



**QNAP**

# **TVS-x72XU**

**TVS-1672XU-RP**  
**TVS-2472XU-RP**

**User Guide**

# Contents

## 1. Preface

About This Guide.....	3
Audience.....	3
Document Conventions.....	3

## 2. Product Overview

About the TVS-x72XU.....	4
Hardware Specifications.....	4
Package Contents.....	7
Components.....	7
Front Panel.....	7
Rear Panel.....	8
System Board.....	10
Drive Numbering.....	12
Safety Information.....	12
Installation Requirements.....	13
Setting up the NAS.....	14

## 3. Installation and Configuration

Hardware Installation.....	15
Drive Installation.....	15
Expansion Unit Installation.....	20
Hot-swapping Redundant Power Supply Units.....	21
Removing Expansion Cards.....	23
Installing Expansion Cards.....	27
Rail Kits.....	33
Replacing Memory Modules.....	33
QTS Installation.....	38
Installing QTS Using Qfinder Pro.....	38
Installing QTS Using the Cloud Key.....	39

## 4. Basic Operations

Power Button.....	42
Reset Button.....	42
LEDs.....	42
Beep Alarm.....	44

## 5. Troubleshooting

Forcing Qfinder Pro or myQNAPcloud to Locate the NAS.....	45
Hot-swapping Failed Drives.....	45
Support and Other Resources.....	45

## 6. Glossary

CloudKey.....	47
CloudLink.....	47
myQNAPcloud.....	47
myQNAPcloud ID.....	47
Qfinder Pro.....	47
QTS.....	47

## 7. Notices

Limited Warranty.....	48
Disclaimer.....	48
BSMI Notice.....	48
CE Notice.....	49
FCC Notice.....	49
GNU Public License.....	49
SJ/T 11364-2006.....	57
VCCI Notice.....	57

# 1. Preface





## About This Guide

This guide provides information on the QNAP TVS-x72XU NAS and step-by-step instructions on installing the hardware. It also provides instructions on basic operations and troubleshooting information.

## Audience

This document is intended for consumers and storage administrators. This guide assumes that the user has a basic understanding of storage and backup concepts.

## Document Conventions

Symbol	Description
	Notes provide default configuration settings and other supplementary information.
	Important notes provide information on required configuration settings and other critical information.
	Tips provide recommendations or alternative methods of performing tasks or configuring settings.
	Warnings provide information that, when ignored, may result in potential loss, injury, or even death.

## 2. Product Overview

This chapter provides basic information about the QNAP TVS-x72XU NAS.

### About the TVS-x72XU

Powered by an Intel® Core™ i3-8100 processor, the TVS-x72XU is an enterprise-class series NAS. The series supports different disk storage configurations to better meet your virtualization and data storage needs. It also features four Long-DIMM memory slots, scaling up to 64GB of memory, several expansion card slots, and various input/output (I/O) ports for better scalability and flexibility.

### Hardware Specifications




#### Warning





If your QNAP product has hardware defects, return the product to QNAP or a QNAP-authorized service center for maintenance or replacement. Any attempt to repair or perform maintenance procedures on the product by you or an unauthorized third-party invalidates the warranty.








QNAP is not responsible for any damage or data loss caused by unauthorized modifications and installation of unsupported third-party applications.

For details, see the [QNAP Warranty Terms and Conditions](#).

Ordering P/N	CPU	Memory	Power supply
TVS-1672XU-RP-I3-8G	Intel® Core™ i3-8100	8 GB	Redundant
TVS-2472XU-RP-I5-8G	Intel® Core™ i5-8500	8 GB	Redundant

Component	TVS-1672XU-RP	TVS-2472XU-RP
Processor		
CPU	Intel® Core™ i3-8100	Intel® Core™ i5-8500
Frequency	4-core 3.6 GHz	6-core 3.0 GHz
Architecture	x86 64-bit	
Encryption engine	AES-256	
Memory		
Pre-installed memory	8 GB RAM: 2 x 4 GB DDR4	
Memory slots	4 x Long-DIMM DDR4	
	 <b>Important</b> Use only QNAP memory modules to maintain system performance and stability. For NAS devices with more than one memory slot, use QNAP modules with identical specifications. Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.	
Maximum memory	64 GB RAM: 4 x 16 GB	
Flash memory	4 GB (dual boot OS protection)	
Storage		
Drive bays	16 x 3.5-inch SATA 6 Gbps bays	24 x 3.5-inch SATA 6 Gbps bays

Component	TVS-1672XU-RP	TVS-2472XU-RP
Drive compatibility	<ul style="list-style-type: none"> <li>• 3.5-inch SATA hard disk drives</li> <li>• 2.5-inch SATA hard disk drives</li> <li>• 2.5-inch SATA solid-state drives</li> </ul> <div style="display: flex; align-items: center;">  <div> <p><b>Important</b> 2.5-inch drive trays only support drives with a maximum height of 9.5 mm.</p> </div> </div>	
Network		
10 Gigabit Ethernet ports	2 x 10 GbE SFP+ SmartNIC	
Gigabit Ethernet ports	4 x GbE RJ45	
External I/O Ports & Expansion Slots		
PCIe slots	<ul style="list-style-type: none"> <li>• 1 x PCIe 2.0 (x4)</li> <li>• 1 x PCIe 3.0 (x8)</li> <li>• 2 x PCIe 3.0 (x4)</li> </ul> <div style="display: flex; align-items: center;">  <div> <p><b>Note</b> A dual-port 10 GbE SFP+ network expansion card is pre-installed on PCIe 3.0 slot 4.</p> </div> </div>	<ul style="list-style-type: none"> <li>• 1 x PCIe 3.0 (x8)</li> <li>• 1 x PCIe 3.0 (x4)</li> <li>• 3 x PCIe 2.0 (x4)</li> </ul> <div style="display: flex; align-items: center;">  <div> <p><b>Note</b> A dual-port 10 GbE SFP+ network expansion card is pre-installed on PCIe 2.0 slot 5.</p> </div> </div>
	<div style="display: flex; align-items: center;">  <div> <p><b>Tip</b> For the list of compatible expansion cards, go to <a href="https://www.qnap.com/compatibility">https://www.qnap.com/compatibility</a>.</p> </div> </div>	
USB ports	<ul style="list-style-type: none"> <li>• 2 x USB 3.1 Gen2 (10Gbps) 5V/3A Type-C</li> <li>• 4 x USB 3.1 Gen2 (10Gbps) 5V/1A Type-A</li> </ul>	
HDMI ports	1 x HDMI 2.0 (up to 3840 x 2160 resolution at 60 Hz)	
Interface		
Buttons	<ul style="list-style-type: none"> <li>• Power</li> <li>• Reset</li> </ul>	
Dimensions		
Form factor	3U Rackmount	4U Rackmount
Dimensions (H x W x D)	130 x 481 x 573.5 mm (5.12 x 18.94 x 22.56 in)	176.15 x 481.04 x 672.02 mm (6.94 x 18.94 x 26.46 in)
Net weight	15.35 kg (33.84 lbs)	20.67 kg (45.57 lbs)
Others		

Component	TVS-1672XU-RP	TVS-2472XU-RP
Rail compatibility	RAIL-A03-57	RAIL-A02-90
	 <b>Note</b> <ul style="list-style-type: none"> <li>• Rail kits are not included with the NAS and must be purchased separately. For details, contact an authorized reseller or go to <a href="http://shop.qnap.com">http://shop.qnap.com</a>.</li> <li>• Information on rail kit installation can be found in the installation guide included in the rail kit package.</li> </ul>	
Power supply unit	2 x 500W, 100-240V AC, 50/60Hz	2 x 800W, 100-240V AC, 50/60Hz
	 <b>Warning</b> To reduce the risk of fire or electric shock, ensure that you only connect the power cord to a properly grounded electrical outlet.	
System battery	CR2032 lithium battery (3V, 225 mAh)	
	 <b>Warning</b> 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.	
	 <b>Important</b> Dispose of used batteries according to local regulations or the instructions of the battery manufacturer.	
Sound level	49.7 db(A)	36.3 db(A)
	 <b>Note</b> The sound level was tested at a bystander position, which is within one meter of the NAS. The test NAS operated at low speed with the maximum number of drives installed.	
Fans	System: 4 x 92 mm, 12V DC	
	 <b>Warning</b>  To avoid potential injury or damage to components, do not touch the fans while the NAS is connected to a power source.	
Operating temperature	0°C to 40°C (32°F to 104°F)	
Relative humidity	<ul style="list-style-type: none"> <li>• Non-condensing relative humidity: 5% to 95%</li> <li>• Wet-bulb temperature: 27°C (80.6°F)</li> </ul>	

**Tip**

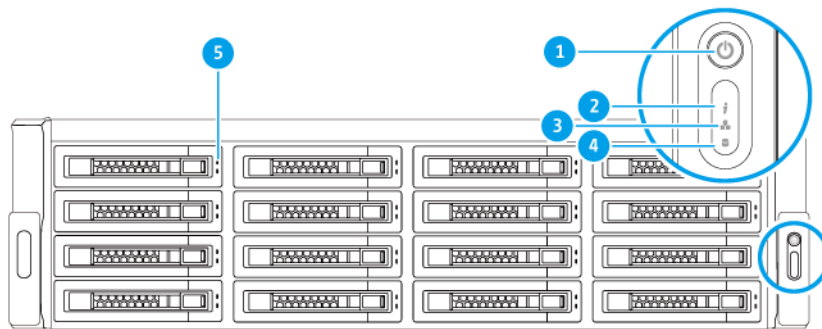
Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

## Package Contents

Item	Quantity
TVS-x72XU NAS	1
Power cord	<ul style="list-style-type: none"> <li>• TVS-1672XU-RP: 2</li> <li>• TVS-2472XU-RP: 2</li> </ul>
Ethernet cable	2
Screws for 2.5-inch drives	TVS-1672XU-RP: 64 TVS-2472XU-RP: 96
Screws for 3.5-inch drives	TVS-1672XU-RP: 64 TVS-2472XU-RP: 96
Quick Installation Guide (QIG)	1

## Components

### Front Panel

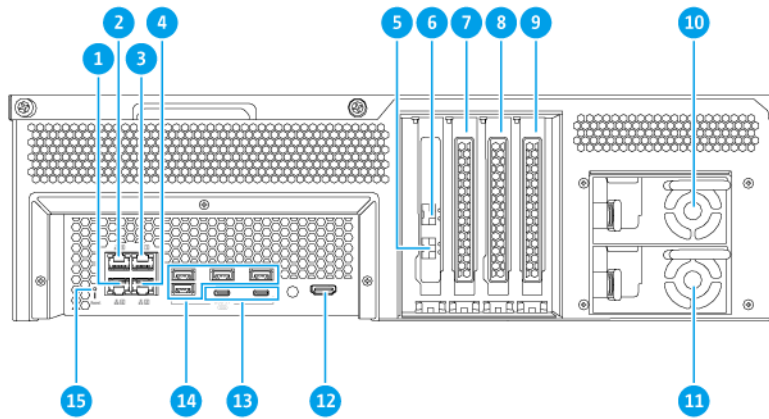


### TVS-1672XU-RP, TVS-2472XU-RP

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

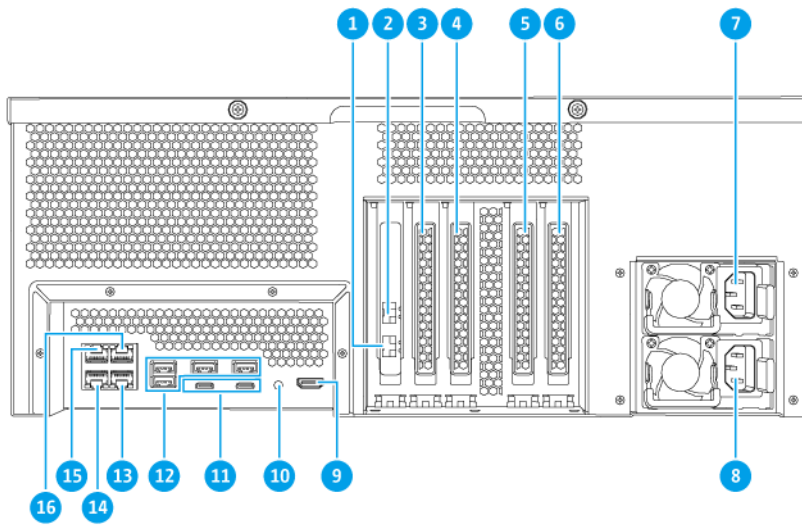


## Rear Panel



### TVS-1672XU-RP

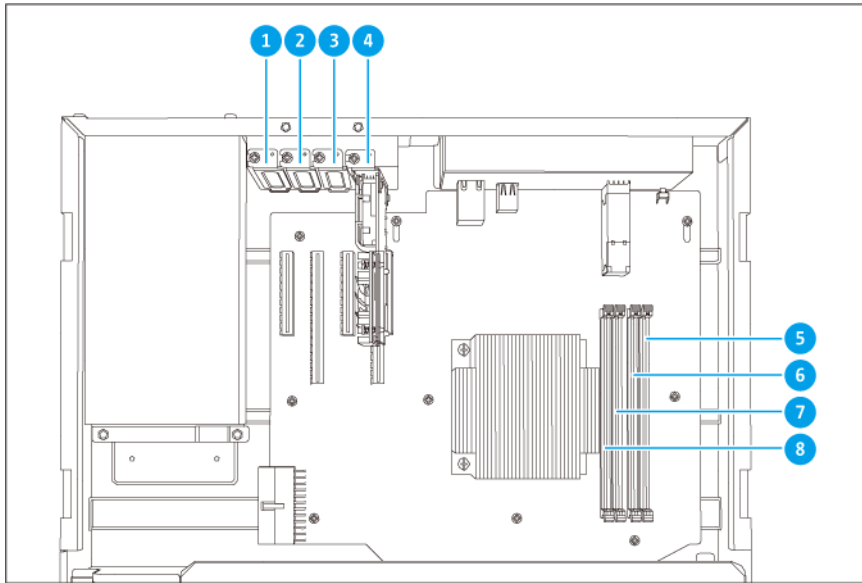
No.	Component	No.	Component
1	Ethernet port 4 (GbE RJ45)	9	PCIe 2.0 slot 1 (x4)
2	Ethernet port 3 (GbE RJ45)	10	Power supply unit 1
3	Ethernet port 1 (GbE RJ45)	11	Power supply unit 2
4	Ethernet port 2 (GbE RJ45)	12	HDMI port
5	Ethernet port 6 (10 GbE SFP+)	13	USB 3.1 Gen 2 Type-C ports
6	Ethernet port 5 (10 GbE SFP+)	14	USB 3.1 Gen 2 Type-A ports
7	PCIe 3.0 slot 3 (x4)	15	Reset button
8	PCIe 3.0 slot 2 (x8)	-	-




### TVS-2472XU-RP

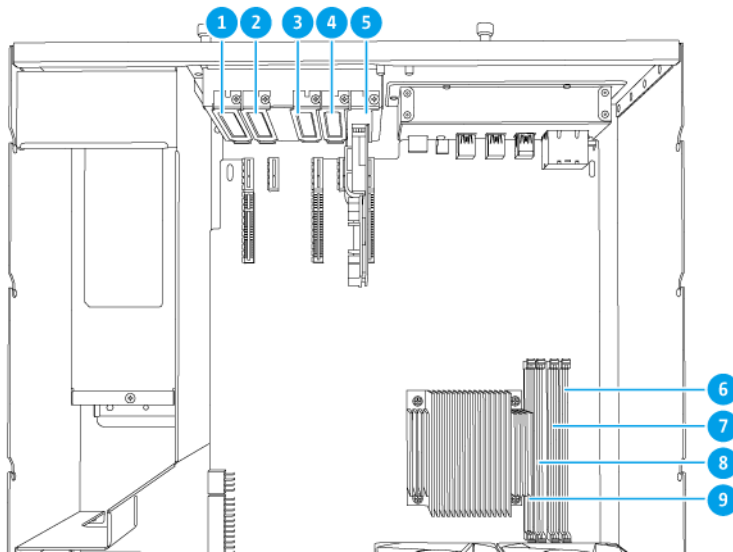
No.	Component	No.	Component
1	Ethernet port 6 (10 GbE SFP+)	9	HDMI port
2	Ethernet port 5 (10 GbE SFP+)	10	Reset button
3	PCIe 3.0 slot 4 (x8)	11	USB 3.1 Gen 2 Type-C ports
4	PCIe 2.0 slot 3 (x4)	12	USB 3.1 Gen 2 Type-A ports
5	PCIe 3.0 slot 2 (x4)	13	Ethernet port 2 (GbE RJ45)
6	PCIe 2.0 slot 1 (x4)	14	Ethernet port 4 (GbE RJ45)
7	Power supply unit 1	15	Ethernet port 3 (GbE RJ45)
8	Power supply unit 2	16	Ethernet port 1 (GbE RJ45)

## System Board




**TVS-1672XU-RP**

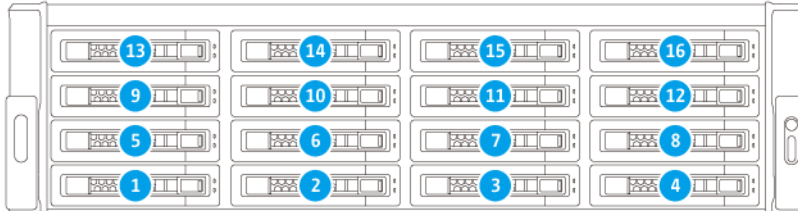
No.	Component	No.	Component
1	PCIe 2.0 slot 1 (x4)	5	Memory slot 1
2	PCIe 3.0 slot 2 (x8)	6	Memory slot 2
3	PCIe 3.0 slot 3 (x4)	7	Memory slot 3
4	PCIe 3.0 slot 4 (x4)	8	Memory slot 4
	 <b>Note</b> A dual-port 10 GbE SFP+ network expansion card is pre-installed on this PCIe slot.		



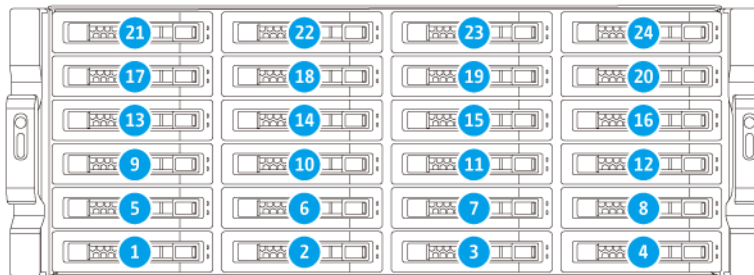
## TVS-2472XU-RP

No.	Component	No.	Component
1	PCIe 2.0 slot 1 (x4)	6	Memory slot 1
2	PCIe 3.0 slot 2 (x4)	7	Memory slot 2
3	PCIe 2.0 slot 3 (x4)	8	Memory slot 3
4	PCIe 3.0 slot 4 (x8)	9	Memory slot 4
5	PCIe 2.0 slot 5 (x4)	-	-
	 <b>Note</b> A dual-port 10 GbE SFP+ network expansion card is pre-installed on this PCIe slot.		

## Drive Numbering



### TVS-1672XU-RP



### TVS-2472XU-RP

## Safety Information

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

### General Instructions

- The device should be stored in a secure location with restricted access, controlled through the use of a tool, lock and key, or any means of security.
- Only qualified, skilled, and authorized persons with knowledge of all restrictions, safety precautions, and installation and maintenance procedures should have physical access to the device.

- To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.
- Observe electrostatic discharge (ESD) procedures to avoid potential injury or damage to components.

### Power

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



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

### System Battery

- To avoid potential battery explosion, causing injury or damage to components, ensure that you replace the existing battery with a battery of the same type.
- Dispose of used batteries properly according to local regulations or the instructions of the battery manufacturer.

### Moving Parts



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



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

## Installation Requirements

Category	Item
Environment	<ul style="list-style-type: none"> <li>• Room temperature: 0°C to 40°C (32°F to 104°F)</li> <li>• Non-condensing relative humidity: 5% to 95%</li> <li>• Wet-bulb temperature: 27°C (80.6°F)</li> <li>• Flat, anti-static surface without exposure to direct sunlight, liquids, or chemicals</li> </ul>

Category	Item
Hardware and peripherals	<ul style="list-style-type: none"> <li>• Storage drives For details on compatible drives, go to <a href="https://www.qnap.com/compatibility/">https://www.qnap.com/compatibility/</a>.</li> <li>• Network cable</li> </ul>
Tools	<ul style="list-style-type: none"> <li>• Phillips #1 or #2 screwdriver</li> <li>• Anti-static wrist strap</li> </ul>

## Setting up the NAS



### Important

Read all safety requirements and information in [Safety Information](#) carefully before setting up the NAS or installing NAS components.

1. Place your NAS device in an environment that meets the requirements.  
For details, see [Installation Requirements](#).
2. Install the drives.  
For details, see the following topics:
  - [Installing 3.5-inch Hard Drives on 3.5-inch Trays](#)
  - [Installing 2.5-inch Hard Drives or Solid State Drives on 3.5-inch Trays](#)
3. Connect the power cord and all applicable cables.
4. Power on the NAS.
5. Install QTS.  
For details, see [QTS Installation](#).
6. Log on to QTS.

## 3. Installation and Configuration

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

### Hardware Installation

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

### Drive Installation

The TVS-x72XU is compatible with 3.5-inch and 2.5-inch hard drives, and 2.5-inch solid state drives.

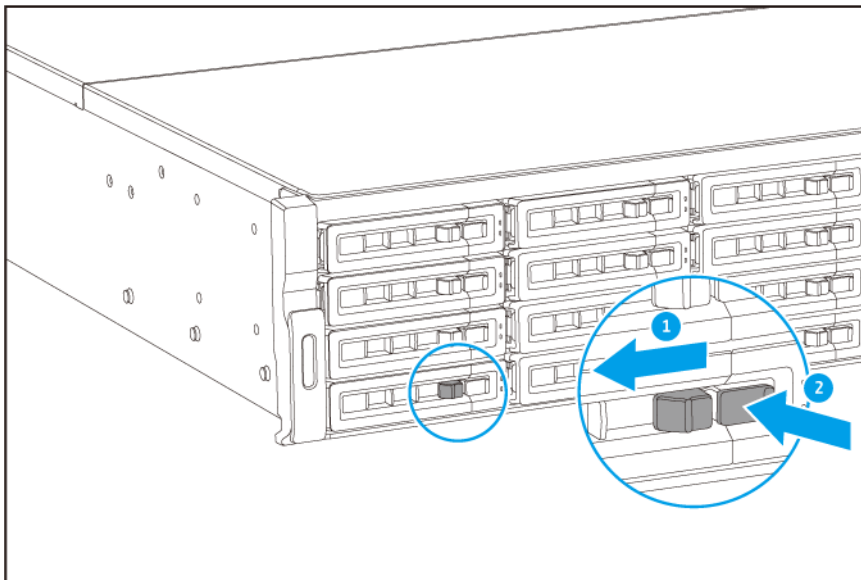
#### Installing 3.5-inch Hard Drives on 3.5-inch Trays



#### Warning

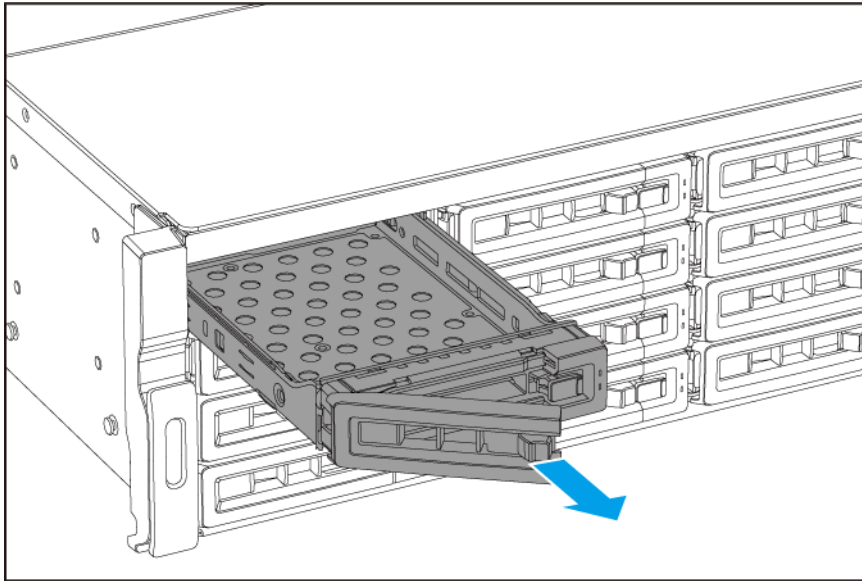
- Installing a drive deletes all data on the drive.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. Power off the NAS.
2. Remove the drive tray.
  - a. Locate the lock.
  - b. Slide the lock to the left.



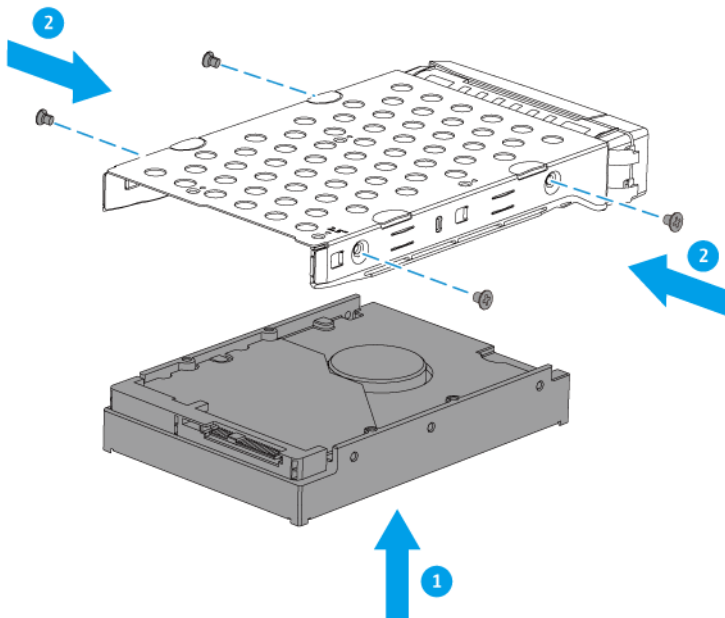
- c. Push the gray button to release the handle.
- d. Pull the tray out.





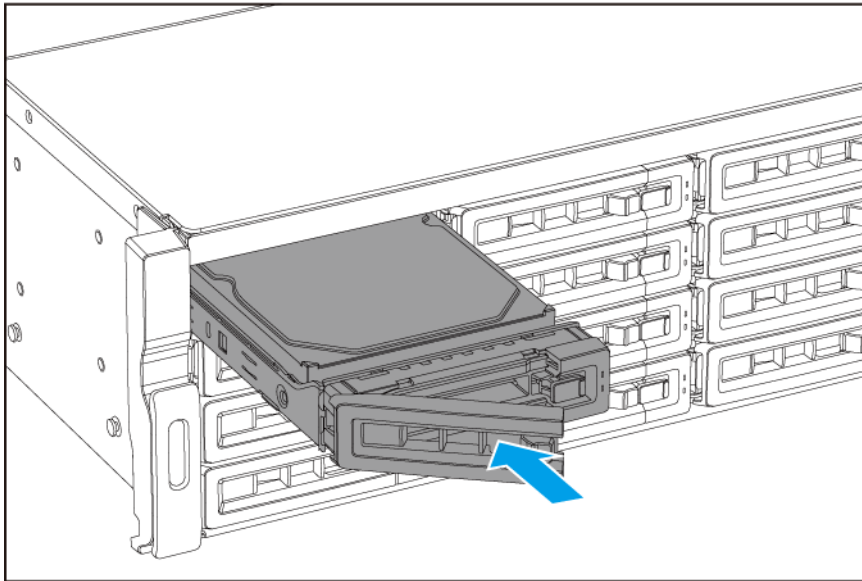
**3. Install a drive on the tray.**

- a. 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.
- b. Attach the screws to lock the drive to the tray.

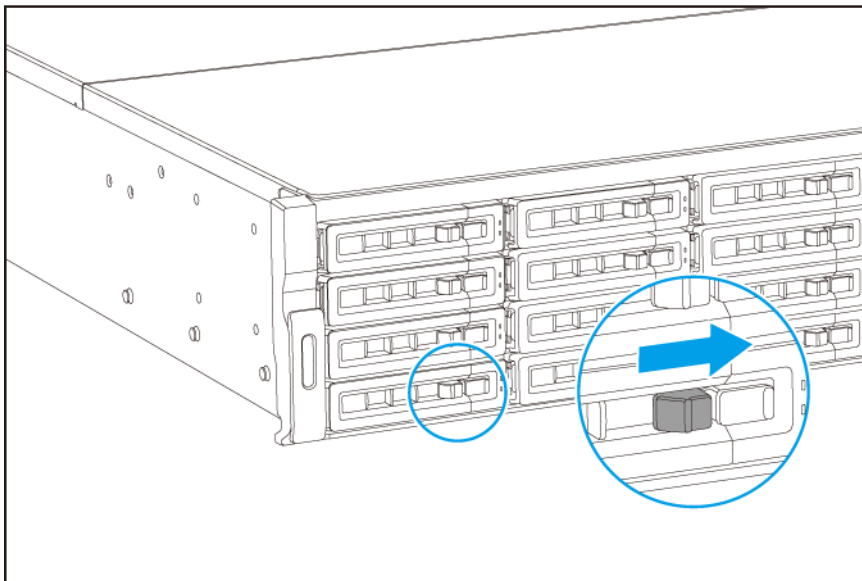


**4. Load the tray into the bay.**

- a. Insert the tray into the drive bay.
- b. Push the handle.



c. 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

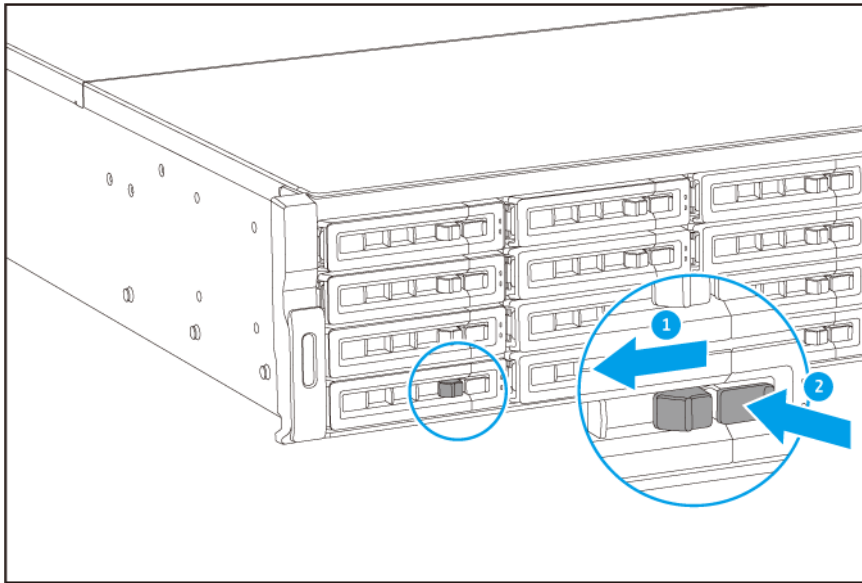


#### Warning

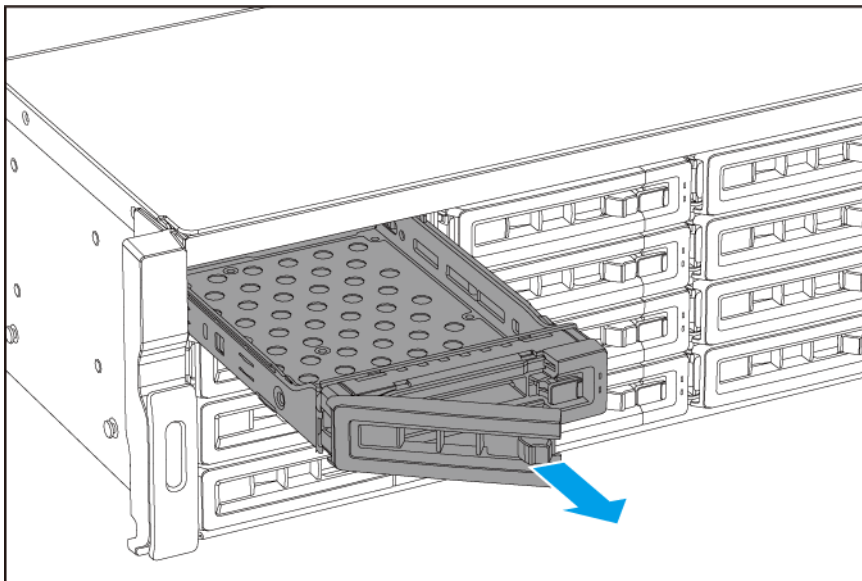
- Installing a drive deletes all data on the drive.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

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

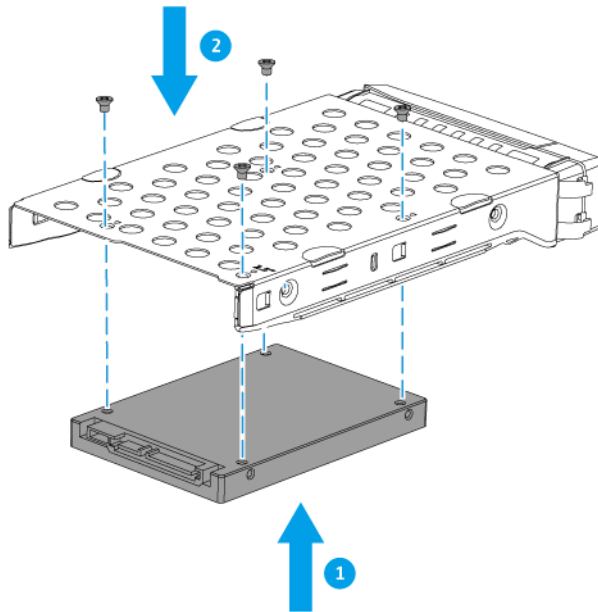
- a. Locate the lock.
- b. Slide the lock to the left.



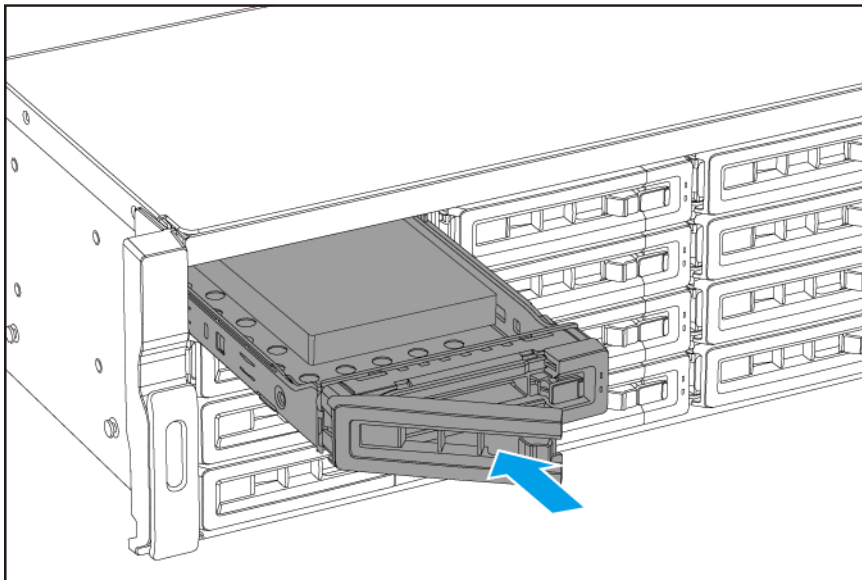
- c. Push the gray button to release the handle.
- d. Pull the tray out.



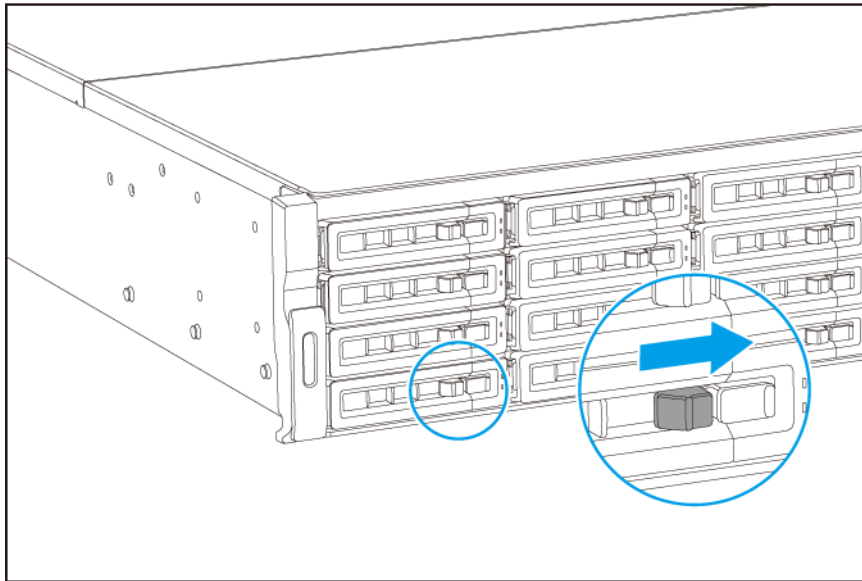
3. Install a drive on the tray.
  - a. Place the drive on the tray so that the holes on the side of the drive are aligned with the holes on the side of the tray.
  - b. Attach the screws to lock the drive to the tray.



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



- c. Slide the lock to the right.



5. Power on the NAS.

## Expansion Unit Installation

The TVS-x72XU supports SAS expansion units.

Type	Description	Required Accessories
SAS	<ul style="list-style-type: none"> <li>• Uses a SAS 12 Gbps interface</li> <li>• Supports a maximum of eight expansion units</li> <li>• Supports SAS/SATA HDD/SSD</li> </ul>	<ul style="list-style-type: none"> <li>• SAS-12G2E storage expansion card</li> <li>• mini-SAS SFF-8644 cable</li> <li>• RAIL-A03-57 rail kit</li> </ul>

## Connecting SAS Expansion Units

The TVS-x72XU supports a maximum of eight SAS expansion units and is compatible with the following models:

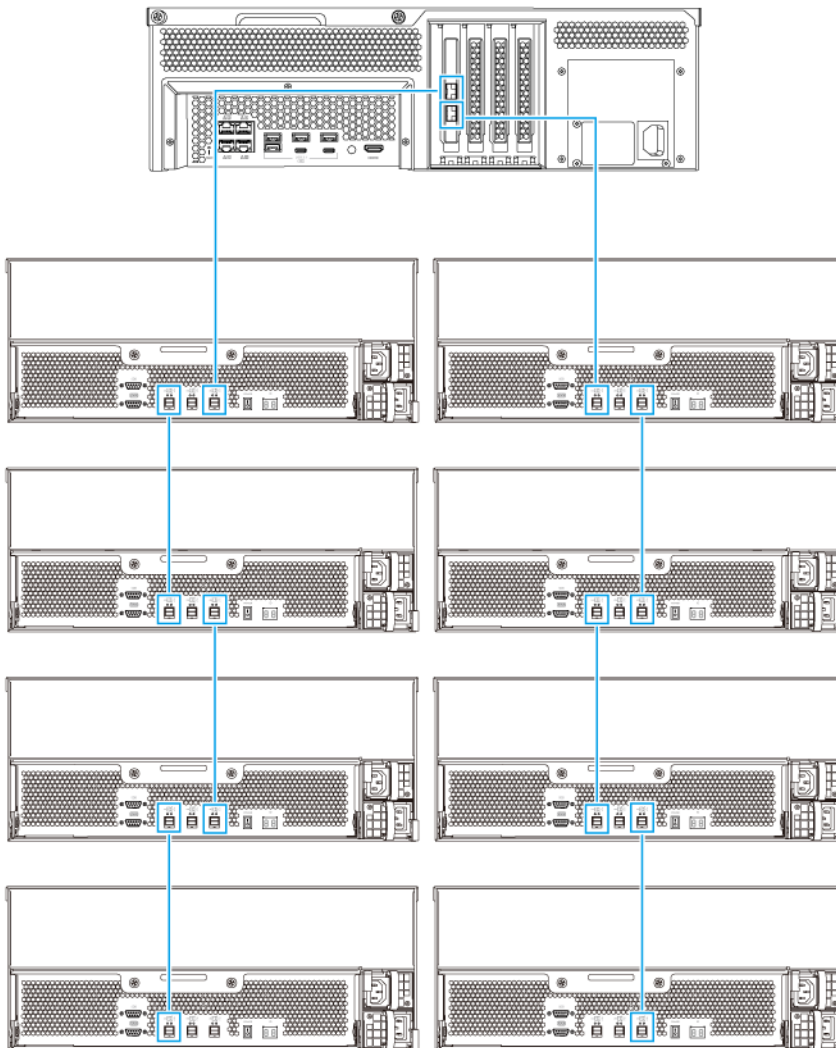
- REXP-1210U-RP
- REXP-1220U-RP
- REXP-1610U-RP
- REXP-1620U-RP

To use SAS expansion units, an SAS-12G2E storage expansion card must be installed on the NAS and connected to 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 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.

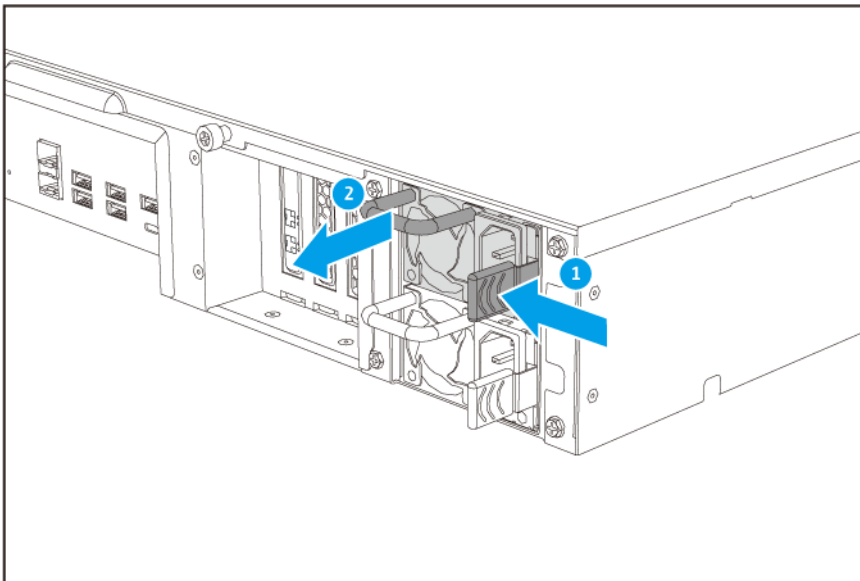
## Hot-swapping Redundant Power Supply Units

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

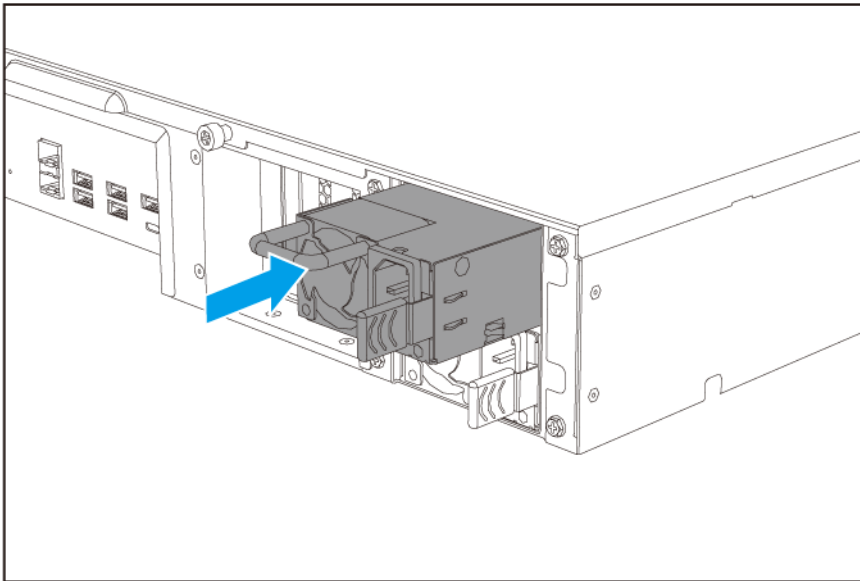
**Warning**

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. Power off the NAS.
2. Disconnect the power cord from the electrical outlet and the PSU that you are replacing.
3. Firmly press the latch toward the handle and then pull the PSU out.



4. Insert the new PSU.



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

## Removing 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.



### Note

For the TVS-1672XU-RP, a dual-port 10 GbE SFP+ network expansion card is pre-installed on PCIe 3.0 slot 4.  
 For the TVS-2472XU-RP, a dual-port 10 GbE SFP+ network expansion card is pre-installed on PCIe 3.0 slot 5.



### Warning

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



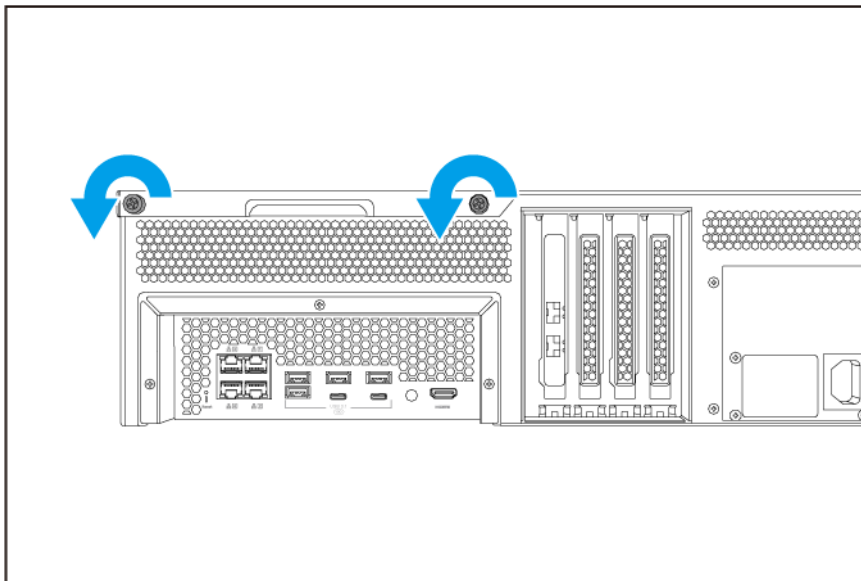


**Moving fan blades:** Keep your hands and other body parts away from moving fan blades.

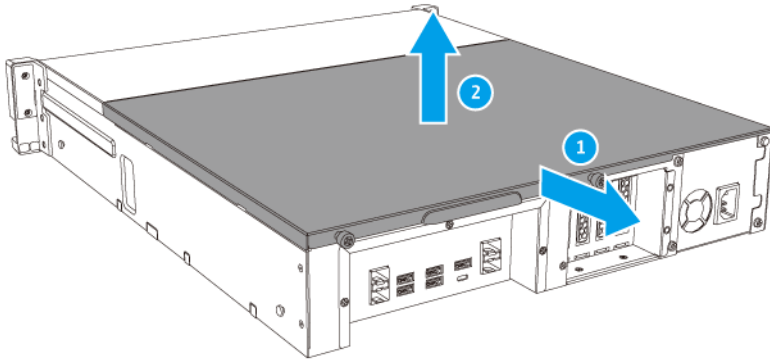


**Other moving components:** Keep your hands and other body parts away from other moving components.

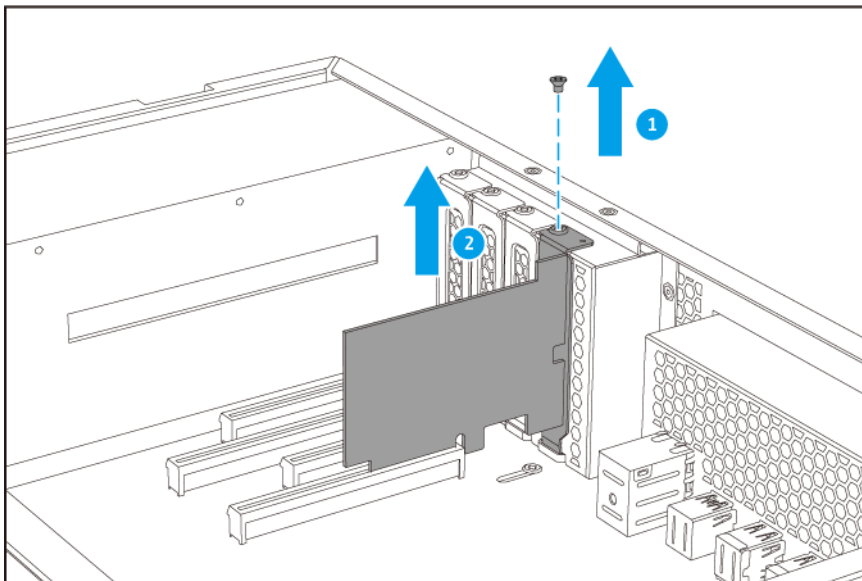
1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the top cover.
  - a. Loosen the two screws on the back of the top cover.

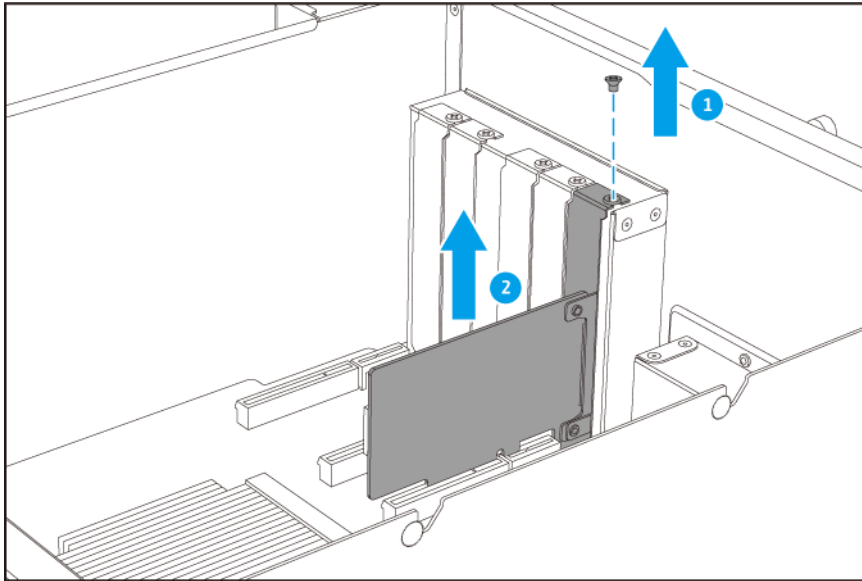


- b. Slide the top cover back using the handle.
- c. Lift the top cover up.

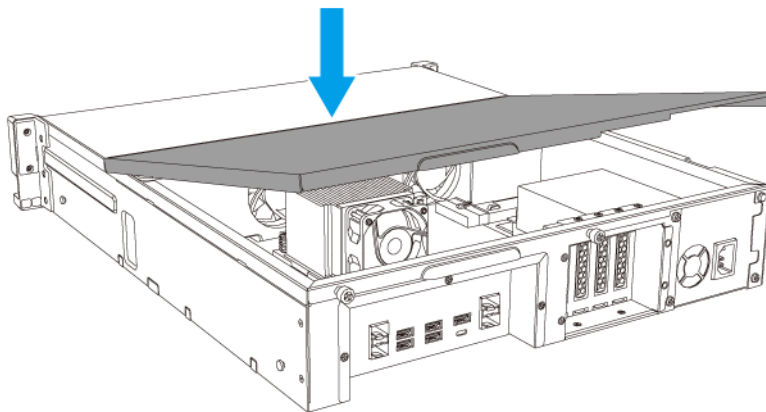


5. Remove the existing expansion card.
  - a. Remove the screw that secures the PCIe bracket to the chassis.
  - b. Hold the card by the edges and then carefully pull it out of the slot.

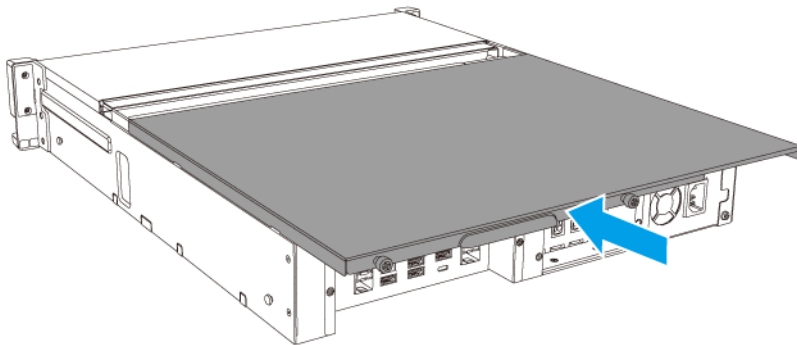
**TVS-1672XU-RP**

**TVS-2472XU-RP**

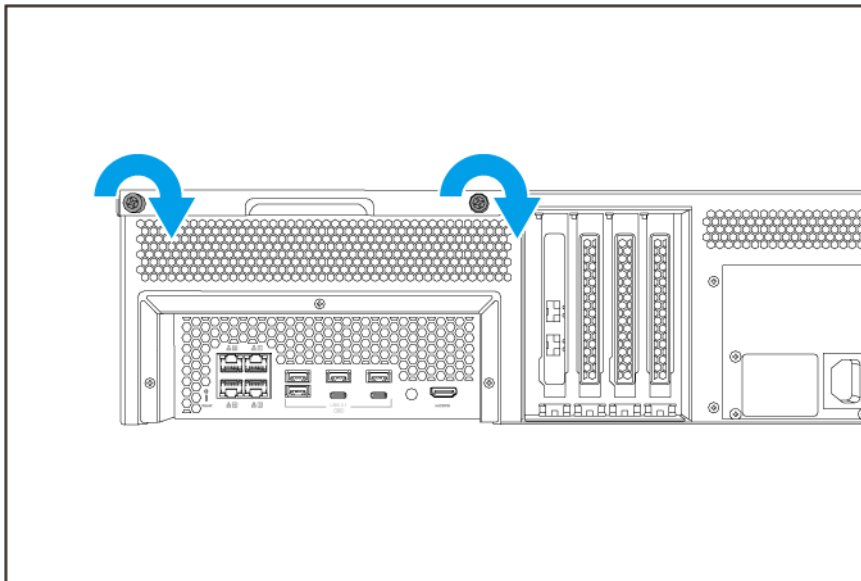
6. Optional: Install a new expansion card. For details, see [Installing Expansion Cards](#).
7. Attach the top cover.
  - a. Place the top cover on the NAS.



- b. Slide the top cover forwards.



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.

## 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.

**Note**

For the TVS-1672XU-RP, a dual-port 10 GbE SFP+ network expansion card is pre-installed on PCIe 3.0 slot 4.  
 For the TVS-2472XU-RP, a dual-port 10 GbE SFP+ network expansion card is pre-installed on PCIe 3.0 slot 5.

**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.

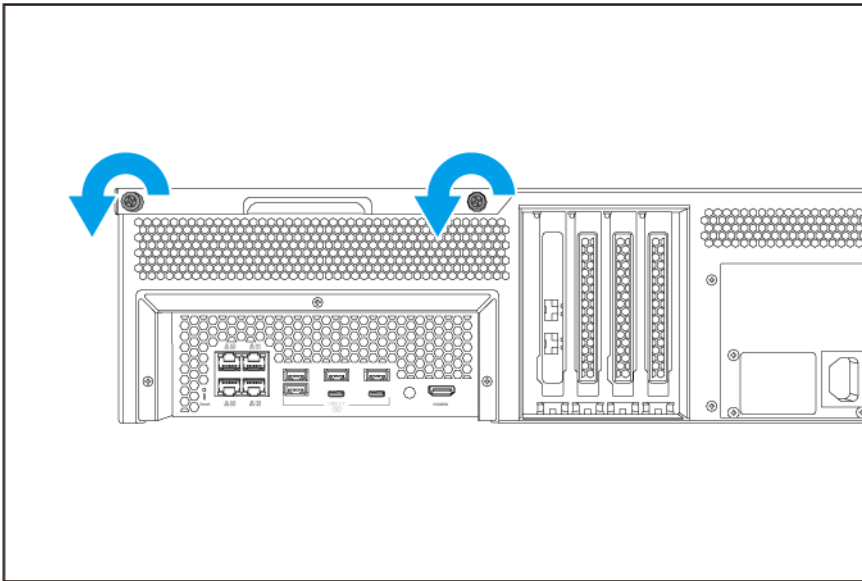


**Moving fan blades:** Keep your hands and other body parts away from moving fan blades.

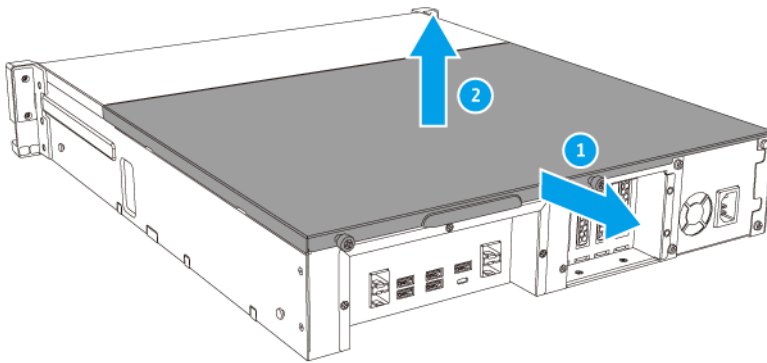


**Other moving components:** Keep your hands and other body parts away from other moving components.

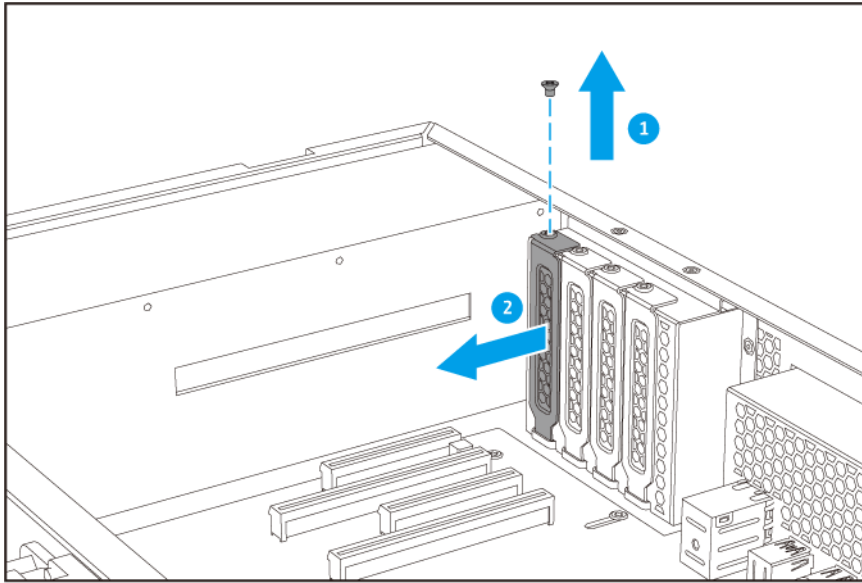
1. Check the expansion cards and brackets supported by your model on the QNAP website.
  - a. Go to [www.qnap.com/compatibility](http://www.qnap.com/compatibility).
  - b. Click **Search by NAS**.
  - c. Specify the number of bays and the specific model of your NAS.
  - d. Under **Category**, select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



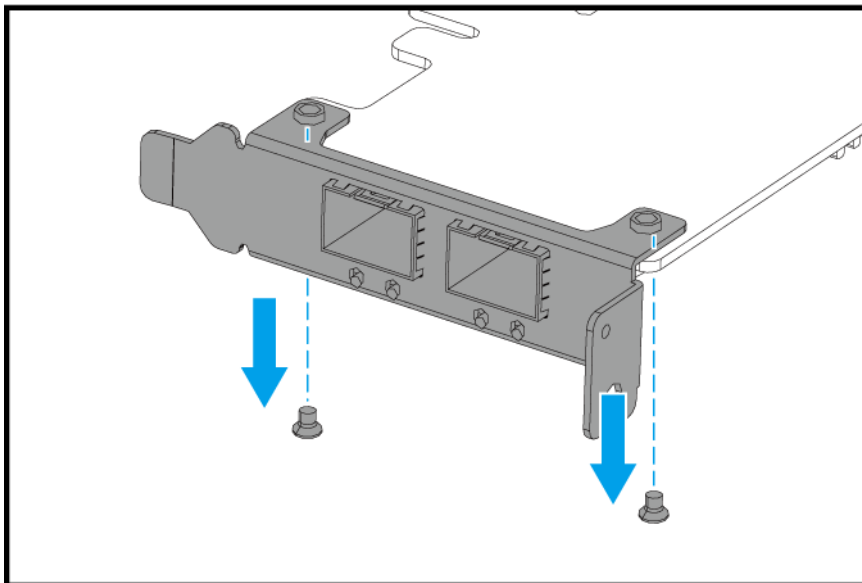
- b. Slide the top cover back using the handle.
- c. Lift the top cover up.



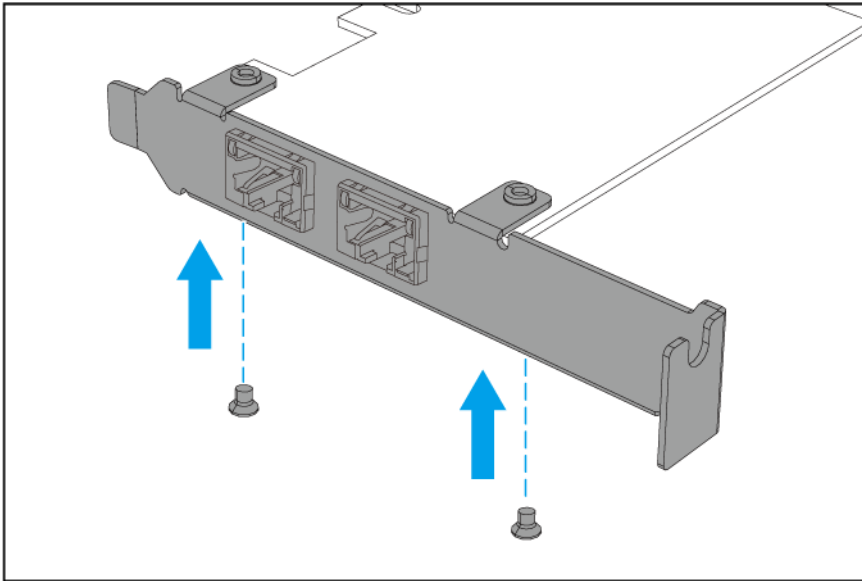
- 6. Remove the PCIe cover.
  - a. Remove the screw that secures the cover to the bracket.
  - b. Pull the cover away from the slot.



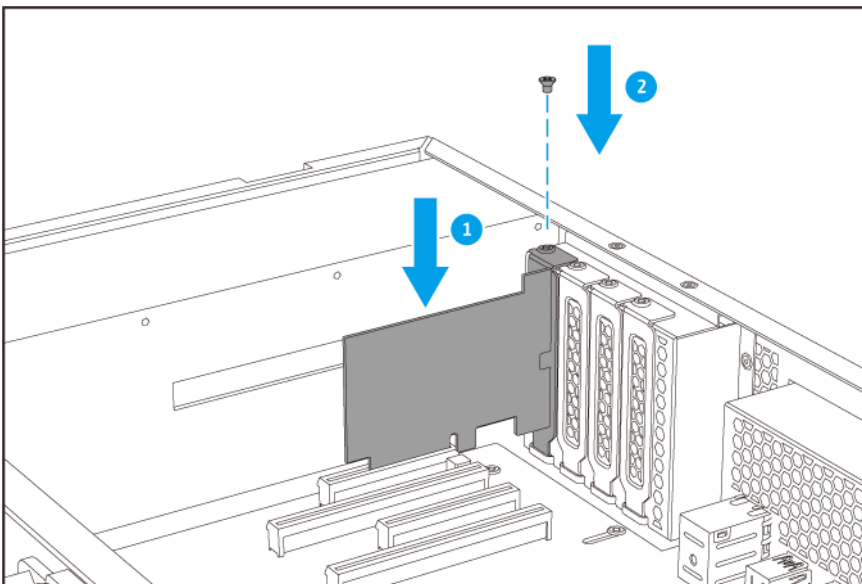
7. Optional: Attach the QNAP bracket to the expansion card.
  - a. Remove all screws of the existing bracket.



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

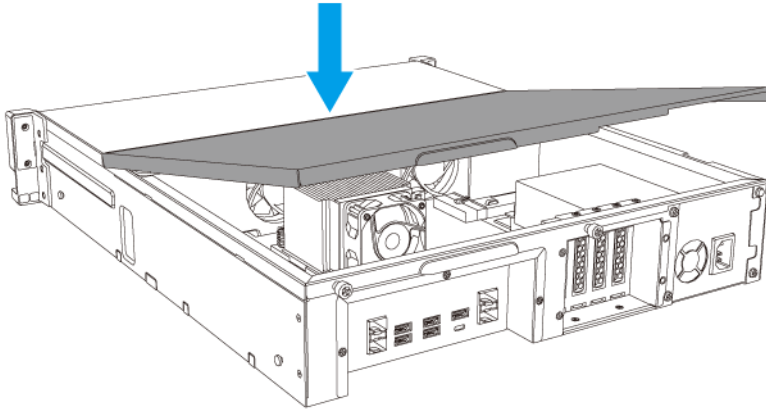


- d. Verify that the bracket does not move.
8. Install the expansion card.
- a. Hold the card by the edges.
  - b. Insert the card into the slot.
  - c. Attach the screw.

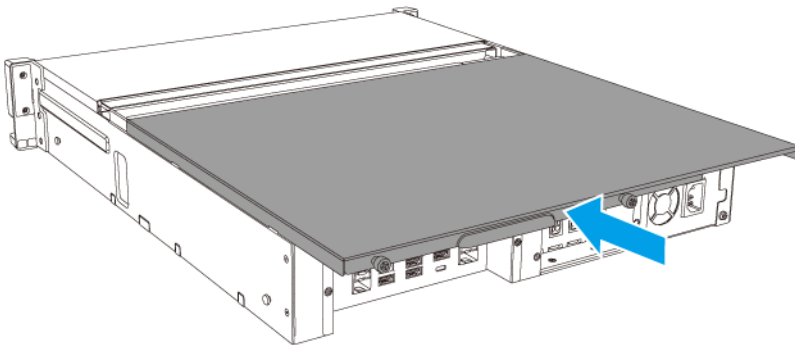


9. Attach the top cover.
- a. Place the top cover on the NAS.

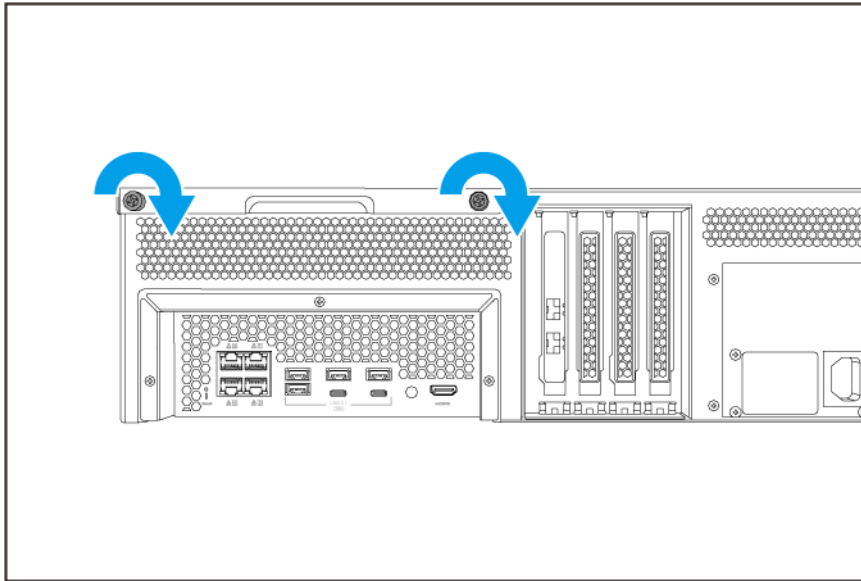




**b.** Slide the top cover forwards.



**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.

## Rail Kits

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

The TVS-x72XU is compatible with the following rail kit models:

Model	Compatible Rail Kit
TVS-1672XU-RP	RAIL-A03-57
TVS-2472XU-RP	RAIL-A02-90

You can find installation information in the rail kit package.

## Replacing Memory Modules

The NAS has four memory slots. You can increase the memory capacity of the NAS by upgrading the memory module.

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 1.
- When installing two modules, use slots 1 and 3. Ensure that the modules are identical.

- When installing four modules, use slots 1 and 3 for the first pair, and slots 2 and 4 for the second pair. Ensure that each pair uses identical modules.

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



### Warning

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

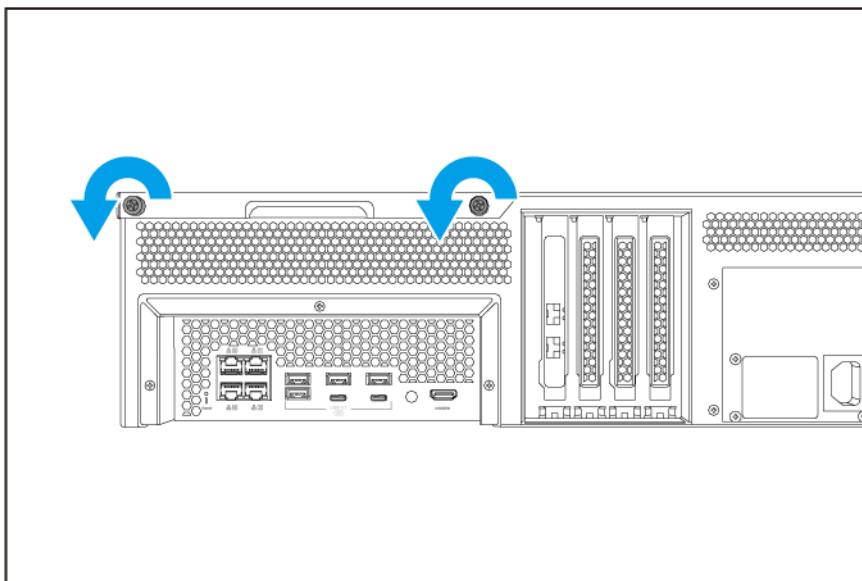


**Moving fan blades:** Keep your hands and other body parts away from moving fan blades.



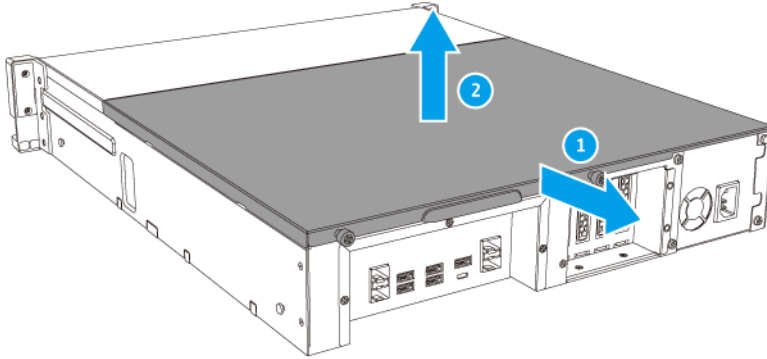
**Other moving components:** Keep your hands and other body parts away from other moving components.

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



- b. Slide the top cover back using the handle.

- c. Lift the top cover up.



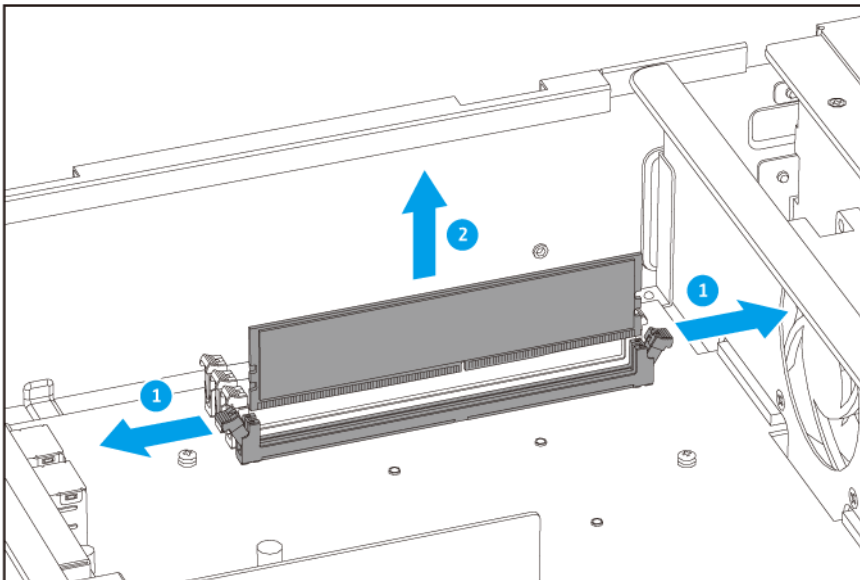
5. Remove an existing module.

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

**Warning**

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

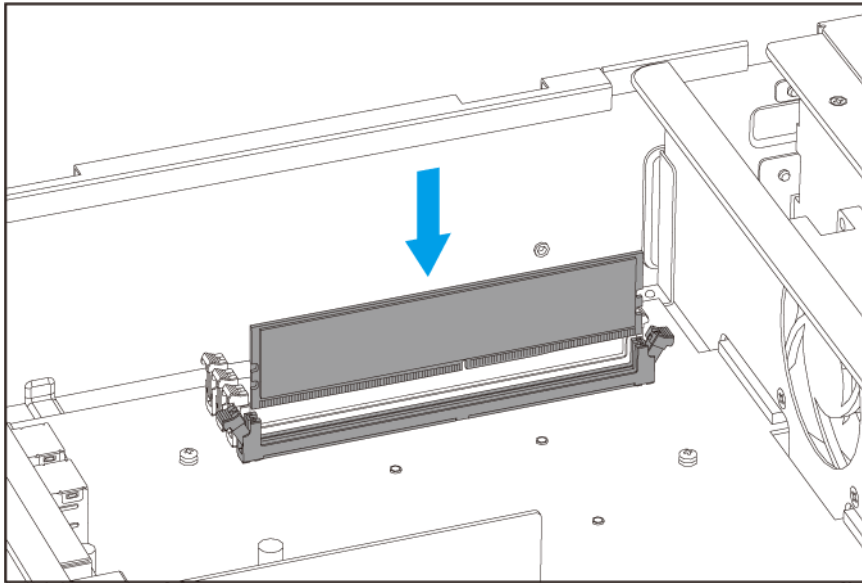
- b. Hold the module by the edges and then carefully slide it out of the slot.



6. Install a new module.

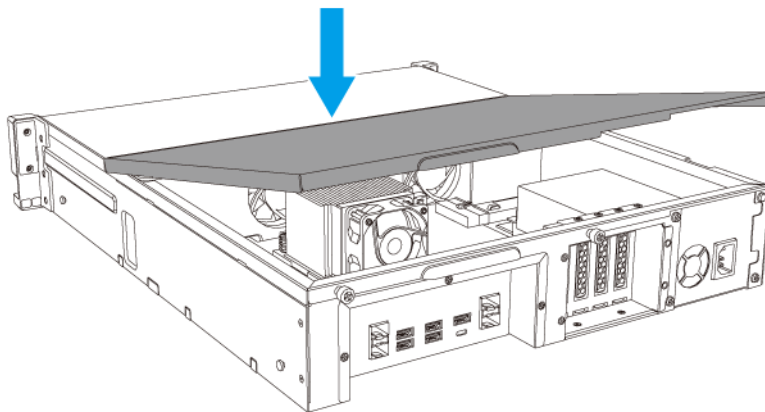
- a. Align the notch with the ridge in the slot.
- b. Insert the module into the slot.

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

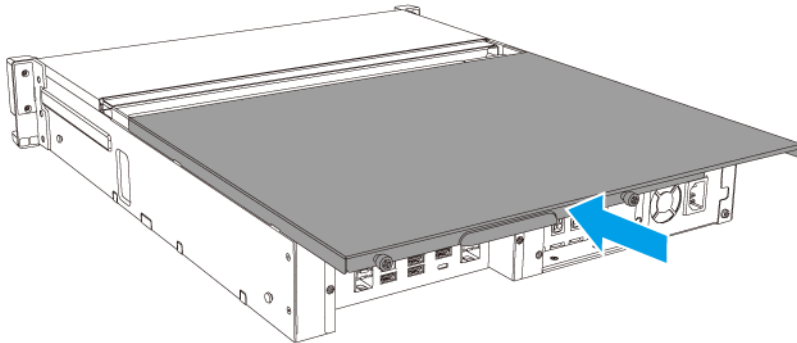


**7. Attach the top cover.**

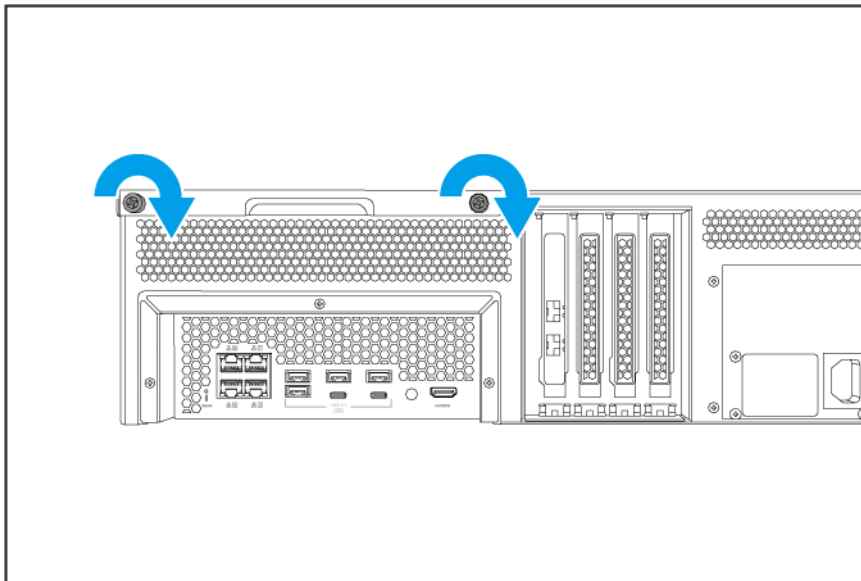
- a. Place the top cover on the NAS.



- b. Slide the top cover forwards.



c. Tighten the screws.



8. Connect all cables and external attachments.
9. Power on the NAS.
10. Verify that the module is recognized by the NAS.
  - a. Log on to QTS as administrator.
  - b. Go to **Control Panel > System > System Status > Hardware Information** .
  - c. Check the value for **Total memory**.

## QTS Installation

The TVS-x72XU 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"> <li>• Locate the NAS using Qfinder Pro.</li> <li>• Complete the steps in the Smart Installation Guide wizard.</li> </ul> <p>For details, see <a href="#">Installing QTS Using Qfinder Pro</a>.</p>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Network cable</li> <li>• Qfinder Pro installer</li> </ul>
Cloud installation	<p>If the NAS is connected to the internet, you can do the following:</p> <ul style="list-style-type: none"> <li>• Scan the QR code on the NAS.</li> <li>• Log into your myQNAPcloud account.</li> <li>• Use CloudLink to remotely access your NAS.</li> <li>• Complete the steps in the Smart Installation Guide wizard.</li> </ul> <p>For details, see <a href="#">Installing QTS Using the Cloud Key</a>.</p>	<ul style="list-style-type: none"> <li>• Computer or mobile device</li> <li>• Network cable</li> <li>• myQNAPcloud account</li> <li>• CloudKey</li> </ul>

### 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.   <b>Important</b> 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"> <li>• System administrator password: admin</li> <li>• TCP/IP configuration: <ul style="list-style-type: none"> <li>• Obtain IP address settings automatically via DHCP</li> <li>• Disable jumbo frames</li> <li>• If port trunking is enabled (multi-LAN models only), the port trunking mode is reset to “Active Backup (Failover)”.</li> </ul> </li> <li>• System port: 8080 (system service port)</li> <li>• Security level: Low (Allow all connections)</li> <li>• LCD panel password: (blank)</li> <li>• VLAN: Disabled</li> </ul>
Advanced system reset	Press and hold the button for 15 seconds.	The default factory settings are restored. <ul style="list-style-type: none"> <li>• To retrieve old data after an advanced system reset, recreate the previous folder structure on the NAS.</li> </ul>


### 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"> <li>• The drive is being formatted.</li> <li>• The NAS is being initialized.</li> <li>• The operating system is being updated.</li> <li>• RAID rebuilding is in progress.</li> <li>• Online RAID Capacity Expansion is in progress.</li> <li>• Online RAID Level Migration is in progress.</li> </ul>
	Red	<ul style="list-style-type: none"> <li>• The drive is invalid.</li> <li>• The disk volume has reached its full capacity.</li> <li>• The disk volume is about to reach its full capacity.</li> <li>• The system fan is not functioning.</li> <li>• An error occurred when accessing (read/write) the data.</li> <li>• A bad sector is detected on the hard drive.</li> <li>• 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).</li> <li>• A hardware self-test error occurred.</li> </ul>
	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"> <li>• The NAS is starting up.</li> <li>• The NAS is not configured.</li> <li>• A drive is not formatted.</li> </ul>
	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.

LED	Status	Description
Drive	Flashes red	The drive is being accessed and a read/write error occurs during the process.
	Red	A drive read/write error has occurred.
	Flashes green	The data is being accessed.
	Green	The drive can be accessed.
Expansion	Orange	<ul style="list-style-type: none"> <li>A SAS JBOD expansion unit has been detected.</li> <li>A REXP expansion unit has been detected.</li> </ul>
	Off	No JBOD expansion unit has been detected.

 **Note**  
The expansion unit LEDs do not apply to 9-bay models.

## Beep Alarm

Duration	Frequency	Description
Short beep (0.5 seconds)	1	<ul style="list-style-type: none"> <li>The NAS is starting up.</li> <li>The NAS is shutting down (software shutdown).</li> <li>The user pressed the Reset button.</li> <li>The operating system was updated.</li> </ul>
	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"> <li>The disk volume is about to reach its full capacity.</li> <li>The disk volume has reached its full capacity.</li> <li>The drives are in degraded mode.</li> <li>The user started the drive rebuilding process.</li> <li>A drive is plugged in or out.</li> </ul>
	1	<ul style="list-style-type: none"> <li>The NAS was powered off by force shutdown (hardware shutdown).</li> <li>The NAS was powered on successfully and is ready.</li> </ul>

## 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*.

### Support and Other Resources

QNAP provides the following resources:

Resource	URL
Documentation	<a href="http://docs.qnap.com">http://docs.qnap.com</a>
Helpdesk	<a href="http://helpdesk.qnap.com">http://helpdesk.qnap.com</a>
Downloads	<a href="http://download.qnap.com">http://download.qnap.com</a>
Community Forum	<a href="http://forum.qnap.com">http://forum.qnap.com</a>

## 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.

### BSMI Notice



D33B77  
RoHS

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## CE Notice



This QNAP NAS complies with CE Compliance Class A.

## 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.

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Version 3, 29 June 2007

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