

The QNAP logo is located in the top-left corner of the page. It consists of the letters "QNAP" in a bold, white, sans-serif font, set against a solid blue square background.

QNAP

TS-h1283XU-RP

User Guide

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1. Preface





About This Guide

This guide provides information on the QNAP TS-h1283XU-RP NAS and step-by-step instructions on installing the hardware. It also provides instructions on basic operations and troubleshooting information.

Audience

This document is intended for storage administrators. This guide assumes that the user is knowledgeable and qualified to install, maintain, and troubleshoot issues involving servers, server components, and storage systems. This guide also assumes that the user is trained to recognize hazards, including the appropriate actions the user needs to take to prevent personal injury and damage to data and property.

Document Conventions

Symbol	Description
	Notes provide default configuration settings and other supplementary information.
	Important notes provide information on required configuration settings and other critical information.
	Tips provide recommendations or alternative methods of performing tasks or configuring settings.
	Warnings provide information that, when ignored, may result in potential loss, injury, or even death.

2. Product Overview

This chapter provides basic information about the QNAP TS-h1283XU-RP NAS.

About the TS-h1283XU-RP

Powered by Intel® Xeon® E-2236 processor, the TS-h1283XU-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-h1283XU-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	CPU	Memory	Power supply
TS-h1283XU-RP-E2236-32G	Intel® Xeon® E-2236	32 GB	Redundant
TS-h1283XU-RP-E2236-128G	Intel® Xeon® E-2236	128 GB	Redundant

Component	TS-h1283XU-RP-E2236-32G	TS-h1283XU-RP-E2236-128G
Processor		
CPU	Intel® Xeon® E-2236	
Frequency	6-core/12-thread 3.2 GHz base/4.8 GHz burst	
Architecture	x86 64-bit	
Encryption engine	AES-NI	
Memory		
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	
	 Important <ul style="list-style-type: none"> Use only QNAP memory modules to maintain system performance and stability. For NAS devices with more than one memory slot, use QNAP modules with identical specifications. Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting. 	
Maximum memory	128 GB: 4 x 32 GB	
Flash memory	5 GB (dual-boot OS protection)	
Storage		

Component	TS-h1283XU-RP-E2236-32G	TS-h1283XU-RP-E2236-128G
Drive bays	12 x 3.5-inch SATA 6 Gbps  Tip The drive bays are backward compatible with SATA 3 Gbps drives.	
Drive compatibility	3.5-inch bays: <ul style="list-style-type: none"> • 3.5-inch SATA hard disk drives • 2.5-inch 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 Ethernet ports	<ul style="list-style-type: none"> • 2 x 10GbE SFP+ SmartNIC • 2 x 10GBase-T RJ45 	
Gigabit Ethernet ports	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  Tip <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. 	
USB ports	<ul style="list-style-type: none"> • 2 x USB 3.2 Gen2 5V/3A 10Gbps Type-C • 4 x USB 3.2 Gen2 5V/1A 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		

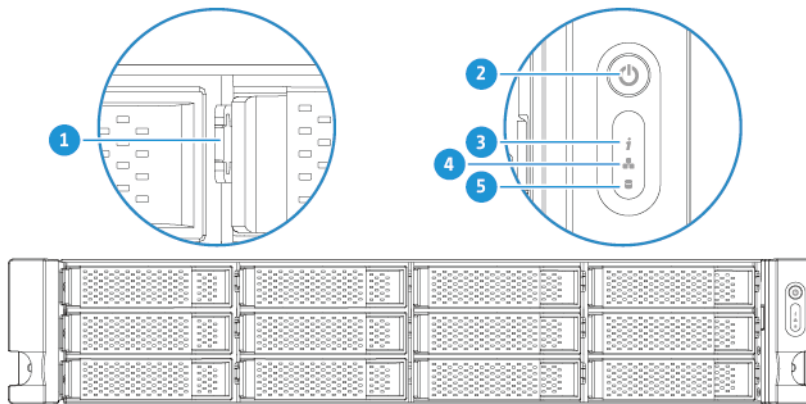
Component	TS-h1283XU-RP-E2236-32G	TS-h1283XU-RP-E2236-128G
Rail compatibility	RAIL-B02  Note <ul style="list-style-type: none"> • Rail kits are not included with the NAS and must be purchased separately. For details, contact an authorized reseller or go to http://shop.qnap.com. • You can find installation information in the rail kit package. 	
Power supply unit	TS-h1283XU-RP: 2 x 300W, 100-240V AC, 50/60Hz	
System battery	CR2032 lithium battery (3V, 225 mAh)  Important Dispose of used batteries according to local regulations or the instructions of the battery manufacturer.	
Sound level	40.6 db(A)  Note 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.	
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-h1283XU-RP	1
Power cord	2
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

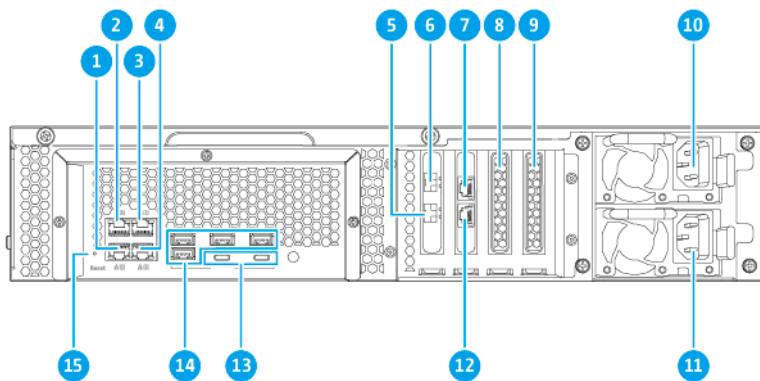
Components

Front Panel



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

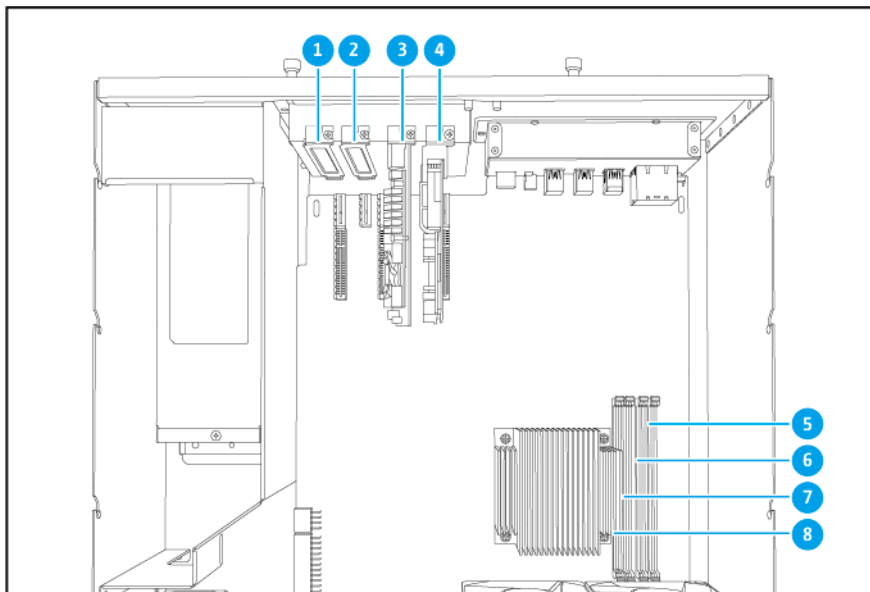
Rear Panel





No.	Component	No.	Component
1	Ethernet port 4 (GbE RJ45)	9	PCIe 2.0 x4 slot 1

No.	Component	No.	Component
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 (10GbaseT 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 (10GbaseT 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
2	PCIe 3.0 x8 slot 2	6	Memory slot 2
3	PCIe 3.0 x4 slot 3	7	Memory slot 3
	 Note A dual-port 10GBase-T RJ45 expansion card is installed on this PCIe slot.		
4	PCIe 3.0 x4 slot 4	8	Memory slot 4
	 Note A dual-port 10 GbE SFP+ expansion card is installed on this PCIe slot.		

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

Safety Information

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

General Instructions

- The NAS 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 NAS.

- To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.
- Observe electrostatic discharge (ESD) procedures to avoid potential injury or damage to components.

Power

- To reduce the risk of fire or electric shock, ensure that you only connect the power cord to a properly grounded electrical outlet.



The device 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.

System Battery

- To avoid potential battery explosion, causing injury or damage to components, ensure that you replace the existing battery with a battery of the same type.
- Dispose of used batteries properly according to local regulations or the instructions of the battery manufacturer.

Moving Parts



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



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

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

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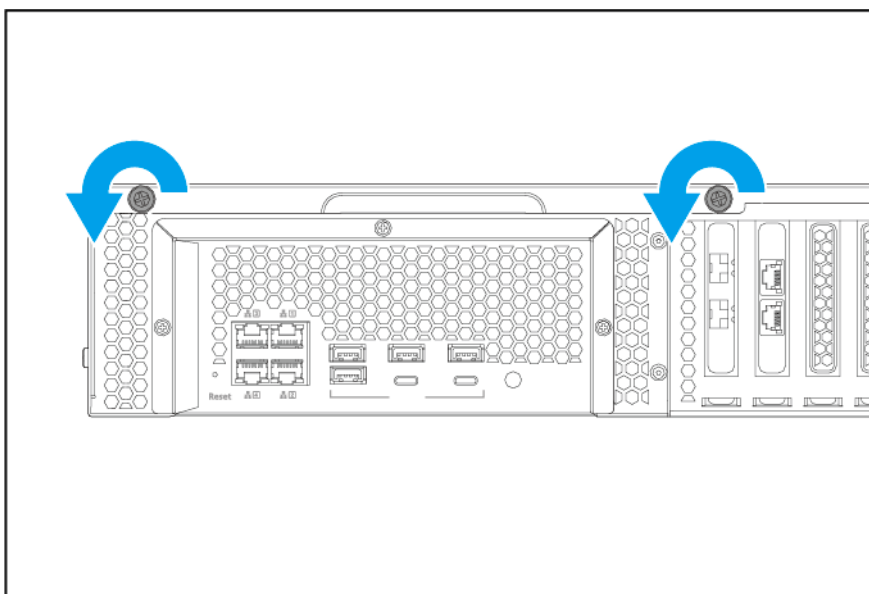
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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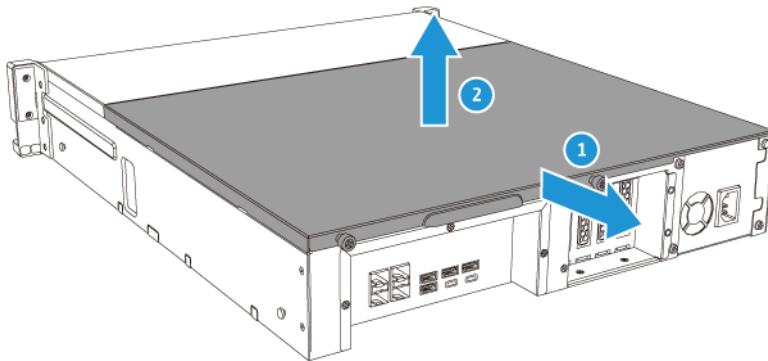


Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. 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

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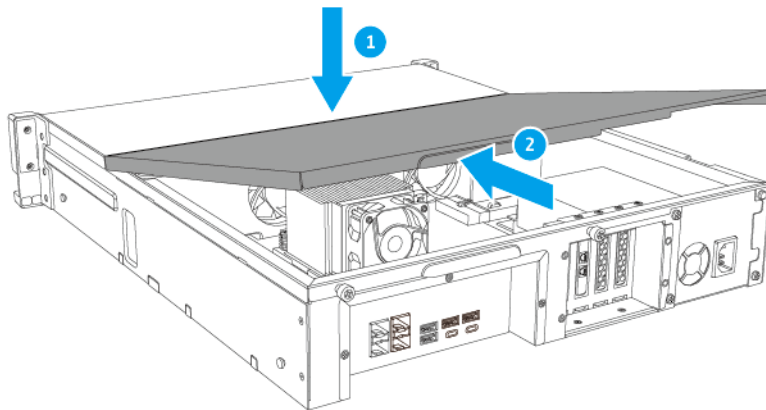
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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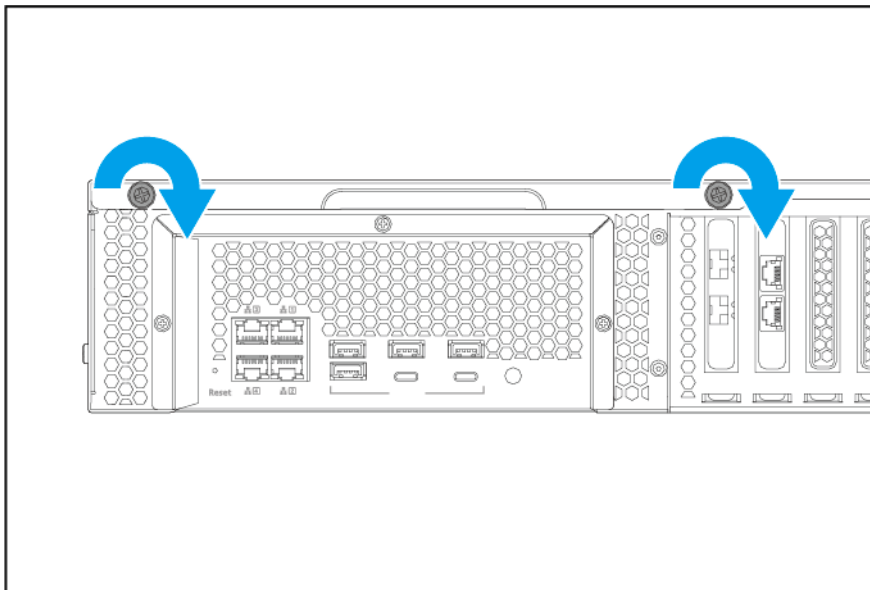


Other moving components: Keep your hands and other body parts away from other moving components.

1. Place the case cover on the NAS.
2. Slide the cover forward.



3. Tighten the screws.



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

Drive Installation

The TS-h1283XU-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.

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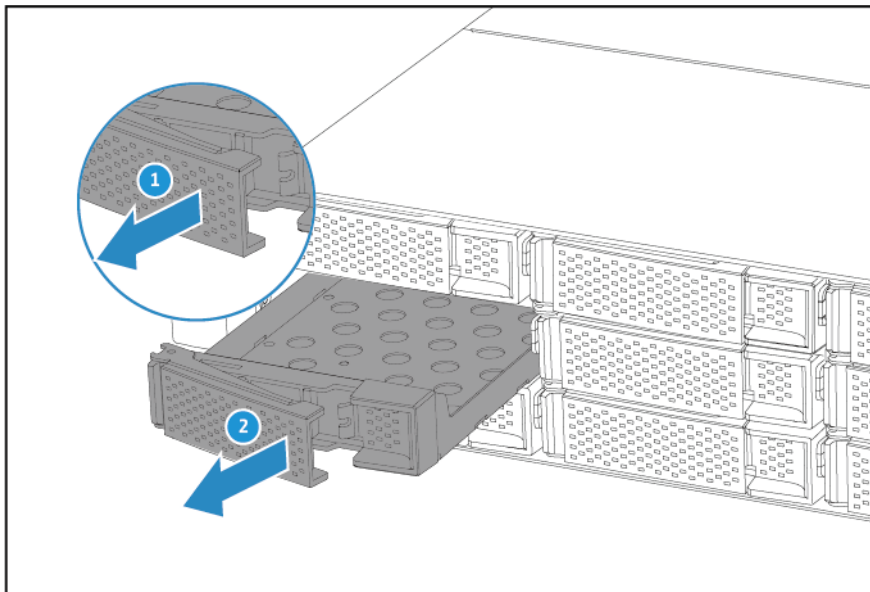
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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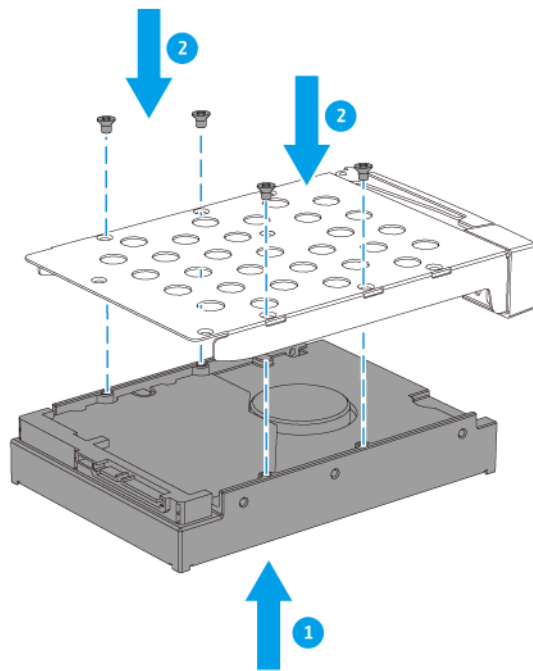


Other moving components: Keep your hands and other body parts away from other moving components.

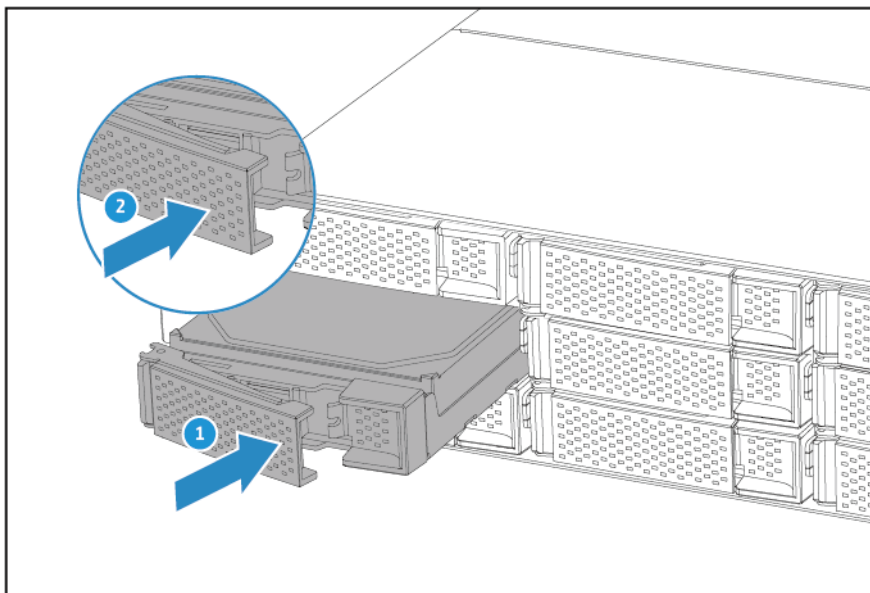
1. Power off the NAS.
2. Remove the drive tray.
 - a. Pull the handle to release the tray.
 - b. Pull the tray out.



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.

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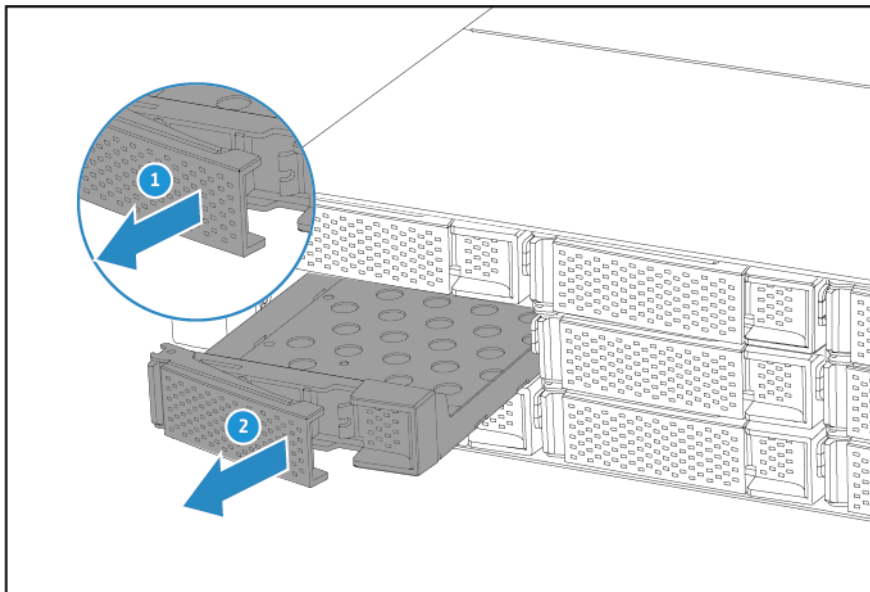
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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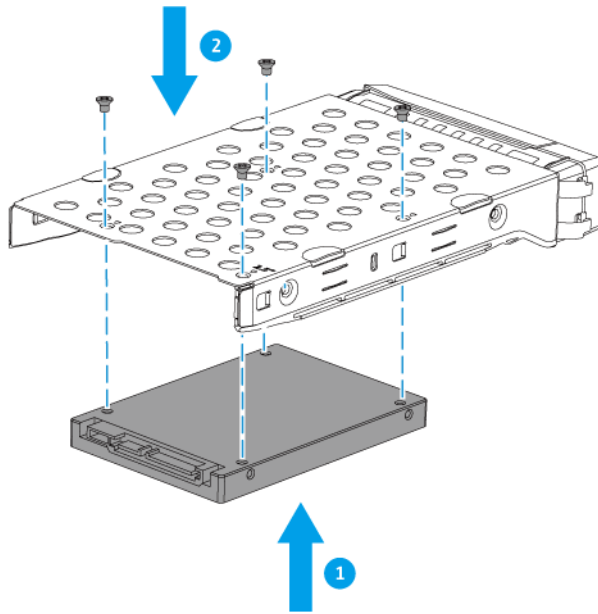


Other moving components: Keep your hands and other body parts away from other moving components.

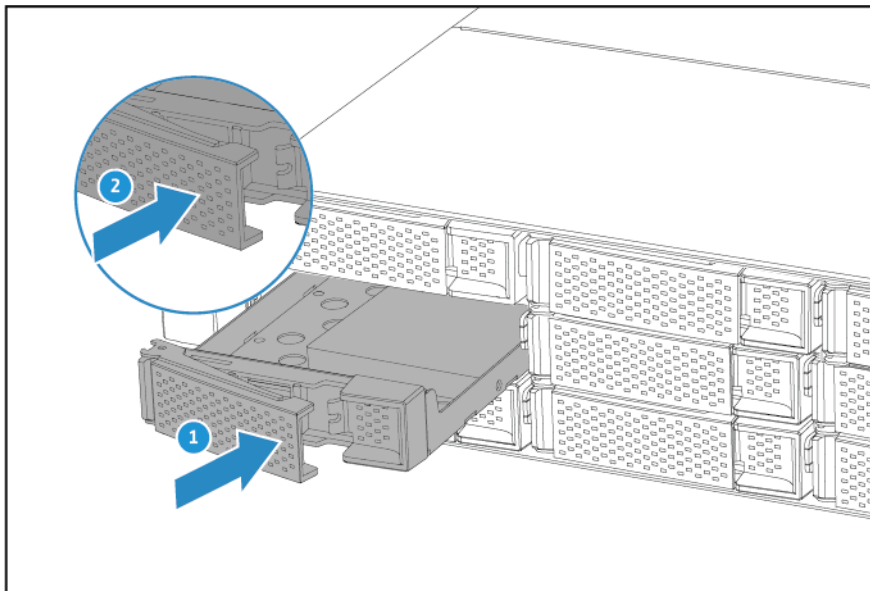
1. Power off the NAS.
2. Remove the drive tray.
 - a. Pull the handle to release the tray.
 - b. Pull the tray out.



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

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

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

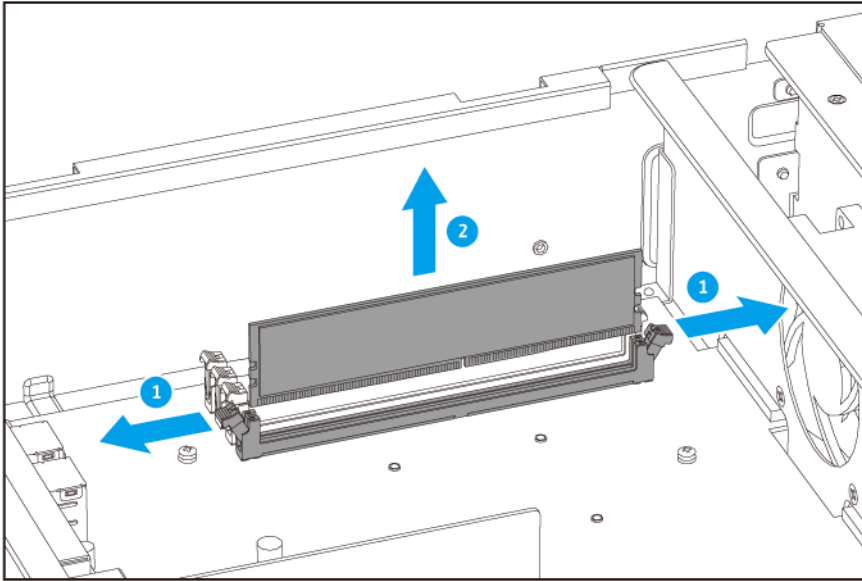
1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
For details, see [Removing the Case Cover](#).
5. Remove an existing module.
 - a. Push the retention clips outward simultaneously to release the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



Warning

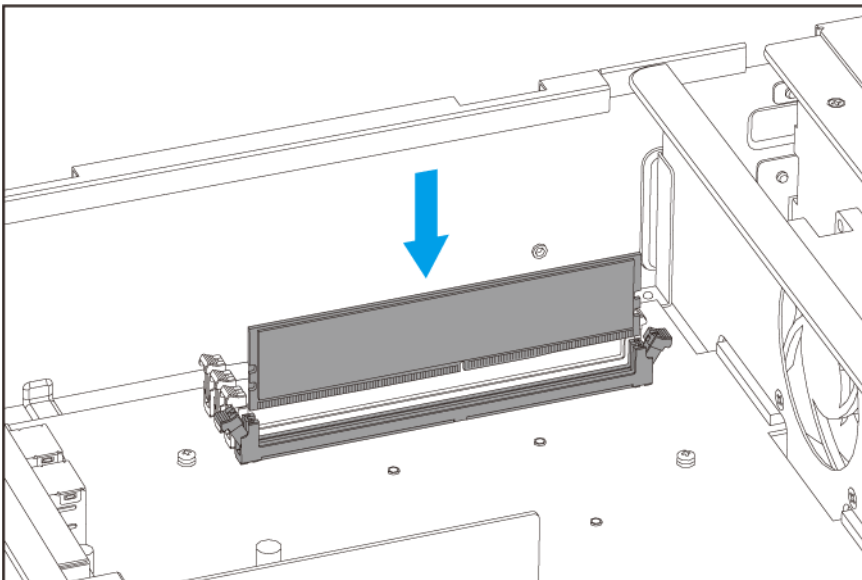
Attempting to remove a module that is not completely released may damage the module and the motherboard.

- 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-h1283XU-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

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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.

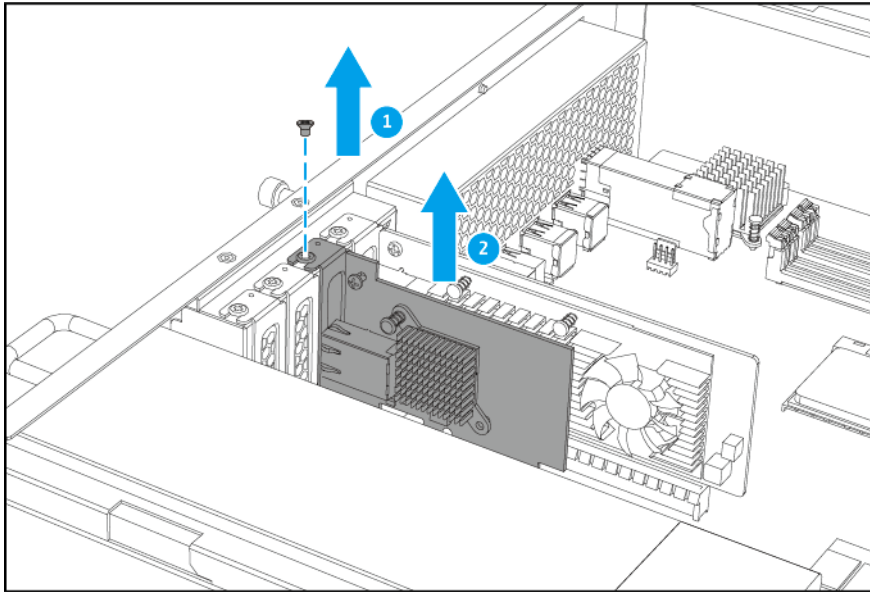
1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
For details, see [Removing the Case Cover](#).



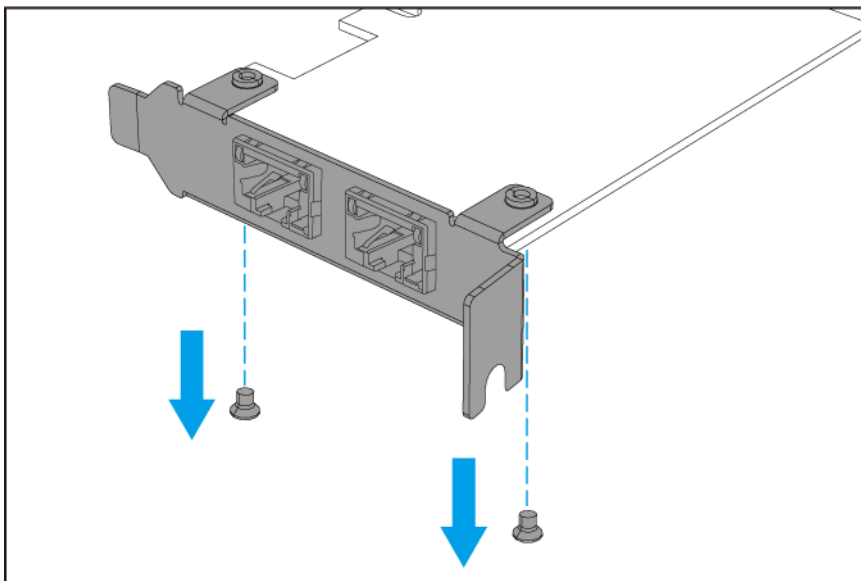
Warning

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

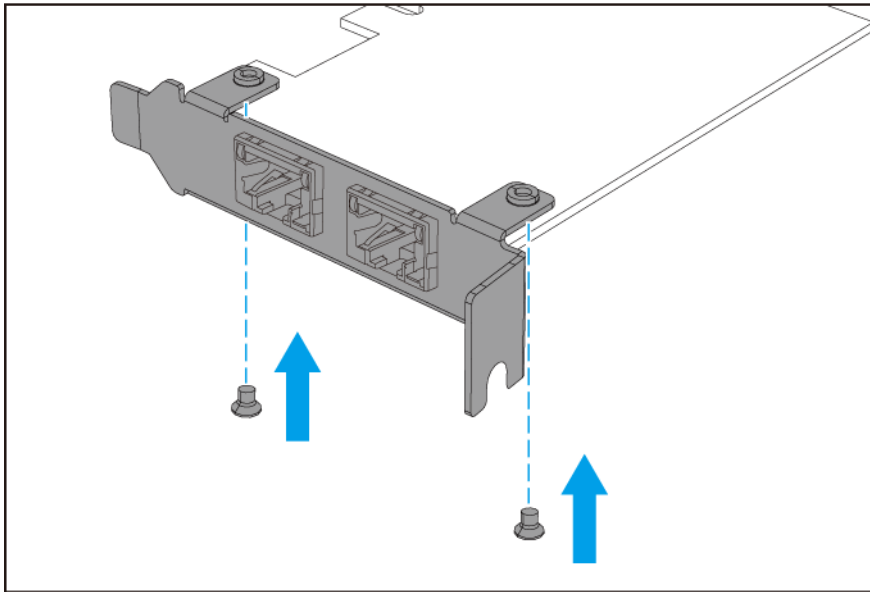
5. Remove the existing expansion card.
 - a. Remove the screw that secures the PCIe bracket to the chassis.
 - b. Hold the expansion card by the edges.
 - c. Carefully pull the card out of the slot.



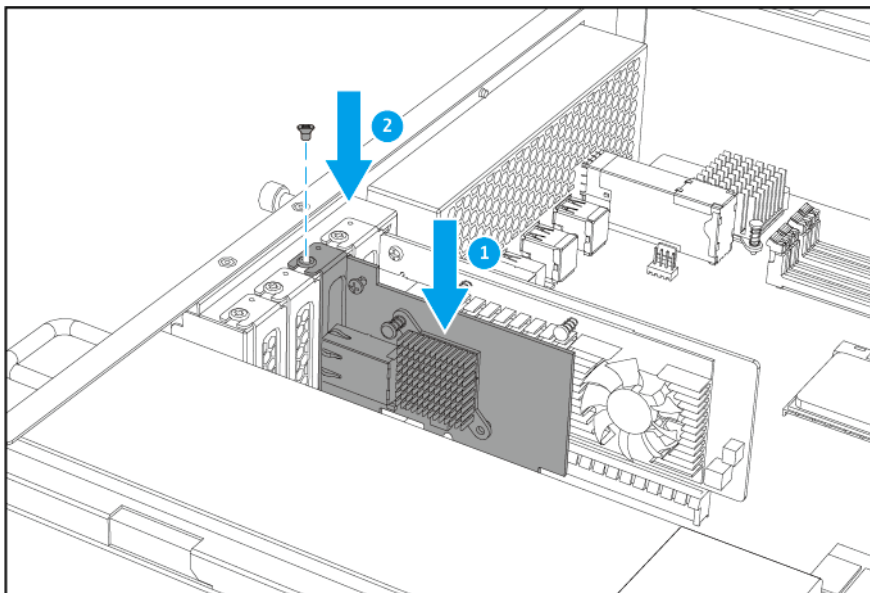
6. Optional: Attach the QNAP bracket to the expansion card.
 - a. Remove all screws of the existing bracket.
 - b. Carefully pull the bracket away from the card.



- 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.

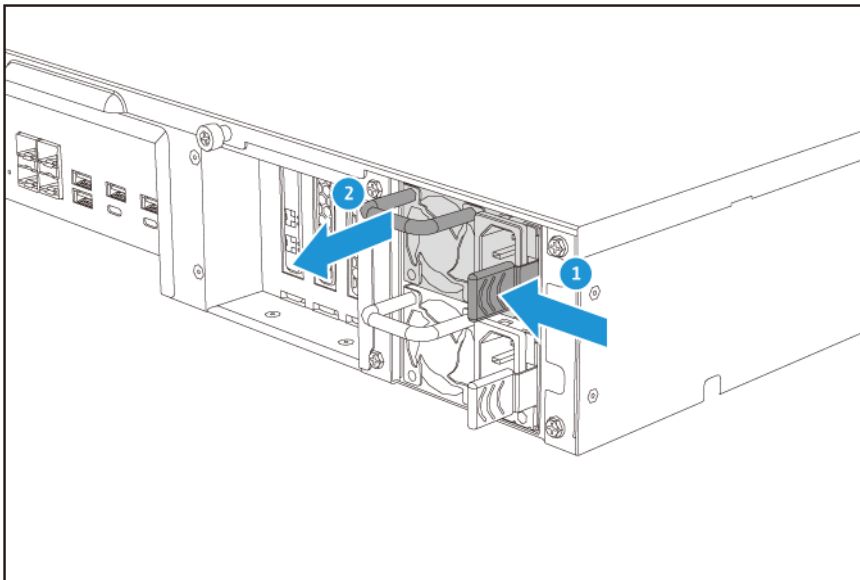


Warning

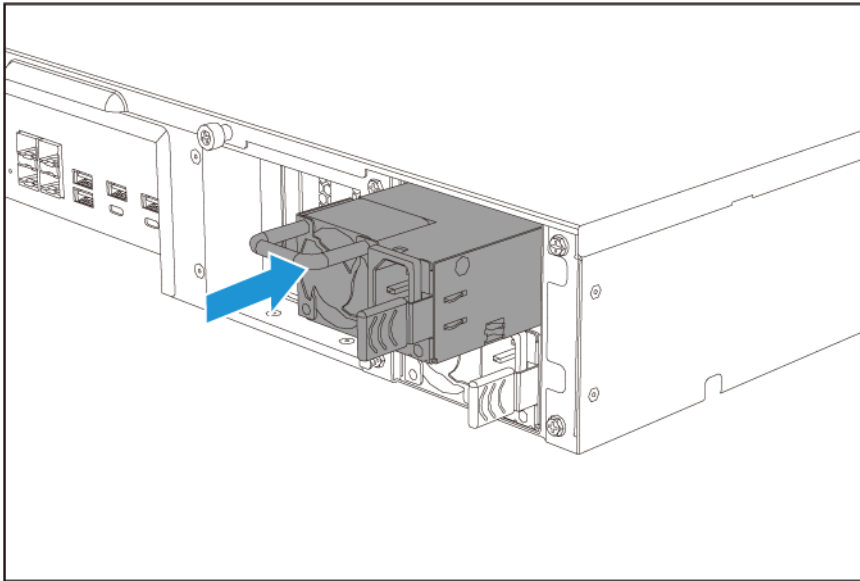


The NAS may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords before installing or replacing system components.

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-h1283XU-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-h1283XU-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/>.

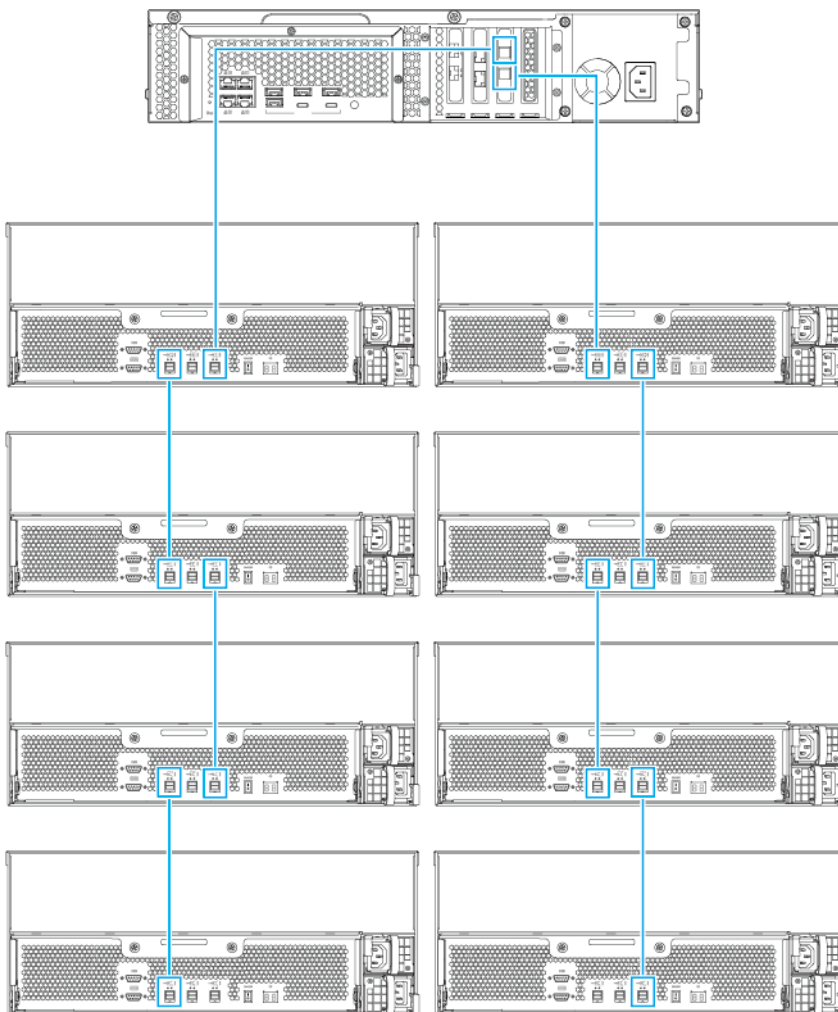
For the list of compatible expansion units and the maximum number of applicable expansion units, go to <http://www.qnap.com/go/compatibility-expansion>.

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 • Supports SATA/HDD/SSD 		
REXP-1210U-RP			
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 • Supports SATA 	USB 3.2 Gen 1 Type-A to Type-C cable
TR-004U	<ul style="list-style-type: none"> • USB 3.2 Gen 1 Type-A to Type-C cable • RAIL-B02 		
TL-D800C	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA 	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-h1283XU-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-h1283XU-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.

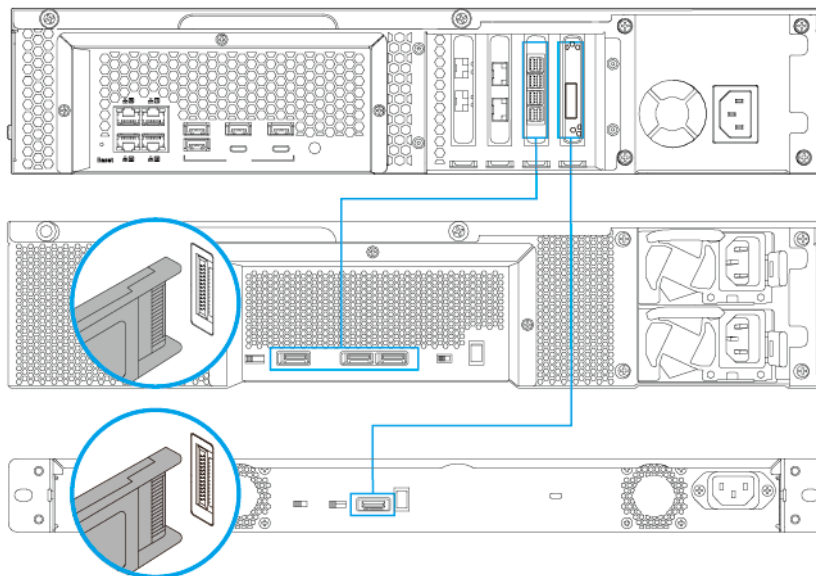


Important

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

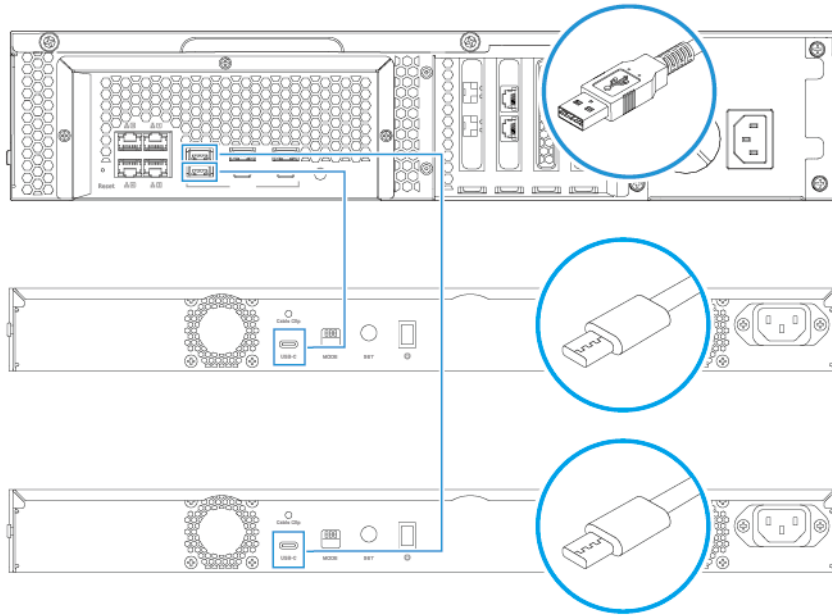
This image shows connecting the NAS to JBOD expansion units TL-R400S and TL-R1200S-RP.

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-h1283XU-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-h1283XU-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.

- 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.

- Click **Next**.

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

- Click **Start Smart Installation Guide**.

- 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.

- Click **Next**.

- 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.

- Click **Next**.

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

- 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.

- Click **Next**.

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

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

- Click **Next**.

The **Summary** window appears.

- Review the settings.

- Click **Apply**.

A confirmation message appears.

**Warning**

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


- 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.  Important Use this method only when the NAS is unresponsive.

Reset Button

Operation	User Action	Result
Basic system reset	Press and hold the button for 3 seconds.	<p>The following settings are reset to default:</p> <ul style="list-style-type: none"> System administrator password: MAC address of adapter 1 without special characters. For example, if the MAC address of adapter 1 is 11:22:33:44:55:66, then the admin password will be 112233445566. <p> Tip You can find the MAC address of adapter 1 using Qfinder Pro. A label attached to the device also lists the address as MAC1.</p> <ul style="list-style-type: none"> TCP/IP configuration: <ul style="list-style-type: none"> Obtain IP address settings automatically via DHCP Disable jumbo frames If port trunking is enabled (multi-LAN models only), the port trunking mode is reset to “Active Backup (Failover)”. System port: 8080 (system service port) Security level: Low (Allow all connections) LCD panel password: (blank) VLAN: Disabled
Advanced system reset	Press and hold the button for 15 seconds.	<p>The default factory settings are restored.</p> <ul style="list-style-type: none"> To retrieve old data after an advanced system reset, recreate the previous folder structure on the NAS.

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.
Expansion unit	Orange	An expansion unit is connected.
	Off	No expansion units are connected.

LED	Status	Description
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. 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

6. 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

7. Notices

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Version 3, 29 June 2007

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FCC Notice

FCC Class A Notice



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



Note

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SJ/T 11364-2006



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