



QNAP

TS-1886XU-RP

User Guide

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1. Preface





About This Guide

This guide provides information on the QNAP TS-1886XU-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-1886XU-RP NAS.

About the TS-1886XU-RP

The TS-1886XU-RP is an enterprise rackmount NAS that provides an economic yet powerful enterprise storage solution. Powered by the latest enterprise Intel® Xeon® D processors, the TS-1886XU-RP possesses high computing capacity for supporting QNAP's automated data tiering feature, Qtier, while ensuring data integrity. The new Intel® Xeon® D processors support DDR4 Error Correcting Code (ECC) memory to ensure data integrity and reliability. Additionally, the TS-1886XU-RP can be scaled to meet different enterprise networking needs. The NAS is loaded with dual-channel long-DIMM DDR4 memory that can be scaled up to 128 GB, and equipped with four PCIe 3.0 slots to accommodate multiple network and accelerator cards. The TS-1886XU-RP supports up to 18 bays that works with 3.5-inch hard drives and 2.5-inch solid-state drives for delivering excellent SSD caching and data tiering performance.

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](#).

Ordering P/N	CPU	Memory	Power supply
TS-1886XU-RP-D1602-4G	Intel® Xeon® D-1602	4 GB	Redundant
TS-1886XU-RP-D1622-8G	Intel® Xeon® D-1622	8 GB	Redundant

Component	TS-1886XU-RP-D1602-4G	TS-1886XU-RP-D1622-8G
Processor		
CPU	Intel® Xeon® D-1602	Intel® Xeon® D-1622
Frequency	Dual-core/4-thread 2.50 GHz/3.2 GHz burst	Quad-core/8-thread 2.60 GHz/3.2 GHz burst
Architecture	x86 64-bit	
Encryption engine	AES-NI	
Memory		
Pre-installed memory	4 GB RAM: 1 x 4 GB UDIMM DDR4 ECC	8 GB RAM: 2 x 4 GB UDIMM DDR4 ECC

Component	TS-1886XU-RP-D1602-4G	TS-1886XU-RP-D1622-8G
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	
Flash memory	5 GB (dual-boot OS protection)	
Storage		
Drive bays	<ul style="list-style-type: none"> • 12 x 3.5-inch SATA 6 Gbps • 6 x 2.5-inch SATA 6 Gbps  Tip The drive bays are backward compatible with SATA 3 Gbps drives.	
Drive compatibility	3.5-inch bays: <ul style="list-style-type: none"> • 3.5-inch SATA hard disk drives • 2.5-inch SATA hard disk drives • 2.5-inch SATA solid-state drives 2.5-inch bays: 2.5-inch SATA solid-state drives	
SSD cache acceleration support	<ul style="list-style-type: none"> • 3.5-inch drive bays: 1 to 12 • 2.5-inch drive bays: 13 to 18 	
Hot-swapping	Supported	
Network		
10 Gigabit Ethernet ports	2 x 10GbE SFP+ SmartNIC port	
Gigabit Ethernet ports	4 x GbE RJ45	
External I/O Ports & Expansion Slots		

Component	TS-1886XU-RP-D1602-4G	TS-1886XU-RP-D1622-8G
PCIe slots	<ul style="list-style-type: none"> • 2 x PCIe Gen 3.0 x4 • 2 x PCIe Gen 3.0 x8 <p> Important</p> <ul style="list-style-type: none"> • A dual-port 10 GbE SFP+ network expansion card is pre-installed in the PCIe slot. • Certain PCIe slot lengths are affected by the installation of expansion cards in neighboring PCIe slots. For details, see Installing Expansion Cards. <p> Tip For the list of compatible expansion cards, go to https://www.qnap.com/compatibility.</p>	
USB ports	2 x USB 3.0 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 549.7 mm (3.48 x 18.98 x 21.64 in)	
Net weight	12.73 kg (28.06 lbs)	
Others		
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. • Information on rail kit installation can be found in the installation guide included in the rail kit package. 	
Power supply unit	TS-1886XU-RP: 2 x 550W, 100-240V AC, 50/60 Hz <p> Warning To reduce the risk of fire or electric shock, ensure that you only connect the power cord to a properly grounded electrical outlet.</p>	

Component	TS-1886XU-RP-D1602-4G	TS-1886XU-RP-D1622-8G
System battery	CR2032 lithium battery (3V, 225 mAh)  Warning 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.	
Sound level	56.9 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: 3 x 60 mm, 12V DC fans  Warning To avoid potential injury or damage to components, do not touch the fans while the NAS is connected to a power source.	
Operating temperature	0°C to 40°C (32°F to 104°F)	
Relative humidity	<ul style="list-style-type: none"> • Non-condensing relative humidity: 5% to 95% • Wet-bulb temperature: 27°C (80.6°F) 	

**Tip**

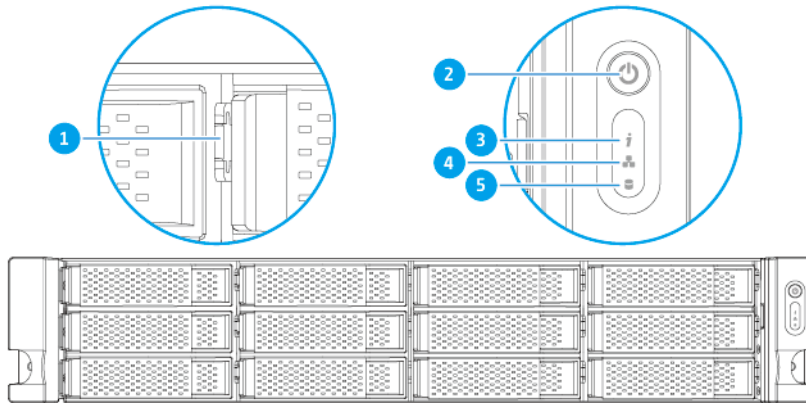
Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

Package Contents

Item	Quantity
TS-1886XU-RP	1
Power cord	2
Ethernet cables	2
Screws for 3.5-inch drives	48
Screws for 2.5-inch drives	64
Quick Installation Guide (QIG)	1

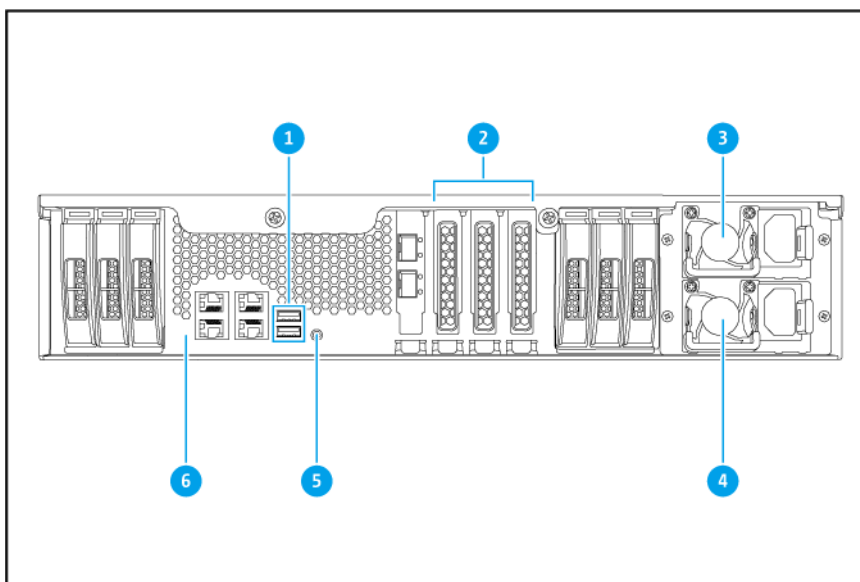
Components

Front Panel



No.	Component	No.	Component
1	3.5-inch drive LEDs	4	LAN LED
2	Power button	5	Expansion unit LED
3	Status LED	-	

Rear Panel



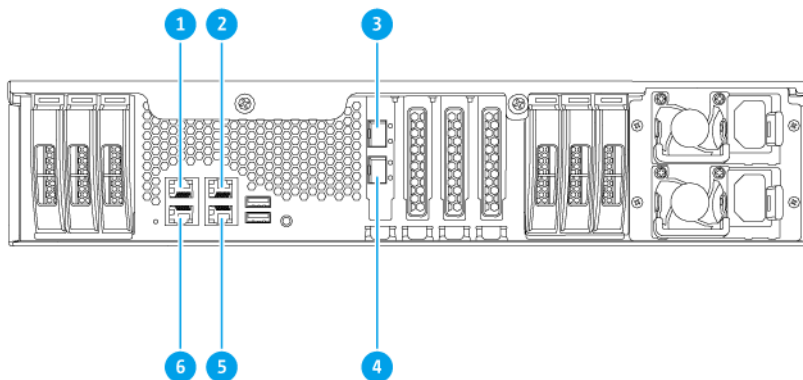
No.	Component	No.	Component
1	USB 3.0 Type-A ports	4	Power supply unit 2

No.	Component	No.	Component
2	PCIe low-profile covers	5	Tool port
3	Power supply unit 1	6	Reset button

**Note**

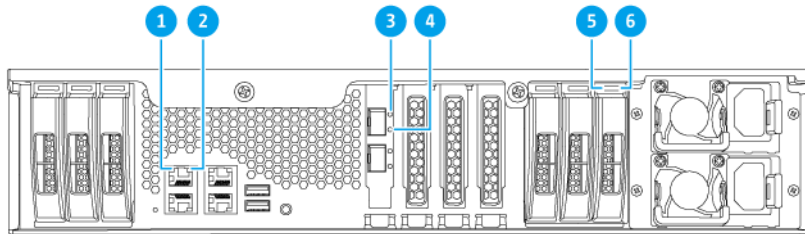
This port is only for engineering purposes.

Rear Panel Network Interface



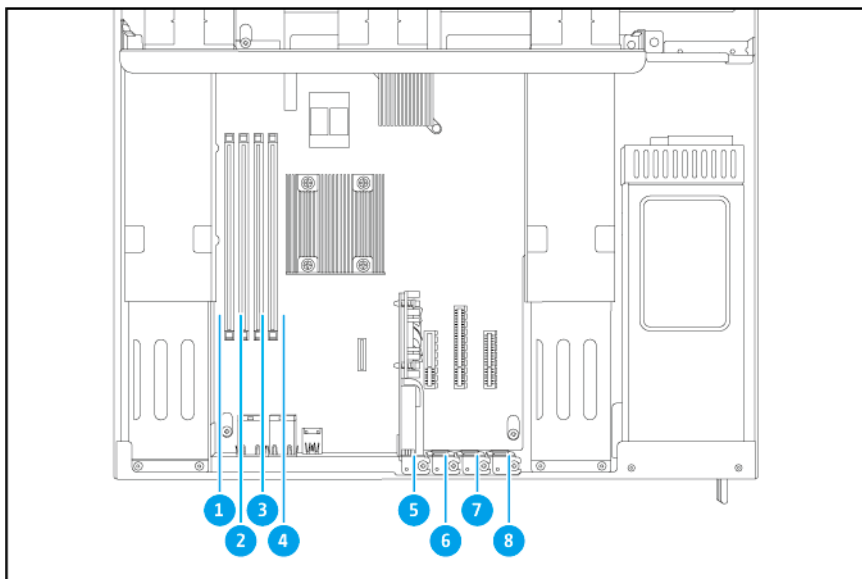
No.	Component	Specifications
1	Ethernet port 3	GbE RJ45
2	Ethernet port 1	GbE RJ45
3	Ethernet port 6	10GbE SFP+
4	Ethernet port 5	10GbE SFP+
5	Ethernet port 2	GbE RJ45
6	Ethernet port 4	GbE RJ45

Rear Panel LED




No.	Component	No.	Component
1	Gigabit Ethernet speed LED	4	10 Gigabit Ethernet activity LED
2	Gigabit Ethernet activity LED	5	Drive status LED
3	10 Gigabit Ethernet speed LED	6	Drive activity LED

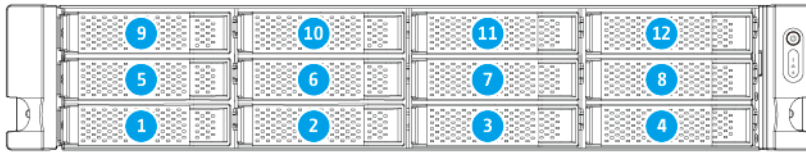
System Board



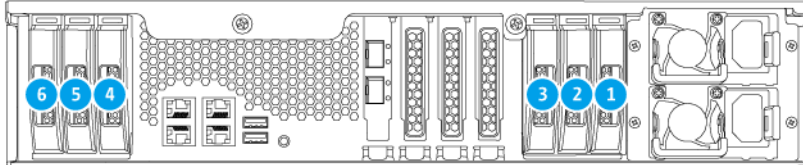
No.	Component	Specifications
1	Memory slot 1	Long-DIMM DDR4

No.	Component	Specifications
2	Memory slot 2	Long-DIMM DDR4
3	Memory slot 3	Long-DIMM DDR4
4	Memory slot 4	Long-DIMM DDR4
5	PCIe slot 4	PCIe 3.0 x8 <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"></div> <div> <p>Note A 10GbE SFP+ SmartNIC card is pre-installed in this PCIe slot.</p> </div> </div>
6	PCIe slot 3	PCIe 3.0 x4
7	PCIe slot 2	PCIe 3.0 x8
8	PCIe slot 1	PCIe 3.0 x4

Drive Numbering



Front panel 3.5-inch drive bays



Rear panel 2.5-inch drive bays

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 Free from objects that may obstruct NAS ventilation or apply pressure to the NAS or power cord
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 Flat head screwdriver Anti-static wrist strap

Setting Up the NAS

- Place your NAS device in an environment that meets the requirements. For details, see [Installation Requirements](#).
- 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](#)
- [Installing 2.5-inch Hard Drives or Solid-State Drives on 2.5-inch Trays](#)

For a list of compatible drives and expansion cards, go to <http://www.qnap.com/compatibility>.

3. Optional: Replace expansion cards.
For details, see [Replacing Expansion Cards](#).
4. Optional: Replace memory modules.
For details, see [Replacing Memory Modules](#).
5. Optional: Install the NAS on a rack.
For details, see [Rail Kits](#).
6. Optional: Connect the expansion units.
For details, see [Expansion Unit Installation](#).
7. Connect the power cord and all applicable cables.
8. Power on the NAS.
For details, see [Front Panel](#).
9. Install QTS.
For details, see [QTS Installation](#).
10. Log on to QTS.

3. Installation and Configuration

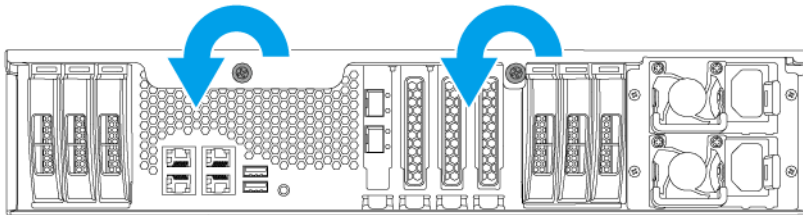
This chapter provides specific hardware and firmware installation and configuration steps.

Hardware Installation

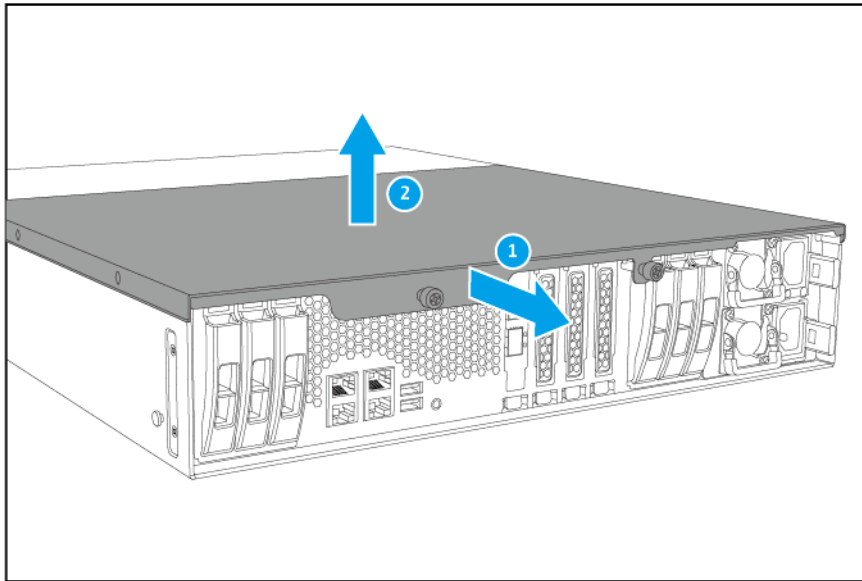
This section provides information on installing drives, memory modules, and expansion cards.

Removing the Case Cover

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.

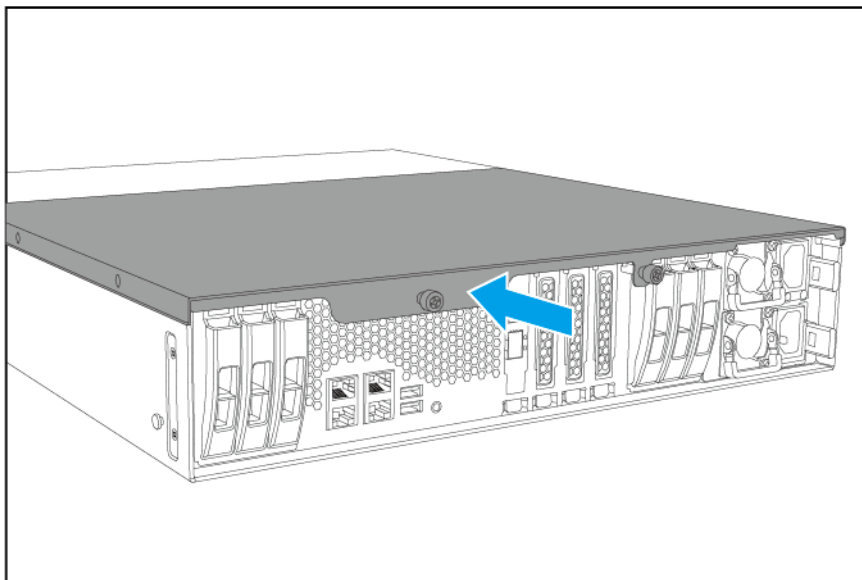


- b. Slide the cover back.
- c. Lift the cover off the NAS.

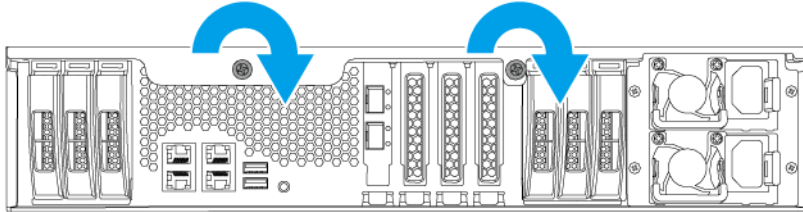


Attaching the Case Cover

1. Place the 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-1886XU-RP is compatible with 3.5-inch hard drives, 2.5-inch hard drives, and 2.5-inch solid-state drives.

Installing 3.5-inch Hard Drives and Solid-State Drives on 3.5-inch Trays

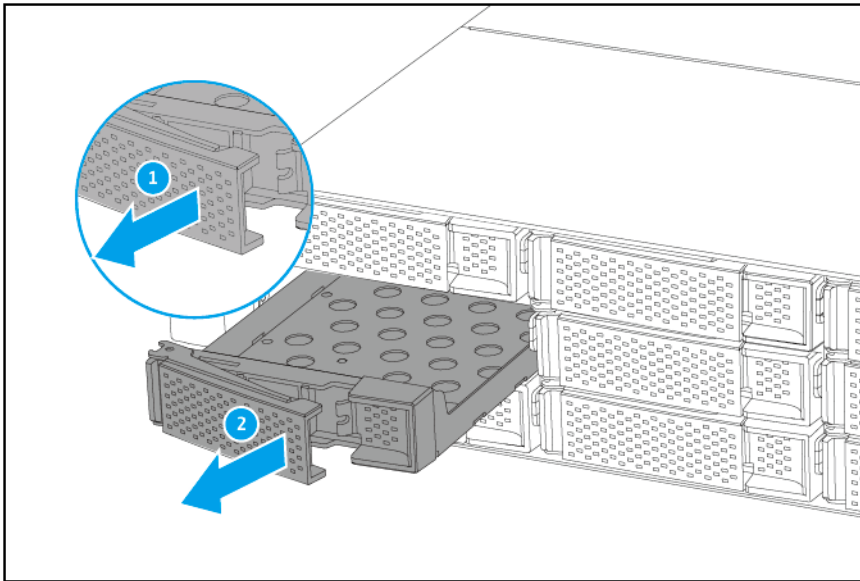
For the list of compatible drive models, go to <https://www.qnap.com/compatibility>.



Warning

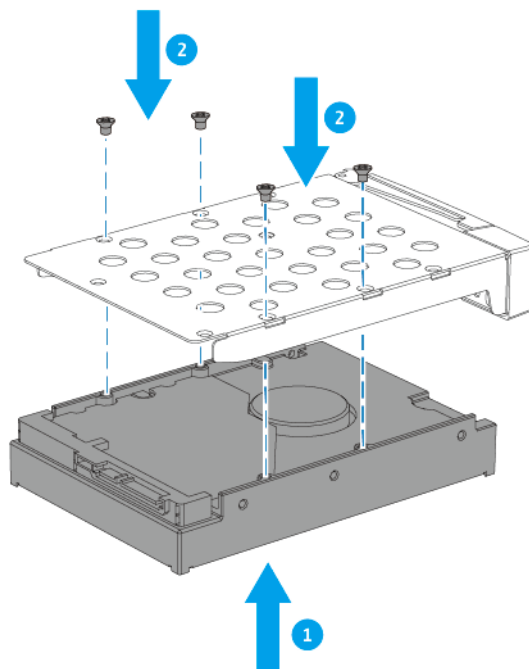
- Installing a drive deletes all data on the drive.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

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.

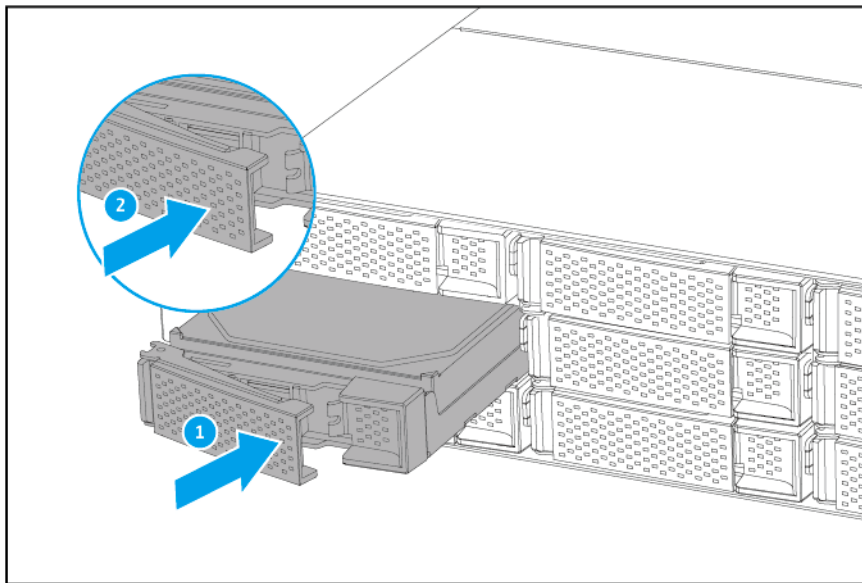
- a. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.
- b. Attach the screws.



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

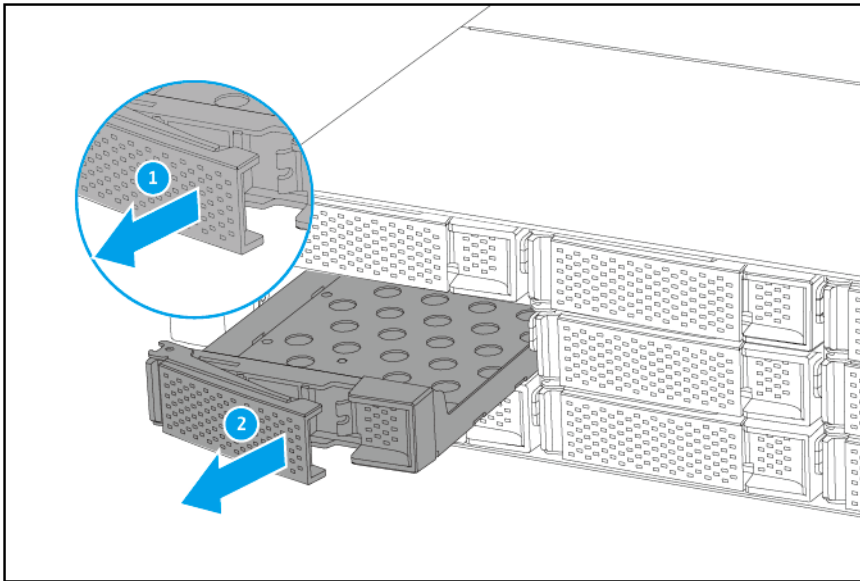
For the list of compatible drive models, go to <https://www.qnap.com/compatibility>.



Warning

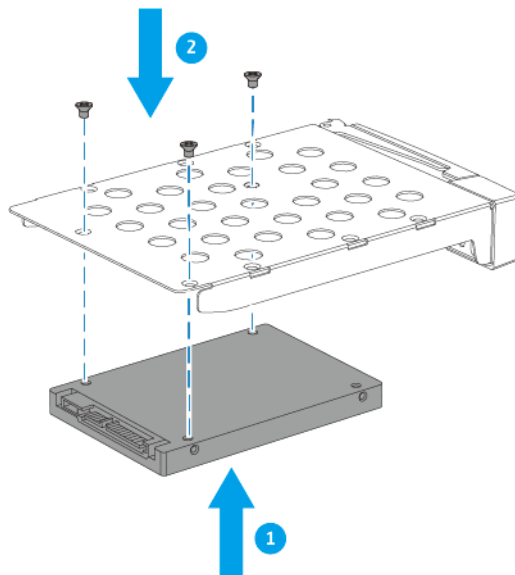
- Installing a drive deletes all data on the drive.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

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



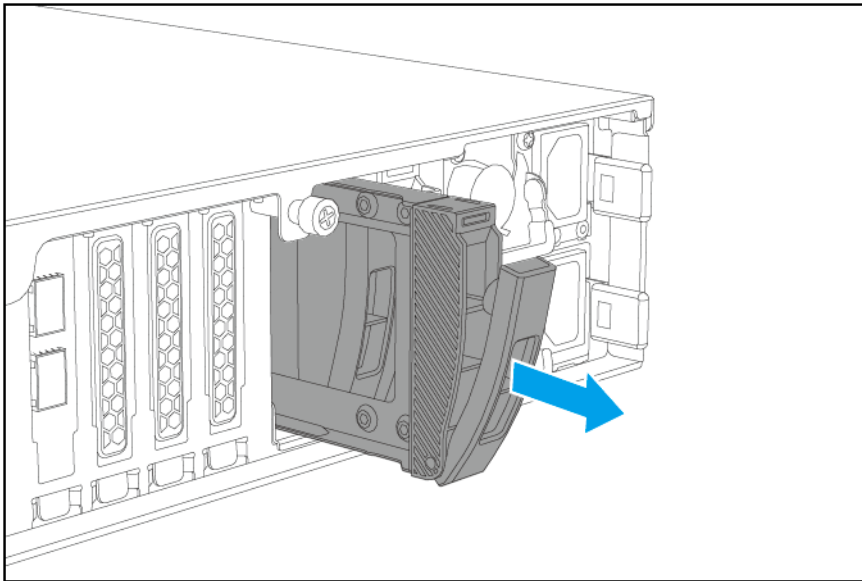
3. Install a drive on the tray.

- 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.



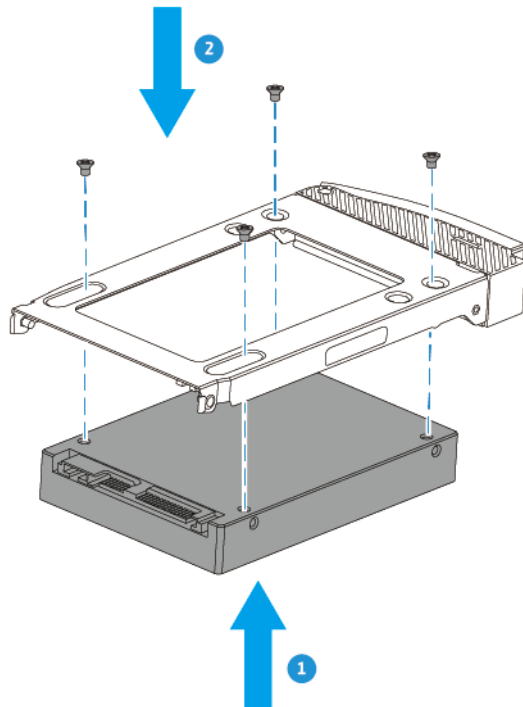
4. Load the tray into the bay.

- a. Insert the tray into the bay.



3. Install a drive on the tray.

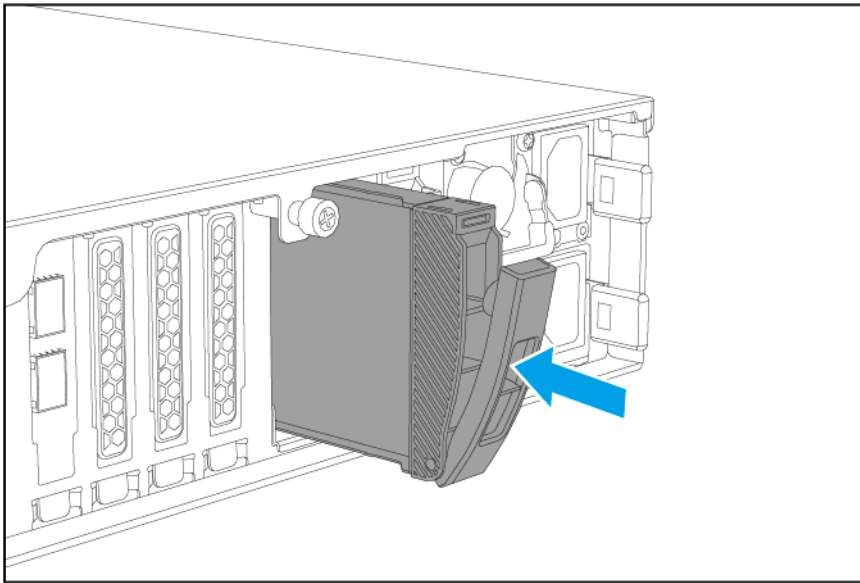
- a. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.
- b. Attach the screws.



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 TS-1886XU-RP 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 all four slots at the same time.

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.



Warning

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



Important

Ensure the following when replacing memory modules:

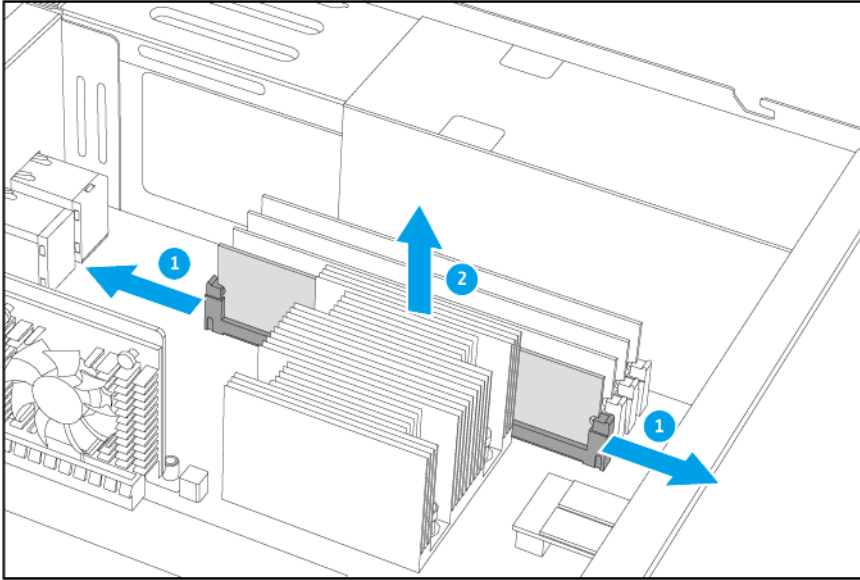
- When installing only one module, use slot 1.
- When installing two modules, use slots 1 and 3. Ensure that the modules are identical.
- When installing four modules, use slots 1 and 3 for the first pair, and slots 2 and 4 for the second pair. Ensure that each pair uses identical modules.
For details on slot numbering, see [System Board](#).

1. Remove the case cover.
For details, see [Removing the Case Cover](#).
2. Remove an existing module.
 - a. Push the retention clips outward simultaneously to release the module.

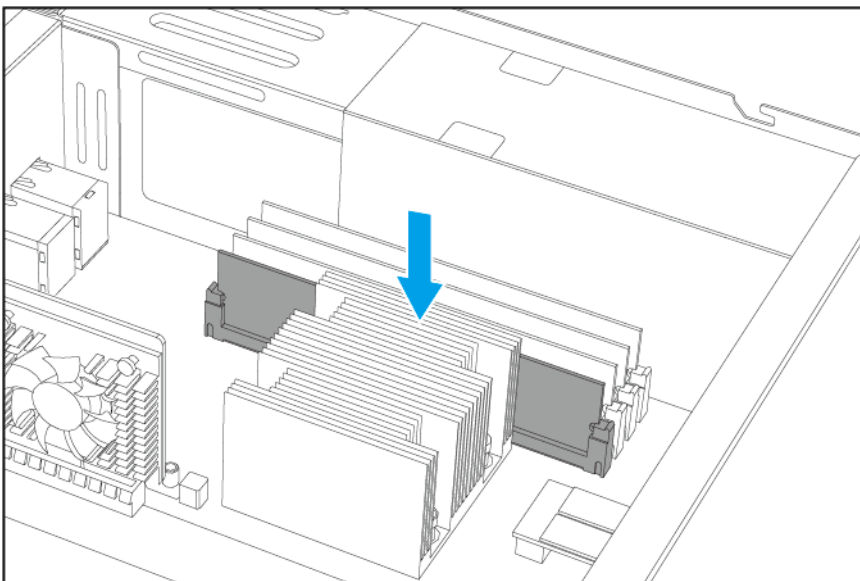
**Warning**

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

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

**3. 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.



4. Attach the case cover.
For details, see [Attaching the Case Cover](#).
5. Verify that the module is recognized by the NAS.
 - a. Log on to QTS as administrator.
 - b. Go to **Control Panel > System > System Status > Hardware Information** .
 - c. Check the value for **Total memory**.

Replacing Expansion Cards

The TS-1886XU-RP 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 TS-1886XU-RP.



Note

- A dual-port 10GbE SFP+ network expansion card is pre-installed on PCIe 3.0 slot 4.
- Slot 2 will reduce its speed from x8 to x4 if an expansion card is installed in slot 1.
- Slot 4 will reduce its speed from x8 to x4 if an expansion card is installed in slot 3.

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



Warning

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

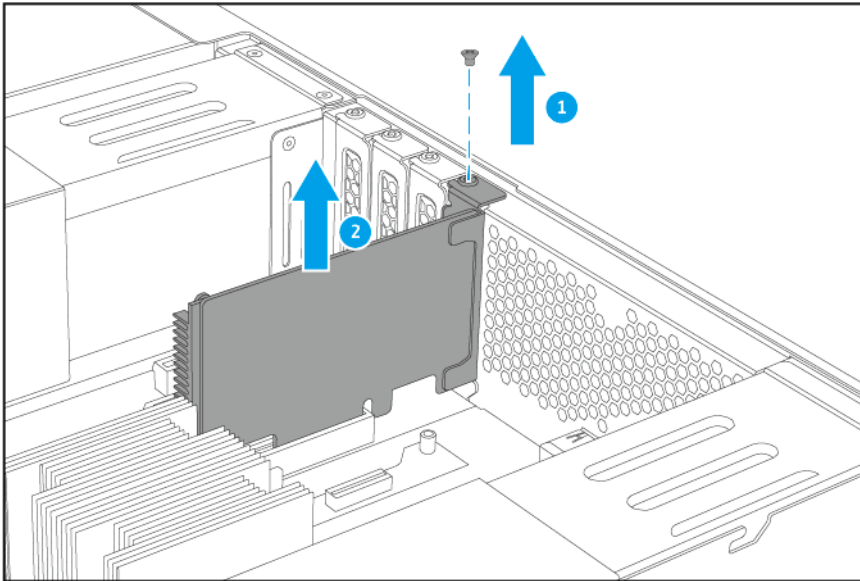
1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
For details, see [Removing the Case Cover](#).



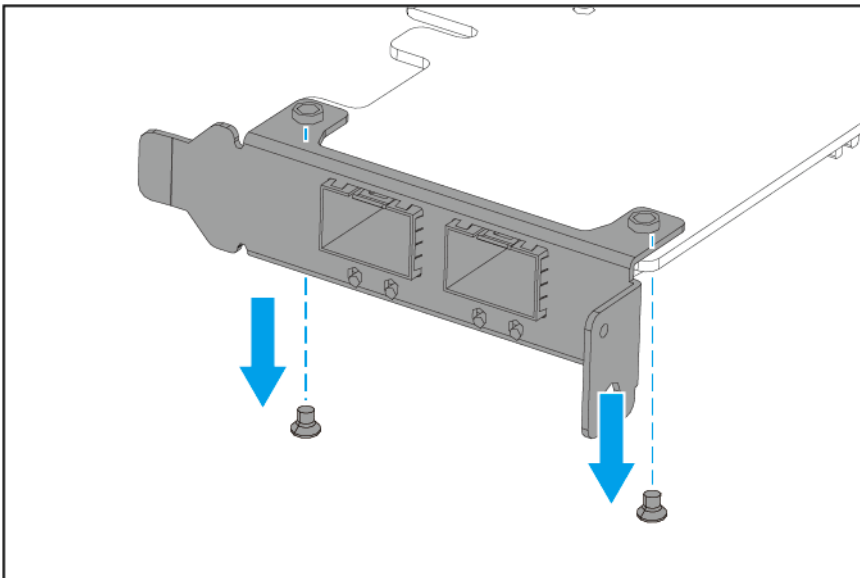
Warning

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

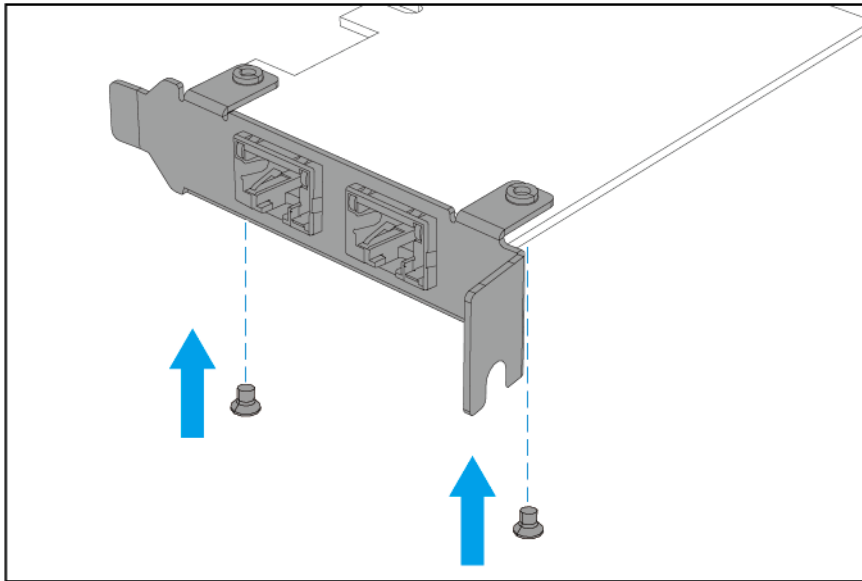
5. Remove the existing expansion card.
 - a. Remove the screw that secures the cover to the chassis.
 - b. Hold the card by the edges.
 - c. Carefully pull the card out of the slot.



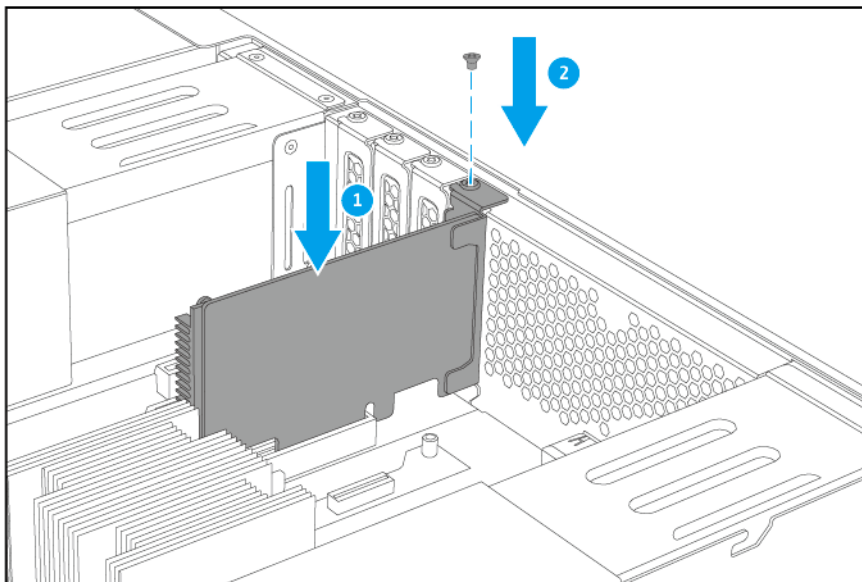
6. Optional: Attach the QNAP low-profile bracket to the expansion card.
 - a. Remove all screws of the existing bracket.
 - b. Carefully pull the bracket away from the card.



- 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.

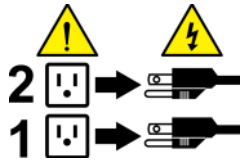


8. Attach the top cover.
For details, see [Attaching the Case Cover](#).
9. Connect all cables and external attachments.
10. Connect the power cord to the electrical outlet.
11. Power on the NAS.

Hot-Swapping Redundant Power Supply Units

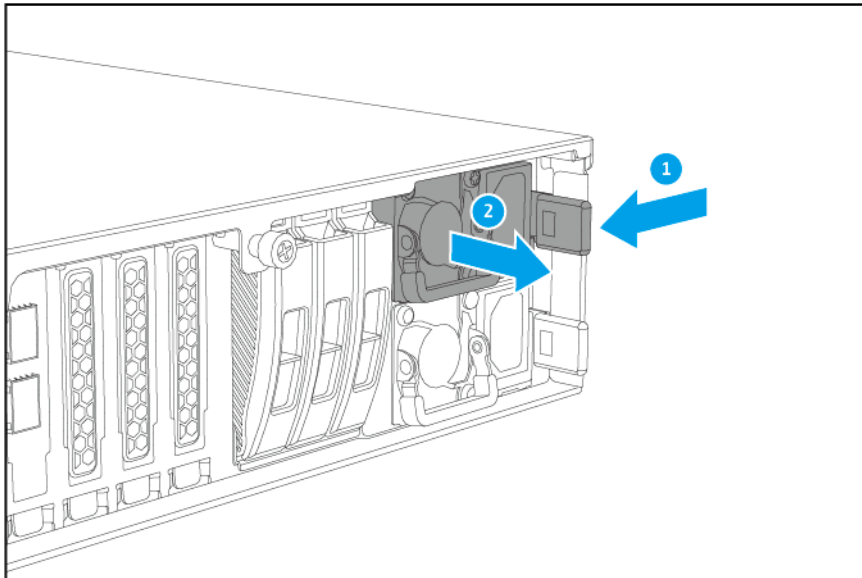


Warning

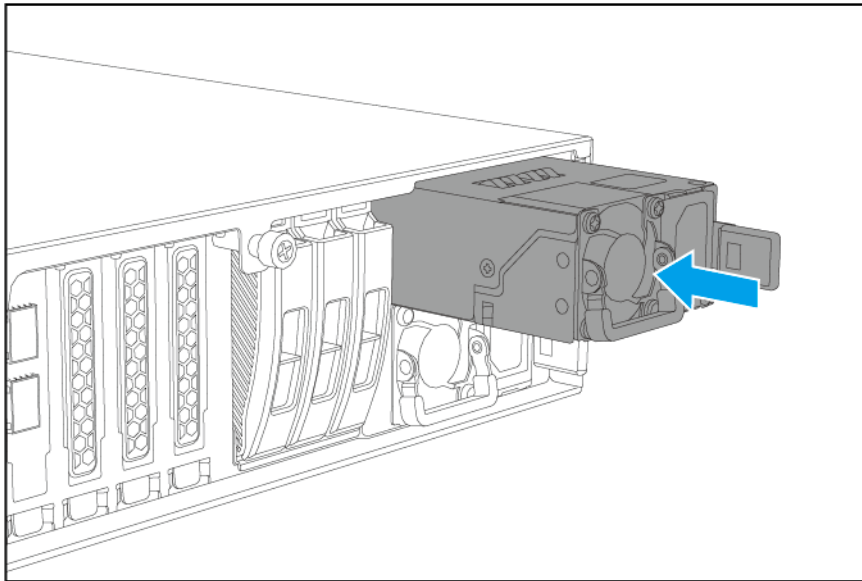


The NAS may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords before installing or replacing system components.

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

Rail Kits

The TS-1886XU-RP is compatible with the rack model RAIL-B02.

Rail kits are not included with the JBOD enclosure 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.

Expansion Unit Installation

The TS-1886XU-RP is compatible with both SAS expansion units and USB 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/>.

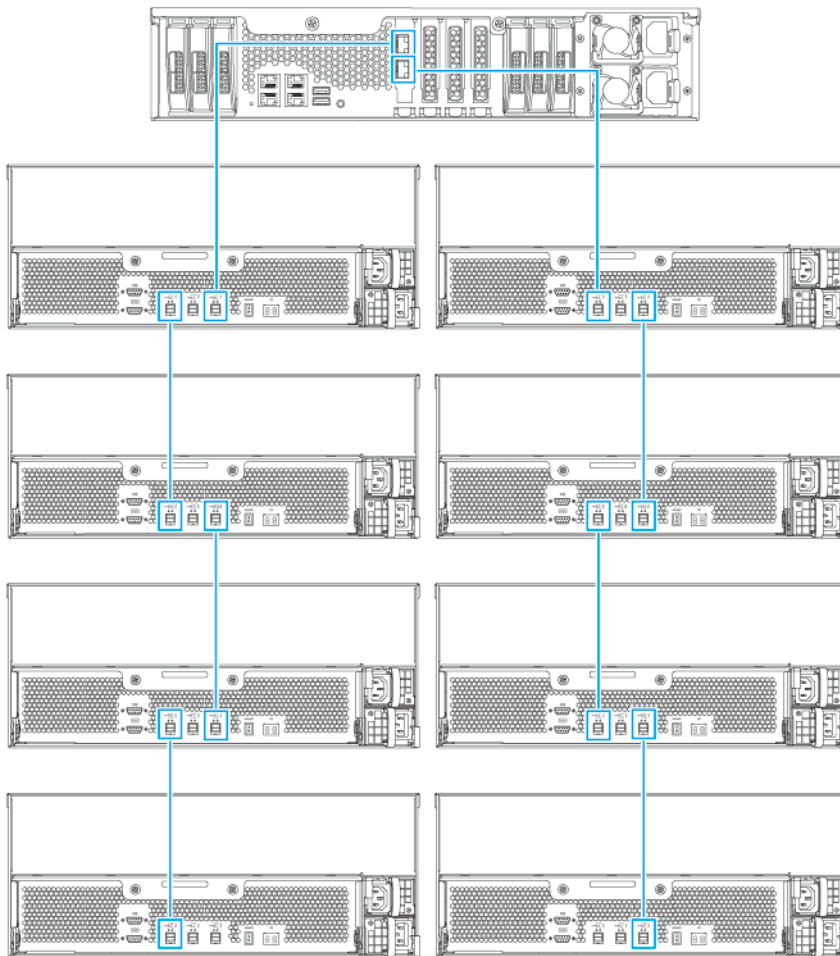
Expansion Unit Model	Description	Required Accessories	Maximum Expansion Units Supported
REXP-1620U-RP	<ul style="list-style-type: none"> • Uses a SAS 12 Gbps (SFF-8644) interface 	<ul style="list-style-type: none"> • SAS-12G2E storage expansion card 	8
REXP-1220U-RP	<ul style="list-style-type: none"> • Supports SAS/SATA HDD/SSD 	<ul style="list-style-type: none"> • mini-SAS SFF-8644 cable 	
REXP-1610U-RP	<ul style="list-style-type: none"> • Uses a SAS 6 Gbps (SFF-8644) interface 	<ul style="list-style-type: none"> • RAIL-A03-57 	
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 	2
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 	

Expansion Unit Model	Description	Required Accessories	Maximum Expansion Units Supported
TR-002	<ul style="list-style-type: none"> • Uses a USB 3.1 Gen 2 Type-C interface • Supports SATA 	USB 3.1 Gen 2 Type-A to Type-C cable	2
TR-004	<ul style="list-style-type: none"> • Uses a USB 3.0 Type-C interface • Supports SATA 	USB 3.0 Type-A to Type-C cable	
TR-004U		<ul style="list-style-type: none"> • USB 3.0 Type-A to Type-C cable • RAIL-B02 	
TL-D800C	<ul style="list-style-type: none"> • Uses a USB 3.1 Type-C interface • Supports SATA 	USB 3.1 Gen 2 Type-A to Type-C cable	
TL-R1200C-RP		<ul style="list-style-type: none"> • USB 3.1 Gen 2 Type-A to Type-C cable • RAIL-B02 	

Connecting SAS Expansion Units

The TS-1886XU-RP supports a maximum of eight SAS expansion units. To connect SAS expansion units, a storage expansion card must be installed in the NAS.

1. Install a storage expansion card on the PCIe slot.
For details, see [Installing 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 QTS as administrator.
 - b. Go to **Main Menu > Storage & Snapshots > Overview > System** .
 - c. Verify that the expansion units are listed.

Connecting SATA JBOD Expansion Units

The TS-1886XU-RP supports a maximum of two SATA JBOD expansion units. To connect SATA JBOD expansion units, a host bus adapter must be installed on the NAS. For details on the required accessories, see [Expansion Unit Installation](#).

1. Power off the NAS.
2. Install a host bus adapter on the PCIe slot.



Important

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

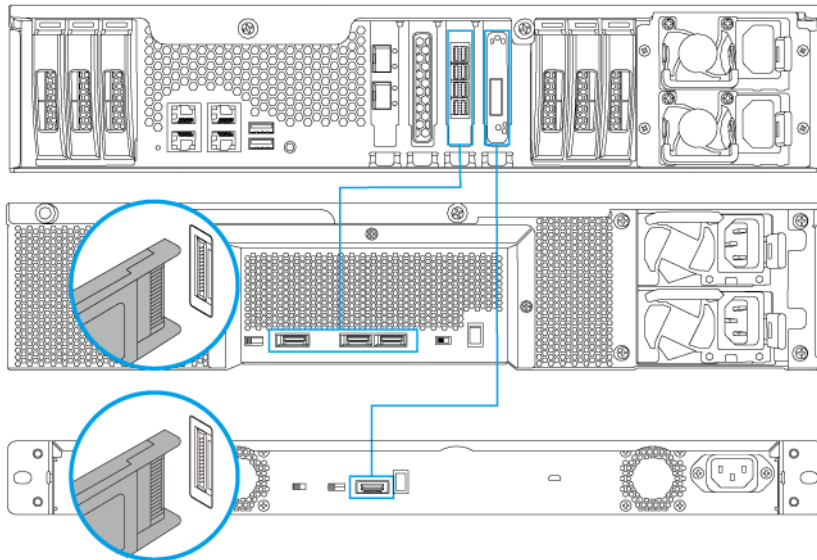
For details, see [Installing Expansion Cards](#).

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



Note

This image shows connecting the NAS to a TL-R400S and TL-R1200S-RP.

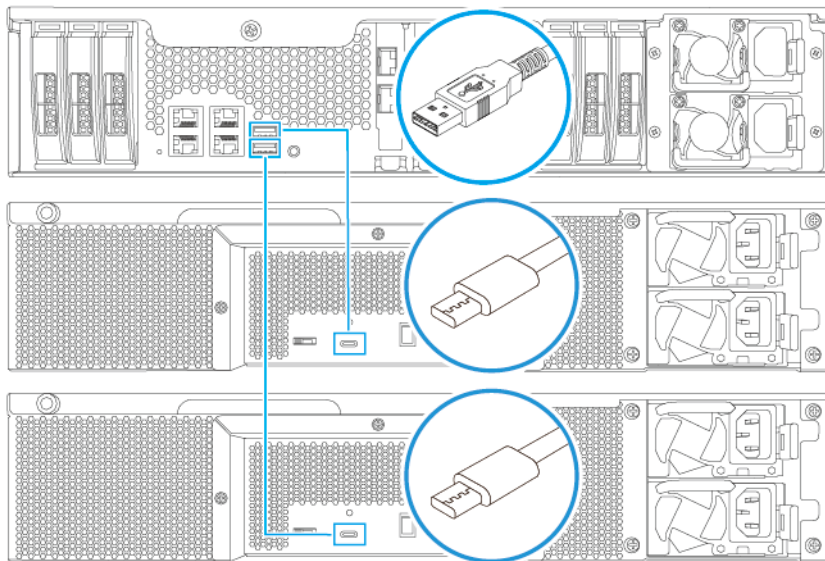


4. Power on the SATA JBOD expansion units.
5. Power on the NAS.
6. Verify that the expansion units are recognized by the NAS.
 - a. Log on to QTS as administrator.
 - b. Go to **Main Menu > Storage & Snapshots > Overview > System**.
 - c. Verify that the expansion units are listed.

Connecting USB Expansion Units

The TS-1886XU-RP supports a maximum of two USB expansion units.

1. Connect the expansion unit to the NAS.
 - a. Connect the USB cable to the USB Type-C port on the expansion unit.
 - b. Connect the USB cable to a USB Type-A port on the NAS.



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

QTS Installation

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. 	<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. • Specify the Cloud Key. • Log into your myQNAPcloud account. • Use myQNAPcloud Link to remotely access your NAS. • Complete the steps in the Smart Installation Guide wizard. 	<ul style="list-style-type: none"> • Computer or mobile device • myQNAPcloud account • CloudKey

Installing QTS Using Qfinder Pro



Warning

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

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



Note

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

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

16. Click **Confirm**.
QTS is installed.

Installing QTS Using the Cloud Key



Warning

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

1. Power on the NAS.
2. Connect the NAS to the internet.
3. Go to the QNAP Cloud Installation page using one of the following methods:
 - On your computer, go to <http://install.qnap.com/>.
 - Scan the QR code on the NAS using a mobile device.

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

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



Note

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

The installation wizard opens in the default web browser.

5. Create an account or sign in to myQNAPcloud.



Note

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

6. Specify the myQNAPcloud device name for the NAS.



Note

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

7. Click **Next**.
The **Smart Installation Guide** opens in the default web browser.
8. Click **Start Smart Installation Guide**.
9. Specify the following information.
 - **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
 - **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.
10. Click **Next**.
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**.
13. Select **Obtain an IP address automatically (DHCP)**.
14. Click **Next**.
15. Select the types of devices that you will use to access shared folders on the NAS.
16. Click **Next**.
17. Review the settings.
18. Click **Apply**.
A confirmation message appears.

**Warning**


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

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

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.	The following settings are reset to default: <ul style="list-style-type: none"> • System administrator password: admin • 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.	The default factory settings are restored. <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 [Components](#).

LED	Status	Description
System Status	Flashes green and red alternately every 0.5 seconds	<ul style="list-style-type: none"> The drive is being formatted. The 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.
LAN	Orange	A read/write error occurred while another device is accessing data.
	Flashes orange	The NAS is being accessed from the network.
Drive	Flashes red	The data is being accessed and a read/write error occurs during the process.
	Red	A drive read/write error occurred.
	Flashes green	The data is being accessed.
	Green	The drive can be accessed.

LED	Status	Description
USB	Flashes blue every 0.5 sec	<ul style="list-style-type: none"> A USB device (connected to the front USB port) is detected. A USB device (connected to the front USB port) is being removed from the NAS. A USB device (connected to the front USB port of the NAS) is being accessed. Data is being copied to or from a USB or eSATA device.
	Blue	A USB device is detected in the front USB port.
	Off	<ul style="list-style-type: none"> No USB device is detected. The NAS has finished copying data to or from the USB device connected to the front USB port.

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.

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 QTS.
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*.

Forcing Qfinder Pro or myQNAPcloud to Locate the NAS

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

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

Recovering Unintentionally Removed Healthy Drives

The NAS supports exclusive RAID recovery technology to recover failed RAID disk volumes from unintentional disconnection or removal of drives. Users can recover an inactive RAID 1, RAID 5, or RAID 6 volume to degraded mode, or an inactive RAID 0 and JBOD configuration to normal.

Disk Volume	RAID Recovery Support	Maximum Number of Removed Drives
Single	No	N/A
JBOD	Yes	1
RAID 0	Yes	1
RAID 1	Yes	1
RAID 5	Yes	2
RAID 6	Yes	3
RAID 10	No	N/A

Support and Other 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

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

myQNAPcloud Link

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

Qfinder Pro

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

QTS

QNAP NAS operating system

7. Notices

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Version 3, 29 June 2007

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- 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.
- d. Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with

the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

- 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.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

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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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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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