



QNAP

TS-2888X

TS-2888X

User Guide

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1. Preface

About This Guide

This guide provides information on the QNAP TS-2888X 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 consumers and storage administrators. This guide assumes that the user has a basic understanding of storage and backup concepts.

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-2888X NAS.

About the TS-2888X

The TS-2888X is an enterprise solution designed for AI applications, data storage, backup, sharing, and centralized management. It is powered by a high-performance Intel Xeon W multi-core processor, and loaded with DDR4 ECC RDIMM memory that can be scaled up to 512 GB. Each TS-2888X NAS features two 10 GbE RJ45 Ethernet ports for increased bandwidth and throughput.

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	Frequency	Memory
TS-2888X-W2123-32G	Intel® Xeon® W-2123	4-core 3.6 GHz	32 GB
TS-2888X-W2133-64G	Intel® Xeon® W-2133	6-core 3.6 GHz	64 GB
TS-2888X-W2145-128G	Intel® Xeon® W-2145	8-core 3.7 GHz	128 GB
TS-2888X-W2145-256G	Intel® Xeon® W-2145	8-core 3.7 GHz	256 GB
TS-2888X-W2145-512G	Intel® Xeon® W-2145	8-core 3.7 GHz	512 GB
TS-2888X-W2175-128G	Intel® Xeon® W-2175	14-core 2.5 GHz	128 GB
TS-2888X-W2175-256G	Intel® Xeon® W-2175	14-core 2.5 GHz	256 GB
TS-2888X-W2175-512G	Intel® Xeon® W-2175	14-core 2.5 GHz	512 GB
TS-2888X-W2195-128G	Intel® Xeon® W-2195	18-core 2.3 GHz	128 GB
TS-2888X-W2195-256G	Intel® Xeon® W-2195	18-core 2.3 GHz	256 GB
TS-2888X-W2195-512G	Intel® Xeon® W-2195	18-core 2.3 GHz	512 GB

Component	TS-2888X-W2123 TS-2888X-W2133 TS-2888X-W2145	TS-2888X-W2175 TS-2888X-W2195
Processor		
CPU	Intel® Xeon® W-2123 Intel® Xeon® W-2133 Intel® Xeon® W-2145	Intel® Xeon® W-2175 Intel® Xeon® W-2195
Frequency	4-core/8-thread 3.6 GHz base/3.9 GHz burst 6-core/12-thread 3.6 GHz base/3.9 GHz burst 8-core/16-thread 3.7 GHz base/4.5 GHz burst	14-core/28-thread 2.5 GHz base/4.3 GHz burst 18-core/36-thread 2.3 GHz base/4.3 GHz burst
Architecture	x86 64-bit	

Component	TS-2888X-W2123 TS-2888X-W2133 TS-2888X-W2145	TS-2888X-W2175 TS-2888X-W2195
Encryption engine	AES-NI	
Graphics	 Tip You can install a graphics card in the PCIe slot.	
Memory		
Pre-installed memory	32 GB RAM: 4 x 8 GB RDIMM DDR4 ECC 64 GB RAM: 4 x 16 GB RDIMM DDR4 ECC 128 GB RAM: 4 x 32 GB RDIMM DDR4 ECC 256 GB RAM: 8 x 32 GB RDIMM DDR4 ECC 512 GB RAM: 8 x 64 GB LRDIMM DDR4 ECC	
Memory slots	8 x DDR4 RDIMM (non-512 GB RAM models) 8 x DDR4 LRDIMM (512 GB RAM models)  Important Use only QNAP memory modules to maintain system performance and stability. For NAS devices with more than one memory slot, use QNAP modules with identical specifications. Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.	
Maximum memory	512 GB RAM: 8 x 64 GB	
Flash memory	4 GB (dual-boot OS protection)	
Storage		
Drive bays	<ul style="list-style-type: none"> • 8 x 3.5-inch SATA 6 Gbps • 4 x 2.5-inch U.2 PCIe NVMe • 16 x 2.5-inch SATA 6 Gbps 	
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: <ul style="list-style-type: none"> • U.2 bays: 2.5-inch U.2 PCIe NVMe solid-state drives • SATA bays: 2.5-inch SATA solid-state drives 	
SSD cache acceleration support	The device supports SSD cache acceleration for all drives.	
Hot-swapping	The device supports hot-swapping for all drives.	
Network		
10 Gigabit Ethernet ports	2 x 10 GbE RJ45	
Gigabit Ethernet ports	4 x GbE RJ45	
External I/O Ports & Expansion Slots		

Component	TS-2888X-W2123 TS-2888X-W2133 TS-2888X-W2145	TS-2888X-W2175 TS-2888X-W2195
PCIe slots	<ul style="list-style-type: none"> • 3 x PCIe 3.0 x8 • 5 x PCIe 3.0 x4 <div style="display: flex; align-items: center;">  <div> <p>Tip</p> <p>For the list of compatible expansion cards, go to https://www.qnap.com/compatibility.</p> </div> </div>	
USB ports	<p>6 x USB 3.0 Type-A 4 x USB 2.0 Type-A</p> <ul style="list-style-type: none"> • Front: <ul style="list-style-type: none"> • 1 x USB 3.0 One Touch Copy Type-A • 1 x USB 3.0 Type-A • Rear: <ul style="list-style-type: none"> • 4 x USB 3.0 Type-A • 4 x USB 2.0 Type-A 	
Audio ports	<ul style="list-style-type: none"> • 2 x 3.5 mm dynamic microphone jacks • 1 x 3.5 mm line-out jack <div style="display: flex; align-items: center;">  <div> <p>Note</p> <p>You cannot use speakers and line-out jacks simultaneously.</p> </div> </div>	
Interface		
Display panel	Monochrome backlit LCD display	
Buttons	<ul style="list-style-type: none"> • Power • Reset • USB One Touch Copy 	
Dimensions		
Form factor	Tower	
Dimensions (H x W x D)	612 x 374 x 448 mm (24.09 x 14.72 x 17.64 in)	
Net weight	26.7 kg (58.86 lbs)	
Others		
Power supply unit	<p>2000W PSU, 200-240V AC, 50/60 Hz</p> <div style="display: flex; align-items: center;">  <div> <p>Warning</p> <p>To reduce the risk of fire or electric shock, ensure that you only connect the power cord to a properly grounded electrical outlet.</p> </div> </div>	

Component	TS-2888X-W2123 TS-2888X-W2133 TS-2888X-W2145	TS-2888X-W2175 TS-2888X-W2195
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	33.6 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 <ul style="list-style-type: none"> • 1 x 90 mm, 12V DC fan • 9 x 120 mm, 12V DC smart fan  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**

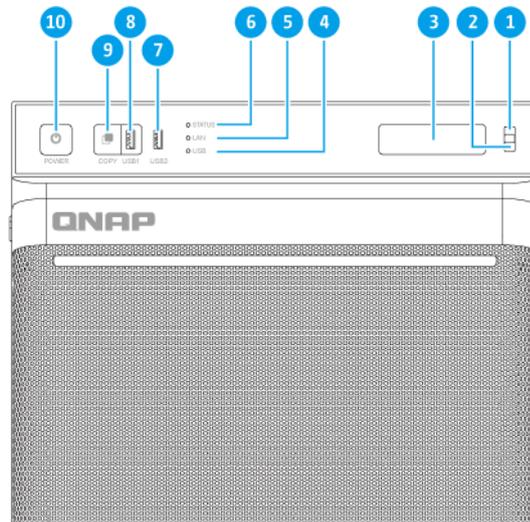
Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

Package Contents

Item	Quantity
TS-2888X NAS	1
Power cord	1
Ethernet cables	4
Screws for 2.5-inch drives	24
Screws for 3.5-inch drives	32
Quick Installation Guide (QIG)	1

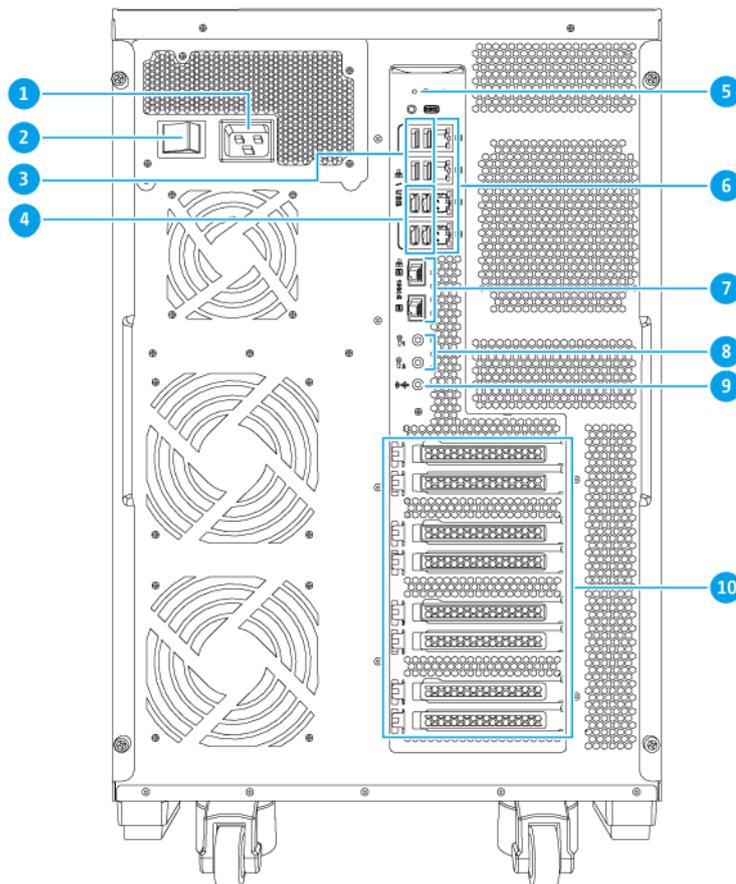
Components

Front Panel



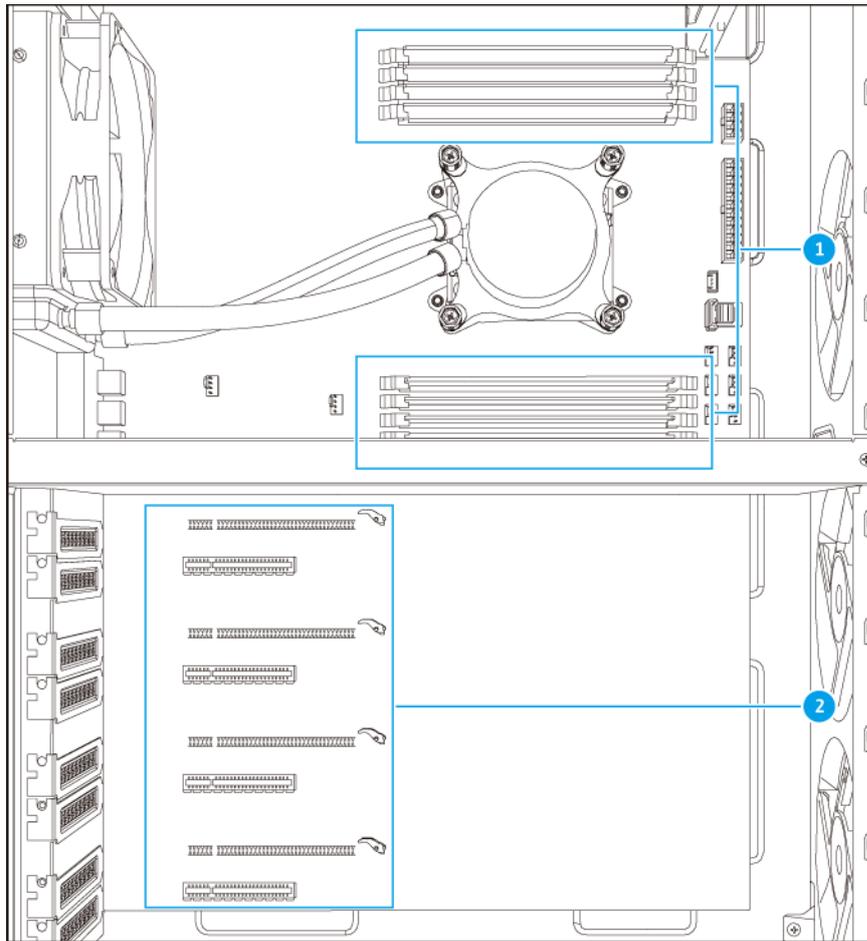
No.	Component	No.	Component
1	Enter button	6	Status LED
2	Select button	7	USB 3.0 Type-A port
3	LCD panel	8	USB 3.0 One Touch Copy Type-A port
4	USB LED	9	USB One Touch Copy button
5	LAN LED	10	Power button

Rear Panel



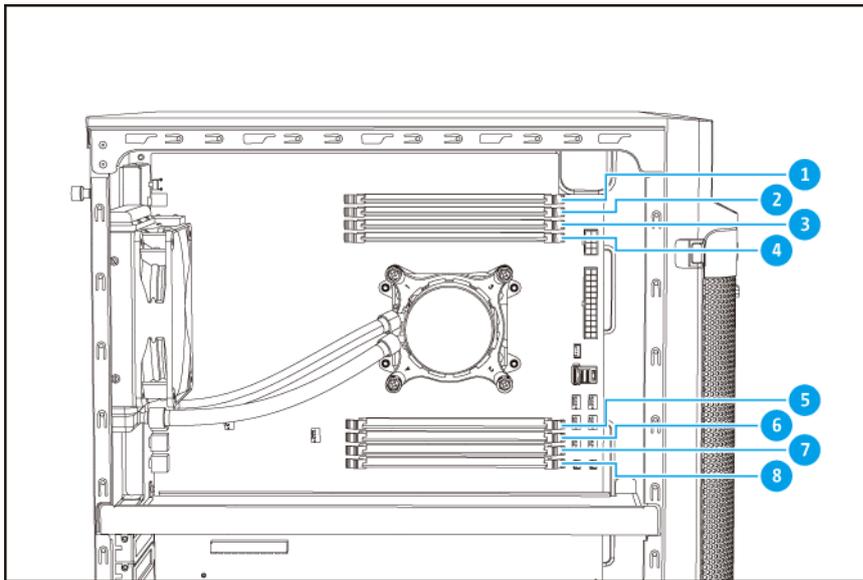
No.	Component	No.	Component
1	Power input	6	Ethernet ports (GbE RJ45)
2	Power switch	7	Ethernet ports (10 GbE RJ45)
3	USB 2.0 Type-A ports	8	3.5 mm dynamic microphone jacks
4	USB 3.0 Type-A ports	9	3.5 mm line-out jack
5	Reset button	10	PCIe full-height cover

System Board

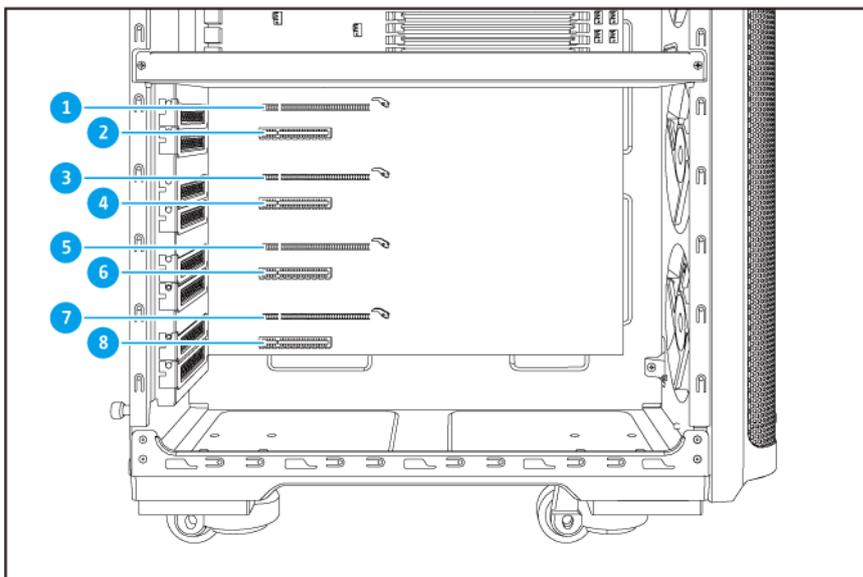


No.	Component	No.	Component
1	Memory slots	2	PCIe 3.0 slots

Memory Slot Numbering

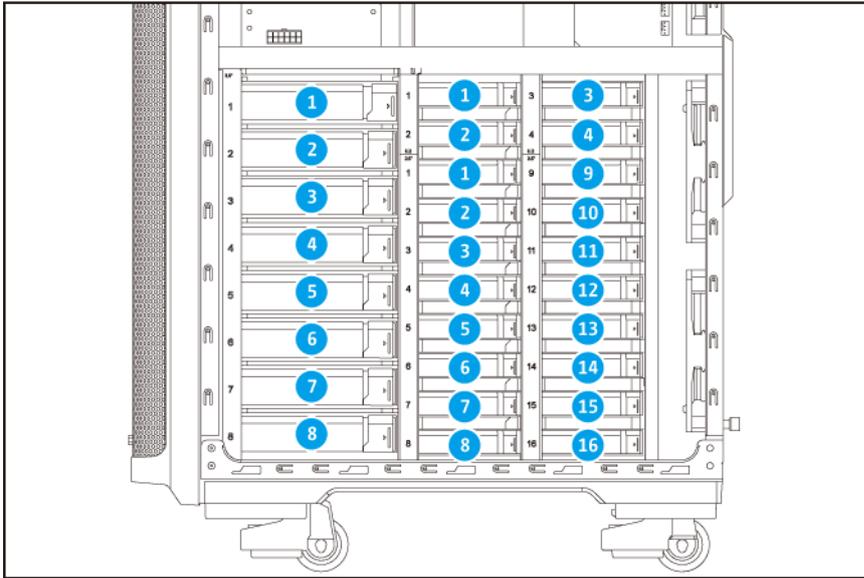


PCIe Slot Numbering



No.	Component	No.	Component
1	PCIe 3.0 x8 slot 1	5	PCIe 3.0 x8 slot 5
2	PCIe 3.0 x4 slot 2	6	PCIe 3.0 x4 slot 6
3	PCIe 3.0 x8 slot 3	7	PCIe 3.0 x4 slot 7
4	PCIe 3.0 x4 slot 4	8	PCIe 3.0 x4 slot 8

Drive Numbering



Safety Information

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

General Instructions

- The device should be stored in a secure location with restricted access, controlled through the use of a tool, lock and key, or any means of security.
- Only qualified, skilled, and authorized persons with knowledge of all restrictions, safety precautions, and installation and maintenance procedures should have physical access to the device.
- To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.
- Observe electrostatic discharge (ESD) procedures to avoid potential injury or damage to components.

Power

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



Devices with redundant power supply may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords from the device before installing or replacing system components.

System Battery

- 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.

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 • Restricted access <ul style="list-style-type: none"> • 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, trained, and authorized NAS administrators with knowledge of all restrictions, safety precautions, and installation and maintenance procedures should have physical access to the NAS.
Hardware and peripherals	<ul style="list-style-type: none"> • Storage drives For details on compatible drives, 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. 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 and U.2 Solid State Drives on 2.5-inch Trays](#)
3. Connect the power cord and all applicable cables.
4. Power on the NAS.
5. Install QTS.
For details, see [QTS Installation](#).
6. 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.

Drive Installation

The TS-2888X 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



Warning

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



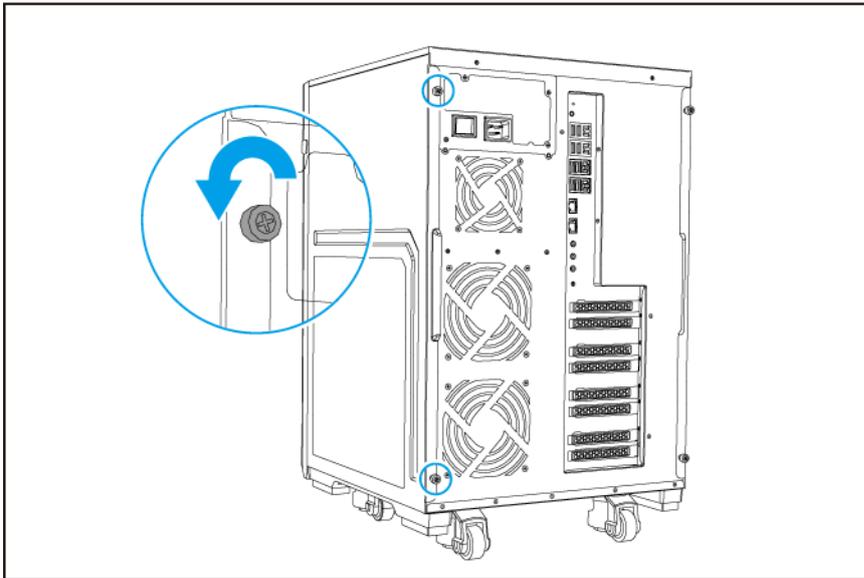
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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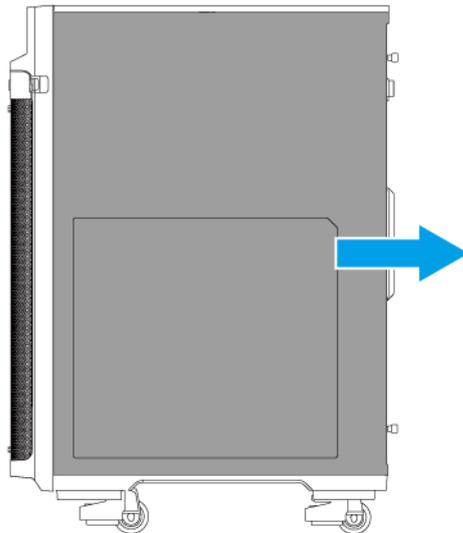


Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. Remove the right cover.
 - a. Loosen the screws.

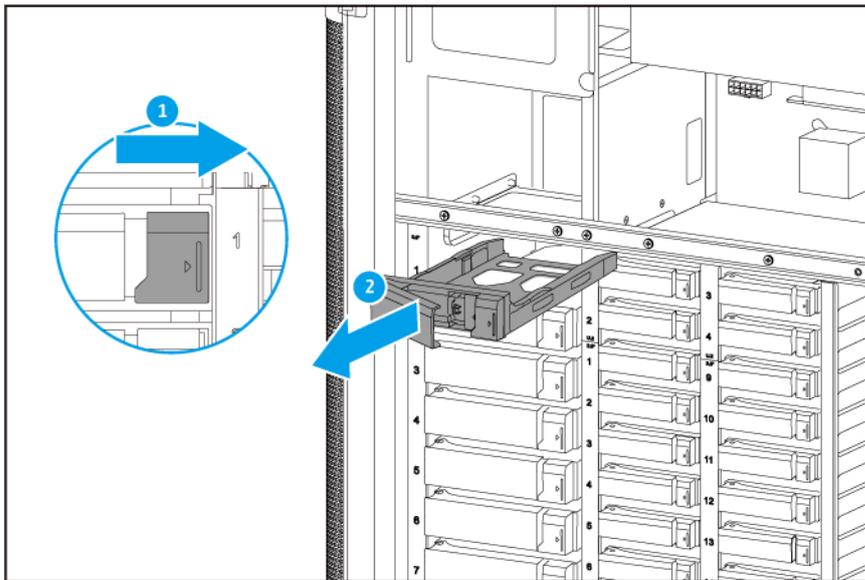


b. Pull the right cover back.

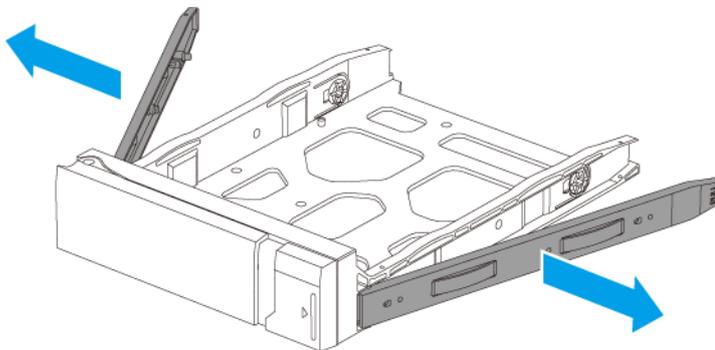


3. Remove the drive tray.

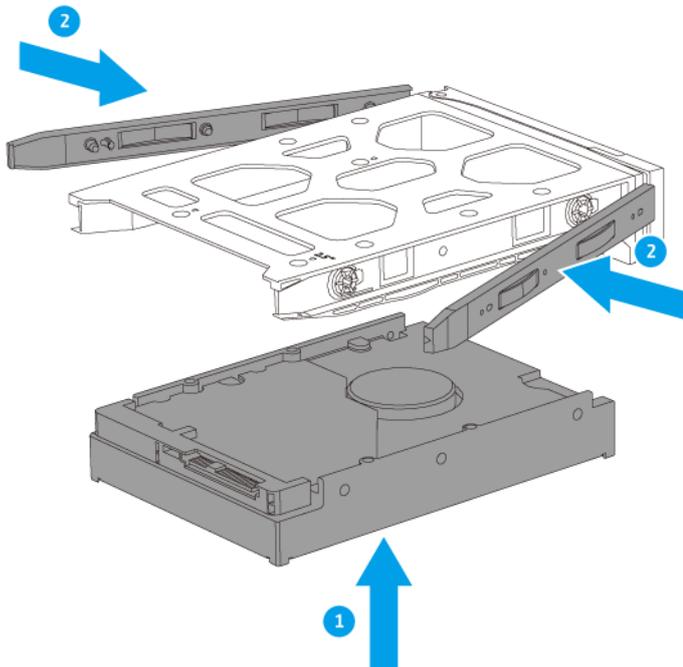
- a.** Slide the lock to the right.
- b.** Pull the handle to release the tray.
- c.** Pull the tray out.



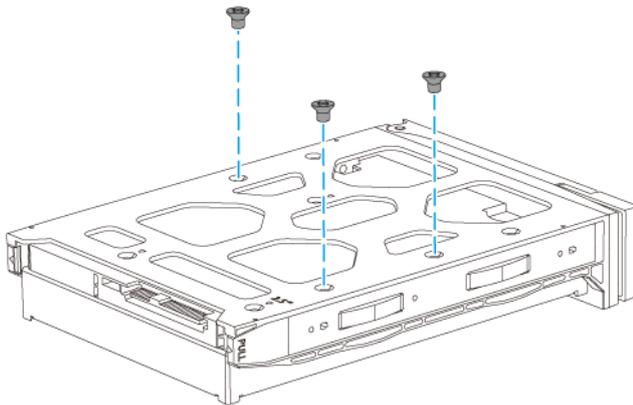
4. Install a drive on the tray.
 - a. Remove the fastening panels from the sides of the tray.



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

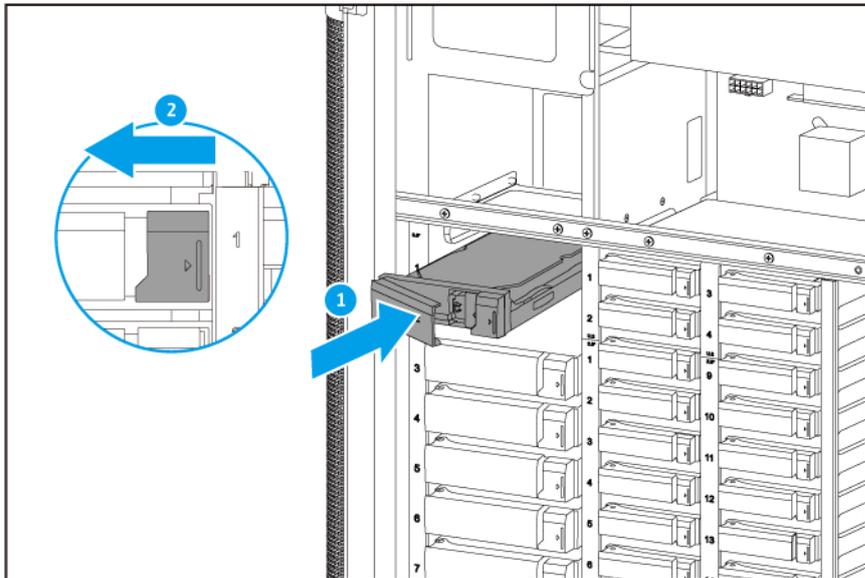


- d. Optional: Attach the screws to further secure the drive.



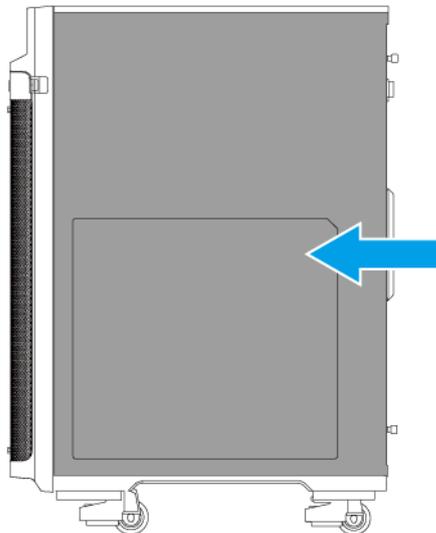
5. Load the tray into the bay.
- Insert the tray into the bay.
 - Push the handle.

c. Slide the lock to the left.

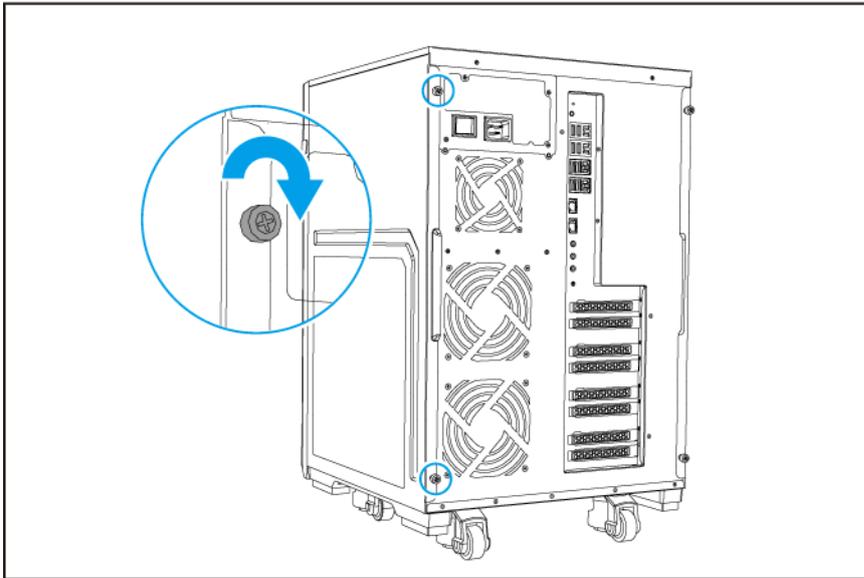


6. Attach the right cover.

a. Align the right cover with the grooves on the case and then slide to the front.



b. Tighten the screws.



7. Power on the NAS.

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



Warning

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

•



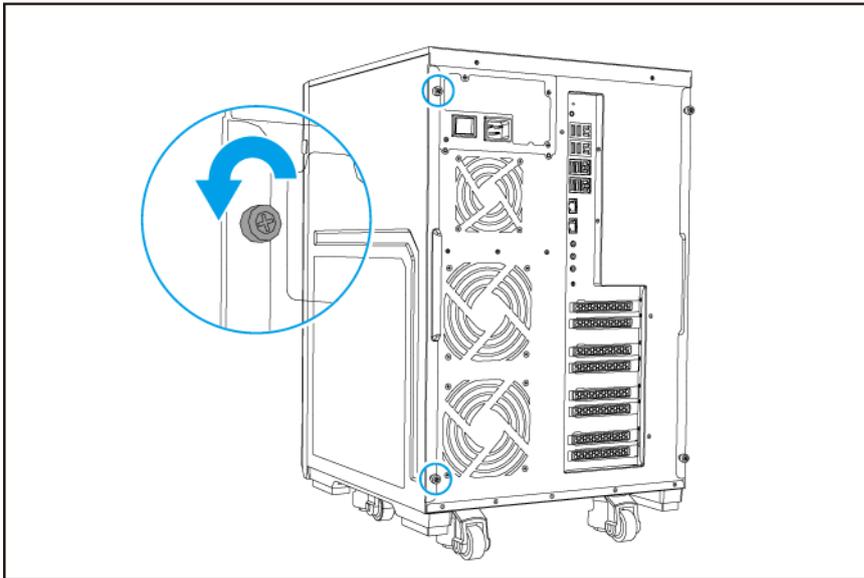
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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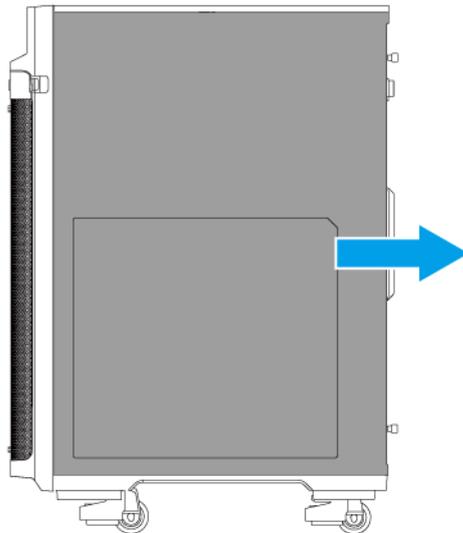


Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. Remove the right cover.
 - a. Loosen the screws.

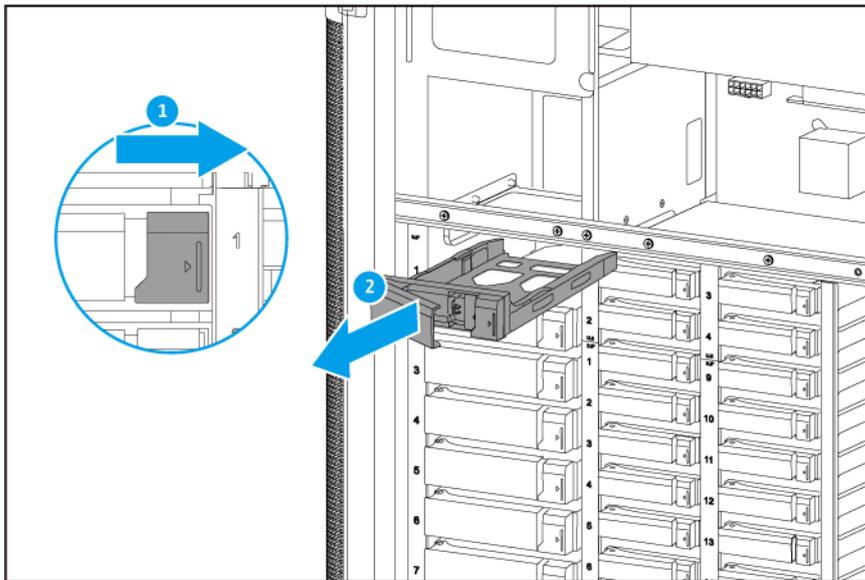


b. Pull the right cover back.

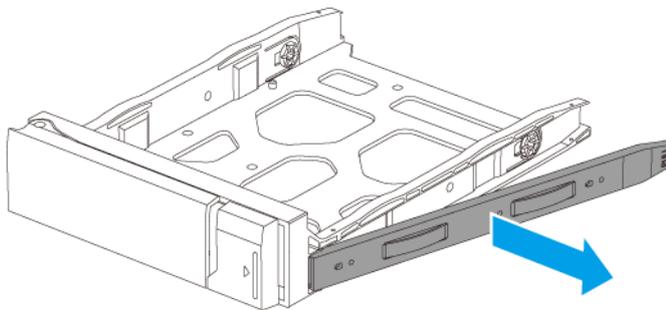


3. Remove the drive tray.

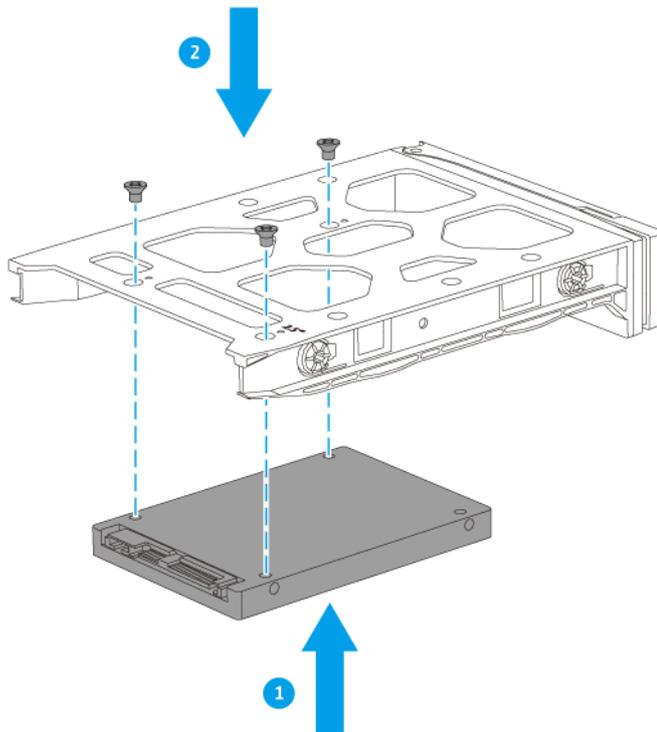
- a.** Slide the lock to the right.
- b.** Pull the handle to release the tray.
- c.** Pull the tray out.



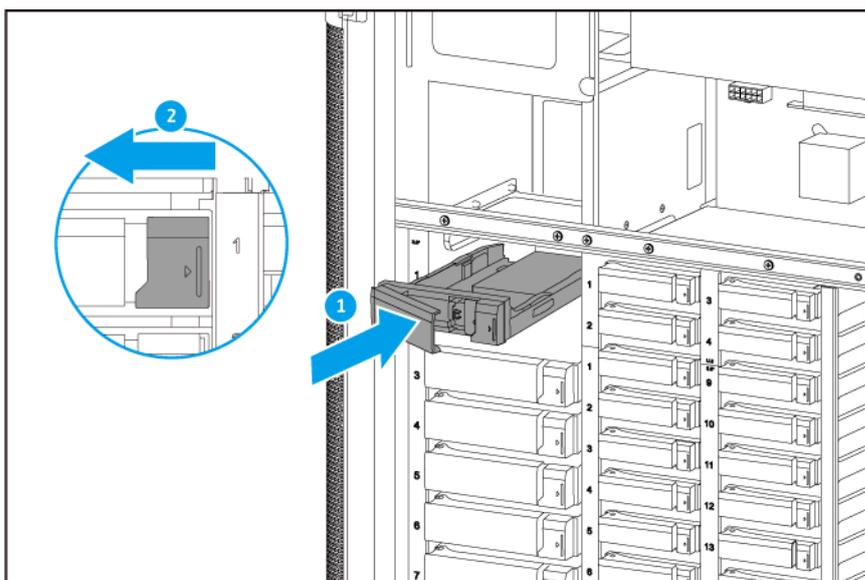
4. Install a drive on the tray.
 - a. Remove the right fastening panel from the tray.



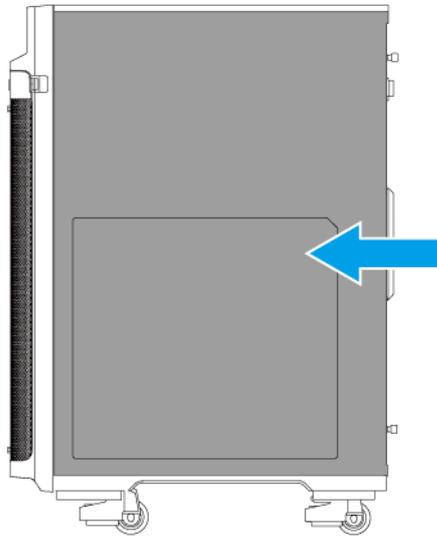
- b. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.
 - c. Attach the screws to lock the drive to the tray.



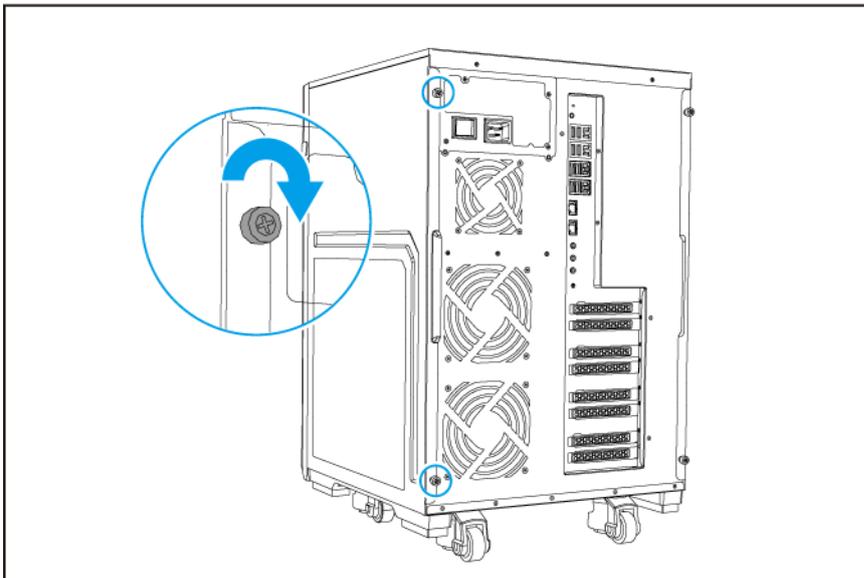
5. Load the tray into the bay.
 - a. Insert the tray into the bay.
 - b. Push the handle.
 - c. Slide the lock to the left.



6. Attach the right cover.
 - a. Align the right cover with the grooves on the case and then slide to the front.



- b. Tighten the screws.



7. Power on the NAS.

Installing 2.5-inch and U.2 Solid State Drives on 2.5-inch Trays



Warning

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



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

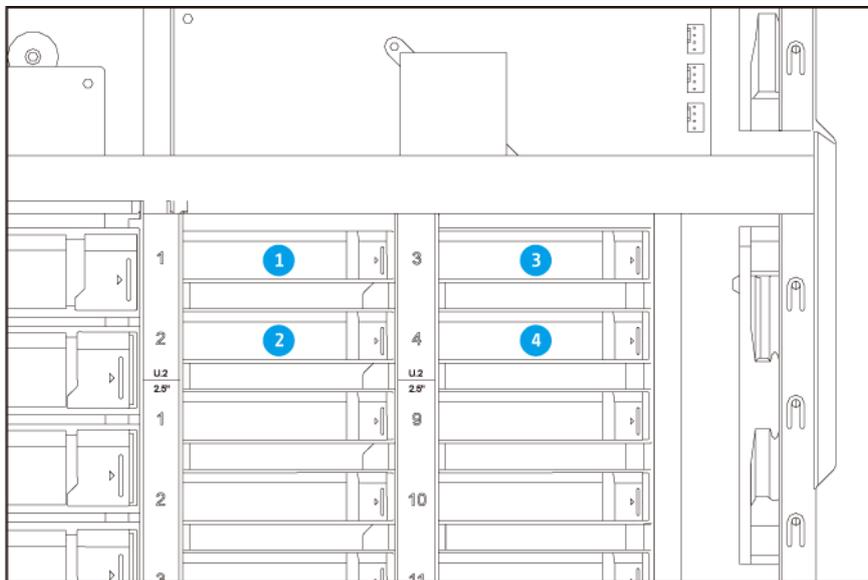


Other moving components: Keep your hands and other body parts away from other moving components.

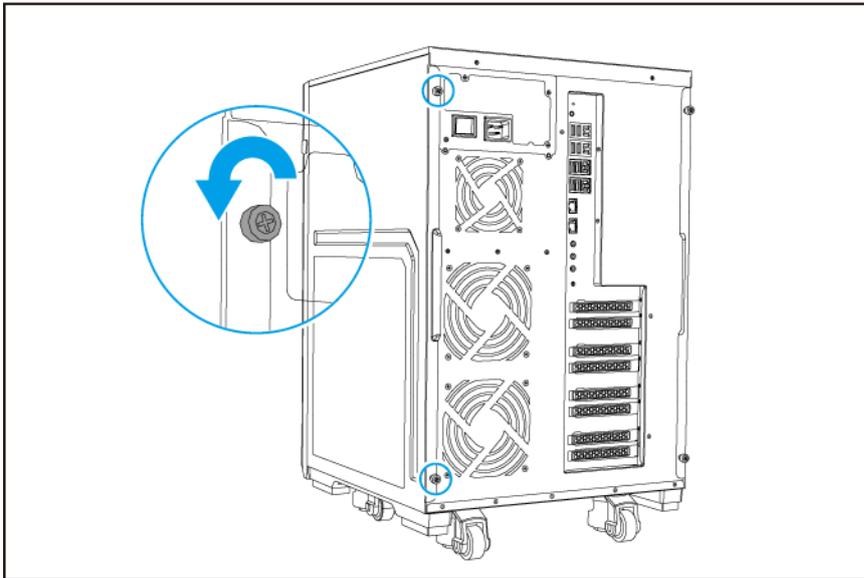


Important

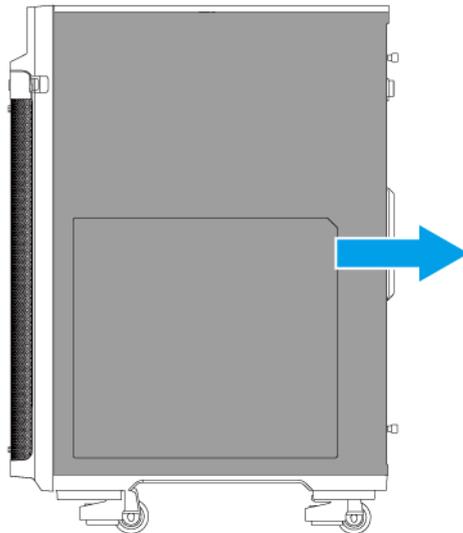
Only install U.2 drives in drive bays 1 to 4 on the upper right corner.



1. Power off the NAS.
2. Remove the right cover.
 - a. Loosen the screws.

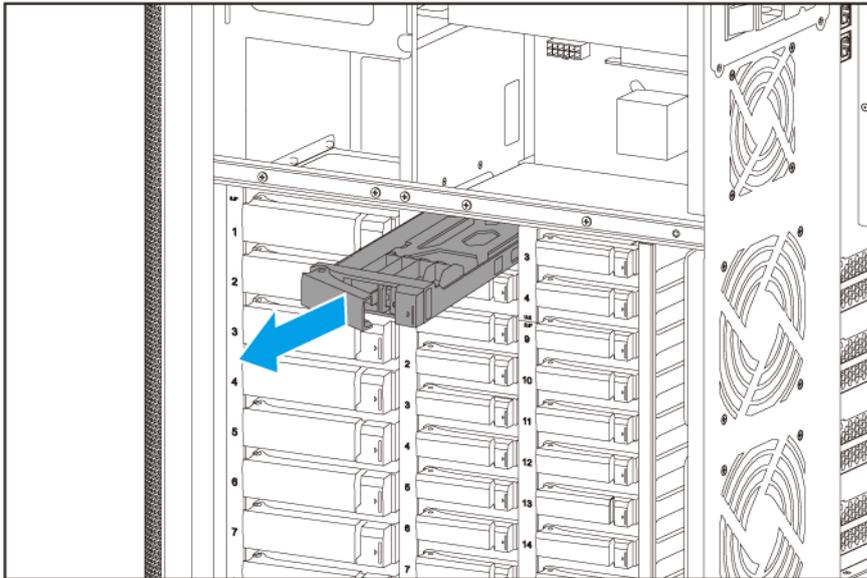


b. Pull the right cover back.

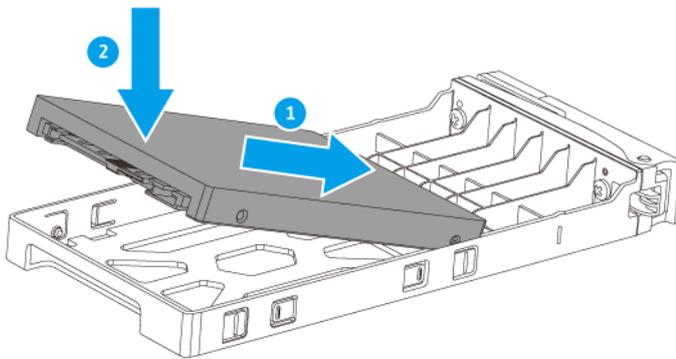


3. Remove the drive tray.

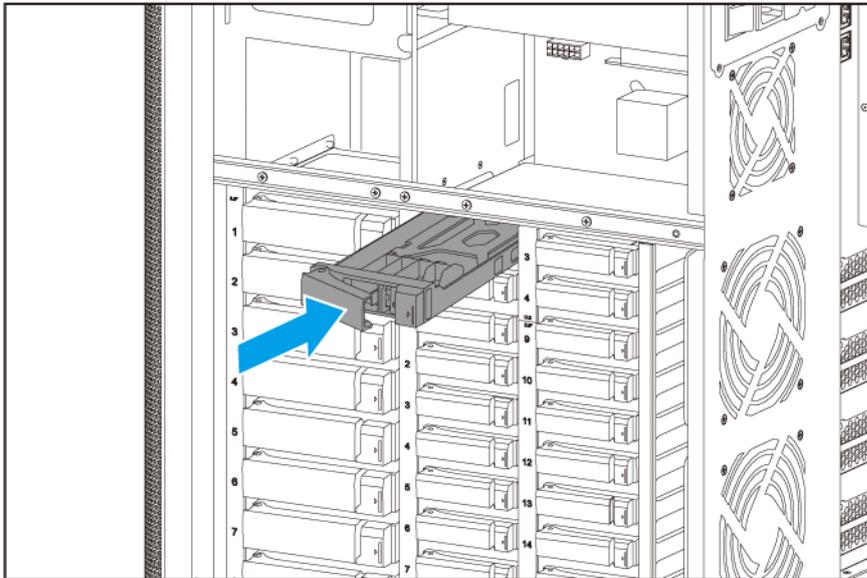
- a.** Slide the lock to the right.
- b.** Pull the handle to release the tray.
- c.** Pull the tray out.



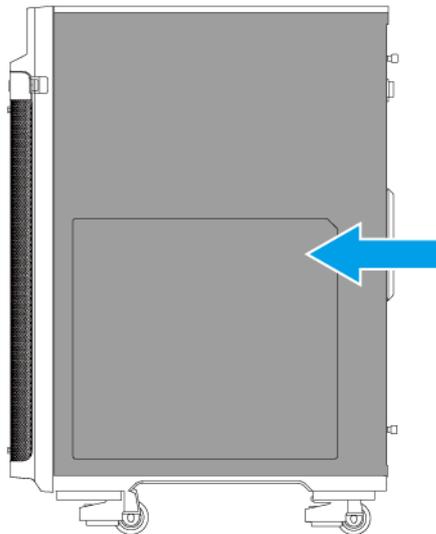
4. Install a drive on the tray.
 - a. Align the SATA connector on the drive with the opening at the end of the tray.
 - b. Place the drive on the tray.



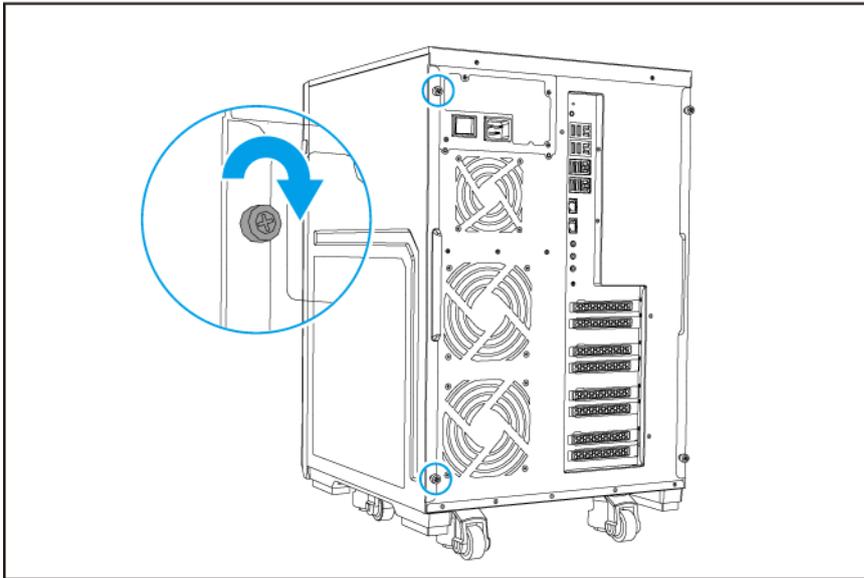
5. Load the tray into the bay.
 - a. Insert the tray into the bay.
 - b. Push the handle.
 - c. Slide the lock to the left.



6. Attach the right cover.
 - a. Align the right cover with the grooves on the case and then slide to the front.



- b. Tighten the screws.



7. Power on the NAS.

Installing Expansion Cards

The TS-2888X 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 all QNAP NAS models.

Slots 1, 3, and 5 provide the bandwidth of PCIe Gen 3.0 x8 when slot 2, 4, and 6 are not in use. Slots 1, 3, and 5 only provide the bandwidth of PCIe Gen 3.0 x4 when an expansion board is installed in slot 2, 4, and 6. For details on slot numbering, see [PCIe Slot Numbering](#).

Some expansion cards may occupy two PCIe slots.



Warning

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



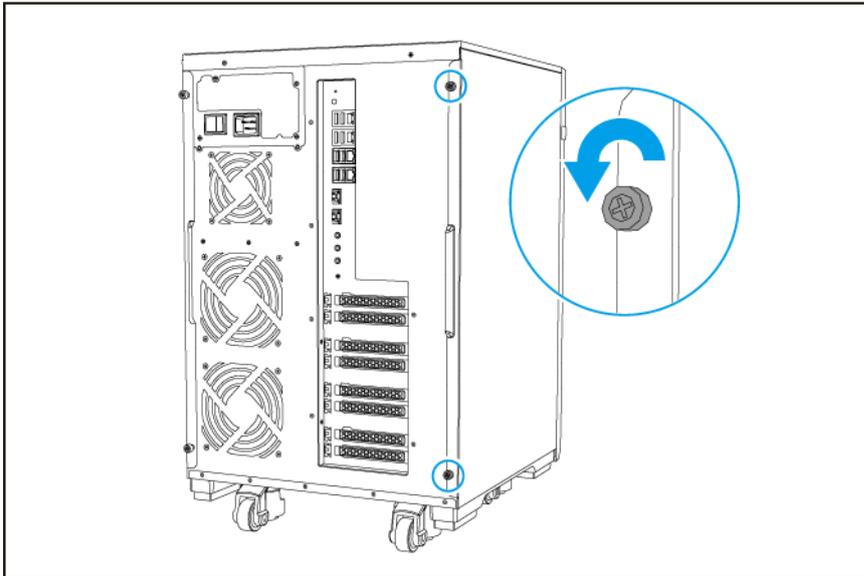
Moving fan blades: Keep your hands and other body parts away from moving fan blades.



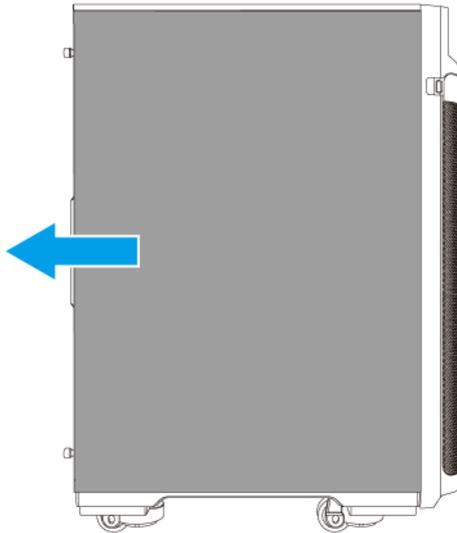
Other moving components: Keep your hands and other body parts away from other moving components.

1. Check the expansion cards and brackets supported by your model on the QNAP website.

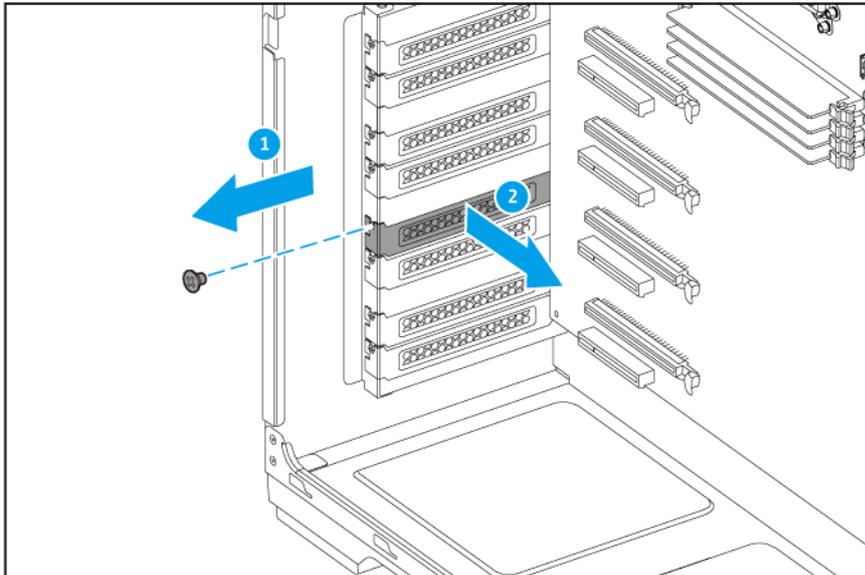
- a. Go to www.qnap.com/compatibility.
 - b. Click **Search by NAS**.
 - c. Specify the number of bays and the specific model of your NAS.
 - d. Under **Category**, select the component or device type.
 - e. Locate a specific component or device model in the list.
 - f. Optional: Click the corresponding **Note** icon to view more information.
2. Power off the NAS.
 3. Disconnect the power cord from the electrical outlet.
 4. Disconnect all cables and external attachments.
 5. Remove the left cover.
 - a. Loosen the screws.



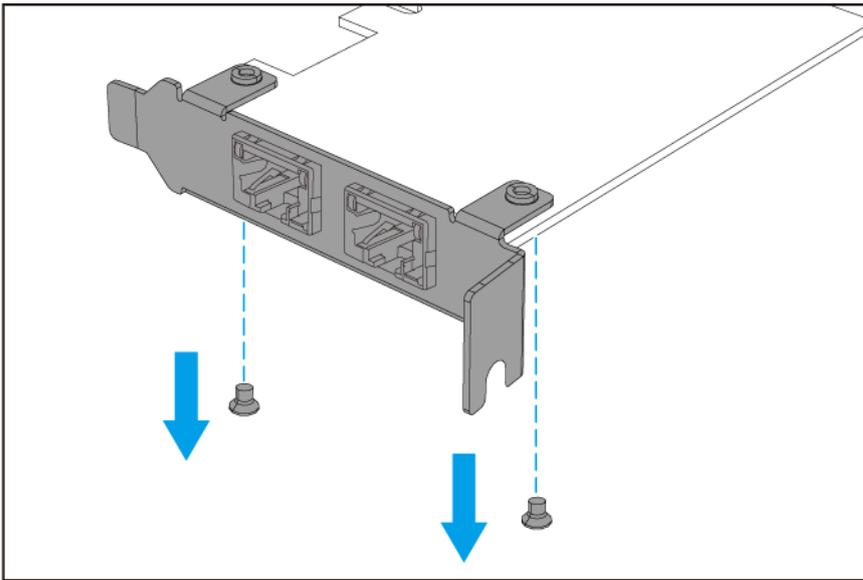
- b. Pull the left cover back.



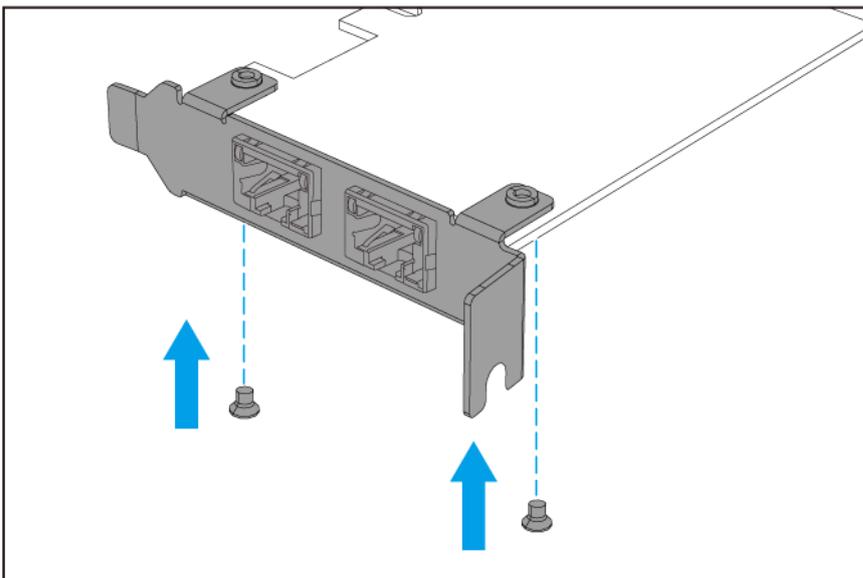
6. Remove the case cover.
 - a. Remove the screws that secure the case cover to the chassis.
 - b. Pull the cover away from the slot.



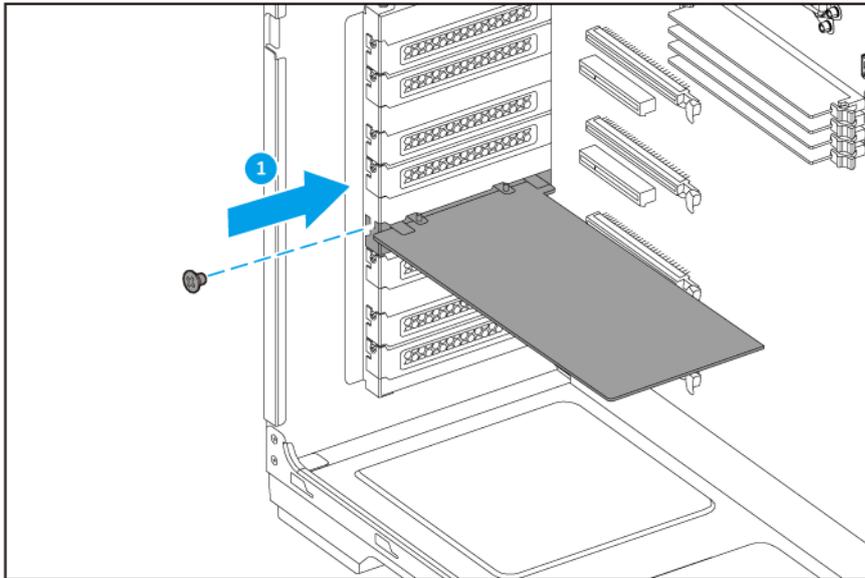
7. Optional: Attach the QNAP bracket to the expansion card.
 - a. Remove all screws of the existing bracket.



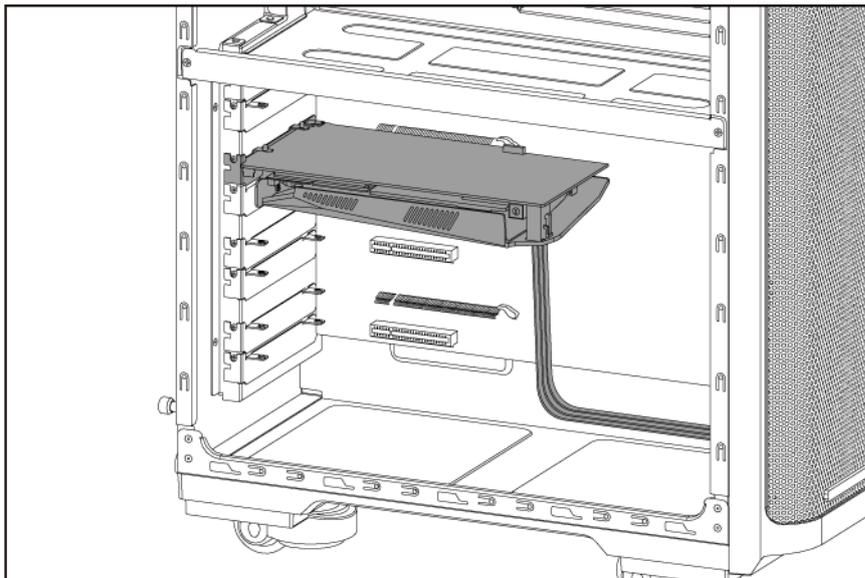
- b.** Carefully pull the bracket away from the card.
- c.** Attach the QNAP bracket to the card using the same screws.



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



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

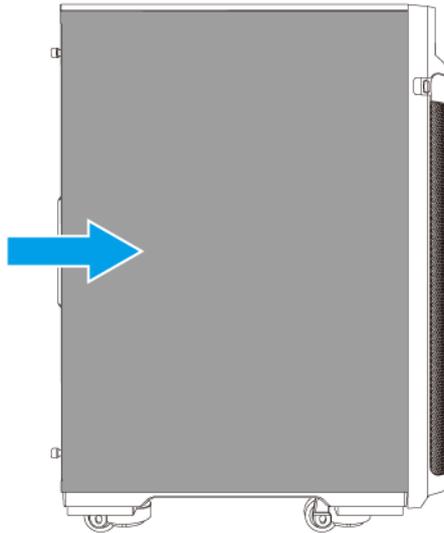


Note

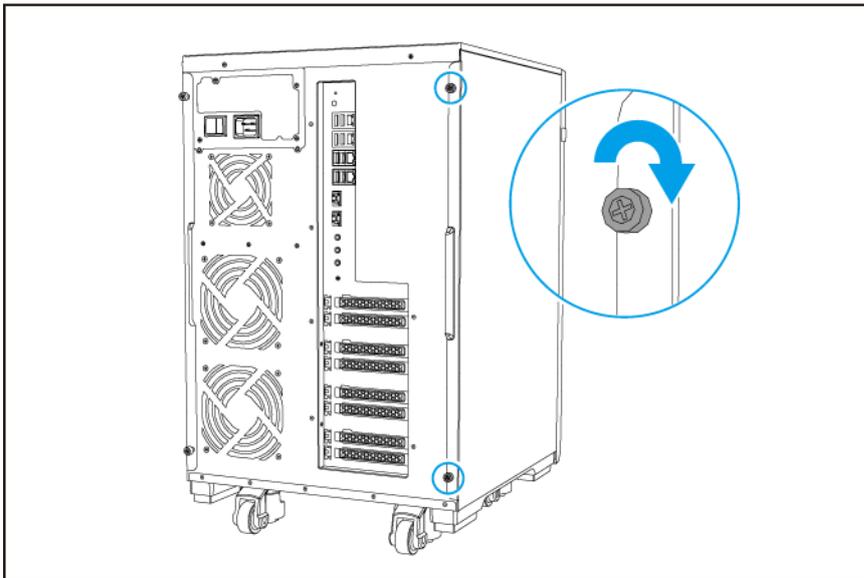
Larger expansion cards may require you to attach the PCIe power connector before inserting the card into the slot.

9. Attach the left cover.

a. Align the left cover with the grooves on the case and then slide to the front.



b. Tighten the screws.



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

Replacing Memory Modules

The TS-2888X has eight memory slots. You can increase the memory capacity of the NAS by upgrading memory modules.

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

For best results, 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.
- When installing only one module, use slot 1.

For details on slot numbering, see [Memory Slot Numbering](#).

Module Pair	Slot Number
First pair	Slots 1 and 5
Second pair	Slots 3 and 7
Third pair	Slots 2 and 6
Fourth pair	Slots 4 and 8



Warning

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

-



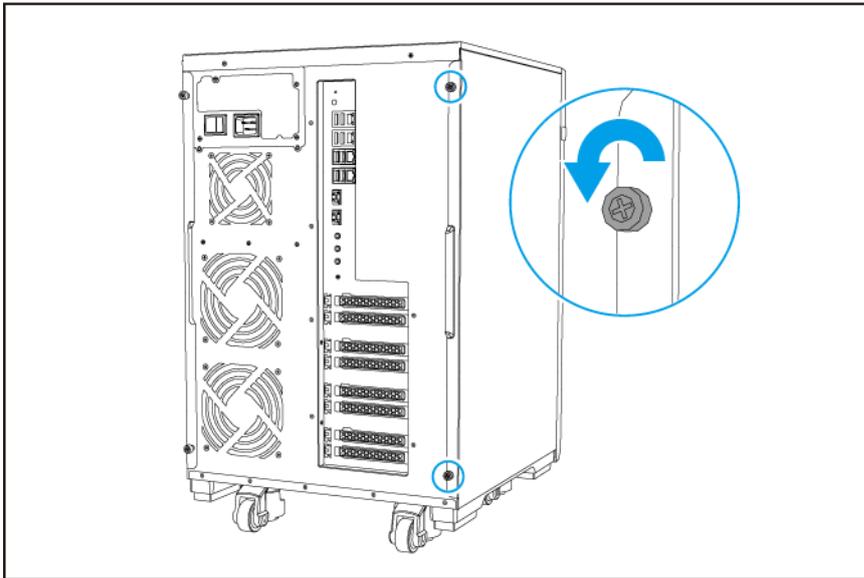
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

-

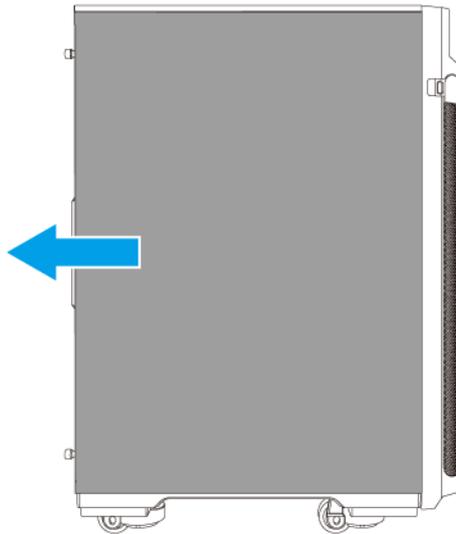


Other moving components: Keep your hands and other body parts away from other moving components.

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



b. Pull the left cover back.



5. Remove an existing module.

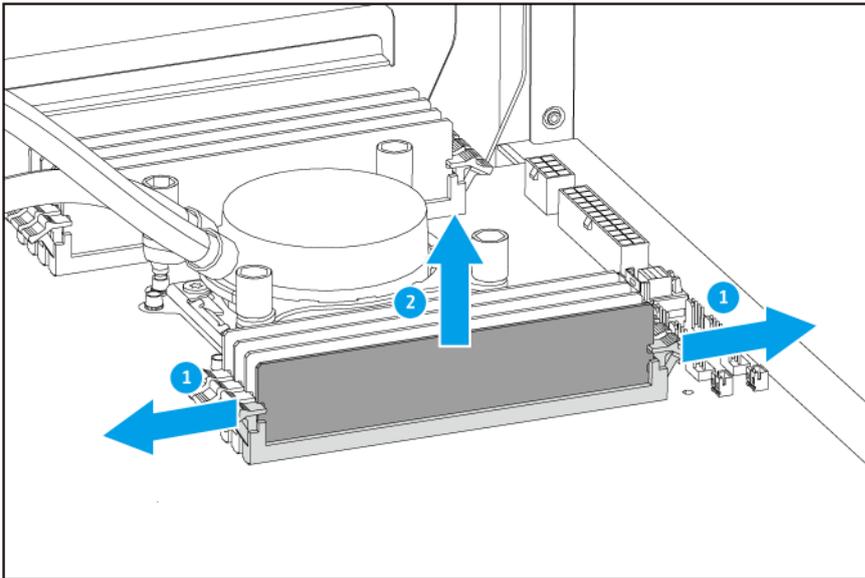
a. Push the retention clips outward simultaneously to release the module.



Warning

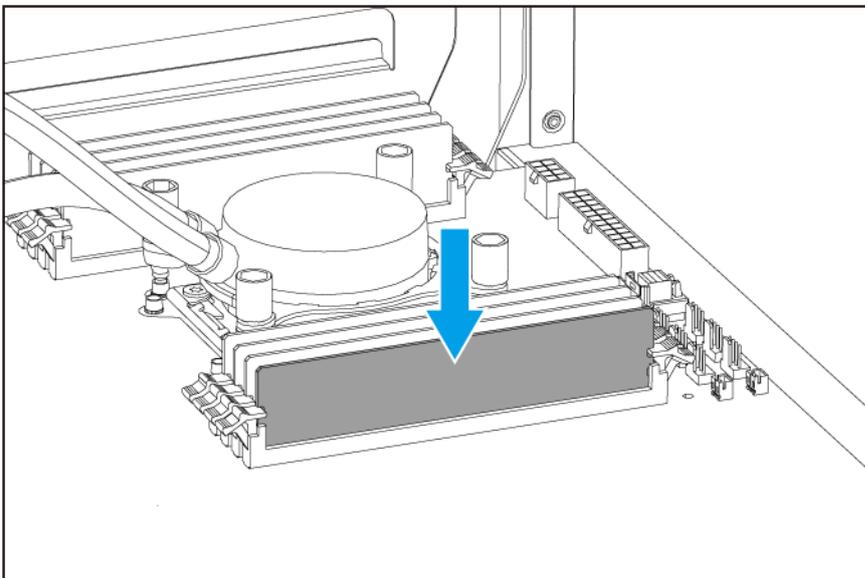
Attempting to remove a module that is not completely released may damage the module and the motherboard.

b. Hold the module by the edges and then carefully slide it out of the slot.



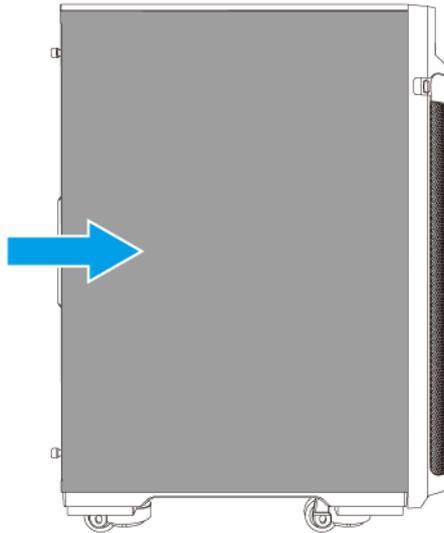
6. Install a new module.

- a. Align the notch with the ridge in the slot.
- b. Insert the module into the slot.
- c. Verify that the metal connectors are completely inserted into the slot.
- d. Carefully press down on the module until the retention clips lock the module into place.

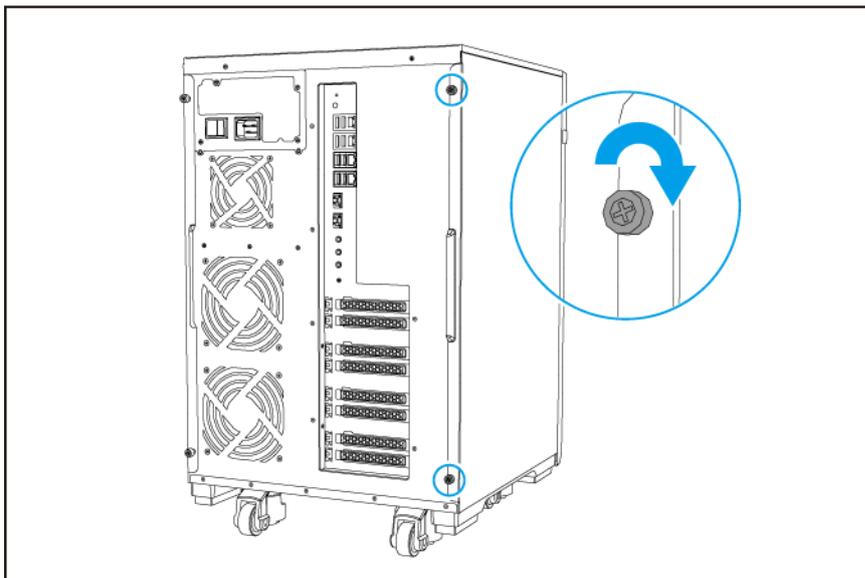


7. Attach the left cover.

- a. Align the left cover with the grooves on the case and then slide to the front.



b. Tighten the screws.



8. Connect all cables and external attachments.
9. Power on the NAS.
10. 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**.

QTS Installation

The TS-2888X uses the QNAP QTS operating system. You can install QTS 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 QTS Using Qfinder Pro.</p>	<ul style="list-style-type: none"> • Computer • Network cable • Qfinder Pro installer
Cloud installation	<p>If the NAS is connected to the internet, you can do the following:</p> <ul style="list-style-type: none"> • Scan the QR code on the NAS. • Log into your myQNAPcloud account. • Use CloudLink to remotely access your NAS. • Complete the steps in the Smart Installation Guide wizard. <p>For details, see Installing QTS Using the Cloud Key.</p>	<ul style="list-style-type: none"> • Computer or mobile device • Network cable • 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. Click **Configure disks later**.

**Note**

For details on configuring disks, see the Storage Manager section of the QTS User Guide.

15. Click **Next**.
16. Select **No**.

**Note**

- Enabling the multimedia functions allows you to install multimedia applications after configuring the disks in Storage Manager.
- For details on enabling multimedia functions on QTS, see the System Administration section of the QTS User Guide.

17. Click **Next**.
18. Review the settings.
19. Click **Apply**.
A confirmation message appears.

**Warning**

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

20. 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 CloudLink remote connection service will be disabled on your NAS after initialization. You can enable it by connecting to QTS through LAN and then installing CloudLink.

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. Click **Configure disks later**.

**Note**

For details on configuring disks, see the Storage Manager section of the QTS User Guide.

18. Click **Next**.
19. Select **No**.

**Note**

- Enabling the multimedia functions allows you to install multimedia applications after configuring the disks in Storage Manager.
- For details on enabling multimedia functions on QTS, see the System Administration section of the QTS User Guide.

20. Click **Next**.
21. Review the settings.
22. Click **Apply**.
A confirmation message appears.

**Warning**

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

23. 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.

USB One Touch Copy Button

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

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

LCD Panel

The LCD panel allows you to perform the following operations.

- Restart and power off the NAS
- Configure or change the LCD panel password
- View and configure network settings
- View information on the system, physical disks, and volumes

Viewing TCP/IP Settings

You can view the following settings for each network adapter on the NAS.

- IP address
 - Subnet mask
 - Default gateway
 - Primary DNS
 - Secondary DNS
1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
 2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
 3. Press and hold **Enter**.
The panel displays the IP address of the first network adapter.
 4. Press and hold **Select** to view the next TCP/IP screen.
 5. Optional: Repeat step 4 as necessary.

Configuring TCP/IP Settings

You can configure the following settings for each network adapter on the NAS

- IP address
 - Subnet mask
 - Default gateway
 - Primary DNS
 - Secondary DNS
1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
 2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.

3. Press and hold **Enter**.
The panel displays the IP address of the first network adapter.
4. Press **Select** repeatedly until the panel displays `Enter Network Settings`.
5. Press and hold **Enter**.
The panel displays the configurable network settings.
6. Press **Select** and **Enter** to configure the settings.

Button	Usage
Enter	<ul style="list-style-type: none"> • Display a configuration screen. • Move to the next item on a configuration screen.
Select	<ul style="list-style-type: none"> • Move to the next item on a menu. • Modify a value on a configuration screen.

Viewing Drive Information

The LCD panel can display the temperature and capacity of each drive installed in the NAS.

1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 2. Physical disk`.
4. Press and hold **Enter**.
The panel displays the temperature and capacity of the drive in slot 1.
5. Press and hold **Select**.
The panel displays the temperature and capacity of the next drive.
6. Optional: Repeat step 5 as necessary.

Viewing Volume Information

The LCD panel can display the name and capacity of each volume.

1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 3. Volume`.
4. Press and hold **Enter**.
The panel displays the name and capacity of the first volume.
5. Press and hold **Select**.
The panel displays the name and capacity of the next volume.
6. Optional: Repeat step 5 as necessary.

Viewing System Information

The LCD panel can display the CPU temperature, system temperature, and system fan speed.

1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 4. System`.
4. Press and hold **Enter**.
The panel displays the CPU and system temperature.
5. Press and hold **Select**.
The panel displays the system fan speed.

Powering Off the NAS

1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 5. Shut down`.
4. Press and hold **Enter**.
The NAS powers off.

Restarting the NAS

1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 6. Reboot`.
4. Press and hold **Enter**.
The NAS restarts.

Changing the LCD Password

Specifying a password for the LCD panel prevents unauthorized access.

1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 7. Password`.
4. Press and hold **Enter**.
The `Change Password` screen appears.

5. Select **Yes** by presing and holding **Enter**.

The `New Password` screen appears.

6. Press **Select** and **Enter** to specify a new password.

- Specify a password with 1 to 8 characters. The password can only contain numbers (0 to 9).
- To remove the password, leave the password field blank.

Button	Usage
Enter	Move to the next item in the <code>New Password</code> screen.
Select	Change a number in the <code>New Password</code> and <code>Verify Password</code> screens.

7. Press **Enter**.

The NAS saves the password.

LCD Error Messages

System Message	Description
Sys. Fan Failed	The system fan failed.
Sys. Overheat	The system overheated.
HDD Overheat	The drive overheated.
CPU Overheat	The CPU overheated.
Network Lost	LAN 1, LAN 2, LAN3, and LAN 4 are disconnected in failover or are in load-balancing mode.
LAN1 Lost	LAN 1 is disconnected.
LAN2 Lost	LAN 2 is disconnected.
LAN3 Lost	LAN 3 is disconnected.
LAN4 Lost	LAN 4 is disconnected.
HDD Failure	The drive failed.
Vol1 Full	The volume is full.
HDD Ejected	The drive was ejected.
Vol1 Degraded	The volume is in degraded mode.
Vol1 Unmounted	The volume is unmounted.
Vol1 Nonactivate	The volume is not activated.

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). Hardware self-test error
	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	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.
LAN	Orange	A read/write error occurred while another device is accessing data.
	Flashes orange	The NAS is being accessed from the network.

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.

Forcing Qfinder Pro or myQNAPcloud to Locate the NAS

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

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

Hot-swapping Failed Drives

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

- RAID 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 **Storage & Snapshots > Storage > Disks/VJBOD** .
 3. Locate the failed drive.
 4. Prepare a new hard drive with a capacity that is the same as or larger than the failed hard drive.
 5. Remove the failed drive from the 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 **Storage & Snapshots > Storage > Storage/Snapshots** .
 11. Locate the volume that contains the new drive and then verify that the status is `Rebuilding`.

Recovering Unintentionally Removed Healthy Drives

The NAS supports exclusive RAID recovery technology to recover failed RAID 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

QNAP provides the following resources:

Resource	URL
Documentation	http://docs.qnap.com
Helpdesk	http://helpdesk.qnap.com
Downloads	http://download.qnap.com
Community Forum	http://forum.qnap.com

6. Glossary

CloudKey

Unique 8-digit code assigned to each NAS device

myQNAPcloud

Provides various remote access services such as DDNS and CloudLink

myQNAPcloud ID

Email address that was used to register for a myQNAPcloud account

Qfinder Pro

Enables you to locate and access the QNAP NAS devices in your local area network

QTS

QNAP NAS operating system

7. Notices

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

Limited Warranty

QNAP offers limited warranty service on our products. Your QNAP-branded hardware product is warranted against defects in materials and workmanship for a period of one (1) year or more from the date printed on the invoice. ("Warranty Period"). Please review your statutory rights at www.qnap.com/warranty, which may be amended from time to time by QNAP in its discretion.

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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.

Should you return any components of the package of QNAP products such as NAS (Network Attached Storage) for refund or maintenance, make sure they are carefully packed for shipping. Any form of damages due to improper packaging will not be compensated.

All the features, functionality, and other product specifications are subject to change without prior notice or obligation. Information contained herein is subject to change without notice.

Further, the ® or ™ symbols are not used in the text.

FCC Notice

FCC Class B Notice



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

1. This device may not cause harmful interference.

- This device must accept any interference received, including interference that may cause undesired operation.



Note

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

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



Important

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

CE Notice



This QNAP NAS complies with CE Compliance Class B.

SJ/T 11364-2006



本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有“环境友好使用期限”的标签，此期限是估算这些物质“不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	0	0	0	0	0	0

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
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
风扇组装	0	0	0	0	0	0
电力供应组装	0	0	0	0	0	0
电池	0	0	0	0	0	0

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

VCCI Notice



VCCI-B

BSMI Notice

