



TVS-hx77AX

TVS-h877AX

TVS-h1277AX

User Guide

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1. Important Information

Original Packaging

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

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

Hardware Defects

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

QNAP is not responsible for any damage or data loss caused by unauthorized modifications and installation of unsupported third-party applications.

For details, see the [QNAP Warranty Terms and Conditions](#).

Safety information

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

General Instructions

WARNING



- To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.
- Always ensure that all drive trays, including empty ones, are properly installed in the device. Missing trays can alter the intended airflow, potentially causing internal components to overheat.



Observe electrostatic discharge (ESD) procedures to avoid potential injury or damage to components.

Power

WARNING



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.

Moving Parts

WARNING



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



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

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

System Battery

WARNING



INGESTION HAZARD

- This product may contain a button battery.
- Keep batteries out of reach of children.
- If swallowed, a lithium button battery can cause severe or fatal injuries within 2 hours.
- 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.

- Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- For information on the type and voltage of the button battery in your device, please see the hardware specification table.
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat, or incinerate. Doing so may result in injury due to venting, leakage, or explosion resulting in chemical burns.
- Ensure the batteries are installed correctly according to polarity (+ and -).
- Do not mix old and new batteries, or different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.
- Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.
- Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.

2. Product Overview

This chapter provides basic information about your QNAP device.

About the TVS-hx77AX

The TVS-hx77AX runs on the ZFS-based QuTS hero operating system and is powered by a 6-core 3.8 GHz processor with a boost of 5.1 GHz. The NAS supports ECC memory modules and memory expansion up to 192 GB. Equipped with 3.5-inch SATA 6 Gbps drive bays and 2.5-inch U.2 PCIe 4.0 x4 drive bays, the NAS also features one PCIe 4.0 x8 slot and two PCIe 4.0 x4 slots that support optional USB4 expansion cards for storage expansion. The TVS-hx77AX is additionally equipped with two USB 3.2 Gen 2 Type-C ports, two USB 2.0 Type-A ports, and one HDMI 1.4b port to enhance your multimedia experience. With two 10GBASE-T ports and two 2.5 Gigabit Ethernet ports, the NAS supports port trunking and failover to meet bandwidth-demanding business applications.

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>.

Component	TVS-h877AX-R5-16G	TVS-h1277AX-R5-16G
Processor		
CPU	AMD Ryzen™ 5 PRO 7645	
Frequency	6-core/12-thread 3.8 GHz base/5.1 GHz boost	
Architecture	x86 64-bit	
Encryption engine	AES-NI	

Component	TVS-h877AX-R5-16G	TVS-h1277AX-R5-16G
Graphics	AMD Radeon™ Graphics	
Memory		
Pre-installed memory	16 GB RAM DDR5 UDIMM	
Memory slots	4 x ECC DDR5 UDIMM Important 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 • For dual-DIMM configurations, use identical DDR5 modules. • This device supports ECC memory modules.	
Maximum memory	192 GB RAM: 4 x 48 GB	
Flash memory	5 GB (dual-boot OS protection)	
Storage		
Drive bays	• 6 x 3.5-inch SATA 6 Gbps • 2 x 2.5-inch U.2 PCIe 4.0 x4	• 8 x 3.5-inch SATA 6 Gbps • 4 x 2.5-inch U.2 PCIe 4.0 x2
Drive compatibility	3.5-inch bays: • 3.5-inch SATA hard disk drives • 2.5-inch SATA solid-state drives 2.5-inch bays: • 2.5-inch U.2 PCIe 5.0 x4 SSDs • 2.5-inch U.2 PCIe 4.0 x4 SSDs	

Component	TVS-h877AX-R5-16G	TVS-h1277AX-R5-16G
SSD cache acceleration support	This device supports SSD cache acceleration for all drives.	
Hot-swapping	This device supports hot-swapping for all drives. Important For U.2 SSDs, you can only hot-swap a drive if it was installed before the system started. If you installed the drive after the system started, you must shut down the system to replace the drive.	
Network		
10 Gigabit network interface	2 x 10GBASE-T Note The 10GBASE-T RJ45 ports support the following network connectivity speeds: 10 GbE, 5 GbE, 2.5 GbE, 1 GbE, and 100 Mbps.	
2.5 Gigabit network interface	2 x 2.5 GbE RJ45 Note The 2.5 Gigabit Ethernet RJ45 ports support the following network connectivity speeds: 2.5 GbE, 1 GbE, 100 Mbps, and 10 Mbps.	
External I/O Ports & Expansion Slots		
PCIe slots	• 1 x PCIe 4.0 x8 (Slot 1) • 2 x PCIe 4.0 x4 (Slots 2 and 3) Note • Slot 1 provides the width of PCIe 4.0 x8 when slot 2 is not in use. • Slot 1 provides the width of PCIe 4.0 x4 when slot 2 is in use.	

Component	TVS-h877AX-R5-16G	TVS-h1277AX-R5-16G
USB ports	Front: 1 x USB 3.2 Gen 2 Type-C (Port 1) Note This USB port supports One Touch Copy. Rear: 1 x USB 3.2 Gen 2 Type-C (Port 2) 2 x USB 2.0 Type-A (Ports 3 and 4)	
HDMI ports	1 x HDMI 1.4b (up to 4096 x 2160 resolution at 30 Hz)	
Interface		
Buttons	- Power - Reset - USB One Touch Copy	
Switches	Power	
LEDs		
System	- System status and power - Drive LEDs - USB One Touch Copy	
Ports	- Speed - Activity	
Dimensions		
Form factor	Tower	
Dimensions (H x W x D)	225 × 292.9 × 319.8 mm (8.86 x 11.53 x 12.59 in)	225.2 × 369.9 × 319.8 mm (8.87 x 14.56 x 12.59 in)
Net weight	8.88 kg (19.58 lbs)	10.98 kg (24.21 lbs)
Others		

Component	TVS-h877AX-R5-16G	TVS-h1277AX-R5-16G
Power supply unit	500W, 100-240V AC, 50/60 Hz	
System battery	CR2032 lithium battery 3V Warning - 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. Important Dispose of used batteries according to local regulations or the instructions of the battery manufacturer.	
Fans	- System: 2 x 80 mm, 12V DC fan - CPU: 2 x 60 mm, 12V DC fan	- System: 3 x 80 mm, 12V DC fan - CPU: 2 x 60 mm, 12V DC fan
Operating temperature	0°C to 40°C (32°F to 104°F)	
Relative humidity	- Non-condensing relative humidity: 5% to 95% - Wet-bulb temperature: 27°C (80.6°F)	

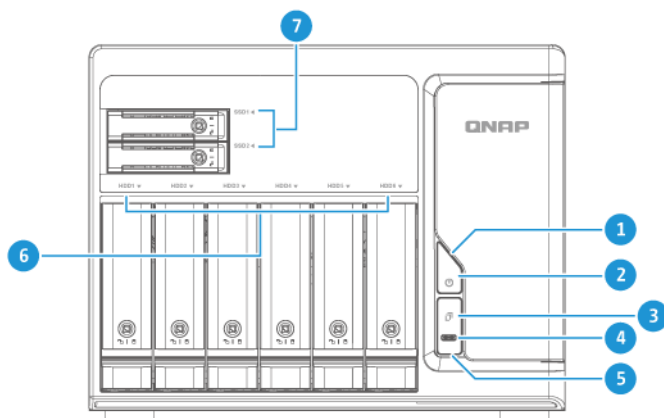
Package contents

Item	Quantity
TVS-h877AX / TVS-h1277AX	1
Power cord	1
Ethernet cable	1 x Cat 6A
Drive tray keys	2

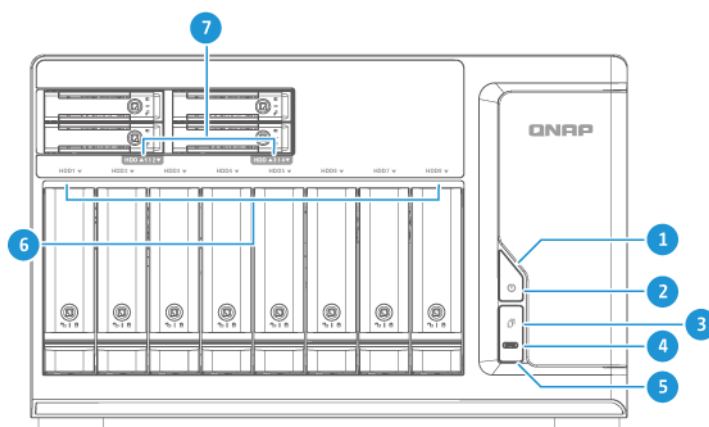
Item	Quantity
Screws for 3.5-inch drives	TVS-h877AX: 24 TVS-h1277AX: 32
Screws for 2.5-inch drives	TVS-h877AX: 8 TVS-h1277AX: 16
Quick Installation Guide (QIG)	1

Components

Front panel



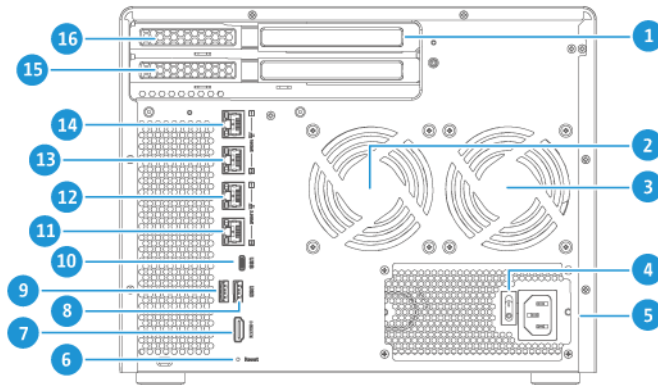
TVS-h877AX



TVS-h1277AX

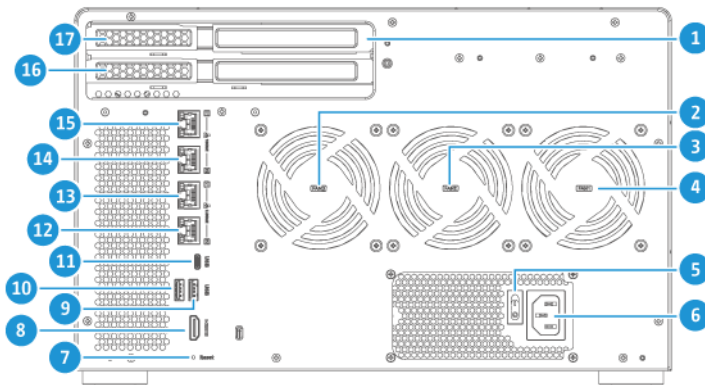
No.	Component	No.	Component
1	Power button	5	USB port 1: USB 3.2 Gen 2 One Touch Copy Type-C port
2	Power LED	6	Drive LEDs
3	USB One Touch Copy button	7	SSD LEDs
4	USB One Touch Copy LED	-	-

Rear panel



TVS-h877AX

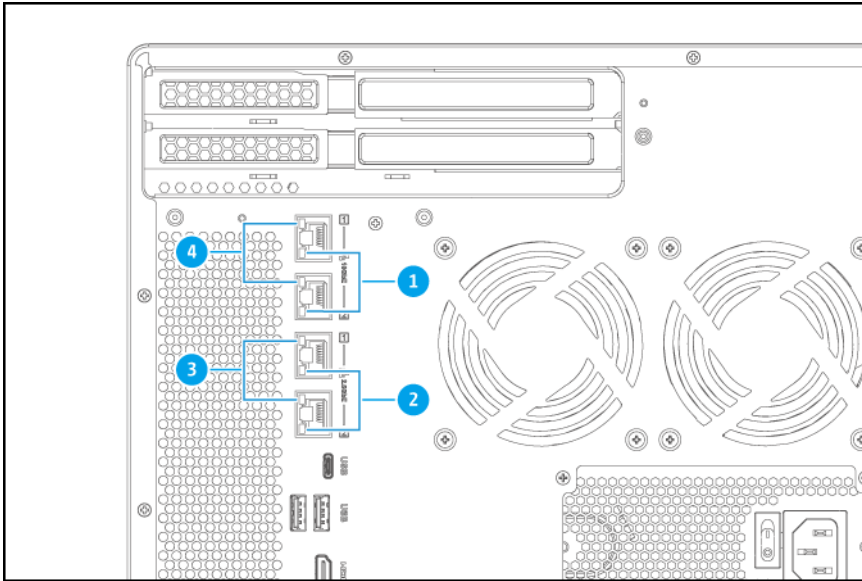
No.	Component	No.	Component
1	PCIe slot 1: PCIe full-height cover	9	USB port 3: USB 2.0 Type-A port
2	System fan 2	10	USB port 2: USB 3.2 Gen 2 Type-C port
3	System fan 1	11	Ethernet port 4: 2.5 Gigabit Ethernet port (RJ45)
4	Power supply unit switch	12	Ethernet port 3: 2.5 Gigabit Ethernet port (RJ45)
5	Power input	13	Ethernet port 2: 10GBASE-T port (RJ45)
6	Reset button	14	Ethernet port 1: 10GBASE-T port (RJ45)
7	HDMI 1.4b port	15	PCIe slot 3: PCIe low-profile cover
8	USB port 4: USB 2.0 Type-A port	16	PCIe slot 2: PCIe low-profile cover



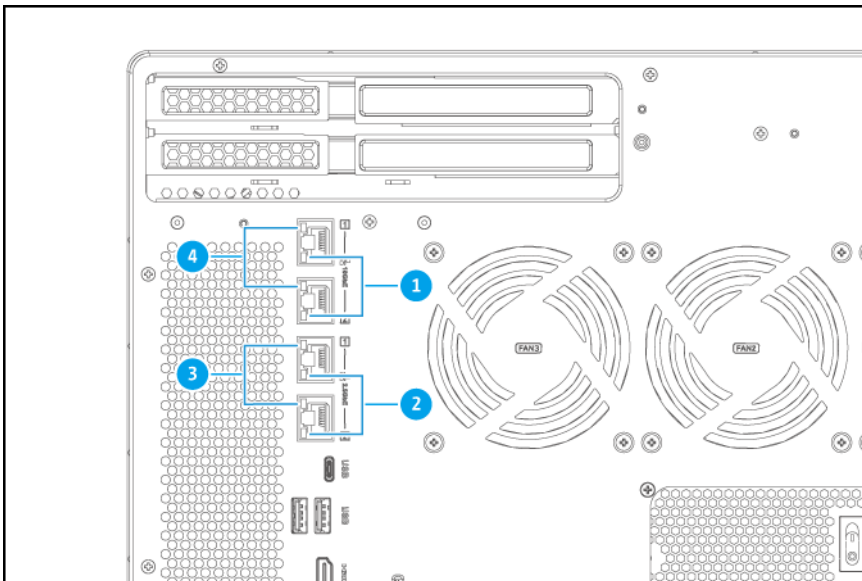
TVS-h1277AX

No.	Component	No.	Component
1	PCIe slot 1: PCIe full-height cover	10	USB port 3: USB 2.0 Type-A port
2	System fan 3	11	USB port 2: USB 3.2 Gen 2 Type-C port
3	System fan 2	12	Ethernet port 4: 2.5 Gigabit Ethernet port (RJ45)
4	System fan 1	13	Ethernet port 3: 2.5 Gigabit Ethernet port (RJ45)
5	Power supply unit switch	14	Ethernet port 2: 10GBASE-T port (RJ45)
6	Power input	15	Ethernet port 1: 10GBASE-T port (RJ45)
7	Reset button	16	PCIe slot 3: PCIe low-profile cover
8	HDMI 1.4b port	17	PCIe slot 2: PCIe low-profile cover
9	USB port 4: USB 2.0 Type-A port	-	-

Rear panel LEDs



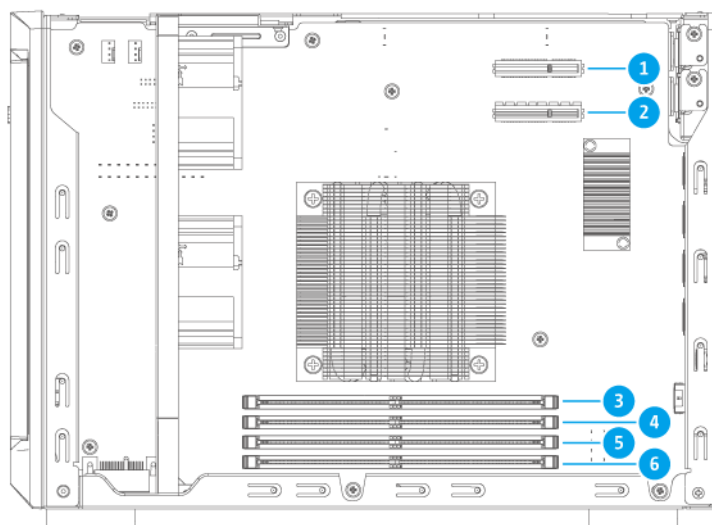
TVS-h877AX



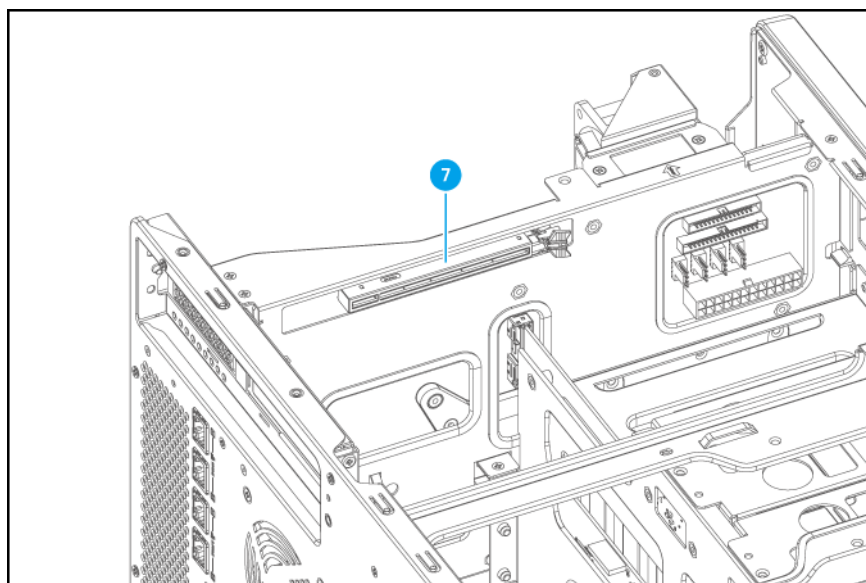
TVS-h1277AX

No.	Component	No.	Component
1	10 Gigabit Ethernet activity LEDs	3	2.5 Gigabit Ethernet speed LEDs
2	2.5 Gigabit Ethernet activity LEDs	4	10 Gigabit Ethernet speed LEDs

System board



Top (Right side of device)

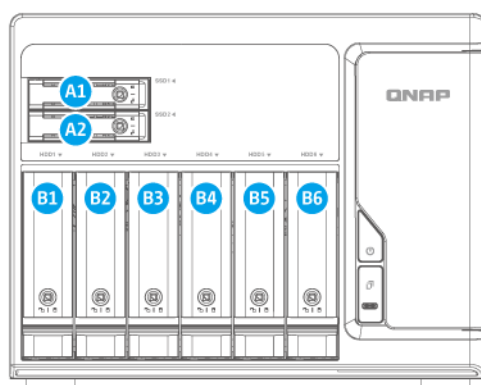


Bottom

No.	Component	No.	Component
1	PCIe slot 2: PCIe 4.0 x4	5	Memory slot 3 (Channel B, UDIMM, 0, black)
2	PCIe slot 3: PCIe 4.0 x4	6	Memory slot 4 (Channel B, UDIMM, 1, blue)

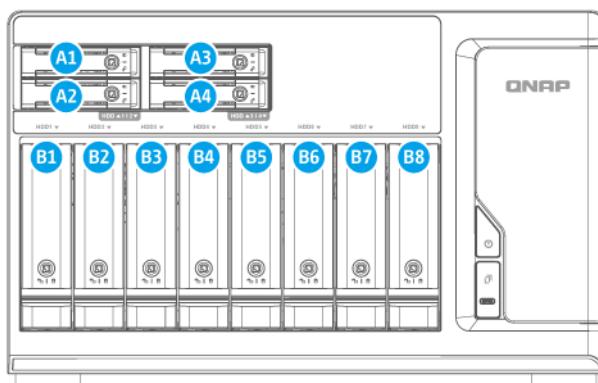
No.	Component	No.	Component
3	Memory slot 1 (Channel A, UDIMM, 0, black)	7	PCIe slot 1: PCIe 4.0 x8
4	Memory slot 2 (Channel A, UDIMM, 1, blue)	-	-

Drive numbering



TVS-h877AX

No.	Component
A1 to A2	2.5-inch SSD drive bays
B1 to B6	3.5-inch drive bays



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No.	Component
A1 to A4	2.5-inch SSD drive bays
B1 to B8	3.5-inch drive bays

Installation requirements

Category	Item
Environment	- Room temperature: 0°C to 40°C (32°F to 104°F) - Non-condensing relative humidity: 5% to 95% - Wet-bulb temperature: 27°C (80.6°F) - Flat, anti-static surface without exposure to direct sunlight, liquids, or chemicals - Free from objects that may obstruct device ventilation or apply pressure to the device or power cord

Category	Item
Hardware and peripherals	- Storage drives Tip For the list of compatible drive models, go to https://www.qnap.com/compatibility. - Network cable - Qfinder Pro installer - Computer
Tools	- Phillips #1 or #2 screwdriver - 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 3.5-inch hard drives on 3.5-inch trays](#)
 - [Installing 2.5-inch solid-state drives on 3.5-inch trays](#)
 - [Installing 2.5-inch solid-state drives on 2.5-inch trays](#)
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. Optional: Connect expansion units.
For details, see [Connecting USB expansion units](#).
6. Connect the power cord and all applicable cables.
7. Power on the NAS.

- 8.** Install QuTS hero.
For details, see [QuTS hero installation](#).
- 9.** Log on to QuTS hero.

3. Installation and Configuration

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

Warning

Always ensure that all drive trays, including empty ones, are properly installed in the device. Missing trays can alter the intended airflow, potentially causing internal components to overheat.

Hardware installation

This section provides information on installing drives and expansion cards; replacing memory modules, CPU fans, and system fans; and connecting expansion units.

Drive installation

The TVS-hx77AX is compatible with 3.5-inch hard drives and 2.5-inch solid-state drives.

Installing 3.5-inch hard 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.

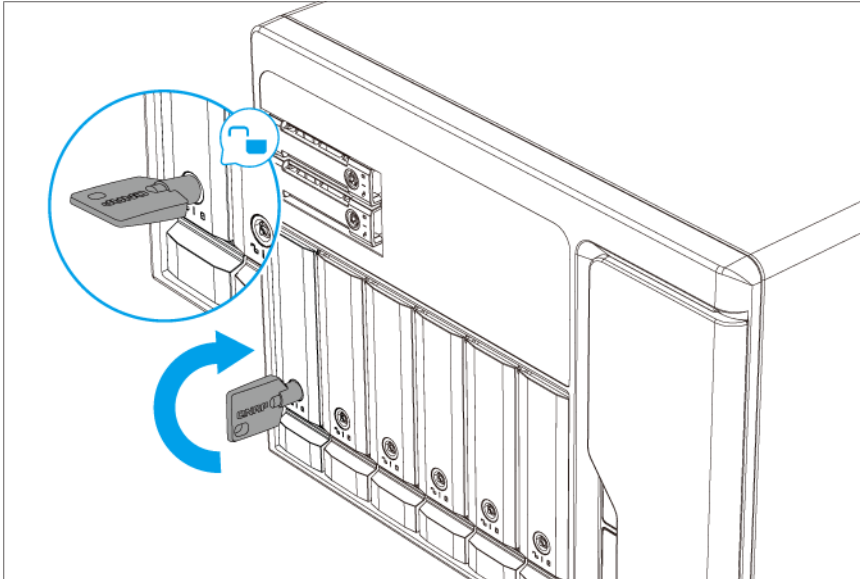


Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.

2. Remove the drive tray.

a. Optional: Unlock the tray.



Note

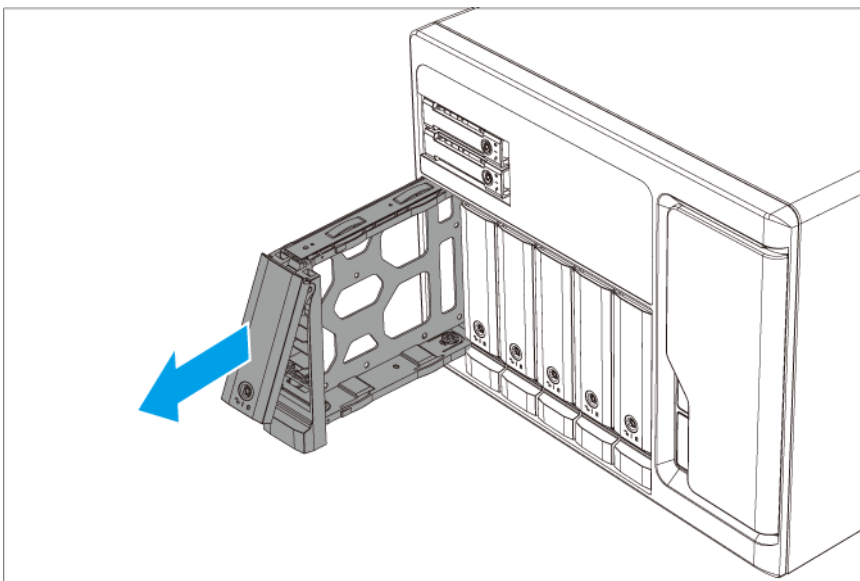
The preinstalled drive trays come unlocked.

Important

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

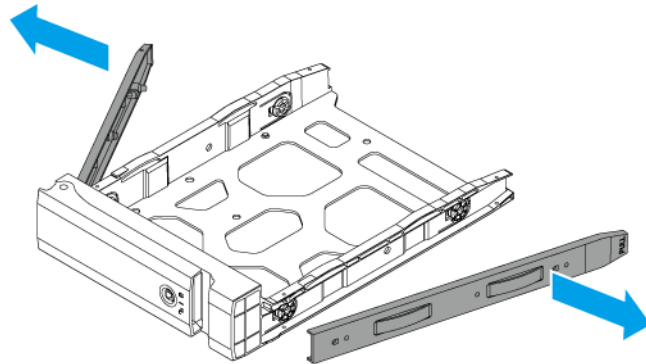
b. Pull the handle to release the tray.

c. Pull the tray out.



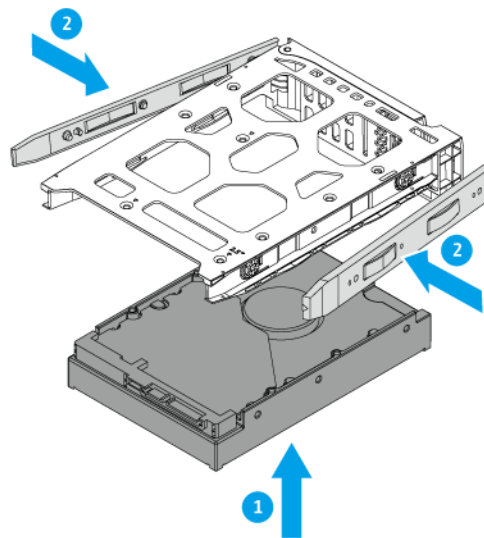
3. Install a drive on the tray.

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

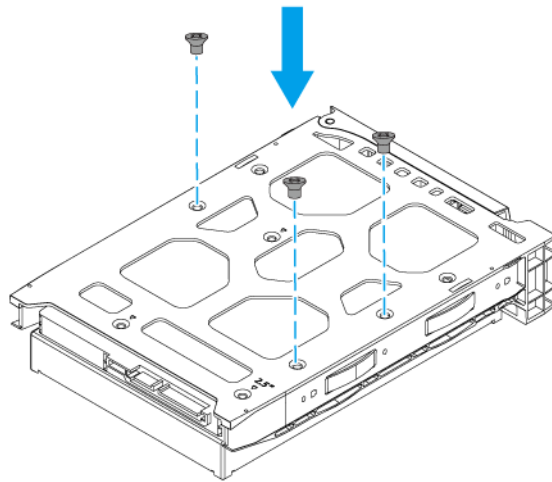


- b.** Place the drive on the tray so that the holes on the sides of the drive are aligned with the holes on the sides of the tray.

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



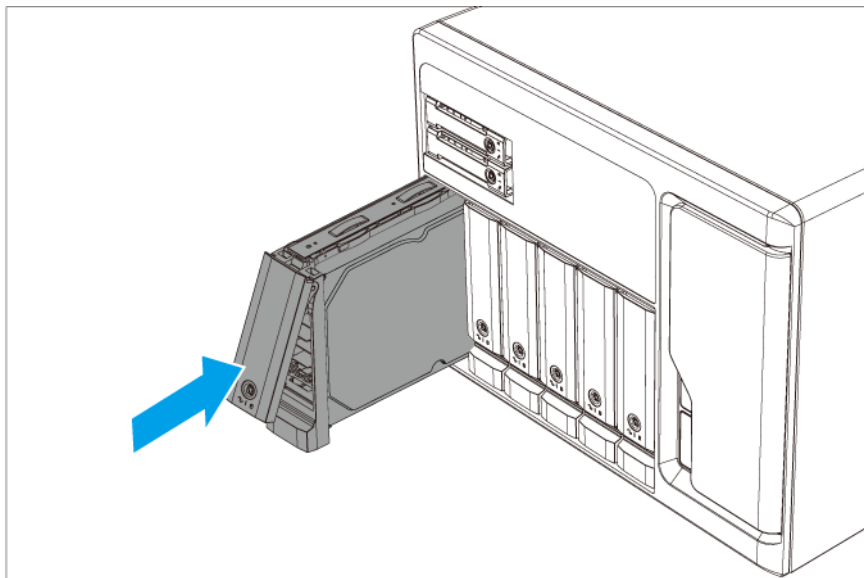
- d.** Attach the screws to lock the drive to the tray.



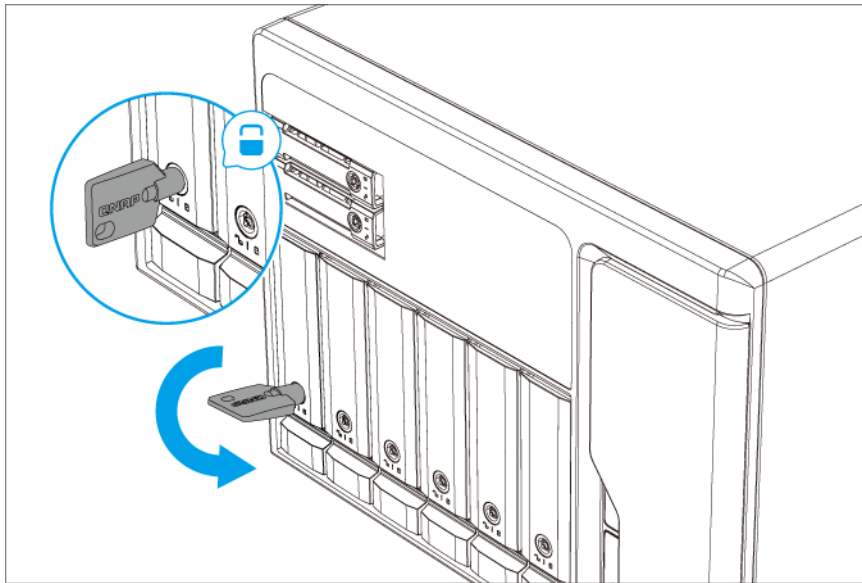
Important

QNAP recommends attaching the screws to the drive trays when transporting the NAS.

- 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 2.5-inch solid-state drives on 3.5-inch trays

Warning

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



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

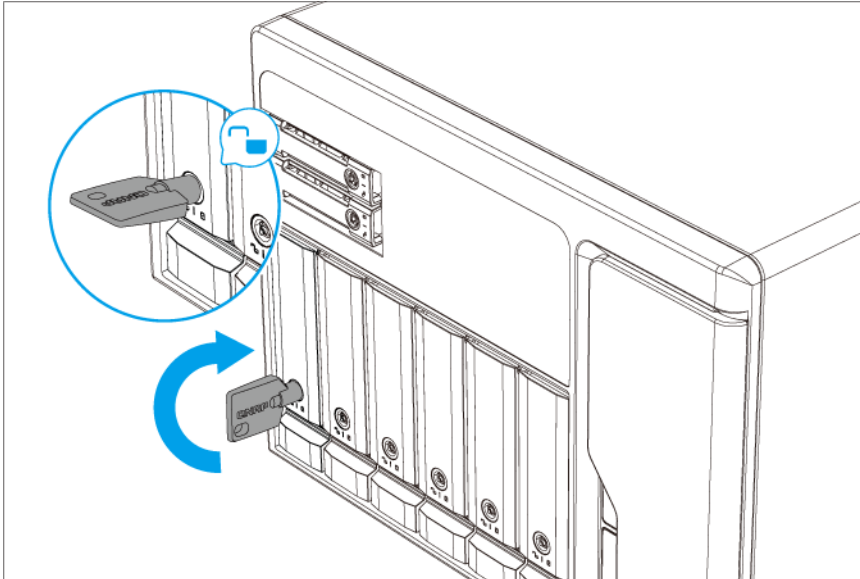


Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.

2. Remove the drive tray.

a. Optional: Unlock the tray.



Note

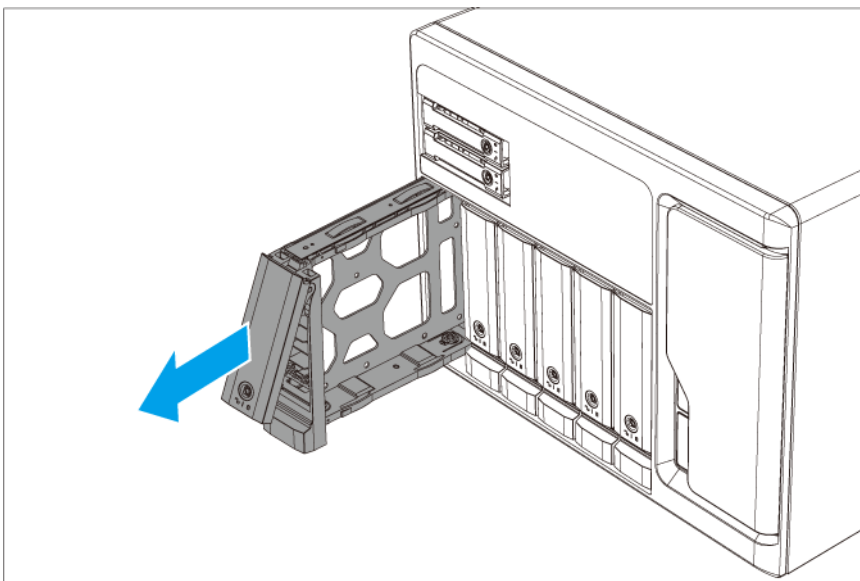
The preinstalled drive trays come unlocked.

Important

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

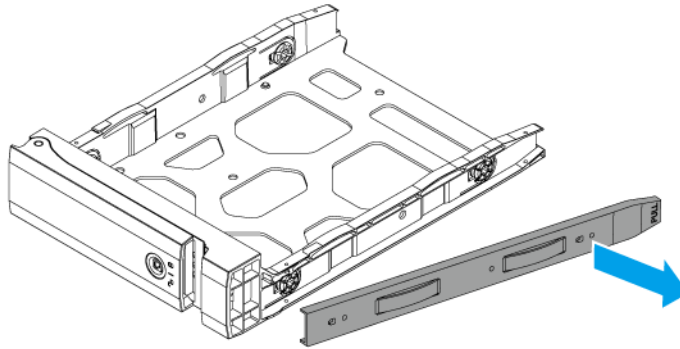
b. Pull the handle to release the tray.

c. Pull the tray out.

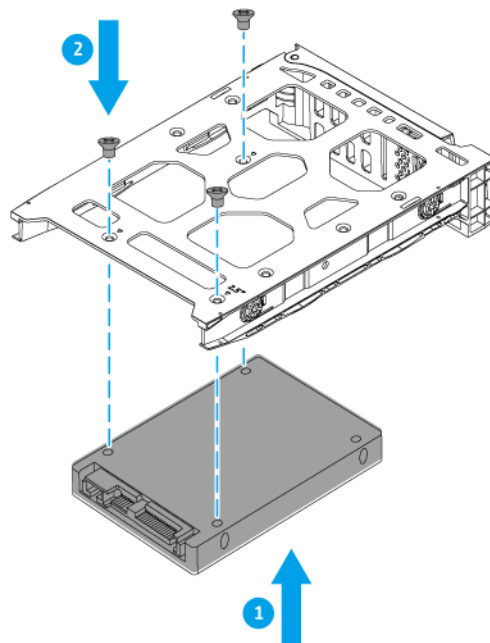


3. Install a drive on the tray.

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

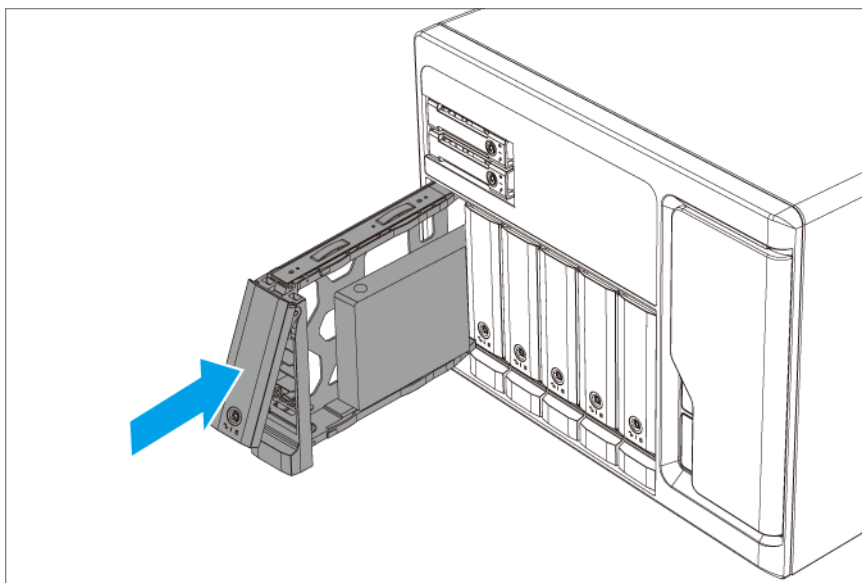


- b.** Place the drive on the tray so that the holes on the sides of the drive are aligned with the holes on the sides of the tray.
- c.** Attach the screws.

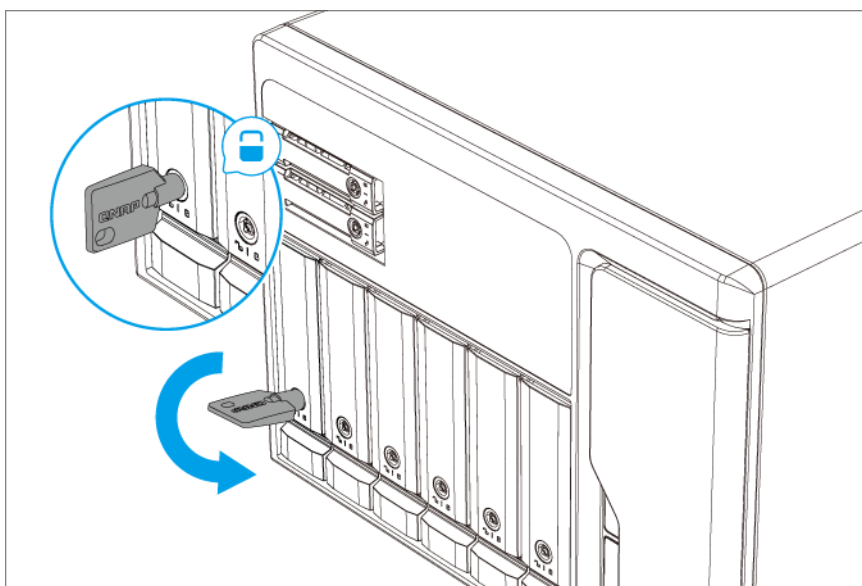
**4. Load the tray into the bay.**

- a.** Insert the tray into the bay.

b. Push the handle.



c. Lock the tray.



5. Power on the NAS.

Installing 2.5-inch solid-state drives on 2.5-inch trays

Warning

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

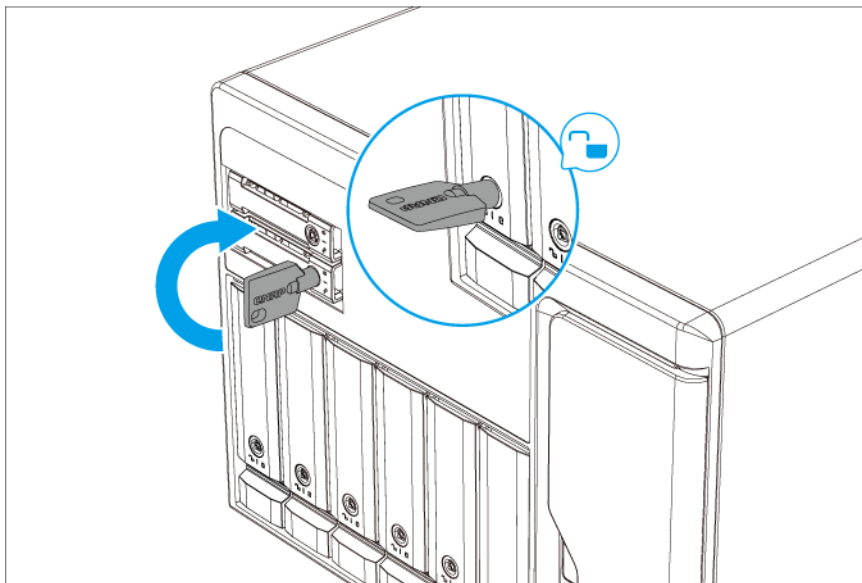


Moving fan blades: Keep your hands and other body parts away from moving fan blades.



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. Unlock the tray.



Note

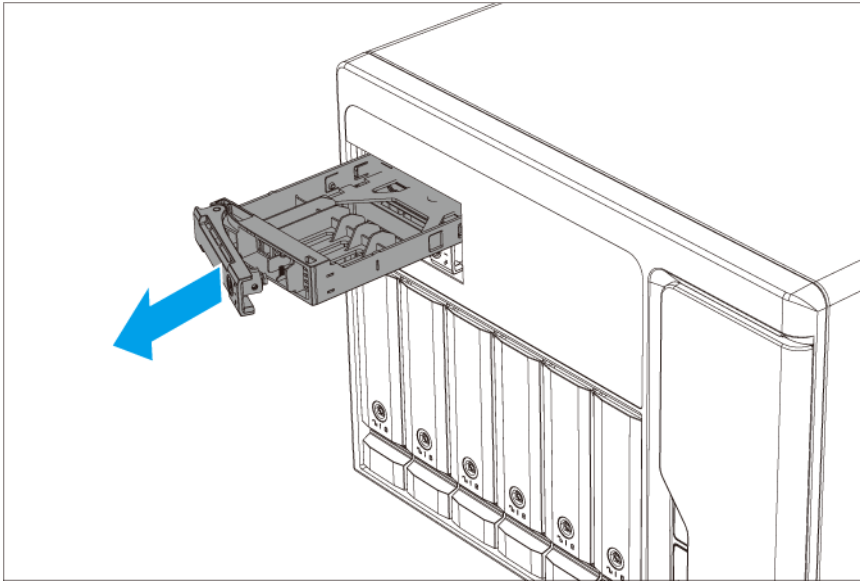
The preinstalled drive trays come unlocked.

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.



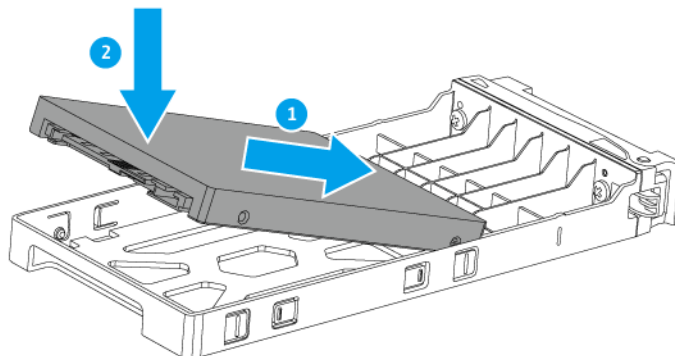
Note

The preinstalled drive trays come unlocked.

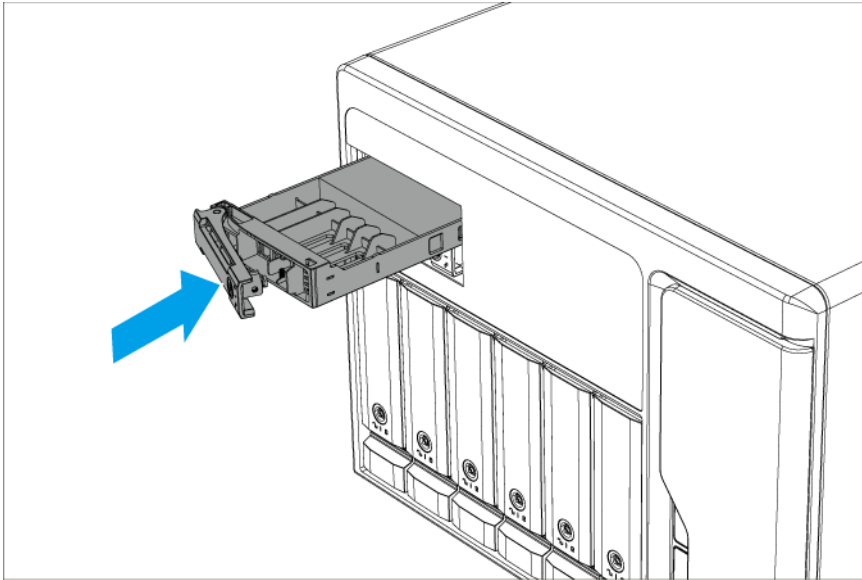
Important

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

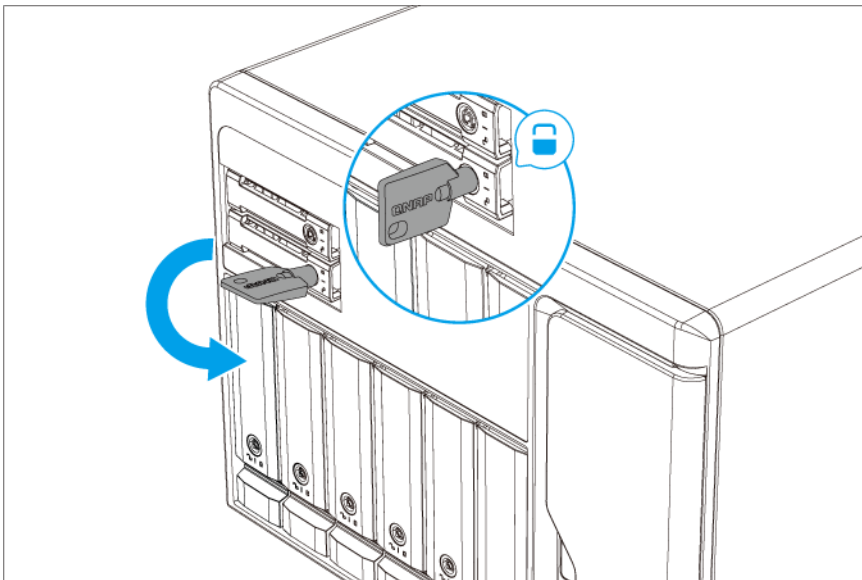
3. Install a drive on the tray.
- a. Align the connector on the drive with the opening at the end of the tray.
 - b. Place the drive on the tray.



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 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.

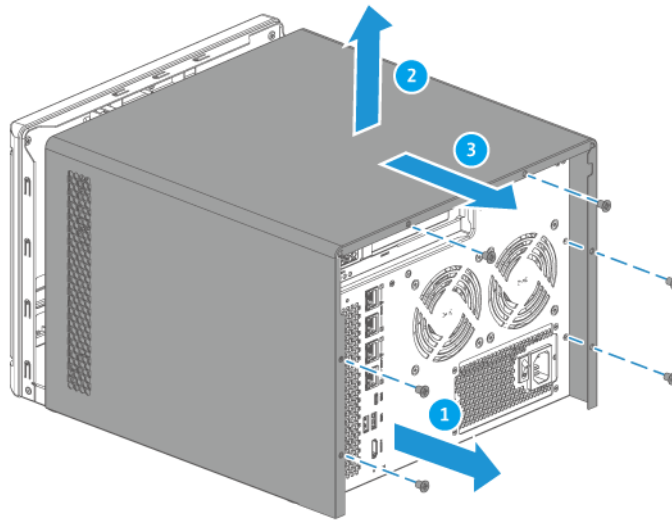


Other moving components: Keep your hands and other body parts away from other moving components.

- 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 NAS.
3. Disconnect the power cord from the electrical outlet.
4. Disconnect all cables and external attachments.
5. Remove the case cover.
 - a. Remove the screws that secure the cover to the chassis.
 - b. Slide the cover back.

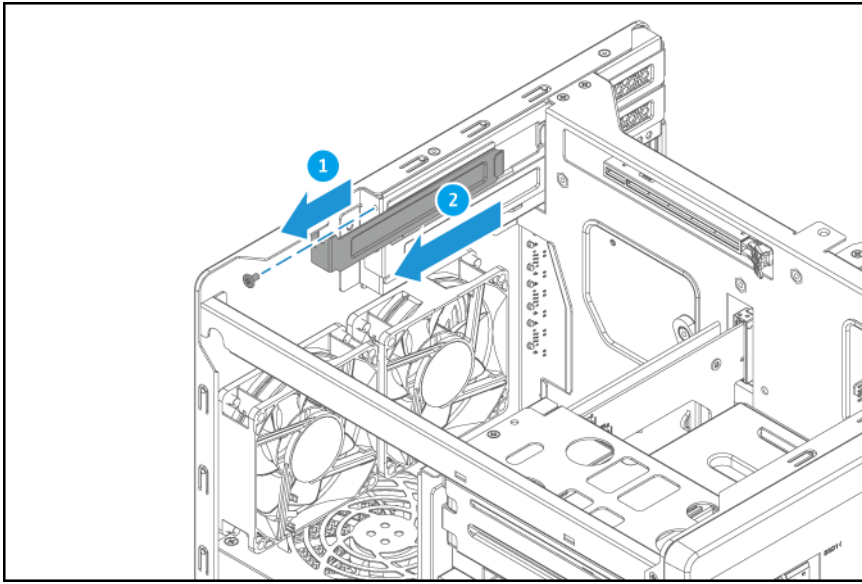
- c.** Lift the cover off the device.



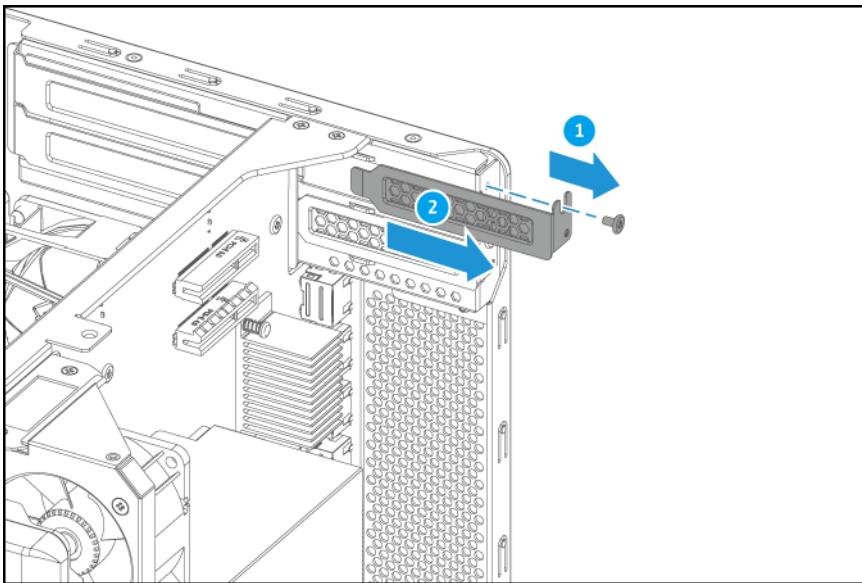
- 6.** Remove the PCIe cover.

- a.** Remove the screw that secures the cover to the bracket.

- b. Pull the cover away from the slot.



PCIe 4.0 x8 slot



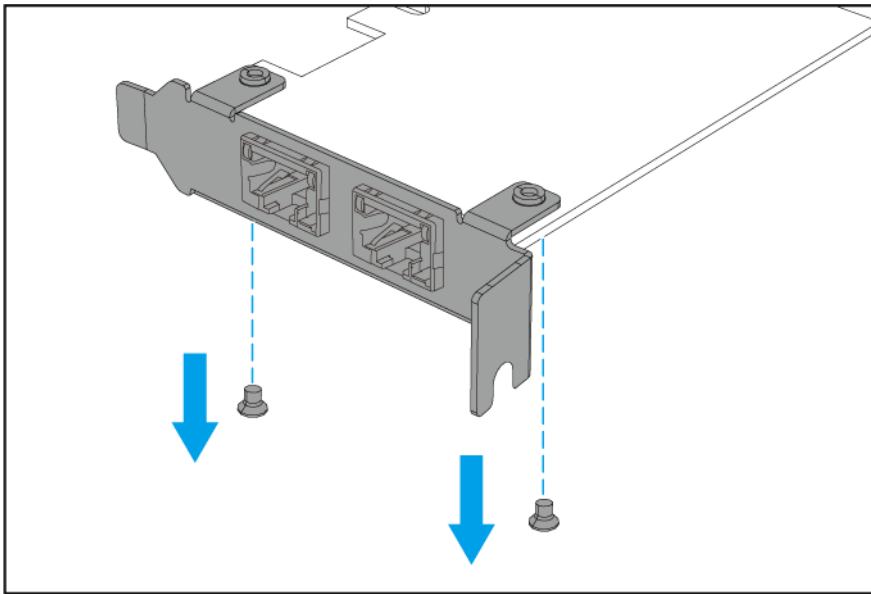
PCIe 4.0 x4 slot

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

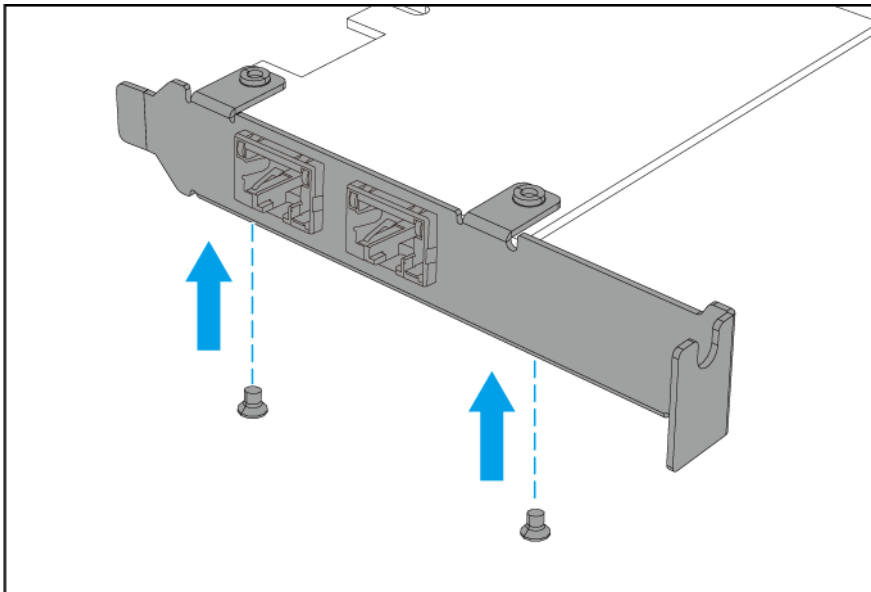
Note

To install a 10 GbE card in a PCIe 4.0 x4 slot, purchase a bracket kit and replace the original bracket with a half-height bracket. For details, go to <https://shop.qnap.com/>.

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

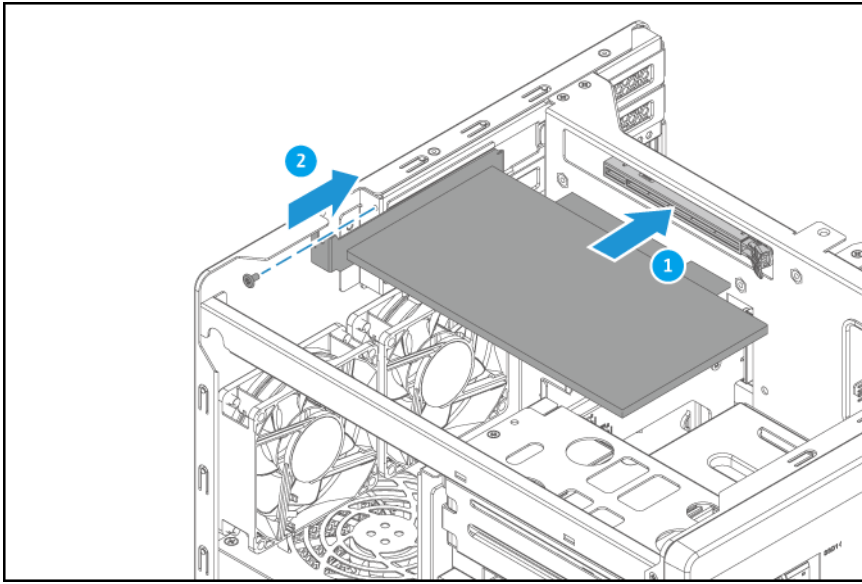


- b.** Carefully pull the bracket away from the card.
c. Attach the QNAP bracket to the card using the same screws.

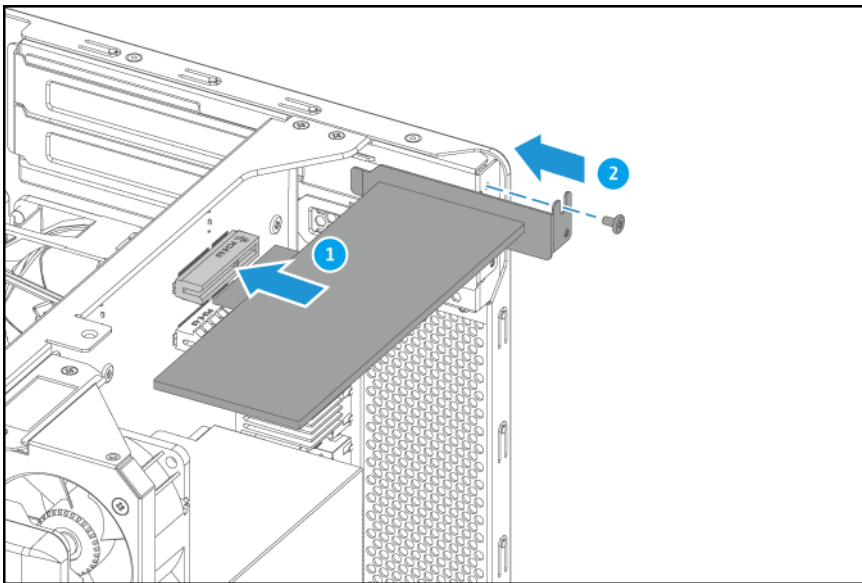


- d.** Verify that the bracket is secured to the card.
- 8.** Install the expansion card.
- a.** Hold the card by the edges.
- b.** Insert the card into the slot.

c. Attach the screw.

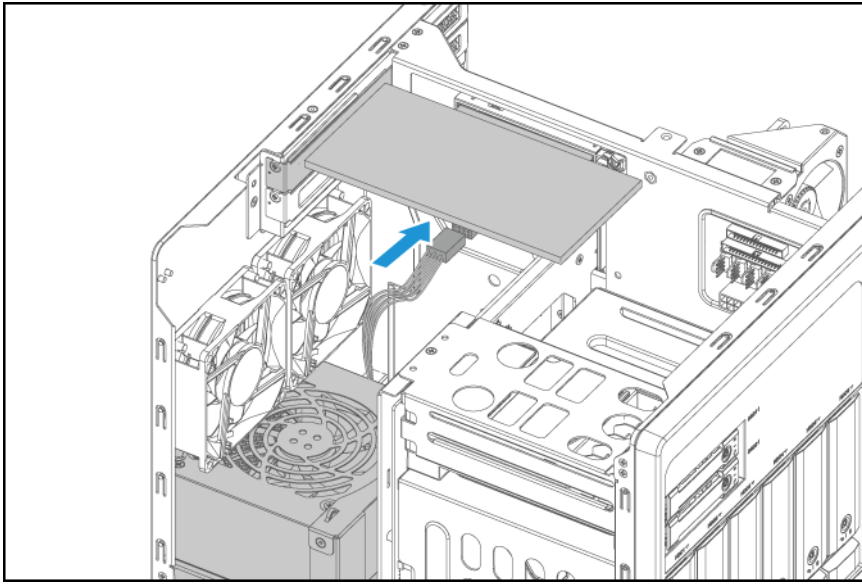


PCIe 4.0 x8 slot



PCIe 4.0 x4 slot

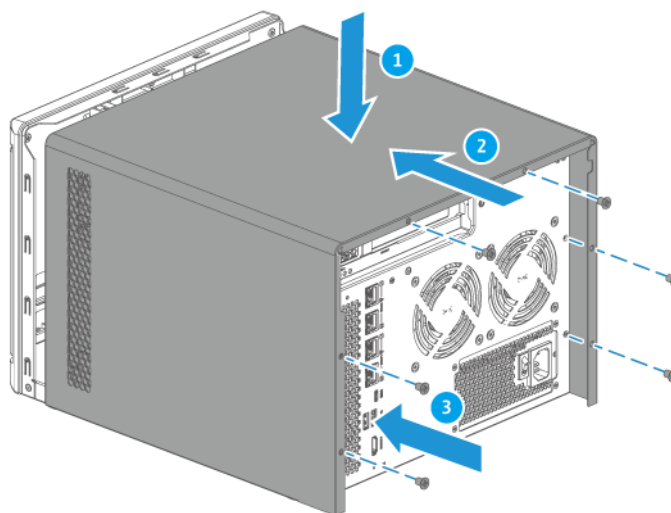
- d. Optional: Attach the PCIe power connector to the expansion card.



Note

- Larger expansion cards may require you to attach the PCIe power connector before inserting the card into the slot.
- The PCIe power connector can only attach to an expansion card installed in the PCIe 4.0 x8 slot.

9. Attach the case cover.
- a. Place the cover on the device.
 - b. Slide the cover forward.
 - c. Attach the screws to the back of the device.



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

Replacing memory modules

The TVS-hx77AX has four memory slots. You can increase the memory capacity of the NAS by upgrading memory modules. For optimal dual-channel performance, replace memory modules in pairs.

This NAS also comes preinstalled with one or two non-ECC memory modules. To provide extra protection from undetected data corruption, you can upgrade to ECC memory modules.

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

Important

- QNAP recommends installing modules in pairs to run dual-channel mode.
- Ensure that each pair uses identical modules.
- Ensure that each memory channel uses identical modules. See table below for details:

Channel Name	Slot Numbering
Channel A	Slots 1, 2
Channel B	Slots 3, 4

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

- Use only all ECC memory modules, or all non-ECC memory modules. Installing both types of memory modules will cause the ECC modules to perform as non-ECC modules.

Warning

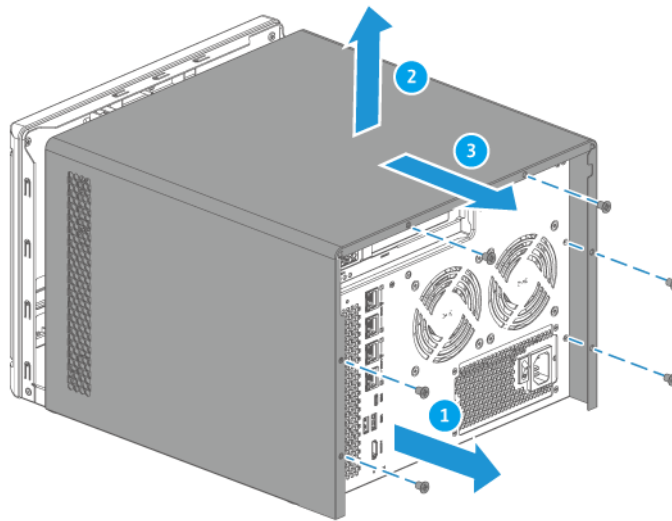


- **Moving fan blades:** Keep your hands and other body parts away from moving fan blades.



- **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. Remove the screws that secure the cover to the chassis.
 - b. Slide the cover back.
 - c. Lift the cover off the device.



5. 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

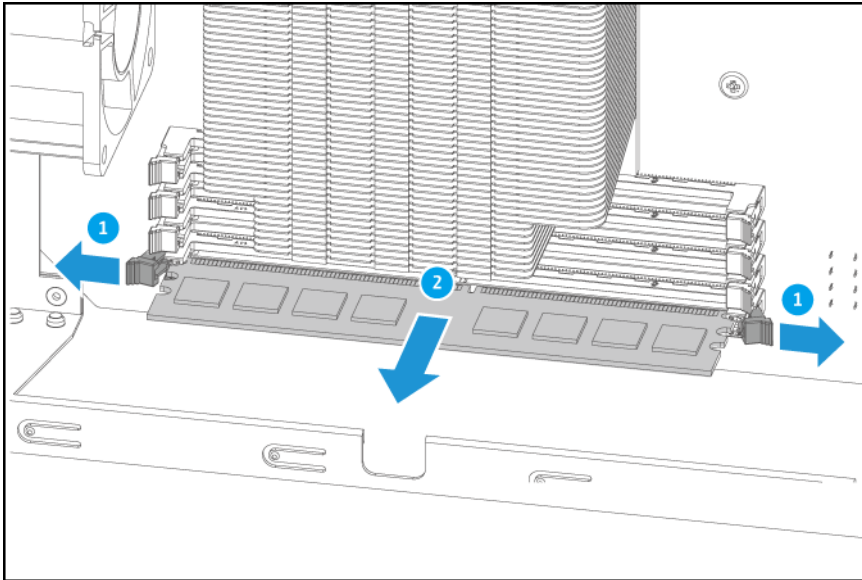
Attempting to remove a module that is not completely released may damage the module and the system board.

- c. Hold the module by the edges.

- d. Carefully slide the module out of the slot.

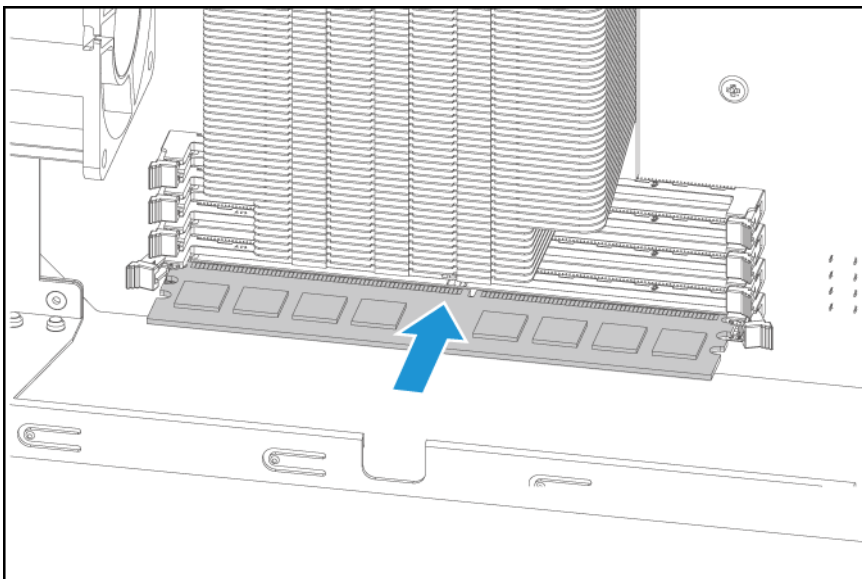
Warning

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

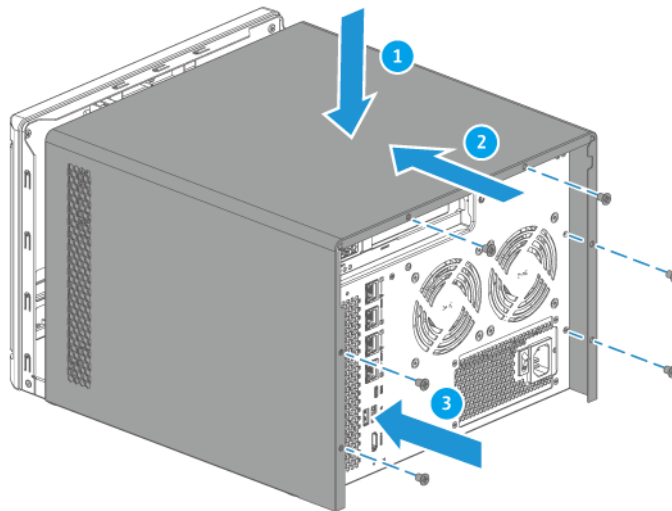


6. Install a new module.

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



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

Replacing CPU fans

The device contains two dedicated fans for cooling the CPU.

Important

This device has a transparent plastic fan duct preinstalled on the fan tray. The fan duct helps maintain ideal operating temperatures for the CPU. QNAP does not recommend operating this device without the fan duct installed.

Warning

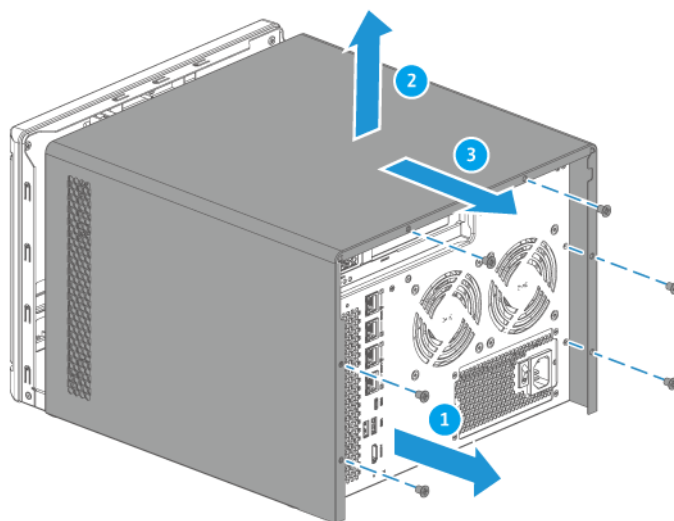
Moving fan blades: Keep your hands and other body parts away from moving fan blades.



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

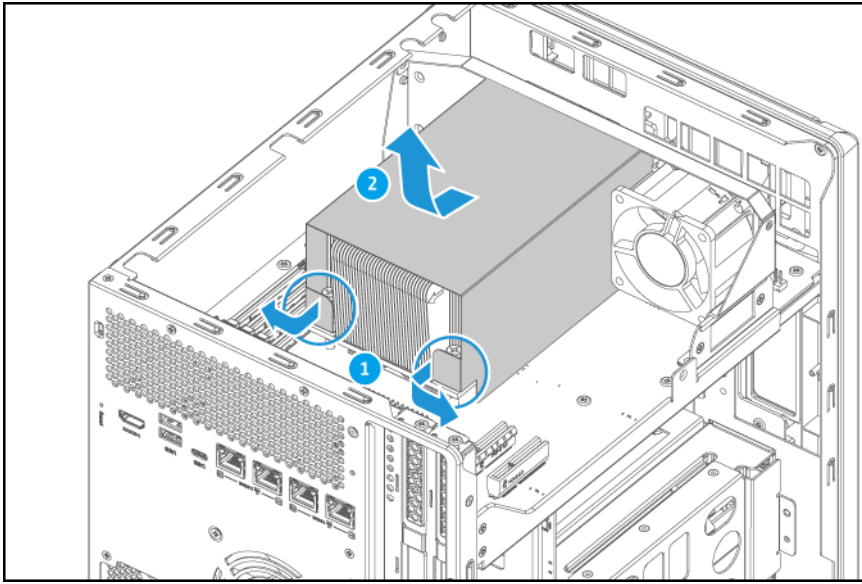
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

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. Remove the screws that secure the cover to the chassis.
 - b. Slide the cover back.
 - c. Lift the cover off the device.



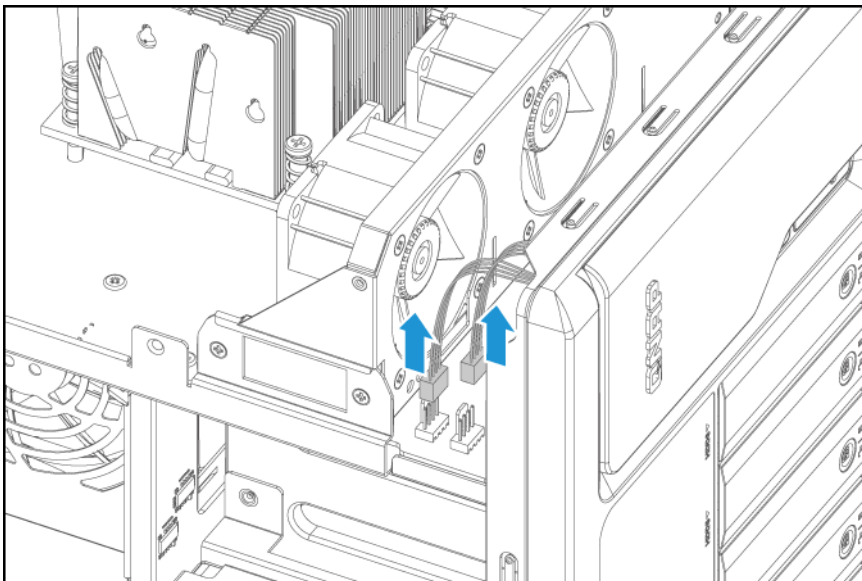
5. Place the device on its left side.
6. Remove the CPU fan duct.
 - a. Detach the bottom hooks of the CPU fan duct from the CPU heatsink screws.

- b.** Pull the CPU fan duct out of the device.



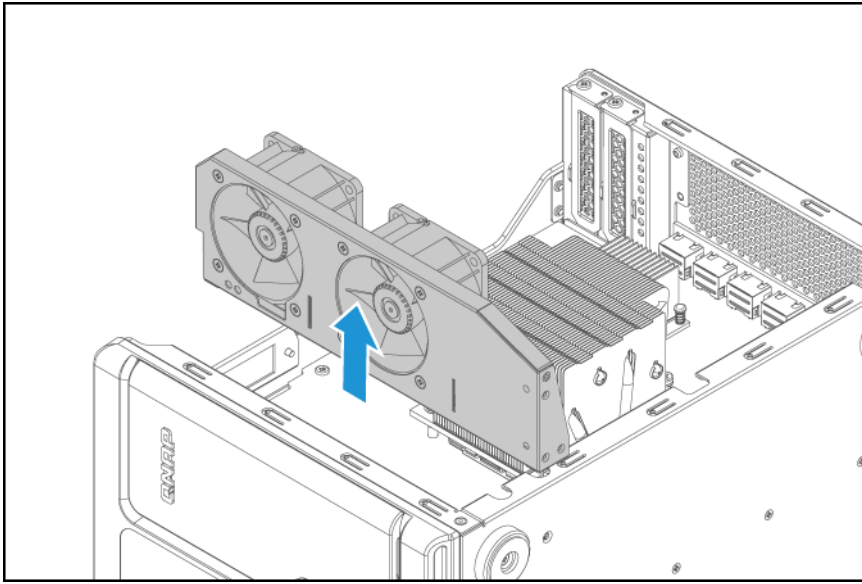
7. Remove the fan tray.

- a.** Disconnect the power connectors of all fans from the system board.

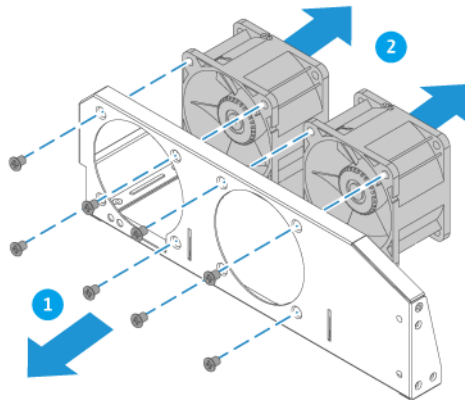


- b.** Remove the screws that secure the fan tray to the chassis.

- c.** Lift the fan tray out of the chassis.

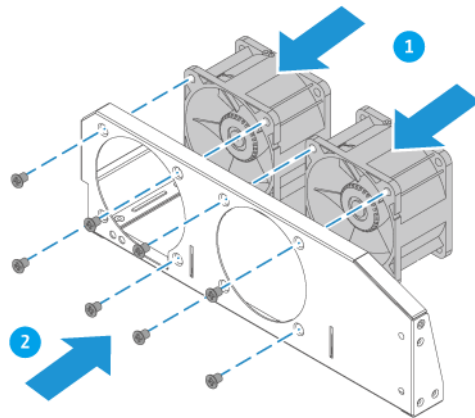


- 8.** Remove the fans.
 - a.** Remove the screws that secure the fans to the fan tray.
 - b.** Remove the fans from the fan tray.



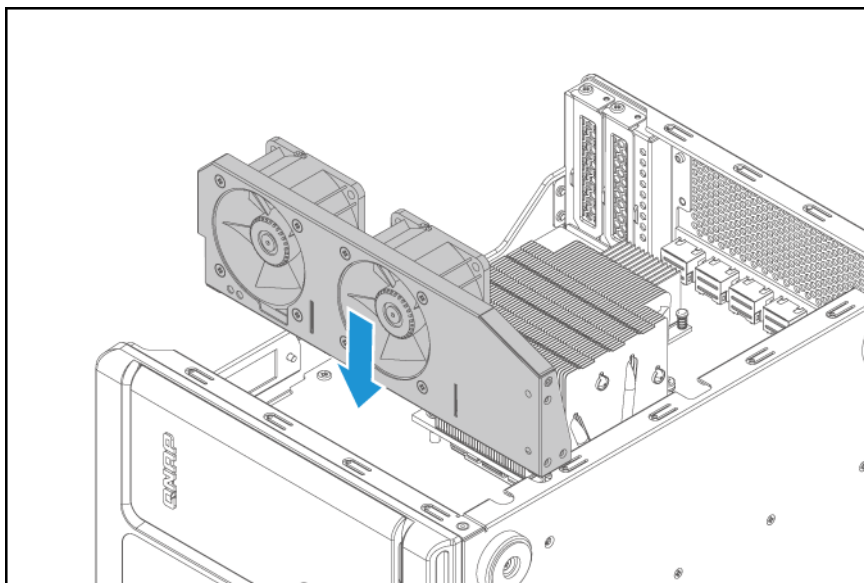
- 9.** Install new fans.
 - a.** Align the fans to the screw holes on the fan tray.

- b.** Attach the screws that secure the fans to the fan tray.

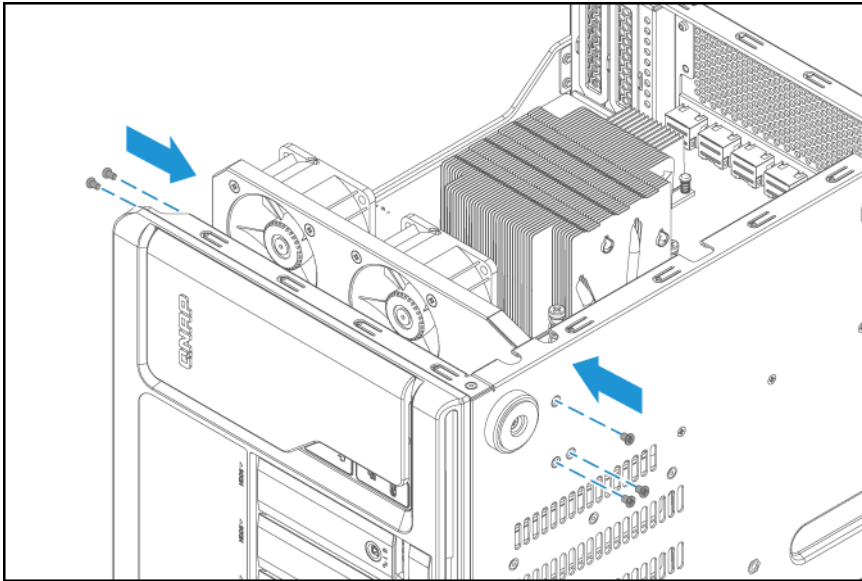


10. Install the fan tray.

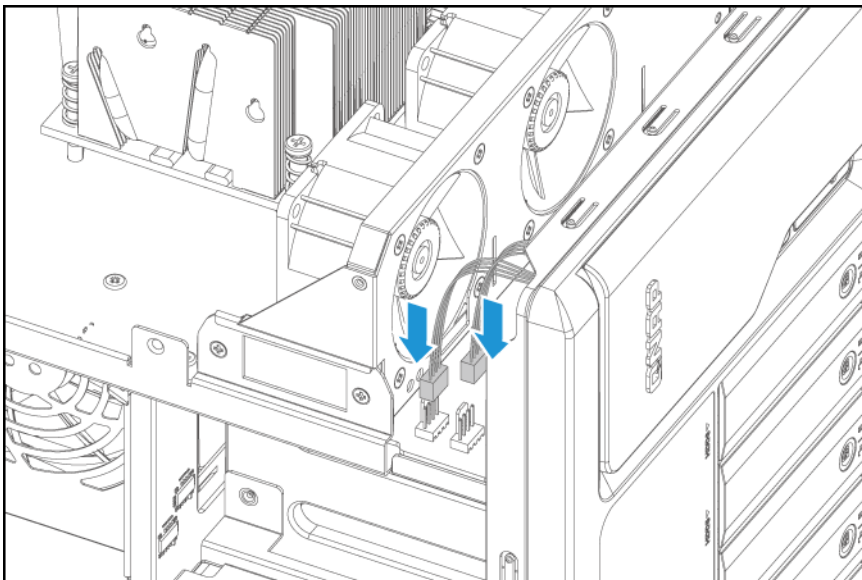
- a.** Insert the fan tray into the chassis.



- b.** Attach the screws that secure the fan tray to the chassis.



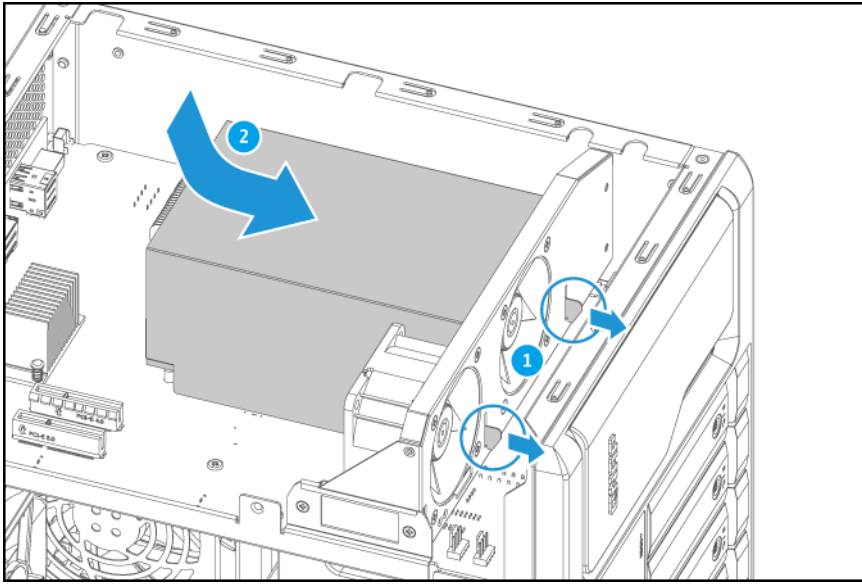
- c.** Connect the power connectors of all fans to the system board.



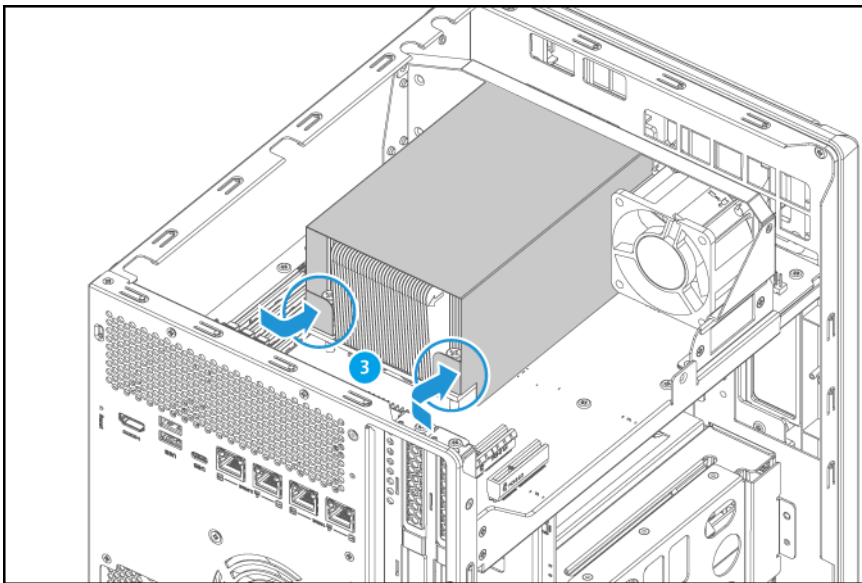
11. Attach the CPU fan duct.

- a.** Attach the CPU fan duct to the fan tray.

- b.** Ensure the front hooks on the CPU fan duct are inserted into the fan tray.



- c.** Attach the bottom hooks of the CPU fan duct to the CPU heatsink screws.

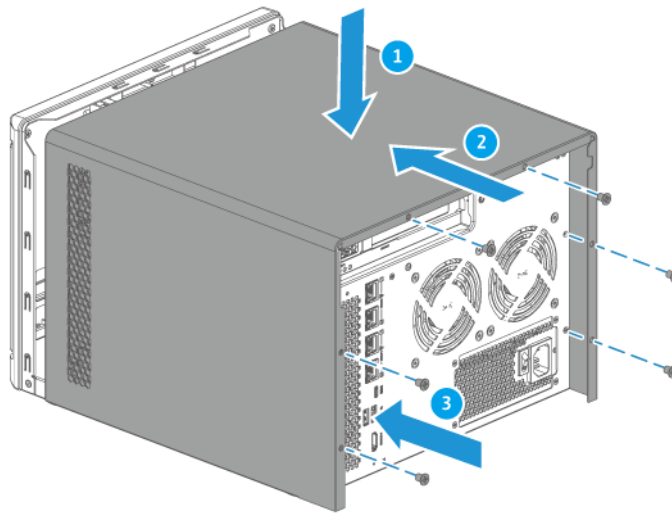


- 12.** Place the device in its normal upright position.

- 13.** Attach the case cover.

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

- c. Attach the screws to the back of the device.



- 14. Connect all cables and external attachments.
- 15. Connect the power cord to the electrical outlet.
- 16. Power on the NAS.

Replacing system fans

The device contains two to three system fans to ensure adequate cooling.

Warning



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

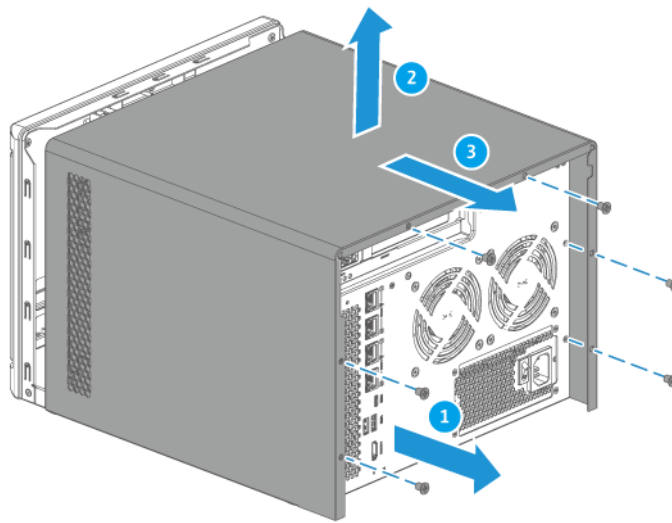


Other moving components: Keep your hands and other body parts away from other moving components.

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

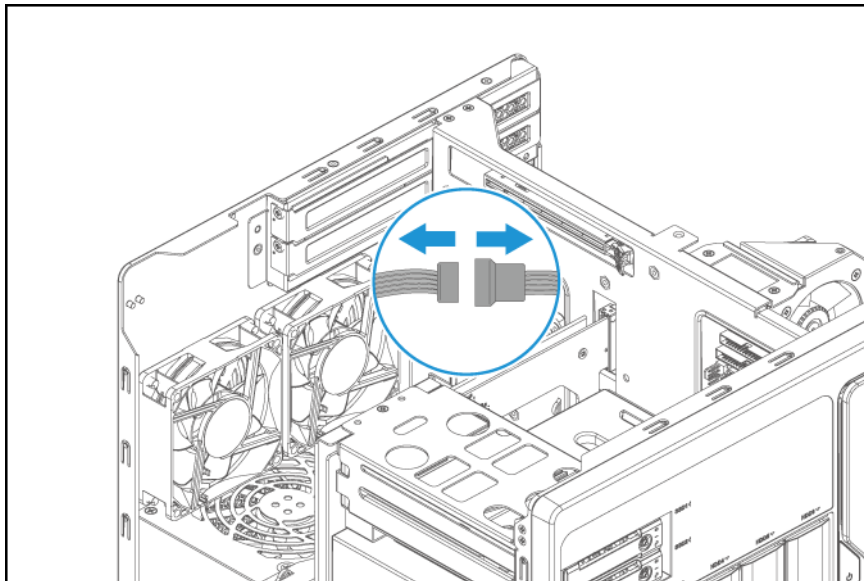
- 1. Power off the device.
- 2. Disconnect the power cord from the electrical outlet.
- 3. Disconnect all cables and external attachments.
- 4. Remove the case cover.
 - a. Remove the screws that secure the cover to the chassis.

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



5. Remove the fans.

- a. Detach the power connectors of all fans from the power connectors of the system board.

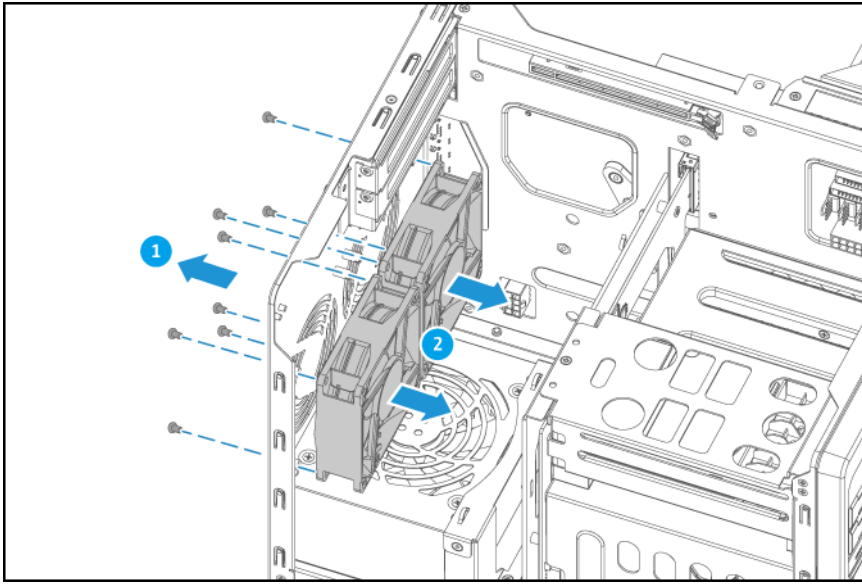


Important

There are two or three power connectors to disconnect depending on the number of system fans on your model. Ensure all the system fan power connectors are disconnected.

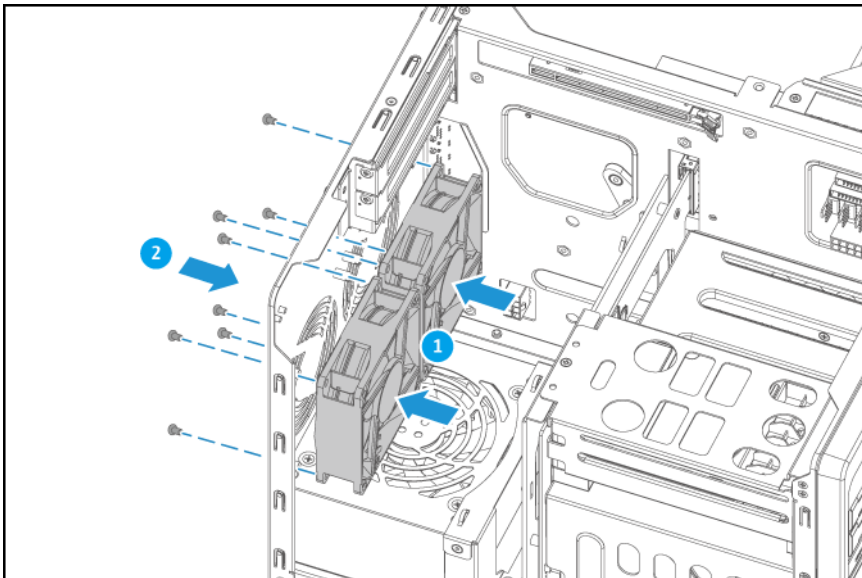
- b. Remove the screws that secure the fans to the rear panel.

- c.** Remove the fans from the chassis.

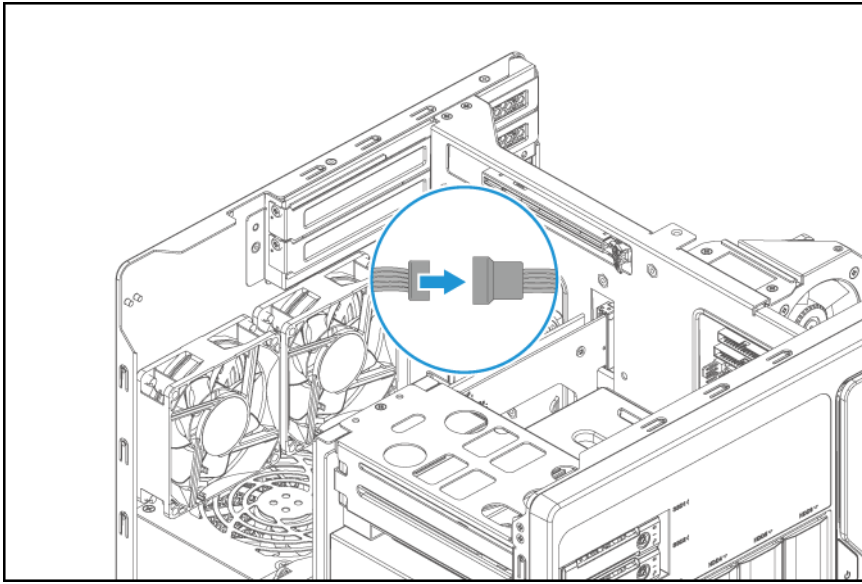


6. Install new fans.

- a.** Align the fans to the screw holes on the rear panel.
- b.** Attach the screws that secure the fans to the rear panel.

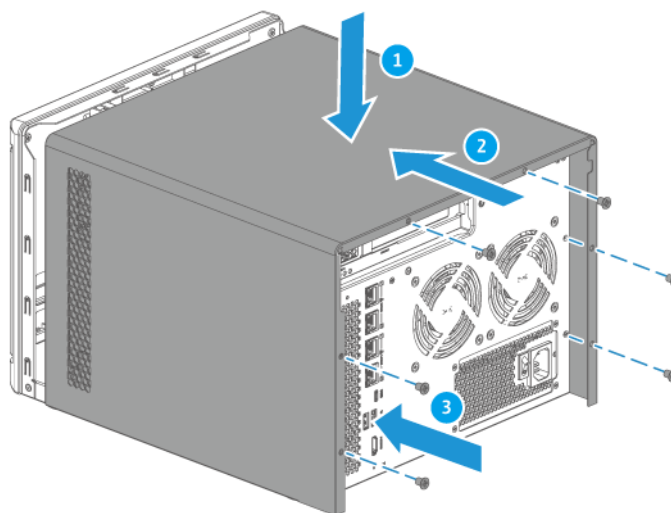


- c. Attach the power connectors of all fans to the power connectors of the system board.

**Important**

There are two or three power connectors to connect depending on the number of system fans on your model. Ensure all the system fan power connectors are reconnected.

7. Attach the case cover.
 - a. Place the cover on the device.
 - b. Slide the cover forward.
 - c. Attach the screws to the back of the device.



8. Connect all cables and external attachments.

9. Connect the power cord to the electrical outlet.
10. Power on the NAS.

Connecting USB expansion units

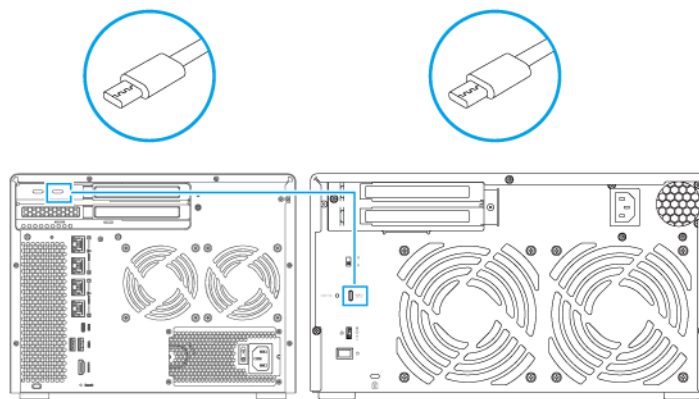
The device supports USB expansion units. For details, please see the table below.

You can purchase storage expansion accessories from QNAP or an authorized reseller. For details, go to <https://shop.qnap.com/>.

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

Expansion Unit Model	Description	Required Accessories
TL-D810TC4	• Uses a USB4 Type-C interface • Supports SATA HDD/SSD	• QXP-40G2UC host bus adapter • USB4 Type-C to Type-C cable

1. Install a QXP-40G2UC host bus adapter in a PCIe x4 slot on the NAS.
For details, see [Installing expansion cards](#).
2. Verify that the NAS is powered off.
3. Connect the expansion unit to the NAS.
 - a. Connect the USB cable to the USB Type-C port on the expansion unit.
 - b. Connect the USB cable to the USB Type-C port on the QXP-20GUC host bus adapter installed on the NAS.



4. Optional: Connect another expansion unit to the NAS.
5. Power on the expansion units.

6. Power on the NAS.
7. Verify that the expansion units are recognized by the NAS.
 - a. Log on to QuTS hero as an administrator.
 - b. Go to **Storage Manager > External Storage**.
 - c. Verify that the expansion units are listed.
8. Optional: Troubleshoot abnormal USB connection speed.
 - a. Power off the NAS.
 - b. Power off the expansion units.
 - c. Disconnect all USB cables.
 - d. Wait 10 seconds.
 - e. Replug the USB connectors.

Important

Plug each connector all the way in to its corresponding USB port in one smooth action.

QuTS hero installation

The TVS-hx77AX series uses the QNAP QuTS hero operating system. You can install QuTS hero using any of the following methods.

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

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)	If the NAS is connected to your local area network, you can do the following: • Locate the NAS using Qfinder Pro. • Complete the steps in the Smart Installation Guide wizard. For details, see Initializing QuTS hero using Qfinder Pro.	• Computer • Network cable • Qfinder Pro installer
Cloud installation	If the NAS is connected to the internet, you can do the following: • Scan the QR code on the NAS. • Log into your myQNAPcloud account. • Use myQNAPcloud Link to remotely access your NAS. • Complete the steps in the Smart Installation Guide wizard. For details, see Initializing QuTS hero using the cloud installation website.	• Computer or mobile device • Network cable • myQNAPcloud account • Cloud Key

Initializing QuTS hero using Qfinder Pro

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

Warning

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

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

Note

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

4. Locate the NAS in the list and then double-click the name or IP address.
The **Smart Installation Guide** opens in the default web browser.

5. If the screen shows a different operating system, click **QuTS hero**.

Note

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

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

6. Click **Start Smart Installation Guide**.
The **Install Firmware** window appears.
7. Install firmware using any of the following methods:

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

8. Specify the following information

- **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
- **Username:** Specify an administrator username that contains 1 to 32 characters. The name can contain letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), multi-byte Chinese, Japanese, Korean, and Russian characters.
The username cannot contain the following special characters: grave accent (`), asterisk (*), equal sign (=), plus sign (+), square brackets ([]), curly brackets ({}), slash (/), vertical bar (|), semicolon (;), colon (:), apostrophe ('), quotation mark ("), comma (,), less than sign (<), greater than sign (>), backslash (\), question mark (?), percent sign (%), dollar sign (\$), and the space character.

Important

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

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

9. Click **Next**.

10. Specify the time zone, date, and time.

Tip

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

11. Click **Next**.

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

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

13. Click **Next**.

14. Review the settings.

15. Click **Apply**.

A confirmation message appears.

Warning

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

16. Click **Initialize**.

QuTS hero initialization starts. It may take a few minutes to complete the process.

After the initialization, you can click **Go to NAS Management** to start using QuTS hero and configuring other settings.

Initializing QuTS hero using the cloud installation website

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

Warning

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

1. Power on the device.

2. Connect the device to the internet.

3. Go to the QNAP Cloud Installation website using one of the following methods:

- On your computer, go to the website dedicated to your region.
 - Global: <https://install.qnap.com>
 - China: <https://install.qnap.com.cn>
- Or scan the QR code on the NAS using a mobile device.

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

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

Tip

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

The installation wizard opens in the default web browser.

5. Create an account or sign in to myQNAPcloud.

Note

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

6. Specify the myQNAPcloud device name for the NAS.

Note

- The myQNAPcloud device name is used when remotely accessing the NAS.
- For security purposes, the myQNAPcloud Link remote connection service will be disabled on your NAS after initialization. You can enable it by connecting to QuTS hero through LAN and then installing myQNAPcloud Link.

7. Click **Next**.

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

8. Perform any of the following actions.

- To check for the latest available version, click **Start**.
The wizard downloads the latest available version, and then the NAS restarts after the download is complete. If a newer version is not available, the wizard automatically displays the **Smart Installation Guide**.
- To install the out-of-the-box version, click **Skip**.
- If the screen shows a different operating system, click **QuTS hero**.
The NAS restarts and the smart installation screen shows QuTS hero as the operating system to install.

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

10. Install firmware using any of the following methods:

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

11. Specify the following information

- **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
- **Username:** Specify an administrator username that contains 1 to 32 characters. The name can contain letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), multi-byte Chinese, Japanese, Korean, and Russian characters.
The username cannot contain the following special characters: grave accent (`), asterisk (*), equal sign (=), plus sign (+), square brackets ([]), curly brackets ({}), slash (/), vertical bar (|), semicolon (;), colon (:), apostrophe ('), quotation mark ("), comma (,), less than sign (<), greater than sign (>), backslash (\), question mark (?), percent sign (%), dollar sign (\$), and the space character.

Important

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

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

12. Click **Next**.

13. Specify the time zone, date, and time.

Tip

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

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

Warning

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

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

4. Basic Operations

This chapter describes basic NAS operations.

Power button

Operation	User Action	Result
Power on	Press the button once.	The device powers on.
Power off	Press and hold the button for 1.5 seconds.	The device powers off.
Force power off	Press and hold the button for 10 seconds.	The device powers off. Important Use this method only when the device is unresponsive. Note After forcing the device to power off, the fans will spin very fast for about 3 seconds. This is normal and to be expected.

Reset button

Important

To protect your device from brute force attacks, QNAP recommends disabling the default `admin` account after a system reset. To disable the default `admin` account, you must first create a new administrator account, log out of the `admin` account, and then log in with the new account.

Operation	User Action	Result
Basic system reset	Press and hold the button for 3 seconds.	The following settings are reset to default: • The <code>admin</code> account is automatically enabled. • System administrator password: For details on the default password, see this FAQ. • TCP/IP configuration: • Obtain IP address settings automatically via DHCP • Disable jumbo frames • If port trunking is enabled (multi-LAN models only), the port trunking mode is reset to "Active Backup (Failover)". • System port: 8080 (system service port) • Security level: Low (Allow all connections) • VLAN: Disabled
Advanced system reset	Press and hold the button for 10 seconds.	The default factory settings are restored. To retrieve old data after an advanced system reset, recreate the previous folder structure on the NAS.

USB One Touch Copy button

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

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

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

LEDs

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

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

System Status and Power LED

Status	Description
Flashes green and red alternately every 0.5 seconds	• A drive is being formatted. • The device is being initialized. • The operating system is being updated. • RAID rebuilding is in progress. • Online RAID Capacity Expansion is in progress. • Online RAID Level Migration is in progress. • The firmware is being updated. Important When updating the firmware, do not remove the power cord or USB cable, and do not force-exit the application.
Red	• A drive is invalid. • A shared folder has reached its full capacity. • A shared folder is about to reach its full capacity. • A system fan is not functioning. • An error occurred when accessing (read/write) the data. • A bad sector is detected on a drive. • The device is in degraded read-only mode (two member drives failed in RAID 5 or RAID 6 but the data can still be read). • A hardware self-test error occurred.
Flashes red every 0.5 seconds	The device is in degraded mode (one member drive failed in RAID 1, RAID 5, or RAID 6).
Green	The device is ready.
Flashes green every 0.5 seconds	• The device is not configured. • A drive is not formatted.
Flashes orange	The device is in sleep mode.

Status	Description
Off	• All drives are in standby mode. • The device is powered off.

Drive LED

This section applies to both 3.5-inch and 2.5-inch drive bays.

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.

USB One Touch Copy LED

Status	Description
Flashes blue every 0.5 seconds	• A USB device connected to the USB One Touch Copy port is detected. • A USB device connected to the USB One Touch Copy port is being removed from the device. • A USB device connected to the USB One Touch Copy port is being accessed.
Blue	A USB device is detected in the USB One Touch Copy port.
Off	• No USB device is detected in the USB One Touch Copy port. • The host device has finished copying data to or from the USB device connected to the USB One Touch Copy port.

10GBASE-T Ethernet Activity LED

Status	Description
Orange	A network connection has been established.

Status	Description
Flashes orange	Data is being transmitted.
Off	There is no network connection.

10GBASE-T Ethernet Speed LED

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

2.5 Gigabit Ethernet Activity LED

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

2.5 Gigabit Ethernet Speed LED

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

Audio alerts

Duration	Frequency	Description
Short beep (0.5 seconds)	1	- The NAS is starting up. - When the reset button is pressed for 3 seconds, the NAS resets configurations. - When the reset button is pressed for 10 seconds, the NAS resets configurations and reboots. - The operating system was updated. - The NAS is starting USB One Touch Copy.
	2	An external storage device has been removed from the USB One Touch Copy port.
	3	- Cannot detect installed disk. - The firmware was updated.
Long beep (1.5 seconds)	3 (every 5 minutes)	- A power error occurred. - A system fan is not functioning. - A fan module has been removed. - The NAS data cannot be copied to the external storage device connected to the USB One Touch Copy port.
	2	- A storage pool is about to reach full capacity. - A storage pool has reached full capacity. - A storage pool status error occurred. - A shared folder is about to reach its full capacity. - A shared folder has reached its full capacity. - The drives are in degraded mode. - A drive is rebuilding. - An external storage device has been removed from the USB One Touch Copy port. - A shared folder status error occurred. - A drive is plugged in or out. - An iSCSI LUN is about to reach full capacity.

Duration	Frequency	Description
Long beep (1.5 seconds)	1	• The NAS is powering off. • The NAS was powered off by force shutdown (hardware shutdown). • The NAS was powered on successfully and is ready.

5. NAS Migration

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

QTS NAS migration

NAS migration requirements

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

Your device must meet the following requirements:

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

Note

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

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

Important

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

Warning

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

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

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

Status and setting changes after NAS migration

The status of NAS data and settings varies after migration.

Data and Settings	After NAS Migration
Registered myQNAPcloud name	Your registered myQNAPcloud name is not migrated.
Encrypted disk volumes	If the NAS does not support file system encryption, encrypted disk volumes are not migrated. Warning To prevent data loss, back up and save the encryption keys of encrypted disk volumes in a safe place. You can also choose to decrypt disk volumes before migration.
Shared folders	All shared folders and the downloaded files stored in them are retained. Warning To prevent data loss, back up and save encryption keys or passwords of encrypted shared folders in a safe place before migration. Important Folder permissions on the destination NAS must be reconfigured after migration.
Network	• If the number of network ports or network port specifications on the destination NAS is different from the source NAS, the following network and virtual settings may change and require reconfiguration: port trunking, virtual machines, Thunderbolt, USB QuickAccess, and more. • You must reconfigure network settings when the source NAS is running on QTS 4.3.5 or earlier versions.
Windows AD configuration	Windows AD configurations must be reconfigured.
Licenses	Licenses are not migrated. Warning To prevent losing all your software licenses, QNAP recommends deactivating licenses on the source NAS before data migration.

Data and Settings	After NAS Migration
Applications	If the destination NAS has less RAM than the source NAS, the following features and applications might not function: Virtualization Station, Qsirch, and Snapshots.
Services	Only services supported by the destination NAS are available.
Multimedia features	Some multimedia features are disabled by default.

Migrating a NAS

Important

Before performing NAS migration, ensure that you understand all requirements and possible changes after migration.

For details see the following topics:

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

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

Important

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

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

Migrating NAS data using HBS 3

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

Preparing the destination NAS

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

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

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

Data and Settings	After NAS Migration
Services	Only services supported by the destination NAS are available.
Multimedia features	Some multimedia features are disabled by default.

Migrating a NAS

Important

Before performing NAS migration, ensure that you understand all requirements and possible changes after migration.

For details see the following topics:

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

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

Important

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

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

6. Troubleshooting

This chapter describes basic troubleshooting information.

Forcing Qfinder Pro or myQNAPcloud to locate the NAS

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

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

Hot-swapping failed drives

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

RAID Type	Number of Disks	Situation
RAID 1	2	One member drive fails.
RAID 5	≥ 3	One member drive fails.
RAID 6	≥ 4	One or two member drives fail.
RAID 10	≥ 4 (Must be an even number)	One or two member drives in two different pairs fail. • One member drive fails. • Two member drives in two different pairs fail.
RAID 50	≥ 6	One disk per subgroup fails.
RAID 60	≥ 8	Two disks per subgroup fail.
Triple Mirror	Multiple of 3. (For example, 3, 6, 9, 12 disks and so forth.)	One or two member drives fail.
RAID-TP	≥ 5	One, two, or three member drives fail.

1. Log on to QuTS hero.
2. Go to **Main Menu > Storage Manager > Disks**.
3. Locate the failed drive.
4. Prepare a new drive with a capacity that is the same as or larger than the failed drive.
5. Remove the failed drive from the device.
6. Wait for 20 seconds or until the device beeps twice.
7. Remove the failed drive from the drive tray.
8. Insert the new drive into the drive tray.
9. Install the new drive.
The NAS beeps twice.
10. Go to **Main Menu > Storage Manager > Storage Space**.
11. Locate the storage pool that contains the new drive and then verify that the status is Rebuilding.

Recovering unintentionally removed healthy drives

The NAS supports exclusive RAID recovery technology to recover failed RAID groups from unintentional disconnection or removal of drives. Users can recover an inactive RAID 1, RAID 5, RAID 6, RAID 10, RAID 50, RAID 60, Triple Mirror, or RAID-TP group from degraded mode.

RAID Type	RAID Recovery Support	Number of Disks	Disk Failure Tolerance
RAID 0	Yes	≥ 2	N/A
RAID 1	Yes	2	1
RAID 5	Yes	≥ 3	1
RAID 6	Yes	≥ 4	2
RAID 10	Yes	≥ 4 (Must be an even number)	One disk per subgroup fails.
RAID 50	Yes	≥ 6	One disk per subgroup fails.
RAID 60	Yes	≥ 8	Two disks per subgroup fail.

RAID Type	RAID Recovery Support	Number of Disks	Disk Failure Tolerance
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://www.qnap.com/download
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/status
Downloads	https://www.qnap.com/download
QNAP Community	https://community.qnap.com
QNAP Accessories Store	https://accessory.qnap.com

7. Glossary

Cloud Key

Unique 8-digit code assigned to each NAS device

myQNAPcloud Link

Enables you to access QNAP devices 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 devices in your local area network

QuTS hero

QNAP NAS operating system featuring ZFS file system

8. Notices

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

Limited warranty

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Version 3, 29 June 2007

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The precise terms and conditions for copying, distribution and modification follow.

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2. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not

part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

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- b.** Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

- c. Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
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- e. Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

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END OF TERMS AND CONDITIONS

CE notice



This device complies with CE Compliance Class B.

UKCA notice



This device complies with the UKCA requirements for products sold in Great Britain.

FCC notice

FCC Class B Notice



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

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

Note

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

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

Important

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

VCCI notice

VCCI-B

BSMI notice

SJ/T 11364-2006



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壳体	0	0	0	0	0	0
显示	0	0	0	0	0	0
印刷电路板	0	0	0	0	0	0
金属螺帽	0	0	0	0	0	0
电缆组装	0	0	0	0	0	0
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