

The QNAP logo is displayed in white, bold, uppercase letters within a blue rounded rectangular box in the top-left corner of the page.

TS-h1283XU-RP

User Guide

A decorative graphic at the bottom of the page features a complex network of interconnected nodes and lines, transitioning from light blue to dark blue, with some nodes highlighted in white and others in various shades of blue and red.

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1. Important Information

Original Packaging

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

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

Hardware Defects

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

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

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

Safety information

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

General Instructions

- The device should be stored in a secure location with restricted access, controlled through the use of a tool, lock and key, or any means of security.
- Only qualified, skilled, and authorized persons with knowledge of all restrictions, safety precautions, and installation and maintenance procedures should have physical access to the device.

WARNING



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

WARNING



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.

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.

Rail Kits

Rackmount models may require rail kits for installation onto a server rack or cabinet.

To ensure equipment and personal safety, please carefully read the installation instructions for your rail kit before you install the rail kit and mount your device.

To check if your device is a rackmount unit, see the hardware specification table.

WARNING

- When the rail kit is installed on the server rack, do not fully extend and unlatch the rails except when mounting or unmounting a device.
- Leaving the rails fully extended out and unlatched may cause heavy equipment to fall. This can cause equipment damage and severe or even fatal injuries.
- Before you prepare the rails for device mounting or unmounting, please carefully read and ensure you understand the installation instructions.
- Do not place any objects or add any extra load onto the device or rails when mounting or unmounting a device.
- When mounting a device, slide the device all the way into the server rack to fully latch the rails and secure the device to the server rack.

2. Product Overview

This chapter provides basic information about the QNAP TS-hx83XU-RP NAS.

About the TS-hx83XU-RP

Powered by Intel® Xeon® E-2236 processor, the TS-hx83XU-RP is an enterprise NAS that runs on QNAP's latest QuTS hero operating system. The brand new QuTS hero operating system optimizes QuTS hero applications on the powerful ZFS file system. The TS-hx83XU-RP supports different disk storage configurations to better meet your virtualization and data storage needs. It also features four Long-DIMM memory slots that can scale up to 128 GB of memory, expansion card slots, and various input/output (I/O) ports for better scalability and flexibility.

Hardware Specifications

Tip

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

Ordering P/N	Memory	Power supply
TS-h1283XU-RP-E2236-32G	32 GB	Redundant
TS-h1283XU-RP-E2236-128G	128 GB	Redundant
TS-h1283XU-RP-E2136-32G	32 GB	Redundant
TS-h1283XU-RP-E2136-128G	128 GB	Redundant

Component	TS-h1283XU-RP-E2236-32G	TS-h1283XU-RP-E2236-128G
Processor		
CPU	Intel® Xeon® E Series	
Cores/Threads	6 cores/12 threads	
Architecture	x86 64-bit	
Encryption engine	AES-NI	
Memory		

Component	TS-h1283XU-RP-E2236-32G	TS-h1283XU-RP-E2236-128G
Pre-installed memory	32 GB RAM: 2 x 16 GB UDIMM DDR4 ECC	128 GB RAM: 4 x 32 GB UDIMM DDR4 ECC
Memory slots	4 x Long-DIMM DDR4 <div style="background-color: #fff9c4; padding: 10px; margin-top: 10px;"> <p>Important</p> <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. </div>	
Maximum memory	128 GB: 4 x 32 GB	
Flash memory	5 GB (dual-boot OS protection)	
Storage		
Drive bays	12 x 3.5-inch SATA 6 Gbps <div style="background-color: #fff9c4; padding: 10px; margin-top: 10px;"> <p>Tip</p> <p>The drive bays are backward compatible with SATA 3 Gbps drives.</p> </div>	
Drive compatibility	3.5-inch bays: <ul style="list-style-type: none"> • 3.5-inch SATA hard disk drives • 2.5-inch SAS hard disk drives • 2.5-inch SATA solid-state drives 	
SSD cache acceleration support	3.5-inch drive bays: 1 to 12	
Hot-swapping	The device supports hot-swapping drives except for SSD cache drives.	
Network		
10 Gigabit network interface	<ul style="list-style-type: none"> • 2 x 10GbE SFP+ SmartNIC • 2 x 10GBase-T RJ45 	

Component	TS-h1283XU-RP-E2236-32G	TS-h1283XU-RP-E2236-128G
Gigabit network interface	4 x GbE RJ45	
External I/O Ports & Expansion Slots		
PCIe slots	<ul style="list-style-type: none"> • 1 x PCIe Gen 2.0 x4 • 2 x PCIe Gen 3.0 x4 • 1 x PCIe Gen 3.0 x8 <div style="background-color: #ffffcc; padding: 10px; margin-top: 10px;"> <p>Tip</p> <ul style="list-style-type: none"> • Two of the PCIe slots are preinstalled with 10GbE network adapters. For details, see Replacing Memory Modules. • For the list of compatible expansion cards, go to https://www.qnap.com/compatibility. </div>	
USB ports	<ul style="list-style-type: none"> • 2 x USB 3.2 Gen 2 10Gbps Type-C • 4 x USB 3.2 Gen 2 10Gbps Type-A 	
Interface		
Buttons	<ul style="list-style-type: none"> • Power • Reset 	
Dimensions		
Form factor	2U Rackmount	
Dimensions (H x W x D)	88.3 x 482 x 562 mm (3.48 x 18.98 x 22.13 in)	
Net weight	11.75 kg (25.90 lbs)	
Others		

Component	TS-h1283XU-RP-E2236-32G	TS-h1283XU-RP-E2236-128G
Rail compatibility	RAIL-B02	
	<p>Note</p> <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 http://shop.qnap.com. • You can find installation information in the rail kit package. 	
Power supply unit	TS-hx83XU-RP: 2 x 300W, 100-240V AC, 50/60Hz	
System battery	CR2032 lithium battery (3V, 225 mAh)	
	<p>Important</p> <p>Dispose of used batteries according to local regulations or the instructions of the battery manufacturer.</p>	
Sound level	40.6 db(A)	
	<p>Note</p> <p>The sound level was tested at a bystander position, which is within one meter of the NAS. The test NAS operated at low speed with the maximum number of drives installed.</p>	
Fans	System: 2 x 60mm, 12V DC fans	
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) 	

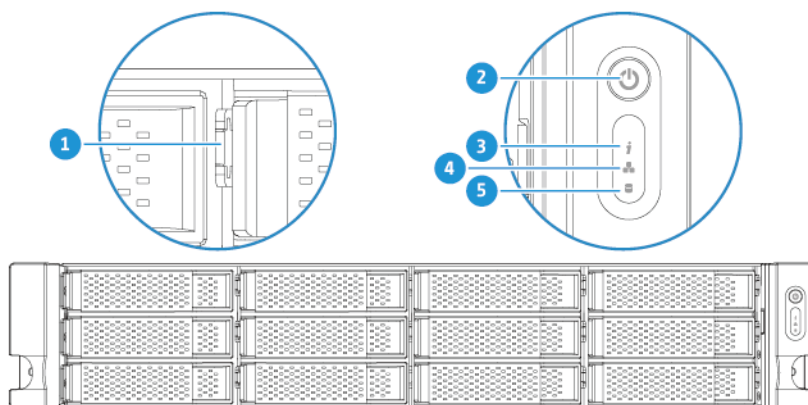
Package Contents

Item	Quantity
TS-hx83XU-RP	1
Power cord	2

Item	Quantity
Ethernet cable	<ul style="list-style-type: none"> • 2 x 1GbE (black Cat5e) • 2 x 10GbE (blue Cat6a)
Screws for 2.5-inch drives	36
Screws for 3.5-inch drives	48
Quick Installation Guide (QIG)	1

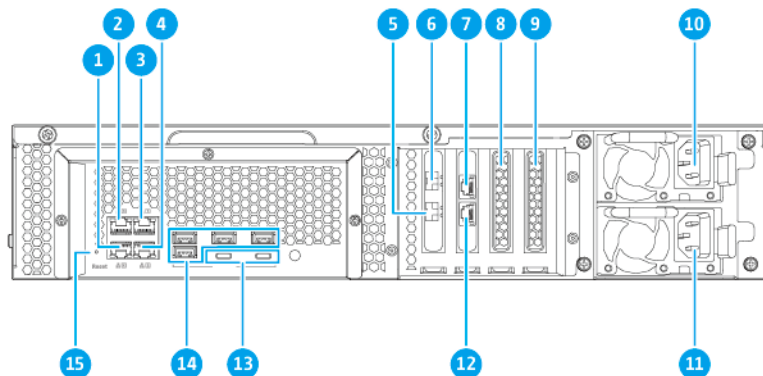
Components

Front Panel



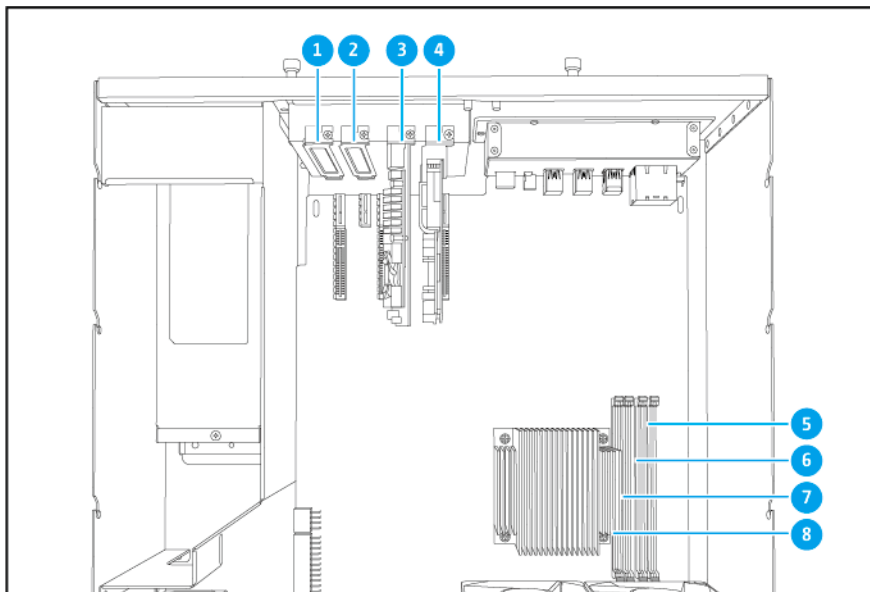
No.	Component	No.	Component
1	Drive LEDs	4	LAN LED
2	Power button	5	Expansion unit LED
3	Status LED	-	-

Rear Panel



No.	Component	No.	Component
1	Ethernet port 4 (GbE RJ45)	9	PCIe 2.0 x4 slot 1
2	Ethernet port 3 (GbE RJ45)	10	Power supply unit 1
3	Ethernet port 1 (GbE RJ45)	11	Power supply unit 2
4	Ethernet port 2 (GbE RJ45)	12	Ethernet port 5 (10GbE RJ45)
5	Ethernet port 7 (10GbE SFP+)	13	USB 3.2 Gen 2 Type-C ports
6	Ethernet port 8 (10GbE SFP+)	14	USB 3.2 Gen 2 Type-A ports
7	Ethernet port 6 (10GbE RJ45)	15	Reset button
8	PCIe 3.0 x8 slot 2	-	-

System Board



No.	Component	No.	Component
1	PCIe 2.0 x4 slot 1	5	Memory slot 1 (Channel B, DIMM 2)
2	PCIe 3.0 x8 slot 2	6	Memory slot 2 (Channel B, DIMM 1)
3	PCIe 3.0 x4 slot 3	7	Memory slot 3 (Channel A, DIMM 2)
	<p>Note</p> <p>A dual-port 10GBase-T RJ45 expansion card is installed on this PCIe slot.</p>		
4	PCIe 3.0 x4 slot 4	8	Memory slot 4 (Channel A, DIMM 1)
	<p>Note</p> <p>A dual-port 10 GbE SFP+ expansion card is installed on this PCIe slot.</p>		

Drive Numbering



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 in [Safety Information](#) carefully before setting up the NAS or installing NAS components.

- 1.** Place your NAS device in an environment that meets the requirements.
For details, see [Installation Requirements](#).
- 2.** Optional: Replace memory modules.
For details, see [Replacing Memory Modules](#).
- 3.** Optional: Replace expansion cards.
For details, see [Replacing Expansion Cards](#).
- 4.** Install the drives.
For details, see the following topics:
 - [Installing 3.5-inch Hard Drives on 3.5-inch Trays](#)
 - [Installing 2.5-inch Hard Drives or Solid-State Drives on 3.5-inch Trays](#)
- 5.** Connect the power cord and all applicable cables.
- 6.** Power on the NAS.
- 7.** Install QuTS hero.
For details, see [QuTS hero Installation](#).
- 8.** Log on to QuTS hero.

3. Installation and Configuration

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

Hardware Installation

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

Removing the Case Cover

Warning

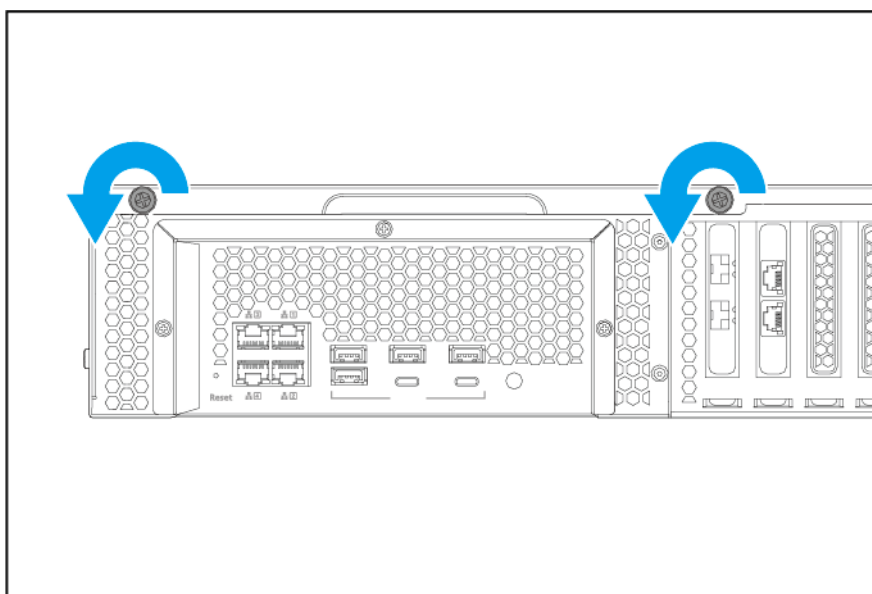


Moving fan blades: Keep your hands and other body parts away from moving fan blades.



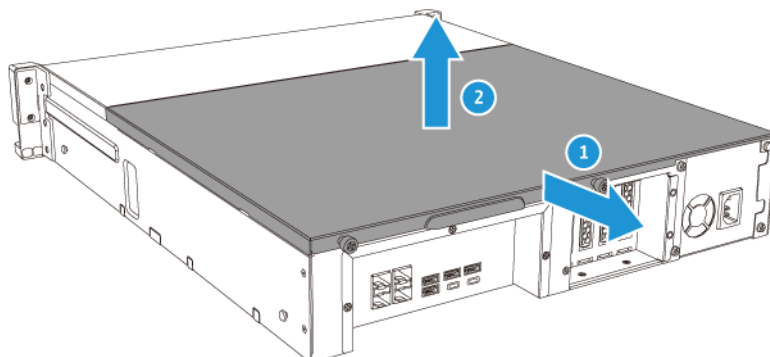
Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
 - a. Loosen the screws.



- b. Slide the cover back.

- c. Lift the cover off the NAS.



Attaching the Case Cover

Warning



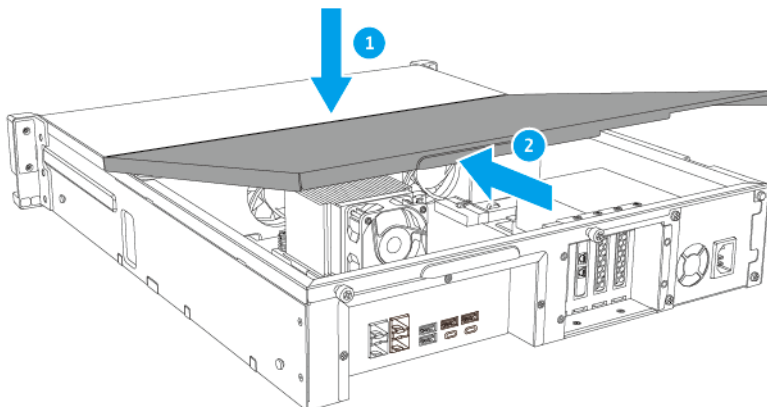
Moving fan blades: Keep your hands and other body parts away from moving fan blades.



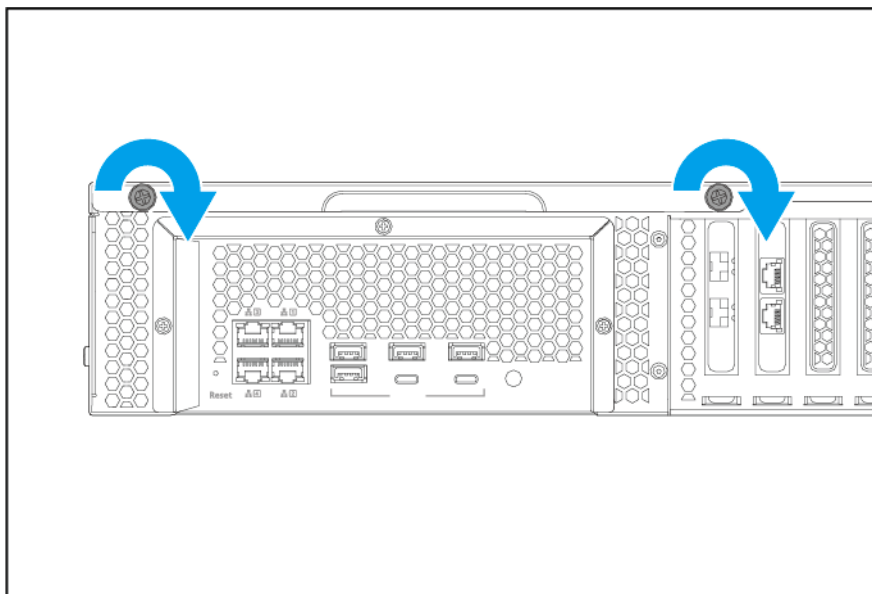
Other moving components: Keep your hands and other body parts away from other moving components.

1. Place the case cover on the NAS.

- Slide the cover forward.



- Tighten the screws.



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

Drive Installation

The TS-hx83XU-RP is compatible with 3.5-inch and 2.5-inch hard drives, and 2.5-inch solid-state drives.

Installing 3.5-inch Hard Drives on 3.5-inch Trays

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

Warning

- Installing a drive and installing QuTS hero deletes all data on the drive.

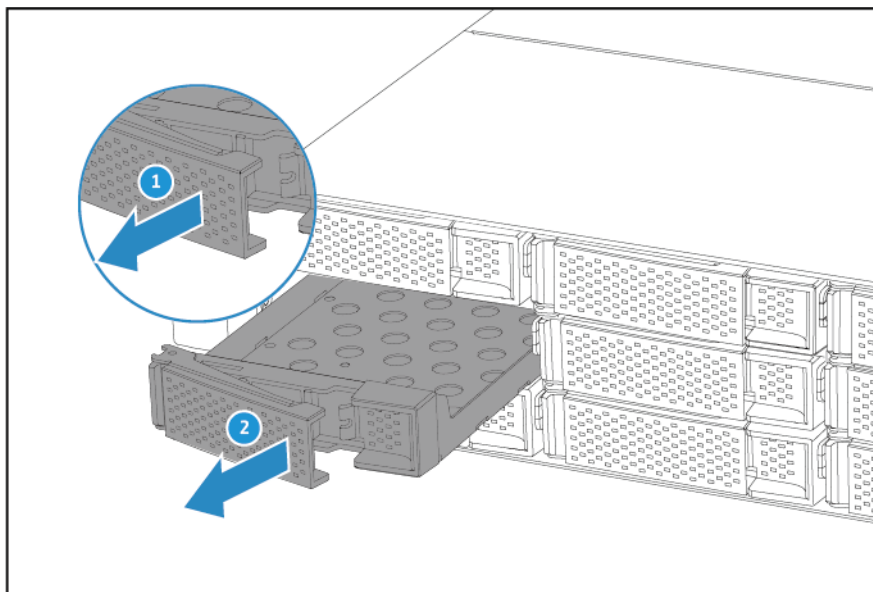


Moving fan blades: Keep your hands and other body parts away from moving fan blades.



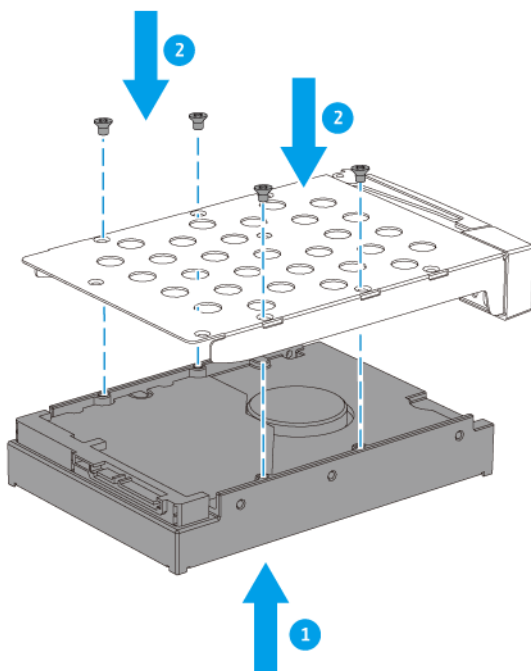
Other moving components: Keep your hands and other body parts away from other moving components.

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



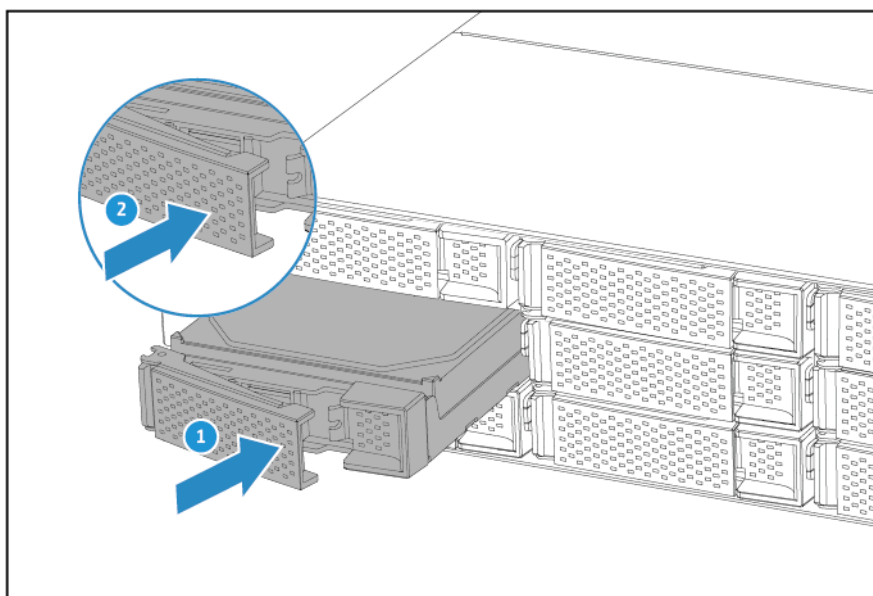
3. Install a drive on the tray.
 - a. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.

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

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

Warning

- Installing a drive and installing QuTS hero deletes all data on the drive.

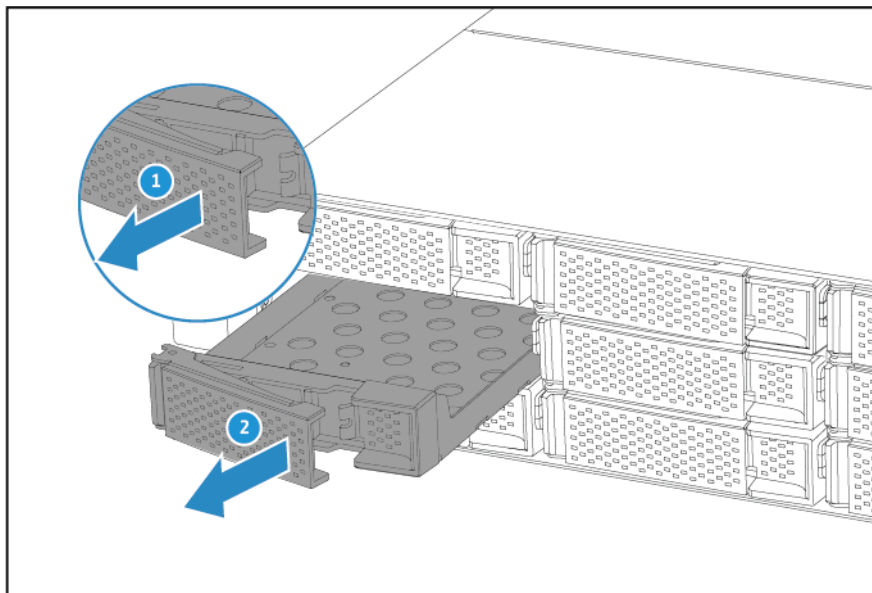


Moving fan blades: Keep your hands and other body parts away from moving fan blades.



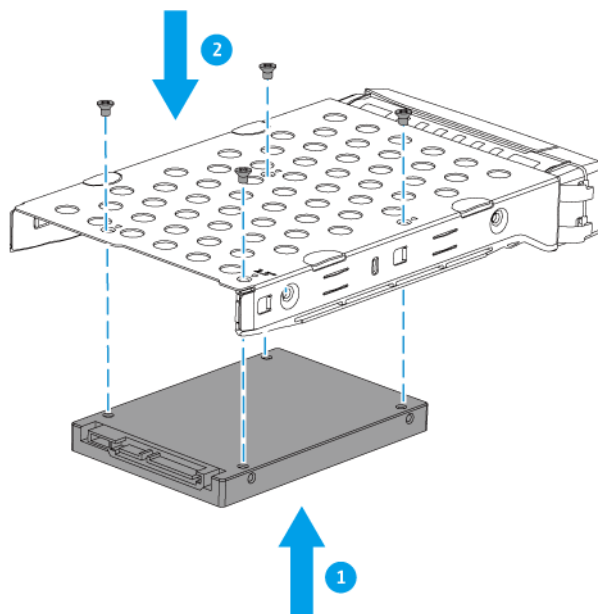
Other moving components: Keep your hands and other body parts away from other moving components.

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

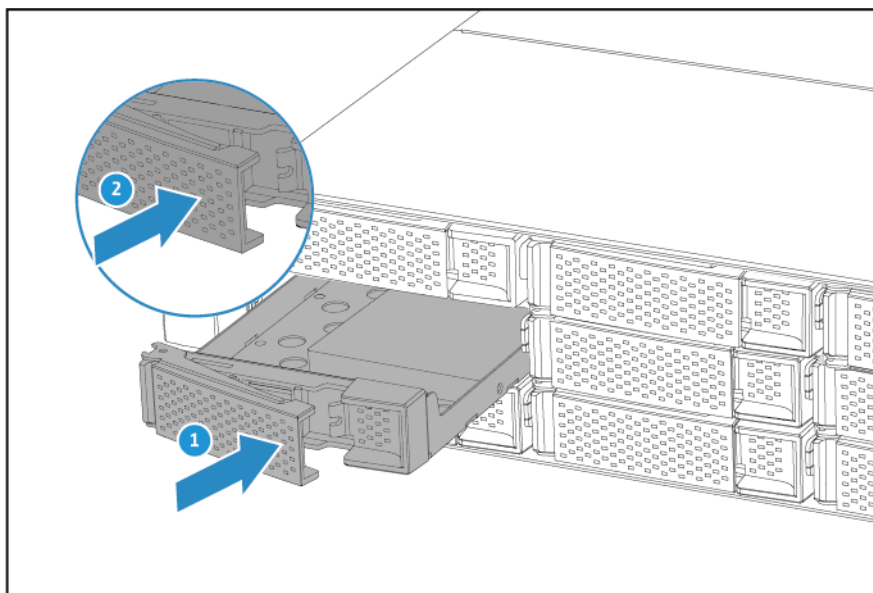


3. Install a drive on the tray.
 - a. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.

- 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.

Replacing Memory Modules

The NAS has four memory slots. You can increase the memory capacity of the NAS by upgrading the memory module.

Use only QNAP modules of the same type and capacity to maintain system performance and stability. You can purchase QNAP memory modules from authorized resellers.

Important

QNAP recommends installing modules in pairs.

- Ensure that each pair uses identical modules.
- Install the pairs in sequence and follow the assigned slots for each pair.
- Install memory modules in groups of two or four. When installing two memory modules, install the memory in slots 1 and 3. When installing four modules, install the memory in slots 1, 3, 2, and 4.

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

Warning



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



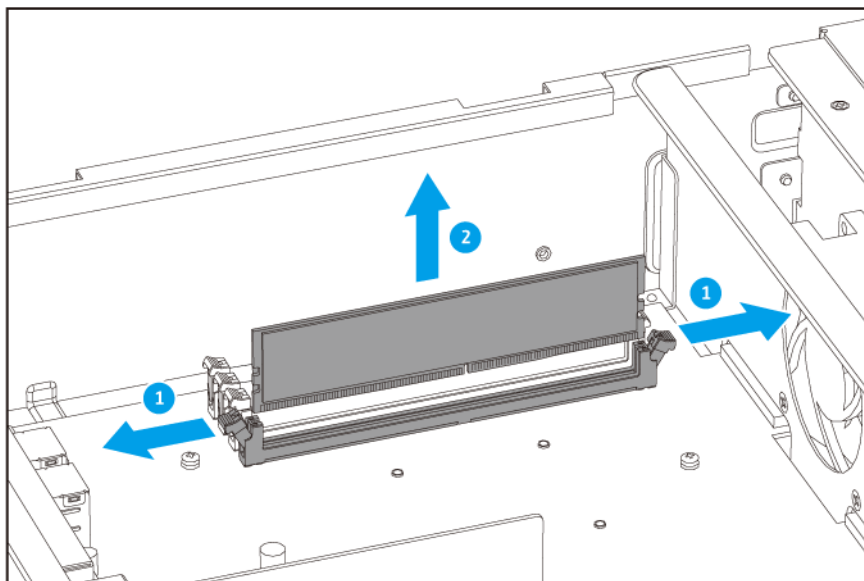
• **Other moving components:** Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
For details, see [Removing the Case Cover](#).
5. Remove an existing module.
 - a. Push the retention clips outward simultaneously to release the module.

Warning

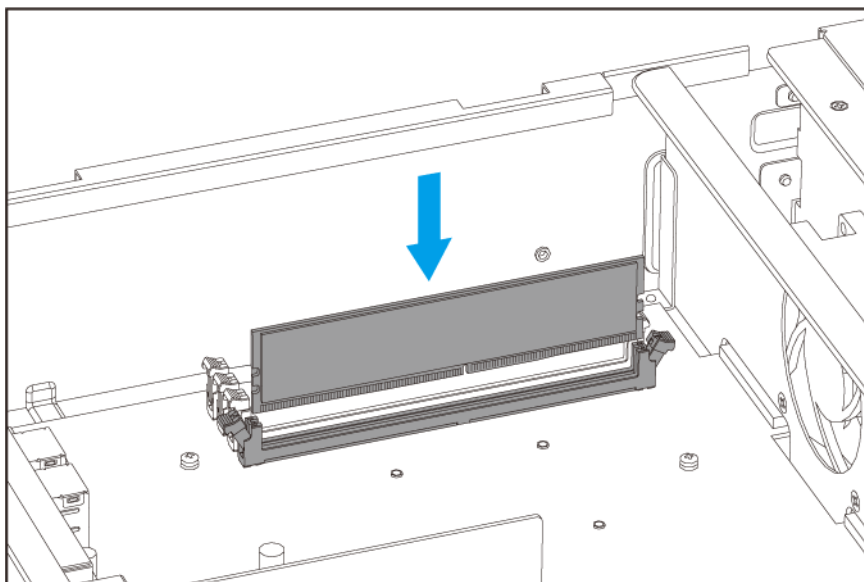
Attempting to remove a module that is not completely released may damage the module and the motherboard.

- b.** Hold the module by the edges.



- 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.
For details, see [Attaching the Case Cover](#).
- 8.** Connect all cables and external attachments.

9. Power on the NAS.
10. Verify that the module is recognized by the NAS.
 - a. Log in to QuTS hero as administrator.
 - b. Go to **Control Panel > System > System Status > Hardware Information**.
 - c. Check the value for **Total memory**.

Replacing Expansion Cards

The TS-hx83XU-RP supports selected expansion cards, some of which require QNAP low-profile PCIe brackets. QNAP-branded expansion cards purchased from the company website are shipped with the brackets necessary to fit all QNAP NAS models.

Note

A dual-port 10Gbase-T RJ45 network expansion card is pre-installed on PCIe 3.0 slot 3, and a dual-port 10 GbE SFP+ network expansion card is pre-installed on PCIe 3.0 slot 4.

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.

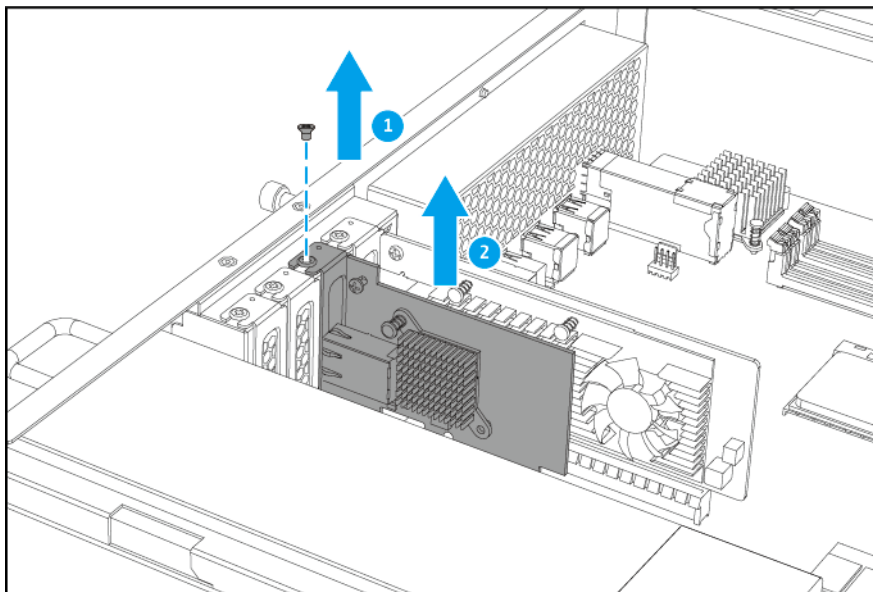
1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
For details, see [Removing the Case Cover](#).

Warning

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

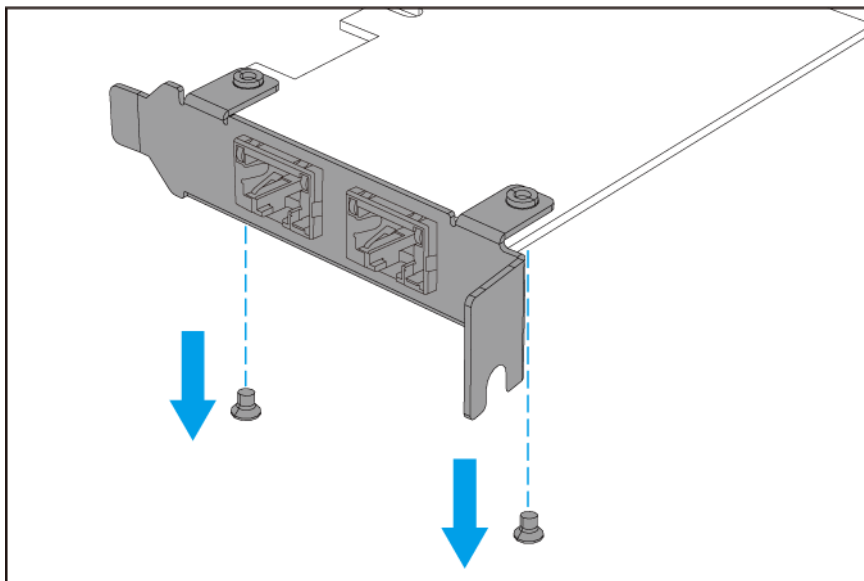
5. Remove the existing expansion card.
 - a. Remove the screw that secures the PCIe bracket to the chassis.
 - b. Hold the expansion card by the edges.

- c.** Carefully pull the card out of the slot.



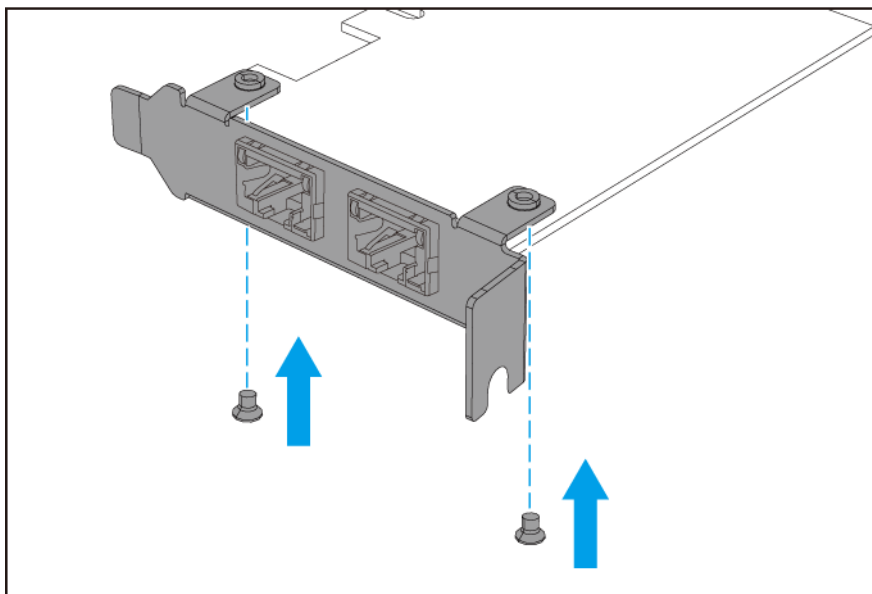
- 6.** Optional: Attach the QNAP bracket to the expansion card.

- a.** Remove all screws of the existing bracket.
b. Carefully pull the bracket away from the card.



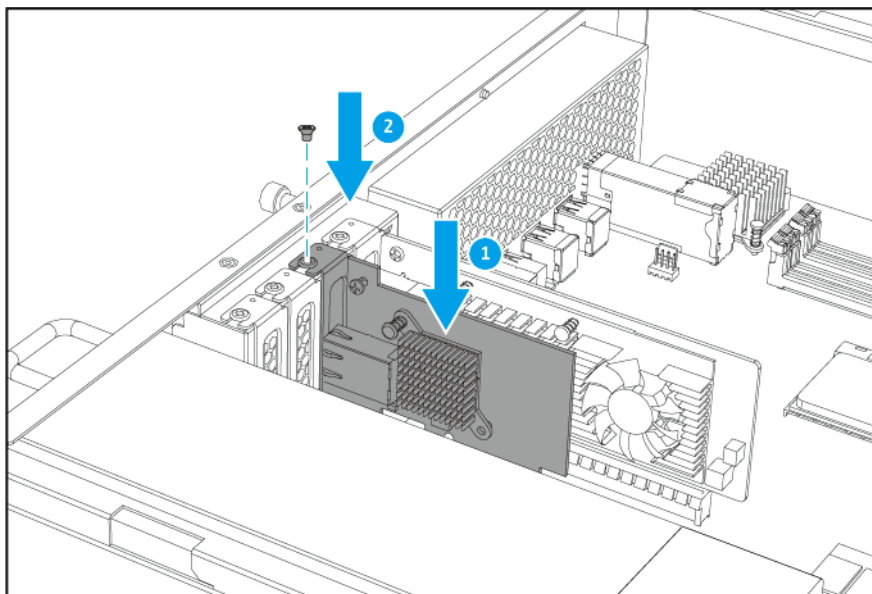
- c.** Attach the QNAP bracket to the card using the same screws.

- d. Verify that the bracket does not move.



7. Optional: Install the expansion card.

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



8. Attach the case cover.
For details, see [Attaching the Case Cover](#).
9. Connect all cables and external attachments.
10. Connect the power cord to the electrical outlet.
11. Power on the NAS.

Hot-Swapping Redundant Power Supplies

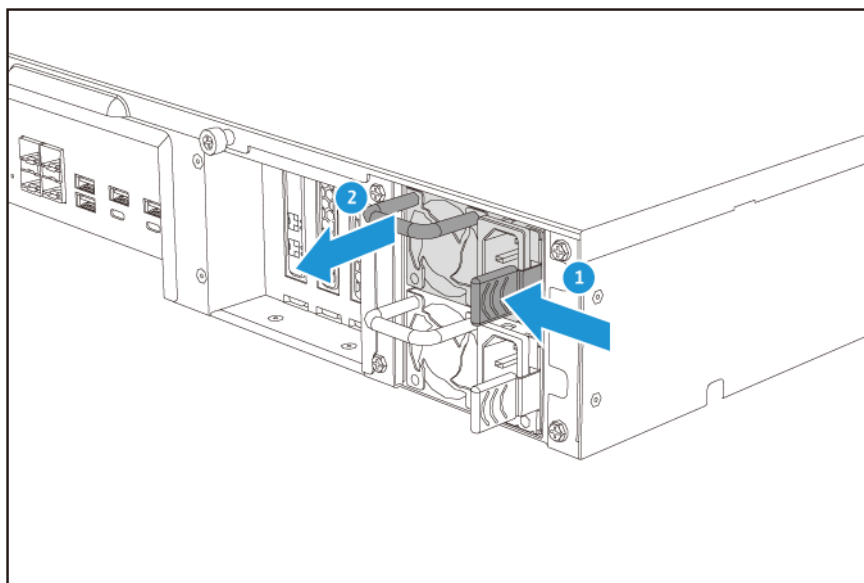
NAS devices with redundant power supply units (PSUs) support hot-swapping.

Warning

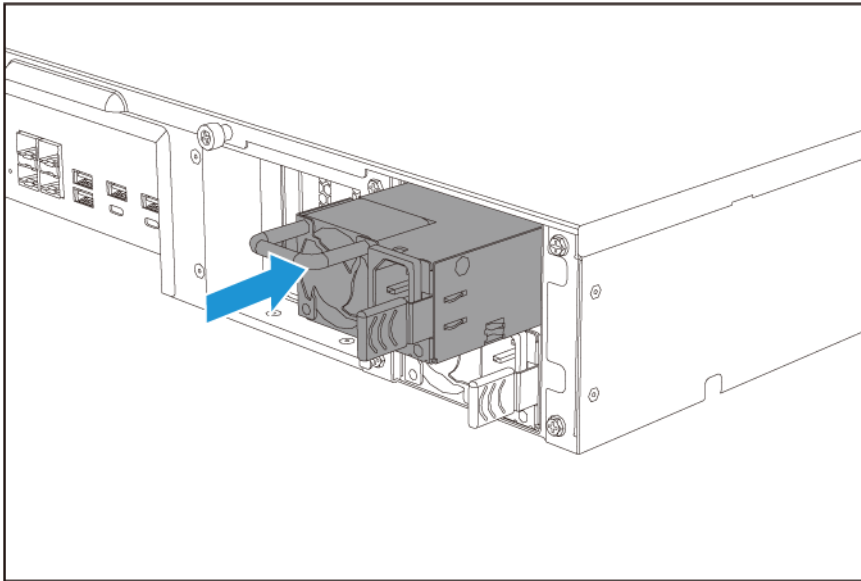


The NAS may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords before installing or replacing system components.

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet and the PSU that you are replacing.
3. Firmly press the latch toward the handle and then pull the PSU out.



4. Insert the new PSU.



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

6. Power on the NAS.

7. Enable alerts for PSU failures.

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

Rail Kits

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>.

The TS-hx83XU-RP is compatible with the following rail kit models:

- RAIL-B02

You can find installation information in the rail kit package.

Expansion Unit Installation

The TS-hx83XU-RP supports SAS expansion units, USB expansion units, and SATA JBOD expansion units. For details, please see table below.

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

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

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

Expansion Unit Type	Description	Required Accessories	
REXP-1620U-RP	<ul style="list-style-type: none"> • Uses a SAS 12 Gbps (SFF-8644) interface 	<ul style="list-style-type: none"> • SAS-12G2E storage expansion card • mini-SAS SFF-8644 cable • RAIL-A03-57 	
REXP-1220U-RP	<ul style="list-style-type: none"> • Supports SAS/SATA HDD/SSD 		
REXP-1610U-RP	<ul style="list-style-type: none"> • Uses a SAS 6 Gbps (SFF-8644) interface 		
REXP-1210U-RP	<ul style="list-style-type: none"> • Supports SATA/HDD/SSD 		
TL-D400S	<ul style="list-style-type: none"> • Uses a SAS 6 Gbps (SFF-8088) interface • Supports SATA/HDD/SSD 	<ul style="list-style-type: none"> • 1 x SFF-8088 connector cable • QXP-400eS-A1164 host bus adapter 	
TL-D800S		<ul style="list-style-type: none"> • 2 x SFF-8088 connector cables • QXP-800eS-A1164 host bus adapter 	
TL-D1600S		<ul style="list-style-type: none"> • 4 x SFF-8088 to SFF-8644 connector cables • QXP-1600eS host bus adapter 	
TL-R400S		<ul style="list-style-type: none"> • 1 x SFF-8088 connector cable • QXP-400eS-A1164 host bus adapter • RAIL-B02 	
TL-R1200S-RP		<ul style="list-style-type: none"> • 3 x SFF-8088 to SFF-8644 connector cables • QXP-1600eS host bus adapter • RAIL-B02 	
TR-002		<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA 	USB 3.2 Gen 2 Type-A to Type-C cable
TR-004		<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 1 Type-C interface 	USB 3.2 Gen 1 Type-A to Type-C cable

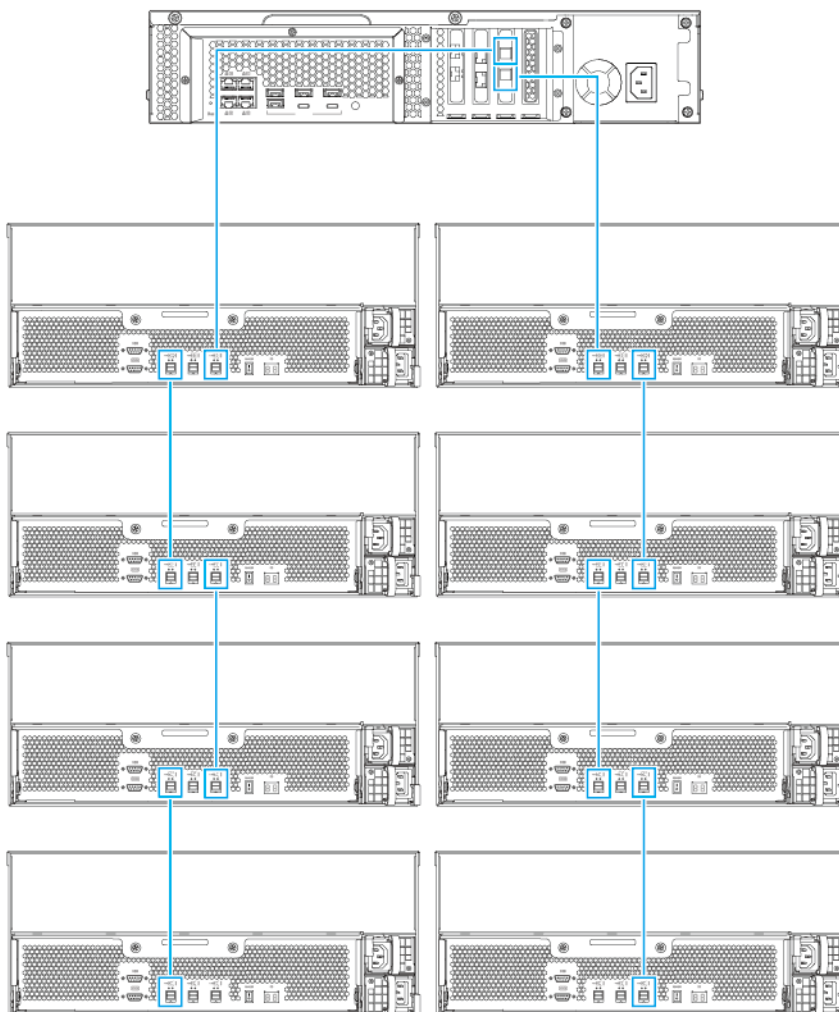
Expansion Unit Type	Description	Required Accessories
TR-004U	<ul style="list-style-type: none"> Supports SATA 	<ul style="list-style-type: none"> USB 3.2 Gen 1 Type-A to Type-C cable RAIL-B02
TL-D800C	<ul style="list-style-type: none"> Uses a USB 3.2 Gen 2 Type-C interface Supports SATA 	USB 3.2 Gen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

Connecting SAS Expansion Units

To connect the TS-hx83XU-RP to SAS expansion units, a storage expansion card must be installed in the NAS. For required accessories details, see [Expansion Unit Installation](#).

1. Install a storage expansion card on the PCIe slot.
For details, see [Replacing Expansion Cards](#).

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



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

Connecting SATA JBOD Expansion Units

To connect the TS-hx83XU-RP to SATA JBOD expansion units, a host bus adapter must be installed on the NAS. For required accessories details, see [Expansion Unit Installation](#).

1. Power off the NAS.

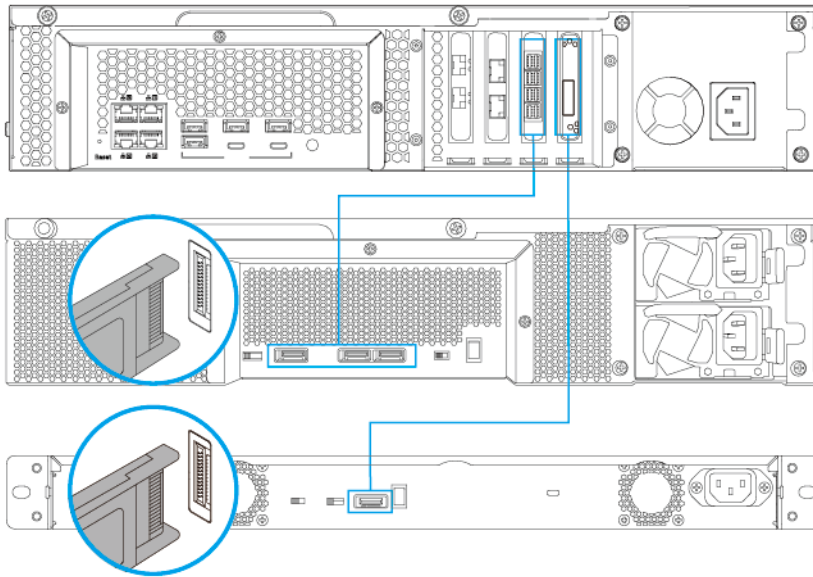
2. Install a host bus adapter on the PCIe slot.

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 [Replacing Expansion Cards](#).

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



Note

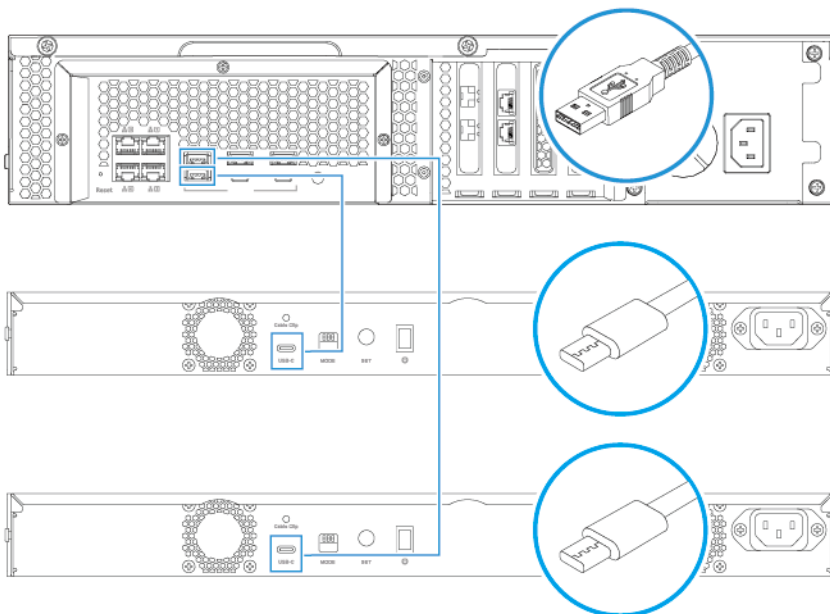
This image shows connecting the NAS to JBOD expansion units TL-R400S and TL-R1200S-RP.

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

Connecting USB Expansion Units

To connect the TS-hx83XU-RP to USB expansion units, USB Type-A to USB Type-C cables or converters are 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 3.2 Gen 1 Type-A port on the NAS.



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

QuTS hero Installation

The TS-hx83XU-RP uses the QNAP QuTS hero operating system. You can install QuTS hero using any of the following methods:

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 Installing QuTS hero 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 Installing QuTS hero Using the Cloud Key.</p>	<ul style="list-style-type: none"> • Computer or mobile device • Network cable • myQNAPcloud account • CloudKey

Installing QuTS hero Using Qfinder Pro

Warning

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

Note

You can revert to QTS operating system anytime. For details, see QuTS hero user guide.

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

Note

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

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

5. Click **Start Smart Installation Guide**.
6. Specify the following information.
 - **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
 - **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.
7. Click **Next**.
8. Specify the time zone, date, and time.

Tip

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

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

Warning

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

16. Click **Confirm**.
QuTS hero is installed.

Installing QuTS hero Using the Cloud Key

Warning

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

Note

You can revert to QTS operating system anytime. For details, see QuTS hero user guide.

1. Power on the NAS.
2. Connect the NAS to the internet.

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

- On your computer, go to <http://install.qnap.com/>.
- Scan the QR code on the NAS using a mobile device.

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

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

Note

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

The installation wizard opens in the default web browser.

5. Create an account or sign in to myQNAPcloud.

Note

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

6. Specify the myQNAPcloud device name for the NAS.

Note

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

7. Click **Next**.

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

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

9. Specify the following information.

- **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
- **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.

10. Click **Next**.

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

Tip

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

12. Click **Next**.
The **Configure the network settings** screen appears.
13. Select **Obtain an IP address automatically (DHCP)**.
You can also choose the Static IP Address configuration option to meet your networking needs.
You can only apply one network configuration method.
14. Click **Next**.
The **Cross-platform file transfer service** screen appears.
15. Select the types of devices that you will use to access shared folders on the NAS.
16. Click **Next**.
The **Summary** window appears.
17. Review the settings.
18. Click **Apply**.
A confirmation message appears.

Warning

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

19. Click **Confirm**.
QuTS hero is installed.

4. Basic Operations

This chapter describes basic NAS operations.

Power Button

Operation	User Action	Result
Power on	Press the button once.	The NAS powers on.
Power off	Press and hold the button for 1.5 seconds.	The NAS powers off.
Force power off	Press and hold the button for 5 seconds.	The NAS shuts down. <div style="background-color: #fff9c4; padding: 10px; border: 1px solid #ccc;"> <p>Important Use this method only when the NAS is unresponsive.</p> </div>

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.	<p>The following settings are reset to default:</p> <ul style="list-style-type: none"> • The <code>admin</code> account is automatically enabled. • System administrator password: For details on the default password, see this FAQ. • 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.

LEDs

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

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

LED	Status	Description
System Status	Flashes green and red alternately every 0.5 seconds	<ul style="list-style-type: none"> The drive is being formatted. The NAS is being initialized. The operating system is being updated. RAID rebuilding is in progress. Online RAID Capacity Expansion is in progress. Online RAID Level Migration is in progress.
	Red	<ul style="list-style-type: none"> The drive is invalid. The disk volume has reached its full capacity. The disk volume is about to reach its full capacity. The system fan is not functioning. An error occurred when accessing (read/write) the data. A bad sector is detected on the hard drive. The NAS is in degraded read-only mode (two member drives failed in RAID 5 or RAID 6 but the data can still be read). A hardware self-test error occurred.
	Flashes red every 0.5 seconds	The NAS is in degraded mode (one member drive failed in RAID 1, RAID 5, or RAID 6).
	Flashes green every 0.5 seconds	<ul style="list-style-type: none"> The NAS is starting up. The NAS is not configured. A drive is not formatted.
	Green	The NAS is ready.
	Off	All drives are in standby mode.
Drive	Green	The drive is ready.
	Flashes green	The drive is being accessed.
	Red	A read/write error has occurred.
	Flashes red	The drive is being located in QuTS hero.

LED	Status	Description
Expansion unit	Orange	An expansion unit is connected.
	Off	No expansion units are connected.
LAN	Orange	The NAS network link is active.
	Flashes orange	The NAS is being accessed.
	Off	There is no network link.

Audio Alert

Duration	Frequency	Description
Short beep (0.5 seconds)	1	<ul style="list-style-type: none"> The NAS is starting up. The NAS is shutting down (software shutdown). The user pressed the Reset button. The operating system was updated.
	3	The user tried to copy the NAS data to the external storage device from the front USB port, but the data cannot be copied.
Long beep (1.5 seconds)	3 (every 5 minutes)	The system fan is not functioning.
	2	<ul style="list-style-type: none"> The disk volume is about to reach its full capacity. The disk volume has reached its full capacity. The drives are in degraded mode. The user started the drive rebuilding process. A drive is plugged in or out.
	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.

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.

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</p> <p>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</p> <p>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</p> <p>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</p> <p>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.

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

Support and Other Resources

QNAP provides the following resources:

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

7. Glossary

CloudKey

Unique 8-digit code assigned to each NAS device

myQNAPcloud Link

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

myQNAPcloud

Provides various remote access services such as DDNS and myQNAPcloud Link

myQNAPcloud ID

Email address that was used to register for a myQNAPcloud account

Qfinder Pro

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

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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Back up the system periodically to avoid any potential data loss is recommended. QNAP disclaims any responsibility of all sorts of data loss or recovery.

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Version 3, 29 June 2007

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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.

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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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