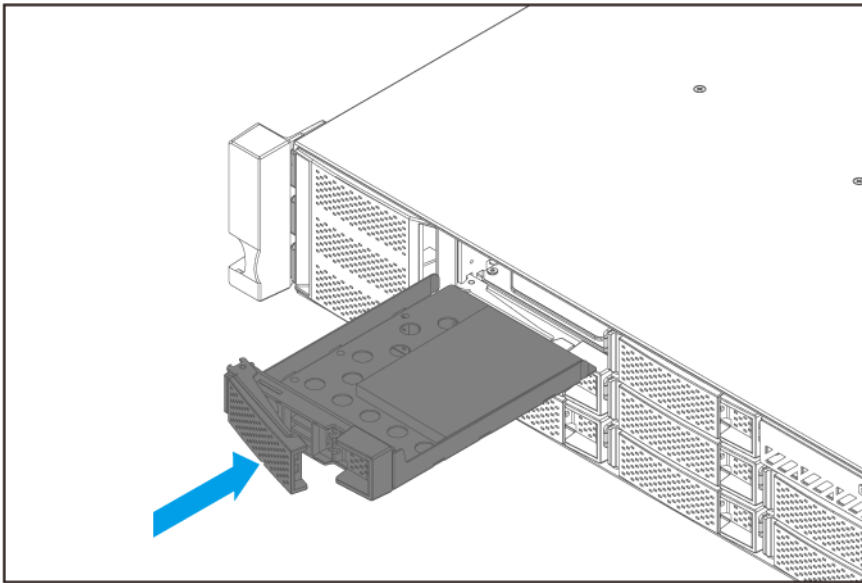
3. Install a drive on the tray.

- a.** Place the tray on the drive so that the holes on the tray are aligned with those on the drive.
- b.** Attach the screws.



4. Load the tray into the bay.

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



5. Power on the NAS.

Installing 3.5-inch hard drives



Tip

For the list of compatible drive models, 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.



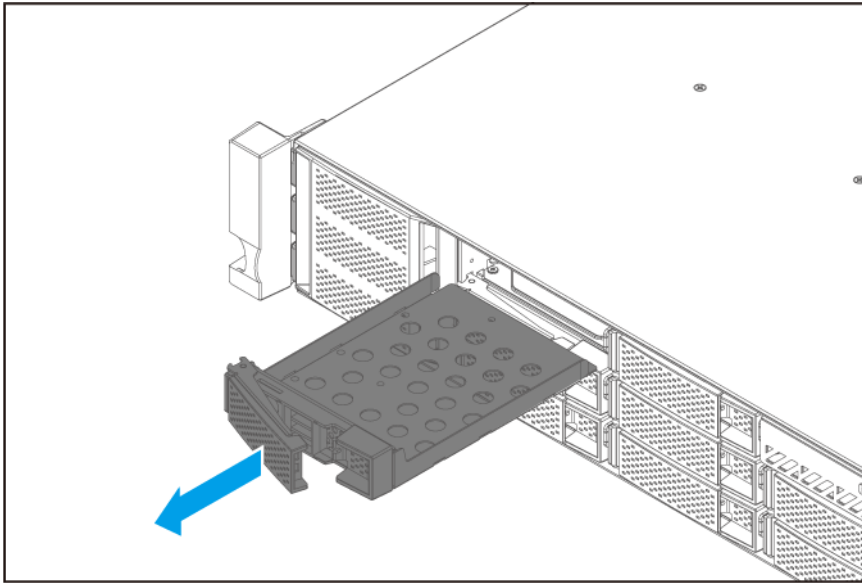
Moving fan blades: Keep your hands and other body parts away from moving fan blades.



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

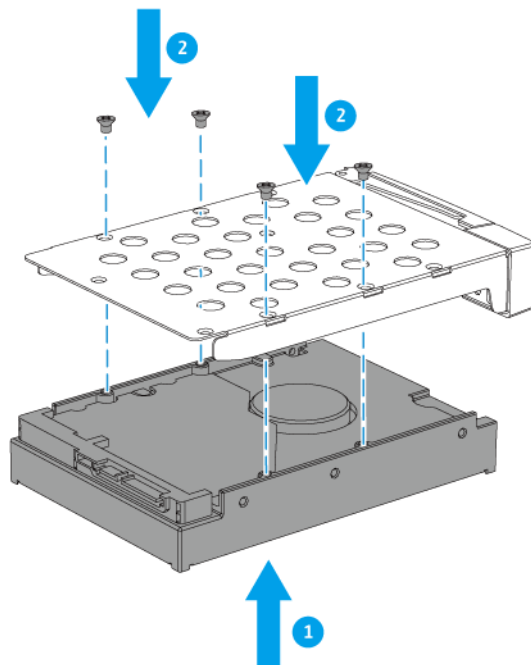
1. Power off the NAS.
2. Remove the drive tray.
 - a. Pull the tray handle outward.

- b.** Pull the tray out.



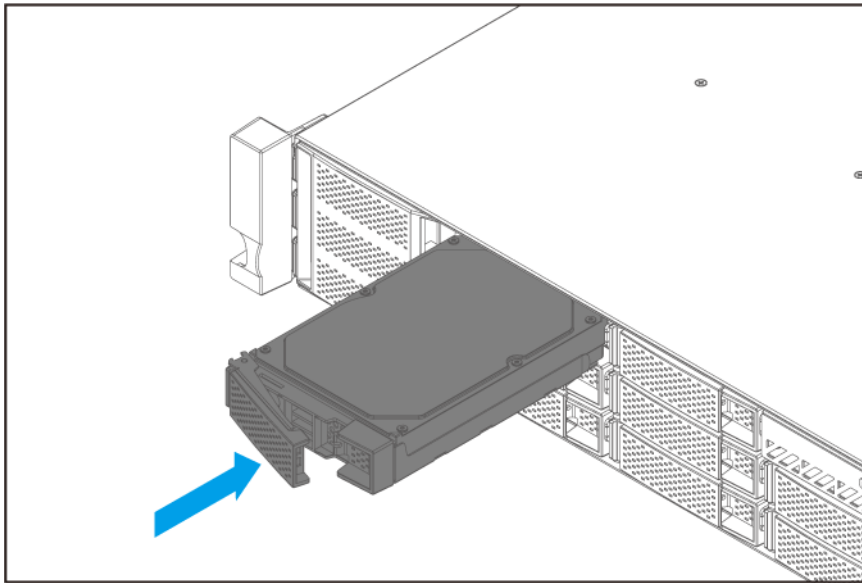
- 3.** Install a drive on the tray.

- a.** Place the tray on the drive so that the holes on the tray are aligned with those on the drive.
b. Attach the screws.



- 4.** Load the tray into the bay.

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



5. Power on the NAS.

Installing M.2 solid-state drives

The device has two M.2 SSD slots on the system board.

For details, see [System board](#).

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.

•



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

•



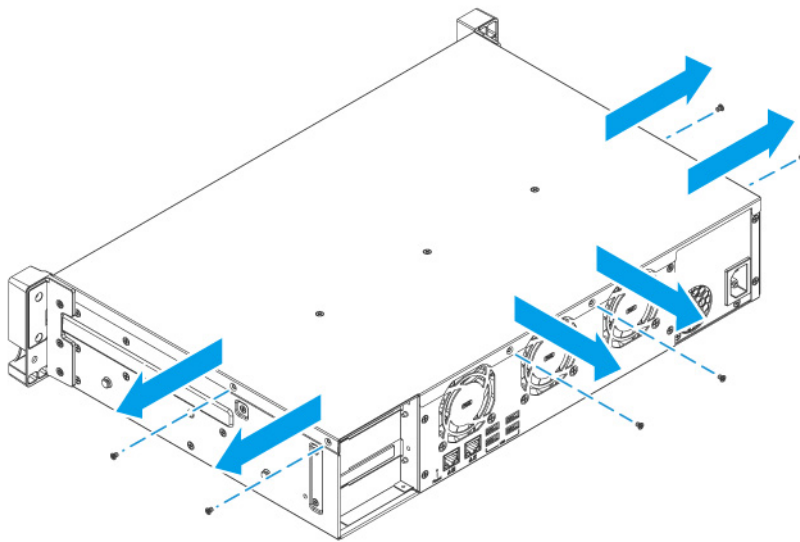
Other moving components: Keep your hands and other body parts away from other moving components.



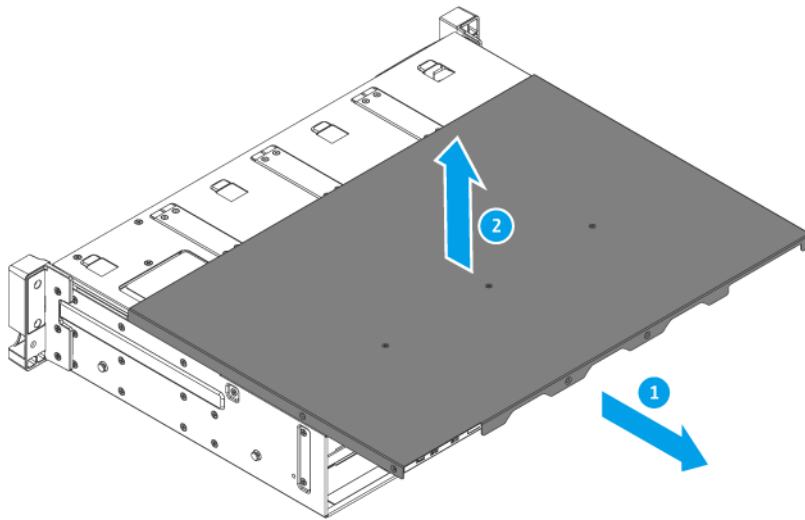
Note

- 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. Remove the screws.

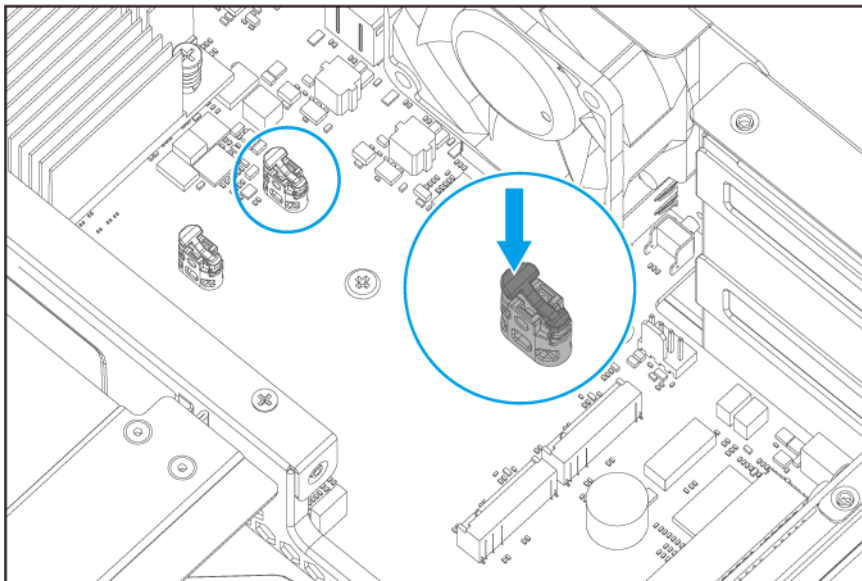


- b. Slide the cover back.
- c. Lift the cover off the device.

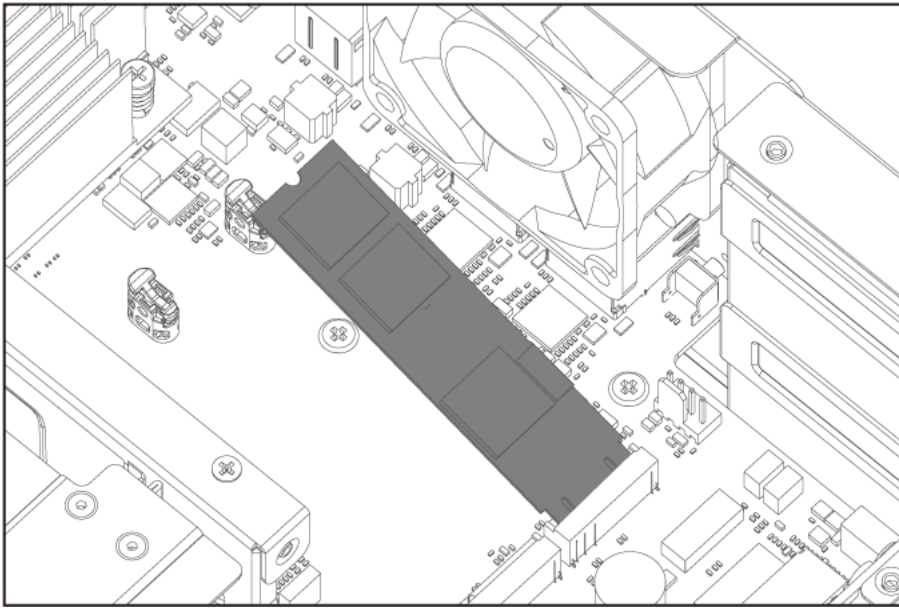


5. Install the M.2 SSD.

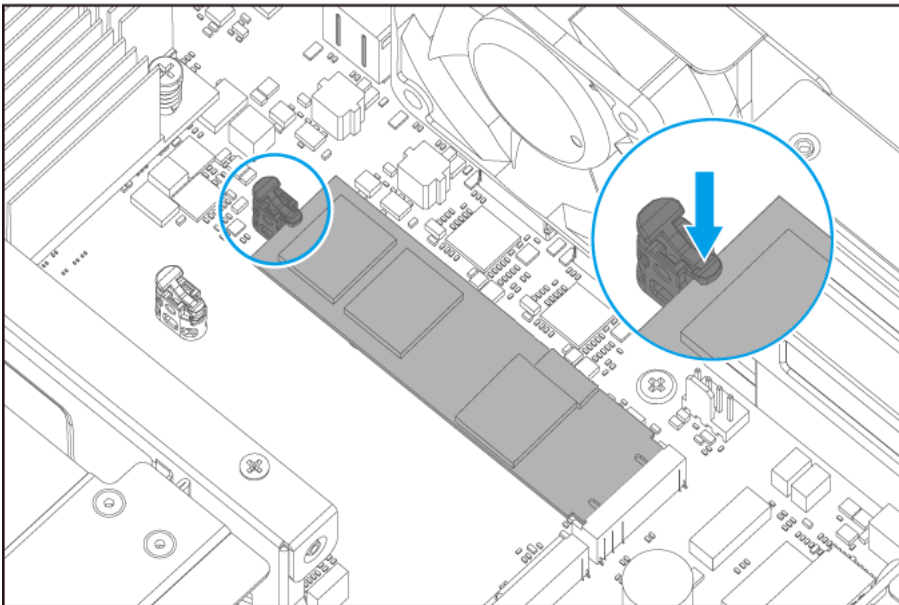
- a. Unlock the M.2 spacer by pushing down on its edge.**



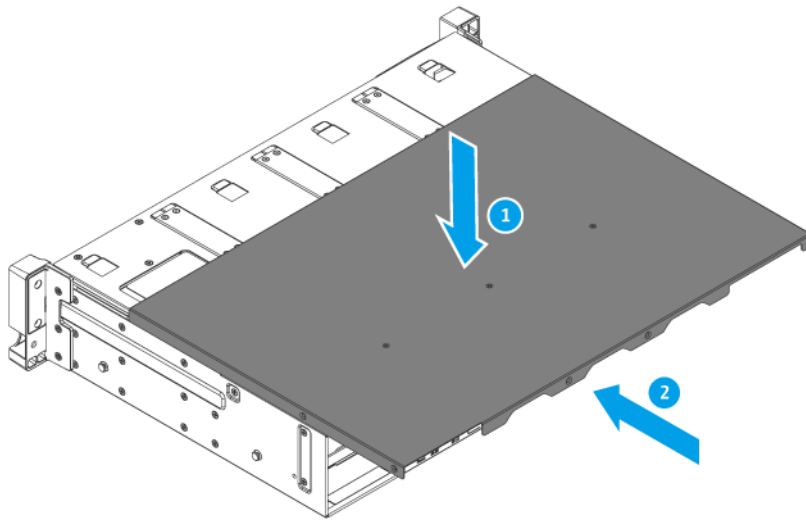
- b. Insert the M.2 SSD into the slot.**



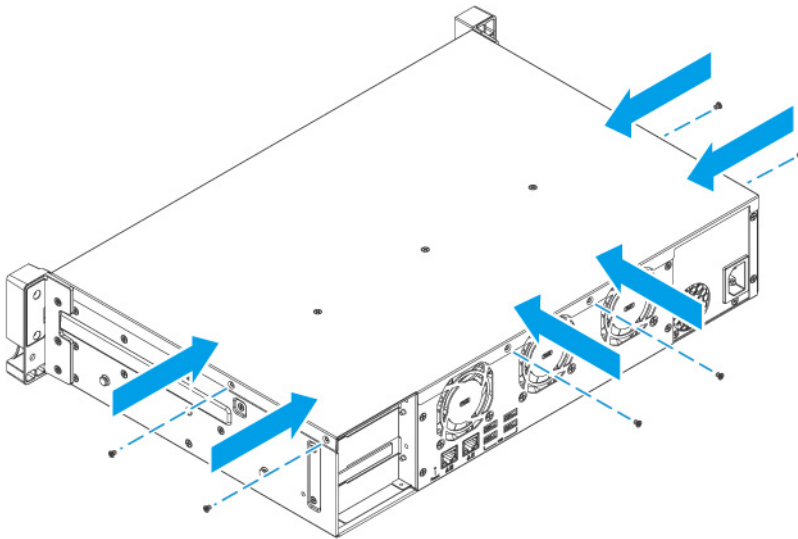
- c. Carefully press the M.2 SSD down until the spacer locks the drive into place.
- d. Verify that the M.2 spacer is firmly locking the M.2 SSD into place.



6. Attach the case cover.
 - a. Place the cover on the device.
 - b. Slide the cover forward.



c. Attach the screws.



7. Connect all cables and external attachments.
8. Connect the power cord to the electrical outlet.
9. Power on the device.

Replacing memory modules

The device has two memory slots. You can increase the memory capacity of the device by upgrading memory modules. For optimal dual-channel performance, replace memory modules in all slots at the same time.

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

**Important**

Ensure that all modules are identical.

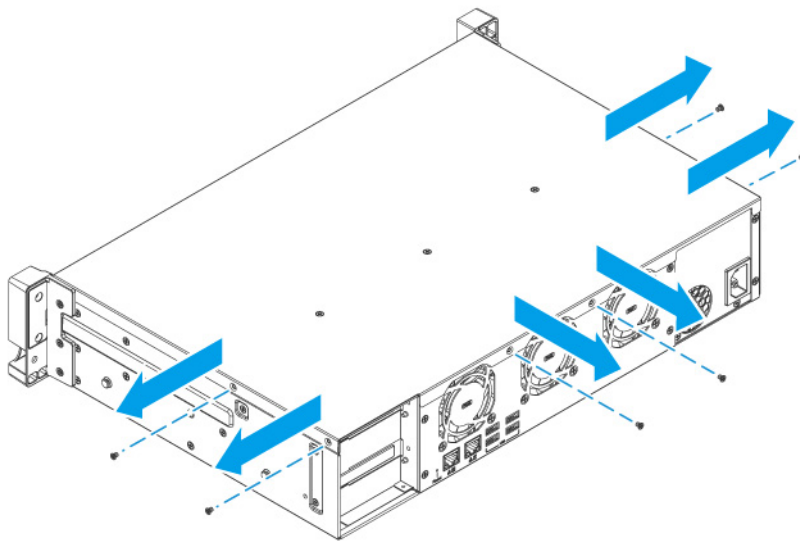
**Warning**

- Only qualified personnel should perform the following steps. Failure to follow instructions can result in serious injury or death.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.
-

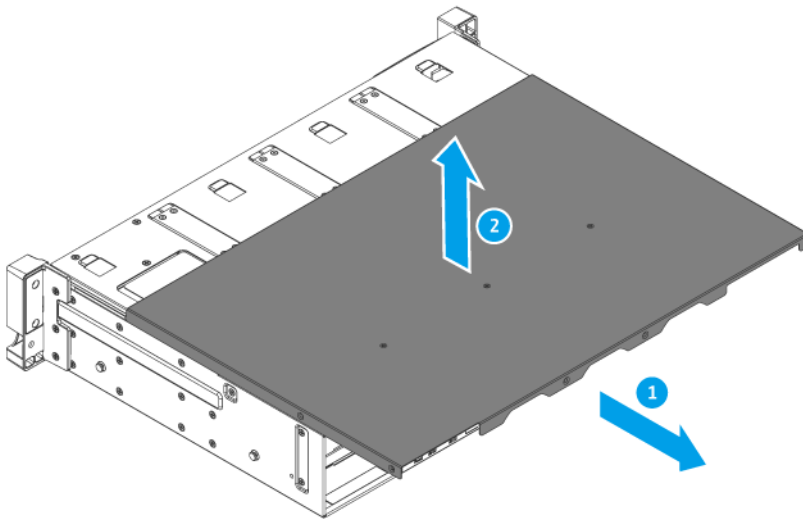


Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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. Remove the screws.

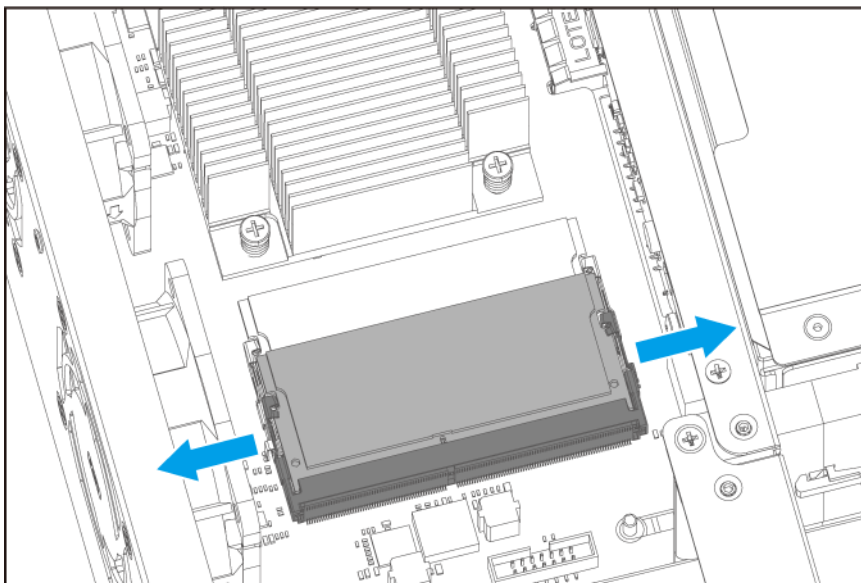


- b. Slide the cover back.
- c. Lift the cover off the device.



5. Remove an existing module.

- a. Push the retention clips outward simultaneously to release the module.



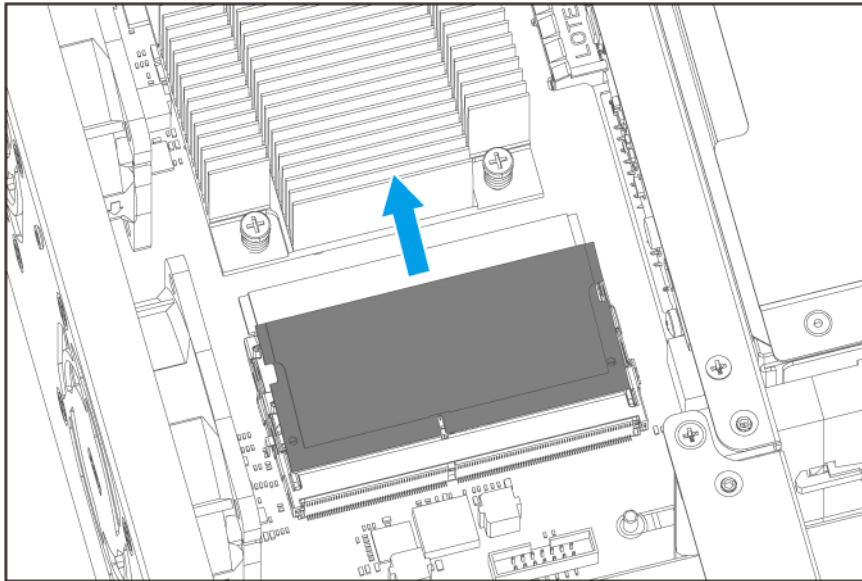
- b. Verify that the module has tilted upward and is completely released from the slot.



Warning

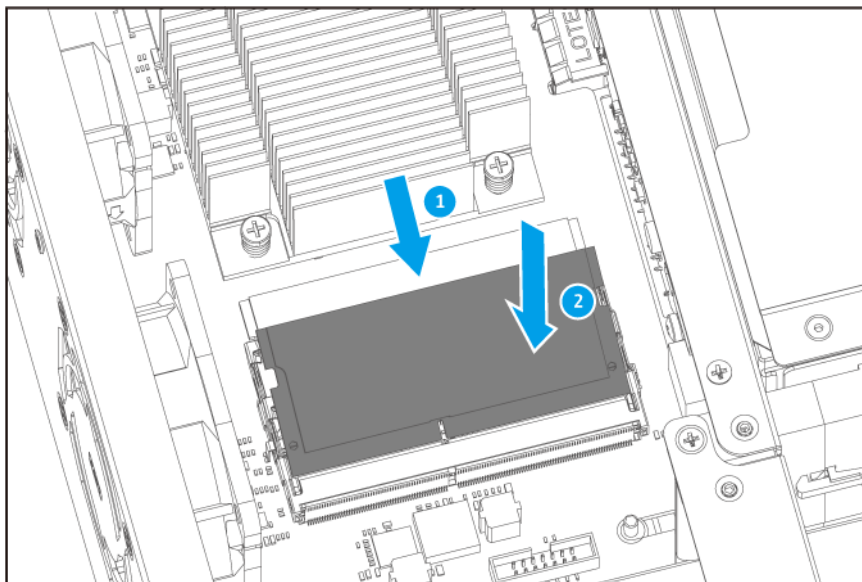
Attempting to remove a module that is not completely released may damage the module and the system board.

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



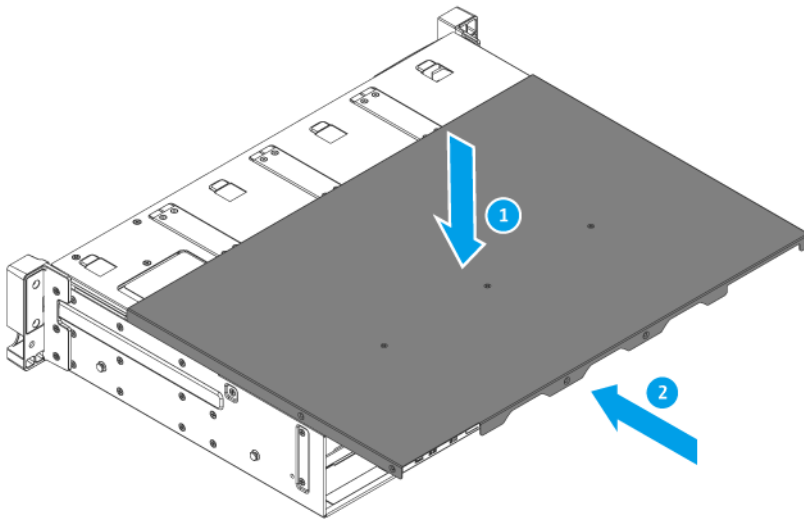
6. Install a new module.

- 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.

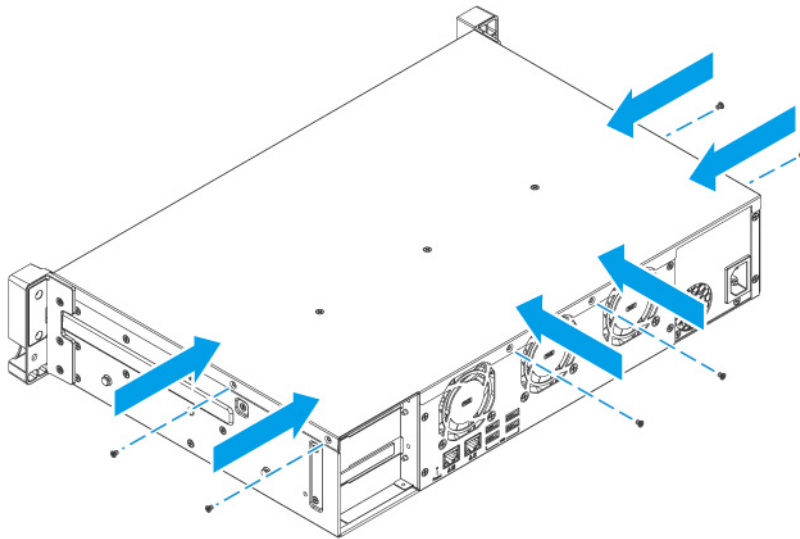


7. Attach the case cover.

- a.** Place the cover on the device.
- b.** Slide the cover forward.



c. Attach the screws.

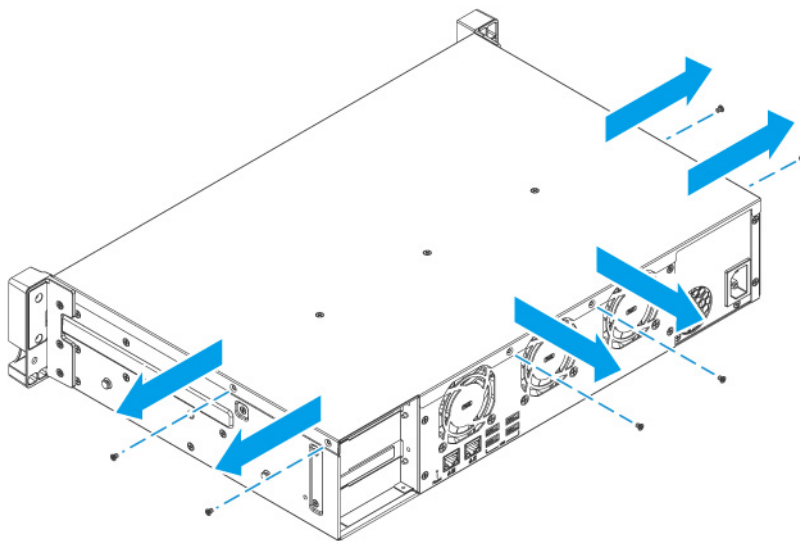


8. Connect all cables and external attachments.
9. Connect the power cord to the electrical outlet.
10. Power on the device.
11. Verify that the module is recognized by the device.
 - a. Log on to QTS as administrator.
 - b. Go to **Control Panel > System > System Status > Hardware Information**.
 - c. Check the value for **Total memory**.

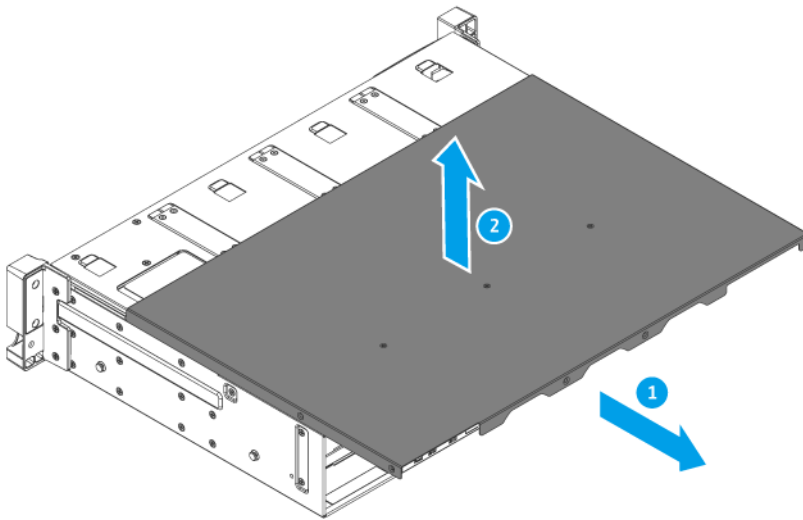
Installing expansion cards

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.

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. Remove the screws.

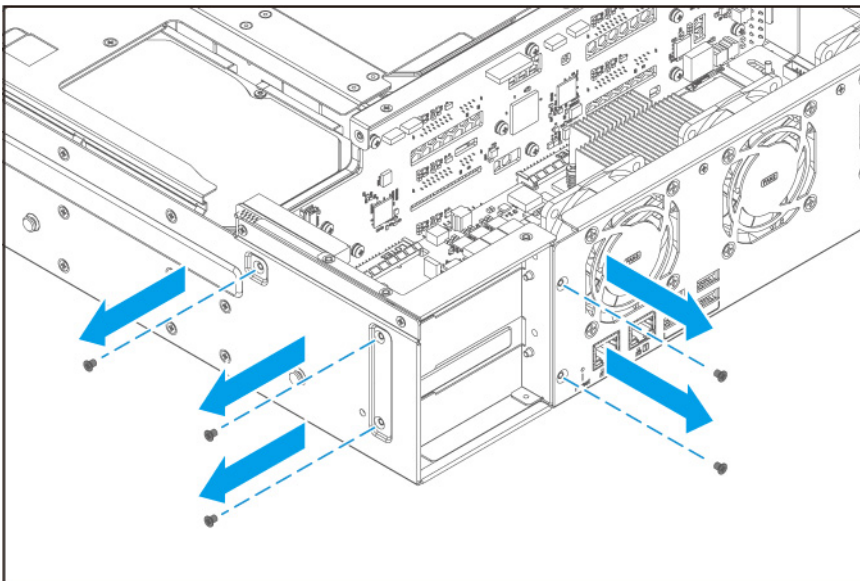


- b. Slide the cover back.
- c. Lift the cover off the device.

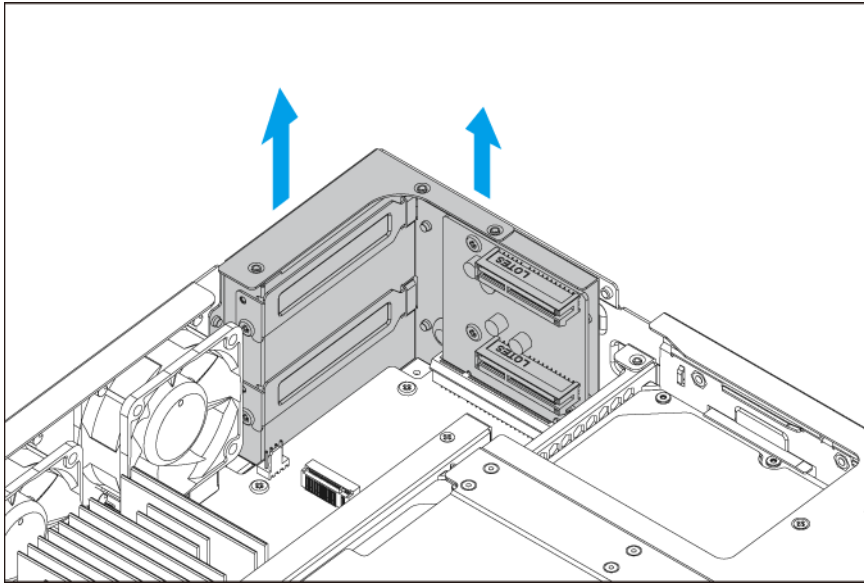


5. Remove the expansion card module.

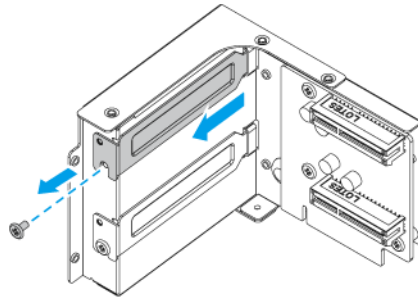
- a. Remove the screws that secure the module to the chassis.**



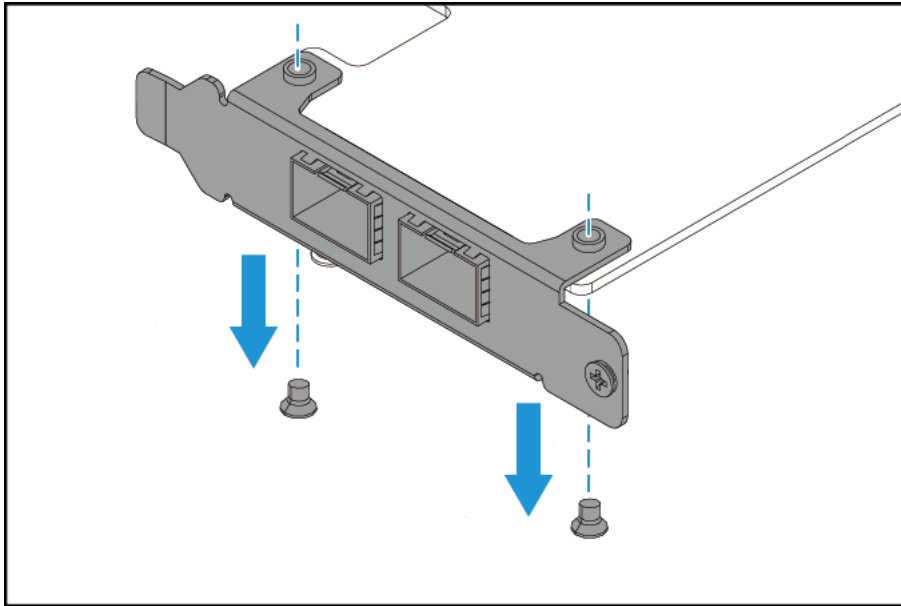
- b. Remove the module from the chassis.**



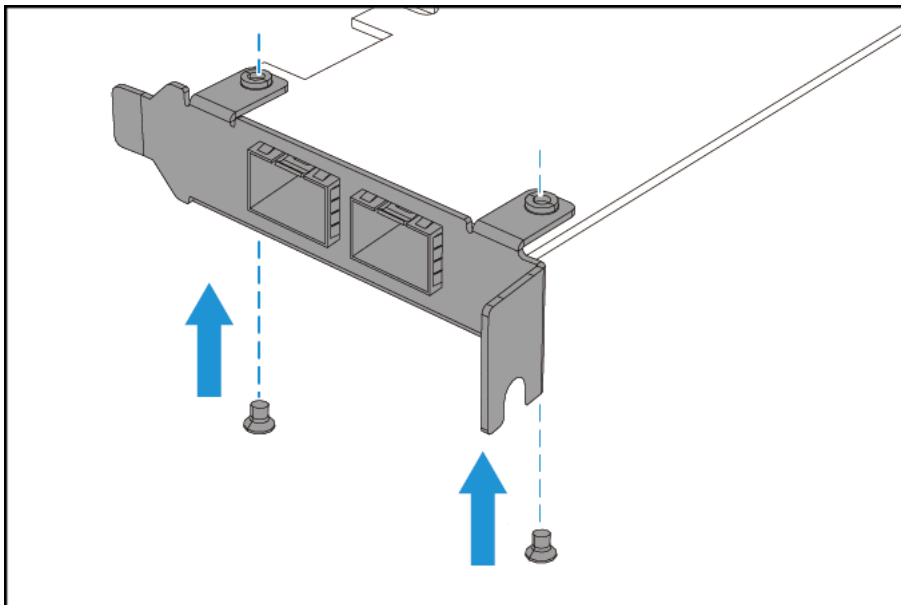
6. Remove the PCIe cover.
 - a. Remove the screw that secures the cover.
 - b. Pull the cover away from the slot.



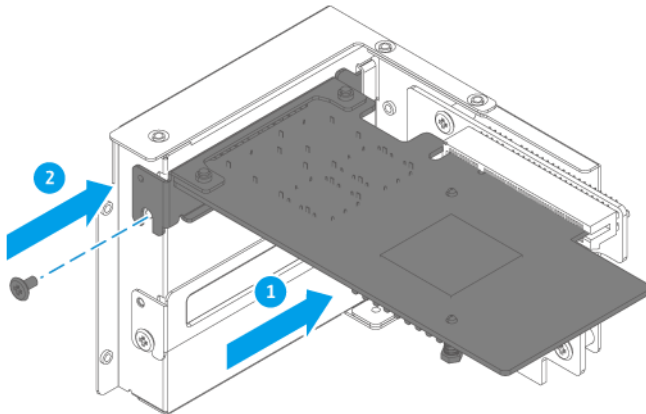
7. Optional: Attach the QNAP bracket to the expansion card.
 - a. Remove all screws of the existing bracket.



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

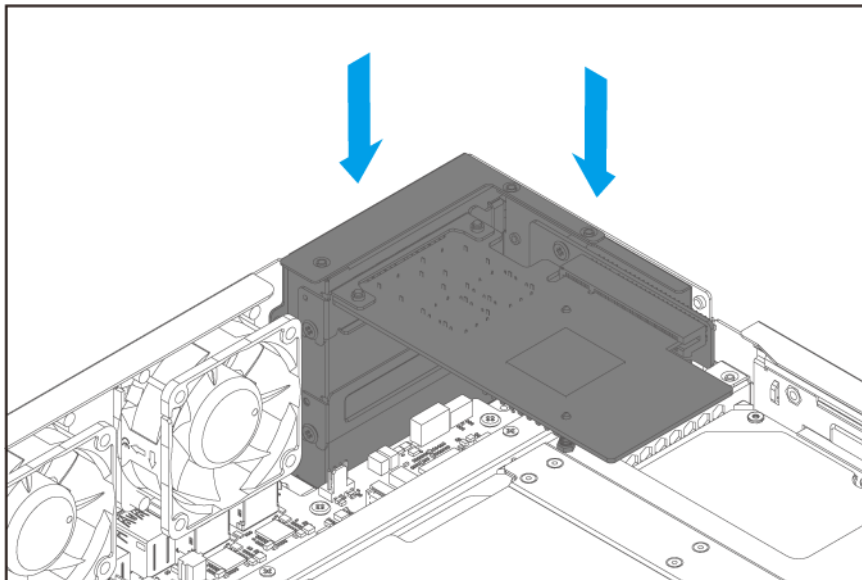


- d.** Verify that the bracket does not move.
- 8.** Install the expansion card.
- a.** Hold the card by the edges.
 - b.** Insert the card into the slot.
 - c.** Attach the screw.

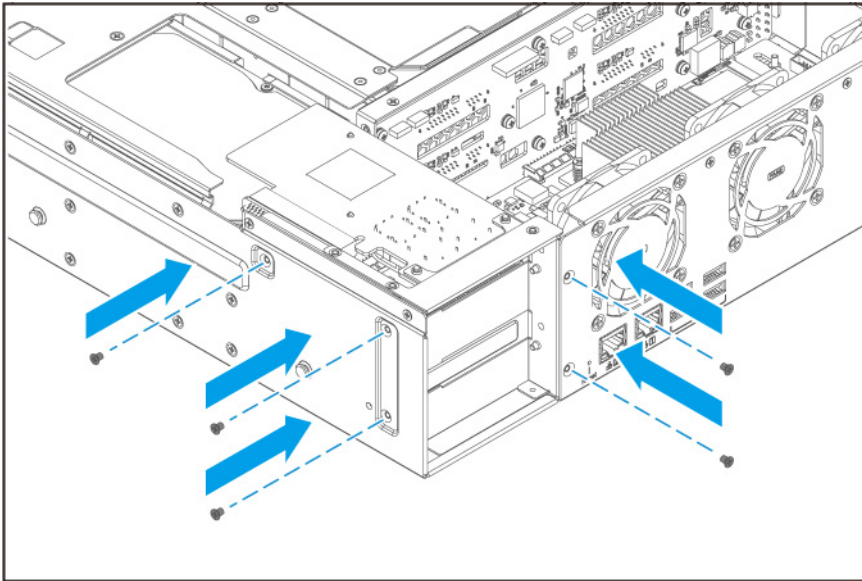


9. Attach the expansion card module.

- a.** Align the expansion card on the module to the PCIe socket on the system board.
- b.** Insert the module into the slot.

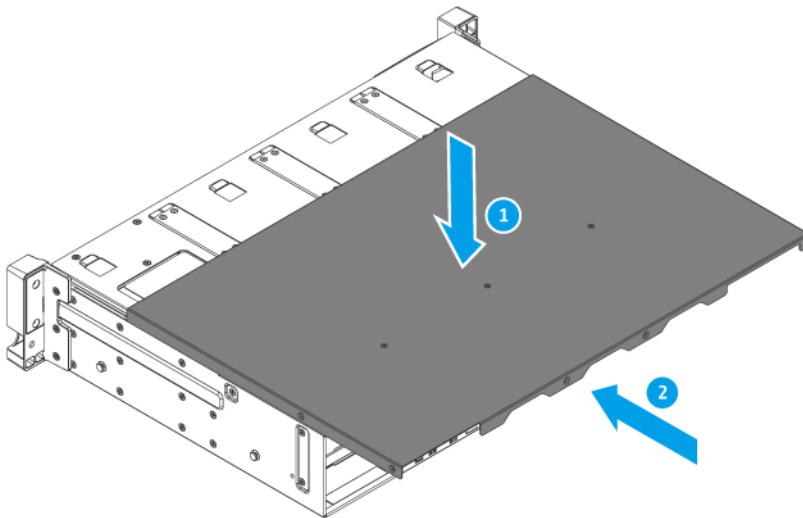


- c.** Verify the expansion card is completely inserted into the PCIe socket.
- d.** Attach the screws that secure the module to the chassis.

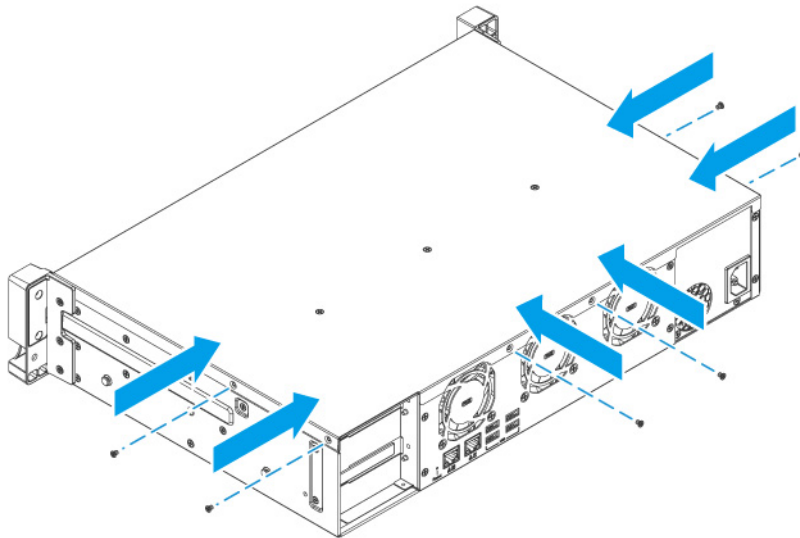


10. Attach the case cover.

- a. Place the cover on the device.
- b. Slide the cover forward.



- c. Attach the screws.



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

Hot-swapping redundant power supply units

This section is only applicable to the TS-855eU-RP-8G.



Warning

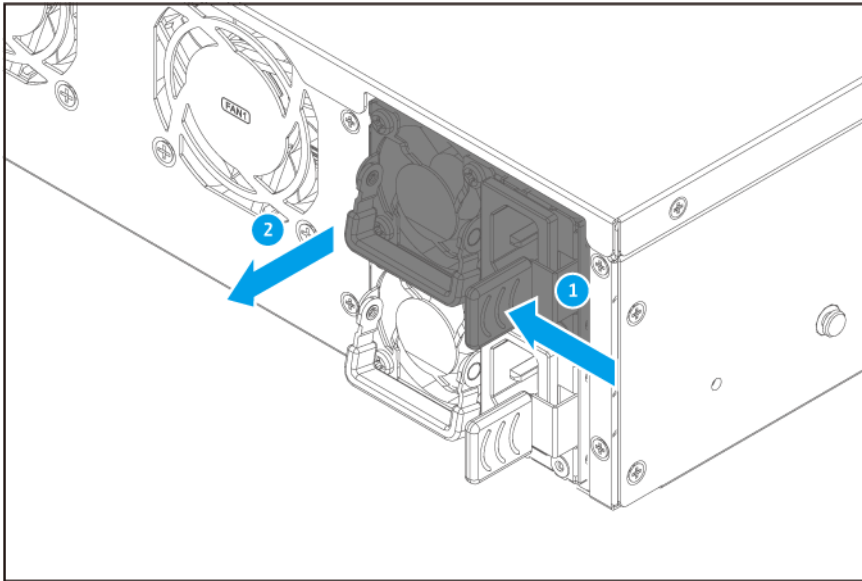
- Electric shock hazard.

•

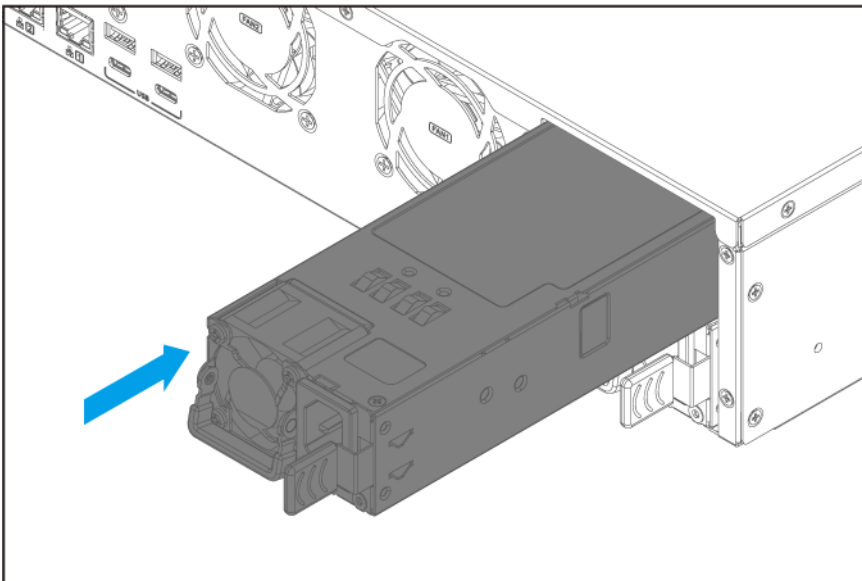


The NAS may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords before installing or replacing system components.

1. Disconnect the power cord from the electrical outlet and the power supply unit (PSU) that you are replacing.
2. Firmly press the latch toward the handle and then pull the PSU out.



3. Insert the new PSU.



4. Connect the power cord to the PSU and the electrical outlet.

5. Enable alerts for PSU failures.

- a. Log on to QTS as administrator.
- b. Go to **Control Panel > System > Hardware > General** .
- c. Select **Enable Redundant Power Supply Mode**.
- d. Click **Apply All**.

Expansion unit installation

The device supports SAS expansion units, 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 <https://www.qnap.com/go/compatibility-expansion>.

Expansion Unit Model	Description	Required Accessories
TL-R1220Sep-RP	<ul style="list-style-type: none"> • Uses a SAS 12 Gbps (SFF-8644) interface • Supports SAS/SATA HDD/SSD 	<ul style="list-style-type: none"> • One of the following storage expansion cards: <ul style="list-style-type: none"> • QXP-820S-B3408 • QXP-1620S-B3616W • mini-SAS SFF-8644 cable • RAIL-B02
TL-R1620Sep-RP		
REXP-1220U-RP	<ul style="list-style-type: none"> • Uses a SAS 12 Gbps (SFF-8644) interface • Supports SAS/SATA HDD/SSD 	<ul style="list-style-type: none"> • SAS-12G2E storage expansion card • mini-SAS SFF-8644 cable • RAIL-A03-57
REXP-1620U-RP		
REXP-1210U-RP	<ul style="list-style-type: none"> • Uses a SAS 6 Gbps (SFF-8644) interface • Supports SATA HDD/SSD 	<ul style="list-style-type: none"> • 1 x SFF-8088 connector cable • QXP-400eS-A1164 host bus adapter
REXP-1610U-RP		
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"> • 2 x SFF-8088 connector cables • QXP-800eS-A1164 host bus adapter
TL-D800S		<ul style="list-style-type: none"> • 4 x SFF-8088 to SFF-8644 connector cables • QXP-1600eS-A1164 host bus adapter
TL-D1600S		<ul style="list-style-type: none"> • 1 x SFF-8088 connector cable • QXP-400eS-A1164 host bus adapter • RAIL-B02
TL-R400S		<ul style="list-style-type: none"> • 3 x SFF-8088 to SFF-8644 connector cables • QXP-1600eS-A1164 host bus adapter • RAIL-B02
TL-R1200S-RP		<ul style="list-style-type: none"> • RAIL-B02

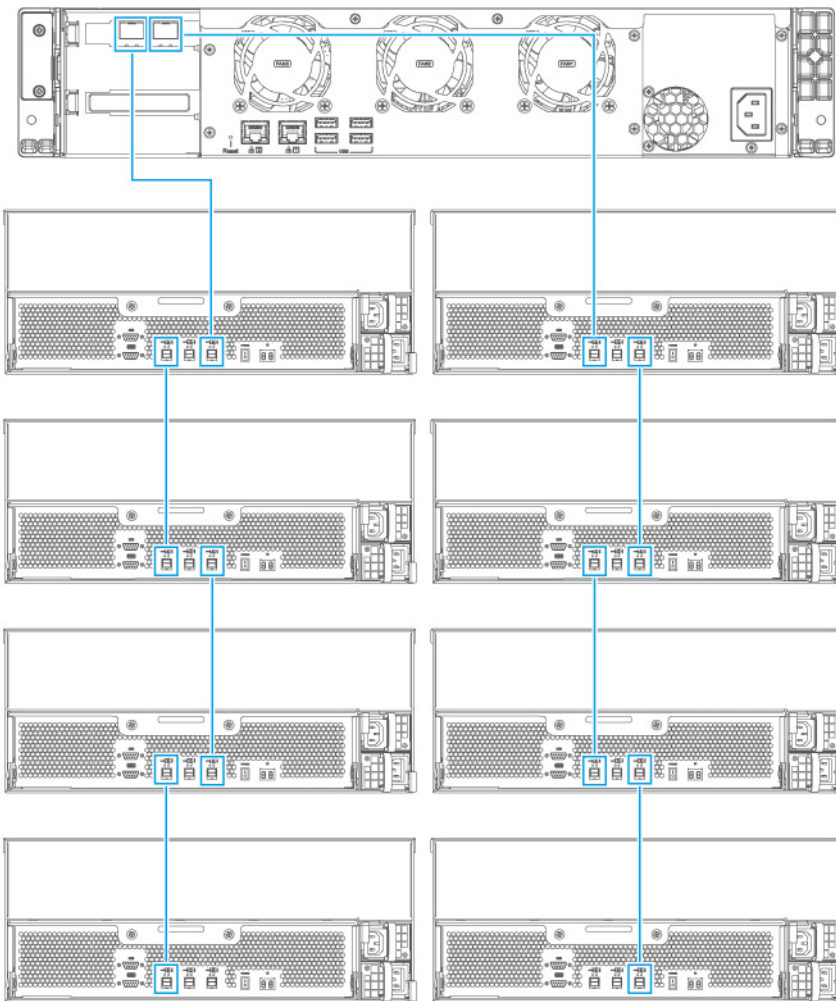
Expansion Unit Model	Description	Required Accessories
TR-002	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA HDD/SDD 	<ul style="list-style-type: none"> • USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TR-004	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 1 Type-C interface • Supports SATA HDD/SDD 	USB 3.2 Gen 1 Type-A to Type-C cable
TR-004U		<ul style="list-style-type: none"> • USB 3.2 Gen 1 Type-A to Type-C cable • RAIL-B02
TL-D800C	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA HDD/SDD 	USB 3.2 Gen 2 Type-C to Type-C cable
TL-R1200C-RP		<ul style="list-style-type: none"> • USB 3.2 Gen 2 Type-C to Type-C cable • RAIL-B02

Connecting SAS expansion units

To connect the device to SAS expansion units, a storage expansion card must be installed in the device.

For required accessory details, see [Expansion unit installation](#).

1. Install a storage expansion card on the PCIe slot.
For details, see [Installing expansion cards](#).
2. Connect the expansion units to the device using the following topology.



3. Power on the expansion units.
4. Verify that the expansion units are recognized by the device.
 - 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 JBOD Expansion Units

To connect the device to a SATA JBOD expansion unit, 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.

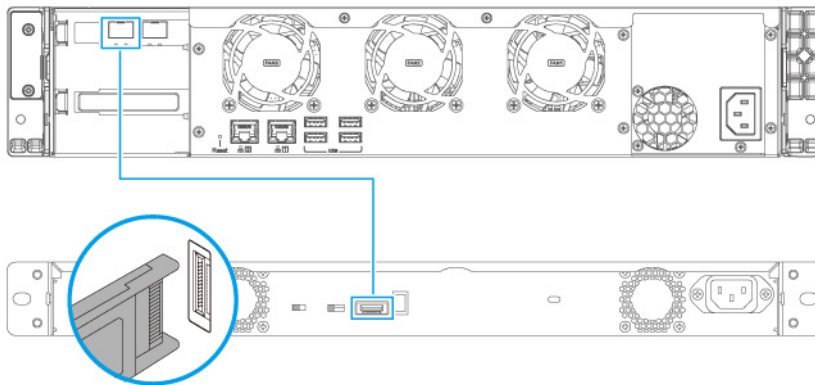


Important

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.

For details, see [Installing expansion cards](#).

3. Connect the expansion unit to the NAS.



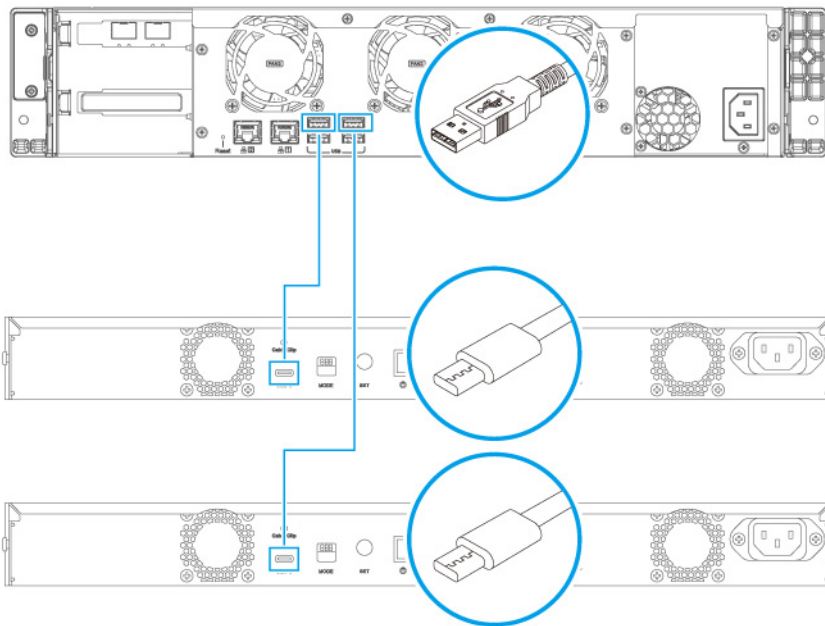
4. Power on the SATA JBOD expansion unit.
5. Power on the NAS.
6. Verify that the expansion unit is recognized by the NAS.
 - a. Log on to QTS as administrator.
 - b. Go to **Main Menu > Storage & Snapshots > Overview > System** .
 - c. Verify that the expansion unit is listed.

Connecting USB Expansion Units

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

For required accessories details, see [Expansion unit installation](#).

1. 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 Type-A port on the NAS.



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

Rail Kits

The TS-855eU is compatible with the following model:

- RAIL-B02

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

You can find installation information in the rail kit package.

QTS installation

The TS-855eU uses the QNAP QTS operating system. You can install QTS using any of the following methods.

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 <https://download.qnap.com>.

**Warning**

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

Method	Description	Requirements
Qfinder Pro installation (Recommended)	<p>If the NAS is connected to your local area network, you can do the following:</p> <ul style="list-style-type: none"> • Locate the NAS using Qfinder Pro. • Complete the steps in the Smart Installation Guide wizard. <p>For details, see Initializing QTS using Qfinder Pro.</p>	<ul style="list-style-type: none"> • Computer • Network cable • Qfinder Pro installer
Cloud installation	<p>If the NAS is connected to the internet, you can do the following:</p> <ul style="list-style-type: none"> • Scan the QR code on the NAS. • Log into your myQNAPcloud account. • Use myQNAPcloud Link to remotely access your NAS. • Complete the steps in the Smart Installation Guide wizard. <p>For details, see Initializing QTS using the cloud installation website.</p>	<ul style="list-style-type: none"> • Computer or mobile device • Network cable • myQNAPcloud account • Cloud Key

Initializing QTS using Qfinder Pro

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

**Warning**

Initializing 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 network.

**Tip**

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

4. Click **Next**.
The **QNAP Warranty Service** page opens in the default web browser.
5. Click **Check warranty**.
The **QNAP Warranty Service** window opens in a new web page.

**Important**

You can check your device warranty policy or purchase an extended warranty plan at [QNAP Warranty Service](#).

6. Close the warranty page.
The **Smart Installation Guide** opens in the default web browser.
7. If the screen shows a different operating system, click **QTS**.



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 QTS.

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

8. Click **Start Smart Installation**.
9. Specify a firmware version using any of the following methods.

Methods	User Actions
Current version	Select Current version .
Latest available version	<ol style="list-style-type: none"> a. Select Latest available version. b. Click Check for Update The system checks for the latest firmware update available for your device. If a newer version is available, the system downloads the firmware update and restarts the NAS.
Uploaded version	<ol style="list-style-type: none"> a. Select Uploaded version. b. Click Browse. The file upload window appears. c. Select a firmware file.

10. Click **Next**.
The **Enter the NAS name and administrator's password** screen appears.
11. Specify the following information.
 - **NAS Name:** Specify a name with 1 to 14 characters. The name can contain 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 QTS initialization to disable the default "admin" account.

- **Password:** Specify an administrator password with 1 to 64 characters. The password can contain any ASCII characters.
 - **Confirm Password:** Enter the new administrator password again.
12. Click **Next**.
The **Set the date and time** screen appears.

13. Specify the time zone, date, and time using any of the following methods:



Tip

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

Methods	User Actions
Synchronize with computer or mobile device time	Select Same as the computer/device time The NAS synchronizes with the date and time of the computer or mobile device used to complete the initialization.
Enter manually	<p>a. Select Input Manually.</p> <p>b. Specify the date and time. The NAS uses the specified date and time.</p>
Synchronize with a time server automatically	Click Synchronize with an Internet time server automatically . The NAS synchronizes with the NTP server.

14. Click **Next**.
The **Configure the network settings** screen appears.

15. Configure the network settings using any of the following methods.

Methods	User Actions
Obtain an IP address automatically (DHCP)	Select Obtain an IP address automatically (DHCP) The system automatically detects and configures the IP address settings.
Use static IP address	<p>a. Select Use static IP address. The IP address configuration page appears.</p> <p>b. Specify the following IP address configurations:</p> <ul style="list-style-type: none"> • Interface • IP Address • Subnet Mask • Default Gateway • Primary DNS server • Secondary DNS server

16. Click **Next**.
The **Thunderbolt Connection** page appears.



Note

This page only appears if your device supports Thunderbolt. You will need to connect your device to a computer using a Thunderbolt cable.

17. Click **Next**.
The **Summary** screen appears.
18. Review the settings.

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



Warning

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

20. Click **Initialize**.



Important

The initialization may take several minutes to complete. Do not power off the device during the process.

QTS is initialized.

Initializing QTS using the cloud installation website

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



Warning

Initializing 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 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 QTS through LAN and then installing myQNAPcloud Link.

7. Click **Next.**

The **QNAP Warranty Service** page opens in the default web browser.

8. Click **Check warranty.**

The **QNAP Warranty Service** window opens in a new web page.



Important

You can check your device warranty policy or purchase an extended warranty plan at [QNAP Warranty Service](#).

9. Close the warranty page.

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

10. If the screen shows a different operating system, click **QTS.**



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 QTS.
- If the screen shows QuTS hero, you may need to click **Skip** first.

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

11. Click **Start Smart Installation.**

12. Specify a firmware version using any of the following methods.

Methods	User Actions
Current version	Select Current version .
Latest available version	<p>a. Select Latest available version.</p> <p>b. Click Check for Update The system checks for the latest firmware update available for your device. If a newer version is available, the system downloads the firmware update and restarts the NAS.</p>
Uploaded version	<p>a. Select Uploaded version.</p> <p>b. Click Browse. The file upload window appears.</p> <p>c. Select a firmware file.</p>

13. Click **Next.**

The **Enter the NAS name and administrator's password** screen appears.

14. Specify the following information.

- **NAS Name:** Specify a name with 1 to 14 characters. The name can contain 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 QTS installation to disable the default "admin" account.

- **Password:** Specify an administrator password with 1 to 64 characters. The password can contain any ASCII characters.
- **Confirm Password:** Enter the new administrator password again.

15. Click **Next**.

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

16. Specify the time zone, date, and time using any of the following methods:



Tip

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

Methods	User Actions
Synchronize with computer or mobile device time	Select Same as the computer/device time The NAS synchronizes with the date and time of the computer or mobile device used to complete the initialization.
Enter manually	a. Select Input Manually. b. Specify the date and time. The NAS uses the specified date and time.
Synchronize with a time server automatically	Click Synchronize with an Internet time server automatically . The NAS synchronizes with the NTP server.

17. Click **Next**.

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

18. Configure the network settings using any of the following methods.

Methods	User Actions
Obtain an IP address automatically (DHCP)	Select Obtain an IP address automatically (DHCP) The system automatically detects and configures the IP address settings.

Methods	User Actions
Use static IP address	<p>a. Select Use static IP address. The IP address configuration page appears.</p> <p>b. Specify the following IP address configurations:</p> <ul style="list-style-type: none"> • Interface • IP Address • Subnet Mask • Default Gateway • Primary DNS server • Secondary DNS server

- 19.** Click **Next**.
The **Thunderbolt Connection** page appears.

**Note**

This page only appears if your device supports Thunderbolt. You will need to connect your device to a computer using a Thunderbolt cable.

- 20.** Click **Next**.
The **Summary** screen appears.
- 21.** Review the settings.
- 22.** Click **Apply**.
A confirmation message appears.

**Warning**

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

- 23.** Click **Initialize**.

**Important**


The initialization may take several minutes to complete. Do not power off the device during the process.

QTS is initialized.

3. 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 5 seconds.	The device powers off.  Important Use this method only when the device is unresponsive.

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	<ul style="list-style-type: none"> • 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.

Status	Description
Red	<ul style="list-style-type: none"> • A drive is invalid. • A disk volume has reached its full capacity. • A disk volume 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 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). • A hardware self-test error occurred.
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	<ul style="list-style-type: none"> • The device is not configured. • A drive is not formatted.
Flashes orange	The device is in sleep mode.
Off	<ul style="list-style-type: none"> • All drives are in standby mode. • The device is powered off.

Drive LED

Status	Description
Flashes red	Data is being accessed, and during the process a drive read/write error occurred.
Red	A drive read/write error occurred.
Flashes green	Data is being accessed.
Green	The drive is ready.
Off	No drive was detected.

LAN LED

Status	Description
Orange	The network connection is operating.
Flashes orange	The device is being accessed from the network.
Off	The device is not connected to a network.

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 or 100 Mbps.

Status	Description
Off	<ul style="list-style-type: none"> The network connection is operating at 10 Mbps. 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.

Expansion LED

Status	Description
Blue	An expansion unit is connected.
Off	No expansion unit has been detected.

Redundant Power Supply LED

Status	Description
Green	The power supply unit is connected to a power source, and the device is powered on.
Flashes green	The power supply unit is connected to a power source, and the device is powered off.
Orange	<ul style="list-style-type: none"> The power supply unit is disconnected from a power source, but a parallel power supply unit is connected to a power source. The power supply unit has shut down due to one of the following: <ul style="list-style-type: none"> The power supply unit failed. OCP was activated. OVP was activated. The fan failed.
Flashes orange	<ul style="list-style-type: none"> The temperature is too high. The power is too strong. The current is too high. The fan is too slow.
Orange for a few seconds and then off	The power supply unit has been disconnected from a power source, while no parallel power supply unit is connected to a power source.
Off	All power supply units are disconnected from a power source.

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. The operating system was updated.
	3	Cannot detect installed disk.
Long beep (1.5 seconds)	3 (every 5 minutes)	<ul style="list-style-type: none"> A power error occurred. A system fan is not functioning. A fan module has been removed.
	2	<ul style="list-style-type: none"> A storage pool is about to reach full capacity. A storage pool has reached full capacity. A storage pool status error occurred. A disk volume is about to reach its full capacity. A disk volume has reached its full capacity. A volume status error occurred. A drive is plugged in or out. The iSCSI is about to reach full capacity.
	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.
Long and short beeps	1 long and 2 short beeps	The JBOD expansion unit has been removed.

Reset button



Important

- The default "admin" account is automatically enabled after the system reset.
- To protect your device from brute force attacks, QNAP recommends disabling the default "admin" account after a system reset. To disable the account, change the default admin password, log out of QTS, and then log in to QTS with another admin account.

Operation	User Action	Result
Basic system reset	Press and hold the button for 3 seconds.	<p>The following settings are reset to default:</p> <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 would be 00089BF61575. <p> Tip You can find the first MAC address with Qfinder Pro or attached to a label on the device listed as MAC1.</p> <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 • 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 15 seconds.	<p>The default factory settings are restored.</p> <ul style="list-style-type: none"> • To retrieve old data after an advanced system reset, recreate the previous folder structure on the NAS.

4. 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	<p>If the NAS does not support file system encryption, encrypted disk volumes are not migrated.</p> <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>

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.

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	<p>If the NAS does not support file system encryption, encrypted shared folders are not migrated.</p> <p> 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.</p>
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	<p>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.</p>
Windows AD configuration	<p>Windows AD configurations must be reconfigured.</p>
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	<p>If the destination NAS has less RAM than the source NAS, the following features and applications might not function: Virtualization Station, Qsirch, and Snapshots.</p>
Services	<p>Only services supported by the destination NAS are available.</p>
Multimedia features	<p>Some multimedia features are disabled by default.</p>

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.

5. 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

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.
RAID 50	≥ 6	One disk per subgroup fails.
RAID 60	≥ 8	Two disks per subgroup 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 > Storage/Snapshots** .
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 groups 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 group from degraded mode.

RAID Type	RAID Recovery Support	Number of Disks	Disk Failure Tolerance
Single	No	1	N/A
JBOD	No	≥ 2	
RAID 0	No		
RAID 1	Yes	2	1
RAID 5	Yes	≥ 3	
RAID 6	Yes	≥ 4	2
RAID 10	No	≥ 4 (Must be an even number)	One disk per subgroup fails.
RAID 50	Yes	≥ 6	One disk per subgroup fails.
RAID 60	Yes	≥ 8	Two disks per subgroup fail.

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

6. 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 NAS devices in your local area network

QNAP ID

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

QTS

QNAP NAS operating system

QuTS hero

QNAP NAS operating system featuring ZFS file system

7. Notices

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Version 3, 29 June 2007

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FCC Class A Notice



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