



QNAP

TS-1677X

TS-1677X

User Guide

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1. Preface





About This Guide

This guide provides information on the QNAP TS-1677X 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-1677X NAS.

About the TS-1677X

The TS-1677X is powered by an AMD Ryzen™ processor with a Turbo Core range up to 3.7 GHz. The TS-1677X offers high performance while keeping energy consumption low. It comes with two 10 Gigabit Ethernet ports for enhanced connectivity. Designed for scalability, the TS-1677X also has four Long-DIMM DDR4 slots that support up to 64 GB of memory, and three PCIe slots for HDMI, graphics, or network expansion cards.


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 accessories or applications.

| Ordering P/N | CPU | Memory |
|-------------------|--------------|--------|
| TS-1677X-1200-4G | Ryzen 3 1200 | 4 GB |
| TS-1677X-1600-8G | Ryzen 5 1600 | 8 GB |
| TS-1677X-1700-16G | Ryzen 7 1700 | 16 GB |
| TS-1677X-1700-64G | Ryzen 7 1700 | 64 GB |

| Component | TS-1677X |
|-------------------|---|
| Processor | |
| CPU | <ul style="list-style-type: none"> • AMD Ryzen™ 3 1200 4-core/4-thread 3.1 GHz processor, Turbo Core 3.4 GHz • AMD Ryzen™ 5 1600 6-core/12-thread 3.2 GHz processor, Turbo Core 3.6 GHz • AMD Ryzen™ 7 1700 8-core/16-thread 3.0 GHz processor, Turbo Core 3.7 GHz |
| Graphics | Optional: PCIe expansion card  Note Power cables are provided for additional graphics cards. |
| Architecture | 64-bit |
| Encryption engine | AES-NI |
| Memory | |

| Component | TS-1677X |
|--------------------------------------|---|
| Pre-installed memory | <ul style="list-style-type: none"> • 4 GB RAM: 1 x 4 GB DDR4 • 8 GB RAM: 2 x 4 GB DDR4 • 16 GB RAM: 2 x 8 GB DDR4 • 64 GB RAM: 4 x 16 GB 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> <p> Important Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.</p> |
| Total memory slots | <p>4 x Long-DIMM DDR4</p> <p> Important For dual- or quad-DIMM configurations, you must use a pair of identical DDR4 modules.</p> |
| Maximum memory | 64 GB: 4 x 16 GB |
| Storage | |
| Drive bays | <ul style="list-style-type: none"> • 12 x 3.5-inch SATA 6 Gbps bays • 4 x 2.5-inch SATA 6 Gbps bays |
| Drive compatibility | <ul style="list-style-type: none"> • 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"> • 2.5-inch SATA solid state drives |
| Network | |
| 10 Gigabit Ethernet ports | <p>2 x 10GBASE-T RJ45</p> <p> Note These ports support 10GbE, 5GbE, 2.5GbE, 1GbE, and 100M networking.</p> <p> Tip You can purchase additional CAT 6A or CAT 7 LAN cables to attain 10GbE connectivity.</p> |
| Gigabit Ethernet ports | 4 x RJ45 |
| External I/O Ports & Expansion Slots | |
| PCIe slots | <ul style="list-style-type: none"> • 1 x PCIe 3.0 x8 • 1 x PCIe 3.0 x4 • 1 x PCIe 2.0 x4 |

| Component | TS-1677X |
|------------------------|---|
| USB ports | 8 x USB 3.0 <ul style="list-style-type: none"> • Front: <ul style="list-style-type: none"> • 1 x USB 3.0 Type-A <div style="display: flex; align-items: center;">  <div> <p>Note You can use the One Touch Copy button with this port.</p> <ul style="list-style-type: none"> • 1 x USB 3.0 Type-C </div> </div> <ul style="list-style-type: none"> • Back: 6 x USB 3.0 Type-A |
| HDMI outputs | Optional: PCIe expansion card |
| Audio | <ul style="list-style-type: none"> • 2 x 3.5 mm dynamic microphone jacks • 1 x 3.5 mm line-out jack • 1 x speaker • Alarm buzzer <div style="display: flex; align-items: center;">  <div> <p>Note You cannot use the speakers and the line-out jack simultaneously.</p> </div> </div> |
| Interface | |
| Display panel | Monochrome backlit LCD display with Enter and Select buttons |
| IR sensor | 1 <div style="display: flex; align-items: center; margin-top: 10px;">  <div> <p>Note</p> <ul style="list-style-type: none"> • The IR sensor requires a graphics card. • The QNAP RM-IR004 remote control is an optional separate purchase. </div> </div> |
| Buttons | <ul style="list-style-type: none"> • LCD enter • LCD select • Power • USB One Touch Copy • Reset • Power supply unit |
| Dimensions | |
| Form factor | Tower |
| Dimensions (H x W x D) | 303.84 x 369.89 x 319.8 mm 11.96 x 14.56 x 12.59 in |
| Net weight | 13.39 kg (29.52 lbs) |
| Other | |
| Power supply unit | 550W, 100-240V AC, 50/60Hz |

| Component | TS-1677X |
|-----------------------|--|
| 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. |
| Sound level | 23.5 dB(A)  Note The sound level was 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 | <ul style="list-style-type: none"> • System: 3 x 92 mm fan, 12V DC • CPU: 2 x 90 mm fan  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**

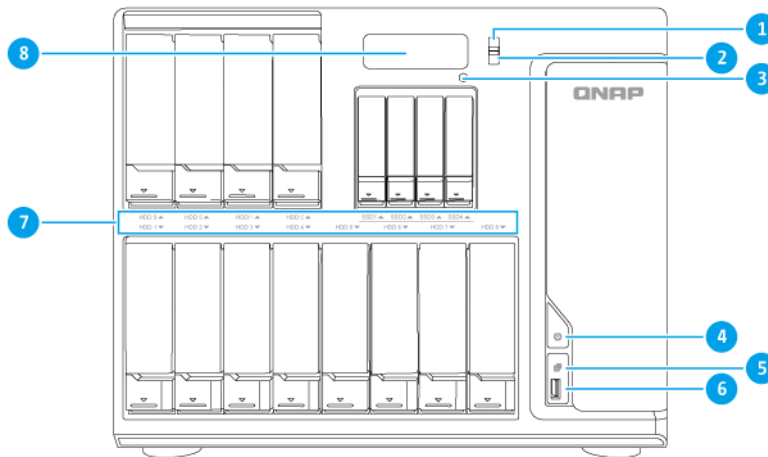
Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

Package Contents

| Item | Quantity |
|--------------------------------|----------|
| TS-1677X NAS | 1 |
| AC power adapter | 1 |
| Power cord | 1 |
| Ethernet cable | 2 |
| Screws for 3.5-inch drives | 36 |
| Screws for 2.5-inch drives | 12 |
| Quick Installation Guide (QIG) | 1 |

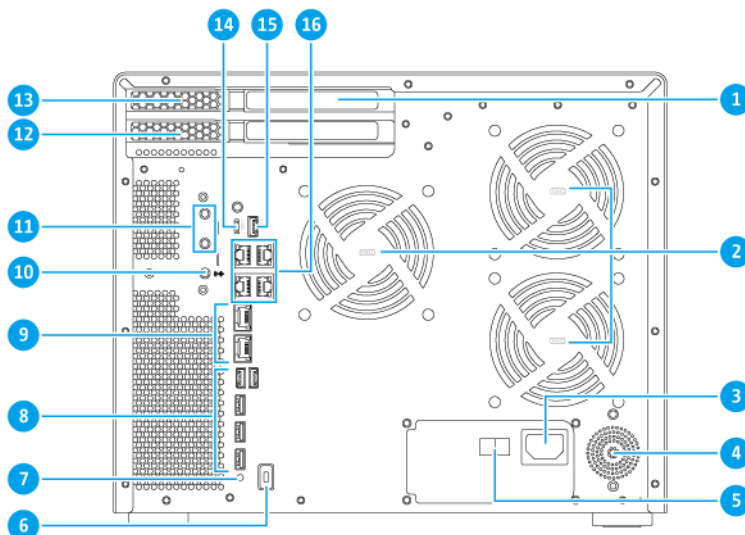
Components

Front Panel



| No. | Component | No. | Component |
|-----|---------------|-----|-----------------------------|
| 1 | Enter button | 5 | USB One Touch Copy button |
| 2 | Select button | 6 | USB 3.0 One Touch Copy port |
| 3 | IR sensor | 7 | Drive LEDs |
| 4 | Power button | 8 | LCD Panel |

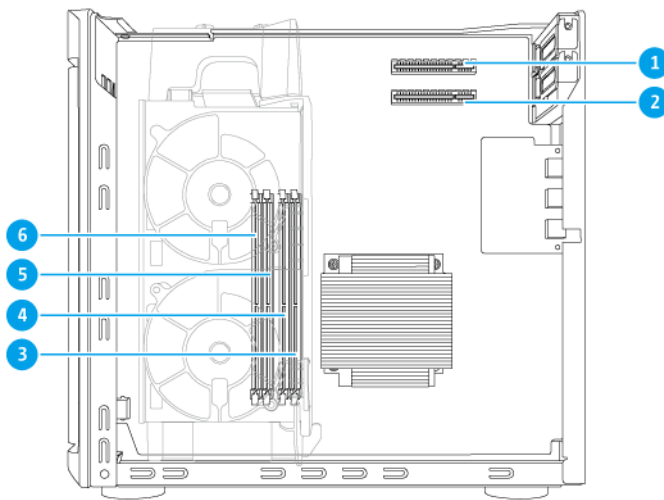
Rear Panel



| No. | Component | No. | Component |
|-----|------------------------|-----|----------------------|
| 1 | PCIe full-height cover | 9 | 10GBASE-T RJ45 ports |

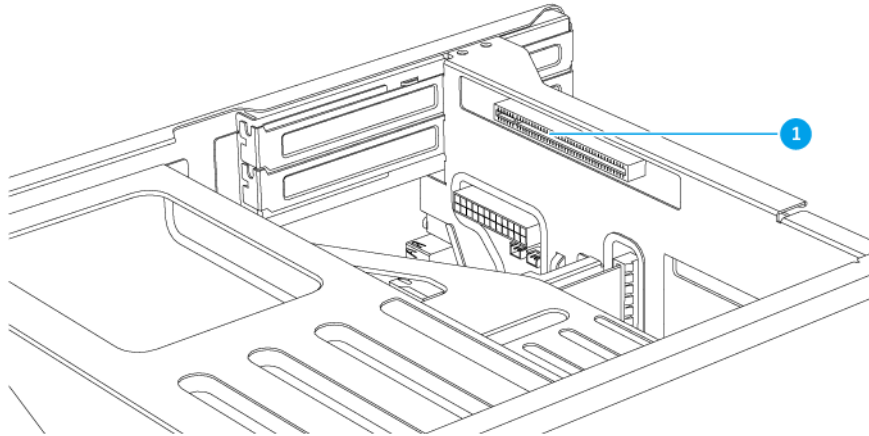
| No. | Component | No. | Component |
|-----|--------------------------|-----|-----------------------------|
| 2 | System fans | 10 | 3.5 mm audio jack |
| 3 | Power input | 11 | 3.5 mm microphone jacks |
| 4 | Speaker | 12 | PCIe low-profile cover |
| 5 | Power supply unit button | 13 | PCIe low-profile cover |
| 6 | Kensington security slot | 14 | USB 3.0 Type-C port |
| 7 | Reset button | 15 | USB 3.0 Type-A port |
| 8 | USB 3.0 Type-A ports | 16 | Gigabit Ethernet RJ45 ports |

Right Panel



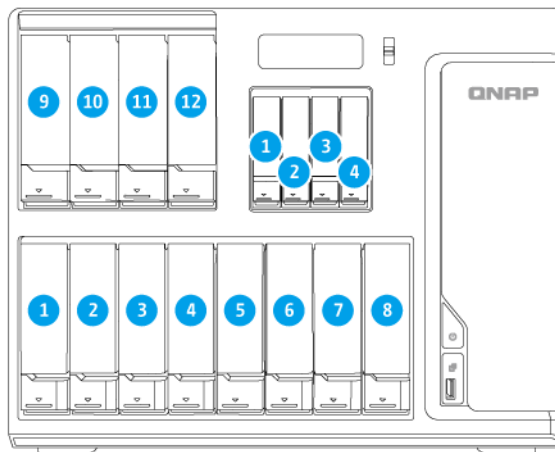
| No. | Component | No. | Component |
|-----|--------------------|-----|---------------|
| 1 | PCIe 3.0 x4 slot 2 | 4 | Memory slot 2 |
| 2 | PCIe 2.0 x4 slot 3 | 5 | Memory slot 3 |
| 3 | Memory slot 1 | 6 | Memory slot 4 |

Left Panel



| No. | Component | No. | Component |
|-----|--------------------|-----|-----------|
| 1 | PCIe 3.0 x8 slot 1 | - | - |

Front Drive Numbering



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 |
| Hardware and peripherals | <ul style="list-style-type: none"> • Storage drives • 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. Verify that the intake vents on the bottom of the case are unobstructed.
3. Remove the protective films from the LCD panel and the front cover.
4. Install the drives.
For details, see the following topics:
 - [Installing 3.5-inch Hard Drives on 3.5-inch Trays](#)
 - [Installing 2.5-inch Drives or Solid State Drives on 3.5-inch Trays](#)
 - [Installing Solid State Drives on Solid State Drive Trays](#)
5. Connect the power cord and all applicable cables.
6. Power on the NAS.
7. Install QTS.
For details, see [QTS Installation](#).
8. 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-1677X is compatible with 3.5-inch, 2.5-inch hard drives, and 2.5-inch solid state drives.

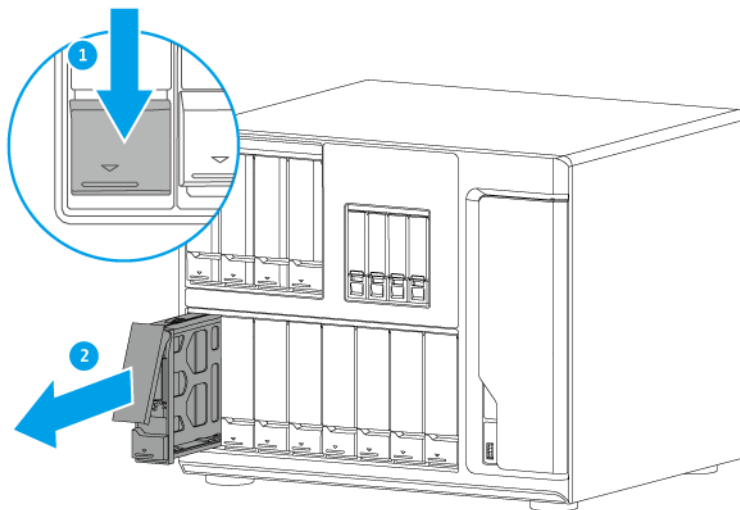
Installing 3.5-inch Hard Drives on 3.5-inch Trays



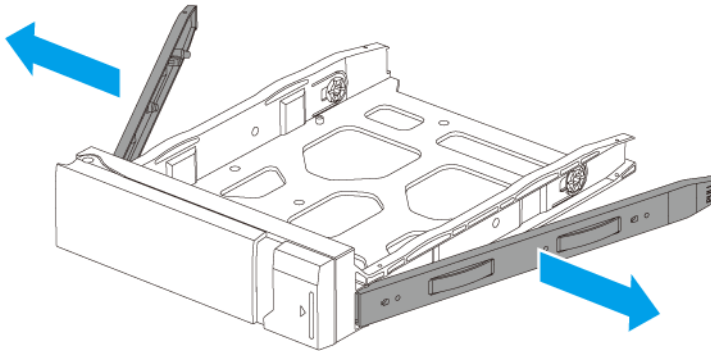
Warning

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

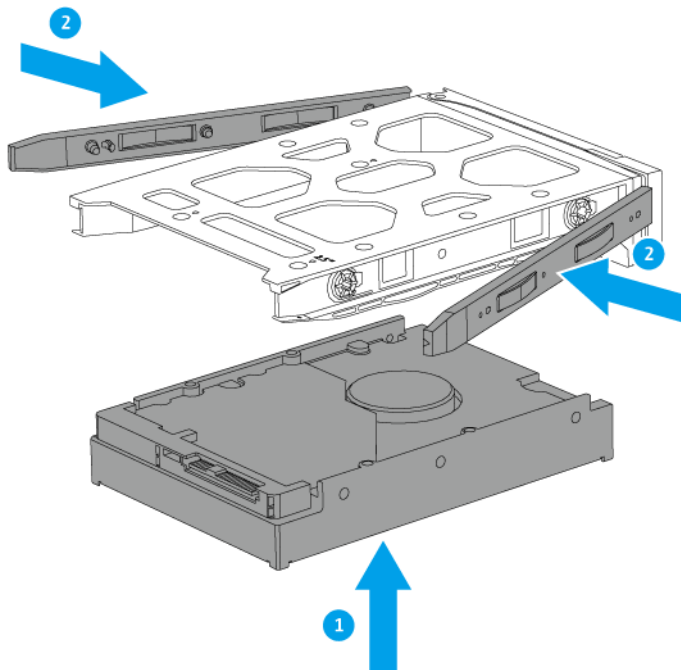
1. Power off the NAS.
2. Remove the drive tray.
 - a. Slide the lock down.
 - b. Pull the handle to release the tray.
 - c. Pull the tray out.



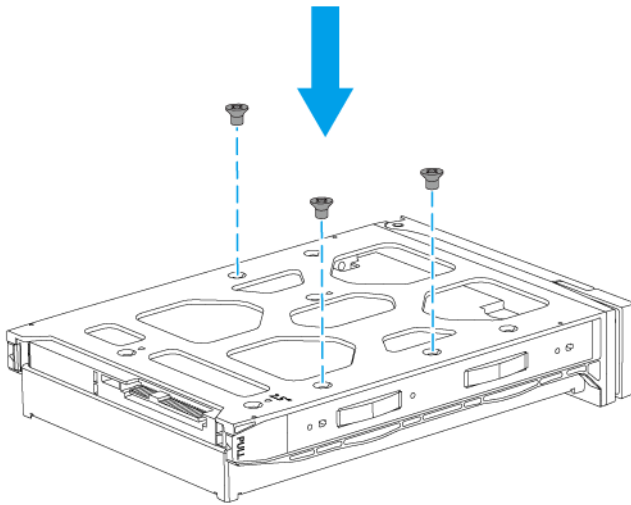
3. Install a drive on the tray.
 - a. Remove the fastening panels from the sides of the tray.



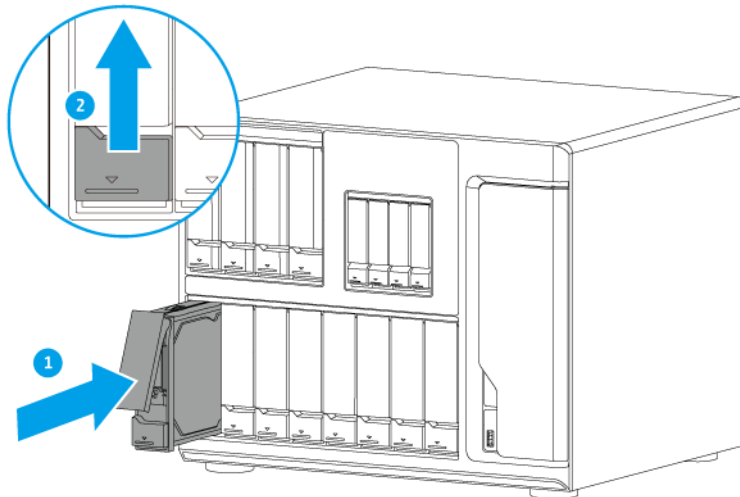
- b.** Place the drive on the tray so that the holes on the sides of the drive are aligned with the holes on the sides of the tray.
- c.** Attach the fastening panels.



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



4. Load the tray into the drive bay.
 - a. Insert the tray into the bay.
 - b. Push the handle.
 - c. Slide the lock up.



5. Power on the NAS.

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

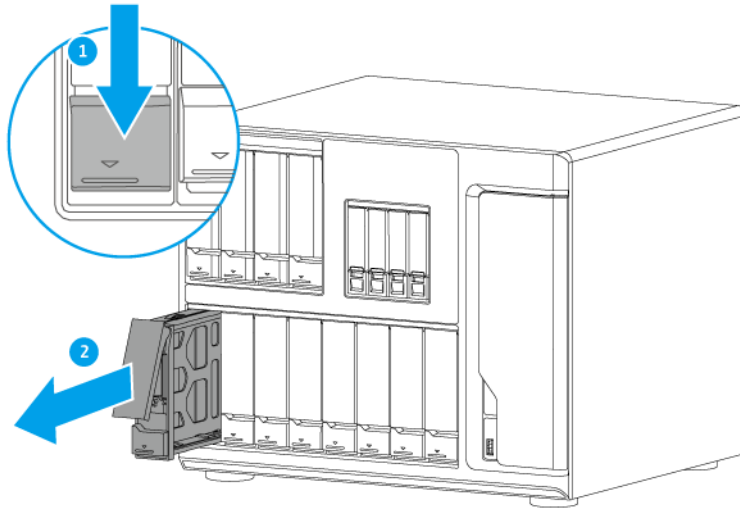


Warning

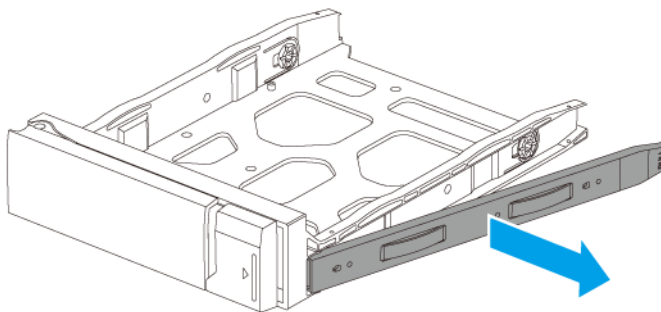
- Installing a drive deletes all data on the drive.

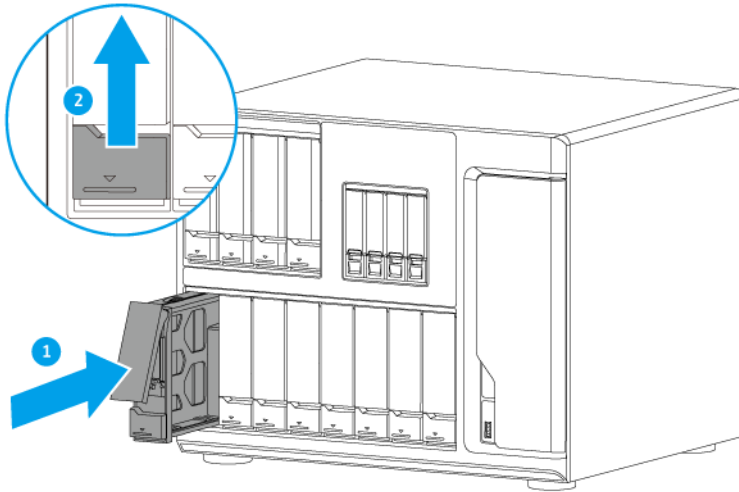
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

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



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





5. Power on the NAS.

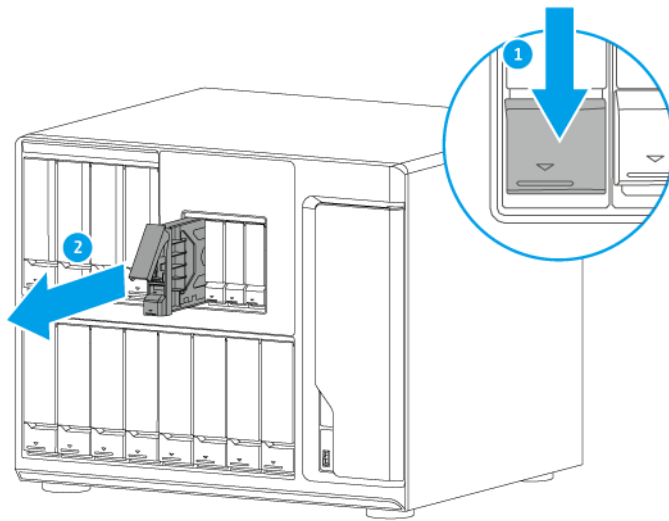
Installing Solid State Drives on Solid State Drive Trays



Warning

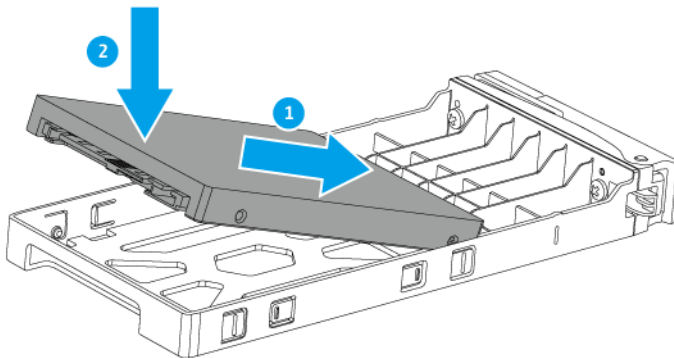
- Installing a drive deletes all data on the drive.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. Power off the NAS.
2. Remove the drive tray.
 - a. Slide the lock down.
 - b. Push the button to release the tray handle.
 - c. Pull the tray out.



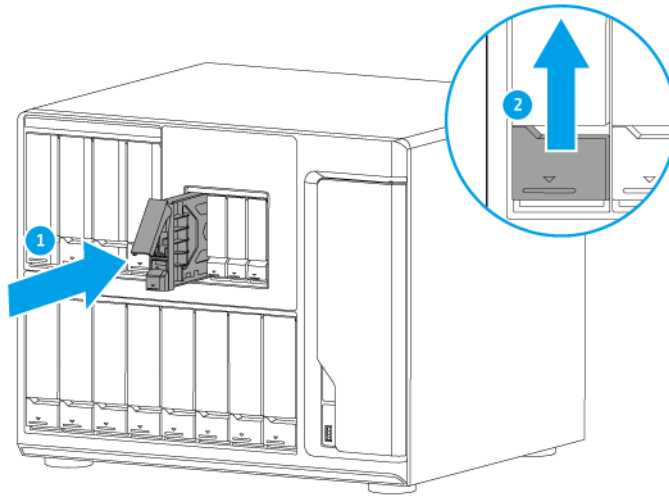
3. Install a drive on the tray.

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



4. Load the tray into the bay.

- a. Insert the tray into the bay.
- b. Push the handle.
- c. Slide the lock up.



5. Power on the NAS.

Installing Expansion Cards

The NAS 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.

The NAS also has PCIe power connectors for expansion cards that require additional power to operate.

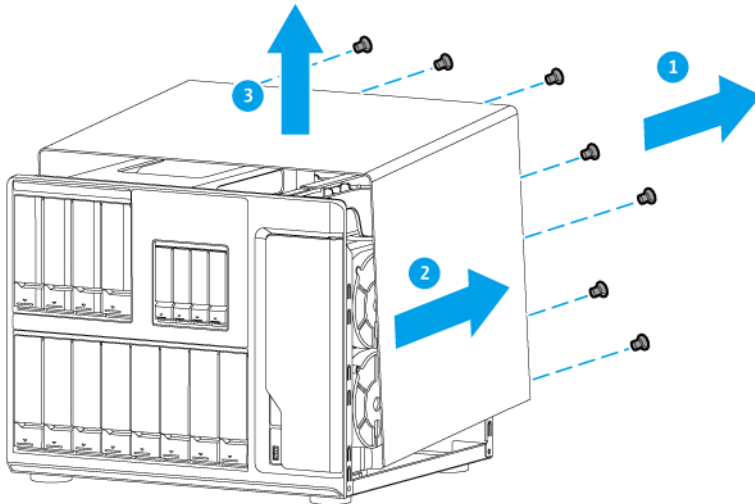


Warning

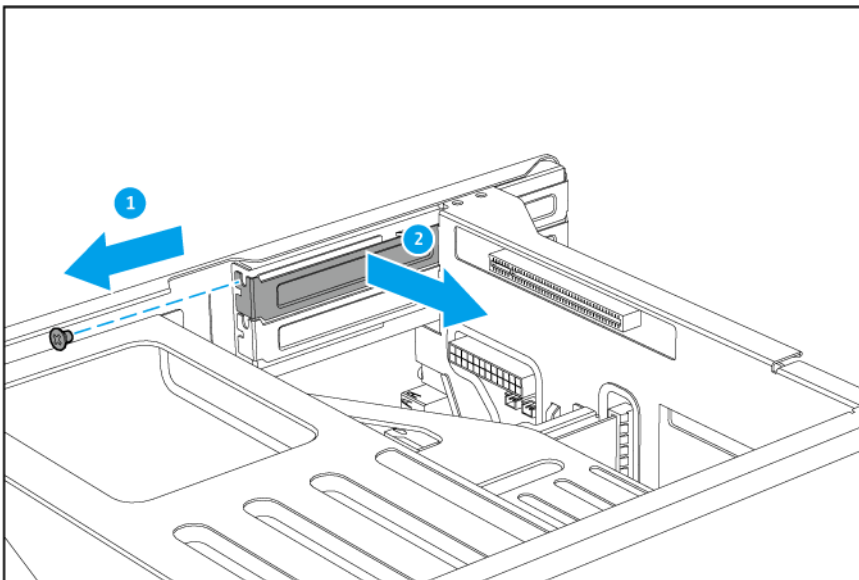
- Only qualified personnel should perform the following steps. Failure to follow instructions can result in serious injury or death.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

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. 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.

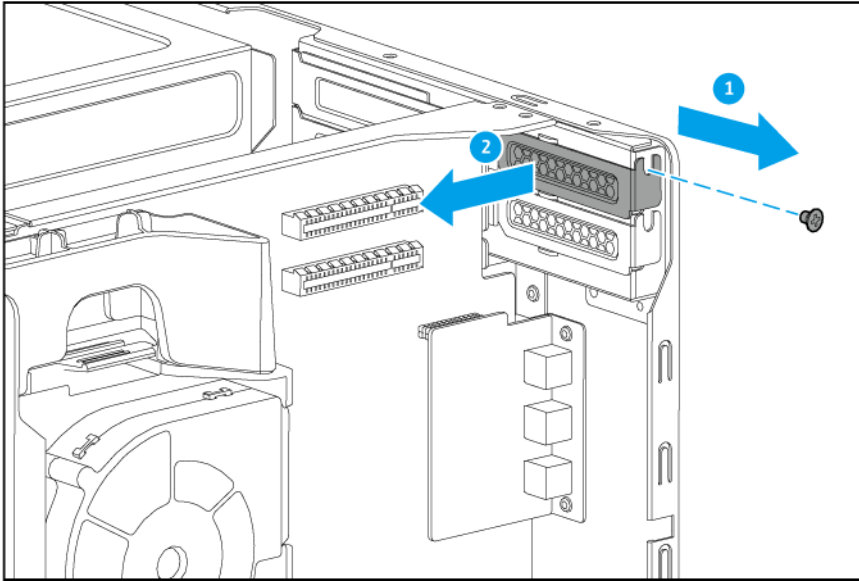
5. Remove the case cover.
 - a. Remove the screws that secure the cover to the chassis.
 - b. Slide the cover back.
 - c. Pull the cover up until it completely detaches from the chassis.



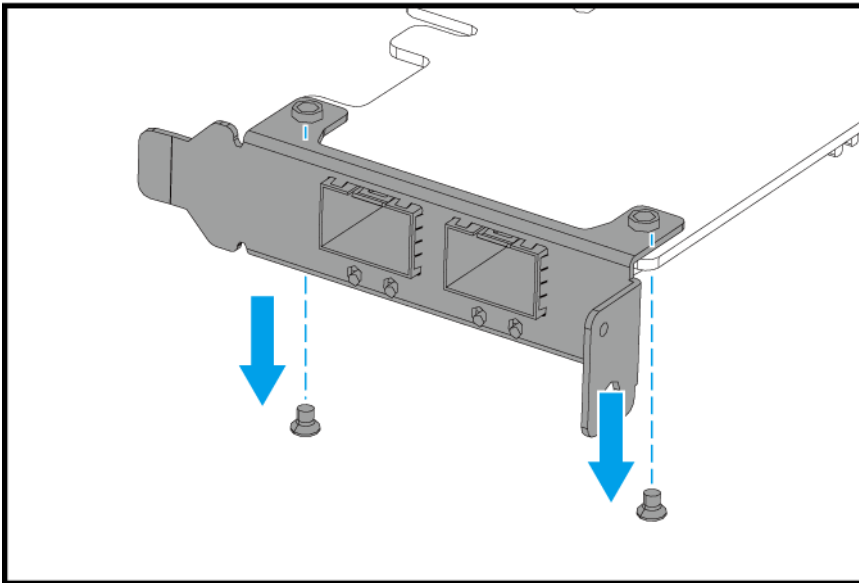
6. Remove the PCIe cover.
 - a. Remove the screw that secures the cover to the chassis.
 - b. Pull the cover away from the slot.



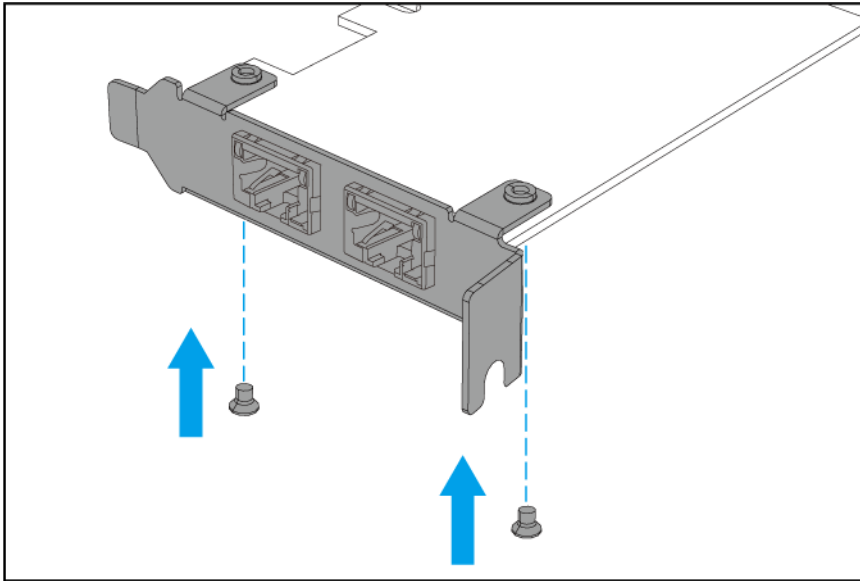
PCIe 3.0 x8

**PCIe 3.0 x4**

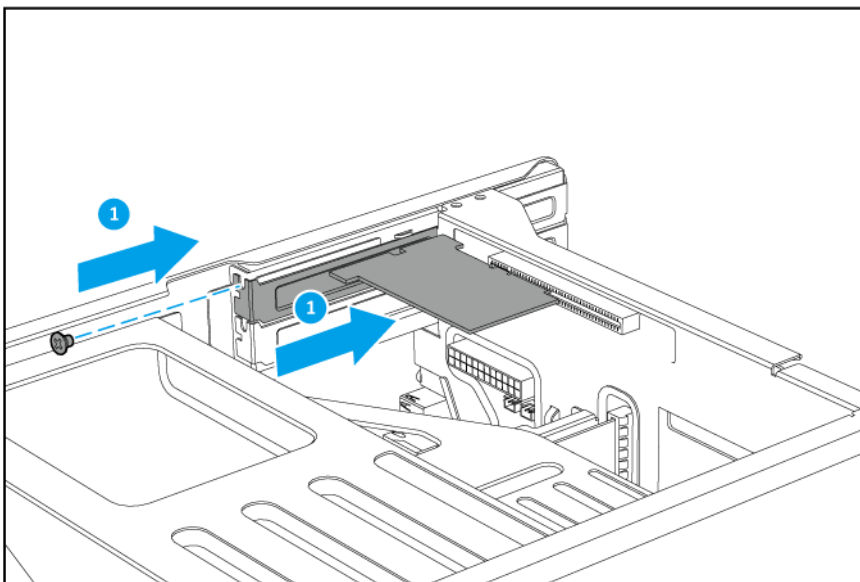
7. Attach the QNAP bracket to the expansion card.
 - a. Remove all screws of the existing bracket.



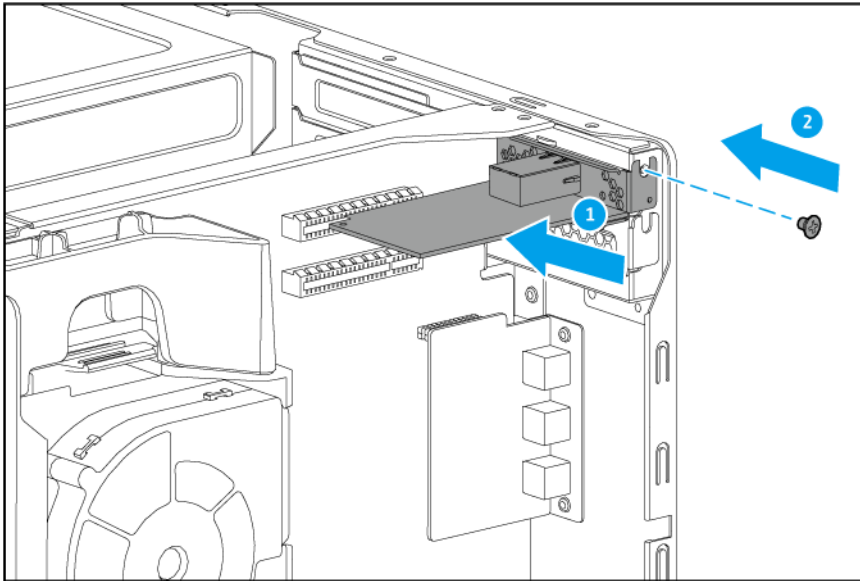
- b. Carefully pull the bracket away from the card.
 - c. Attach the QNAP bracket to the card using the same screws.



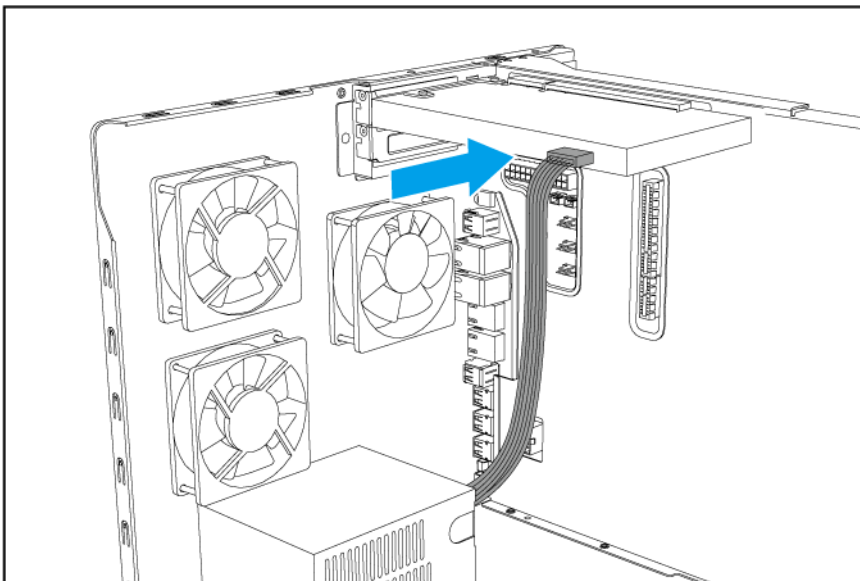
- d. Verify that the bracket does not move.
8. Install the expansion card.
- a. Hold the card by the edges.
 - b. Insert the card into the slot.
 - c. Attach the screw.



PCIe 3.0 x8

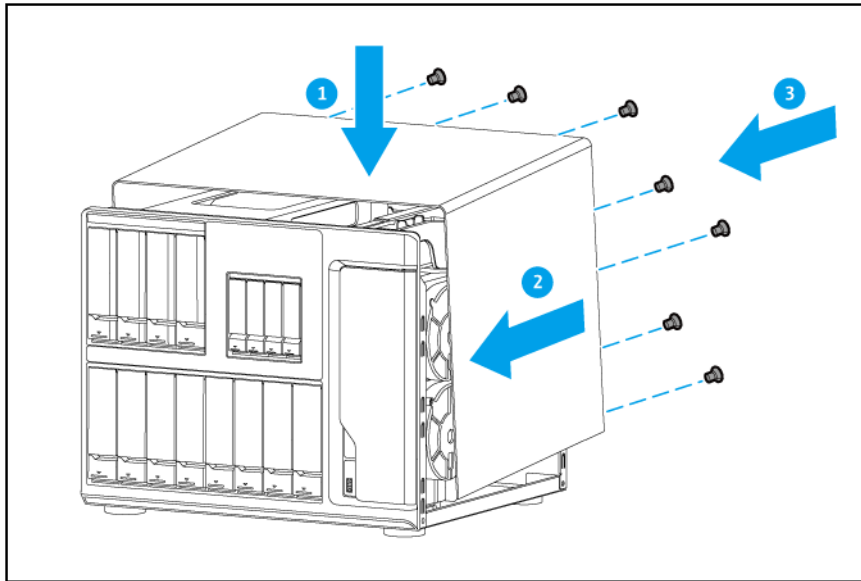
**PCIe 3.0 x4**

- d. Attach the PCIe power connector to the expansion card.

**Tip**

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

9. Attach the case cover.
 - a. Slide the cover down until it completely connects with the chassis.
 - b. Slide the cover forward.
 - c. Attach the screws to the back side of the case.



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 NAS has four memory slots. You can increase the memory capacity of the NAS by upgrading the memory modules. When using multiple 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

Ensure the following when replacing memory modules.

- When installing only one module, use slot 4.
- When installing two modules, use slots 2 and 4. Ensure that the modules are identical.
- When installing four modules, use slots 2 and 4 for the first pair, and slots 1 and 3 for the second pair. Ensure that each pair uses identical models.

For details on slot numbering, see [Right Panel](#).

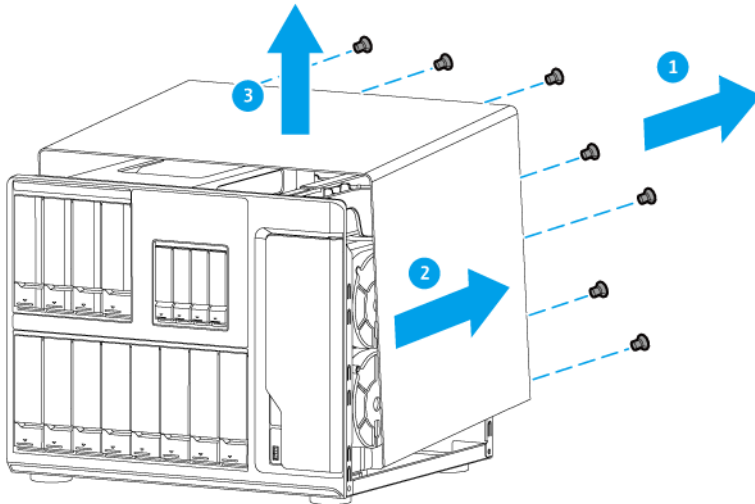


Warning

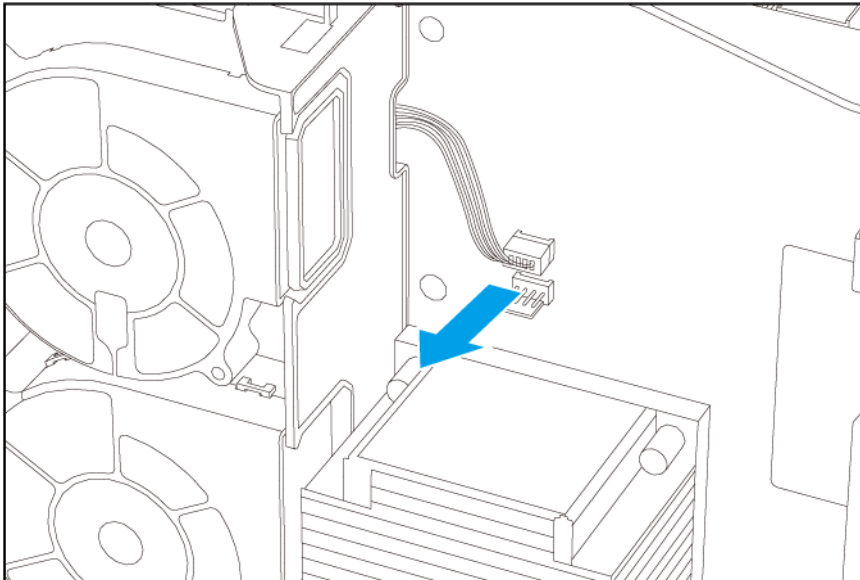
- Only qualified personnel should perform the following steps. Failure to follow instructions can result in serious injury or death.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.

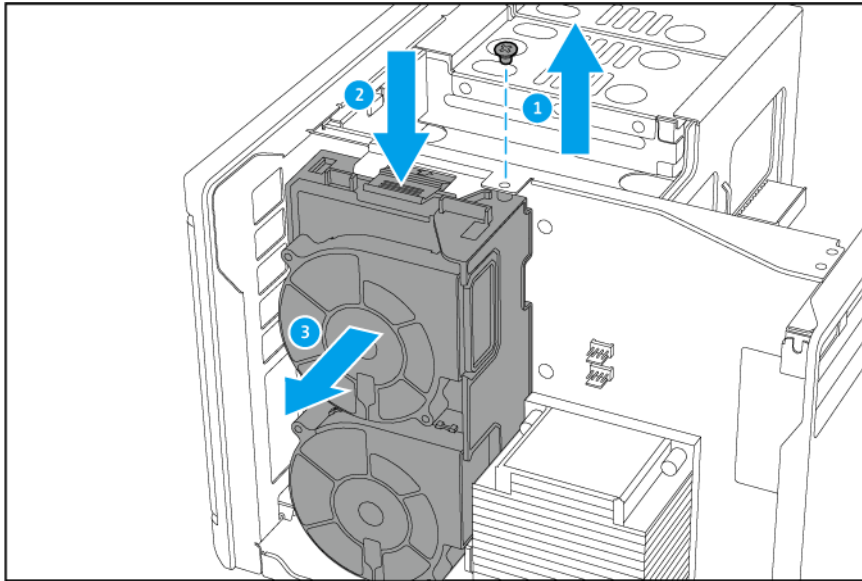
4. Remove the case cover.
 - a. Remove the screws that secure the cover to the chassis.
 - b. Slide the cover back.
 - c. Pull the cover up until it completely detaches from the chassis.



5. Remove the fan module.
 - a. Disconnect the fan cable from the system board.



- b. Remove the screw that secures the fan module to the chassis.
 - c. Press the fan module clip and then pull the module away from the system board.



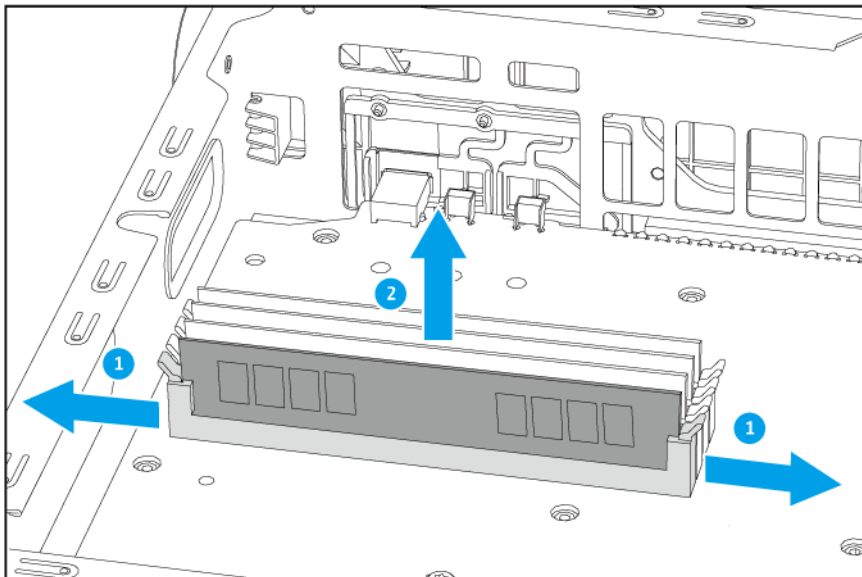
6. Optional: Remove an existing module.

- a. Push the retention clips outward simultaneously to release the module.
- b. Hold the module by the edges and then carefully slide it out of the slot.



Warning

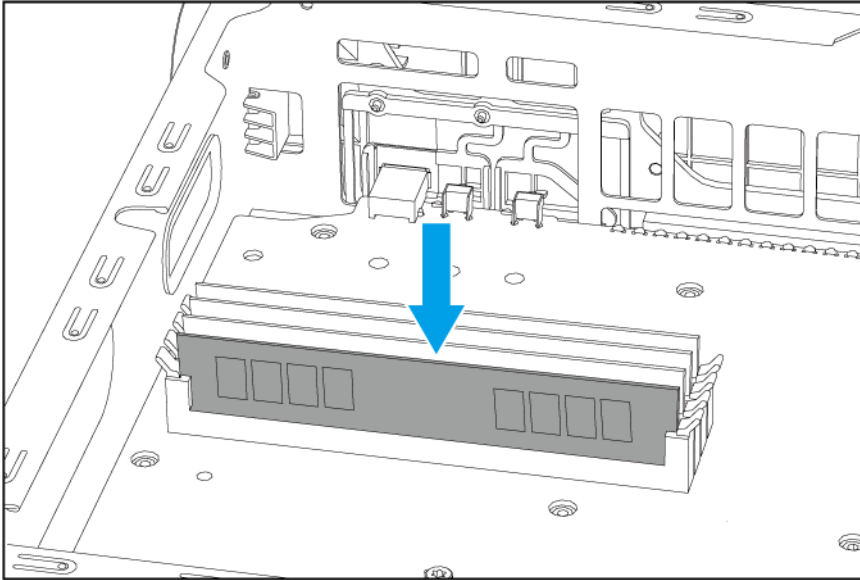
Attempting to remove a module that is not completely released may damage the module and the motherboard.



7. Install a new module.

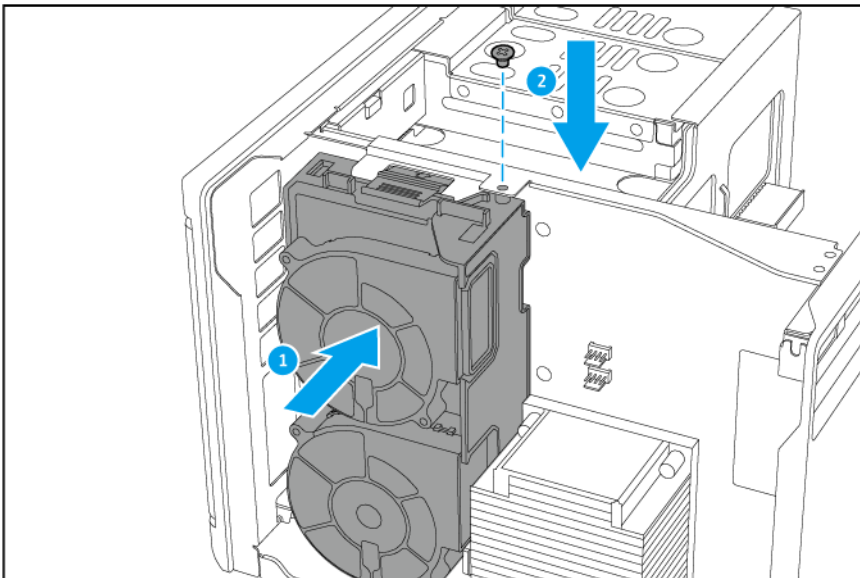
- a. Align the notch with the ridge in the slot.
- b. Insert the module into the slot.

- c. Verify that the metal connectors are completely inserted into the slot.

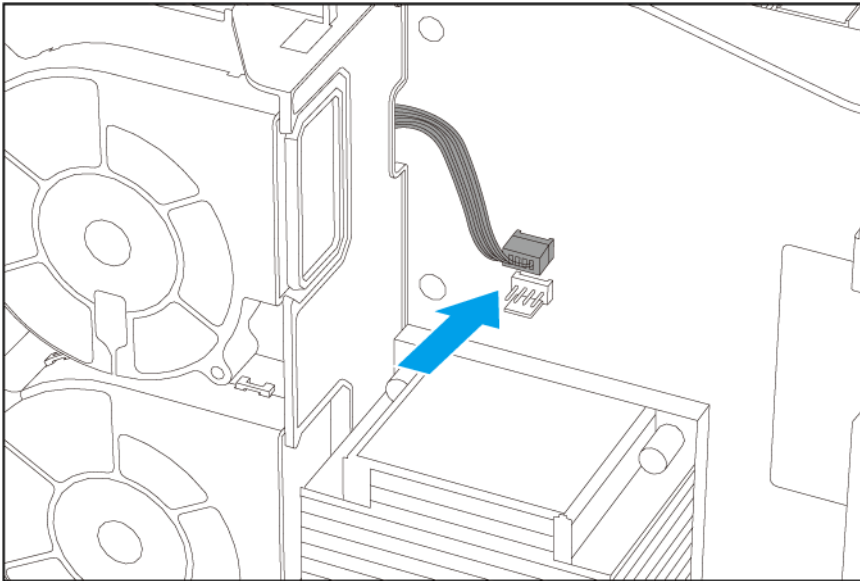


8. Attach the fan module.

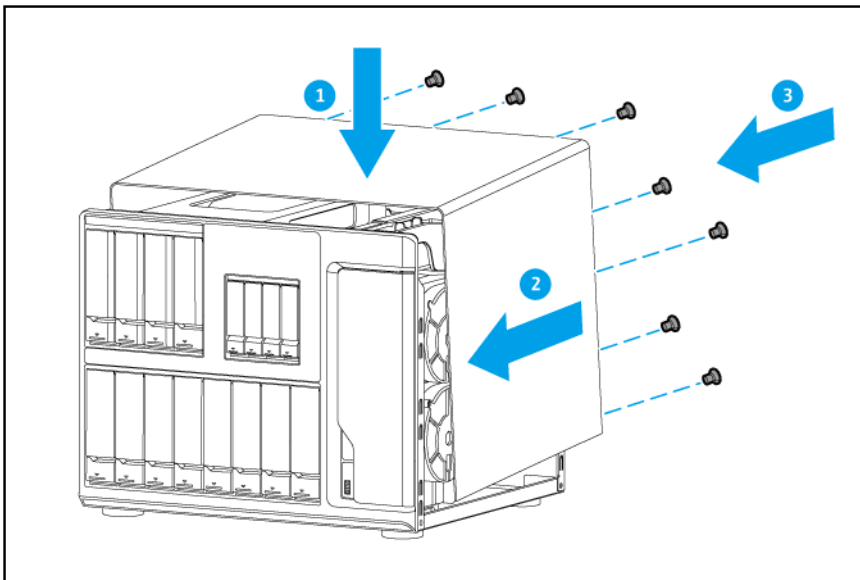
- a. Align the clip with the hole on the chassis.
- b. Push the module toward the system board until the clip locks the module into place.
- c. Attach the screw that secures the module to the chassis.



- d. Connect the fan cable to the system board.



9. Attach the case cover.
 - a. Slide the cover down until it completely connects with the chassis.
 - b. Slide the cover forward.
 - c. Attach the screws to the back side of the case.

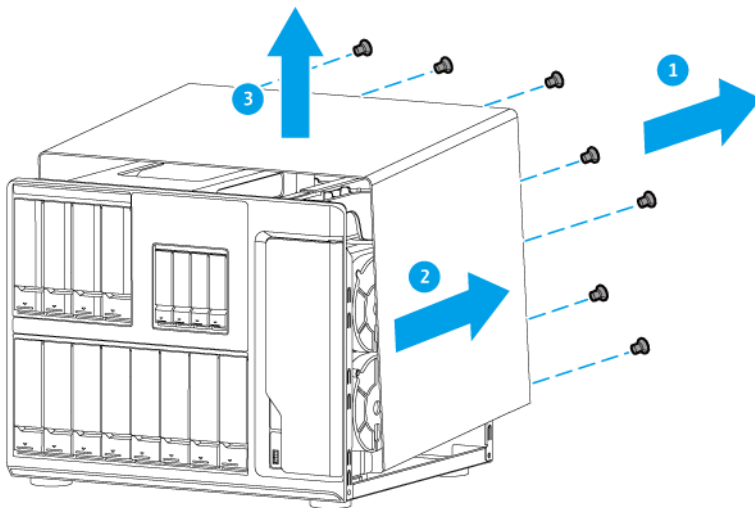


10. Connect all cables and external attachments.
11. Connect the power cord to the electrical outlet.
12. Power on the NAS.
13. Verify that the NAS recognizes the module.

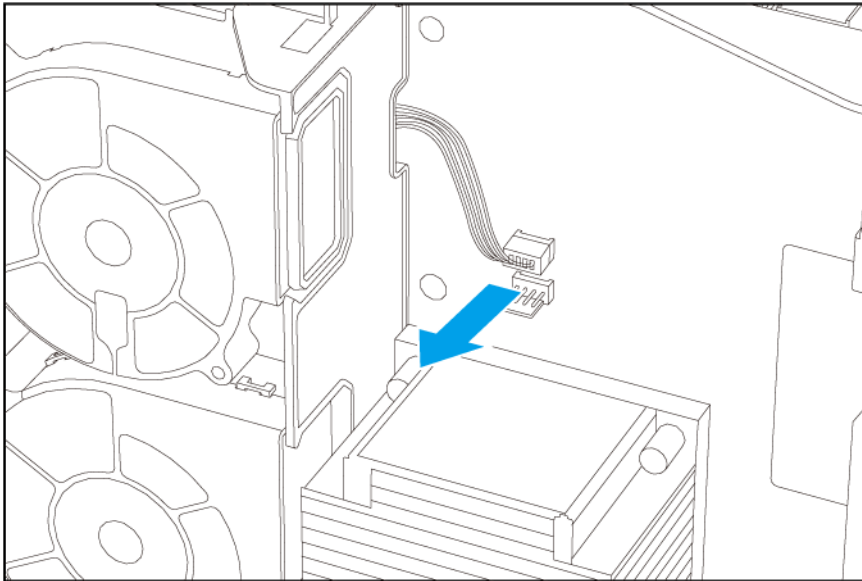
- a. Log on to QTS as administrator.
- b. Go to **Control Panel > System > System Status > Hardware Information** .
- c. Check the value for **Total memory**.

Replacing CPU Fans

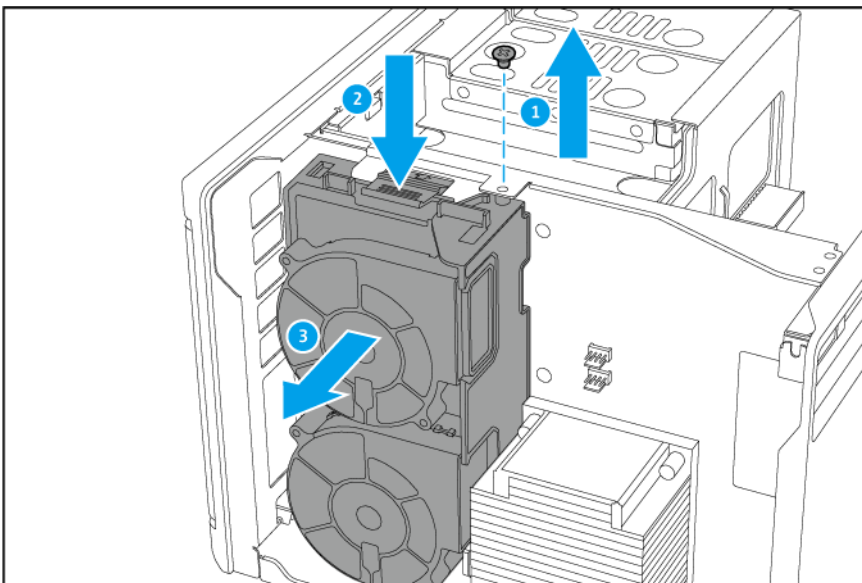
1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
 - a. Remove the screws that secure the cover to the chassis.
 - b. Slide the cover back.
 - c. Pull the cover up until it completely detaches from the chassis.



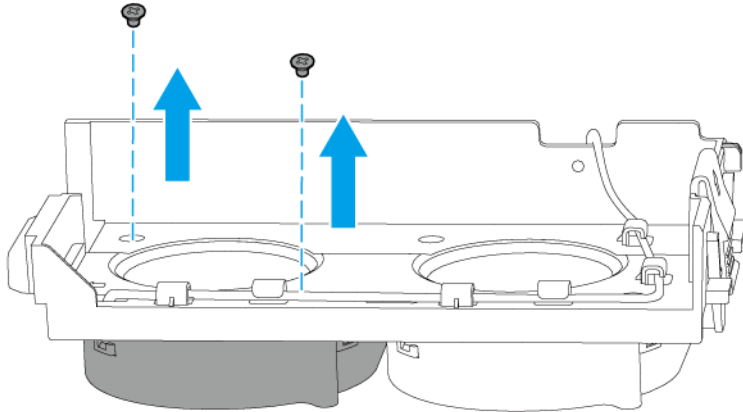
5. Remove the fan module.
 - a. Disconnect the fan cable from the system board.



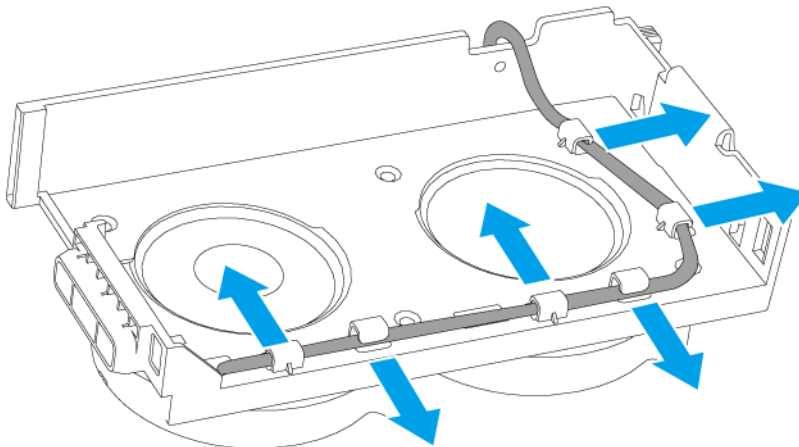
- b.** Remove the screw that secures the fan module to the chassis.
- c.** Press the fan module clip and then pull the module away from the system board.



- 6.** Remove an existing fan.
 - a.** Remove the screws that secure the fan to the fan chassis.



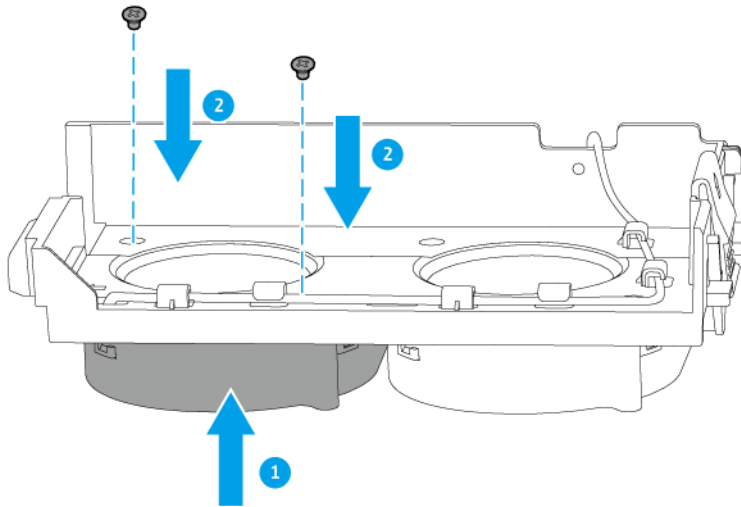
- b.** Remove the fan cable from the clips on the fan chassis.



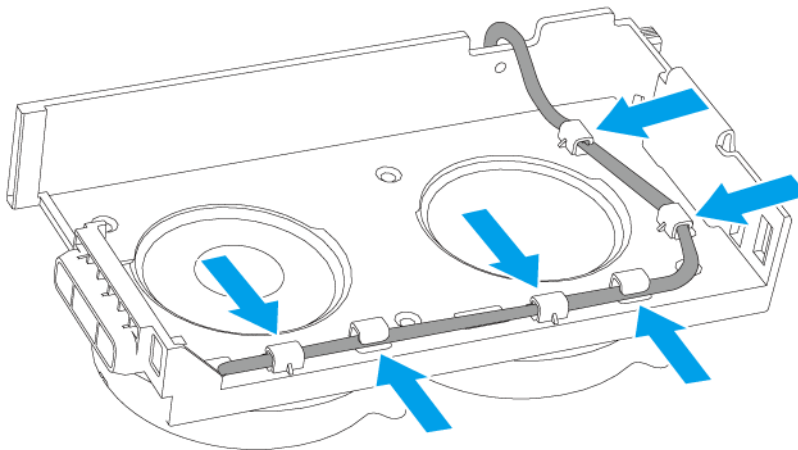
- c.** Remove the fan from the chassis.

7. Install a new fan in the same location.

- a.** Position the fan chassis so that the cable clips face upward.
- b.** Align the holes on the fan with those on the fan chassis.
- c.** Attach the screws to secure the fan to the fan chassis.

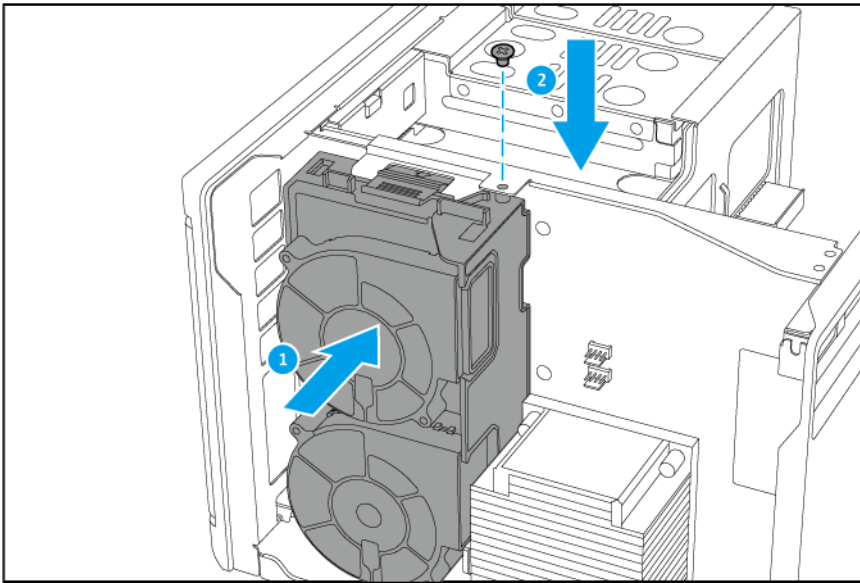


- d. Attach the fan cable to the cable clips on the fan chassis.

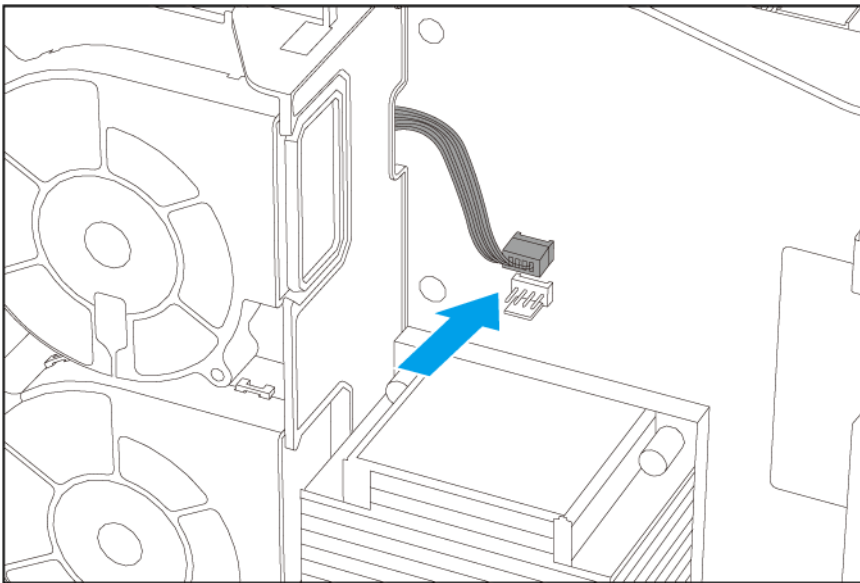


8. Attach the fan module.

- a. Align the clip with the hole on the chassis.
- b. Push the module toward the system board until the clip locks the module into place.
- c. Attach the screw that secures the module to the chassis.

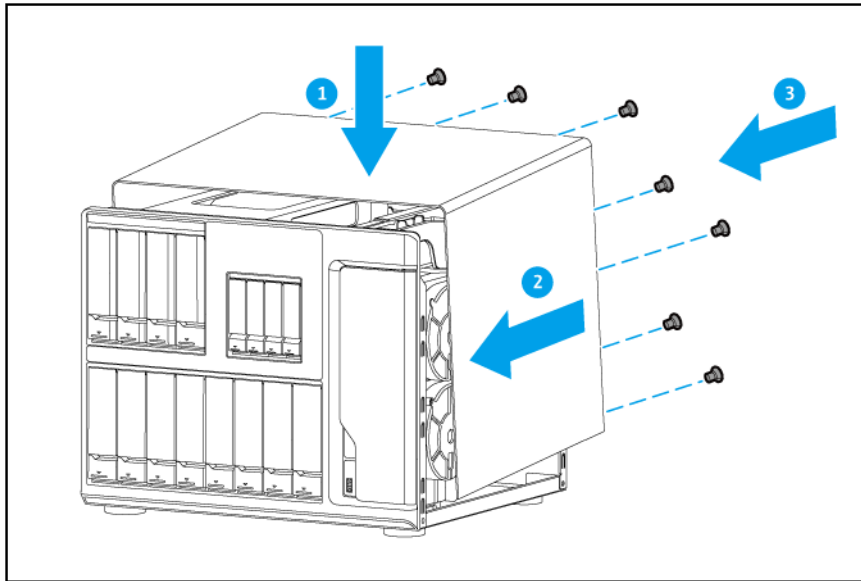


d. Connect the fan cable to the system board.



9. Attach the case cover.

- a. Slide the cover down until it completely connects with the chassis.
- b. Slide the cover forward.
- c. Attach the screws to the back side of the case.



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

QTS Installation

The TS-1677X 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. | <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. • Specify the Cloud Key. • Log into your myQNAPcloud account. • Use CloudLink to remotely access your NAS. • Complete the steps in the Smart Installation Guide wizard. | <ul style="list-style-type: none"> • Computer or mobile device • myQNAPcloud account • CloudKey |

Installing QTS Using Qfinder Pro



Warning

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

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



Note

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

4. Locate the NAS in the list and then double-click the name or IP address. The **Smart Installation Guide** opens in the default web browser.
5. Click **Start Smart Installation Guide**.
6. Specify the following information.
 - **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
 - **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.
7. Click **Next**.
8. Specify the time zone, date, and time.



Tip

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

9. Click **Next**.
10. Select **Obtain an IP address automatically (DHCP)**.

11. Click **Next**.
12. Select the types of devices that you will use to access shared folders on the NAS.
13. Click **Next**.
14. Select **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.

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

9. Click **Start Smart Installation Guide**.

10. 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.

11. Click **Next**.

12. 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.

13. Click **Next**.

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

15. Click **Next**.

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

17. Click **Next**.

18. Select **Configure disks later**.



Note

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

19. Click **Next**.

20. 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.

21. Click **Next**.

22. Review the settings.

23. Click **Apply**.

A confirmation message appears.

**Warning**

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


24. 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.

For details on configuring USB One Touch Copy, see the QTS User Guide.

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, drives, 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 the 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. 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 the 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 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

Using the LCD panel, you can view the temperature and capacity of each drive installed in the NAS.

1. Press **Enter** or **Select**.
The panel displays the NAS name and the 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 first drive.
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

Using the LCD panel, you can view the name and capacity of each volume.

1. Press **Enter** or **Select**.
The panel displays the NAS name and the 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

Using the LCD panel, you can view the CPU temperature, system temperature, and system fan speed.

1. Press **Enter** or **Select**.
The panel displays the NAS name and the 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 the 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 the 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 pressing and holding **Enter**.
The **New Password** screen appears.
6. Press **Select** and **Enter** to set the new password.
 - Specify a password with 1 to 8 characters. The password can only contain numbers (0 to 9).
 - To remove a password, leave the password field blank.

| Button | Usage |
|---------------|--|
| Enter | Move to the next item in the New Password screen. |
| Select | Change a number in the New Password and Verify Password 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 and LAN 2 are disconnected in failover or are in load-balancing mode. |
| LAN1 Lost | LAN 1 is disconnected. |
| LAN2 Lost | LAN 2 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. |
| | Flashes green every 2 seconds | The NAS is in S3 sleep mode. |
| | 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

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

Limited Warranty

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

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.

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Version 3, 29 June 2007

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END OF TERMS AND CONDITIONS

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.
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 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

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CE Notice



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SJ/T 11364-2006



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