



**QNAP**

# **TVS-951X**

## **User Guide**



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# 1. Preface





## About This Guide

This guide provides information on the QNAP TVS-951X NAS and step-by-step instructions on installing the hardware. It also provides instructions on basic operations and troubleshooting information.

## Audience

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

## Document Conventions

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

## 2. Product Overview

This chapter provides basic information about the QNAP TVS-951X NAS.

### About the TVS-951X


With a reliable dual-core processor, an HDMI port, and 1GbE and 10GBASE-T ports, the TVS-951X balances its compact size with a powerful feature set adaptable to a range of situations. Accommodating up to nine storage drives, the TVS-951X meets the storage, backup, restoration, and private cloud needs of most small to medium-sized businesses. The TVS-951X also features a hardware-accelerated encryption engine which keeps data secure.





### 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	TVS-951X
Ordering Information	
Ordering P/N	<ul style="list-style-type: none"> <li>• TVS-951X-2G</li> <li>• TVS-951X-8G</li> </ul>
Processor	
CPU	Intel® Celeron® 3865U dual-core 1.8 GHz processor
Architecture	64-bit
Encryption engine	AES-NI
Memory	
Pre-installed memory	<ul style="list-style-type: none"> <li>• 2 GB RAM: 1 x 2 GB DDR4</li> <li>• 8 GB RAM: 2 x 4 GB DDR4</li> </ul> <div style="margin-top: 10px;">  <h4>Important</h4> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.</li> </ul> </div>
Total memory slots	2 x SODIMM DDR4
Maximum memory	32 GB (2 x 16 GB)
Flash Memory	512 MB
Storage	
Drive bays	<ul style="list-style-type: none"> <li>• 5 x 3.5-inch SATA 6 Gbps bays</li> <li>• 4 x 2.5-inch SATA 6 Gbps bays</li> </ul>

Component	TVS-951X
Drive compatibility	<ul style="list-style-type: none"> <li>• 3.5-inch bays:               <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> </li> <li>• 2.5-inch bays:               <ul style="list-style-type: none"> <li>• 2.5-inch SATA solid state drives</li> </ul> </li> </ul>
Hot-swappable	Yes
Network	
10 gigabit Ethernet ports	1 x RJ45 <div style="margin-top: 10px;">  <b>Note</b> <ul style="list-style-type: none"> <li>• This port supports 10GbE, 5GbE, 2.5GbE, 1GbE and 100Mbps networking speeds.</li> <li>• A CAT6a or CAT7 cable is required to achieve 10GbE speeds (not included).</li> </ul> </div>
Gigabit Ethernet ports	1 x 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> <div style="margin-top: 10px;">  <b>Note</b> <p>You can use the One-Touch Copy button with this port.</p> </div> <ul style="list-style-type: none"> <li>• Rear: 3 x USB 3.0 Type-A</li> </ul>
HDMI outputs	1 x HDMI v1.4b, up to 4096 x 2304 resolution at 24Hz
Audio	<ul style="list-style-type: none"> <li>• 1 x 3.5 mm line-out jack</li> <li>• 1 x speaker</li> </ul> <div style="margin-top: 10px;">  <b>Note</b> <p>You cannot use the speaker and the line-out jack simultaneously.</p> </div>
Interface	
Buttons	<ul style="list-style-type: none"> <li>• Power</li> <li>• Reset</li> <li>• USB One Touch Copy</li> </ul>
IR sensor	1 <div style="margin-top: 10px;">  <b>Note</b> <p>The QNAP RM-IR004 remote control is an optional separate purchase.</p> </div>
Dimensions	
Form factor	Tower

Component	TVS-951X
Dimensions (H x W x D)	182 x 225 x 224 mm ( 7.17 x 8.86 x 8.82 inch)
Net weight	3.53 kg (7.78 lbs)
Other	
Power supply unit	120W, 100-240V AC, 50/60Hz
System battery	CR2032 lithium battery (3V, 225mAh)  <b>Warning</b> When replacing the system battery, only use the same battery type as the existing one to avoid explosions.
Sound level	17.6 dBA  <b>Note</b> The sound level was tested at a bystander position, which is within one meter from the NAS. The test NAS operated at low speed with the maximum number of drives installed.
Fans	1 x 140 mm, 12V  <b>Warning</b> To avoid serious injuries, do not touch the fans while the NAS is connected to a power source.
Operating temperature	0 to 40°C (32 to 104°F)
Relative humidity	<ul style="list-style-type: none"> <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**

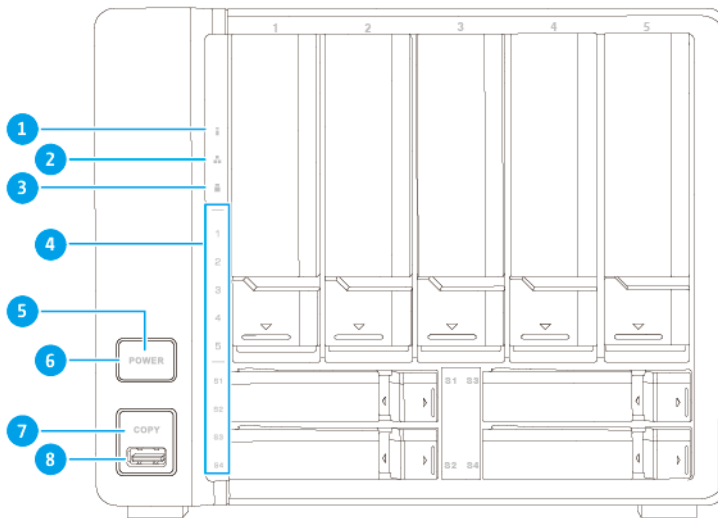
Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

## Package Contents

Item	Quantity
TVS-951X NAS	1
AC power adapter	1
Power cord	1
Ethernet cable	2
Screws for 2.5-inch drives	24
Screws for 3.5-inch drives	32
Quick Installation Guide (QIG)	1

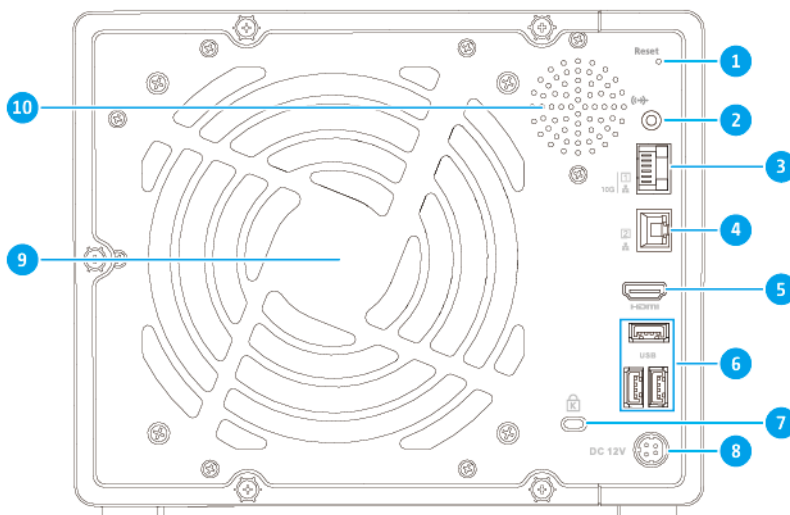
## Components

## Front Panel



No.	Component	No.	Component
1	Status LED	5	IR sensor
2	LAN LED	6	Power button
3	USB LED	7	USB One Touch Copy button
4	Drive LEDs	8	USB One Touch Copy port

## Rear Panel

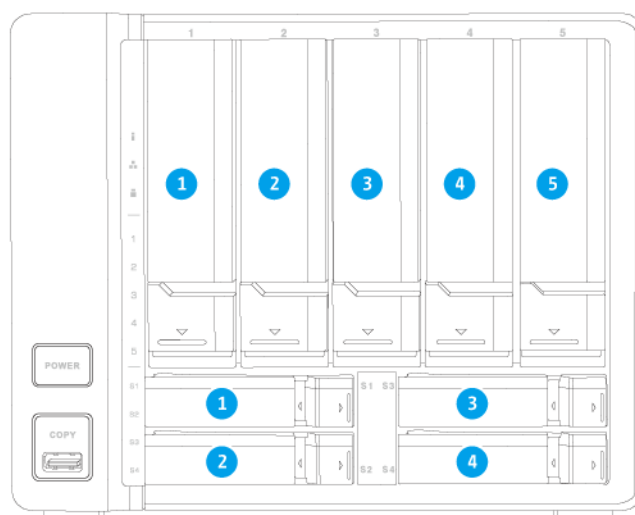


No.	Component	No.	Component
1	Reset button	6	USB 3.0 Type-A ports



No.	Component	No.	Component
2	3.5 mm speaker jack	7	Kensington security slot
3	10GBASE-T RJ45 port	8	Power input
4	Gigabit Ethernet RJ45 port	9	System fan
5	HDMI Port	10	Speaker

## Front Drive Numbering



## Installation Requirements

Category	Item
Environment	<ul style="list-style-type: none"> <li>Room temperature: 0 to 40°C (32 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, and 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>Phillips #1 or #2 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 Hard Drives or Solid State Drives on 3.5-inch Trays](#)
- [Installing Solid State Drives on Solid State Drive Trays](#)

3. Connect the power cord and all applicable cables.
4. Power on the NAS.
5. Install QTS.  
For details, see [QTS Installation](#).
6. Log on to QTS.

## 3. Installation and Configuration

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

### Hardware Installation

This section provides information on installing drives and memory modules.

### Drive Installation

The TVS-951X is compatible with 3.5-inch, 2.5-inch hard drives, and 2.5-inch solid state drives.

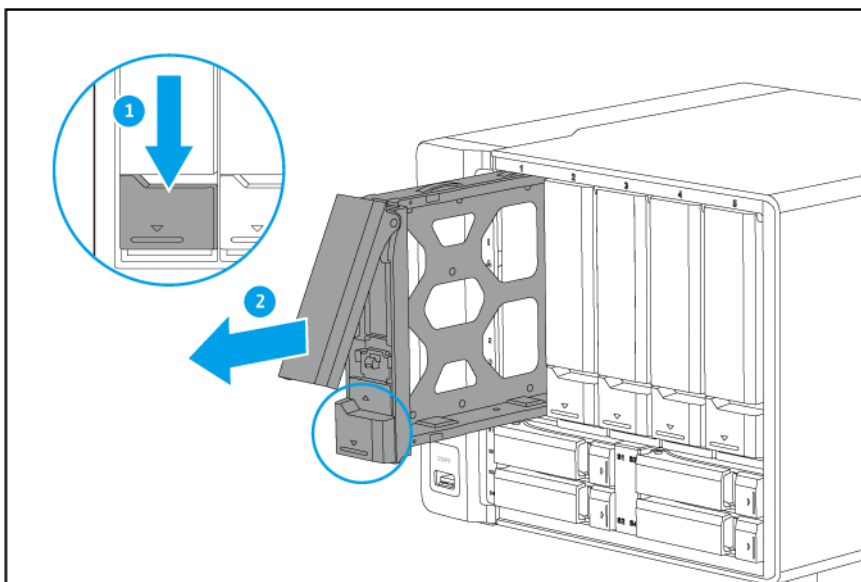
#### Installing 3.5-inch Hard Drives on 3.5-inch Trays



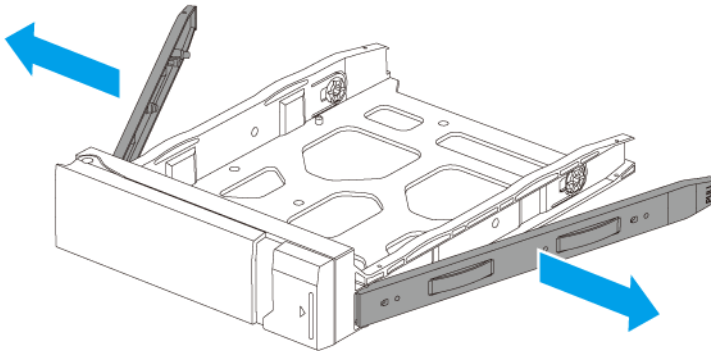
#### Warning

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

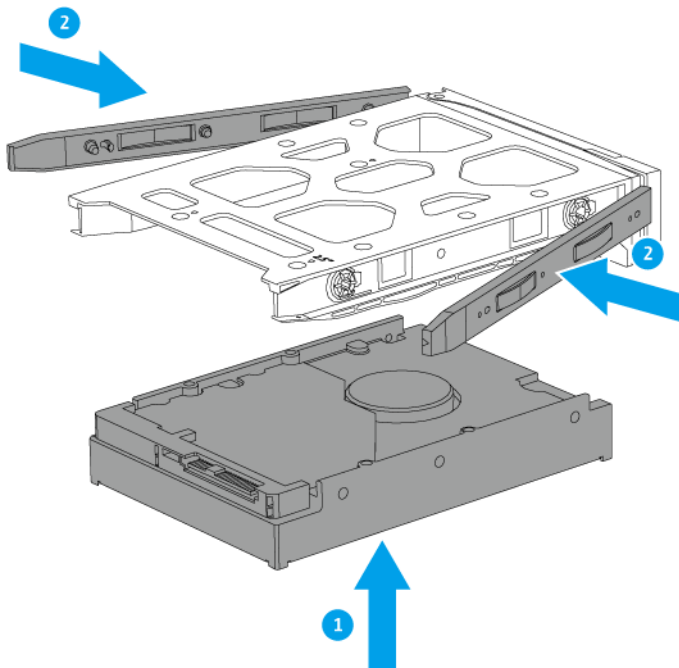
1. Power off the NAS.
2. Remove the drive tray.
  - a. Slide the lock down.
  - b. Pull the tray handle outward.
  - c. Pull the tray out.



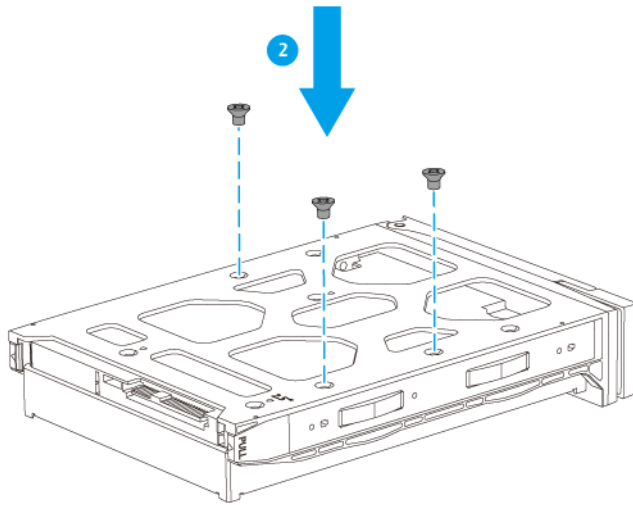
3. Install a drive on the tray.
  - a. Remove the fastening panels from the sides of the drive tray.



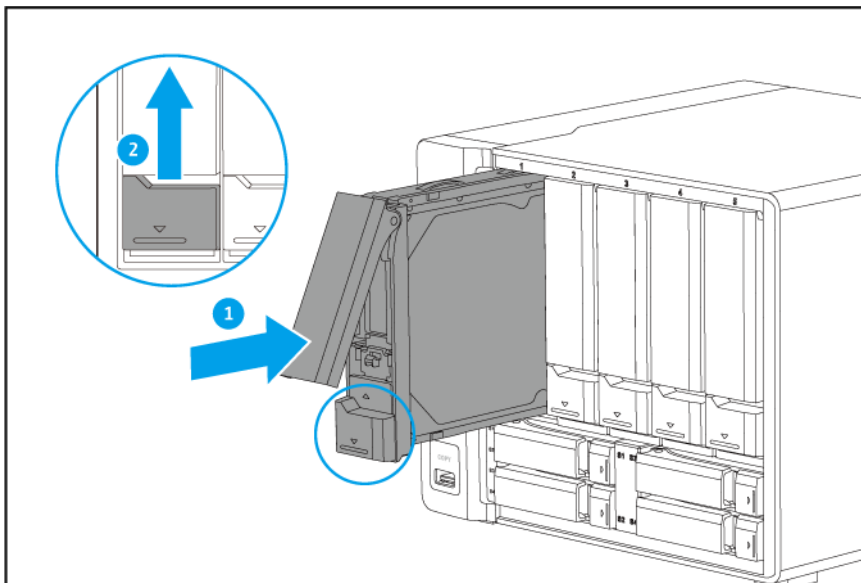
- b.** Place the drive on the tray so that the holes on the sides of the drive are aligned with the holes on the sides of the tray.
- c.** Attach the fastening panels to lock the drive to the tray.



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



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



5. Power on the NAS.

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

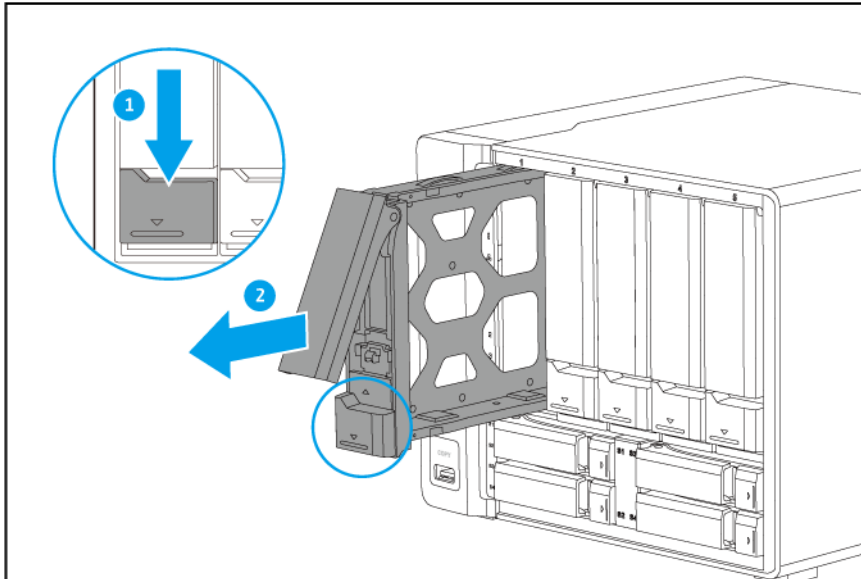


#### Warning

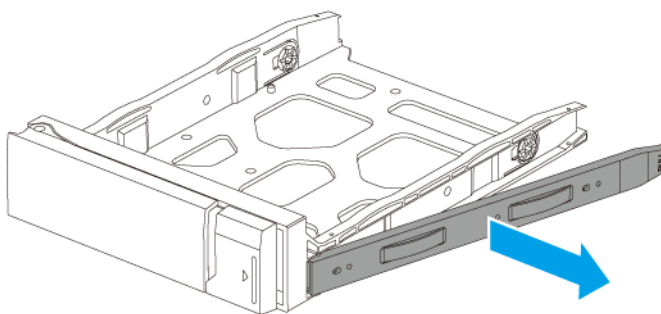
- Installing a drive deletes all data on the drive.

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

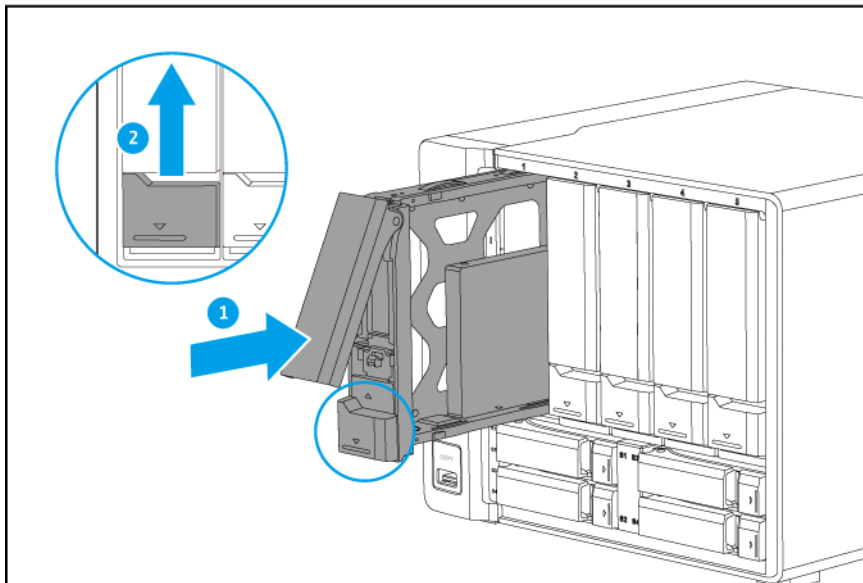
1. Power off the NAS.
2. Remove the drive tray.
  - a. Slide the lock down.
  - b. Pull the tray handle outward.
  - c. Pull the tray out.



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







5. Power on the NAS.

### Installing Solid State Drives on Solid State Drive Trays

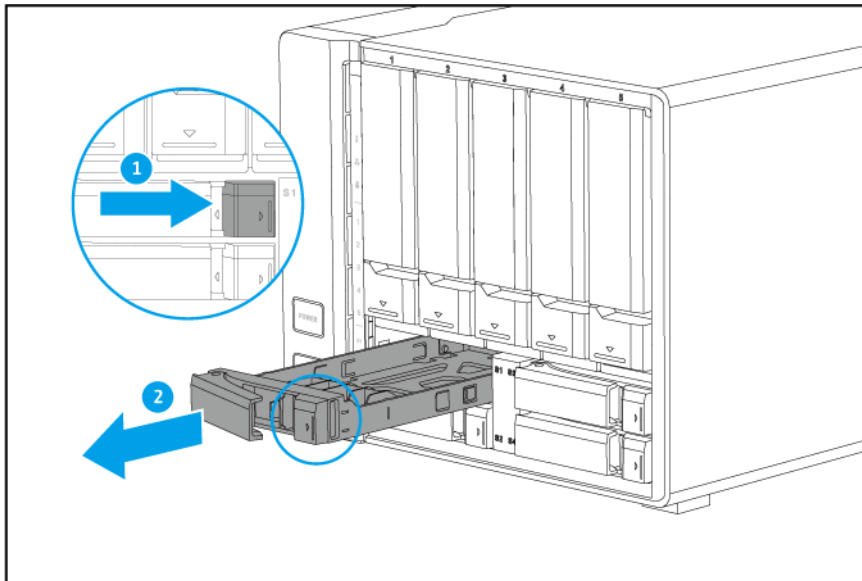


#### Warning

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

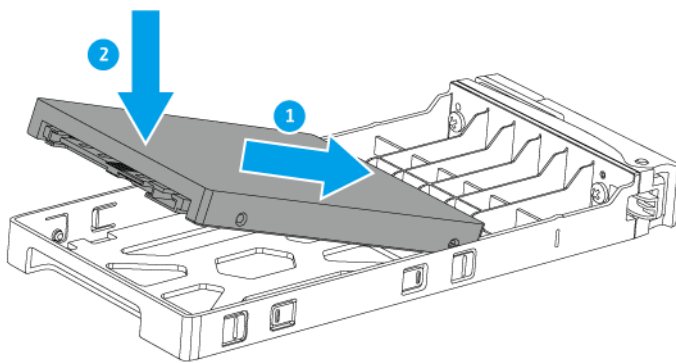
1. Power off the NAS.
2. Remove the drive tray.
  - a. Slide the lock to the right.
  - b. Pull the tray handle outward.
  - c. Pull the tray out.





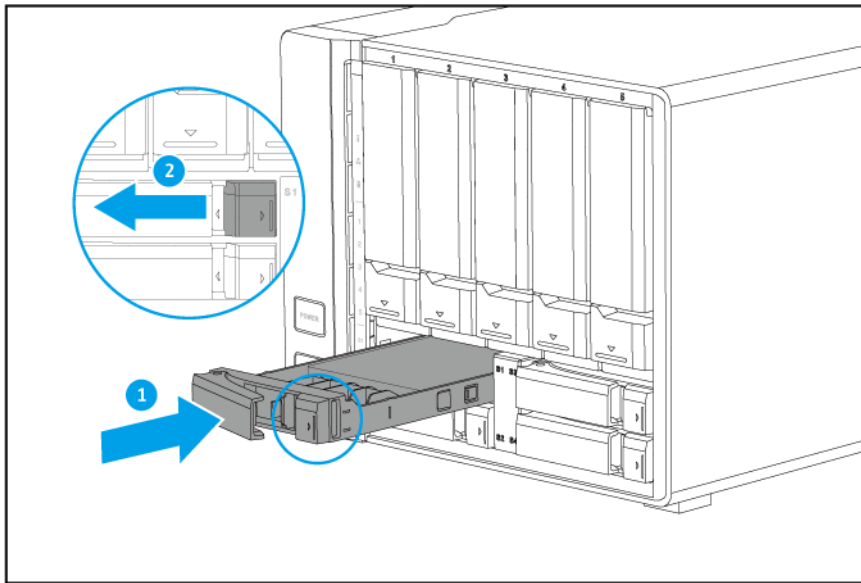
**3. Install a drive on the tray.**

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



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

- a. Slide the tray into the drive bay.
- b. Push the handle.
- c. Slide the lock to the left.



5. Power on the NAS.

## Replacing Memory Modules



### Important

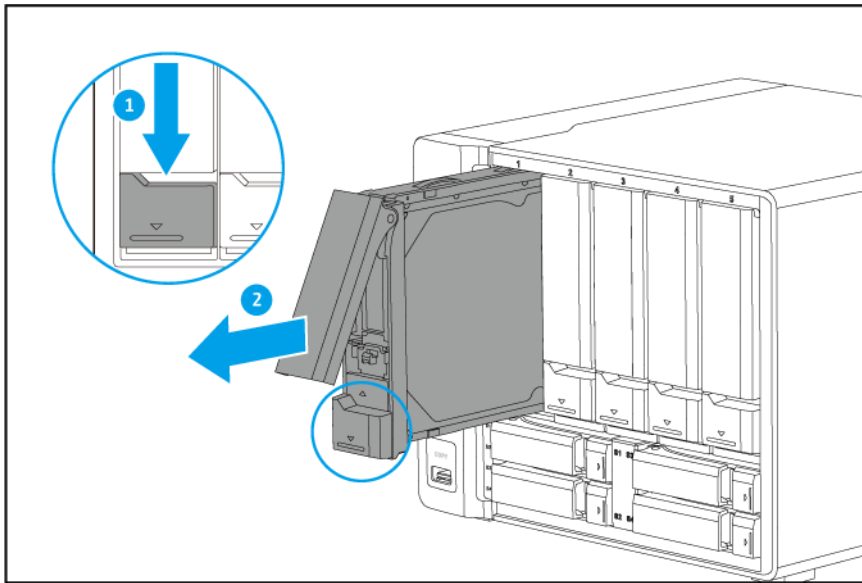
Use only QNAP memory modules to maintain system performance and stability. You can purchase QNAP memory modules from authorized resellers.



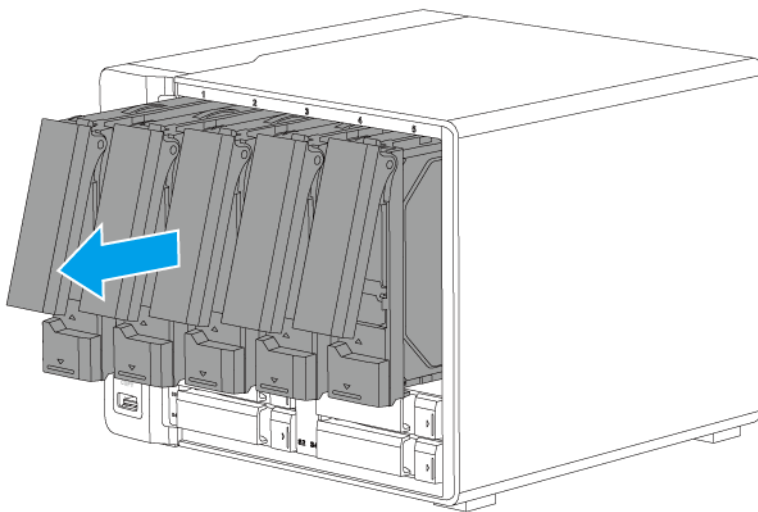
### Warning

- 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.

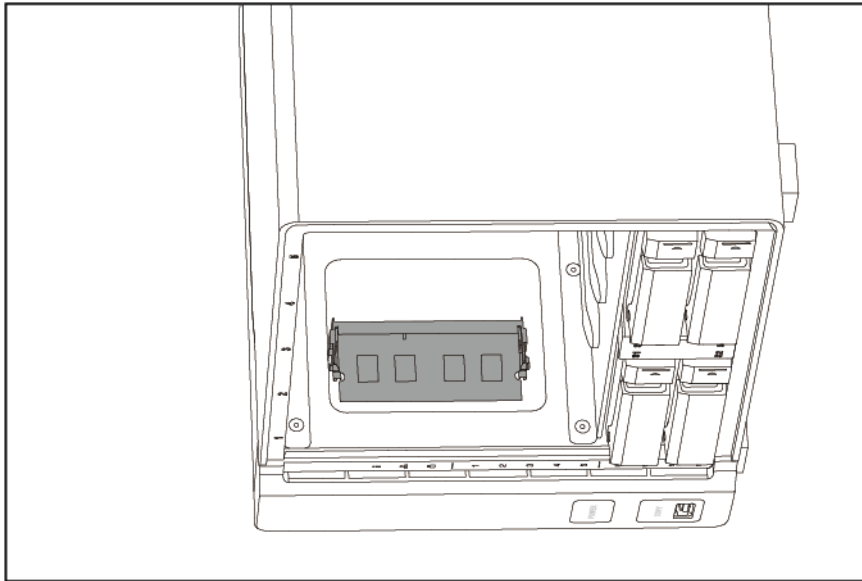
1. Power off the NAS.
2. Unplug the power cord from the electrical outlet.
3. Disconnect all cables and attached devices.
4. Remove drive trays 1 to 5.
  - a. Slide the lock down.
  - b. Pull the tray handle outward.
  - c. Pull the tray out.



d. Repeat the process for the remaining trays.

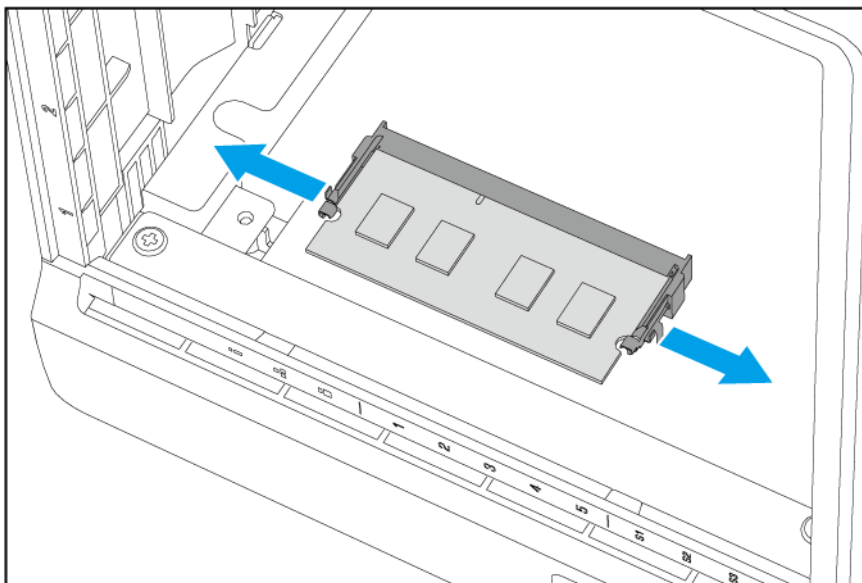


5. Place the NAS on its left side.



6. Remove the existing memory module.

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

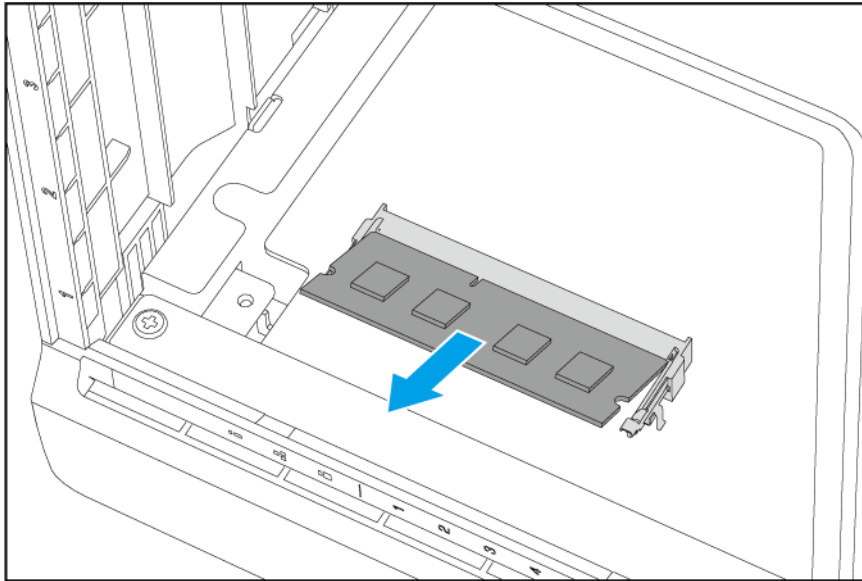


- b. Hold the module by the edges and then carefully slide it out of the slot.



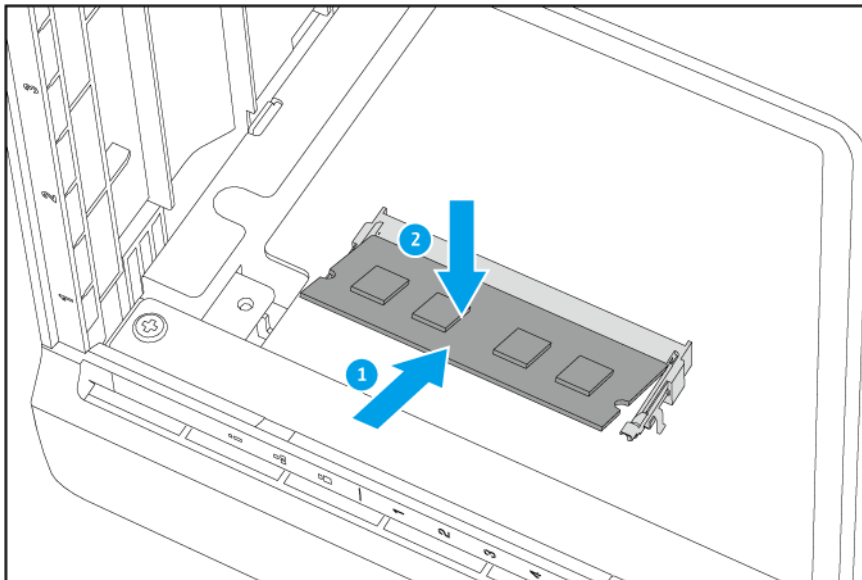
**Warning**

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



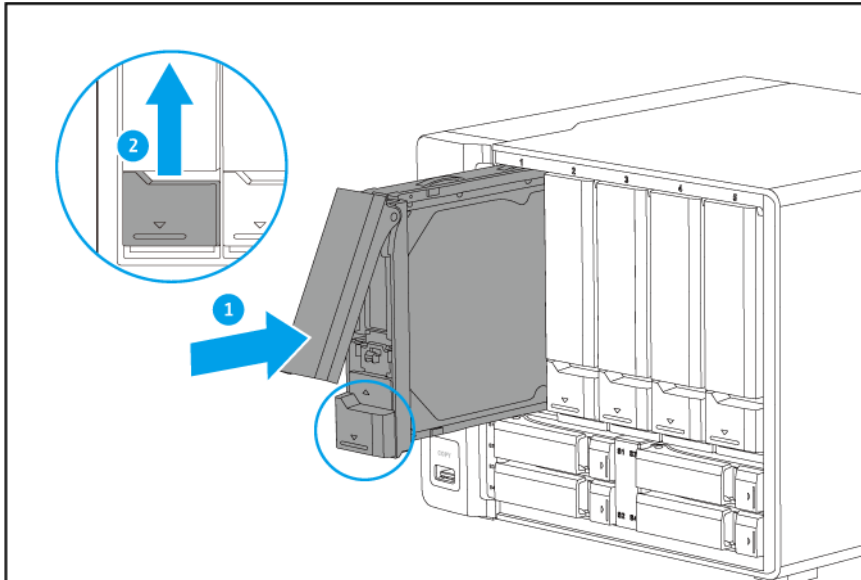
**7. Install a new module.**

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

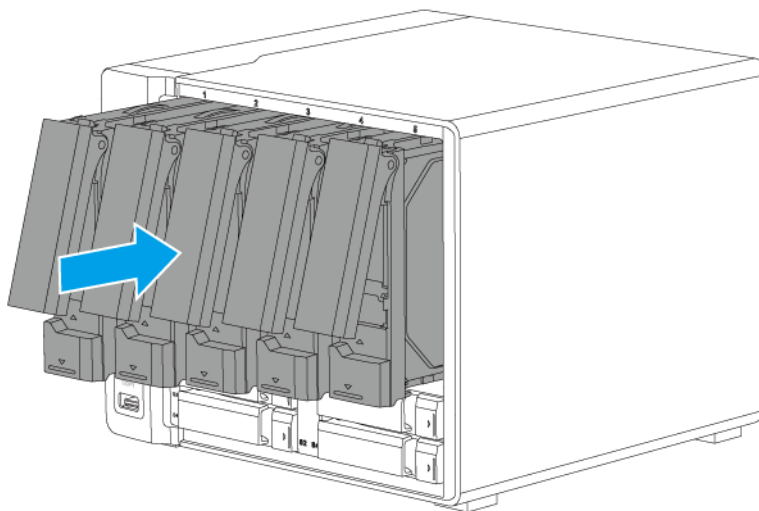


- 8. Place the NAS in its normal upright position.**
- 9. Load drive trays 1 to 5 into their drive bays.**
  - a. Slide the tray into the drive bay.

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



- d. Repeat the process for the remaining trays.



- 10. Connect all cables and external attachments.
- 11. Power on the NAS.
- 12. 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-951X 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. Select **Configure disks later**.

**Note**

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

15. Click **Next**.
16. Select **No**.

**Note**

- Enabling the multimedia functions allows you to install multimedia applications after configuring the disks in Storage Manager.
- For details on enabling multimedia functions on QTS, see the System Administration section of the QTS User Guide.

17. Click **Next**.
18. Review the settings.
19. Click **Apply**.  
A confirmation message appears.

**Warning**

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

20. Click **Confirm**.



QTS is installed.

## Installing QTS Using the Cloud Key



### Warning

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

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

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

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



### Note

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

The installation wizard opens in the default web browser.

5. Create an account or sign in to myQNAPcloud.



### Note

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

6. Specify the myQNAPcloud device name for the NAS.



### Note

The myQNAPcloud device name is used when remotely accessing the NAS.

7. Optional: Select **CloudLink**.



### Note

- CloudLink allows you to remotely access the NAS without having to configure port forwarding on your router. You can remotely access the NAS by logging into QTS or by using mobile apps.
- You can also enable CloudLink by installing the CloudLink app on the NAS.

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

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

10. Specify the following information.

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

- **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.

11. Click **Next**.

12. Specify the time zone, date, and time.



**Tip**

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

13. Click **Next**.

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

15. Click **Next**.

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

17. Click **Next**.

18. Select **Configure disks later**.



**Note**

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

19. Click **Next**.

20. Select **No**.



**Note**

- Enabling the multimedia functions allows you to install multimedia applications after configuring the disks in Storage Manager.
- For details on enabling multimedia functions on QTS, see the System Administration section of the QTS User Guide.

21. Click **Next**.

22. Review the settings.

23. Click **Apply**.  
A confirmation message appears.



**Warning**

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

24. Click **Confirm**.  
QTS is installed.

## 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 monitor 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 Manager.  
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 Manager 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>An error occurred when accessing (read/write) the data.</li> <li>A bad sector is detected on the hard drive.</li> <li>The NAS is in degraded read-only mode (two member drives failed in RAID 5 or RAID 6 but the data can still be read).</li> <li>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 starting up.</li> <li>The NAS is not configured.</li> <li>A drive is not formatted.</li> </ul>
	Green	The NAS is ready.
	Off	All drives are in standby mode.
LAN	Orange	A read/write error occurred while another device is accessing data.
	Flashes orange	The NAS is being accessed from the network.

LED	Status	Description
Drive	Flashes red	The 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.
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 Manager > Storage > Disks/VJBOD** .
3. Locate the failed drive.
4. Prepare a new hard drive with a capacity that is the same as or larger than the failed hard drive.
5. Remove the failed drive from the NAS.
6. Wait for 20 seconds or until the NAS beeps twice.
7. Remove the failed drive from the drive tray.
8. Insert the new drive into the drive tray.
9. Install the new drive.  
The NAS beeps twice.
10. Go to **Main Menu > Storage Manager > Storage Space** .
11. Locate the volume that contains the new drive and then verify that the status is *Rebuilding*.

## Recovering Unintentionally Removed Healthy Drives

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

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

## Support and Other Resources

QNAP provides the following resources:

Resource	URL
Documentation	<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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## 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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壳体	0	0	0	0	0	0
显示	0	0	0	0	0	0
印刷电路板	0	0	0	0	0	0
金属螺帽	0	0	0	0	0	0
电缆组装	0	0	0	0	0	0
风扇组装	0	0	0	0	0	0
电力供应组装	0	0	0	0	0	0
电池	0	0	0	0	0	0

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