TS-x73U

TS-873U
TS-1273U
TS-1673U
TS-873U-RP
TS-1273U-RP
TS-1673U-RP

User Guide

Document Version: 7
17/06/2020

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1. Preface

About This Guide

This guide provides information on the QNAP TS-x73U 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-x73U NAS.

About the TS-x73U

The TS-x73U series is powered by a high-performance AMD R-Series quad-core processor, with up to 64 GB of DDR4 memory. Each TS-x73U NAS features two 10 GbE SFP+ ports and two M.2 SATA 6 Gbps SSD slots, for use with storage, tiered storage, or cache acceleration. Encrypted file transfer performance can be doubled with AES-NI encryption acceleration.

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-873U			
TS-873U-4G	8	4 GB	Single
TS-873U-8G		8 GB	
TS-873U-16G		16 GB	
TS-873U-64G		64 GB	
TS-873U-RP			
TS-873U-RP-8G	8	8 GB	Redundant
TS-873U-RP-16G		16 GB	
TS-873U-RP-64G		64 GB	
TS-1273U			
TS-1273U-8G	12	8 GB	Single
TS-1273U-16G		16 GB	
TS-1273U-64G		64 GB	
TS-1273U-RP			
TS-1273U-RP-8G	12	8 GB	Redundant
TS-1273U-RP-16G		16 GB	
TS-1273U-RP-64G		64 GB	
TS-1673U			
TS-1673U-8G	16	8 GB	Single
TS-1673U-16G		16 GB	
TS-1673U-64G		64 GB	
TS-1673U-RP			
TS-1673U-RP-8G	16	8 GB	Redundant
TS-1673U-RP-16G		16 GB	
TS-1673U-RP-64G		64 GB	

Component	TS-873U TS-873U-RP	TS-1273U TS-1273U-RP	TS-1673U TS-1673U-RP
Processor			
CPU	AMD R-Series RX-421ND quad-core 2.1 GHz processor, Turbo Core up to 3.4 GHz		
Architecture	64-bit		
Encryption engine	AES-NI		
Memory			
Pre-installed memory	• 4 GB RAM: 1 x 4 GB UDIMM DDR4 • 8 GB RAM: 2 x 4 GB UDIMM DDR4 • 16 GB RAM: 2 x 8 GB UDIMM DDR4 • 64 GB RAM: 4 x 16 GB UDIMM DDR4 Use only non-error-correcting code (ECC) QNAP memory modules to maintain system performance and stability. For NAS devices with more than one memory slot, use non-ECC QNAP modules with identical specifications. **Note** Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.		
Total memory slots	4 x UDIMM DDR 4		
Maximum memory	64 GB (4 x 16 GB)		
Storage			
Drive bays	8 x SATA 6Gb/s	12 x SATA 6Gb/s	16 x SATA 6Gb/s
Drive compatibility	• 3.5-inch SATA hard disk drives • 2.5-inch SATA hard disk drives • 2.5-inch SATA solid state drives		
M.2 SSD type	2 x M.2 SSD SATA 6 Gbps		
M.2 SSD form factor	• 2260 • 2280		
SSD cache acceleration support	• Drive bays 1 to 8 • M.2 slots 1 to 2 • Optional: SSD using PCIe expansion slot	• Drive bays 1 to 12 • M.2 slots 1 to 2 • Optional: SSD using PCIe expansion slot	• Drive bays 1 to 16 • M.2 slots 1 to 2 • Optional: SSD using PCIe expansion slot
Hot-swappable	Yes **Note** The following are not hot-swappable: • M.2 SSDs • SSD cache drives • SSDs using PCIe expansion slots		
Network			

Component	TS-873U TS-873U-RP	TS-1273U TS-1273U-RP	TS-1673U TS-1673U-RP
10 gigabit Ethernet ports	2 x SFP+		
Gigabit Ethernet ports	4 x RJ45		
External I/O Ports & Expansion Slots			
PCIe slots	1 x PCIe 3.0 x4 **Note** A dual-port 10 GbE SFP+ network expansion card is pre-installed on the PCIe slot.		
USB ports	• 2 x USB 3.0 • 4 x USB 2.0		
Interface			
Maintenance port	1 x 3.5 mm maintenance port		
Dimensions			
Form factor	2U rackmount	2U rackmount	3U rackmount
Dimensions (H x W x D)	89 x 482 x 534 mm 3.5 x 18.98 x 21.02 inch	89 x 482 x 534 mm 3.5 x 18.98 x 21.02 inch	130 x 481 x 536 mm 5.12 x 18.94 x 21.10 inch
Net weight	• TS-873U: 9.86 kg (21.74 lbs.) • TS-873U-RP: 10.96 kg (24.16 lbs.)	• TS-1273U: 10.71 kg (23.62 lbs.) • TS-1273U-RP: 11.81 kg (26.04 lbs.)	• TS-1673U: 14.25 kg (31.42 lbs.) • TS-1673U-RP: 15.42 kg (34 lbs.)
Power supply unit	• TS-873U: 1 x 250W, 100-240V AC, 50/60 Hz • TS-873U-RP: 2 x 250W, 100-240V AC, 50/60 Hz	• TS-1273U: 1 x 350W, 100-240V AC, 50/60 Hz • TS-1273U-RP: 2 x 300W, 100-240V AC, 50/60 Hz	• TS-1673U: 1 x 350W, 100-240V AC, 50/60 Hz • TS-1673U-RP: 2 x 500W, 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.		
Fans	System: 2 x 70 mm	System: 2 x 70 mm	System: 4 x 92 mm
	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	• Non-condensing relative humidity: 5 to 95% • Wet-bulb temperature: 27˚C (80.6˚F)		
Security slot	Kensington security slot		

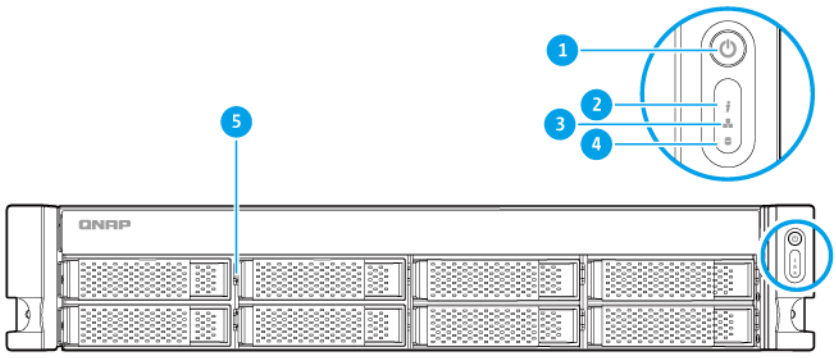
Note
Model specifications are subject to change without prior notice. To see the latest specifications, go to https://www.qnap.com.

Package Contents

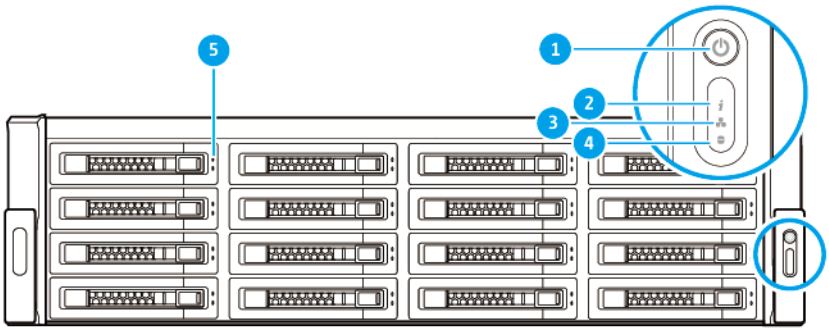
Item	Quantity
TS-x73U NAS	1
Power cords	• TS-873U, TS-1273U, TS-1673U: 1 • TS-873U-RP, TS-1273U-RP, TS-1673U-RP: 2
Ethernet cables	2 x gigabit network cables
Screws for 3.5-inch drives	• TS-873U, TS-873U-RP: 32 • TS-1273U, TS-1273U-RP: 48 • TS-1673U, TS-1673U-RP: 64
Screws for 2.5-inch drives	• TS-873U, TS-873U-RP: 24 • TS-1273U, TS-1273U-RP: 36 • TS-1673U, TS-1673U-RP: 48
Screws for M.2 SSDs	• 2 x flat head machine screws • 2 x riser screws
M.2 SSD heatsinks	2
Quick Installation Guide (QIG)	1

Components

Front Panel



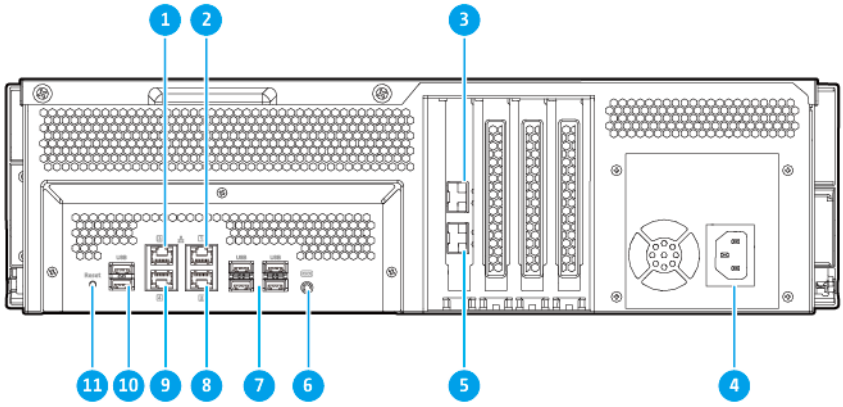
TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP



TS-1673U, TS-1673U-RP

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

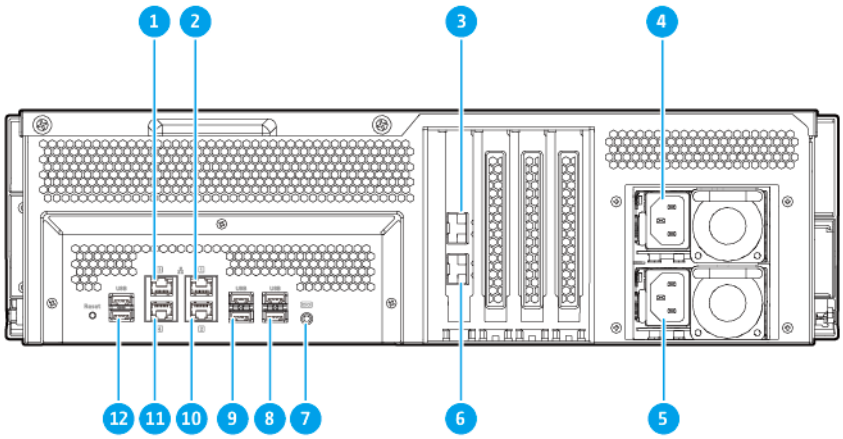
Rear Panel



TS-873U, TS-1273U, TS-1673U

No.	Component	No.	Component
1	Gigabit Ethernet port 3	7	USB 2.0 ports

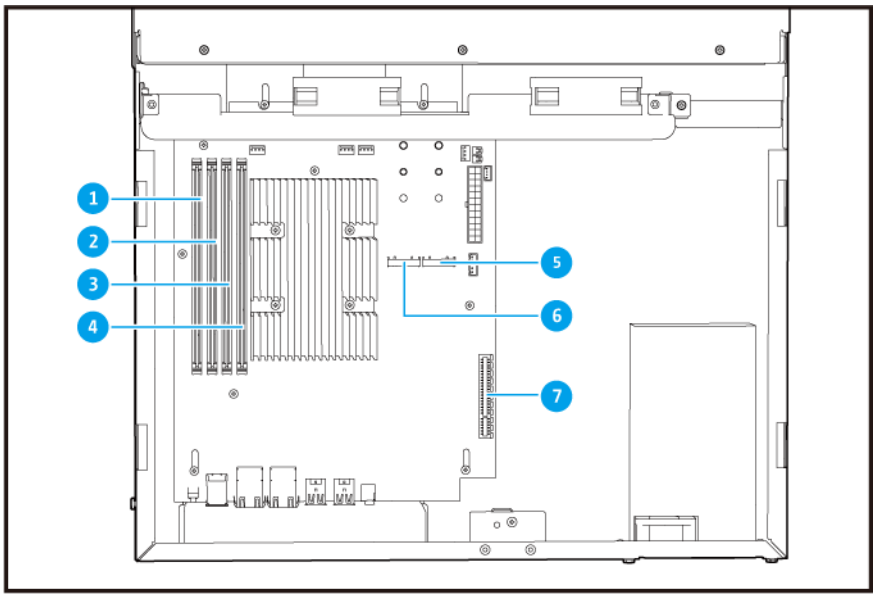
No.	Component	No.	Component
2	Gigabit port 1	8	Gigabit port 2
3	10 Gigabit Ethernet port 1	9	Gigabit port 4
4	Power port	10	USB 3.0 ports
5	10 Gigabit Ethernet port 2	11	Reset button
6	Maintenance port	-	-



TS-873U-RP, TS-1273U-RP, TS-1673U-RP

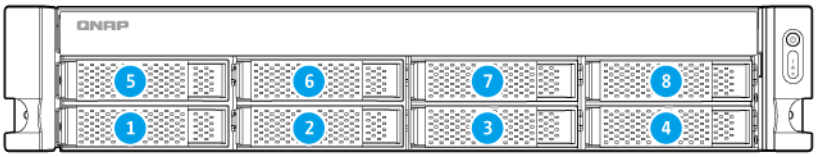
No.	Component	No.	Component
1	Gigabit port 3	7	Maintenance port
2	Gigabit port 1	8	USB 2.0 ports
3	10 gigabit SFP+ port 1	9	Gigabit port 2
4	Power supply unit 1	10	Gigabit port 4
5	Power supply unit 2	11	USB 3.0 ports
6	10 gigabit SFP+ port 2	12	Reset button

System Board

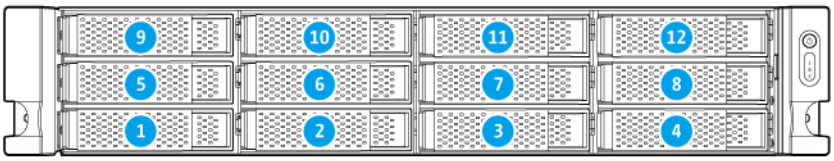


No.	Component	No.	Component
1	DIMM memory slot 4	5	M.2. SSD slot 1
2	DIMM memory slot 3	6	M.2. SSD slot 2
3	DIMM memory slot 2	7	PCIe 3.0 x4
4	DIMM memory slot 1	-	-

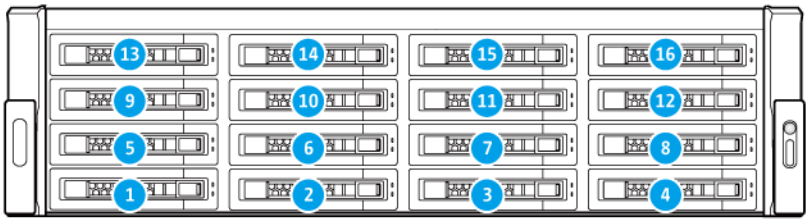
Front Drive Numbering



TS-873U, TS-873U-RP

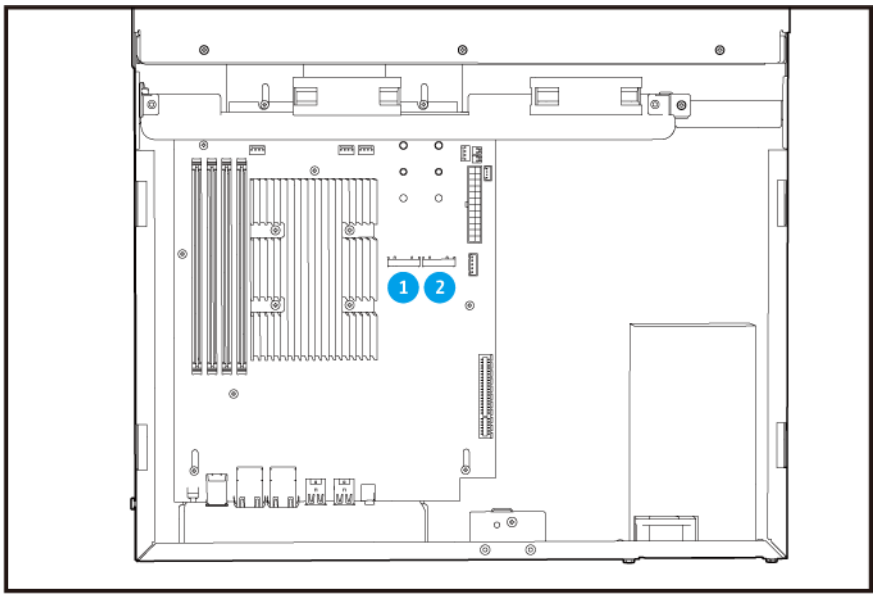


TS-1273U, TS-1273U-RP



TS-1673U, TS-1673U-RP

M.2 Solid State Drive Numbering



Safety Information

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

General Instructions

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

Power

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

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

System Battery

- To avoid potential battery explosion, causing injury or damage to components, ensure that you replace the existing battery with a battery of the same type.

- Dispose of used batteries properly according to local regulations or the instructions of the battery manufacturer.

Moving Parts

- 

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

- 

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

Installation Requirements

Category	Item
Environment	• 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	• Storage drives For details on compatible drives, go to https://www.qnap.com/compatibility/. • Network cable
Tools	• Phillips #1 or #2 screwdriver • Anti-static wrist strap

Setting Up the NAS

Important
Read all safety requirements and information in Safety Information carefully before setting up the NAS or installing NAS components.

1. Place your NAS device in an environment that meets the requirements.
   For details, see Installation Requirements.
2. Install the NAS on a rack.
   For details, see Rail Kits.
3. Install the drives.
   For details, see the following topics:
   - Installing 3.5-inch Hard Drives on 3.5-inch Trays
   - Installing 2.5-inch Hard Drives or Solid State Drives on 3.5-inch Trays

- Installing M.2 Solid State Drives

4. Connect the power cord and all applicable cables.
5. Power on the NAS.
6. Install QTS.
   For details, see QTS Installation.
7. 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.

Installing Drives

The TS-x73U is compatible with 3.5-inch and 2.5-inch hard drives, and 2.5-inch and M.2 solid state drives. All drive bays support SSD cache acceleration.

Installing 3.5-inch Hard Drives on 3.5-inch Trays

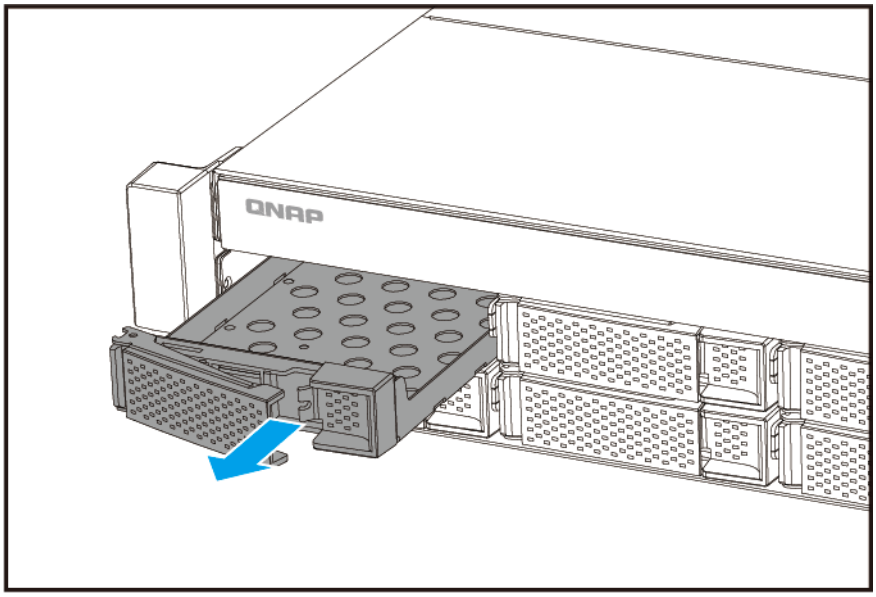
Warning

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

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

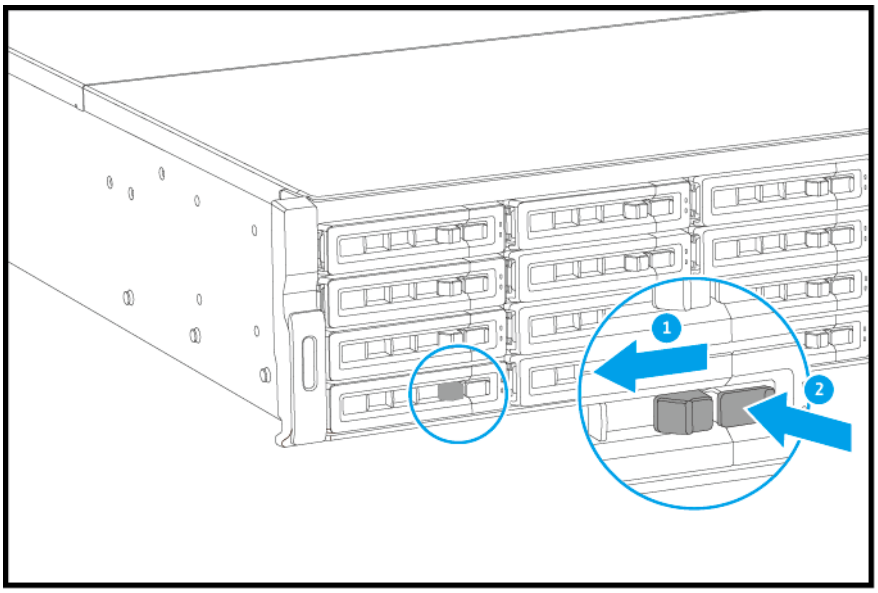
  Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. Remove the drive tray.
   - TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP
     1. Pull the handle to release the tray.
     2. Pull the tray out.

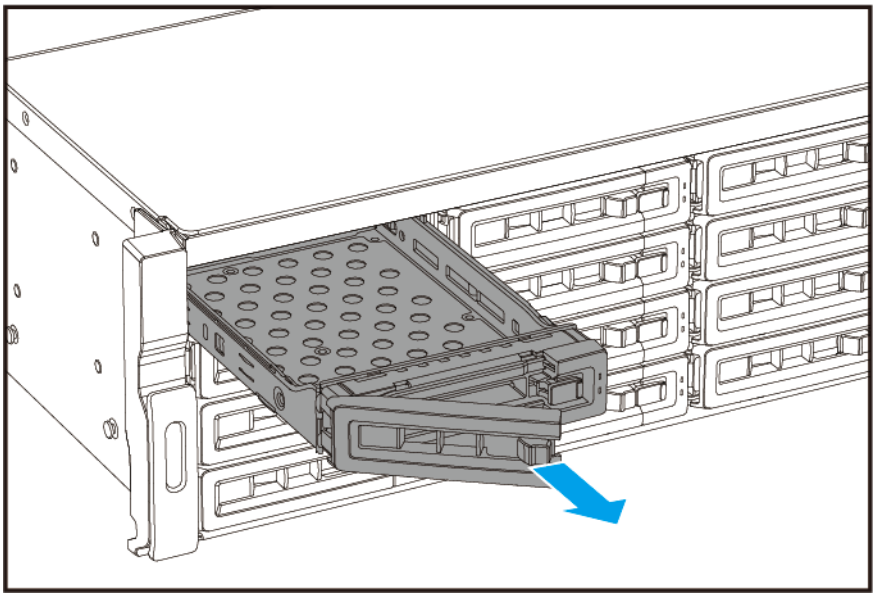


- TS-1673U, TS-1673U-RP

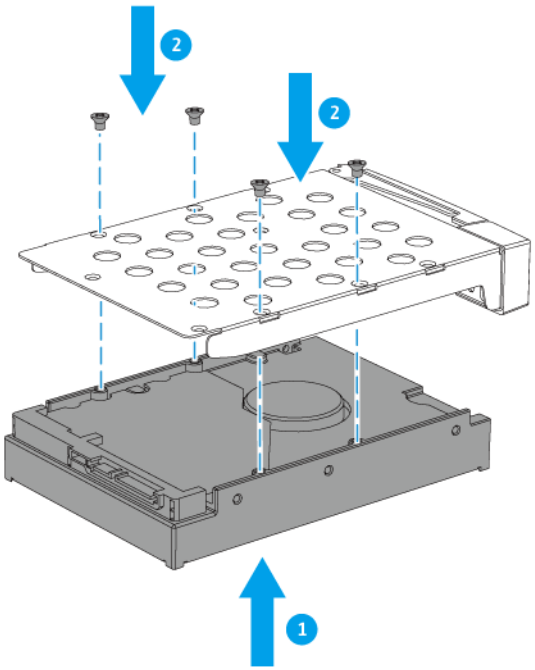
  1. Locate the lock.
  2. Slide the lock to the left.
  3. Push the gray button to release the handle.



  4. Pull the tray out.

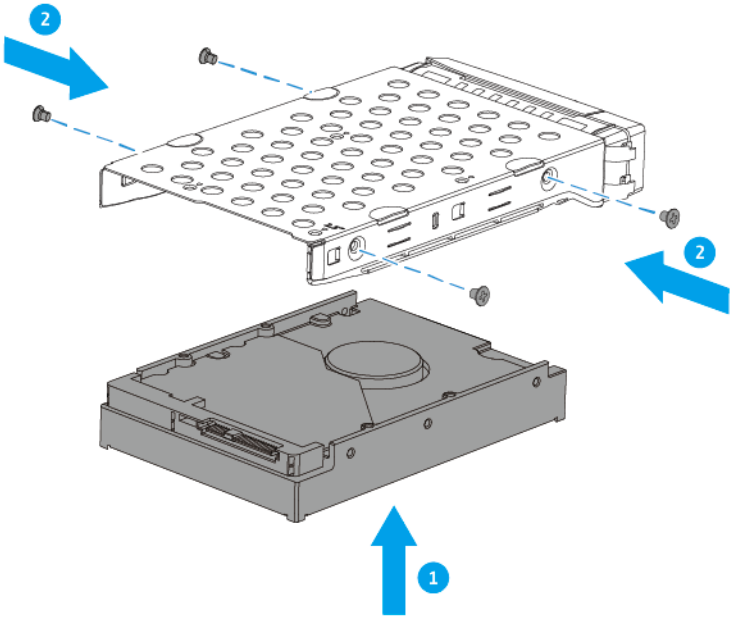


3. Install a drive on the drive tray.
   - TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP
     1. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.
     2. Attach the screws.

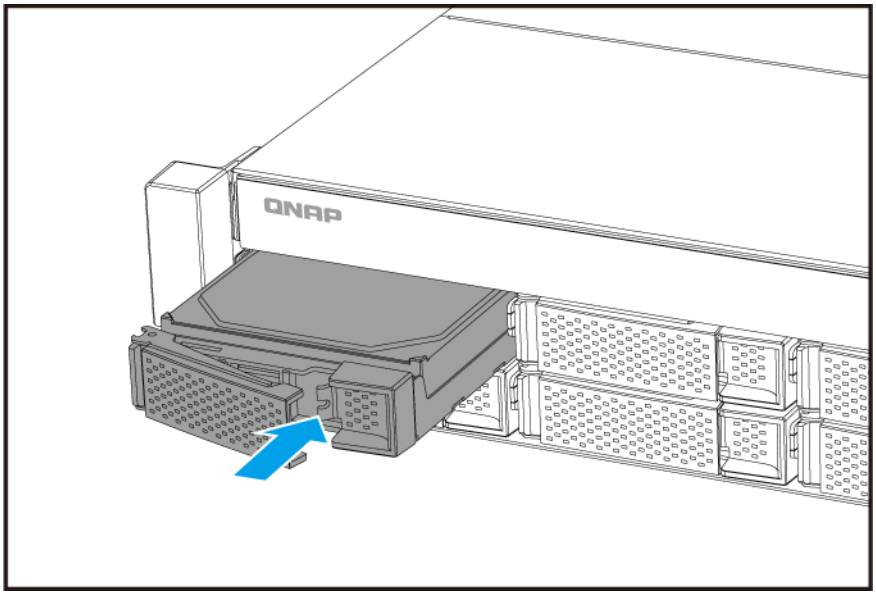


- TS-1673U, TS-1673U-RP

  1. Place the drive on the tray so that the holes on the side of the drive are aligned with the holes on the side of the tray.
  2. Attach the screws.

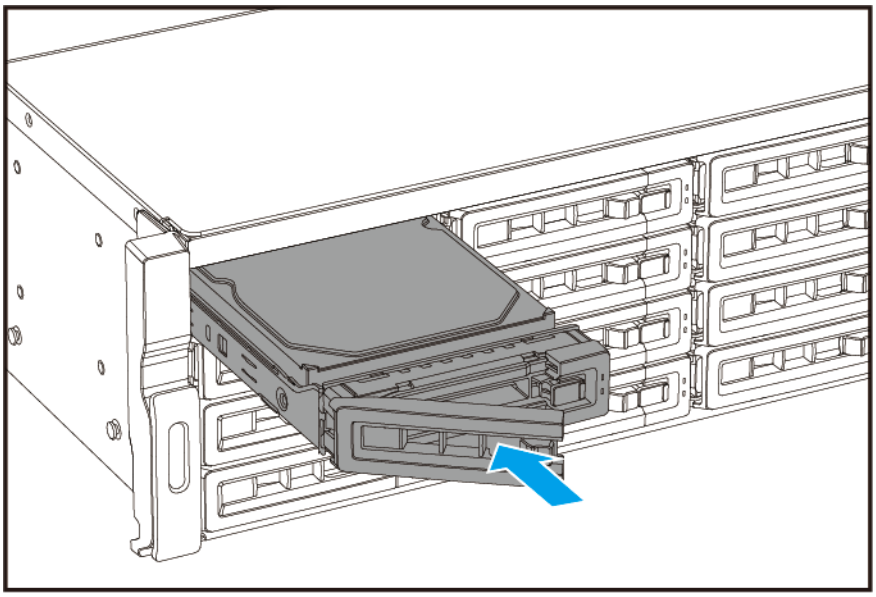


4. Load the drive tray into the drive bay.
   - TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP
     1. Insert the tray into the bay.
     2. Push the handle.



- TS-1673U, TS-1673U-RP

  1. Insert the tray into the bay.
  2. Push the handle.
  3. Slide the lock to the right.



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.
- 

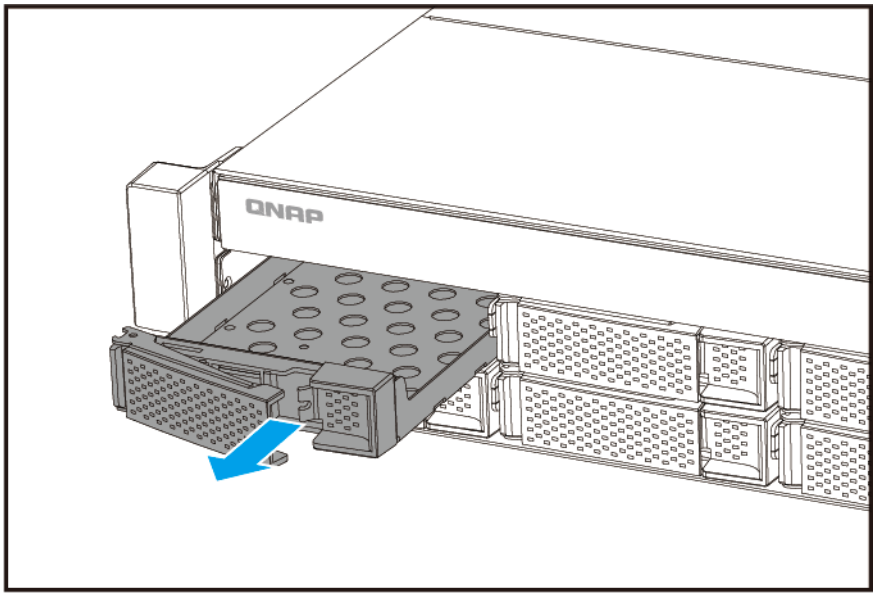
  Moving fan blades: Keep your hands and other body parts away from moving fan blades.
- 

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

1. Power off the NAS.
2. Remove the drive tray.

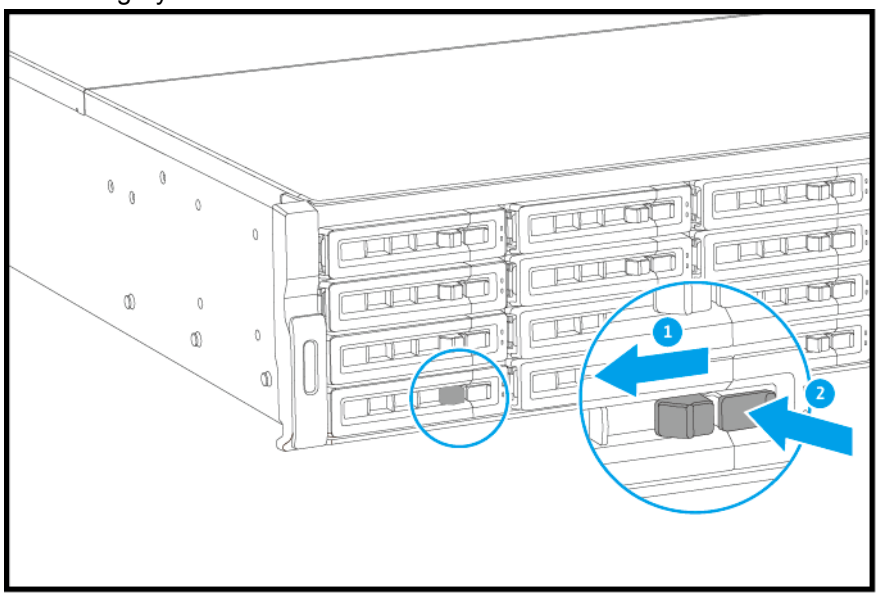
- TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP

  1. Pull the handle to release the tray.
  2. Pull the tray out.

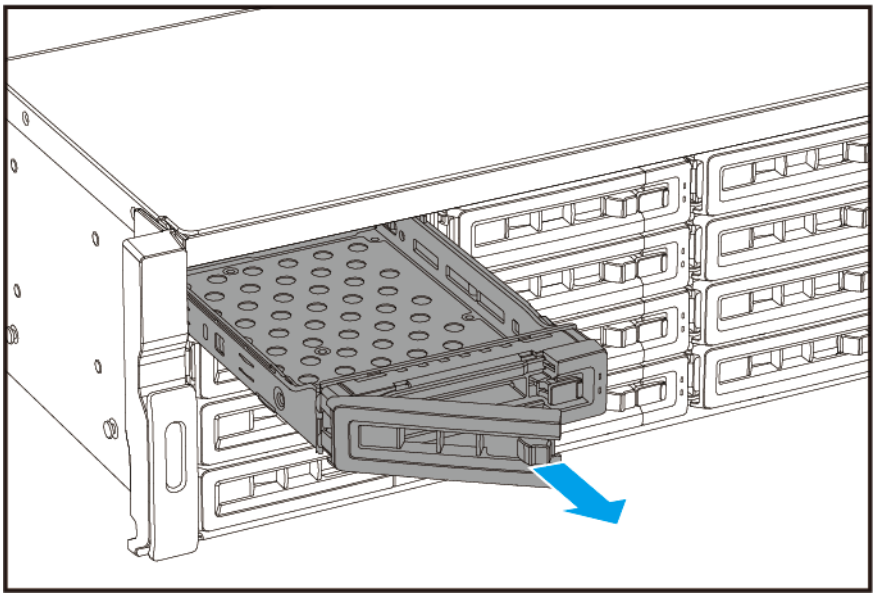


- TS-1673U, TS-1673U-RP

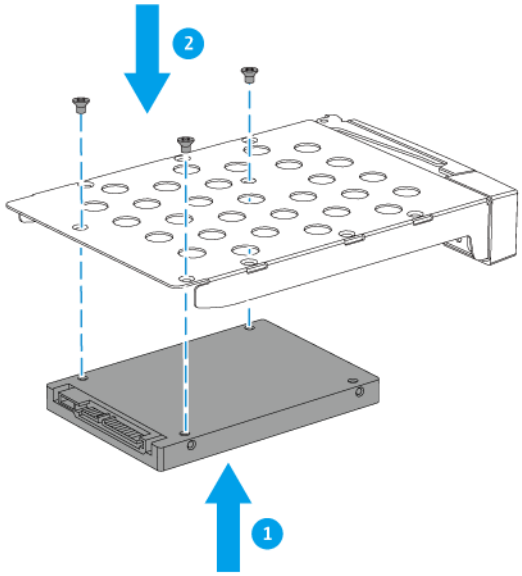
  1. Locate the lock.
  2. Slide the lock to the left.
  3. Push the gray button to release the handle.



  4. Pull the tray out.

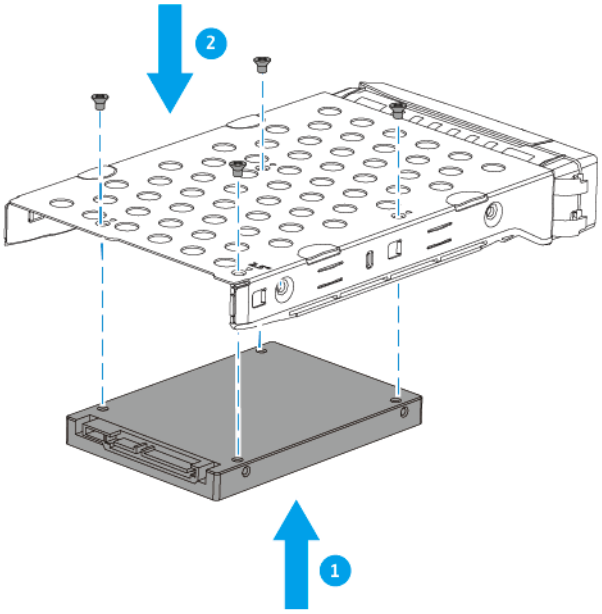


3. Install a drive on the drive tray.
   - TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP
     1. Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.
     2. Attach the screws.

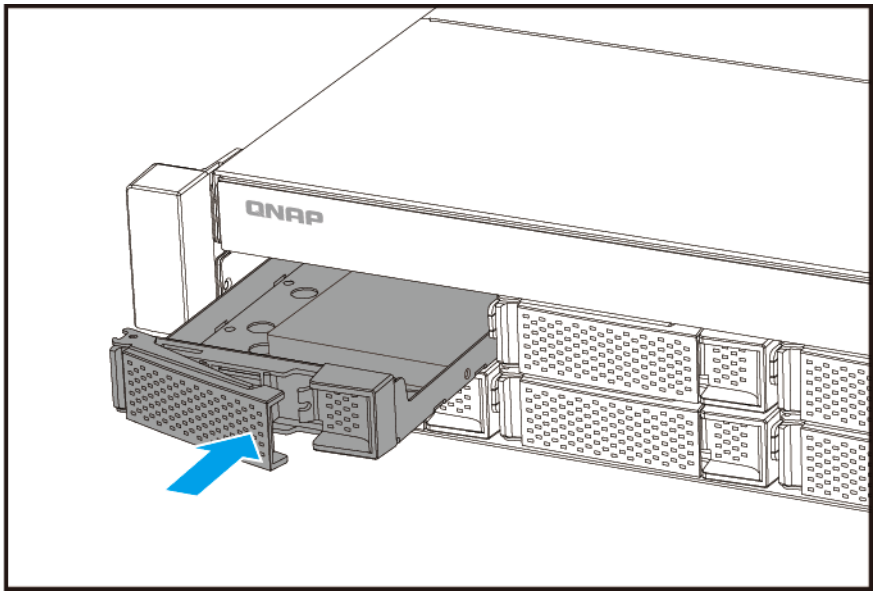


- TS-1673U, TS-1673U-RP

  1. 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.
  2. Attach the screws.

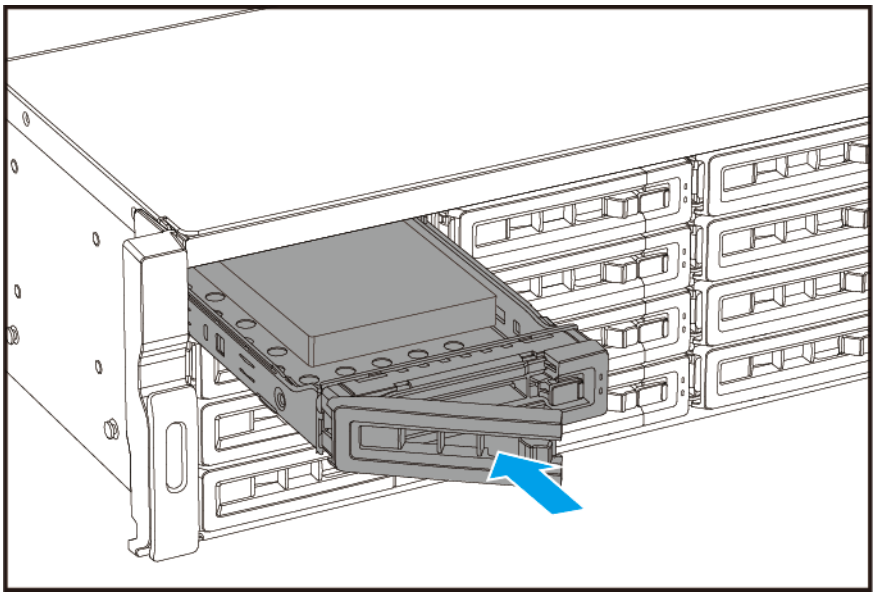


4. Load the drive tray into the drive bay.
   - TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP
     1. Insert the tray into the bay.
     2. Push the handle.



- TS-1673U, TS-1673U-RP

  1. Insert the tray into the drive bay.
  2. Push the handle.
  3. Slide the lock to the right.



5. Power on the NAS.

Installing M.2 Solid State Drives

The TS-x73U has two M.2 SATA 6Gbps SSD slots. For a list of compatible M.2 SSDs, go to http://www.qnap.com/compatibility.

Warning

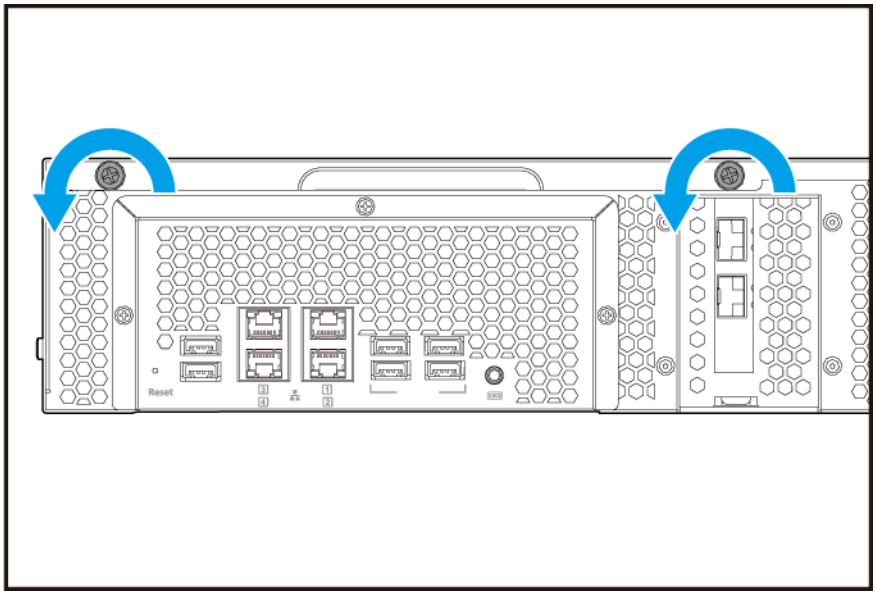
- Only qualified personnel should perform the following steps. Failure to follow instructions can result in serious injury or death.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.
- 

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

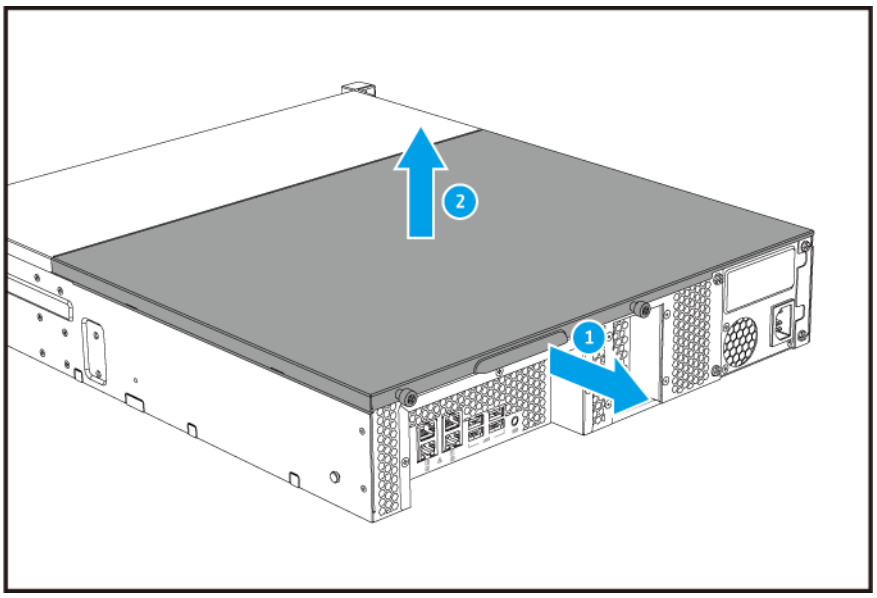
  Other moving components: Keep your hands and other body parts away from other moving components.

Note
QNAP recommends installing heatsinks on the M.2 SSD controllers to enhance cooling efficiency and to ensure consistent performance.

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.
   a. Loosen the screws on the back of the cover.



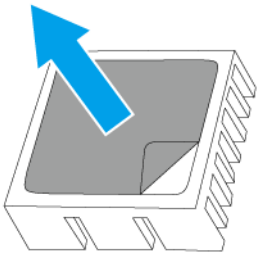
   b. Slide the cover away from the NAS using the handle.
   c. Lift the cover.



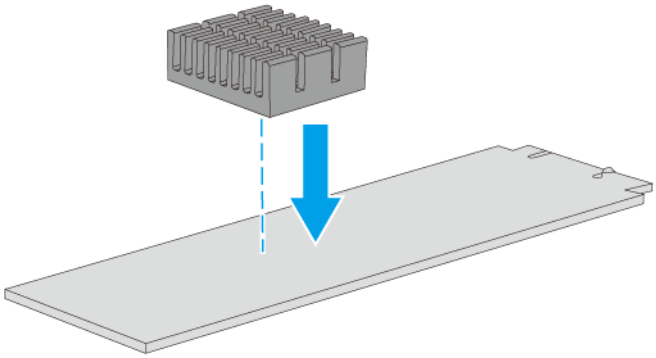
5. Install a heatsink on the M.2 SSD controller.

   a. Locate the controller on the M.2 SSD.
   The controller location varies depending on the model and manufacturer of the M.2 SSD.
   For details, refer to the documentation or contact the manufacturer.

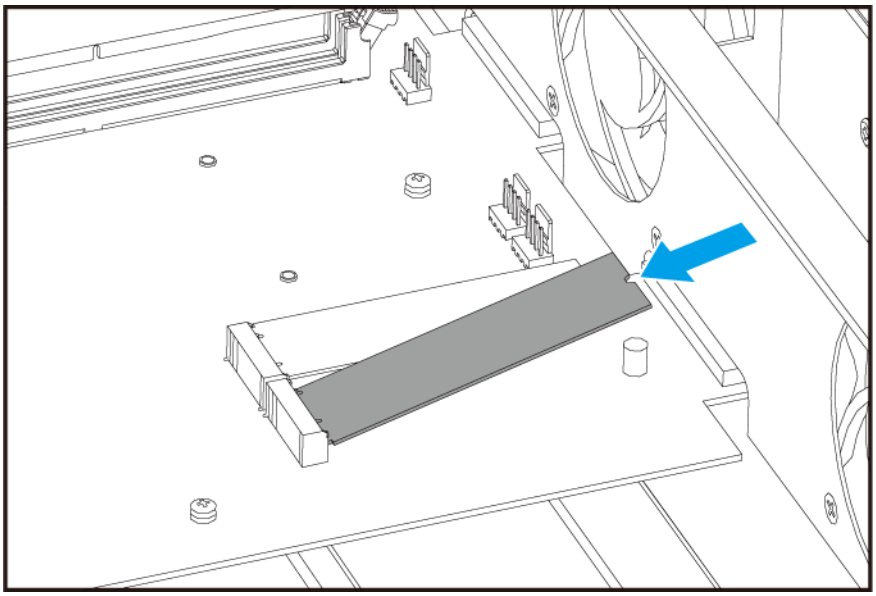
   b. Remove the protective film from the bottom of the heatsink.



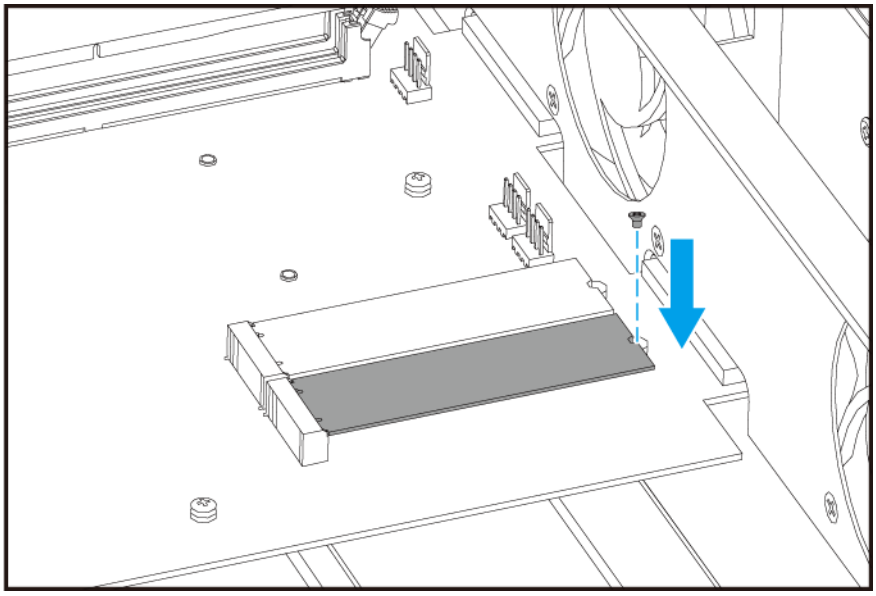
   c. Install the heatsink on the controller.



6. Insert a riser screw for a 2260 M.2 SSD.
7. Install the M.2 SSD.
   a. Insert the M.2 SSD into the slot.

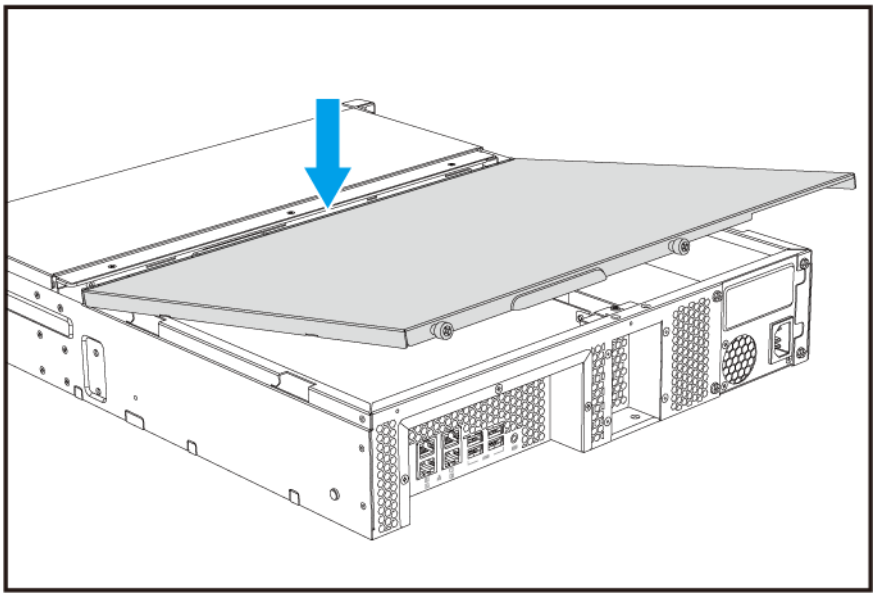


   b. Attach the flat head screw to the riser screw.

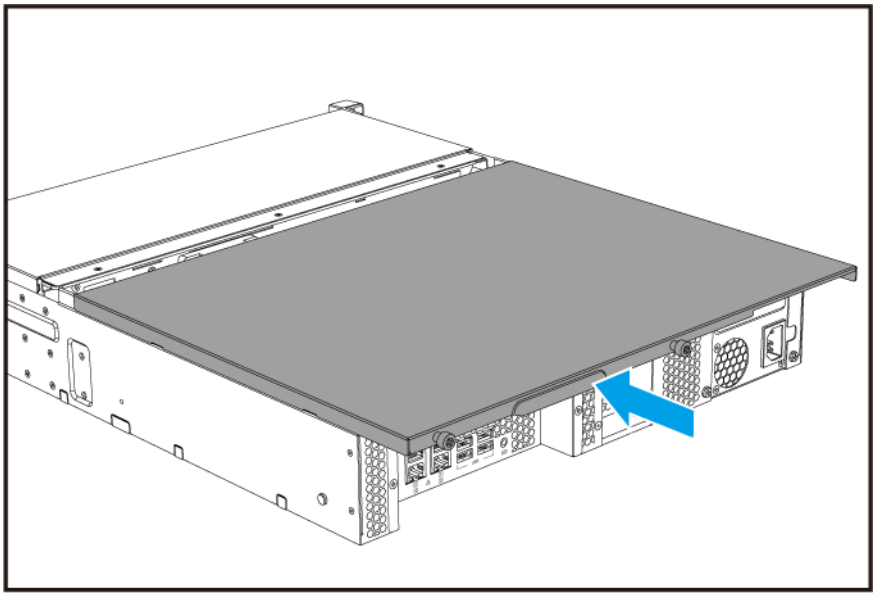


8. Attach the top cover.

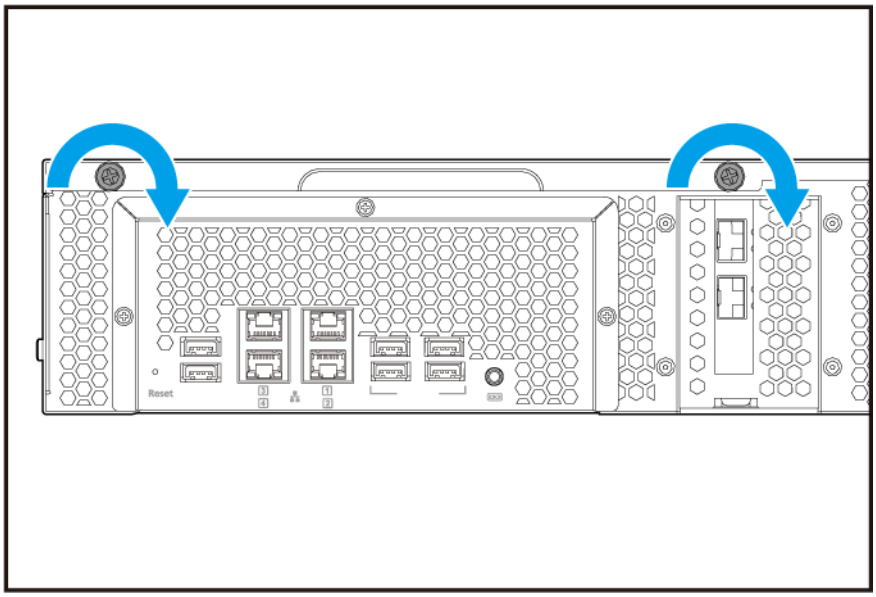
   a. Place the cover on the NAS.



   b. Slide the cover toward the NAS.



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 Expansion Cards

A dual-port 10 GbE SFP+ network expansion card is pre-installed on the PCIe slot. You can replace it with another supported PCIe expansion card.

QNAP-branded expansion cards purchased from the company website are shipped with the brackets necessary to fit all QNAP NAS models. The TS-873U, TS-873U-RP, TS-1273U, and TS-1273U-RP use low-profile brackets, while the TS-1673U and TS-1673U-RP use full-height brackets.

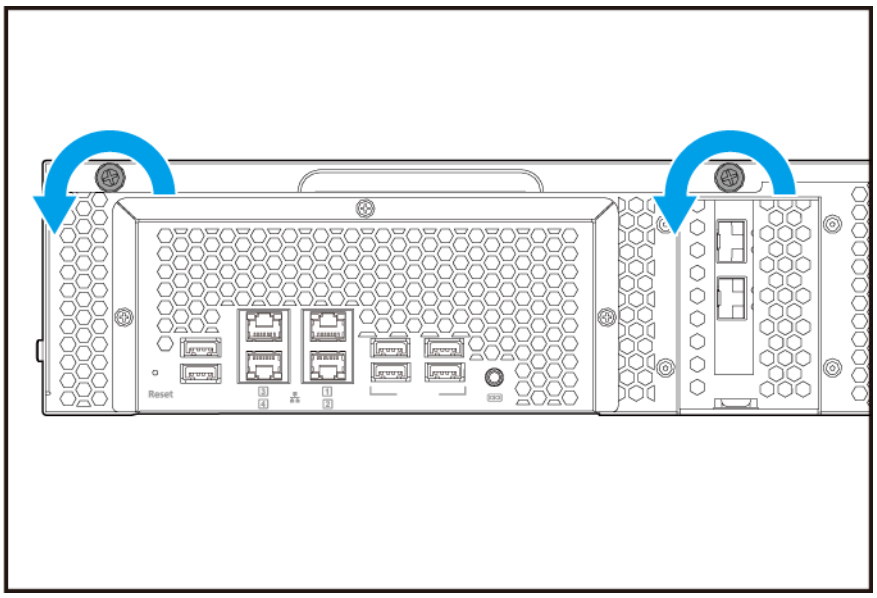
Warning

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

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

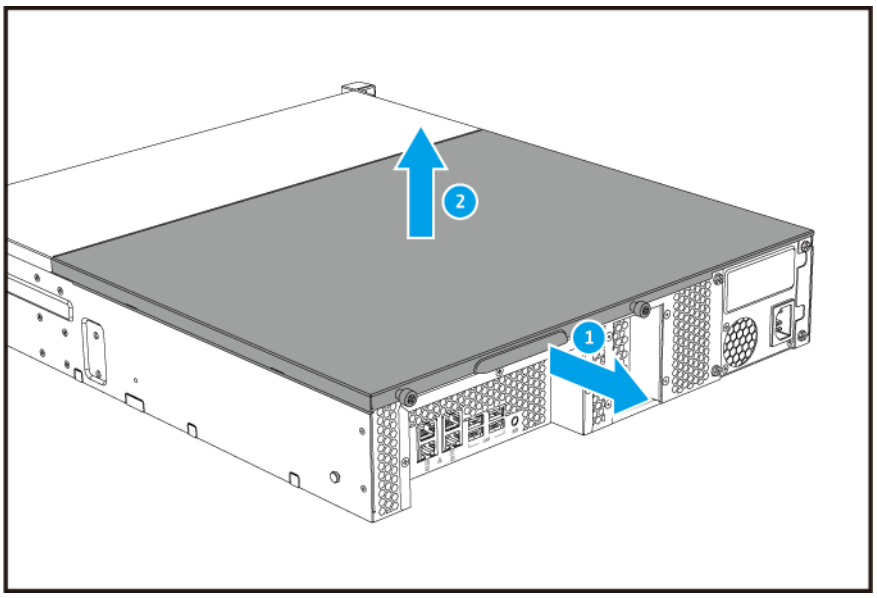
  Other moving components: Keep your hands and other body parts away from other moving components.

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



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

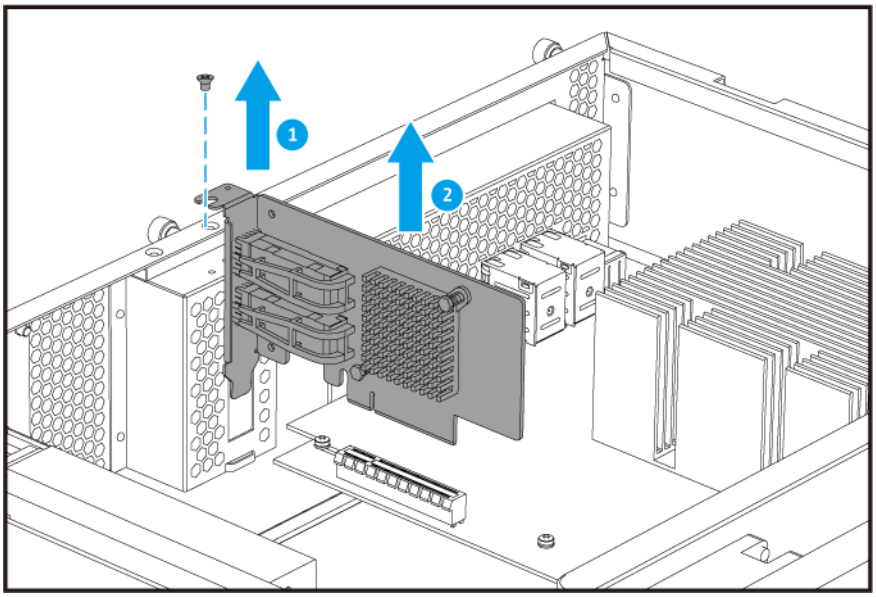
c. Lift the cover.



6. Remove the existing expansion card.

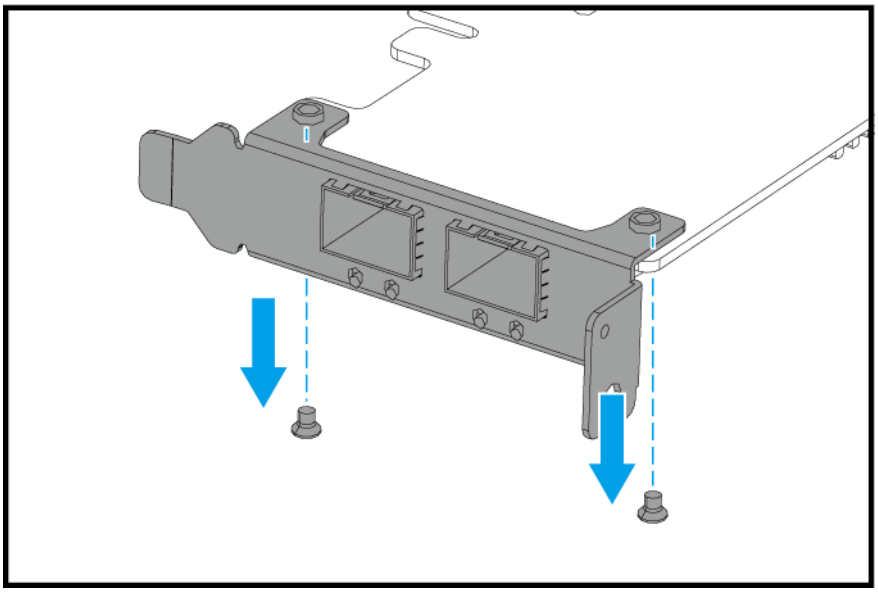
a. Remove the screw that secures the PCIe bracket to the chassis.

b. Hold the card by the edges and then carefully pull it out of the slot.



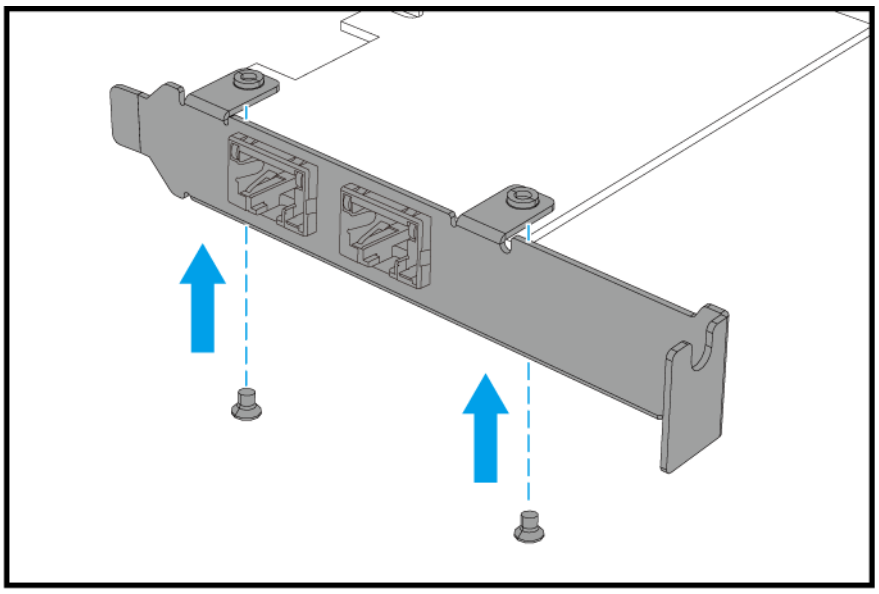
7. Optional: Attach the QNAP bracket to the expansion card.

   a. Remove all screws of the existing bracket.

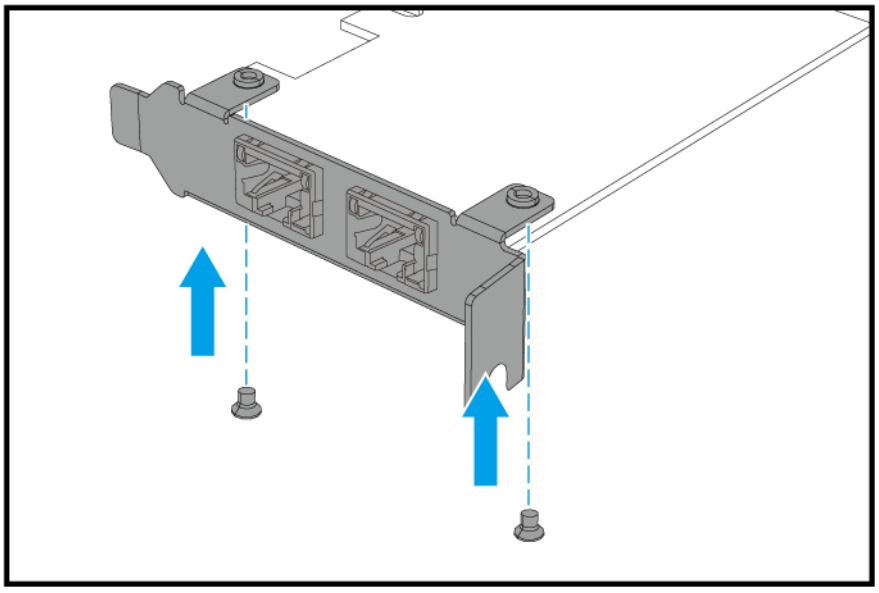


   b. Carefully pull the bracket away from the card.

   c. Attach the QNAP bracket to the card using the same screws.



TS-1673U, TS-1673U-RP



TS-873U, TS-873U-RP, TS-1273U, TS-1273U-RP

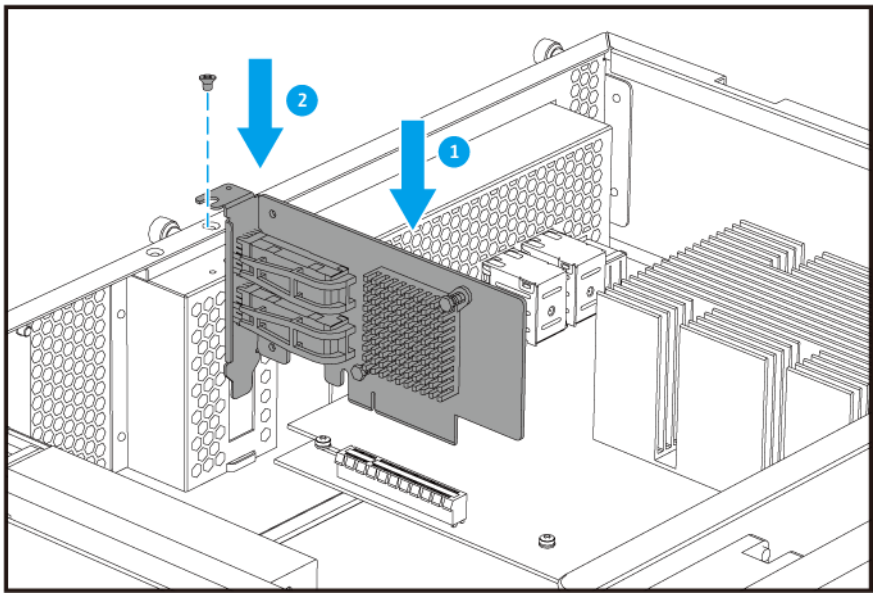
d. Verify that the bracket does not move.

8. Install the expansion card.

a. Hold the expansion card by the edges.

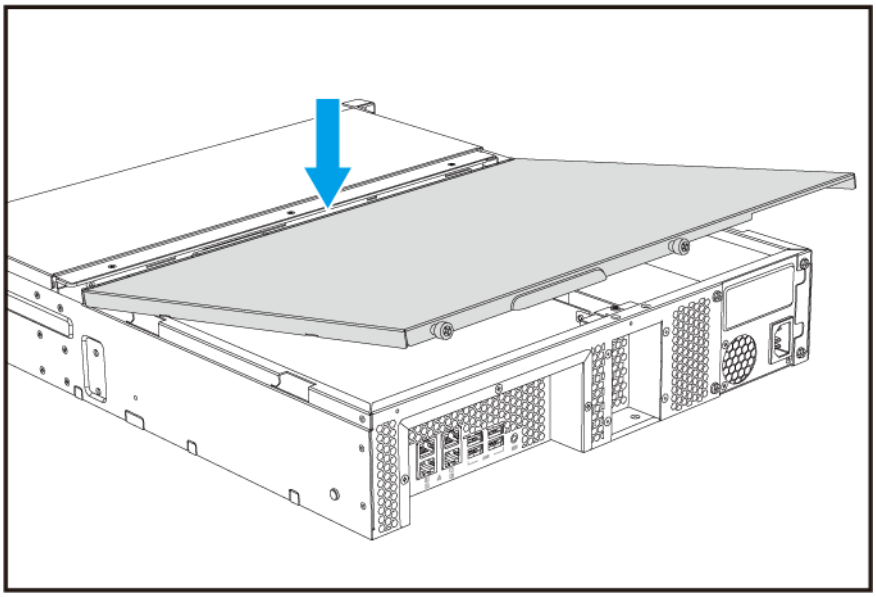
b. Insert the card into the slot.

c. Attach the screw.

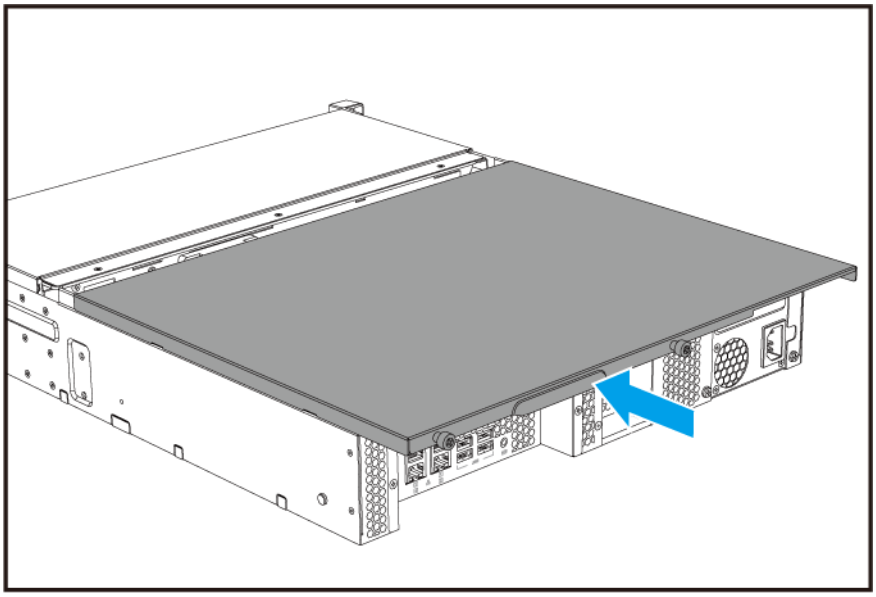


9. Attach the top cover.

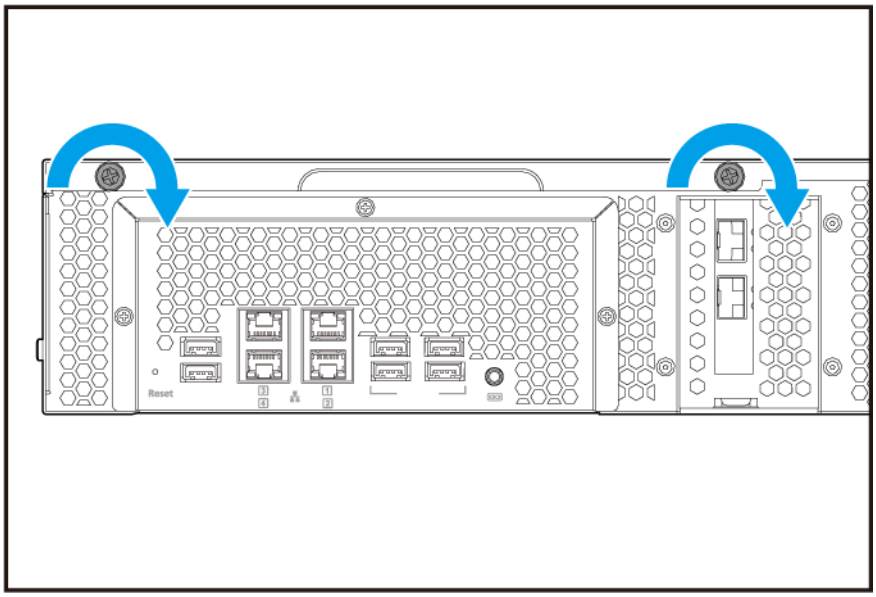
   a. Place the cover on the NAS.



   b. Slide the cover toward the NAS.



c. Tighten the screws.



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

Expansion Units

The TS-x73U supports both SAS and USB expansion units.

Type	Description	Required Accessories
SAS	• Uses a SAS 12 Gbps interface • Supports a maximum of eight expansion units • Supports SAS 12 Gbps and 6 Gpbs drives	• SAS-12G2E storage expansion card • mini-SAS SFF-8644 cable • RAIL-A03-57 rail kit
USB	• Uses a USB 3.0 Type-A interface • Supports a maximum of two expansion units • Supports SATA 6 Gbps drives	RAIL-B01 rail kit

Connecting SAS Expansion Units

The TS-x73U supports a maximum of eight SAS expansion units and is compatible with the following models:

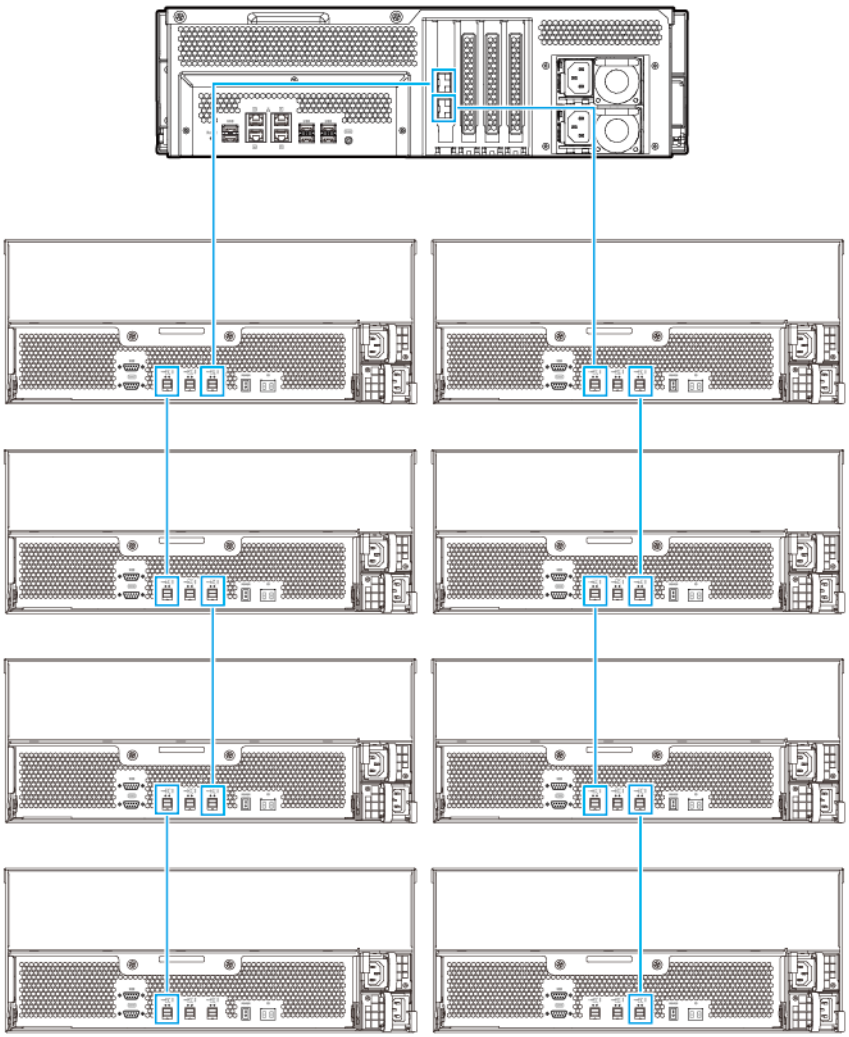
- REXP-1220U-RP
- REXP-1620U-RP

To use SAS expansion units, you must install an SAS-12G2E storage expansion card on the NAS and then connect the expansion units using mini-SAS SFF-8644 cables. You can purchase storage expansion accessories from QNAP or an authorized reseller.

For details, go to https://shop.qnap.com/.

1. Install a storage expansion card on the PCIe slot.
   For details, see Installing Expansion Cards

2. Connect the expansion units to the NAS with mini-SAS SFF-8644 cables using the following topology.



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

Connecting USB Expansion Units

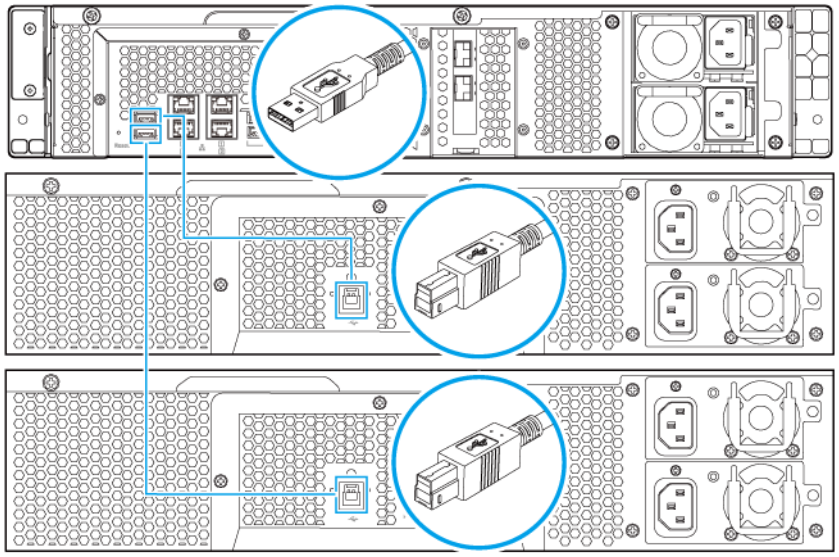
The TS-x73U supports a maximum of two USB expansion units and is compatible with the following models:

- 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.

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.

When replacing modules, ensure the following:

1. A module is installed in slot 1.
2. When installing only two modules, use slots 1 and 3.

For details on slot numbering, see System Board.

Warning

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

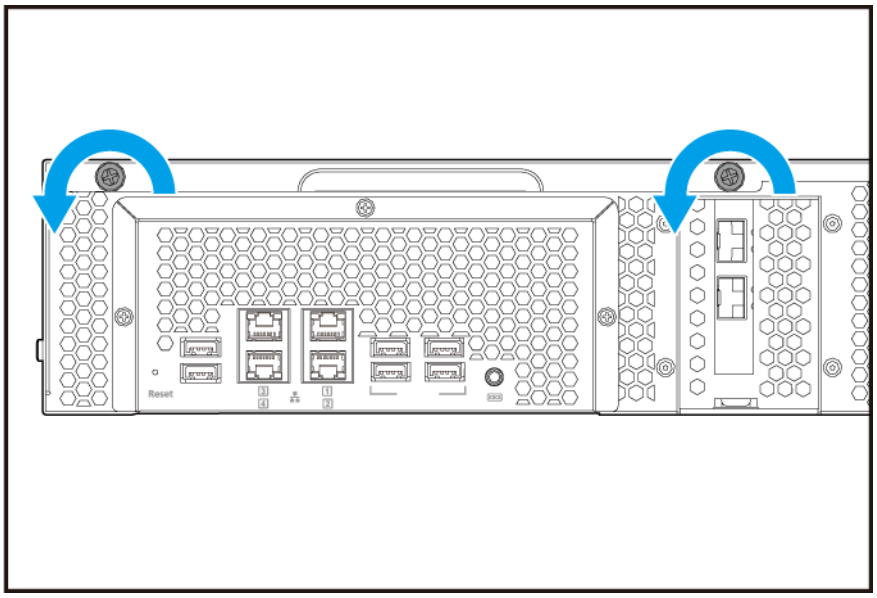
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  Moving fan blades: Keep your hands and other body parts away from moving fan blades.

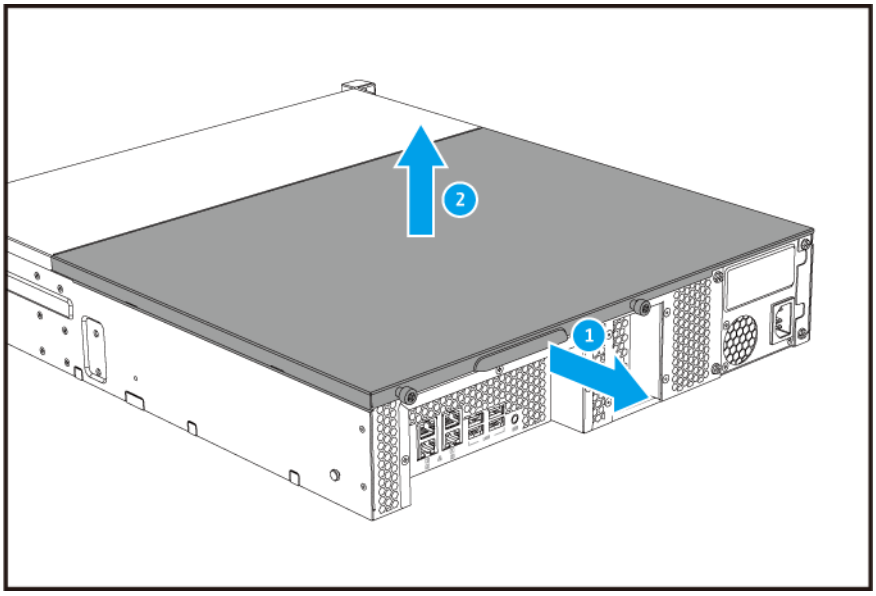
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  Other moving components: Keep your hands and other body parts away from other moving components.

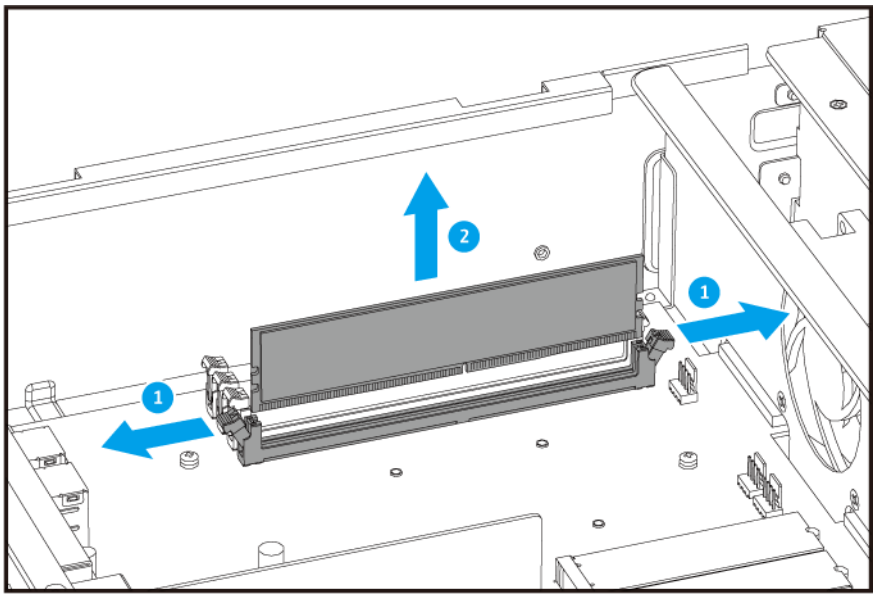
1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the top cover.
   a. Loosen the screws on the back of the cover.



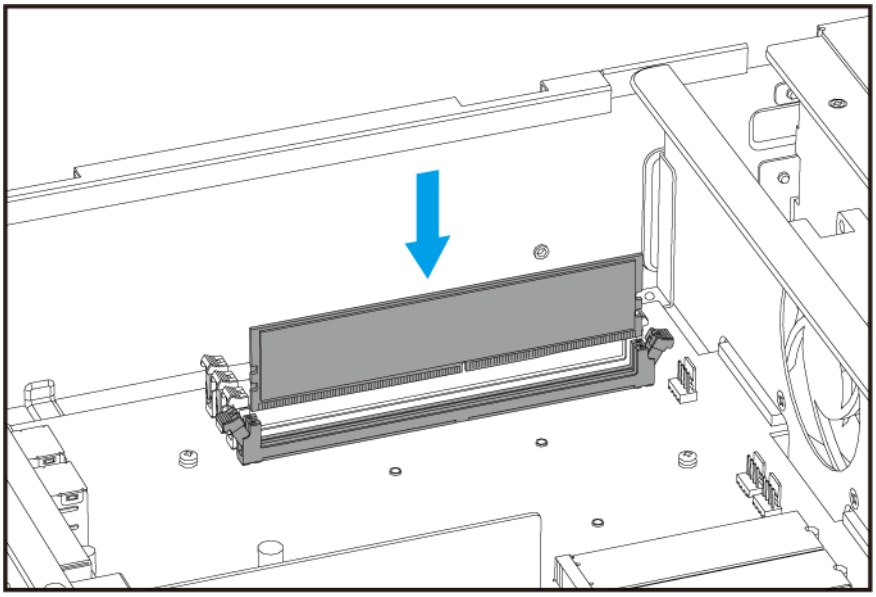
   b. Slide the cover away from the NAS using the handle.
   c. Lift the cover.



5. Remove an existing memory module.
   a. Push the retention clips outward to release the module.
   b. Hold the module by the edges and then carefully pull it out of the slot.



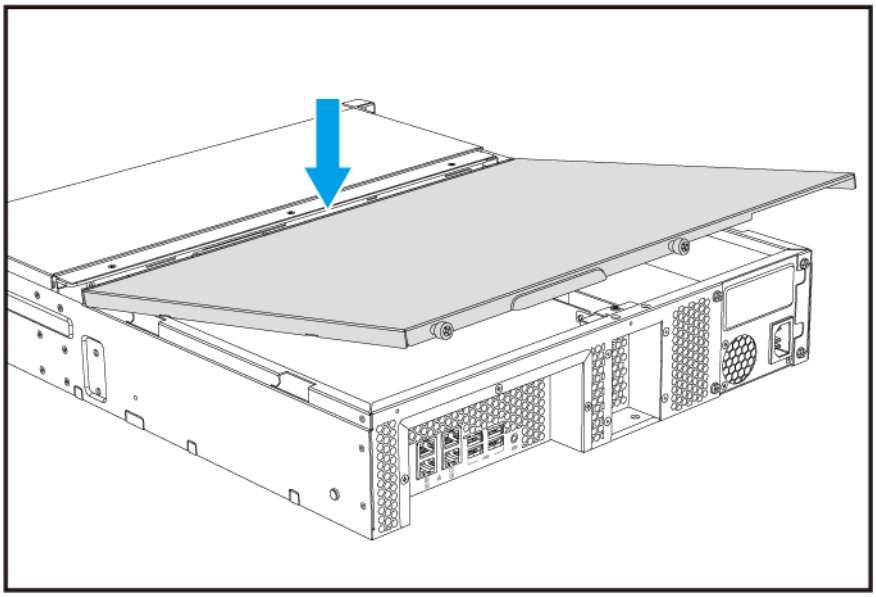
6. Install a new memory module.
   a. Align the notch with the ridge in the slot.
   b. Insert the module into the slot and then carefully press down on the module.



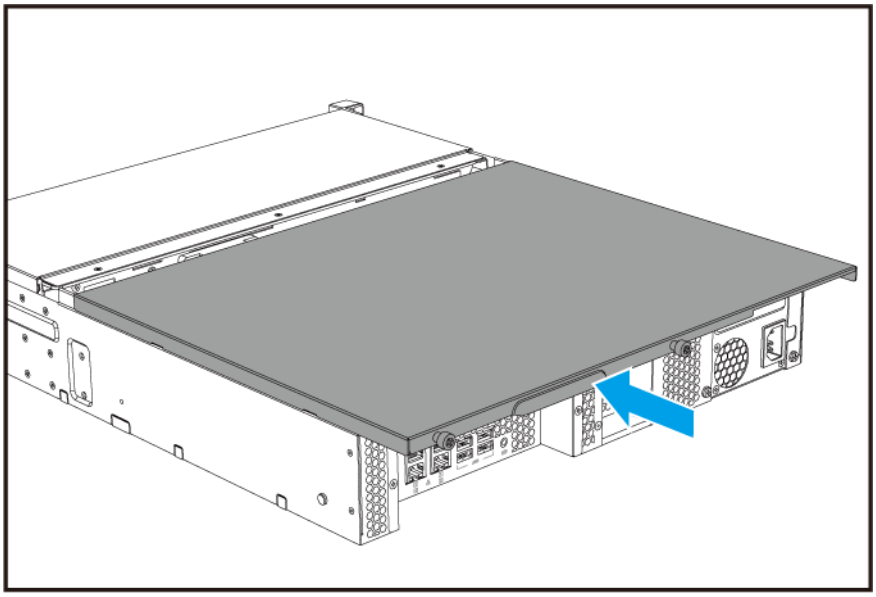
c. Push the retention clips inward to lock the module into place.

7. Attach the top cover.

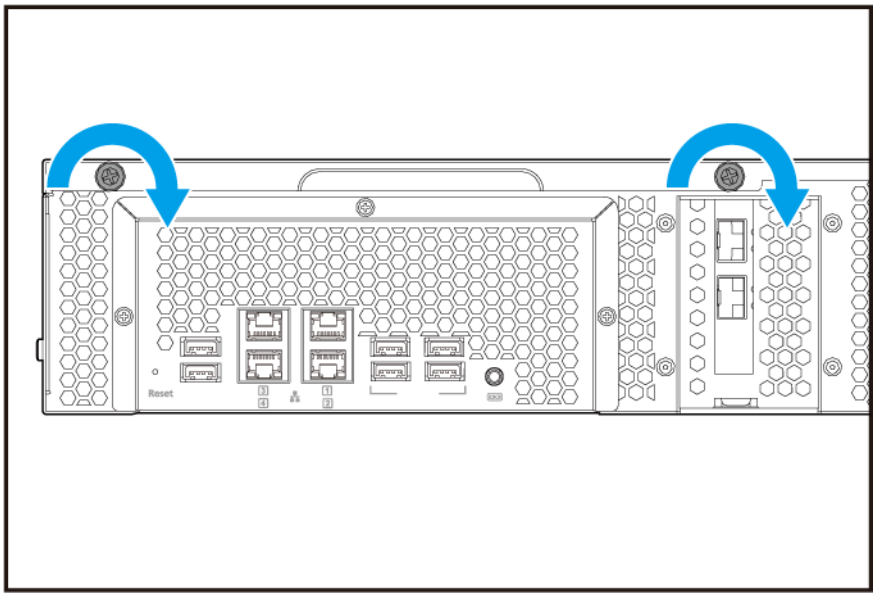
a. Place the cover on the NAS.



b. Slide the cover toward the NAS.



c. 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 **Main Menu** > **Control Panel** > **System** > **System Status** > **System Information** .
    c. Verify the value for **Total memory**.

Hot-swapping Redundant Power Supply Units

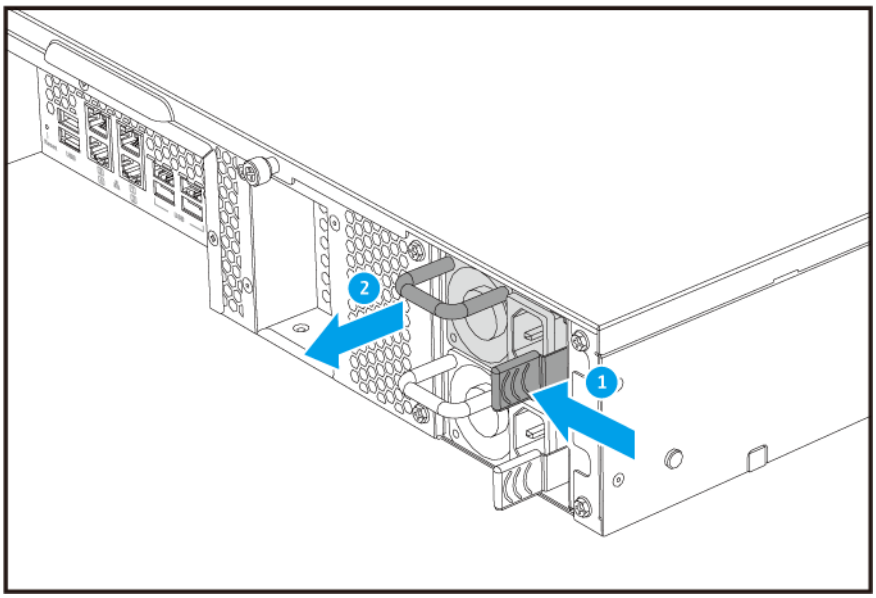
NAS devices with redundant power supply units (PSUs) support hot-swapping.

Warning

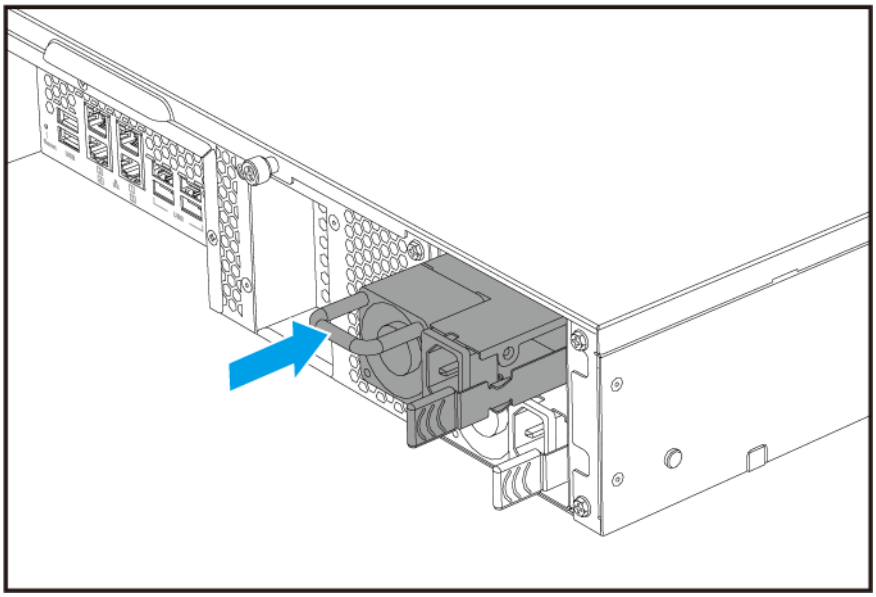


The NAS may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords before installing or replacing system components.

1. Disconnect the power cord from the electrical outlet and the PSU that you want to replace.
2. Press the latch toward the handle and then pull the PSU out.



3. Insert the new PSU.



4. Connect the power cord to the PSU and the electrical outlet.
5. Power on the NAS.
6. Optional: Enable alerts for PSU failures.
   a. Log on to QTS as administrator.
   b. Go to **Control Panel** > **System** > **Hardware** > **General** .
   c. Select **Enable Redundant Power Supply Mode**.
   d. Click **Apply All**.

Rail Kits

The TS-x73U is compatible with the following models:

Model	Rail Kit
TS-873U TS-873U-RP TS-1273U TS-1273U-RP	RAIL-B02
TS-1673U TS-1673U-RP	RAIL-A03-57

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

You can find installation information in the rail kit package.

QTS Installation

The TS-x73U supports the QNAP QTS operating system. You can install QTS using any of the following methods.

Method	Description	Requirements
Qfinder Pro installation (Recommended)	If the NAS is connected to your local area network, you can do the following: • Locate the NAS using Qfinder Pro. • Complete the steps in the Smart Installation Guide wizard. For details, see Installing QTS Using Qfinder Pro.	• Computer • Network cable • Qfinder Pro installer
Cloud installation	If the NAS is connected to the internet, you can do the following: • 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.	• 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:
		• System administrator password: admin
		• TCP/IP configuration:
		  • 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. • 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	• 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	• 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 occured 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	• 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.
Drive/SSD	Flashes red	The drive is being located.
	Red	A drive read/write error has occurred.
	Flashes green	The data is being accessed.
	Green	The drive can be accessed.
	Off	No drive is detected.
M.2 SSD	Flashes red	The drive is being located.
	Red	A drive read/write error has occurred.
	Flashes green	The data is being accessed.
	Green	The drive can be accessed.
	Off	No drive is detected.

Beep Alarm

Duration	Frequency	Description
Short beep (0.5 seconds)	1	• 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	• 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	• 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

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THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

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18. Interpretation of Sections 16 and 17.
If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

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



This QNAP NAS complies with CE Compliance Class A.

SJ/T 11364-2006



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

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

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	0	0	0	0	0	0
显示	0	0	0	0	0	0
印刷电路板	0	0	0	0	0	0
金属螺帽	0	0	0	0	0	0
电缆组装	0	0	0	0	0	0
风扇组装	0	0	0	0	0	0
电力供应组装	0	0	0	0	0	0
电池	0	0	0	0	0	0
O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。						
X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。						