



**QNAP**

# **TS-351**

## **User Guide**



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# 1. Preface





## About This Guide

This guide provides information on the QNAP TS-351 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 TS-351 NAS.

### About the TS-351

The TS-351 is equipped with an Intel® Celeron® J1800 dual-core 2.4 GHz processor and can support up to 8 GB of DDR3L memory. The TS-351 provides multimedia support through its HDMI connection and features USB One Touch Copy for easy and efficient backup and synchronization. In addition to its two memory slots, the TS-351 comes with two M.2 PCIe SSD slots to accommodate your data management needs.





### Hardware Specifications






#### Important

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

Component	TS-351
Ordering Information	
Ordering P/N	<ul style="list-style-type: none"> <li>• TS-351-2G</li> <li>• TS-351-4G</li> </ul>
Processor	
CPU	Intel® Celeron® J1800
Frequency	Dual-core 2.41 GHz base/2.58 GHz turbo
Architecture	64-bit x86
Graphics	Intel® HD Graphics
Memory	
Pre-installed memory	<ul style="list-style-type: none"> <li>• 2 GB RAM: 1 x 2 GB DDR3L</li> <li>• 4 GB RAM: 1 x 4 GB DDR3L</li> </ul> <p>Use only QNAP memory modules to maintain system performance and stability. For NAS devices with more than one memory slot, use QNAP modules with identical specifications. Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.</p>
Total memory slots	2 x SODIMM DDR3L
Maximum memory	8 GB RAM: 2 x 4 GB
Flash memory	512 MB USB DOM
Storage	
Drive bays	3 x 3.5-inch SATA: <ul style="list-style-type: none"> <li>• Drive bays 1 and 2: SATA 3 Gbps</li> <li>• Drive bay 3: SATA 6 Gbps</li> </ul>

Component	TS-351
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> <p> <b>Note</b> TS-351 drive tray caddies require additional drive tray bases for installing 2.5-inch SATA drives. You can purchase tray bases from QNAP or an authorized reseller. For details, go to <a href="https://shop.qnap.com/">https://shop.qnap.com/</a>.</p>
Hot-swappable	Yes
M.2 SSD slots	2 x PCIe NVMe 2.0 x1, 5 Gbps
M.2 SSD form factor	2280
SSD cache acceleration support	<p>Yes</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>• Drive bays 1 and 2 do not support SSD cache acceleration.</li> <li>• SSD cache drives are not hot-swappable.</li> <li>• M.2 SSDs are not hot-swappable.</li> </ul>
Network	
Gigabit Ethernet ports	1 x Gigabit RJ45
External I/O Ports & Expansion Slots	
USB ports	<ul style="list-style-type: none"> <li>• Front: 1 x USB 3.0 Type-A</li> </ul> <p> <b>Note</b> This USB port supports One Touch Copy.</p> <ul style="list-style-type: none"> <li>• Rear: 2 x USB 2.0 Type-A</li> </ul>
HDMI outputs	1 x HDMI 1.4a
Audio	<ul style="list-style-type: none"> <li>• 1 x 3.5 mm line-out jack</li> <li>• 1 x speaker</li> </ul> <p> <b>Note</b> You cannot use the speaker and the line-out jack simultaneously.</p>
Interface	
Buttons	<ul style="list-style-type: none"> <li>• Power</li> <li>• Reset</li> <li>• USB One Touch Copy</li> </ul>
Dimensions	
Form factor	Tower

Component	TS-351
Dimensions (H x W x D)	142 x 150 x 260.1 mm (5.59 x 5.90 x 10.24 in)
Net weight	1.64 kg (3.62 lbs)
Other	
Power supply unit	65W, 100-240V AC, 50/60 Hz
System battery	CR2032 lithium battery (3V, 225 mAh)   <b>Warning</b> To avoid potential injury or damage to components, ensure that you replace the existing battery with a battery of the same type.
Sound level	21.8 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: 1 x 90 mm, 12V DC smart fan   <b>Warning</b> To avoid potential injury or damage to components, do not touch the fan 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>
Security slot	Kensington security slot

**Tip**

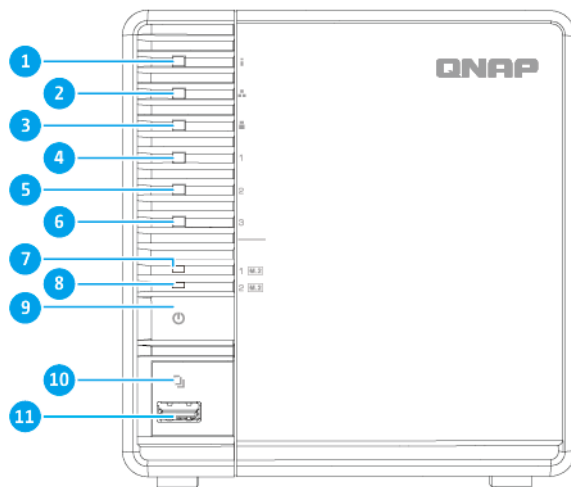
Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

## Package Contents

Item	Quantity
TS-351 NAS	1
Drive tray caddy pins	3
AC power adapter	1
Power cord	1
Ethernet cables	1
Heatsinks for M.2 SSDs	2
Quick Installation Guide (QIG)	1

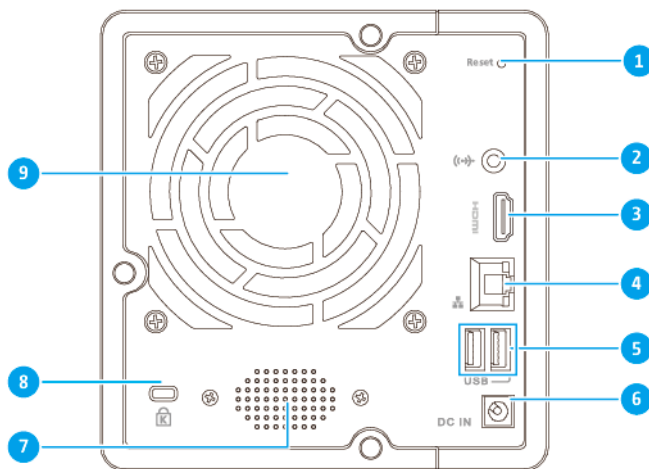
## Components

## Front Panel



No.	Component	No.	Component
1	Status LED	7	M.2 SSD 1 LED
2	LAN LED	8	M.2 SSD 2 LED
3	USB LED	9	Power button
4	Drive 1 LED	10	USB One Touch Copy button
5	Drive 2 LED	11	USB One Touch Copy port
6	Drive 3 LED	-	-

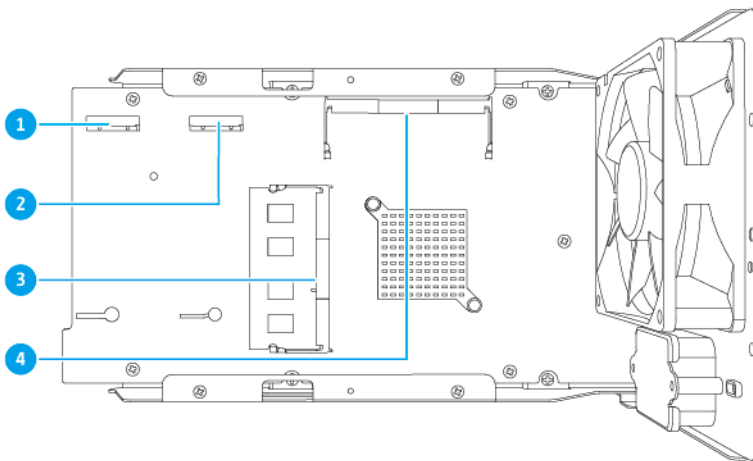
## Rear Panel





No.	Component	No.	Component
1	Reset button	6	Power input
2	3.5 mm line-out jack	7	Speaker
3	HDMI 1.4a port	8	Kensington security slot
4	Gigabit Ethernet RJ45 port	9	Smart fan
5	USB 2.0 Type-A ports	-	-

## System Board

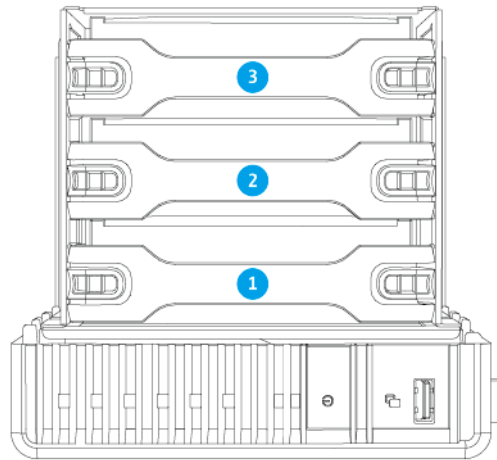


### Note

This image does not include the chassis.

No.	Component	No.	Component
1	M.2 SSD slot 1	3	Memory slot 1
2	M.2 SSD slot 2	4	Memory slot 2

## Front Drive Numbering



### Note

This image shows the NAS positioned on its left side.

## 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 with no exposure to direct sunlight, liquids, or chemicals</li> </ul>
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>Flat head screwdriver</li> <li>Anti-static wrist strap</li> </ul>

## Setting Up the NAS

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

- [Installing 2.5-inch Drives 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 replacing memory modules.

#### Drive Installation

The TS-351 is compatible with 3.5-inch and 2.5-inch hard drives, 2.5-inch solid-state drives, and M.2 solid-state drives.

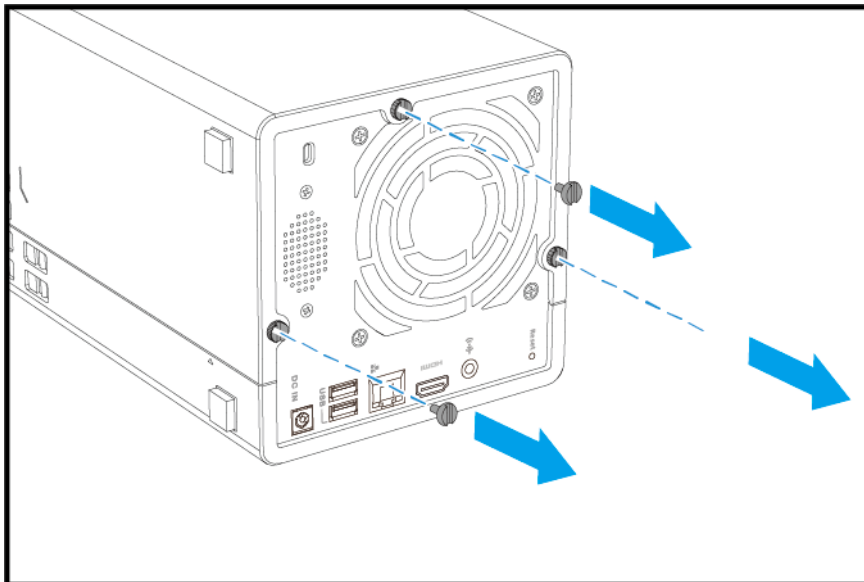
#### Installing 3.5-inch Hard Drives on 3.5-inch Trays



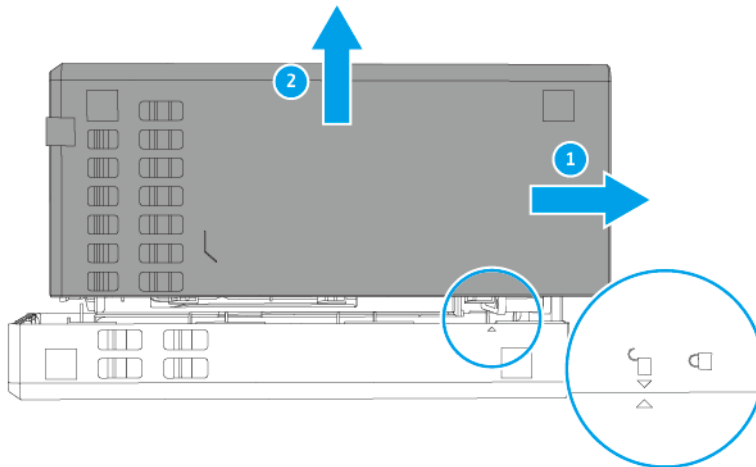
#### Warning

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

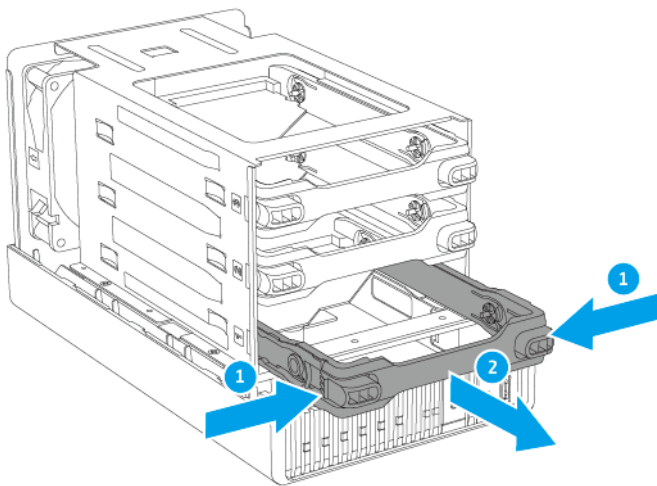
1. Power off the NAS.
2. Remove the case cover.
  - a. Position the NAS on its left side.
  - b. Remove the screws that secure the case cover to the chassis.



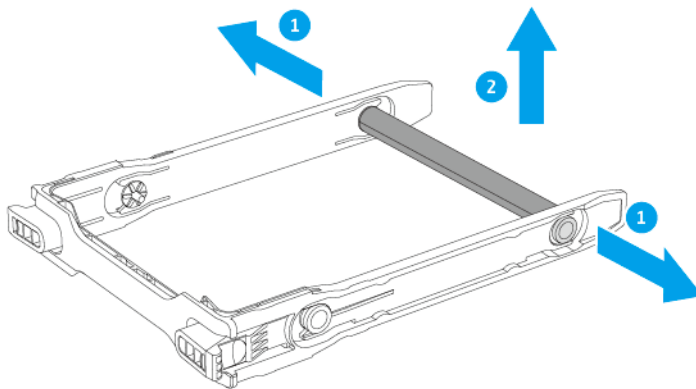
- c. Slide the cover to the right to detach it from the chassis.
- d. Lift the cover off the NAS.



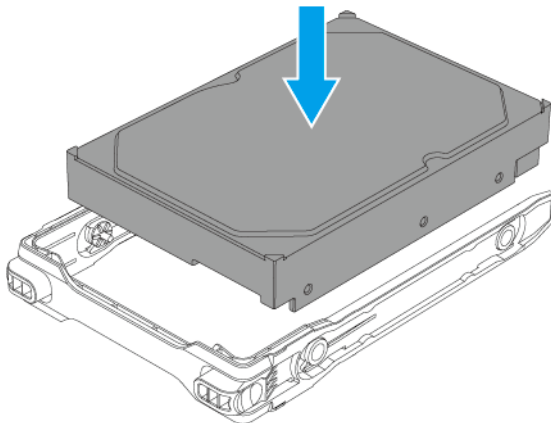
3. Remove a drive tray caddy.
  - a. Squeeze the clips.
  - b. Pull out the caddy.



4. Install a drive on the drive tray caddy.
  - a. Gently pull the sides of the caddy to release the rod.
  - b. Remove the rod.

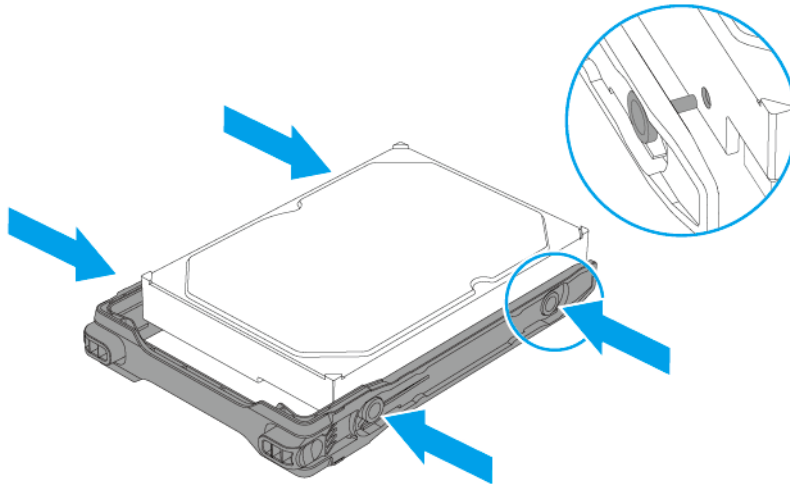


c. Place the drive in the caddy.

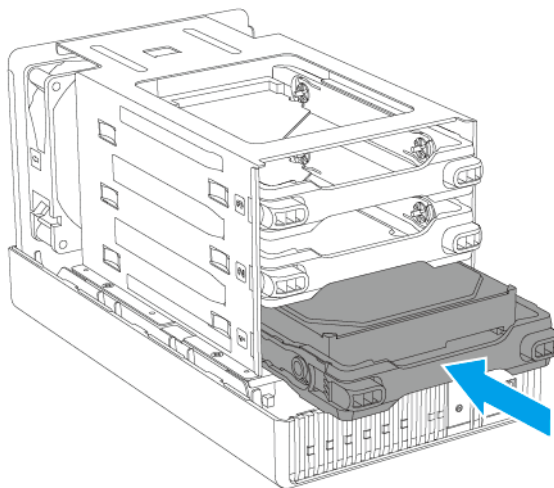


d. Align the holes on the drive with the pins on the caddy.

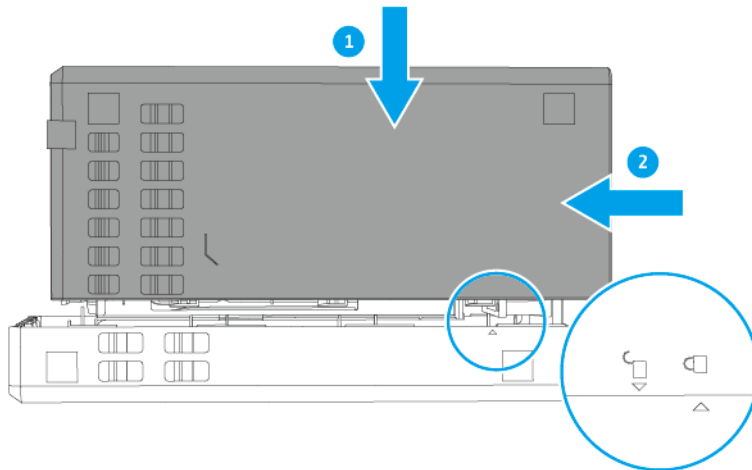
e. Insert the pins.



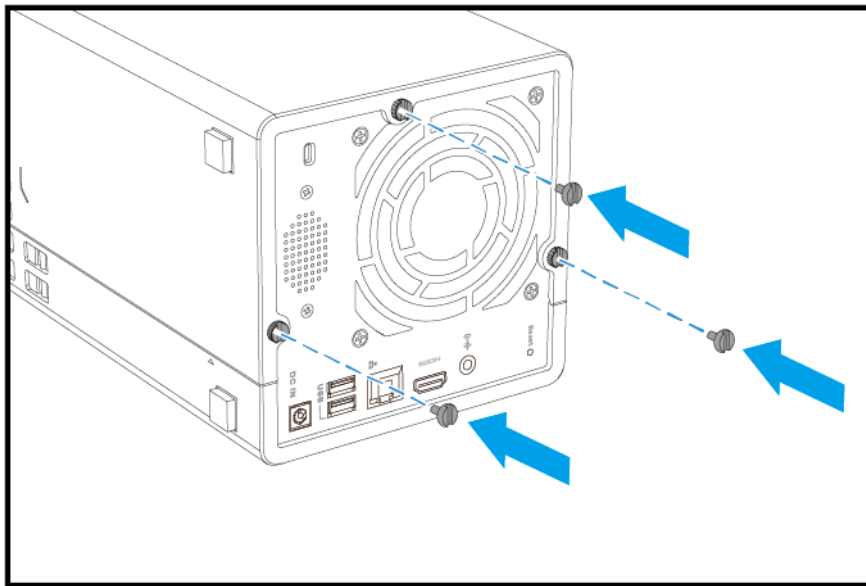
5. Slide the drive tray caddy into the drive bay.



6. Attach the case cover.
  - a. Place the cover on the NAS.
  - b. Align the cover with the grooves on the case.
  - c. Slide the cover to the left to secure it to the chassis.



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



e. Place the NAS in its normal upright position.

7. Power on the NAS.

### Installing 2.5-inch Drives on 3.5-inch Trays



#### Important

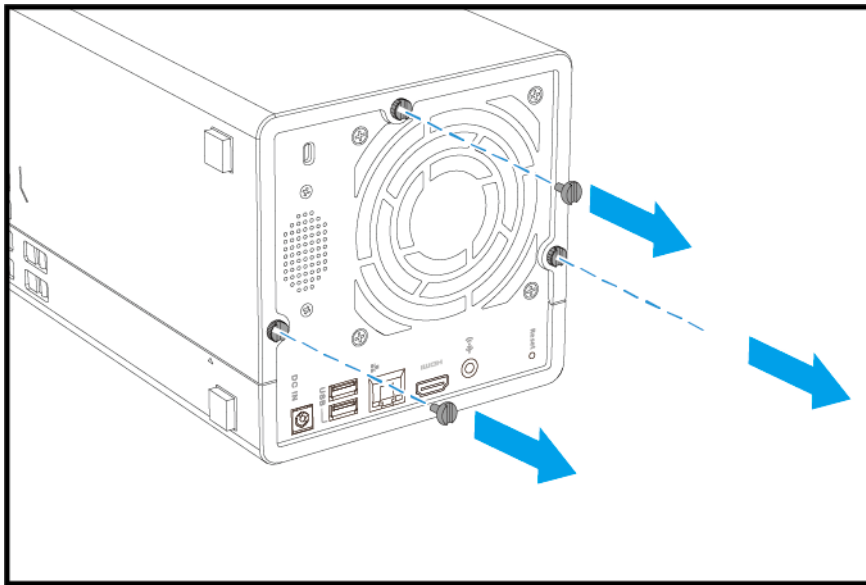
TS-351 drive tray caddies require additional 2.5-inch drive tray bases for installing 2.5-inch drives. Tray bases are an optional, separate purchase and are not included in the packaging for the TS-351. Tray bases can be purchased from QNAP or an authorized reseller. For details, go to <https://shop.qnap.com/>.



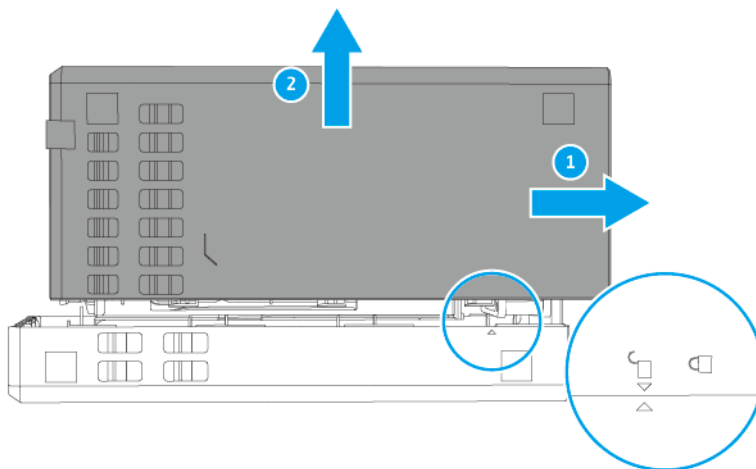
**Warning**

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

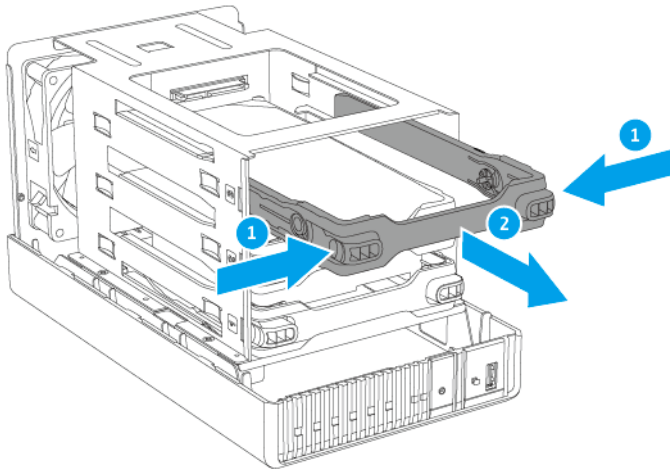
1. Power off the NAS.
2. Remove the case cover.
  - a. Position the NAS on its left side.
  - b. Remove the screws that secure the case cover to the chassis.



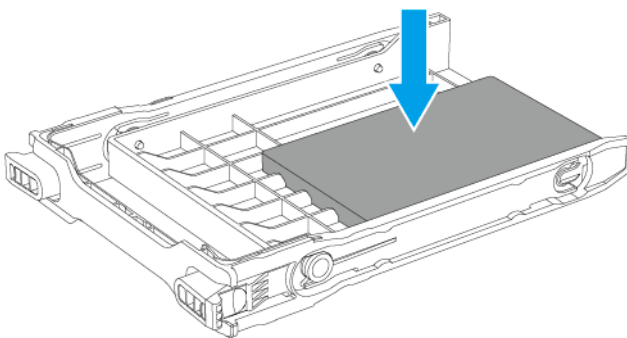
- c. Slide the cover to the right to detach it from the chassis.
- d. Lift the cover off the NAS.



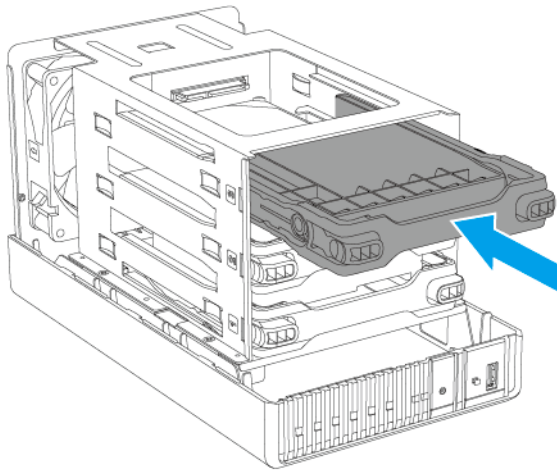
3. Remove a drive tray caddy.
  - a. Squeeze the clips.
  - b. Pull out the caddy.



4. Attach a 2.5-inch drive tray base.  
For details, see [Attaching 2.5-inch Drive Tray Bases](#).
5. Install the drive on the tray.

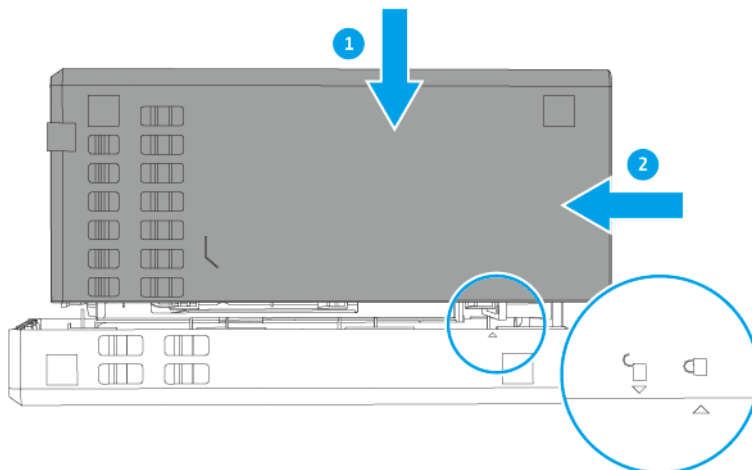


6. Slide the tray into the drive bay.

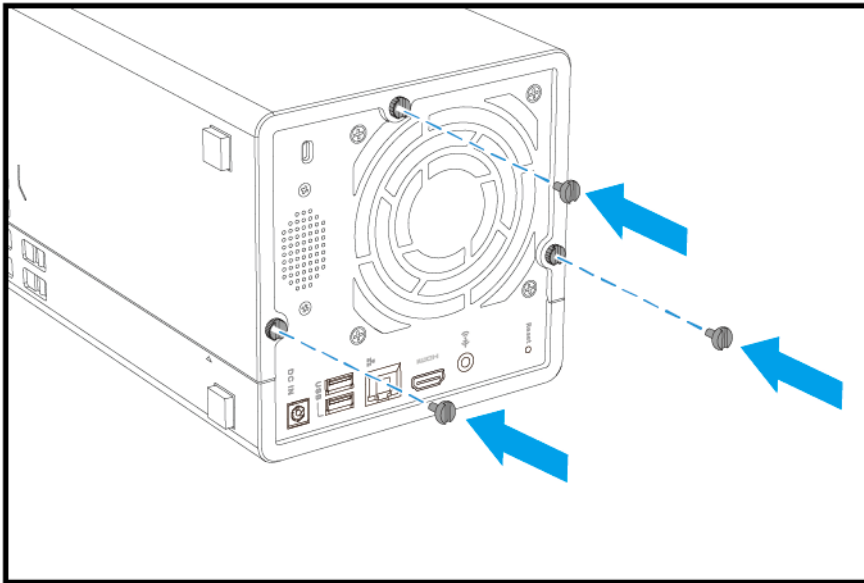


**7. Attach the case cover.**

- a. Place the cover on the NAS.
- b. Align the cover with the grooves on the case.
- c. Slide the cover to the left to secure it to the chassis.



- d. Attach the screws to the back of the NAS.

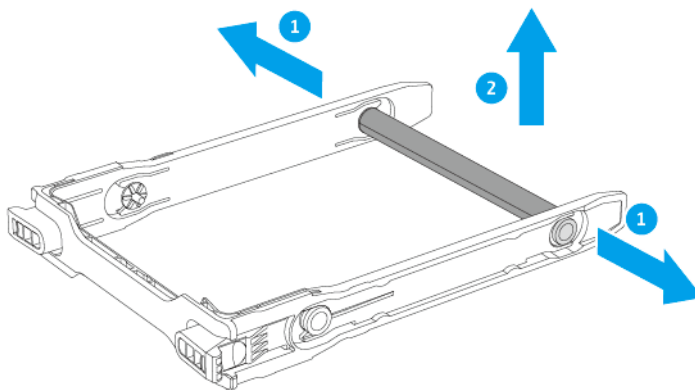


e. Place the NAS in its normal upright position.

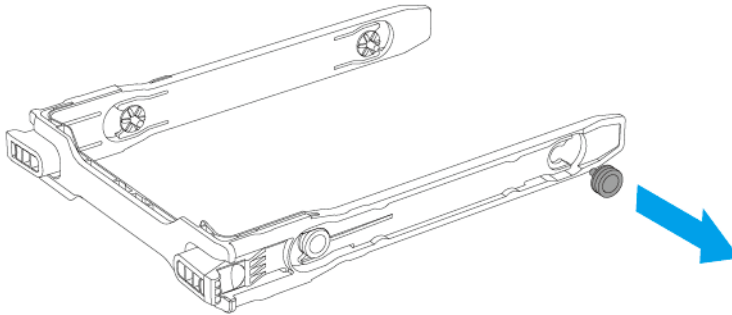
8. Power on the NAS.

### Attaching 2.5-inch Drive Tray Bases

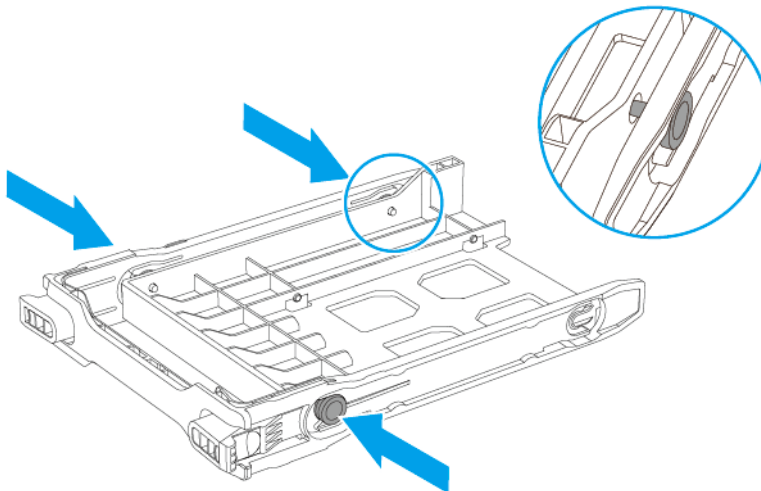
1. Gently pull the sides of the drive tray caddy to release the rod.
2. Remove the rod.



3. Remove the rear right pin from the tray caddy.

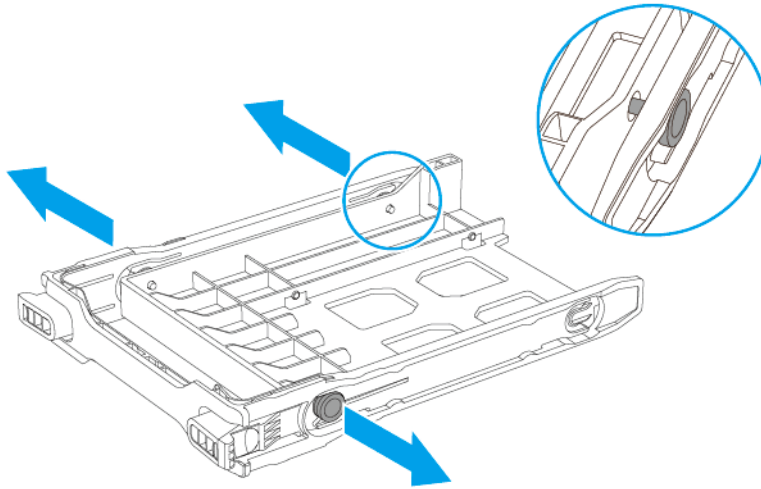


4. Align the holes on the tray base with the pins on the caddy.
5. Attach the pins to the tray base.

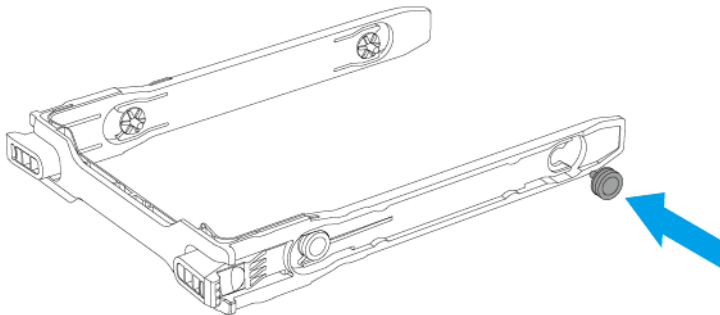


### Removing 2.5-inch Drive Tray Bases

1. Gently pull the sides of the drive tray caddy to remove the pins from the tray base.



2. Attach the rear right pin to the tray caddy.



### Installing M.2 Solid-state Drives

The TS-351 has two M.2 SSD slots. For a list of compatible M.2 SSDs, go to <https://www.qnap.com/compatibility>.

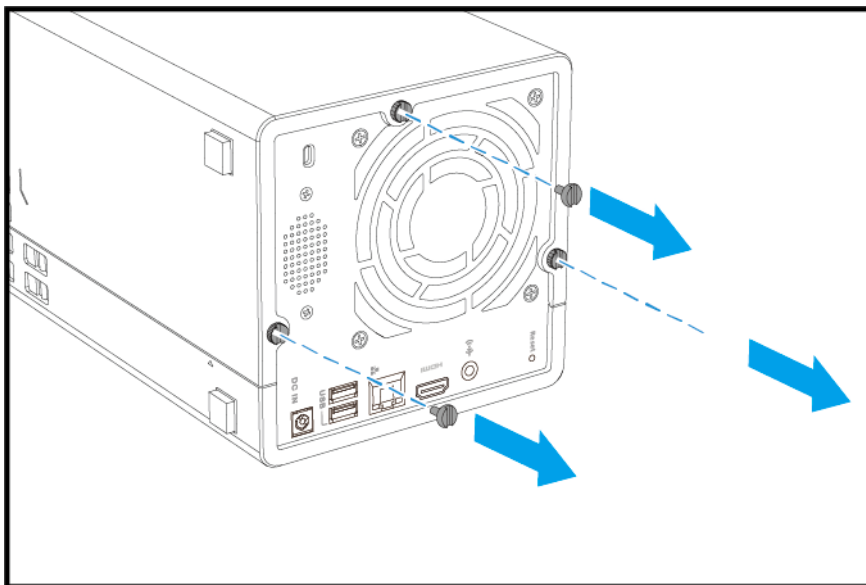
QNAP recommends installing heatsinks on M.2 SSD controllers to enhance cooling efficiency and ensure consistent performance.

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

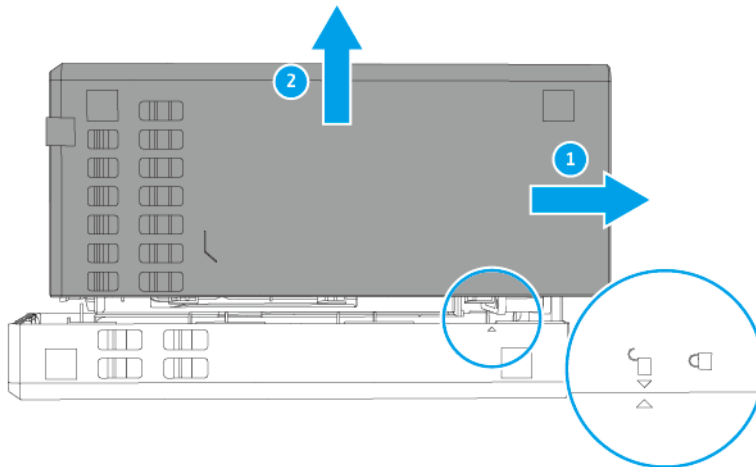


- Only qualified personnel should perform the following steps. Failure to follow instructions can result in serious injury or death.
- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
  - a. Position the NAS on its left side.
  - b. Remove the screws that secure the case cover to the chassis.

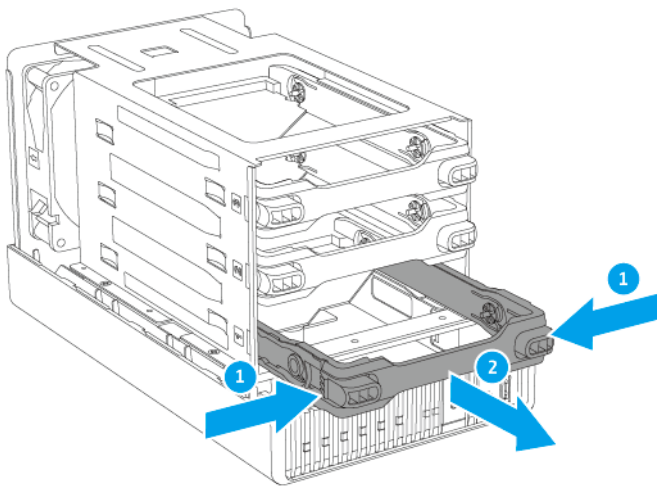


- c. Slide the cover to the right to detach it from the chassis.
- d. Lift the cover off the NAS.



**5. Remove each drive tray caddy.**

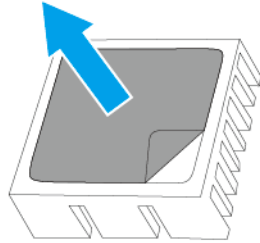
- a. Squeeze the clips.
- b. Pull out the caddies.



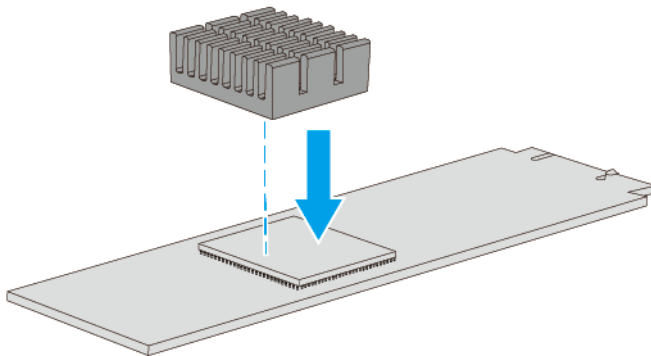
**6. Install a heatsink on the M.2 SSD controller.**

- a. Locate the controller on the M.2 SSD.  
The controller location varies depending on the model and manufacturer of the M.2 SSD. For details, refer to the documentation or contact the manufacturer.
- b. Remove the protective film from the bottom of the heatsink.





- c. Install the heatsink on the controller.

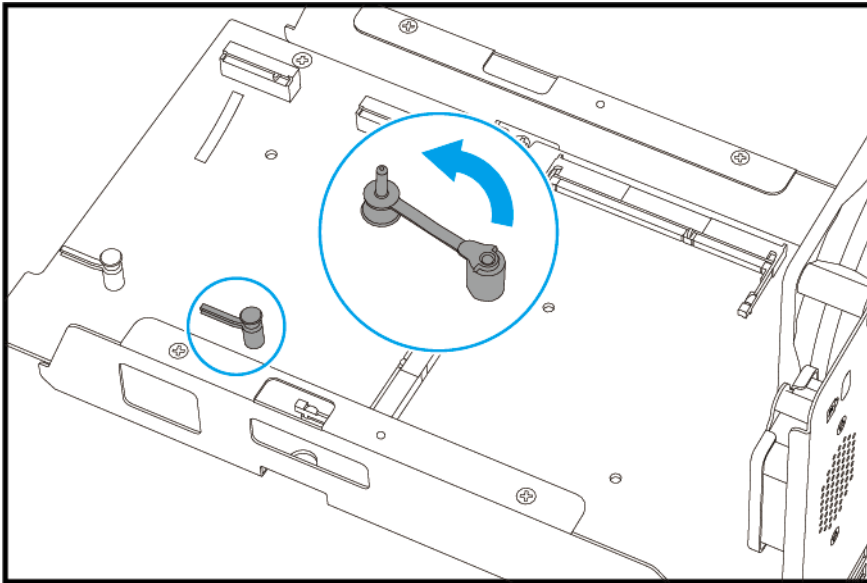


7. Install the M.2 SSD.

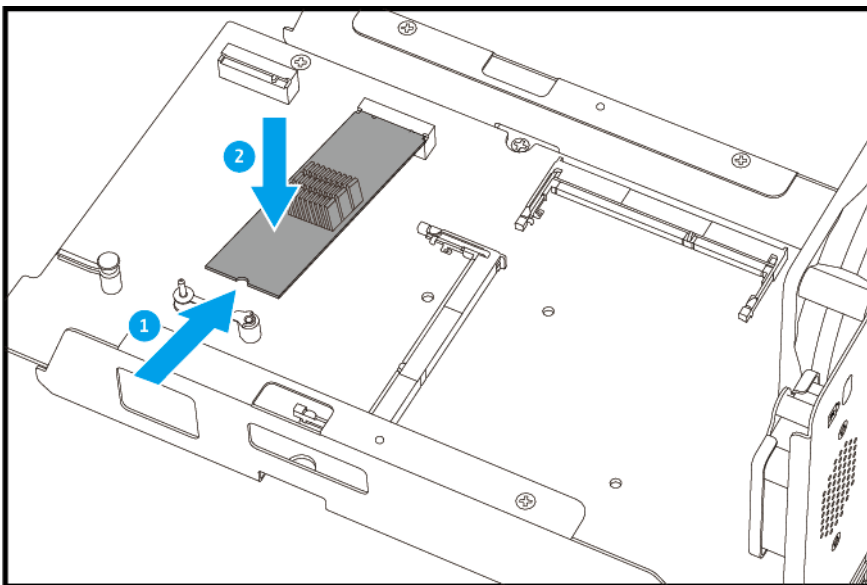
**Note**

The following installation images do not include the chassis.

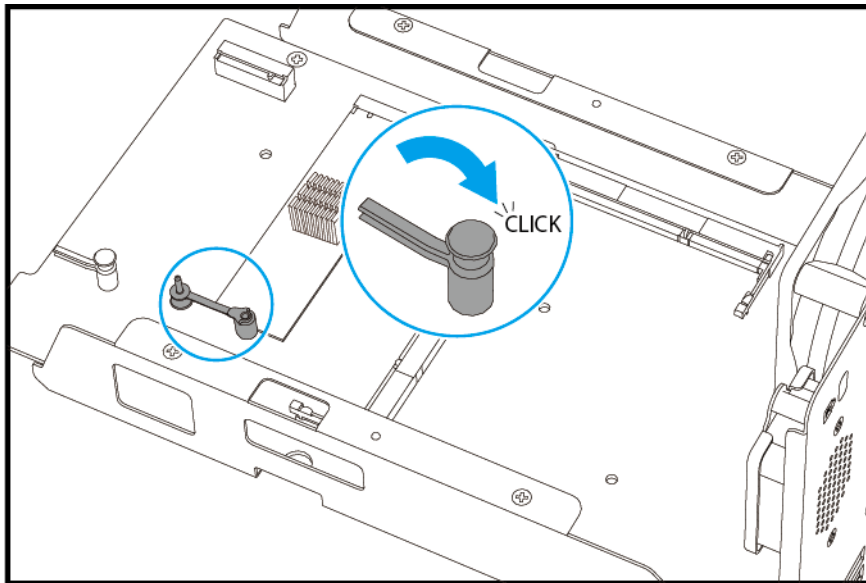
- a. Pull out the pushpin.



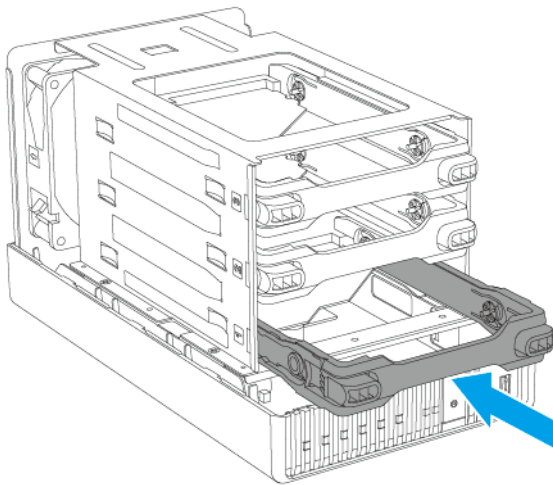
**b.** Insert the M.2 SSD.



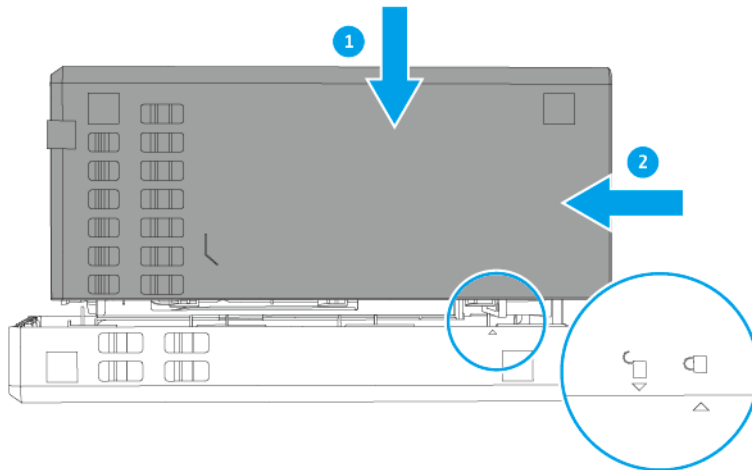
**c.** Insert the pushpin to secure the drive.



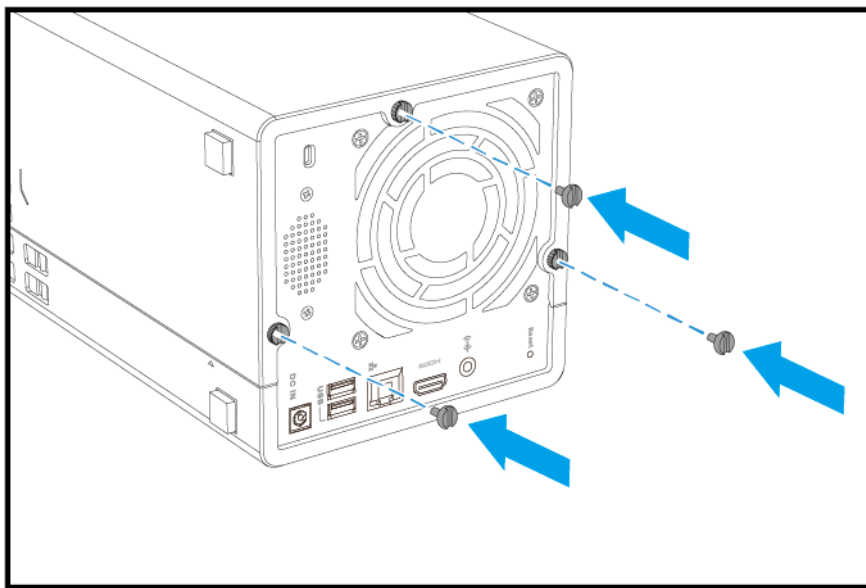
8. Optional: Install an additional M.2 SSD.
9. Slide each drive tray caddy back into the NAS.



10. Attach the case cover.
  - a. Place the cover on the NAS.
  - b. Align the cover with the grooves on the case.
  - c. Slide the cover to the left to secure it to the chassis.



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



e. Place the NAS in its normal upright position.

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

## Replacing Memory Modules

The TS-351 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.

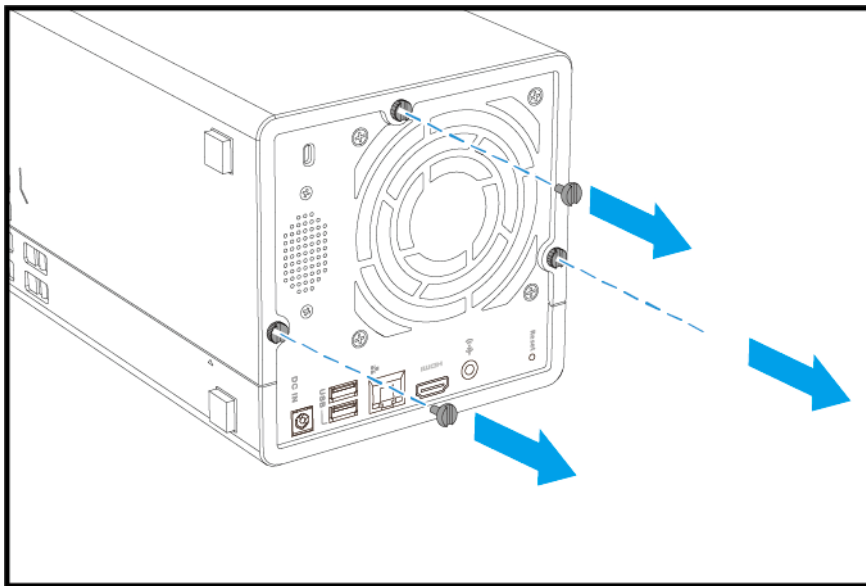
**Important**

The TS-351 comes with one memory module pre-installed in memory slot 1. When installing only one module, ensure that you install it in memory slot 1. A NAS with only one memory module installed in memory slot 2 will not function.

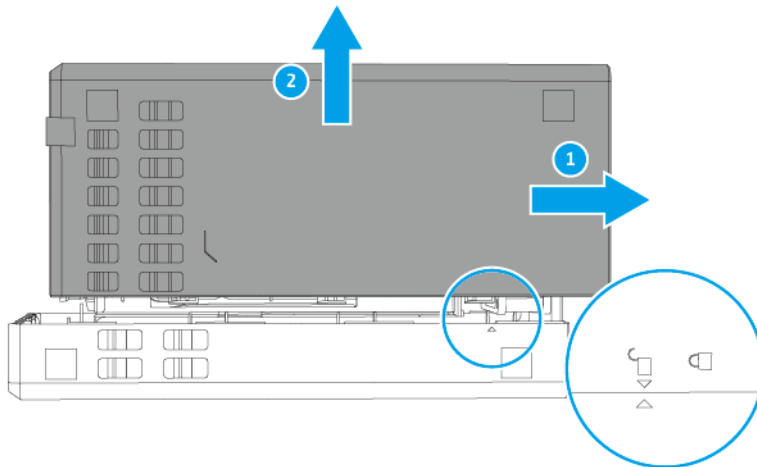
**Warning**

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

1. Power off the NAS.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
  - a. Position the NAS on its left side.
  - b. Remove the screws that secure the case cover to the chassis.

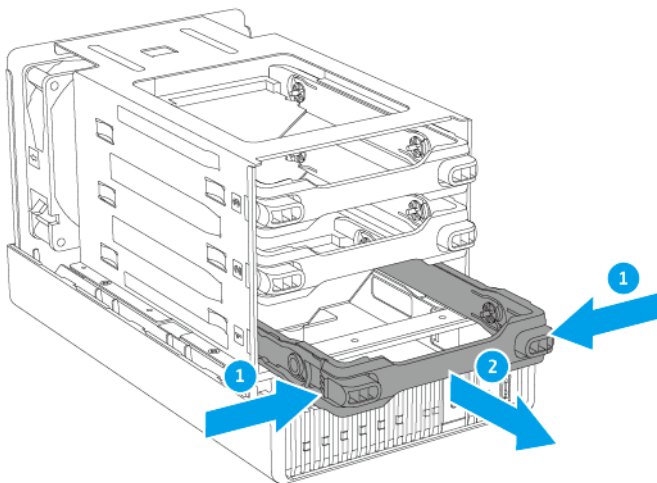


- c. Slide the cover to the right to detach it from the chassis.
- d. Lift the cover off the NAS.



5. Remove each drive tray caddy.

- a. Squeeze the clips.
- b. Pull out the caddies.



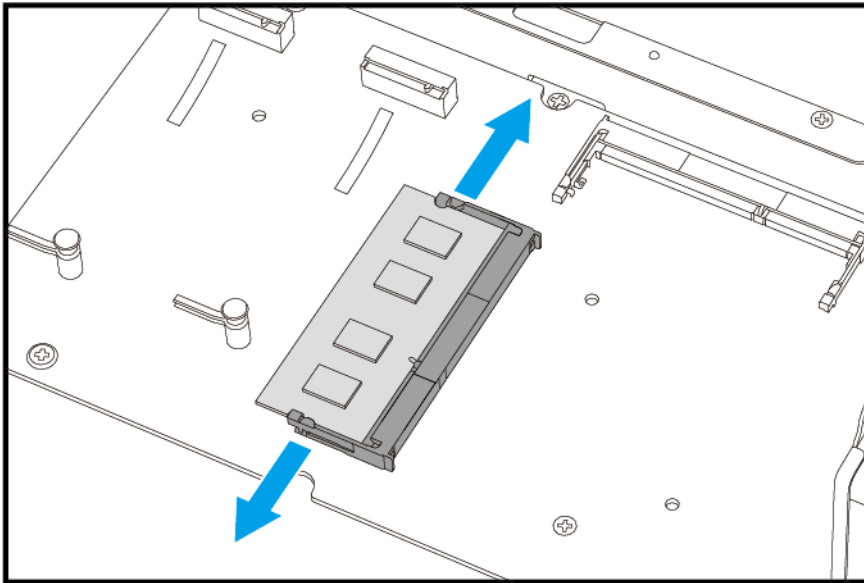
6. Remove an existing module.



**Note**

The following installation images do not include the chassis.

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



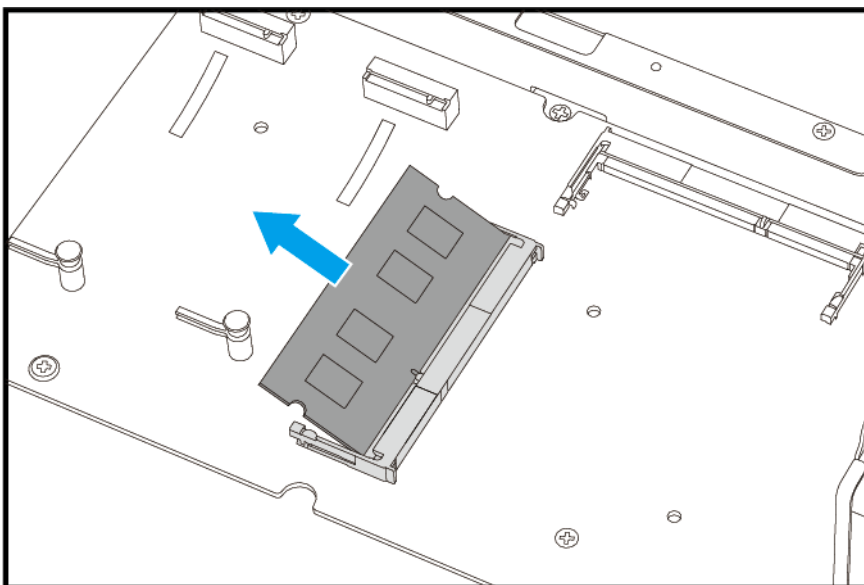
b. Verify that the module has tilted upward and is completely released from the slot.



**Warning**

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.

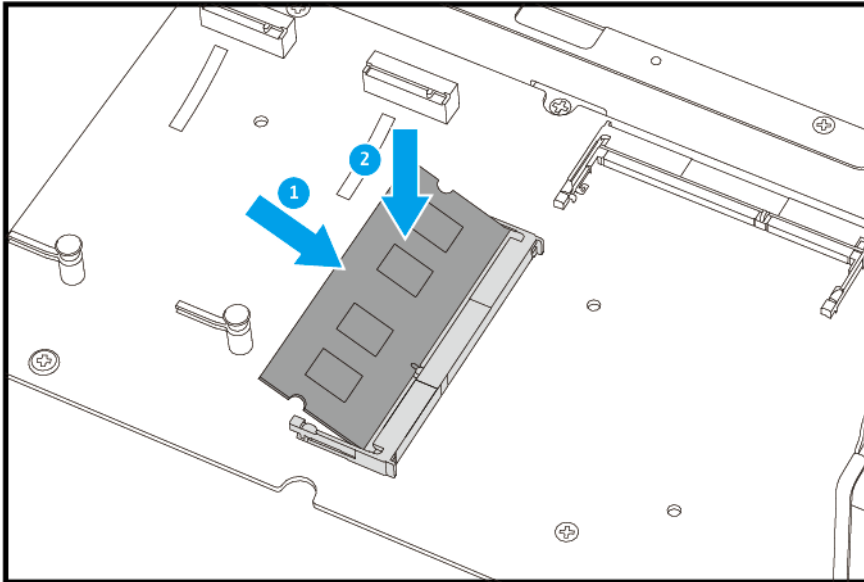


**Warning**

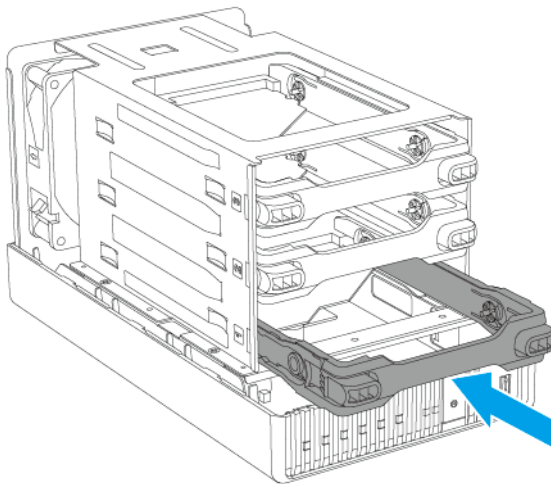
- Do not touch the components, particularly the metal connectors.
- Do not bend the module.

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.

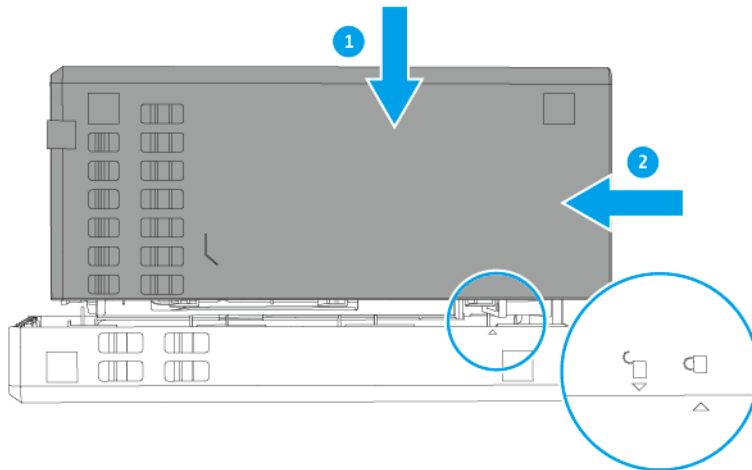


8. Slide each drive tray caddy back into the NAS.

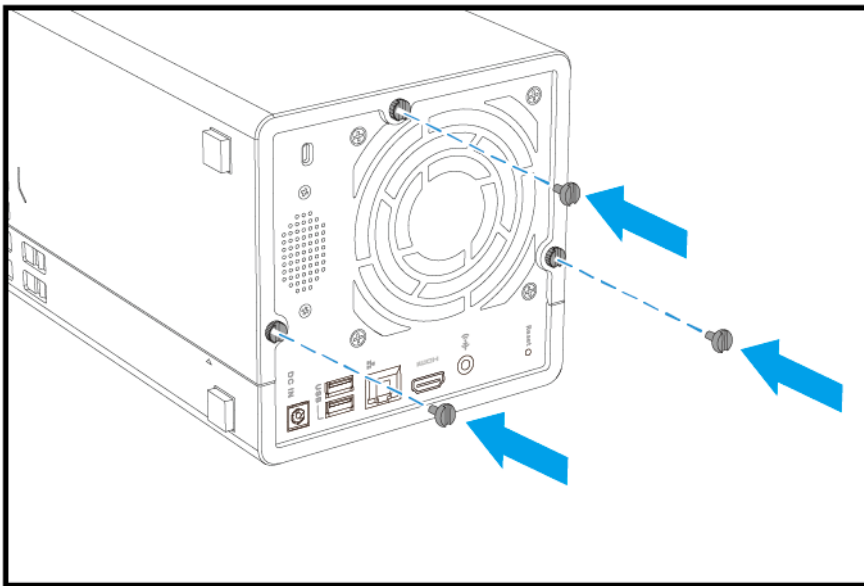


9. Attach the case cover.
  - a. Place the cover on the NAS.
  - b. Align the cover with the grooves on the case.
  - c. Slide the cover to the left to secure it to the chassis.





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



e. Place the NAS in its normal upright position.

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 TS-351 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>
Local installation	<p>If the NAS supports HDMI output, you can do the following:</p> <ul style="list-style-type: none"> <li>• Connect the NAS to the required hardware.</li> <li>• Complete the steps in the Smart Installation Guide wizard.</li> </ul> <p>For details, see <a href="#">Installing QTS Using an HDMI Connection</a>.</p>	<ul style="list-style-type: none"> <li>• Monitor</li> <li>• HDMI cable</li> <li>• USB keyboard or Remote control (not available on all models)</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. 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 in QTS, see the System Settings 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.   <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>

### USB One Touch Copy Button

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

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

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

## 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>A read/write error occurred while accessing 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>Hardware self-test error</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 not configured.</li> <li>A drive is not formatted.</li> </ul>
	Green	<ul style="list-style-type: none"> <li>The NAS is starting up.</li> <li>The NAS is ready.</li> </ul>
	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"> <li>• A USB device (connected to the front USB port) is detected.</li> <li>• A USB device (connected to the front USB port) is being removed from the NAS.</li> <li>• A USB device (connected to the front USB port of the NAS) is being accessed.</li> <li>• Data is being copied to or from a USB or eSATA device.</li> </ul>
	Blue	A USB device is detected in the front USB port.
	Off	<ul style="list-style-type: none"> <li>• No USB device is detected.</li> <li>• The NAS has finished copying data to or from the USB device connected to the front USB port.</li> </ul>

## 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 & 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`.

## Recovering Unintentionally Removed Healthy Drives

The NAS supports exclusive RAID recovery technology to recover failed RAID disk volumes from unintentional disconnection or removal of drives. Users can recover an inactive RAID 1, RAID 5, or RAID 6 volume to degraded mode, or an inactive RAID 0 and JBOD configuration to normal.

Disk Volume	RAID Recovery Support	Maximum Number of Removed Drives
Single	No	N/A
JBOD	Yes	1
RAID 0	Yes	1
RAID 1	Yes	1
RAID 5	Yes	2
RAID 6	Yes	3
RAID 10	No	N/A

## Support and Other Resources

QNAP provides the following resources:

Resource	URL
Documentation	<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

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

- a. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c. Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d. Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with

the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

- e. Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

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## END OF TERMS AND CONDITIONS

### FCC Notice

#### FCC Class B Notice



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

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



#### Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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



#### Important

Any modifications made to this device that are not approved by QNAP Systems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

### CE Notice



This QNAP NAS complies with CE Compliance Class B.

## SJ/T 11364-2006



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显示	0	0	0	0	0	0
印刷电路板	0	0	0	0	0	0
金属螺帽	0	0	0	0	0	0
电缆组装	0	0	0	0	0	0
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