



QNAP

TVS-x72XT

TVS-472XT

TVS-672XT

TVS-872XT

User Guide

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1. Preface





About This Guide

This guide provides information on the QNAP TVS-x72XT 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-x72XT NAS.

About the TVS-x72XT

The TVS-x72XT is a high-performance NAS powered by an Intel® processor and supports up to 16 GB of DDR4 memory. It features an HDMI port for external displays and a USB One Touch Copy port for quick and convenient backup and data transfer. In addition to its three network ports (two 1GbE and one 10GbE), the TVS-x72XT is equipped with two Thunderbolt™ 3 ports (through its PCIe 3.0 x16 slot) that provide a wide range of possibilities, including extra data management capabilities and additional multimedia support.

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](#).

Component	TVS-472XT	TVS-672XT	TVS-872XT
Ordering Information			
Ordering P/N	TVS-472XT-PT-4G	TVS-672XT-i3-8G	TVS-872XT-i5-16G
Processor			
CPU	Intel® Pentium® G5400T	Intel® Core™ i3-8100T	Intel® Core™ i5-8400T
Frequency	Dual-core 3.1 GHz	4-core 3.1 GHz	6-core 1.7 GHz base/3.3 GHz turbo
Architecture	x86 64-bit		
Encryption engine	AES-NI		
Graphics	Embedded Intel® UHD 610 graphics processor	Embedded Intel® UHD 630 graphics processor	
Memory			
Pre-installed memory	4 GB RAM: 2 x 2 GB SODIMM DDR4	8 GB RAM: 2 x 4 GB SODIMM DDR4	16 GB RAM: 2 x 8 GB SODIMM DDR4
Memory slots	2 x SODIMM DDR4		
	Important <ul style="list-style-type: none"> 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: 2 x 32 GB		
Flash memory	4 GB USB DOM		

Component	TVS-472XT	TVS-672XT	TVS-872XT
Storage			
Drive bays	4 x 3.5-inch SATA 6 Gbps	6 x 3.5-inch SATA 6 Gbps	8 x 3.5-inch SATA 6 Gbps
Drive compatibility	<ul style="list-style-type: none"> • 3.5-inch SATA hard disk drives • 2.5-inch SATA hard disk drives • 2.5-inch SATA solid-state drives 		
M.2 SSD slots	2 x PCIe 3.0 x2		
M.2 SSD form factor	2280		
SSD cache acceleration support	• 3.5-inch drive bays 1 to 4	• 3.5-inch drive bays 1 to 6	• 3.5-inch drive bays 1 to 8
	<ul style="list-style-type: none"> • M.2 SSD slots 1 to 2 • Optional: M.2 SSD slots on an M.2 SSD expansion card 		
Hot-swapping	<p>The device supports hot-swapping drives except for the following:</p> <ul style="list-style-type: none"> • M.2 SSDs • SSD cache drives • Optional: M.2 SSDs installed on an M.2 SSD expansion card 		
Network			
10 Gigabit Ethernet ports	1 x 10 GbE RJ45		
Gigabit Ethernet ports	2 x GbE RJ45		
External I/O Ports & Expansion Slots			
PCIe slots	<ul style="list-style-type: none"> • 1 x PCIe 3.0 x16 • 1 x PCIe 3.0 x4 		
	 <p>Note A Thunderbolt™ 3 expansion card is preinstalled in the PCIe 3.0 x16 slot. For the list of compatible expansion cards, go to https://www.qnap.com/compatibility.</p>		
Thunderbolt™ ports	2 x Thunderbolt™ 3 (preinstalled expansion card)		
USB ports	<p>Front:</p> <ul style="list-style-type: none"> • 1 x USB 3.1 Gen 2 (10Gbps) 5V/1A Type-A 		
	 <p>Note This USB port supports One Touch Copy.</p> <p>Rear:</p> <ul style="list-style-type: none"> • 1 x USB 3.1 Gen 2 (10Gbps) 5V/1A Type-A • 1 x USB 3.0 Type-A • 2 x USB 3.1 Gen 2 (10Gbps) 5V/3A Type-C 		
HDMI ports	1 x HDMI 2.0 (up to 3840 x 2160 resolution at 60 Hz)		

Component	TVS-472XT	TVS-672XT	TVS-872XT
Audio ports	<ul style="list-style-type: none"> • 1 x 3.5 mm dynamic microphone jack • 1 x 3.5 mm line-out jack • 1 x speaker <div style="display: flex; align-items: center;">  <p>Note You cannot use speakers and line-out jacks simultaneously.</p> </div>		
Interface			
Display panel	Monochrome backlit LCD display		
Buttons	<ul style="list-style-type: none"> • Power • Reset • USB One Touch Copy 		
IR sensor	1 <div style="display: flex; align-items: center;">  <p>Note The TVS-x72XT supports the QNAP RM-IR004 IR remote control.</p> </div>		
Dimensions			
Form factor	Tower		
Dimensions (H x W x D)	188.2 x 199.3 x 279.6 mm (7.41 x 7.85 x 11.01 in)	188.2 x 264.3 x 279.6 mm (7.41 x 10.40 x 11.01 in)	188.2 x 329.3 x 279.6 mm (7.41 x 12.96 x 11.01 in)
Net weight	5.4 kg (11.9 lbs)	6.5 kg (14.3 lbs)	7.0 kg (15.5 lbs)
Others			
Power supply unit	1 x 250W, 100-240V AC, 50/60 Hz		
System battery	CR2032 lithium battery (3V, 225 mAh) <div style="display: flex; align-items: center;">  <p>Warning To avoid potential battery explosion, causing injury or damage to components, ensure that you replace the existing battery with a battery of the same type.</p> </div>		
Sound level	28.1 db(A)	23.8 db(A)	24.2 db(A)
	<div style="display: flex; align-items: center;">  <p>Note The sound level was tested at a bystander position, which is within one meter of the NAS. The test NAS operated at low speed with the maximum number of drives installed.</p> </div>		

Component	TVS-472XT	TVS-672XT	TVS-872XT
Fans	<ul style="list-style-type: none"> System: 1 x 12 cm, 12V DC smart fan CPU: 2 x 6 cm blower fans 	<ul style="list-style-type: none"> System: 2 x 9.2 cm, 12V DC smart fans CPU: 2 x 6 cm blower fans 	<ul style="list-style-type: none"> System: 2 x 12 cm, 12V DC smart fans CPU: 2 x 6 cm blower fans
	<div style="display: flex; align-items: center;">  <div> <p>Warning</p>  <p>To avoid potential injury or damage to components, do not touch the fans while the NAS is connected to a power source.</p> </div> </div>		
Operating temperature	0°C to 40°C (32°F to 104°F)		
Relative humidity	<ul style="list-style-type: none"> Non-condensing relative humidity: 5% to 95% Wet-bulb temperature: 27°C (80.6°F) 		
Security slot	Kensington security slot		

**Tip**

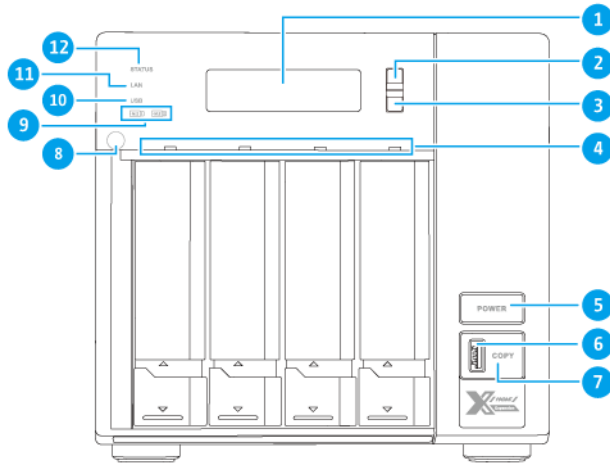
Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

Package Contents

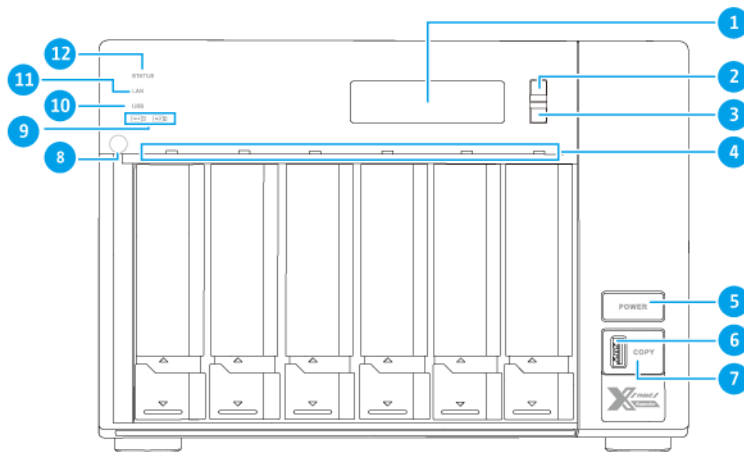
Item	Quantity
TVS-x72XT NAS	1
Power cord	1
Ethernet cables	3: <ul style="list-style-type: none"> 2 x 1 GbE (Cat5e) 1 x 10 GbE (Cat6a)
Screws for 3.5-inch drives	<ul style="list-style-type: none"> TVS-472XT: 12 TVS-672XT: 18 TVS-872XT: 24
Screws for 2.5-inch drives	<ul style="list-style-type: none"> TVS-472XT: 12 TVS-672XT: 18 TVS-872XT: 24
Heatsinks for M.2 SSDs	2
Quick Installation Guide (QIG)	1

Components

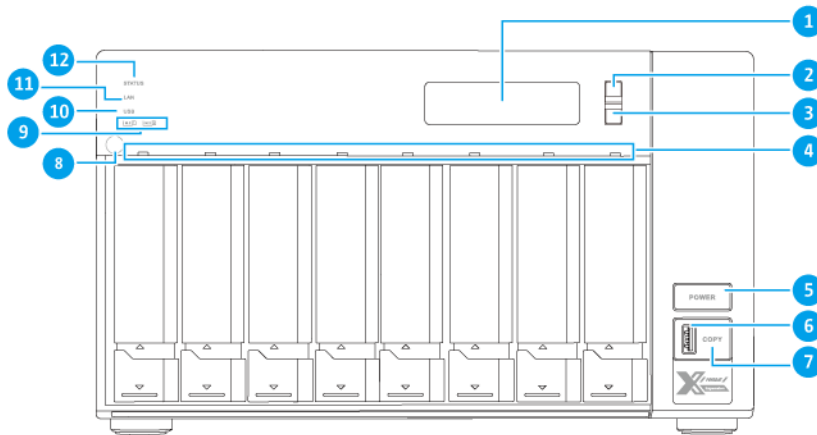
Front Panel



TVS-472XT



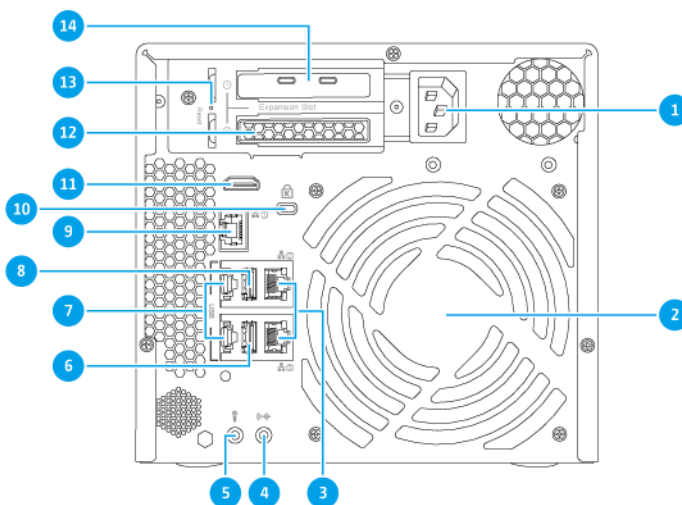
TVS-672XT



TVS-872XT

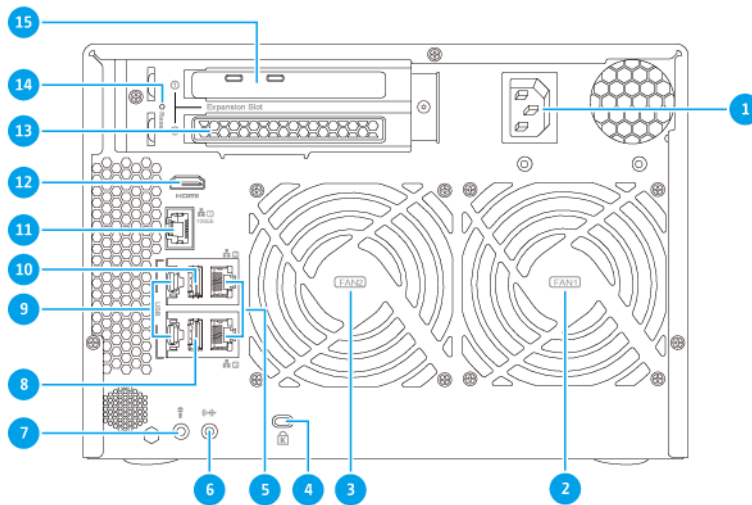
No.	Component	No.	Component
1	LCD panel	7	USB One Touch Copy button
2	Enter button	8	IR sensor
3	Select button	9	M.2 SSD LEDs
4	Drive LEDs	10	USB LED
5	Power button	11	LAN LED
6	USB 3.1 Gen 2 One Touch Copy Type-A port	12	Status LED

Rear Panel



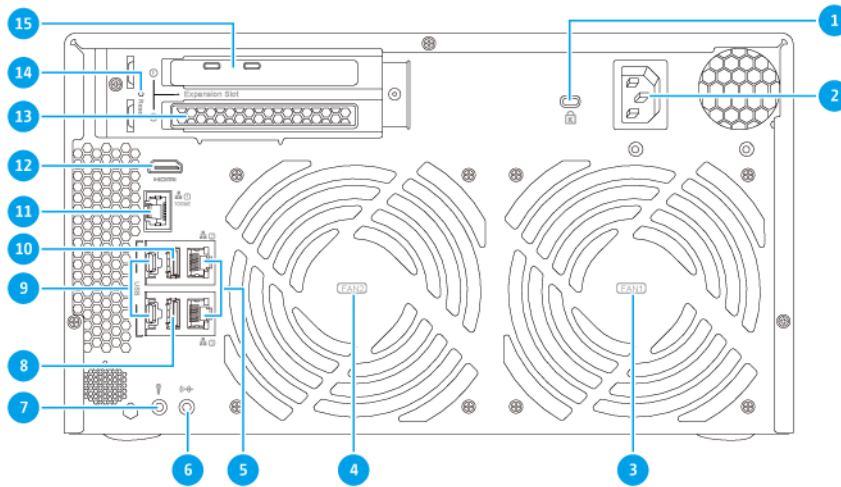
TVS-472XT

No.	Component	No.	Component
1	Power input	8	USB 3.0 Type-A port
2	System fan	9	Ethernet port (10 GbE RJ45)
3	Ethernet ports (GbE RJ45)	10	Kensington security slot
4	3.5 mm line-out jack	11	HDMI 2.0 port
5	3.5 mm dynamic microphone jack	12	PCIe low-profile cover
6	USB 3.1 Gen 2 Type-A port	13	Reset button
7	USB 3.1 Gen 2 Type-C ports	14	Thunderbolt™ 3 ports



TVS-672XT

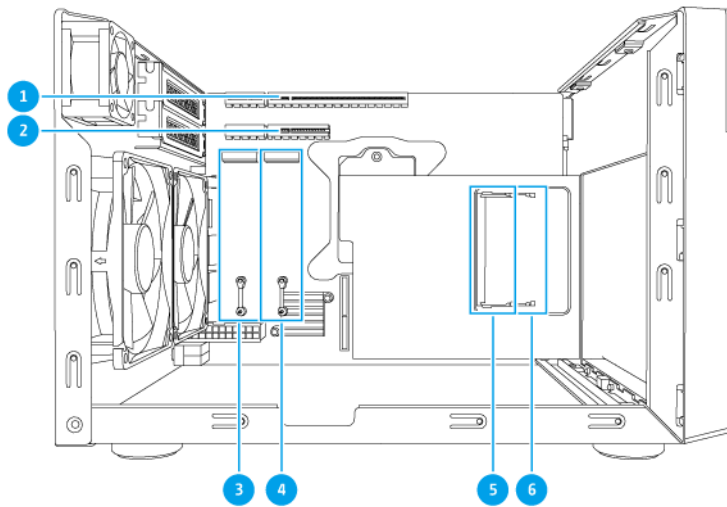
No.	Component	No.	Component
1	Power input	9	USB 3.1 Gen 2 Type-C ports
2	System fan	10	USB 3.0 Type-A port
3	System fan	11	Ethernet port (10 GbE RJ45)
4	Kensington security slot	12	HDMI 2.0 port
5	Ethernet ports (GbE RJ45)	13	PCIe full-height cover
6	3.5 mm line-out jack	14	Reset button
7	3.5 mm dynamic microphone jack	15	Thunderbolt™ 3 ports
8	USB 3.1 Gen 2 Type-A port	-	-



TVS-872XT

No.	Component	No.	Component
1	Kensington security slot	9	USB 3.1 Gen 2 Type-C ports
2	Power input	10	USB 3.0 Type-A port
3	System fan	11	Ethernet port (10 GbE RJ45)
4	System fan	12	HDMI 2.0 port
5	Ethernet ports (GbE RJ45)	13	PCIe full-height cover
6	3.5 mm line-out jack	14	Reset button
7	3.5 mm dynamic microphone jack	15	Thunderbolt™ 3 ports
8	USB 3.1 Gen 2 Type-A port	-	-

System Board



Note

This image does not show the chassis.

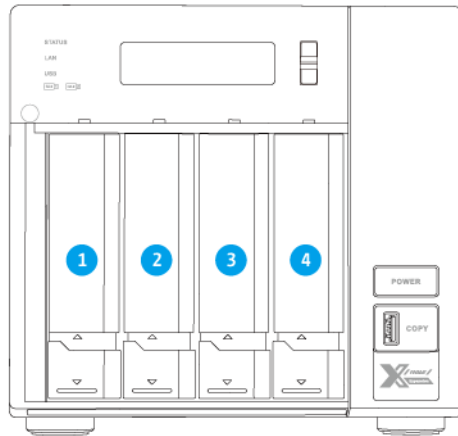
No.	Component	No.	Component
1	PCIe 3.0 x 16 slot	4	M.2 SSD slot 1
2	PCIe 3.0 x 4 slot	5	Memory slot 1
3	M.2 SSD slot 2	6	Memory slot 2



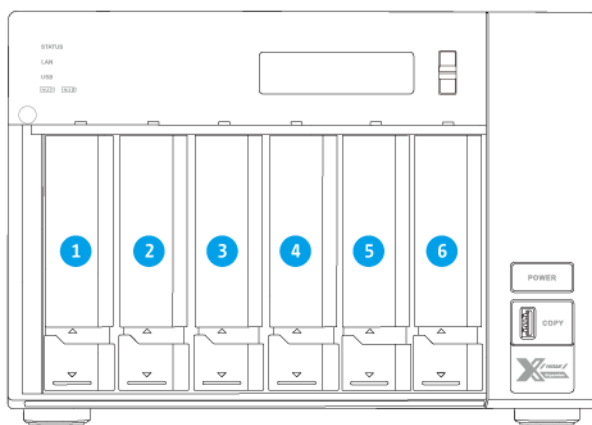
Note

A Thunderbolt™ 3 expansion card is preinstalled in this slot.

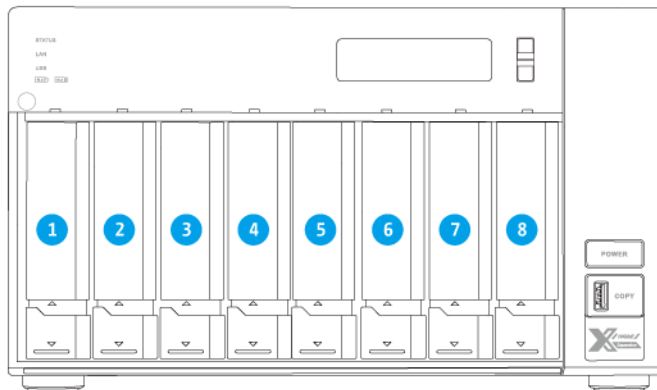
Drive Numbering



TVS-472XT



TVS-672XT



TVS-872XT

Safety Information

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

General Instructions

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

Power

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



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

System Battery

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

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

Moving Parts

-



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

-



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

Installation Requirements

Category	Item
Environment	<ul style="list-style-type: none"> • Room temperature: 0°C to 40°C (32°F to 104°F) • Non-condensing relative humidity: 5% to 95% • Wet-bulb temperature: 27°C (80.6°F) • Flat, anti-static surface without exposure to direct sunlight, liquids, or chemicals
Hardware and peripherals	<ul style="list-style-type: none"> • Storage drives For details on compatible drives, go to https://www.qnap.com/compatibility/. • Network cable
Tools	<ul style="list-style-type: none"> • Phillips #1 or #2 screwdriver • Anti-static wrist strap

Setting Up the NAS



Important

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

1. Place your NAS device in an environment that meets the requirements.
For details, see [Installation Requirements](#).
2. Install the drives.
For details, see the following topics:
 - [Installing 3.5-inch Drives on 3.5-inch Trays](#)
 - [Installing 2.5-inch Drives on 3.5-inch Trays](#)
 - [Installing M.2 Solid-state Drives](#)

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 and expansion cards and replacing memory modules.

Drive Installation

The TVS-x72XT is compatible with 3.5-inch and 2.5-inch hard drives, 2.5-inch solid-state drives, and M.2 solid-state drives.

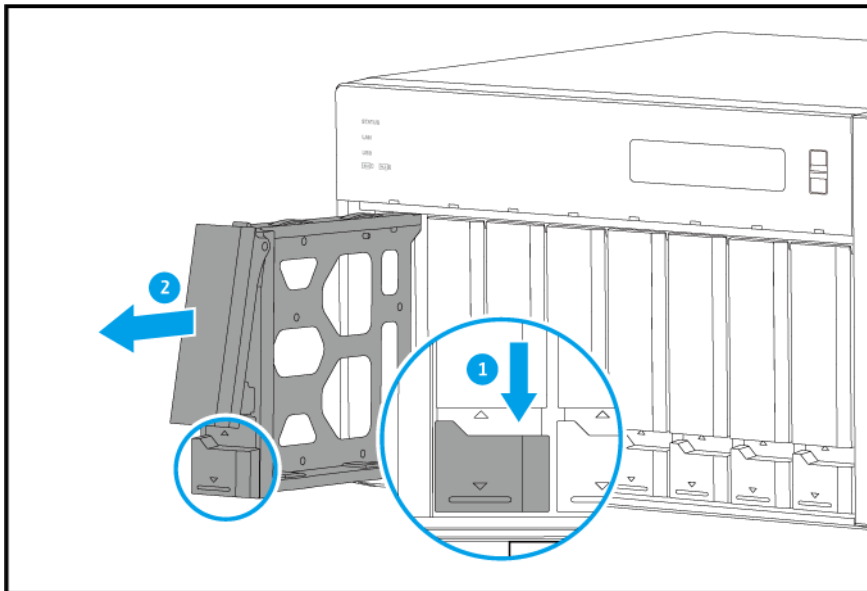
Installing 3.5-inch Drives on 3.5-inch Trays



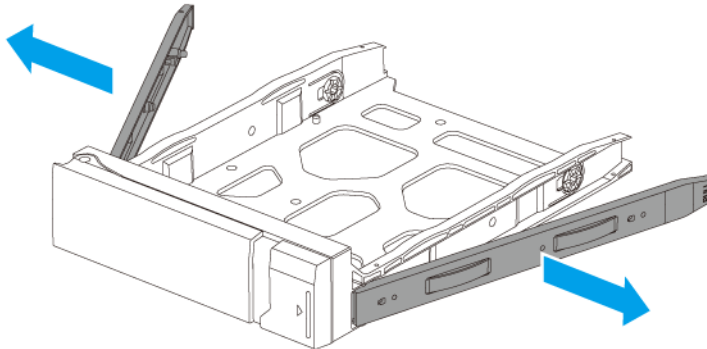
Warning

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

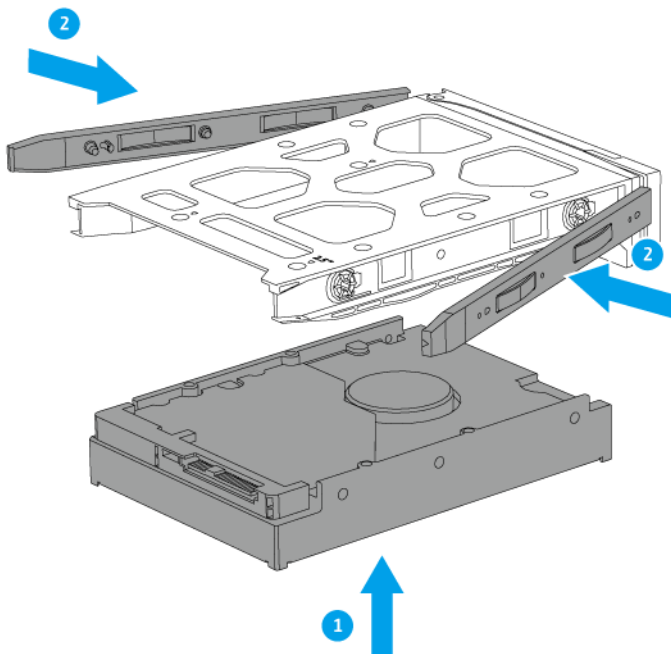
1. Power off the NAS.
2. Remove the drive tray.
 - a. Slide the lock down.
 - b. Pull the handle to release the tray.
 - c. Pull the tray out.



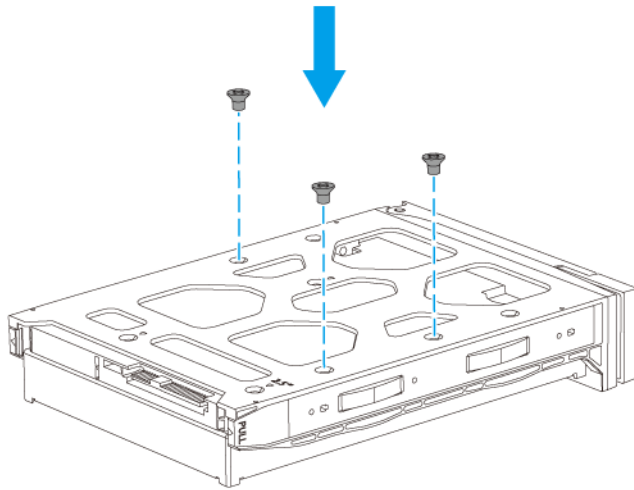
3. Install a drive on the tray.
 - a. Remove the fastening panels from the sides of the tray.



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

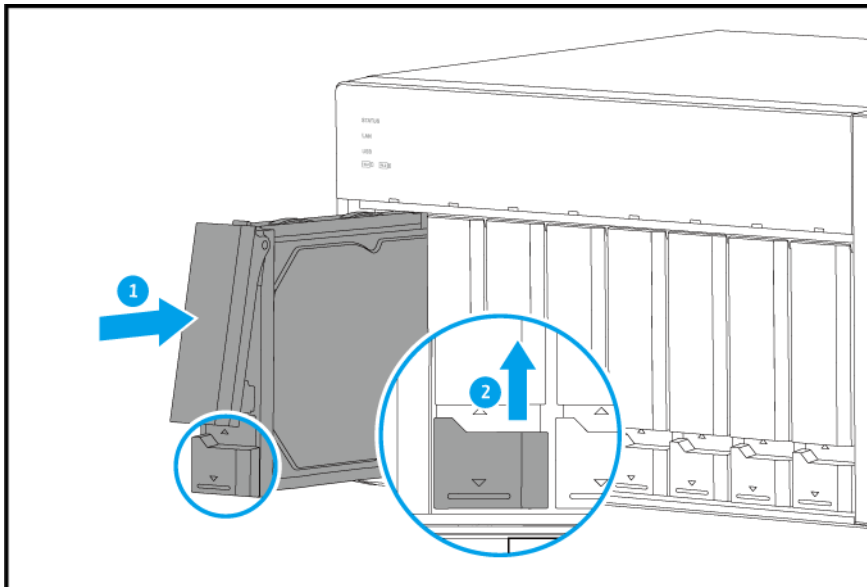


- d.** Optional: Attach the screws to further secure the drive.

**Important**

QNAP recommends attaching the screws to the drive trays when transporting the NAS.

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



5. Power on the NAS.

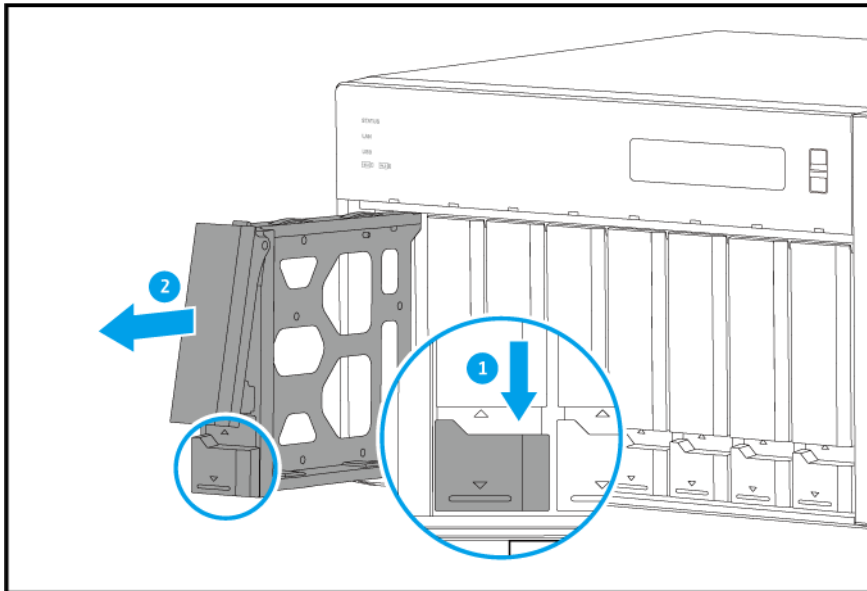
Installing 2.5-inch Drives on 3.5-inch Trays



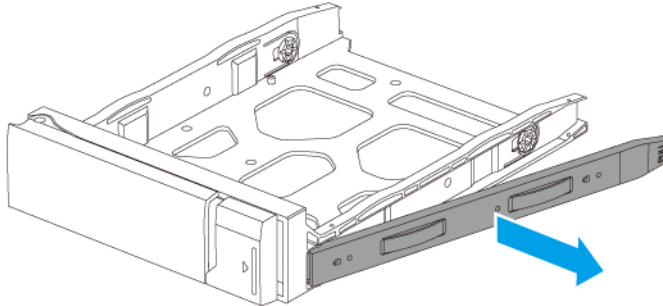
Warning

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

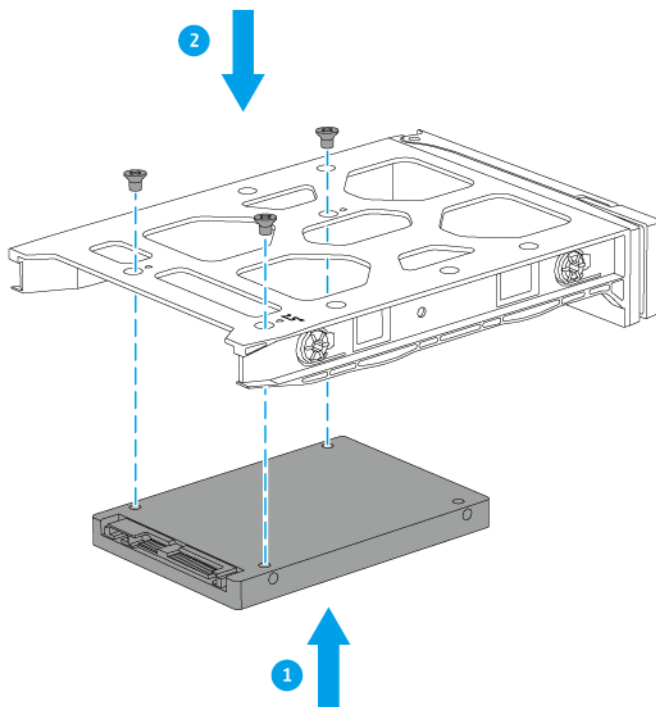
1. Power off the NAS.
2. Remove the drive tray.
 - a. Slide the lock down.
 - b. Pull the handle to release the tray.
 - c. Pull the tray out.



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

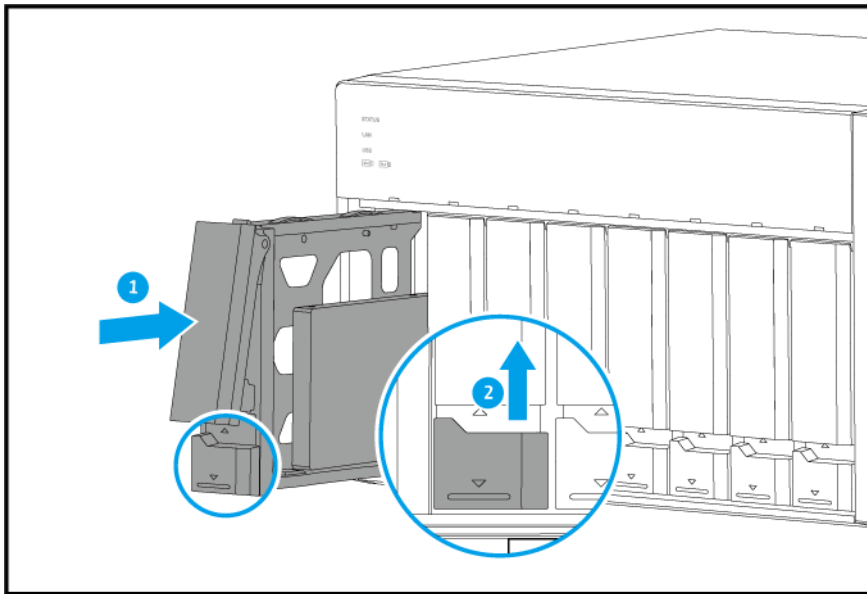


- b.** Place the drive on the tray so that the holes on the bottom of the drive are aligned with the holes on the bottom of the tray.
- c.** Attach the screws.



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

- c. Slide the lock up.



5. Power on the NAS.

Installing M.2 Solid-state Drives



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.

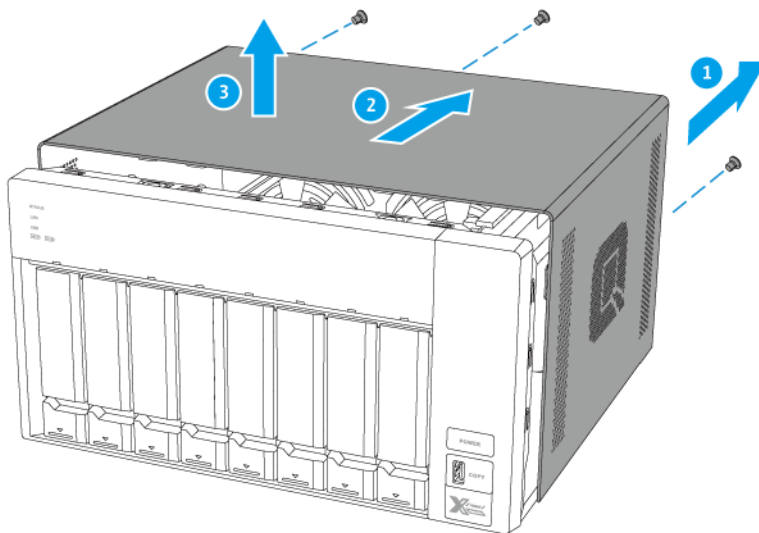


Note

- The TVS-x72XT has two M.2 SSD slots. For a list of compatible M.2 SSDs, go to <https://www.qnap.com/compatibility>.
- QNAP recommends installing heatsinks on M.2 SSD controllers to enhance cooling efficiency and ensure consistent performance.

- Before installing non-QNAP heatsinks, ensure that they are of the appropriate size and shape.

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



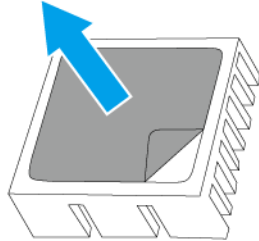
5. Position the NAS on its right side.
6. Install a heatsink on the M.2 SSD controller.
 - a. Locate the controller on the M.2 SSD.



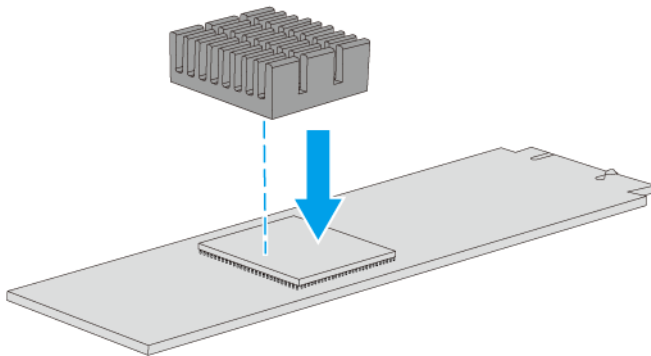
Note

The location of the controller 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.

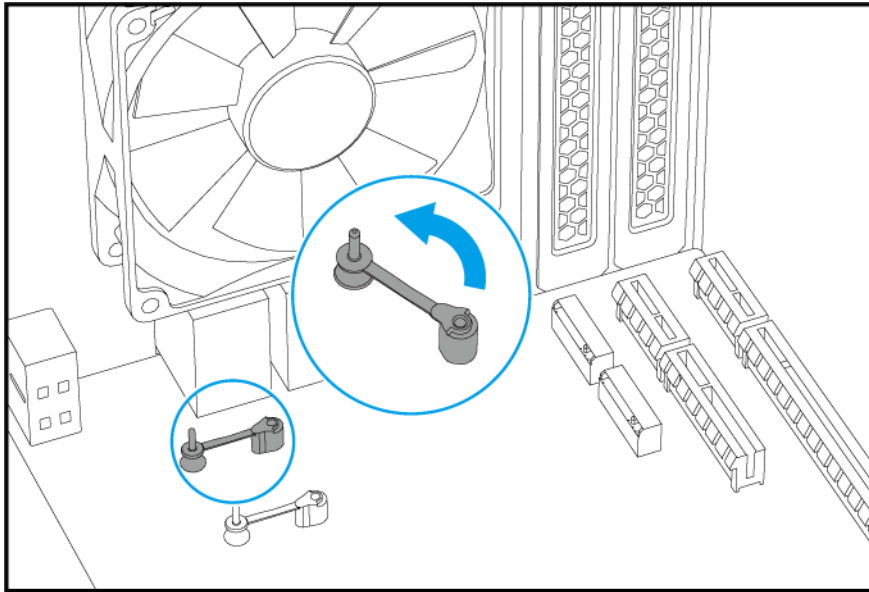


- c. Install the heatsink on the controller.

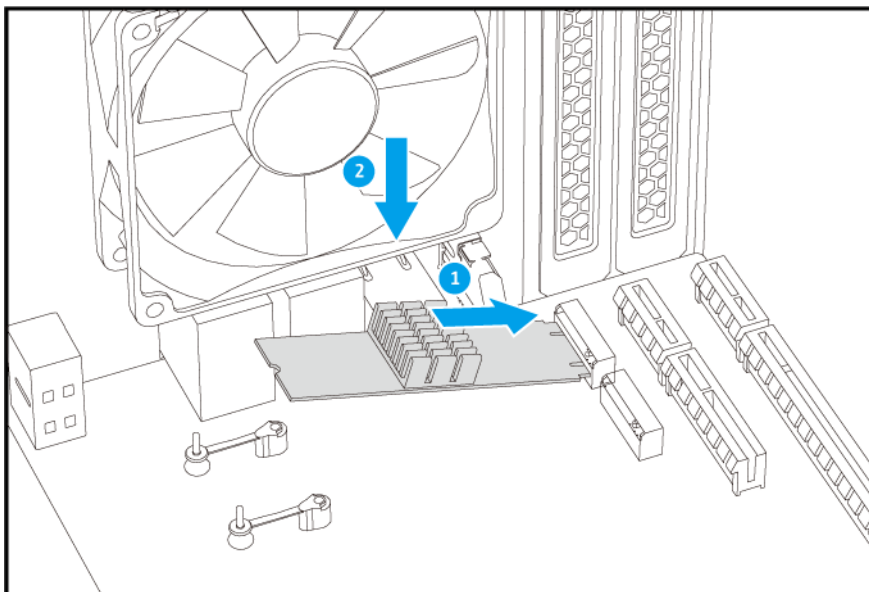


7. Install the M.2 SSD.

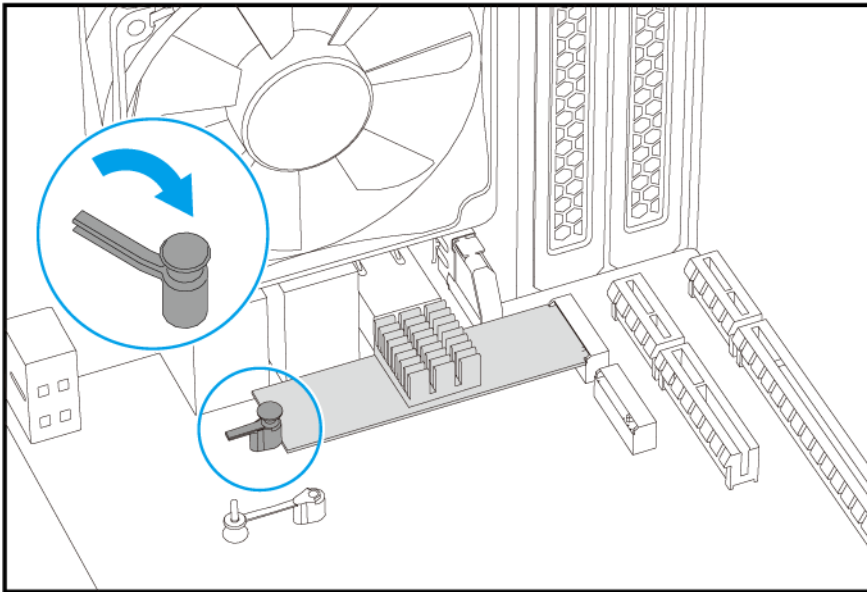
- a. Pull out the pushpin.



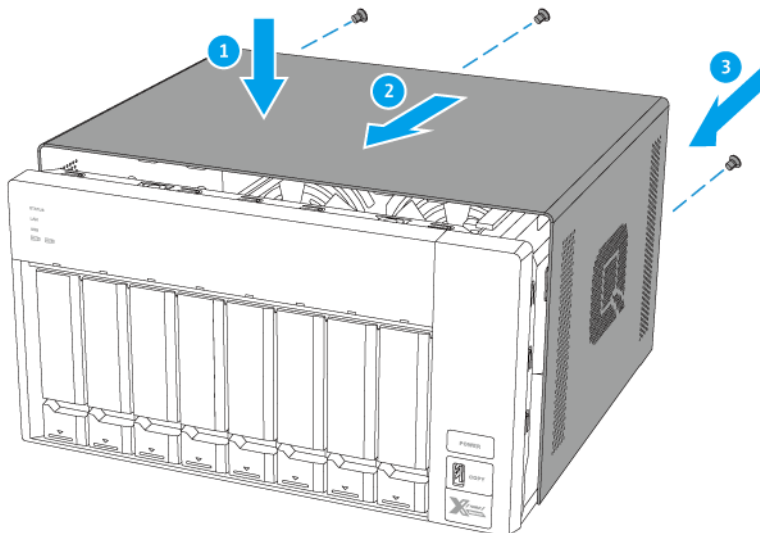
b. Insert the M.2 SSD.



c. Insert the pushpin to secure the drive.



8. Place the NAS in its normal upright position.
9. Attach the case cover.
 - a. Slide the cover down until it is completely connected to the chassis.
 - b. Slide the cover forward.
 - c. Attach the screws to the back of the NAS.



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

Expansion Card Installation

The TVS-x72XT 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.

For details on supported expansion cards and brackets, go to <http://www.qnap.com/compatibility>.

Installing Expansion Cards on the TVS-472XT



Note

This process applies only to the TVS-472XT. For details on the TVS-672XT or TVS-872XT, see [Installing Expansion Cards on the TVS-672XT and TVS-872XT](#).



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.

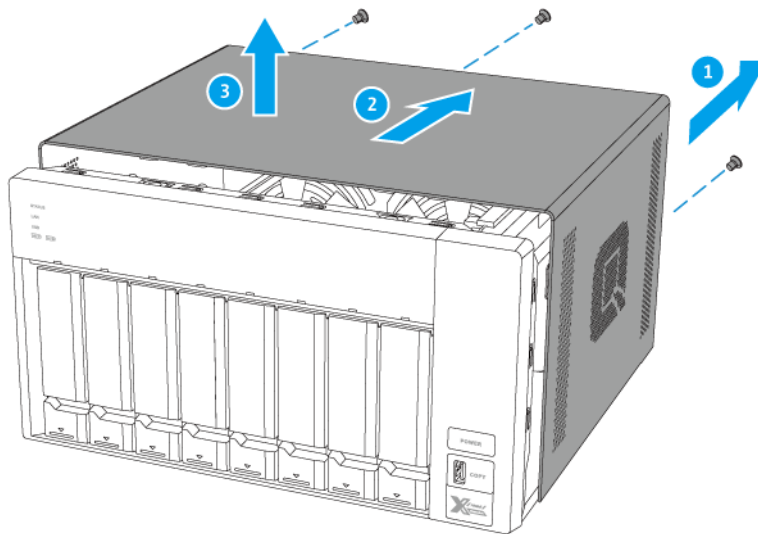
•



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 on 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 case cover.
 - a. Remove the screws that secure the case cover to the chassis.

- b. Slide the cover back.
- c. Lift the cover until it is completely detached from the chassis.



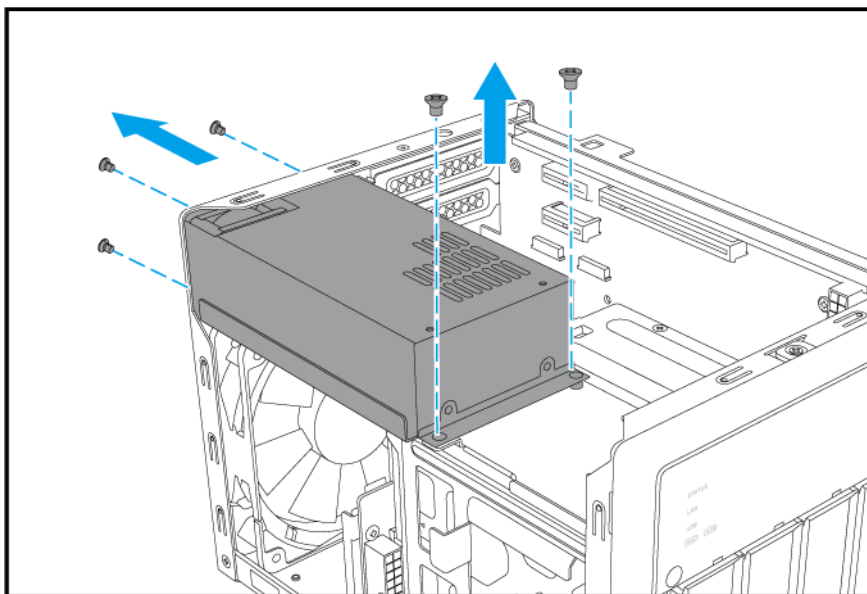
- 6. Remove the power supply unit.



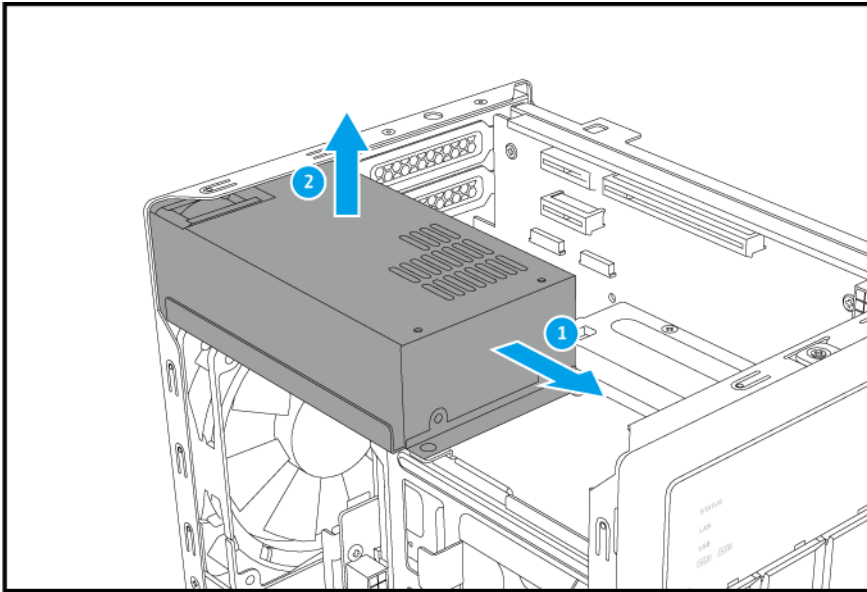
Warning

To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.

- a. Disconnect the power supply cables.
- b. Remove the screws that secure the unit to the chassis.

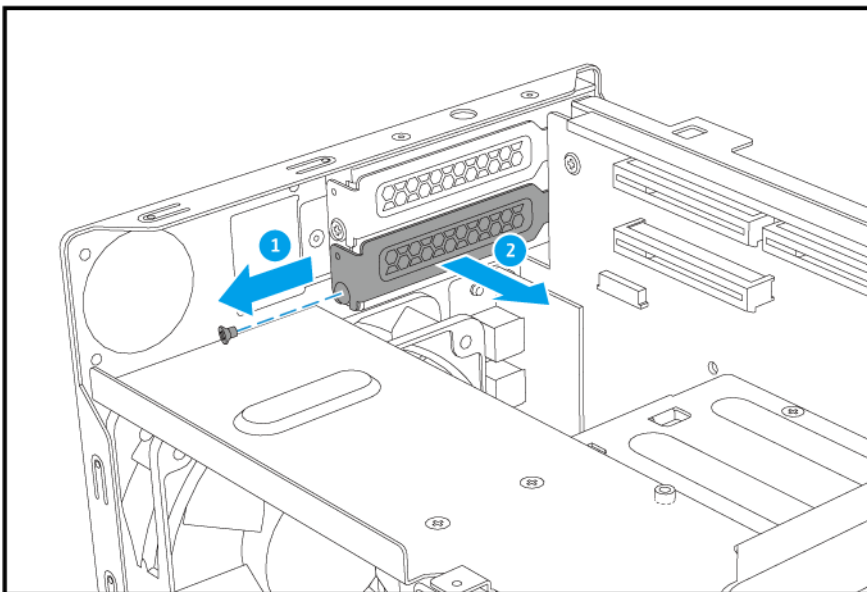


- c. Remove the unit from the chassis.



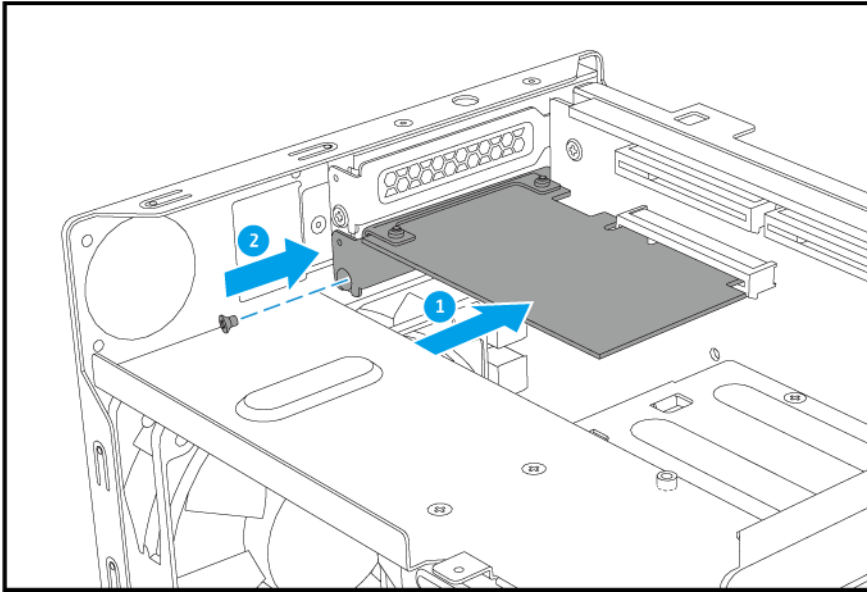
7. Remove the PCIe slot cover.

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



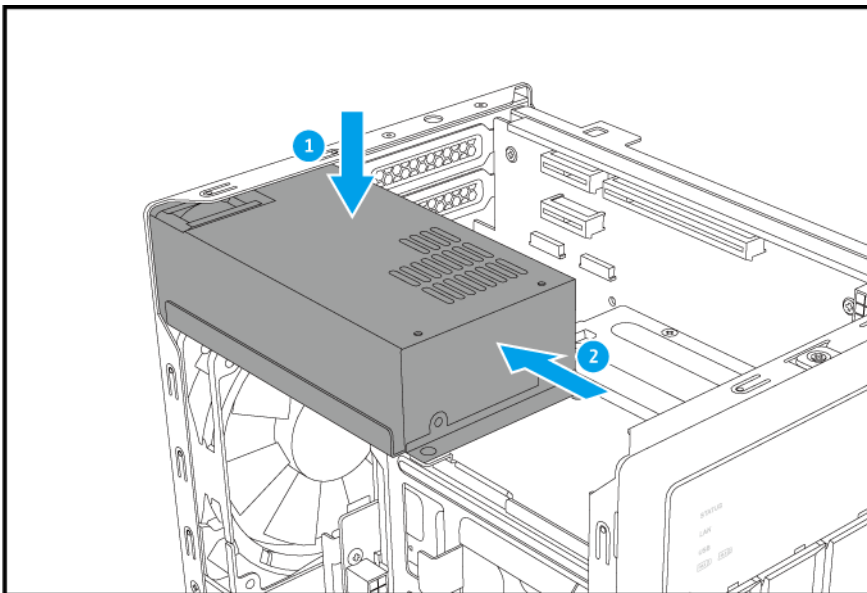
8. Install the expansion card.

- a.** Hold the edges of the expansion card and carefully insert it into the slot.
- b.** Attach the screw.

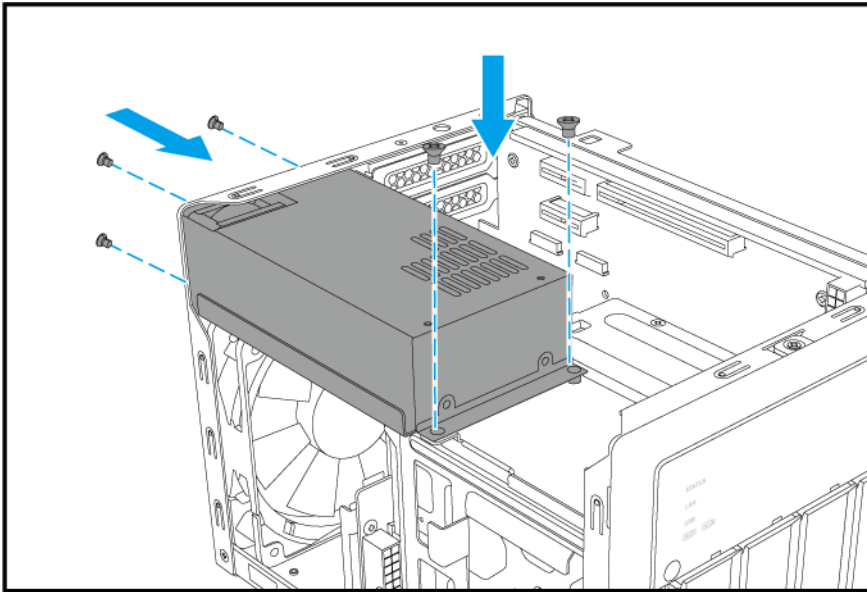


9. Install the power supply unit.

a. Install the unit on the chassis.



b. Attach the screws that secure the unit to the chassis.



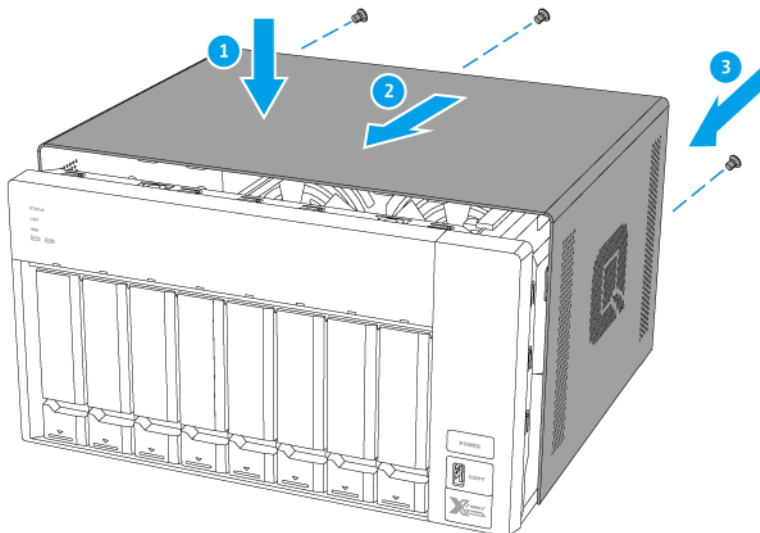
c. Connect the power supply cables.

10. Attach the case cover.

a. Slide the cover down until it is completely connected to the chassis.

b. Slide the cover forward.

c. Attach the screws to the back of the NAS.



11. Connect all cables and external attachments.

12. Connect the power cord to the electrical outlet.

13. Power on the NAS.

Installing Expansion Cards on the TVS-672XT and TVS-872XT



Note

This process applies only to the TVS-672XT and TVS-872XT. For details on the TVS-472XT, see [Installing Expansion Cards on the TVS-472XT](#).



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.

-



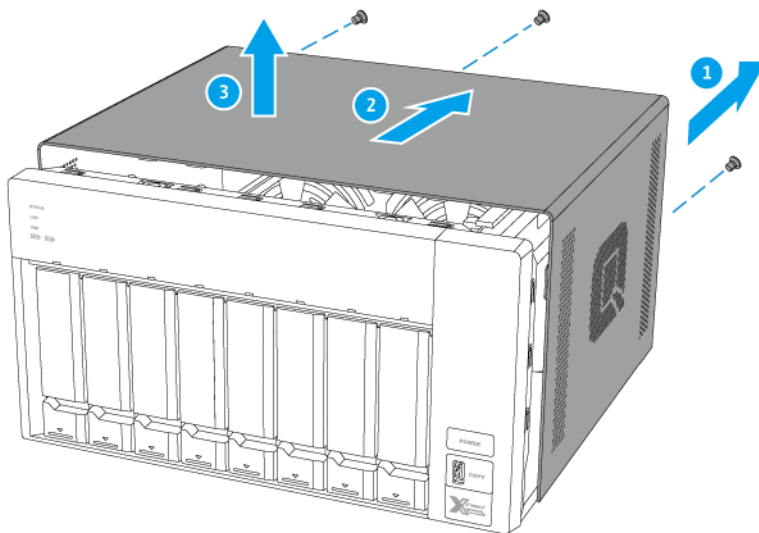
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

-

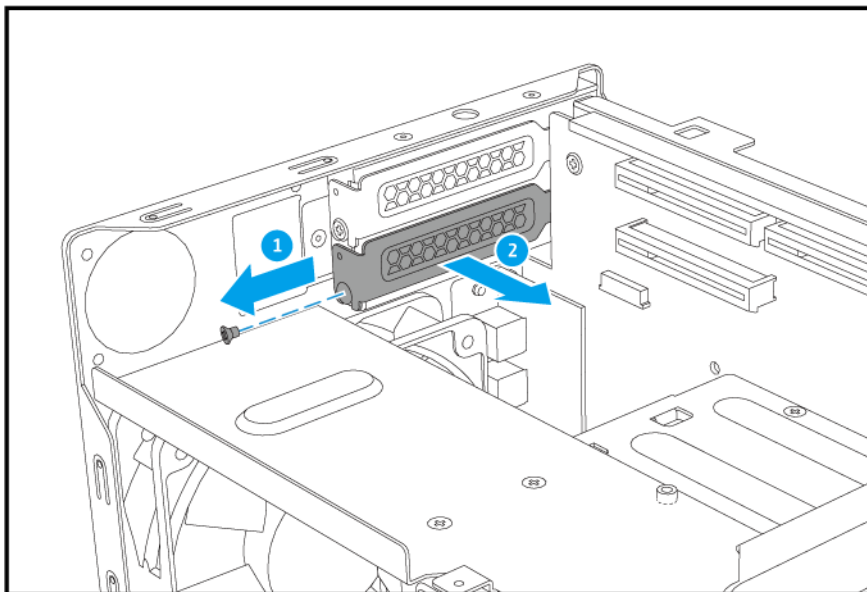


Other moving components: Keep your hands and other body parts away from other moving components.

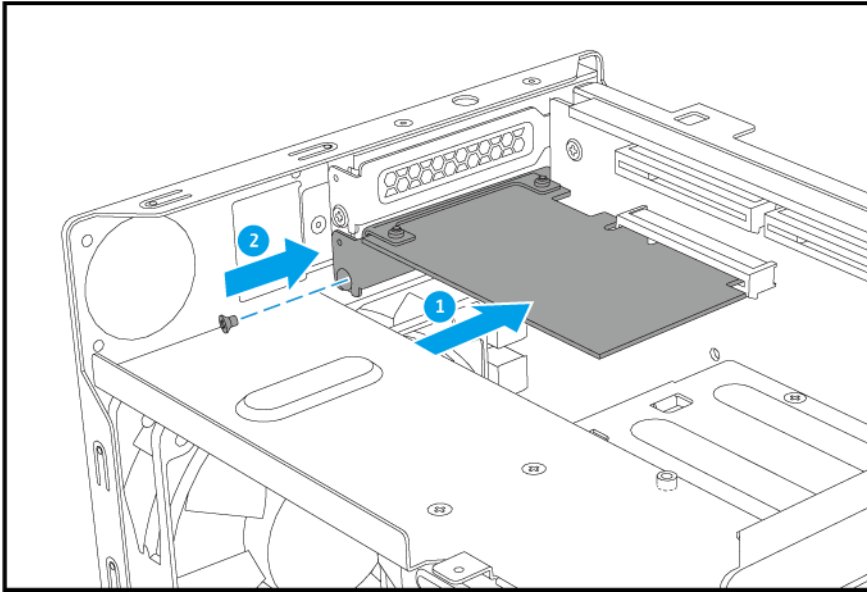
1. Check the expansion cards and brackets supported by your model on the QNAP website.
 - a. Go to www.qnap.com/compatibility.
 - b. Click **Search by NAS**.
 - c. Specify the number of bays and the specific model of your NAS.
 - d. Under **Category**, select the component or device type.
 - e. Locate a specific component or device model on 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 case cover.
 - a. Remove the screws that secure the case cover to the chassis.
 - b. Slide the cover back.
 - c. Lift the cover until it is completely detached from the chassis.



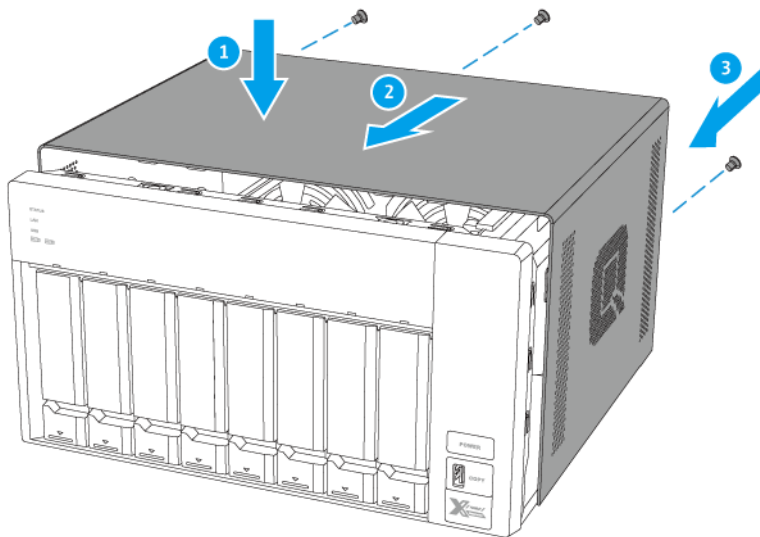
6. Remove the PCIe slot cover.
 - a. Remove the screw that secures the cover to the chassis.
 - b. Pull the cover away from the slot.



7. Install the expansion card.
 - a. Hold the edges of the expansion card and carefully insert it into the slot.
 - b. Attach the screw.



8. Attach the case cover.
 - a. Slide the cover down until it is completely connected to the chassis.
 - b. Slide the cover forward.
 - c. Attach the screws to the back of the NAS.



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

Replacing Memory Modules

The TVS-x72XT has two memory slots. You can increase the memory capacity of the NAS by upgrading the memory modules. When using two 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.



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.

-



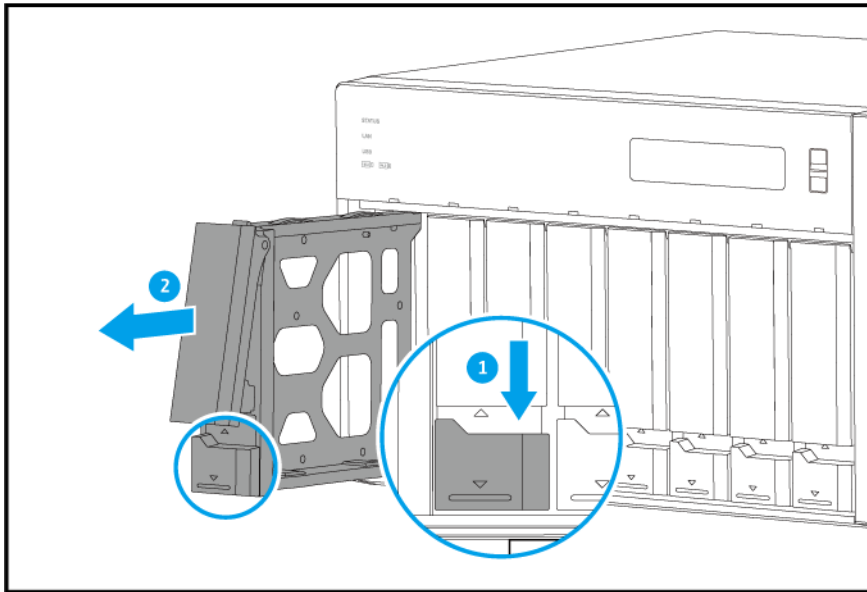
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

-

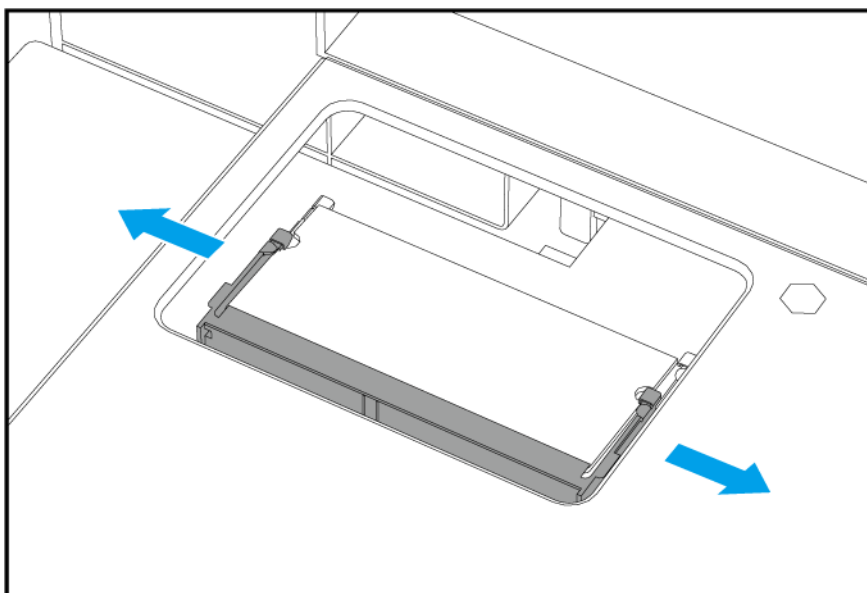


Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove each drive tray from the NAS.
 - a. Slide the lock down.
 - b. Pull the tray handle outward.
 - c. Pull the tray out.



5. Position the NAS on its right side.
6. Remove an existing module.
 - a. Push the retention clips outward simultaneously to release the module.

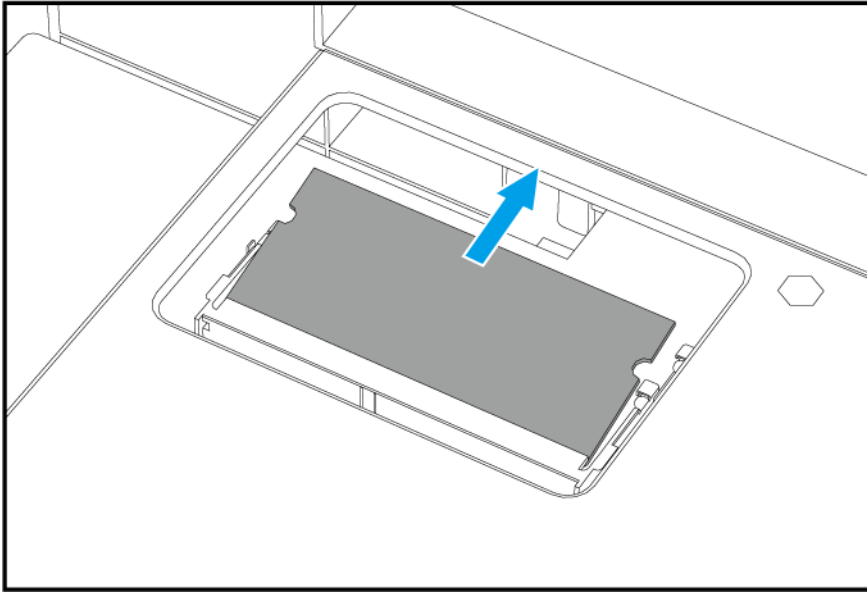


- b. Verify that the module has tilted upward and is completely released from the slot. Attempting to remove a module that is not completely released may damage the module and the motherboard.
 - c. Hold the edges of the module and carefully pull it out of the slot.

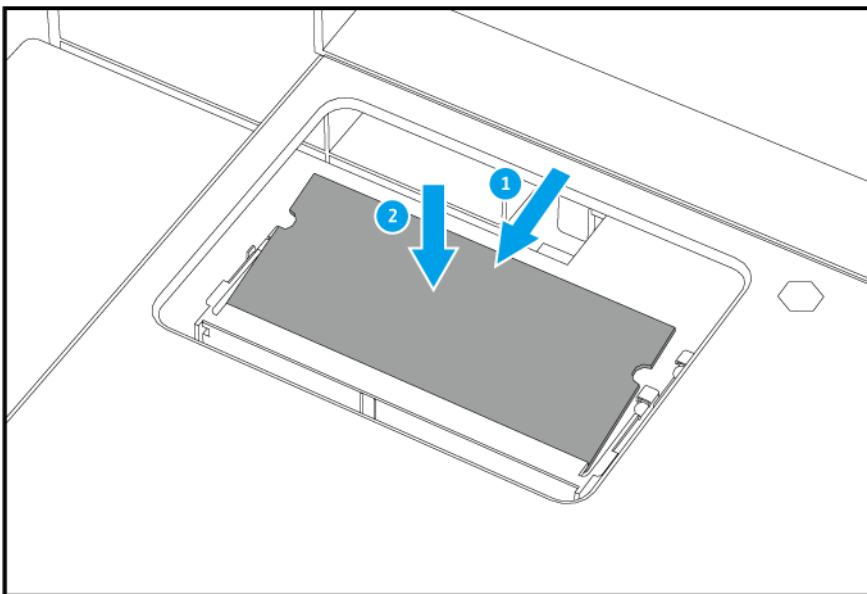


Warning

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

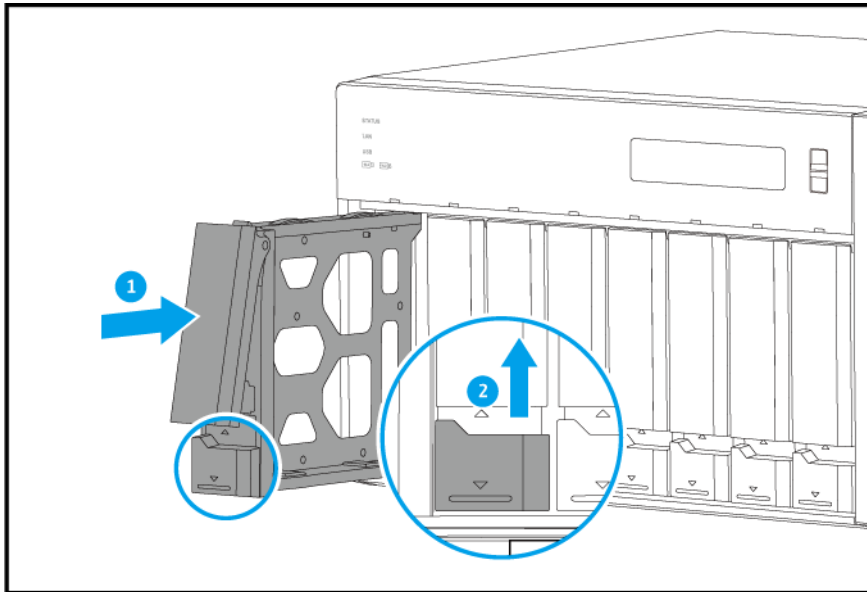


7. Install a new module.
 - a. Align the notch with the ridge in the slot.
 - b. Insert the module.
 - c. Verify that the metal connectors are fully inserted.
 - d. Carefully press down on the module until the retention clips lock the module into place.



8. Place the NAS in its normal upright position.
9. Load each drive tray back into the NAS.
 - a. Slide the tray into the drive bay.

- b. Push the handle.
- c. Slide the lock up.



10. Connect all cables and external attachments.
11. Connect the power cord to the electrical outlet.
12. Power on the NAS.
13. Verify that the 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-x72XT uses the QNAP QTS operating system. You can install QTS using any of the following methods.

Method	Description	Requirements
Qfinder Pro installation (Recommended)	<p>If the NAS is connected to your local area network, you can do the following:</p> <ul style="list-style-type: none"> • Locate the NAS using Qfinder Pro. • Complete the steps in the Smart Installation Guide wizard. <p>For details, see Installing QTS Using Qfinder Pro.</p>	<ul style="list-style-type: none"> • Computer • Network cable • Qfinder Pro installer

Method	Description	Requirements
Cloud installation	<p>If the NAS is connected to the internet, you can do the following:</p> <ul style="list-style-type: none"> • Scan the QR code on the NAS. • Log into your myQNAPcloud account. • Use CloudLink to remotely access your NAS. • Complete the steps in the Smart Installation Guide wizard. <p>For details, see Installing QTS Using the Cloud Key.</p>	<ul style="list-style-type: none"> • Computer or mobile device • Network cable • myQNAPcloud account • CloudKey
Local installation	<p>If the NAS supports HDMI output, you can do the following:</p> <ul style="list-style-type: none"> • Connect the NAS to the required hardware. • Complete the steps in the Smart Installation Guide wizard. <p>For details, see Installing QTS Using an HDMI Connection.</p>	<ul style="list-style-type: none"> • Monitor • HDMI cable • USB keyboard or Remote control (not available on all models)

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. Review the settings.
15. Click **Apply**.
A confirmation message appears.

**Warning**

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

16. Click **Confirm**.
QTS is installed.

Installing QTS Using the Cloud Key

**Warning**

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

1. Power on the NAS.
2. Connect the NAS to the internet.
3. Go to the QNAP Cloud Installation page using one of the following methods:
 - On your computer, go to <http://install.qnap.com/>.
 - Scan the QR code on the NAS using a mobile device.

The web page lists all the uninitialized QNAP NAS devices on the local network.

4. Find your NAS from the list and then click **Initialize**.

**Note**

If your NAS is not listed, follow the instructions on the web page to specify the Cloud Key on the NAS.

The installation wizard opens in the default web browser.

5. Create an account or sign in to myQNAPcloud.

**Note**

You must return to this page to complete the installation after creating an account.

6. Specify the myQNAPcloud device name for the NAS.

**Note**

- The myQNAPcloud device name is used when remotely accessing the NAS.
- For security purposes, the CloudLink remote connection service will be disabled on your NAS after initialization. You can enable it by connecting to QTS through LAN and then installing CloudLink.

7. Click Next.

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

8. Click Start Smart Installation Guide.**9. Specify the following information.**

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

10. Click Next.**11. Specify the time zone, date, and time.****Tip**

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

12. Click Next.**13. Select Obtain an IP address automatically (DHCP).****14. Click Next.****15. Select the types of devices that you will use to access shared folders on the NAS.****16. Click Next.****17. Review the settings.****18. Click Apply.**

A confirmation message appears.

**Warning**

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

19. Click Confirm.

QTS is installed.

Installing QTS Using an HDMI Connection

**Warning**

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

1. Connect an HDMI display to the NAS.
2. Connect a USB keyboard to the NAS or prepare the QNAP IR remote control (not available on all models).

3. Power on the NAS.
The **Welcome** screen of the Smart Installation Guide appears.
4. Select **Start Smart Installation Guide**.
5. Select **No, skip this process**.
Enabling the multimedia functions allows you to install multimedia applications after configuring the disks in Storage & Snapshots.
For details on enabling multimedia functions on QTS, see the System Administration section of the QTS User Guide.
6. Select **Configure later**.
For details on configuring disks, see the Storage & Snapshots section of the QTS User Guide.
7. Review the settings.
8. Click **Next**.
9. Review the settings.
10. Click **Next**.
The **Confirm** screen appears.

**Warning**


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

11. Click **Next**.
QTS is installed.

4. Basic Operations

This chapter describes basic NAS operations.

Power Button

Operation	User Action	Result
Power on	Press the button once.	The NAS powers on.
Power off	Press and hold the button for 1.5 seconds.	The NAS powers off.
Force power off	Press and hold the button for 5 seconds.	The NAS shuts down.  Important Use this method only when the NAS is unresponsive.

Reset Button

Operation	User Action	Result
Basic system reset	Press and hold the button for 3 seconds.	The following settings are reset to default: <ul style="list-style-type: none"> • System administrator password: admin • TCP/IP configuration: <ul style="list-style-type: none"> • Obtain IP address settings automatically via DHCP • Disable jumbo frames • If port trunking is enabled (multi-LAN models only), the port trunking mode is reset to "Active Backup (Failover)". • System port: 8080 (system service port) • Security level: Low (Allow all connections) • LCD panel password: (blank) • VLAN: Disabled
Advanced system reset	Press and hold the button for 15 seconds.	The default factory settings are restored. <ul style="list-style-type: none"> • To retrieve old data after an advanced system reset, recreate the previous folder structure on the NAS.

USB One Touch Copy Button

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

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

LCD Panel

The LCD panel allows you to perform the following operations:

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

Viewing TCP/IP Settings

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

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

Configuring TCP/IP Settings

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

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

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

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

Viewing Drive Information

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

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

Viewing Volume Information

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

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

Viewing System Information

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

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

Powering Off the NAS

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

Restarting the NAS

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

Changing the LCD Password

Specifying a password for the LCD panel prevents unauthorized access.

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

The `Change Password` screen appears.

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

The `New Password` screen appears.

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

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

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

7. Press **Enter.**

The NAS saves the password.

LCD Error Messages

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

LEDs

LEDs indicate system status and related information when the NAS is powered on. The following LED information applies only when the drive is correctly installed and when the NAS is connected to the network.

For details on the location of the LEDs, see [Components](#).

LED	Status	Description
System Status	Flashes green and red alternately every 0.5 seconds	<ul style="list-style-type: none"> The drive is being formatted. The NAS is being initialized. The operating system is being updated. RAID rebuilding is in progress. Online RAID Capacity Expansion is in progress. Online RAID Level Migration is in progress.
	Red	<ul style="list-style-type: none"> The drive is invalid. The disk volume has reached its full capacity. The disk volume is about to reach its full capacity. The system fan is not functioning. An error occurred when accessing (read/write) the data. A bad sector is detected on the hard drive. The NAS is in degraded read-only mode (two member drives failed in RAID 5 or RAID 6 but the data can still be read). Hardware self-test error
	Flashes red every 0.5 seconds	The NAS is in degraded mode (one member drive failed in RAID 1, RAID 5, or RAID 6).
	Flashes green every 0.5 seconds	<ul style="list-style-type: none"> The NAS is starting up. The NAS is not configured. A drive is not formatted.
	Green	The NAS is ready.
	Off	All drives are in standby mode.
LAN	Orange	A read/write error occurred while another device is accessing data.
	Flashes orange	The NAS is being accessed from the network.
Drive	Flashes red	The data is being accessed and a read/write error occurs during the process.
	Red	A drive read/write error occurred.
	Flashes green	The data is being accessed.
	Green	The drive can be accessed.

LED	Status	Description
USB	Flashes blue every 0.5 sec	<ul style="list-style-type: none"> • A USB device (connected to the front USB port) is detected. • A USB device (connected to the front USB port) is being removed from the NAS. • A USB device (connected to the front USB port of the NAS) is being accessed. • Data is being copied to or from a USB or eSATA device.
	Blue	A USB device is detected in the front USB port.
	Off	<ul style="list-style-type: none"> • No USB device is detected. • The NAS has finished copying data to or from the USB device connected to the front USB port.

Audio Alert

Duration	Frequency	Description
Short beep (0.5 seconds)	1	<ul style="list-style-type: none"> • The NAS is starting up. • The NAS is shutting down (software shutdown). • The user pressed the Reset button. • The operating system was updated.
	3	The user tried to copy the NAS data to the external storage device from the front USB port, but the data cannot be copied.
Long beep (1.5 seconds)	3 (every 5 minutes)	The system fan is not functioning.
	2	<ul style="list-style-type: none"> • The disk volume is about to reach its full capacity. • The disk volume has reached its full capacity. • The drives are in degraded mode. • The user started the drive rebuilding process. • A drive is plugged in or out.
	1	<ul style="list-style-type: none"> • The NAS was powered off by force shutdown (hardware shutdown). • The NAS was powered on successfully and is ready.

5. Troubleshooting

This chapter describes basic troubleshooting information.

Forcing Qfinder Pro or myQNAPcloud to Locate the NAS

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

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

Hot-swapping Failed Drives

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

- RAID 1: One member drive fails
 - RAID 5: One member drive fails
 - RAID 6: One or two member drives fail
1. Log on to QTS.
 2. Go to **Main Menu > Storage & Snapshots > Storage > Disks/VJBOD** .
 3. Locate the failed drive.
 4. Prepare a new hard drive with a capacity that is the same as or larger than the failed hard drive.
 5. Remove the failed drive from the NAS.
 6. Wait for 20 seconds or until the NAS beeps twice.
 7. Remove the failed drive from the drive tray.
 8. Insert the new drive into the drive tray.
 9. Install the new drive.
The NAS beeps twice.
 10. Go to **Main Menu > Storage & Snapshots > Storage > Storage/Snapshots** .
 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	http://docs.qnap.com
Helpdesk	http://helpdesk.qnap.com
Downloads	http://download.qnap.com
Community Forum	http://forum.qnap.com

6. Glossary

CloudKey

Unique 8-digit code assigned to each NAS device

CloudLink

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

myQNAPcloud

Provides various remote access services such as DDNS and CloudLink

myQNAPcloud ID

Email address that was used to register for a myQNAPcloud account

Qfinder Pro

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

QTS

QNAP NAS operating system

7. Notices

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

Limited Warranty

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Version 3, 29 June 2007

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FCC Notice

FCC Class B Notice



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



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



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