

TS-x32XU

TS-432XU

TS-432XU-RP

TS-832XU

TS-832XU-RP

TS-1232XU

TS-1232XU-RP

User Guide

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1. Preface





About This Guide

This guide provides information on the QNAP TS-x32XU 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 a task or configuring settings.
	Warnings provide information, that when ignored, may result to potential loss, injury, or even death.

2. Product Overview

This chapter provides basic information about the QNAP TS-x32XU NAS.

About the TS-x32XU

The TS-x32XU is equipped with a quad-core 1.7 GHz ARM® processor, DDR4 memory scalable up to 32 GB, and a SATA 6Gb/s hard drive interface. The TS-x32XU also features four USB 3.0 ports, dual LAN ports, dual SFP+ ports, a PCIe slot, and support for up to two USB expansion units.

The cost-effective TS-x32XU is adaptable to the needs of data centers as well as small and medium-sized businesses.

Hardware Specifications







Important

Modifying the hardware or software of your QNAP product invalidates the warranty. QNAP is not responsible for any damage or data loss caused by unauthorized modifications and installation of unsupported third-party applications.

Ordering P/N	Drive Bays	Memory	Power Supply
TS-432XU-2G	4	2 GB	Single
TS-432XU-RP-2G			Redundant
TS-832XU-4G	8	4 GB	Single
TS-832XU-RP-4G			Redundant
TS-1232XU-4G	12	4 GB	Single
TS-1232XU-RP-4G			Redundant

Component	TS-432XU TS-432XU-RP	TS-832XU TS-832XU-RP	TS-1232XU TS-1232XU-RP
Processor			
CPU	Annapurna Labs AL-324 quad-core 1.7 GHz		
Architecture	64-bit		
Encryption engine	AES-NI		
Memory			
Pre-installed memory	<ul style="list-style-type: none"> • 2 GB RAM: 1 x 2 GB UDIMM DDR4 • 4 GB RAM: 1 x 4 GB UDIMM DDR4 <p>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.</p> <div style="display: flex; align-items: center;"> <p>Important Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.</p> </div>		
Total memory slots	1 x UDIMM DDR4		
Maximum memory	16 GB (1 x 16 GB)		
Flash Memory	512 MB		

Component	TS-432XU TS-432XU-RP	TS-832XU TS-832XU-RP	TS-1232XU TS-1232XU-RP
Storage			
Drive bays	4 x 3.5-inch SATA 6 Gbps bays	8 x 3.5-inch SATA 6 Gbps bays	12 x 3.5-inch SATA 6 Gbps bays
Drive compatibility	<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 		
Hot-swappable	Yes		
Network			
10 gigabit Ethernet ports	2 x 10 Gigabit SFP+		
Gigabit Ethernet ports	2 x Gigabit RJ45		
External I/O Ports & Expansion Slots			
PCIe slots	1 x PCIe 2.0 x2  Note x2, x4, x8, x16 cards can be installed, but cards larger than x2 might experience performance degradation.		
USB ports	4 x USB 3.0 Type-A		
Interface			
Buttons	<ul style="list-style-type: none"> • Power • Reset 		
Dimensions			
Form factor	1U Rackmount	2U Rackmount	
Dimensions (H x W x D)	44 x 439 x 499 mm 1.73 x 17.28 x 19.65 in	89 x 482 x 534 mm 3.5 x 18.98 x 21.02 in	89 x 482 x 534 mm 3.5 x 18.98 x 21.02 in
Net weight	<ul style="list-style-type: none"> • TS-432XU: 7.44 kg (16.4 lbs) • TS-432XU-RP: 9.16 kg (20.19 lbs) 	<ul style="list-style-type: none"> • TS-832XU: 10.9 kg (24.03 lbs) • TS-832XU-RP: 12.56 kg (27.69 lbs) 	<ul style="list-style-type: none"> • TS-1232XU: 11.3 kg (24.91 lbs) • TS-1232XU-RP: 13 kg (28.66 lbs)
Other			
Power supply unit	<ul style="list-style-type: none"> • TS-432XU, TS-832XU, TS-1232XU: 250W, 100-240V AC, 50/60 Hz • TS-432XU-RP, TS-832XU-RP, TS-1232XU-RP: 2 x 250W, 100-240V AC, 50/60 Hz 		
System battery	CR2032 lithium battery (3V, 225mAh)  Warning When replacing the system battery, only use the same battery type as the existing one to avoid explosions.		

Component	TS-432XU TS-432XU-RP	TS-832XU TS-832XU-RP	TS-1232XU TS-1232XU-RP
Sound level	<ul style="list-style-type: none"> TS-432XU: 37.6 dB(A) TS-432XU-RP: 38.9 dB(A) 	<ul style="list-style-type: none"> TS-832XU: 23.4 dB(A) TS-832XU-RP: 31.1 dB(A) 	<ul style="list-style-type: none"> TS-1232XU: 24.5 dB(A) TS-1232XU-RP: 31.7 dB(A)
	 Note The sound levels were tested at a bystander position, which is within one meter from the NAS. The test NAS operated at low speed with the maximum number of drives installed.		
Fans	System: 2 x 40 mm, 12V DC	System: 2 x 70 mm, 12V DC	System: 2 x 70 mm, 12V DC
	 Warning To avoid serious injuries, do not touch the fans while the NAS is connected to a power source.		
Operating temperature	0 to 40°C (32 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) 		
Security slot	Kensington security slot		

**Tip**

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

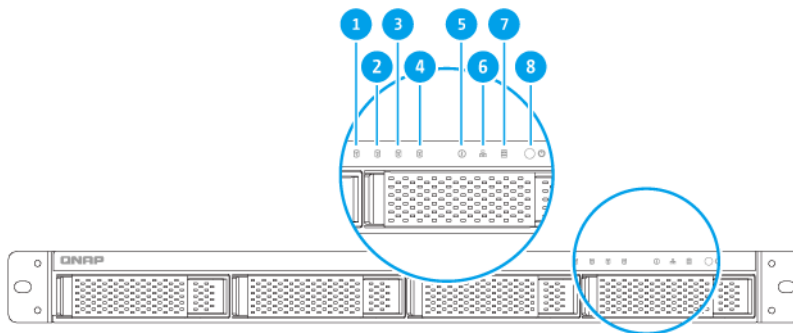
Package Contents

Item	Quantity
TS-x32XU NAS	1
AC power adapter	1
Power cord	<ul style="list-style-type: none"> TS-432XU, TS-832XU-RP, TS-1232XU: 1 TS-432XU-RP, TS-832XU-RP, TS-1232XU-RP: 2
Ethernet cable	2
Screws for 2.5-inch drives	<ul style="list-style-type: none"> TS-432XU, TS-432XU-RP: 12 TS-832XU-RP, TS-832XU-RP: 24 TS-1232XU, TS-1232XU-RP: 36
Screws for 3.5-inch drives	<ul style="list-style-type: none"> TS-432XU, TS-432XU-RP: 16 TS-832XU-RP, TS-832XU-RP: 32 TS-1232XU, TS-1232XU-RP: 48

Item	Quantity
Handle kit	TS-432XU, TS-432XU-RP: <ul style="list-style-type: none"> • 2 x handles • 2 x angle brackets • 8 x screws
Quick Installation Guide (QIG)	1

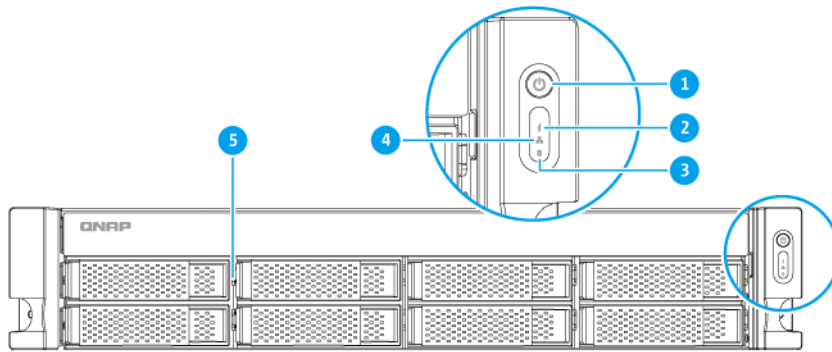
Components

Front Panel



TS-432XU, TS-432XU-RP

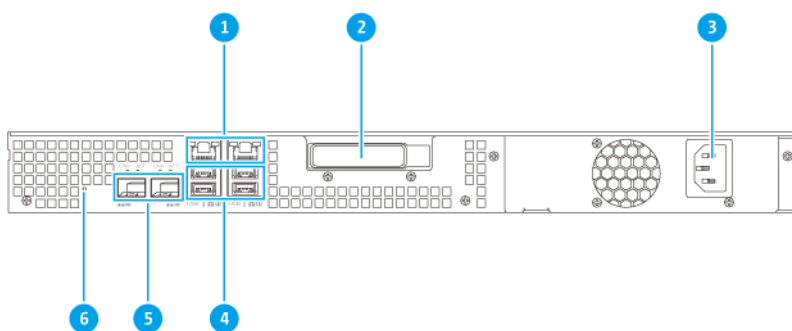
No.	Component	No.	Component
1	Drive 1 LED	5	Status LED
2	Drive 2 LED	6	LAN LED
3	Drive 3 LED	7	Expansion unit LED
4	Drive 4 LED	8	Power button



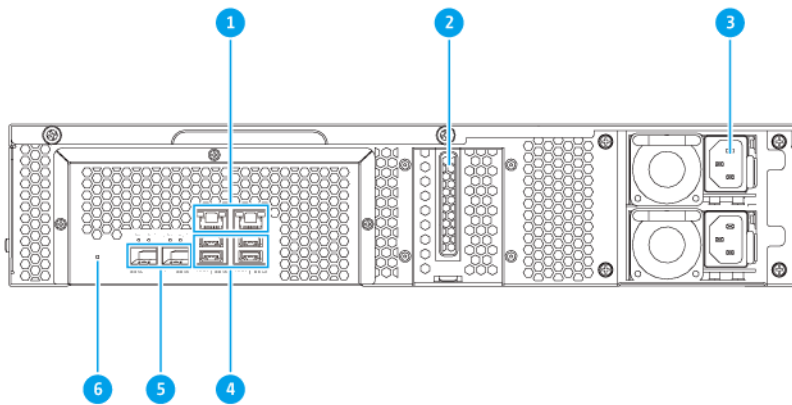
TS-832XU, TS-832XU-RP, TS-1232XU, TS-1232XU-RP

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

Rear Panel

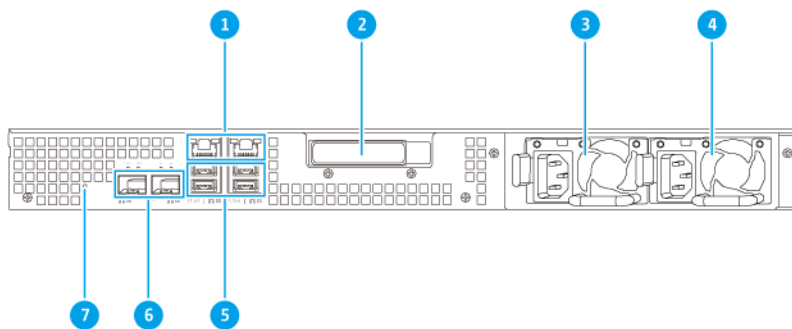


TS-432XU

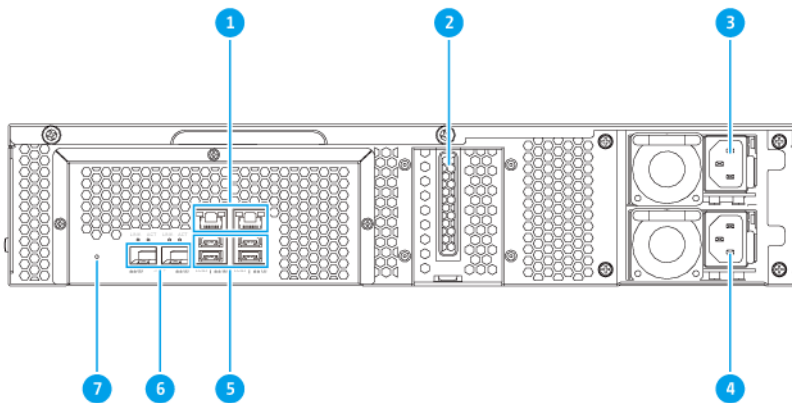


TS-832XU, TS-1232XU

No.	Component	No.	Component
1	Gigabit Ethernet RJ45 ports	4	USB 3.0 Type-A ports
2	PCIe cover	5	10 gigabit Ethernet SFP+ ports
3	Power input	6	Reset button



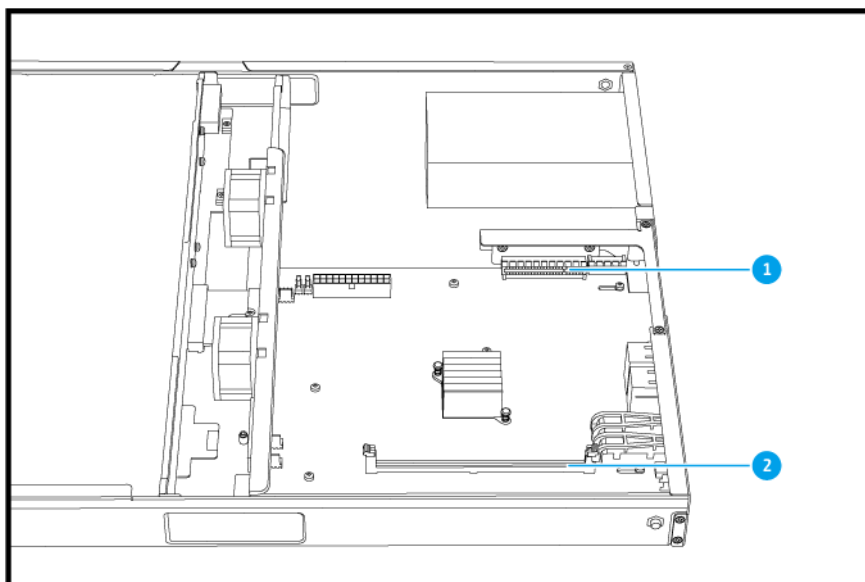
TS-432XU-RP



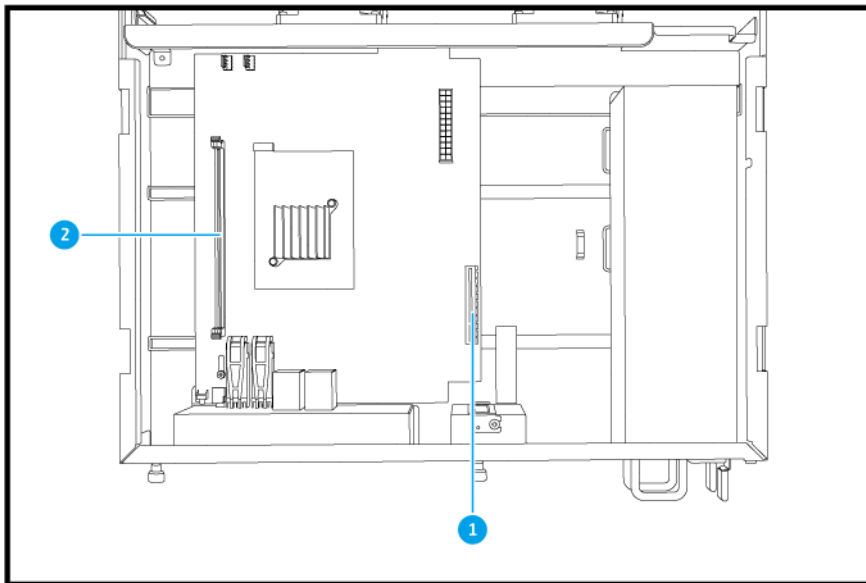
TS-832XU-RP, TS-1232XU-RP

No.	Component	No.	Component
1	Gigabit Ethernet RJ45 ports	5	USB 3.0 Type-A ports
2	Power supply unit 1	6	10 gigabit Ethernet SFP+ ports
3	Power supply unit 2	7	Reset button
4	PCIe low-profile cover	-	-

System Board



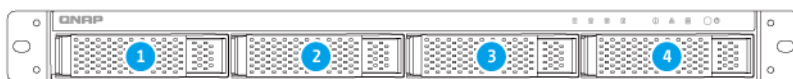
TS-432XU, TS-432XU-RP



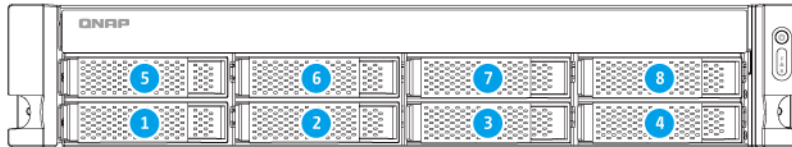
TS-832XU, TS-832XU-RP, TS-1232XU, TS-1232XU-RP

No.	Component	No.	Component
1	PCIe 2.0 x2 slot	2	Memory slot

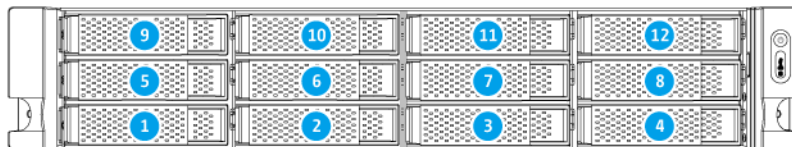
Front Drive Numbering



TS-432XU, TS-432XU-RP



TS-832XU, TS-832XU-RP



TS-1232XU, TS-1232XU-RP

Installation Requirements

Category	Item
Environment	<ul style="list-style-type: none"> Room temperature: 0 to 40°C (32 to 104°F) Non-condensing relative humidity: 5 to 95% Wet-bulb temperature: 27°C (80.6°F) Flat, anti-static surface with no exposure to direct sunlight, liquids, and chemicals

Category	Item
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

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](#)
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-x32XU is compatible with 3.5-inch and 2.5-inch hard drives, and 2.5-inch solid state drives.

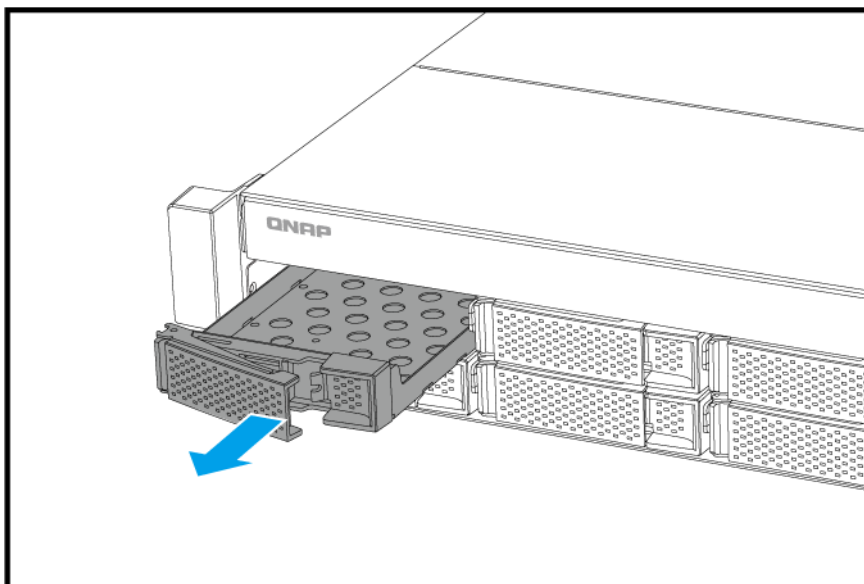
Installing 3.5-inch Hard Drives on 3.5-inch Trays



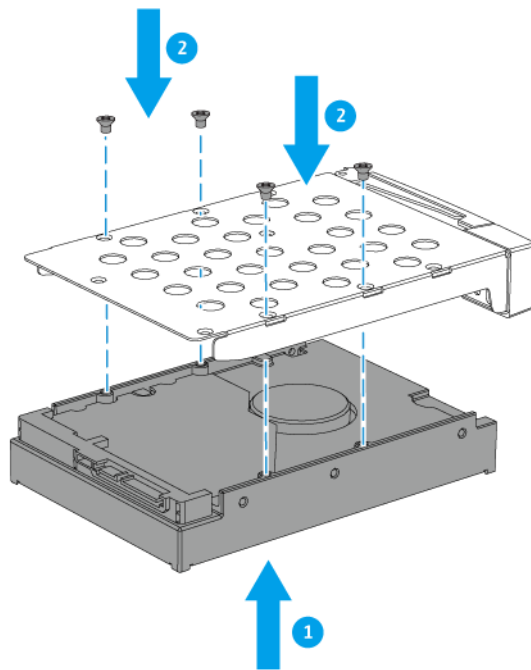
Warning

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

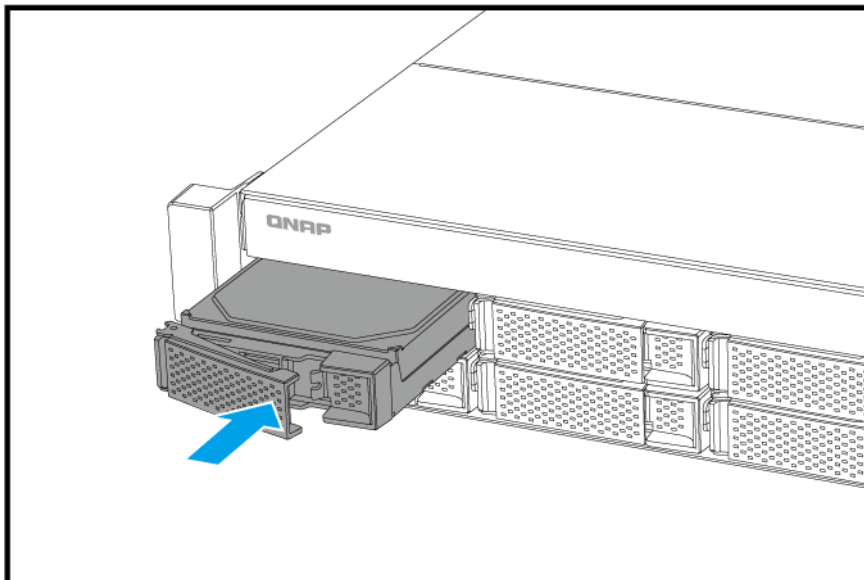
1. Power off the NAS.
2. Remove the drive tray.
 - a. Pull the tray handle outward.
 - b. Pull the tray out.



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 to lock the drive to the tray.



4. Load the tray into the bay.
 - a. Slide the tray into the drive bay.
 - b. Push the handle.



5. Power on the NAS.

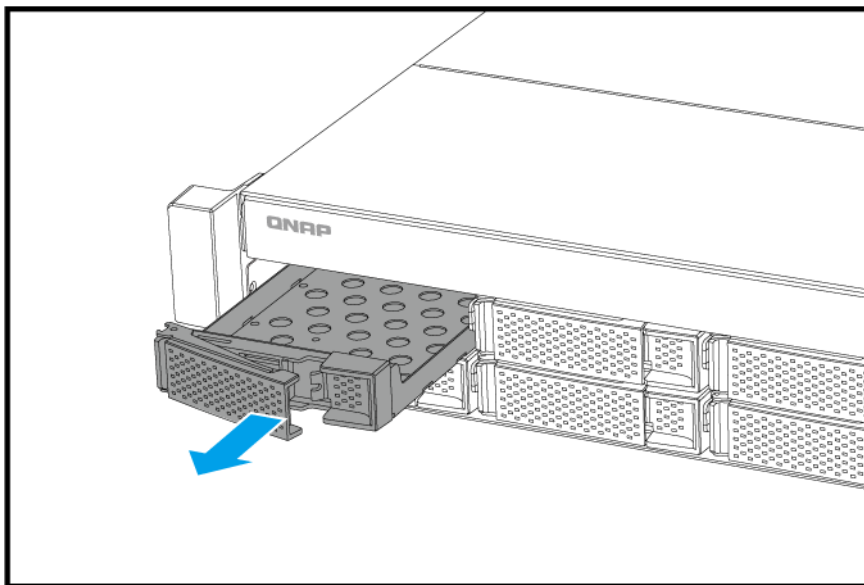
Installing 2.5-inch Hard Drives or Solid State Drives on 3.5-inch Trays



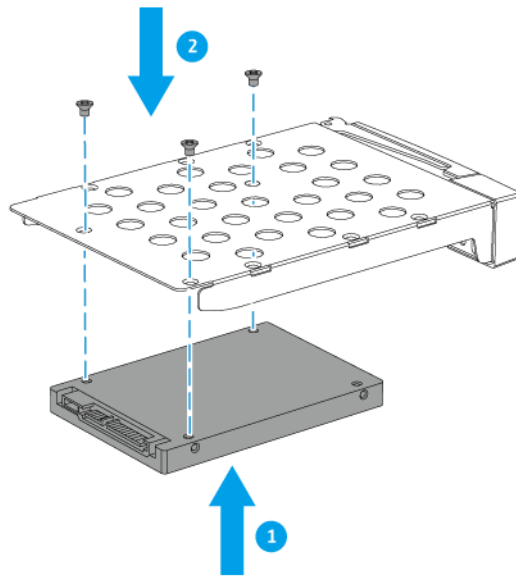
Warning

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

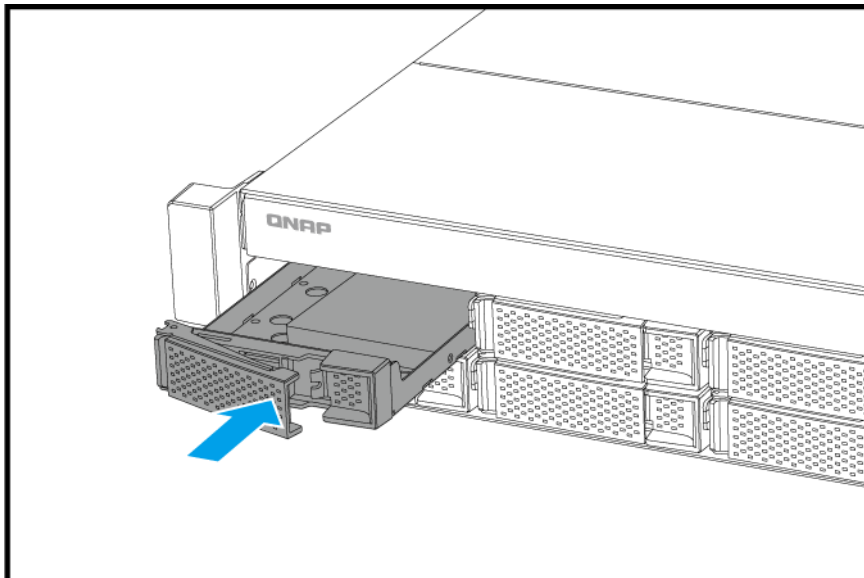
1. Power off the NAS.
2. Remove the drive tray.
 - a. Pull the tray handle outward.
 - b. Pull the tray out.



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 to lock the drive to the tray.



4. Load the tray into the bay.
 - a. Slide the tray into the drive bay.
 - b. Push the handle.



5. Power on the NAS.

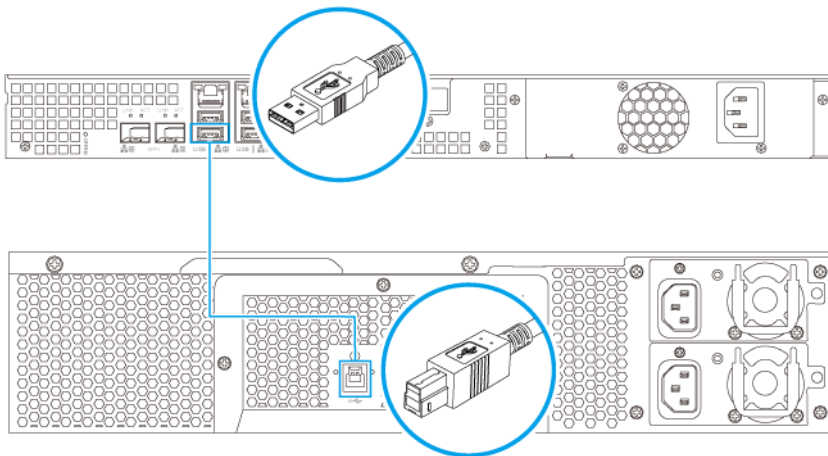
Connecting USB Expansion Units

The TS-x32XU supports a maximum of two USB expansion units and is compatible with the following models:

- UX-800U-RP
- UX-1200U-RP

1. Connect the expansion unit to the NAS.

- a. Connect the USB cable to the USB 3.0 Type-B port on the expansion unit.
- b. Connect the USB cable to a USB 3.0 Type-A port on the NAS.



2. Power on the expansion units.

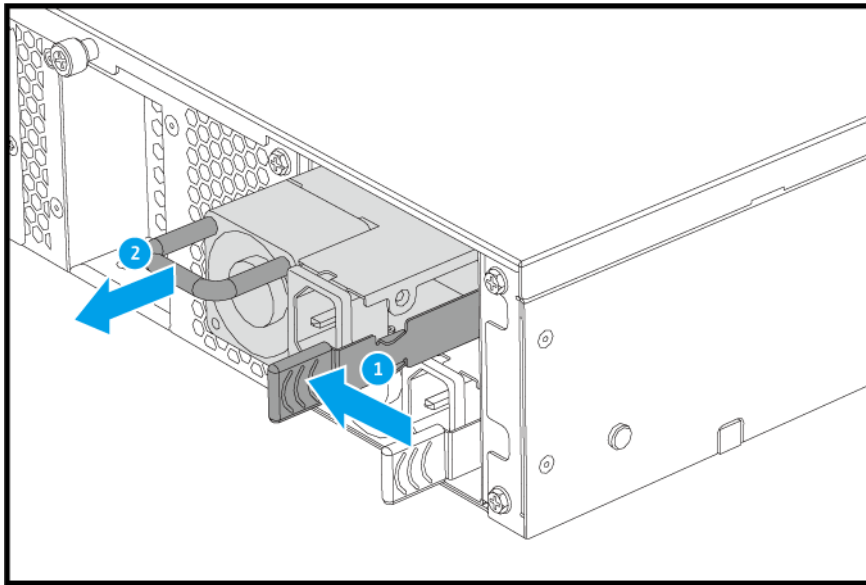
3. Verify that the expansion units are recognized by the NAS.

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

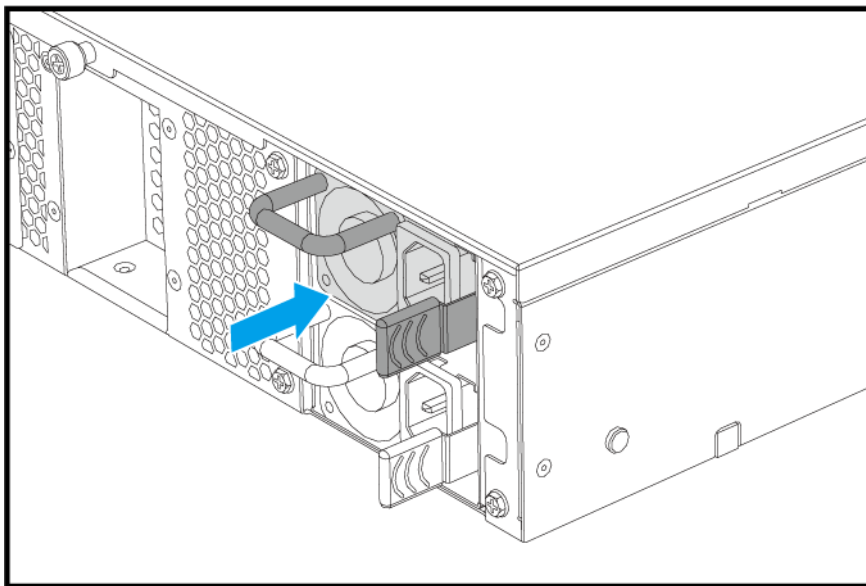
Hot-swapping Redundant Power Supply Units

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

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet and the PSU that you want to replace.
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**.

Installing Expansion Cards

Installing Expansion Cards on TS-432XU

For details on supported expansion cards, go to www.qnap.com/compatibility.



Note

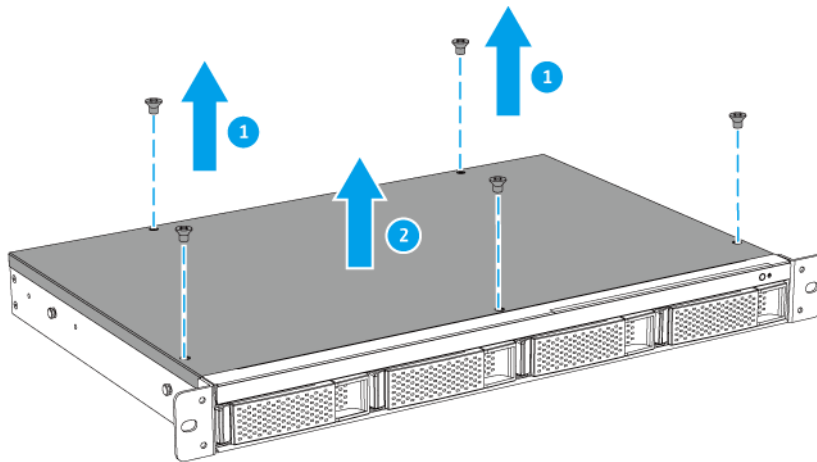
This process applies only to the TS-432XU. For details on the TS-832XU and TS-1232XU, go to [Installing Expansion Cards on TS-832XU or TS-1232XU](#)



Warning

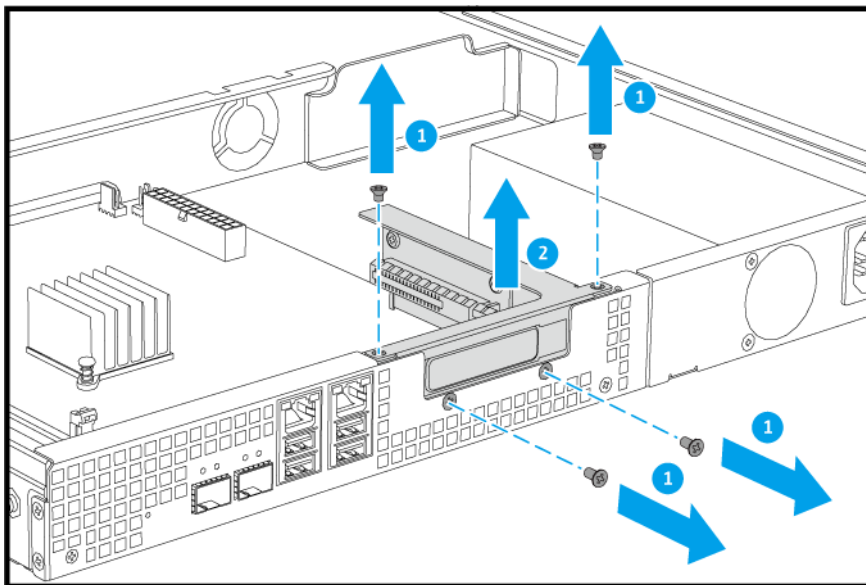
- Only qualified personnel should perform the following steps. Failure to follow instructions can result in serious injury or death.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. 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 top cover.
 - a. Remove the screws connecting the top cover to the chassis.
 - b. Lift the top cover up.



6. Remove the PCIe bracket.

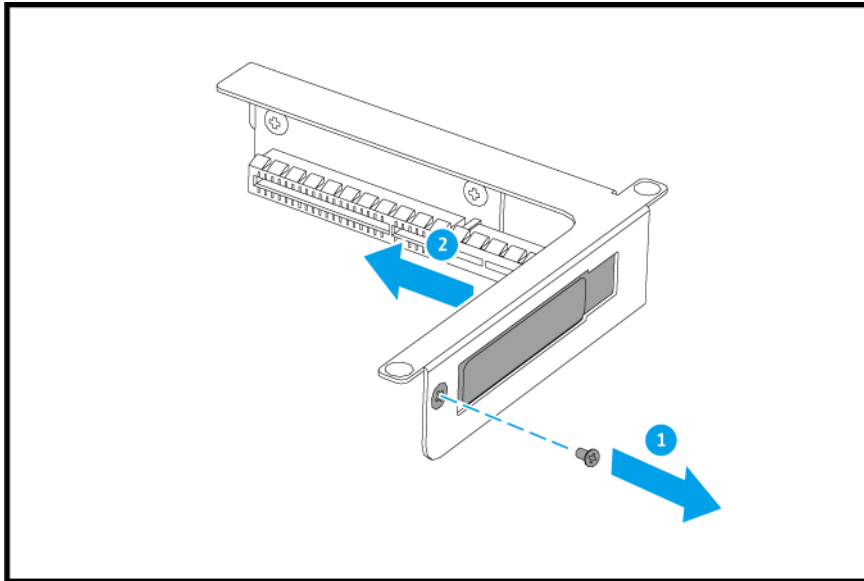
- a. Remove the screws that secure the bracket to the chassis.**



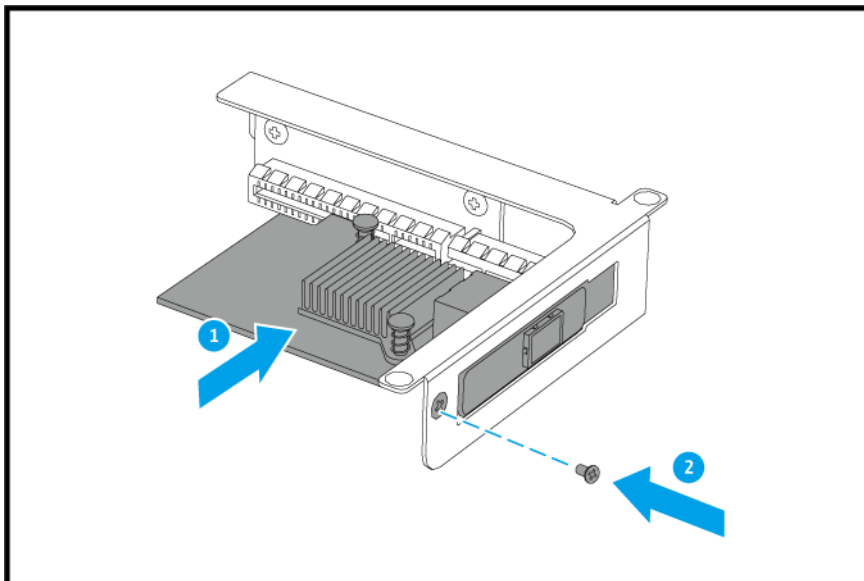
- b. Remove the bracket from the chassis.**

7. Remove the PCIe cover.

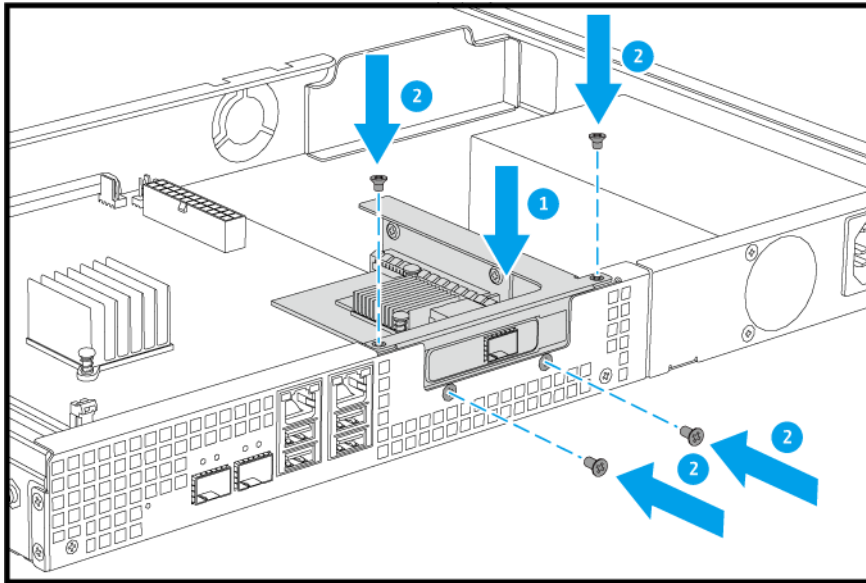
- a. Remove the screw that secures the cover to the bracket.**
- b. Pull the cover away from the slot.**



8. Install the expansion card.
 - a. Insert the card into the PCIe slot on the bracket.
 - b. Attach the screw.

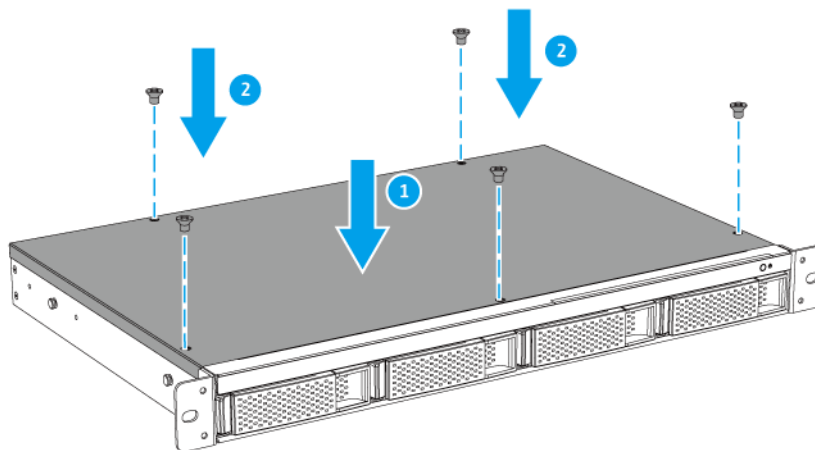


9. Insert the PCIe bracket.
 - a. Insert the PCIe connector on the bracket into the PCIe slot on the system board.
 - b. Attach the screws that secure the bracket to the chassis.



10. Attach the top cover.

- a. Place the cover on the NAS.
- b. Attach the screws connecting the top cover to the chassis.



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

Installing Expansion Cards on TS-832XU or TS-1232XU

For details on supported expansion cards, go to www.qnap.com/compatibility.

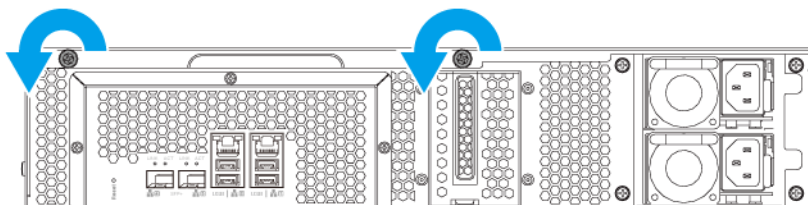
**Note**

This process applies only to the TS-832XU and TS-1232XU. For details on the TS-432XU, go to [Installing Expansion Cards on TS-432XU](#)

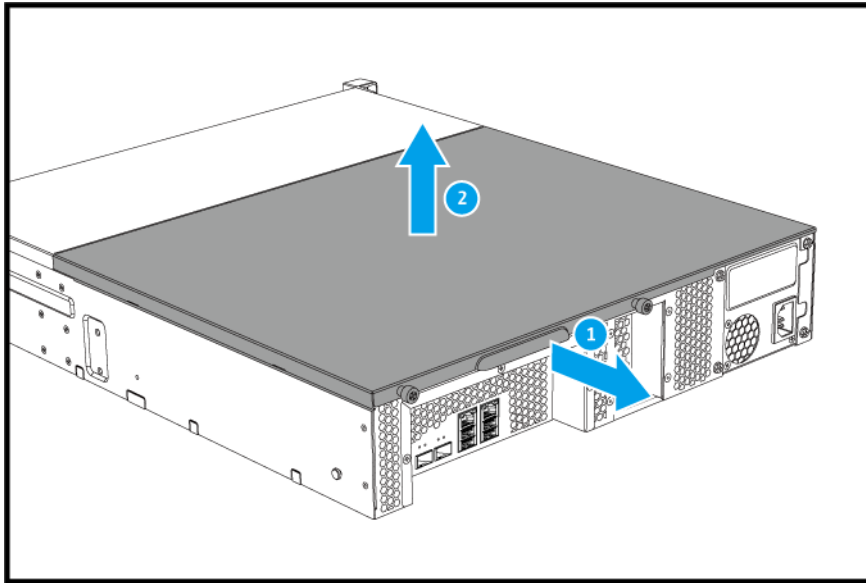
**Warning**

- 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. 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 top cover.
 - a. Loosen the two screws on the back of the top cover.

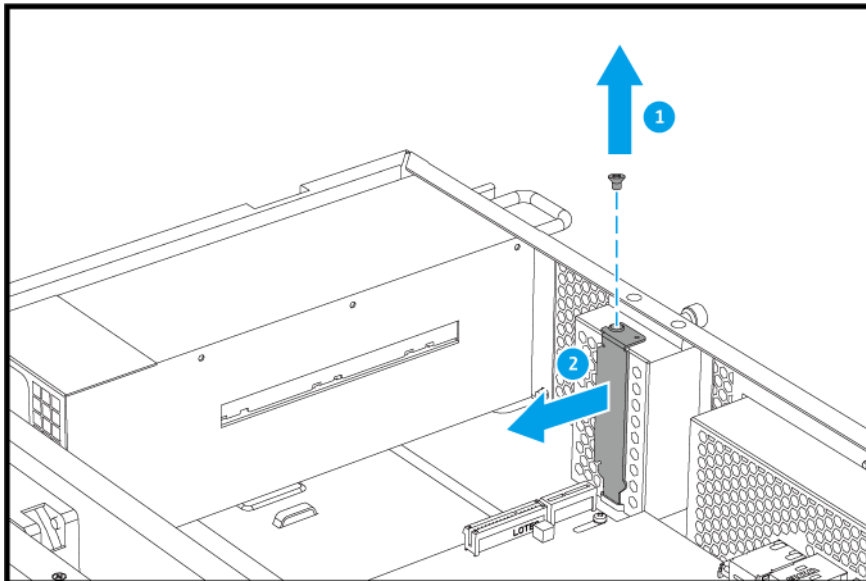


- b. Slide the top cover back using the handle.
- c. Lift the top cover up.



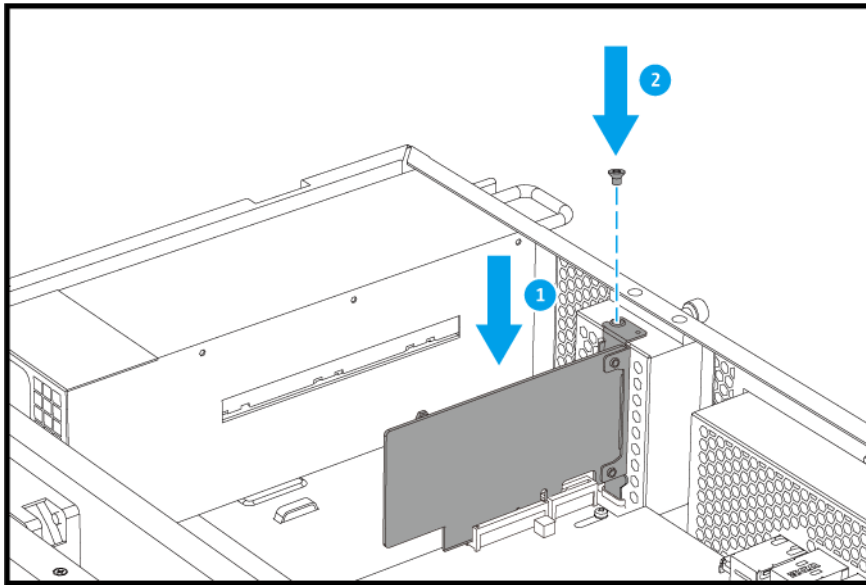
6. Remove the PCIe cover.

- a. Remove the screw that secures the cover to the chassis.
- b. Pull the cover away from the slot.



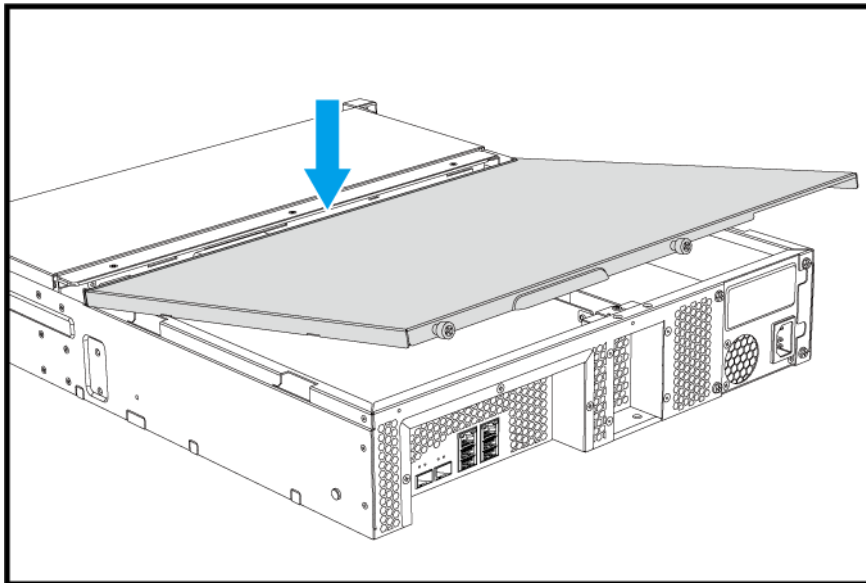
7. Install the expansion card.

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

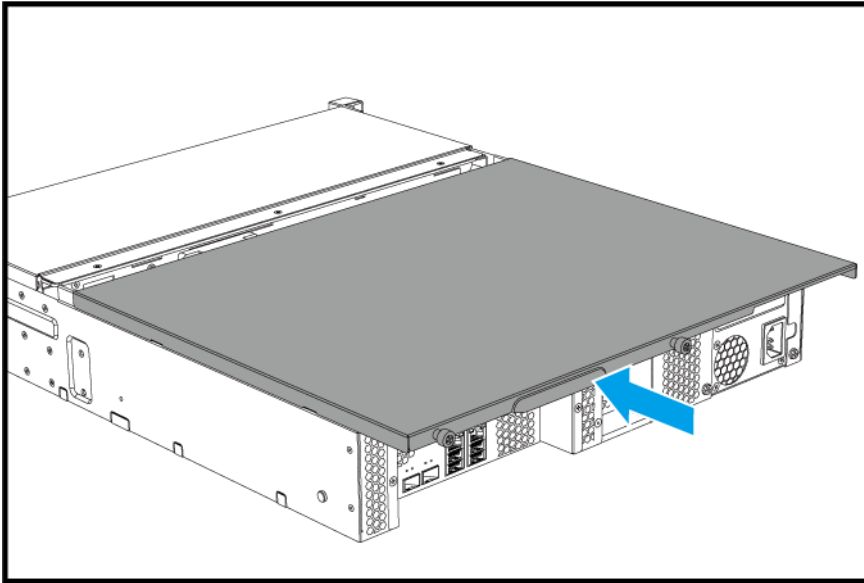


8. Attach the top cover.

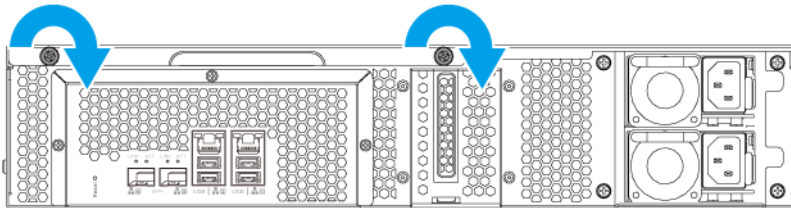
- a. Place the cover on the NAS.



- b. Slide the cover forwards.



c. Tighten the screws.



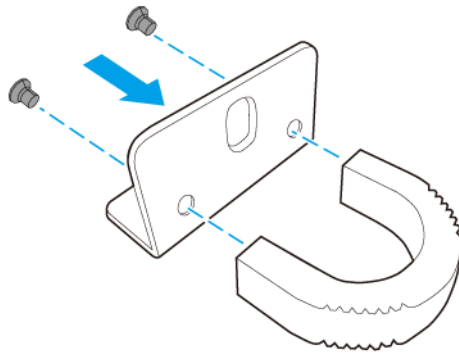
9. Connect all cables and external attachments.
10. Connect the power cord to the electrical outlet.
11. Power on the NAS.

Installing Handles

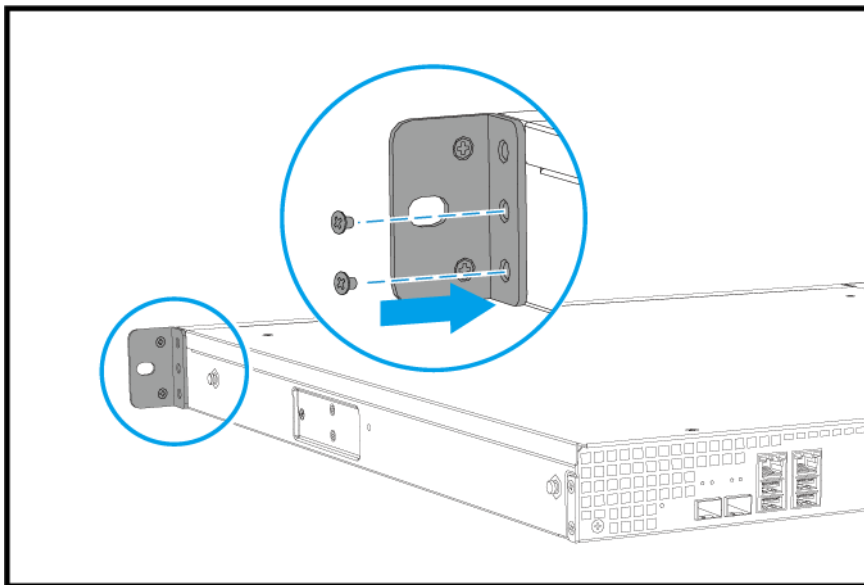
Installing handles enables you to better grip and further secure the NAS on a rack. Handles on the TS-432XU and TS-432XU-RP require manual installation.

1. Power off the NAS.

2. Install a handle on an angle bracket.
 - a. Align the openings of the handle with the screw holes of the angle bracket.
 - b. Attach the screws to lock the handle to the angle bracket.



3. Install the angle bracket on the NAS.
 - a. Align the holes on the angle bracket with the holes on the left side of the chassis.
 - b. Ensure the handle faces the same direction as the front panel.
 - c. Attach the screws to lock the angle bracket to the chassis.



4. Install a second handle on the other side of the chassis.

5. Power on the NAS.

Rail Kits

Rail kits are not included with the NAS and must be purchased separately. For details, contact an authorized reseller or go to <http://shop.qnap.com>.

The TS-x32XU is compatible with the following rail kit models:

Model	Compatible Rail Kit
<ul style="list-style-type: none"> • TS-432XU • TS-432XU-RP • TS-832XU • TS-832XU-RP • TS-1232XU • TS-1232XU-RP 	RAIL-B02

You can find installation information in the rail kit package.

Replacing Memory Modules

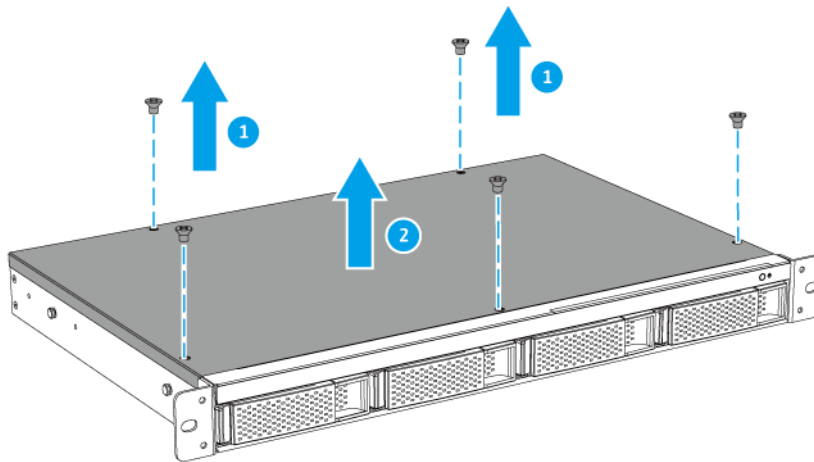
The NAS has one memory slot. You can increase the memory capacity of the NAS by upgrading the memory module. You can purchase QNAP memory modules from authorized resellers.



Warning

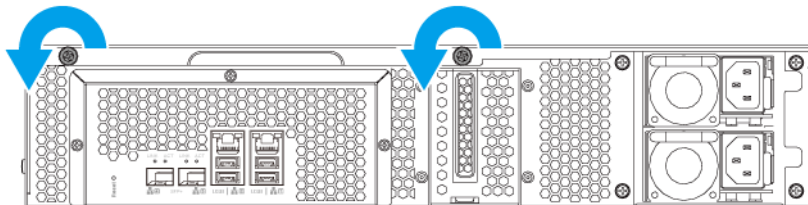
- Only qualified personnel should perform the following steps. Failure to follow instructions can result in serious injury or death.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the top cover.
 - TS-432XU, TS-432XU-RP
 1. Remove the screws connecting the top cover to the chassis.
 2. Lift the top cover up.



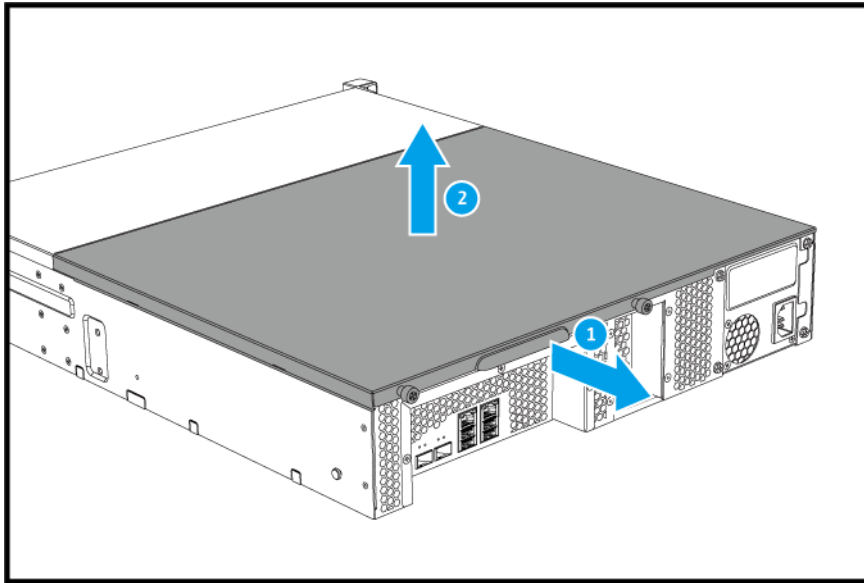
- TS-832XU, TS-832XU-RP, TS-1232XU, TS-1232XU-RP

1. Loosen the two screws on the back of the top cover.



2. Slide the cover away from the NAS using the handle.

3. Lift the top cover up.



5. Remove an existing module.

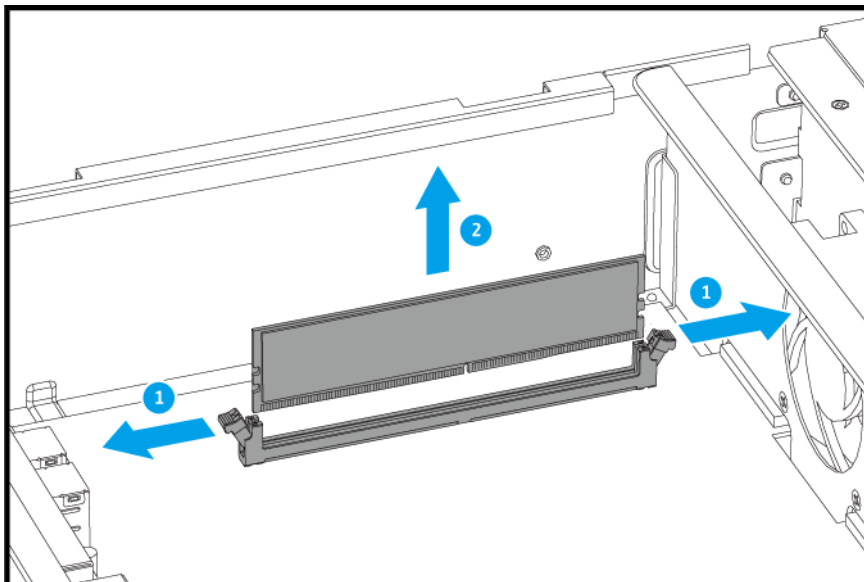
- a. Push the retention clips outward simultaneously to release the module.



Warning

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

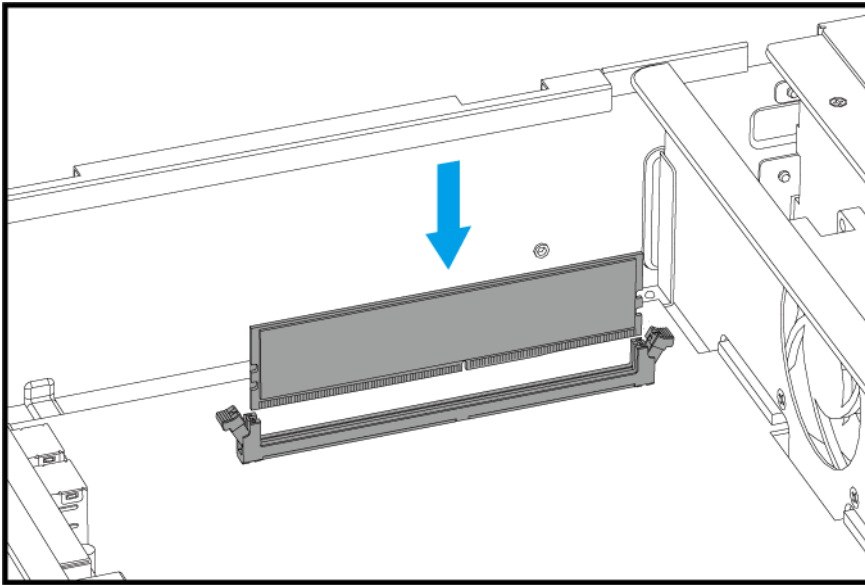
- b. Hold the module by the edges and then carefully slide it out of the slot.



6. Install a new module.

- a. Align the notch with the ridge in the slot.
- b. Insert the module into the slot.

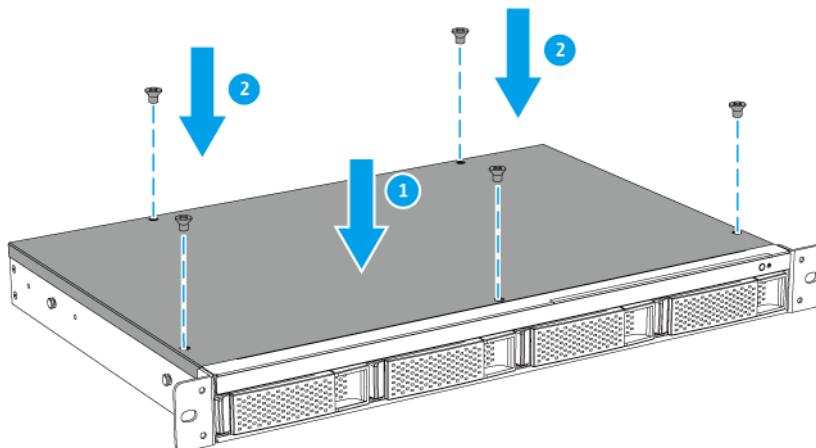
- c. Verify that the metal connectors are completely inserted into the slot.
- d. Carefully press down on the module until the retention clips lock the module into place.



7. Attach the top cover.

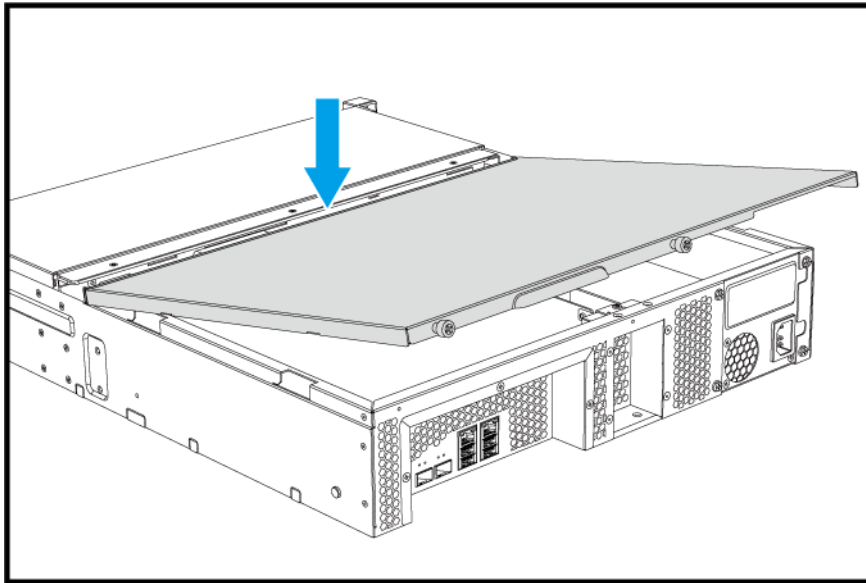
- TS-432XU, TS-432XU-RP

1. Place the cover on the NAS.
2. Attach the screws connecting the top cover to the chassis.

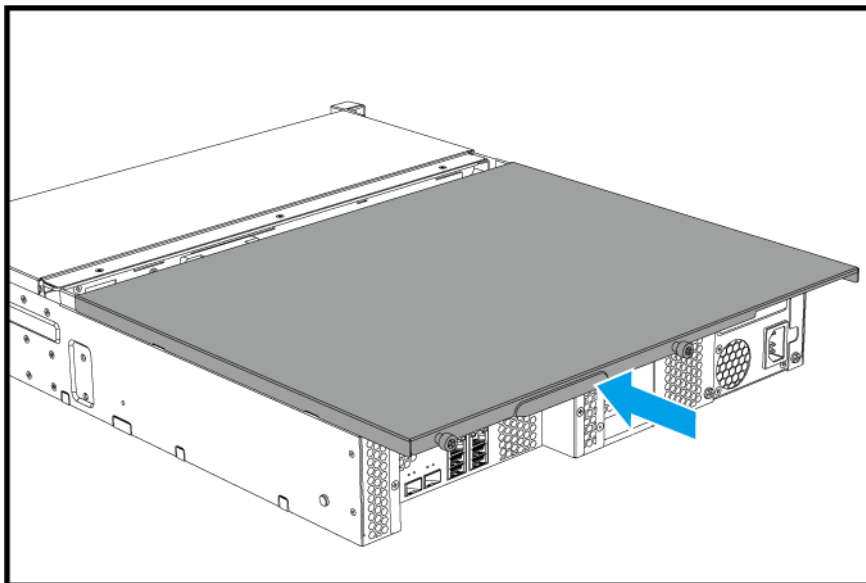


- TS-832XU, TS-832XU-RP, TS-1232XU, TS-1232XU-RP

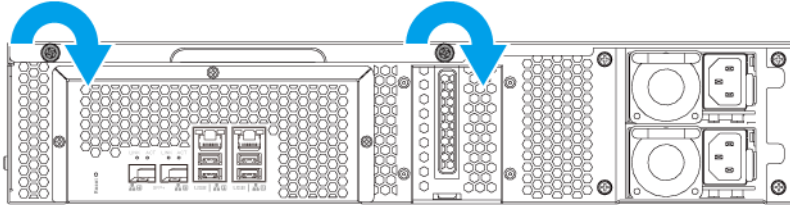
1. Place the cover on the NAS.



2. Slide the cover forwards.



3. Tighten the screws.



8. Connect all cables and external attachments.
9. Connect the power cord to the electrical outlet.
10. Power on the NAS.
11. 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-x32XU 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

Method	Description	Requirements
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.
5. Perform any of the following actions.
 - To check for the latest available version, click **Start**.
The wizard downloads the latest available version, and then the NAS restarts after the download is complete. If a newer version is not available, the wizard automatically displays the **Smart Installation Guide**.
 - To install the out-of-the-box version, click **Skip**.
6. Click **Start Smart Installation Guide**.
7. 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.
8. Click **Next**.
9. 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.

10. Click **Next**.
11. Select **Obtain an IP address automatically (DHCP)**.
12. Click **Next**.
13. Select the types of devices that you will use to access shared folders on the NAS.
14. Click **Next**.
15. Configure the disk settings.
 - a. Select a volume type.
 - b. Select the disks that you want to use to create a RAID group.
 - c. Optional: Select a RAID type.



Note

The **Smart Installation Guide** automatically selects the optimal RAID type based on the number of the selected disks.

- d. Optional: Select **Encrypted Disk Volume** and **Bad Block Scan**.
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.

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.

7. Optional: Select **CloudLink**.

**Note**

- CloudLink allows you to remotely access the NAS without having to configure port forwarding on your router. You can remotely access the NAS by logging into QTS or by using mobile apps.
- You can also enable CloudLink by installing the CloudLink app on the NAS.

8. Click **Next**.

9. Perform any of the following actions.

- To check for the latest available version, click **Start**.
The wizard downloads the latest available version, and then the NAS restarts after the download is complete. If a newer version is not available, the wizard automatically displays the **Smart Installation Guide**.
- To install the out-of-the-box version, click **Skip**.

10. Click **Start Smart Installation Guide**.

11. Specify the following information.

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

12. Click **Next**.

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

**Tip**

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

14. Click **Next**.

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

16. Click **Next**.
17. Select the types of devices that you will use to access shared folders on the NAS.
18. Click **Next**.
19. Configure the disk settings.
 - a. Select a volume type.
 - b. Select the disks that you want to use to create a RAID group.
 - c. Optional: Select a RAID type.

**Note**

The **Smart Installation Guide** automatically selects the optimal RAID type based on the number of the selected disks.

- d. Optional: Select **Encrypted Disk Volume** and **Bad Block Scan**.
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.

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.
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.

Beep Alarm

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 **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`.

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

CloudLink

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

myQNAPcloud

Provides various remote access services such as DDNS and 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

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Version 3, 29 June 2007

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You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a. The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b. The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c. You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
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A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

7. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c. Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- 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.

A “User Product” is either (1) a “consumer product”, which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, “normally used” refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

“Installation Information” for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

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END OF TERMS AND CONDITIONS

FCC Notice

FCC Class A Notice



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

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



Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.



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



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BSMI Notice



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SJ/T 11364-2006



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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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