



**QNAP**

# TS-431KX

TS-431KX

TS-431X3

**用户指南**

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# 1. 重要信息

## 原始包装

请保留原始包装和包装材料。如果要产品退货或寄回进行修理，请使用原始包装以免损坏。

对于因包装不当受损的产品，QNAP 保留不提供退款或保修服务的权利。

## 硬件缺陷

如果您的 QNAP 产品有硬件方面的缺陷，请将产品退回 QNAP 或 QNAP 授权的服务中心进行维修或更换。您本人或未经授权的第三方对产品进行的任何维修或维护流程均会使保修失效。

对于因未经授权进行的修改和安装不受支持的第三方应用程序而造成的任何损坏或数据丢失，QNAP 概不负责。

有关详细信息，请参见 [QNAP 产品保修服务条款](#)。

## 安全信息

以下说明有助于确保个人安全和环境安全。在执行任何操作之前，请仔细阅读这些说明。

### 一般说明

- 设备应存放在通过器具、锁和钥匙或任何安保措施限制进入的安全场所。
- 只有经过授权并掌握技能的合格人员才能实际接触设备，相关人员需了解所有限制措施、安全预防措施和安装维护流程。

### 警告



为避免潜在伤害或组件的损坏，请务必等硬盘和其他内部系统组件冷却后再触碰。



请执行静电放电 (ESD) 规程，以避免可能的人员受伤或组件受损。

## 电源

### 警告



为降低失火或触电风险，请确保只将电源线连接到接地良好的电源插座。



配备冗余电源的设备可能有一条或多条电源单元 (PSU) 线。为避免受到严重伤害，安装或更换系统组件前，经培训的维修技师必须先从设备拔下所有电源单元线。

## 运动的部件

### 警告



**转动的风扇叶片：** 在设备连接到电源时，使您的身体各部位远离任何正在转动的风扇叶片。



**运动的组件：** 使您的身体各部位远离任何正在运动的其他组件。

设备不适合在儿童可能会出现的使用场所使用。

## 系统电池

### 警告



#### 摄入危险

- 此产品配有纽扣电池。
- 请避免儿童接触电池。
- 如果被吞食，锂纽扣电池可能会在 2 小时内导致严重或致命伤害。
- 如果您认为可能电池已被吞食或部于身体的某个部位，请立即就医求助。

- 为避免潜在的电池爆炸、导致人员受伤或组件受损，请确保使用同型电池更换现有电池。
- 请按当地法规或电池制造商的指示正确处置使用过的电池。
- 即使是使用过的电池，也可能导致严重伤害或死亡。
- 有关诊疗信息，请致电当地中毒控制中心。

- 有关设备中纽扣电池类型和电压的信息，请参见硬件规格表。
- 非充电电池不可充电。
- 请勿强行放电、充电、拆卸、加热或焚烧。这样做可能会导致因通风、泄漏或爆炸造成的化学烧伤而导致的伤害。
- 确保电池按照极性（+ 和 -）正确安装。
- 请勿将新旧电池或不同品牌、不同类型的电池（如碱性电池、碳锌电池、充电电池等）混用。
- 对于长时间不使用的设备，请根据当地法规取出并立即回收或处理电池。
- 始终完全固定电池盒。如果电池盒无法牢固关闭，请停止使用本产品，取出电池，并将电池置于儿童接触不到的地方。

## 导轨套件

机架式型号可能需要导轨套件以便安装到服务器机架或机柜上。

为确保设备和人身安全，在安装导轨套件和安装设备之前，请仔细阅读导轨套件的安装说明。

要检查您的设备是否为机架式设备，请参见硬件规格表。

### 警告

- 当导轨套件安装在服务器机架上时，除安装或拆卸设备外，请勿将导轨完全展开或拔掉门锁。
- 如果导轨完全展开并拔掉门锁，可能会导致重型设备坠落。这可能会导致设备损坏，以及严重甚至致命的伤害。
- 在准备导轨以安装或拆卸设备前，请仔细阅读并确保理解安装说明。
- 安装或拆卸设备时，请勿在设备或导轨上放置任何物品或增加任何额外的负重。
- 安装设备时，请将设备完全推入服务器机架，使导轨完全锁住，并将设备固定在服务器机架上。

## 2. 产品概述

本章提供有关 QNAP TS-431KX 和 TS-431X3 NAS 的基本信息。

### 关于 TS-431KX

TS-431KX 由 Annapurna Annapurna Labs Alpine AL-214 1.7 GHz 处理器提供支持，具有强大的多任务和平稳的数据流处理能力。TS-431KX 专为适应繁忙的办公环境而打造，内置了 AES 256 位加密引擎，可确保兼顾数据安全和性能。此机型特有一个 USB 一键复制端口，可快速方便地实现备份和数据传输。TS-431KX 支持 4 硬盘架和 SATA 6 Gbps，可快速传输数据。此型 NAS 还提供一个 10 Gb 以太网 SFP+ 接口和两个千兆位以太网 RJ45 端口，用于快速数据传输。

### 关于 TS-431X3

TS-431X3 由 Annapurna Labs Alpine AL-314 四核 1.7 GHz 处理器提供支持，适用于商业环境中的高性能数据处理和高性价比存储应用。TS-431X3 专为中小企业办公环境而打造，内置了加密引擎，可确保兼顾数据安全和性能。此机型特有一个 USB 一键复制端口，可快速方便地实现备份和数据传输。TS-431X3 支持 4 硬盘架和 SATA 6 Gbps，可快速传输数据。此型 NAS 还提供三种类型的千兆位以太网端口，包括 10 Gb 以太网 SFP+、2.5 Gb 以太网 RJ45 和千兆位以太网 RJ45，用于快速数据传输。

## 硬件规格

#### 警告

如果您的 QNAP 产品有硬件方面的缺陷，请将产品退回 QNAP 或 QNAP 授权的服务中心进行维修或更换。您本人或未经授权的第三方对产品进行的任何维修或维护流程均会使保修失效。

对于因未经授权进行的修改和安装不受支持的第三方应用程序而造成的任何损坏或数据丢失，QNAP 概不负责。

有关详细信息，请参见 [QNAP 产品保修服务条款](#)。

#### 提示

型号规格如有更改，恕不另行通知。要查看最新规格，请转到 <https://www.qnap.com>。

订购部件号	CPU	内存	电源
TS-431KX-2G	Annapurna Labs Alpine AL-214	2 GB	单个
TS-431X3-4G	Annapurna Labs Alpine AL-314	4 GB	单个

组件	TS-431KX-2G	TS-431X3-4G
处理器		

组件	TS-431KX-2G	TS-431X3-4G
CPU	Annapurna Labs Alpine AL-214	Annapurna Labs Alpine AL-314
频率	4 核/1.7 GHz	4 核/1.7 GHz
架构	ARM 32 位	
加密引擎	AES-256	
内存		
预安装内存	2GB RAM: 1 x 2 GB SODIMM DDR3L	4 GB RAM: 1 x 4 GB SODIMM DDR3L
内存插槽	1 x SODIMM DDR3L	
	<p><b>重要</b></p> <ul style="list-style-type: none"> <li>• 请仅使用 QNAP 内存模块，以保证系统性能和稳定性。对于有多个内存插槽的 NAS 设备，请使用规格相同的 QNAP 模块。</li> <li>• 使用不受支持的模块可能导致性能下降、引发错误或使操作系统无法启动。</li> </ul>	
最大内存	8GB RAM: 1 x 8 GB	
闪存	512 MB (双重引导操作系统保护)	
存储		
硬盘架	4 x 3.5 英寸 SATA 6 Gbps	
	<p><b>注意</b></p> <p>SATA 6 Gbps 硬盘架向后兼容 SATA 3 Gbps 硬盘。</p>	
硬盘兼容性	3.5 英寸硬盘架： <ul style="list-style-type: none"> <li>• 3.5 英寸 SATA 机械硬盘</li> <li>• 2.5 英寸 SATA 机械硬盘</li> <li>• 2.5 英寸 SATA 固态硬盘</li> </ul>	
SSD 缓存加速支持	3.5 英寸硬盘架：1 至 4	

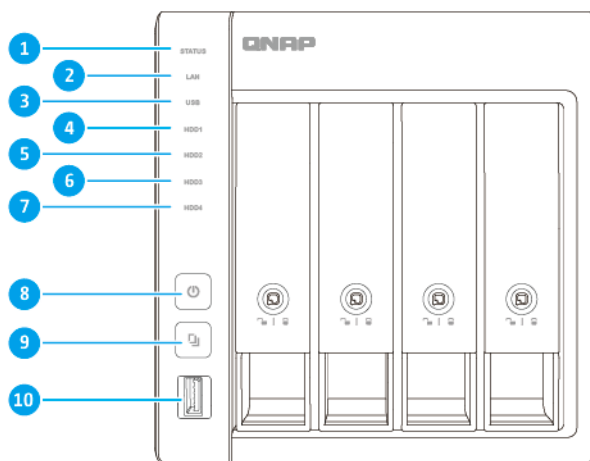


组件	TS-431KX-2G	TS-431X3-4G
热插拔	支持	
网络		
10 Gb 以太网端口	1 x 10 GbE SFP+	
2.5 Gb 以太网端口	无	1 x 2.5 GbE RJ45
千兆位以太网端口	2 x GbE RJ45	1 x GbE RJ45
网络唤醒	是 (GbE RJ45)	
外部 I/O 端口和扩展插槽		
USB 端口	<p>前面板：</p> <ul style="list-style-type: none"> <li>1 x USB 3.2 Gen 1 端口 (5Gbps) A 型</li> </ul> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; margin: 5px 0;"> <p><b>注意</b> 此 USB 端口支持一键复制。</p> </div> <p>后面板：</p> <ul style="list-style-type: none"> <li>2 x USB 3.2 Gen 1 端口 (5Gbps) A 型</li> </ul>	
界面		
按钮	<ul style="list-style-type: none"> <li>电源</li> <li>重置</li> <li>USB 一键复制</li> </ul>	
尺寸		
外形规格	立式	
尺寸 (高 x 宽 x 深)	169 x 160 x 219 mm (6.65 x 6.3 x 8.62 英寸)	
净重	3 kg (6.61 磅)	
其他		

组件	TS-431KX-2G	TS-431X3-4G
电源单元	90W, 100-240V AC, 50/60 Hz	
系统电池	CR2032 锂电池 (3V, 225 mAh)	
噪声声级	19.5 dB(A)  <b>注意</b> 噪声声级在距 NAS 一米以内的旁观者位置测得。测试 NAS 安装了最大数量的硬盘以低速运行。	
风扇	系统风扇: 1 x 120mm, 12V DC 智能风扇	
工作温度	0°C 至 40°C (32 至 104°F)	
相对湿度	<ul style="list-style-type: none"> <li>无冷凝相对湿度: 5% 至 95%</li> <li>湿球温度: 27°C (80.6°F)</li> </ul>	
安全锁孔	Kensington 安全锁孔	

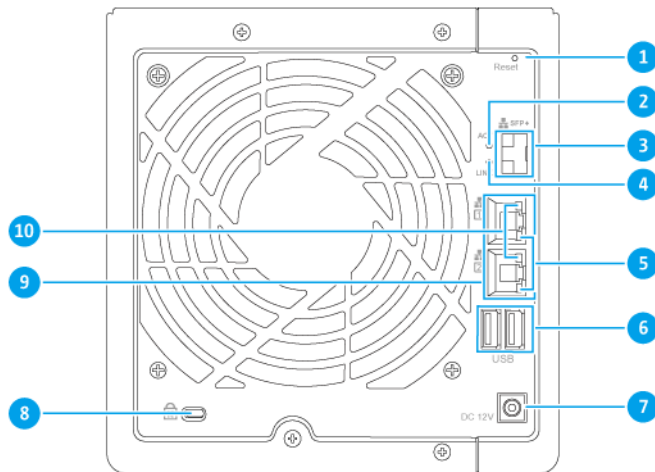
## 组件

### 前面板



编号	组件	编号	组件
1	状态 LED	6	硬盘 3 LED
2	LAN LED	7	硬盘 4 LED
3	USB LED	8	电源按钮
4	硬盘 1 LED	9	USB 一键复制按钮
5	硬盘 2 LED	10	USB 3.2 Gen 1 一键复制 A 型端口

## 后面板



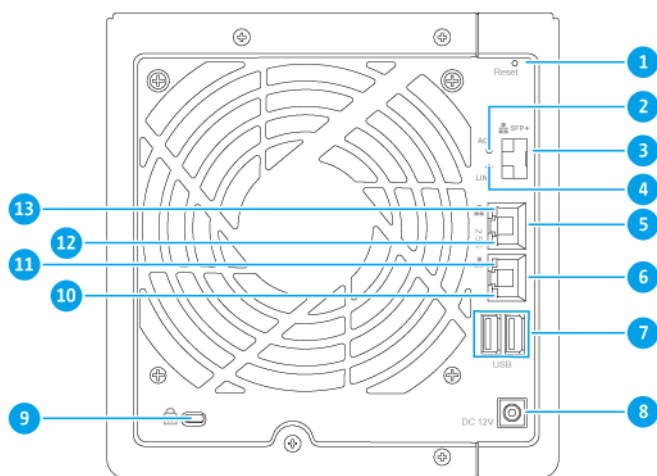
### TS-431KX

编号	组件	编号	组件
1	重置按钮	6	USB 3.2 Gen 1 (5Gbps) A 型端口
2	10 Gb 以太网活动 LED	7	电源输入
3	10 Gb 以太网端口 (SFP+)	8	Kensington 安全锁孔

编号	组件	编号	组件
4	10 Gb 以太网链路 LED	9	千兆位以太网端口 (RJ45)
5	千兆位以太网活动 LED	10	千兆位以太网速度 LED

**注意**

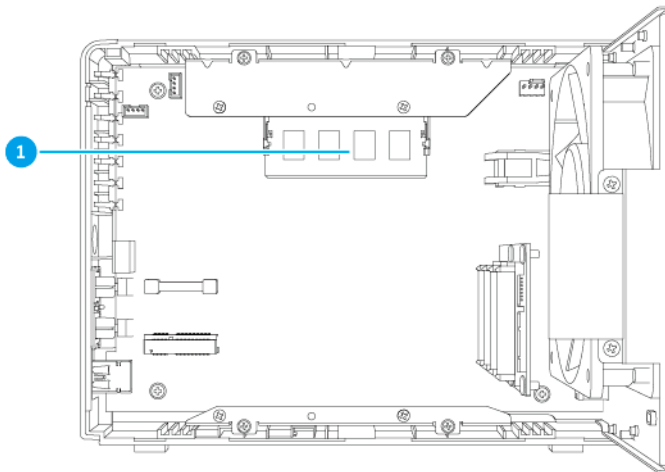
只有这些端口支持网络唤醒配置。

**TS-431X3**

编号	组件	编号	组件
1	重置按钮	8	电源输入
2	10 Gb 以太网活动 LED	9	Kensington 安全锁孔
3	10 Gb 以太网端口 (SFP+)	10	千兆位以太网活动 LED
4	10 Gb 以太网链路 LED	11	千兆位以太网速度 LED
5	2.5 Gb 以太网端口 (RJ45)	12	2.5 Gb 以太网活动 LED

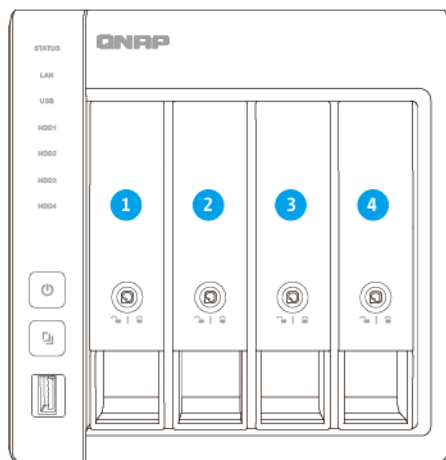
编号	组件	编号	组件
6	千兆位以太网端口 (RJ45)  <b>注意</b> 只有此端口支持网络唤醒配置。	13	2.5 Gb 以太网速度 LED
7	USB 3.2 Gen 1 (5Gbps) A 型端口	-	-

## 系统主板



编号	组件	编号	组件
1	内存插槽	-	-

## 硬盘编号



## 包装内容

项目	数量
TS-431KX 或 TS-431X3	1
交流电源适配器	1
电源线	1
以太网线	TS-431KX: 2 x Cat5e TS-431X3: 1 x Cat5e
适用于 3.5 英寸硬盘的螺丝	16
适用于 2.5 英寸硬盘的螺丝	12
快速安装指南 (QIG)	1

## 安装要求

类别	项目
环境	<ul style="list-style-type: none"> <li>• 室温：0°C 至 40°C (32 至 104°F)</li> <li>• 无冷凝相对湿度：5% 至 95%</li> <li>• 湿球温度：27°C (80.6°F)</li> <li>• 平坦的防静电表面，无直射阳光、液体或化学药剂</li> <li>• 无可能阻塞 NAS 通风或者压住 NAS 或电源线的物品</li> </ul>
硬件和外围设备	<ul style="list-style-type: none"> <li>• 存储硬盘</li> <li>• 有关兼容硬盘型号的列表，请转到 <a href="https://www.qnap.com/compatibility">https://www.qnap.com/compatibility</a>。</li> <li>• 网线</li> </ul>
工具	<ul style="list-style-type: none"> <li>• 1 号或 2 号十字螺丝刀</li> <li>• 平头螺丝刀</li> <li>• 防静电腕带</li> </ul>

## 设置 NAS

### 重要

在设置 NAS 或安装 NAS 组件之前，请仔细阅读[安全信息](#)中的所有安全要求和信息。

1. 将 NAS 设备置于符合要求的环境中。

2. 安装硬盘。

有关详细信息，请参见以下主题：

- [在 3.5 英寸托盘上安装 3.5 英寸硬盘](#)
- [在 3.5 英寸托盘上安装 2.5 英寸硬盘或固态硬盘](#)

有关兼容硬盘型号的列表，请转到 <https://www.qnap.com/compatibility>。

3. 将 NAS 连接到网络。

4. 连接 USB 扩展单元。

有关详细信息，请参见[连接 USB 扩展单元](#)。

5. 连接电源线和所有适用的线缆。

6. 启动 NAS 电源。

有关详细信息，请参见[前面板](#)。

7. 安装 QTS。  
有关详细信息，请参见 [QTS 安装](#)。



## 3. 安装和配置

本章提供了具体的硬件和固件安装与配置步骤。

### 硬件安装

本节提供有关安装硬盘、内存模块和扩展卡的信息。

### 硬盘安装

TS-431KX 和 TS-431X3 兼容 3.5 英寸硬盘、2.5 英寸硬盘以及 2.5 英寸固态硬盘。

#### 在 3.5 英寸托盘上安装 3.5 英寸硬盘

##### 警告

- 安装硬盘将删除硬盘上的所有数据。
- 请执行静电放电 (ESD) 规程，以避免组件损坏。



**转动的风扇叶片：**使您的双手和身体其他部位远离正在转动的风扇叶片。

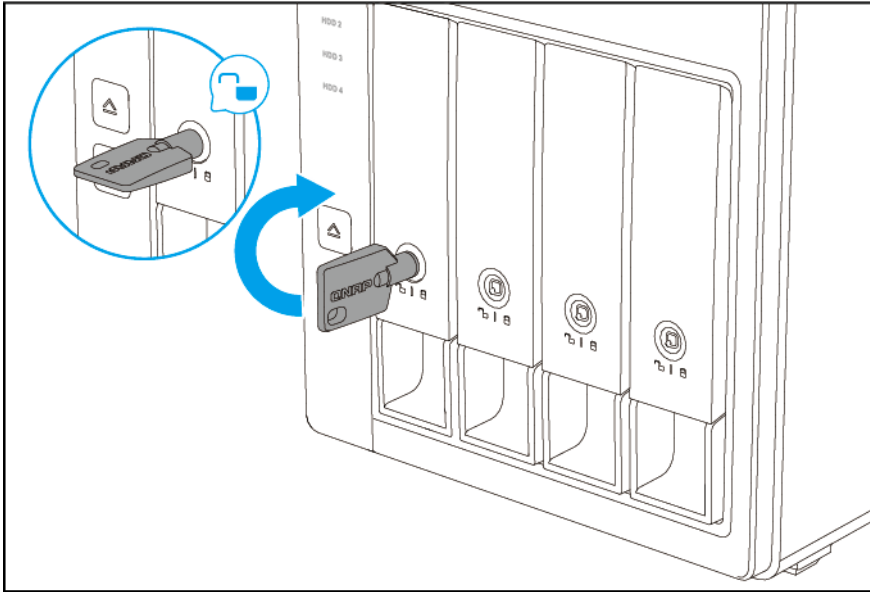


**其他运动的组件：**使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。

## 2. 取下硬盘托盘。

- a. 可选: 解除对托盘的锁定。



### 注意

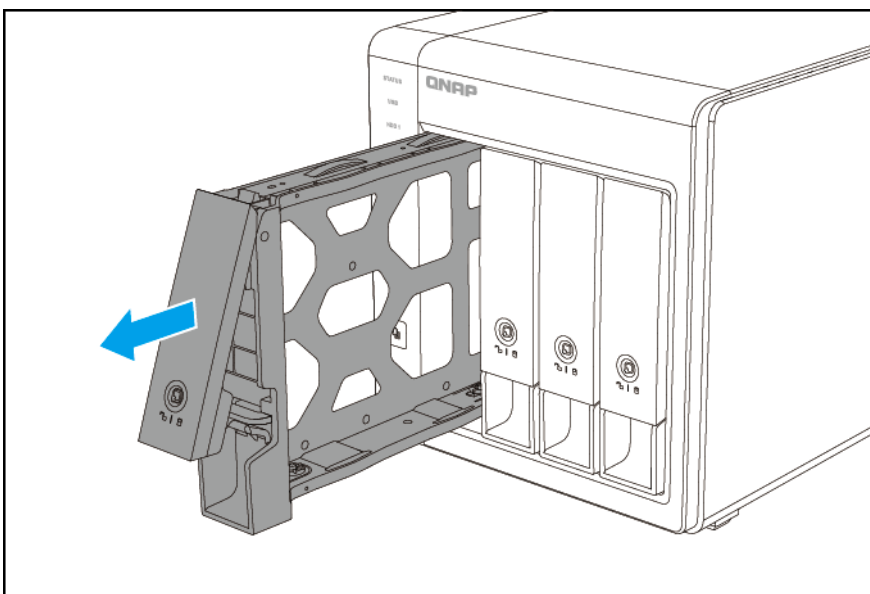
预装硬盘托盘未锁定。

### 重要

请确保将硬盘托盘钥匙存放在安全的地方。

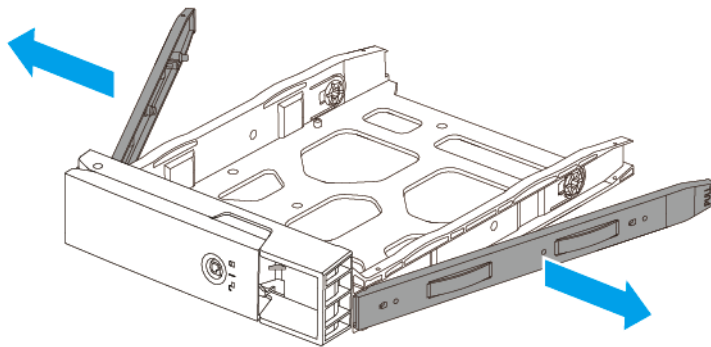
- b. 拉动手柄以松开托盘。

- c. 拉出托盘。



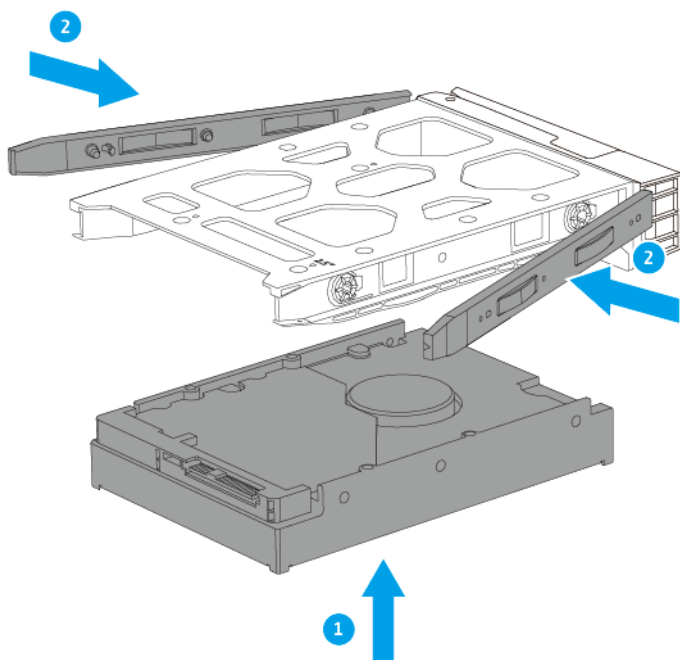
3. 将硬盘安装到托盘上。

- a. 取下硬盘托盘两侧的固定面板。

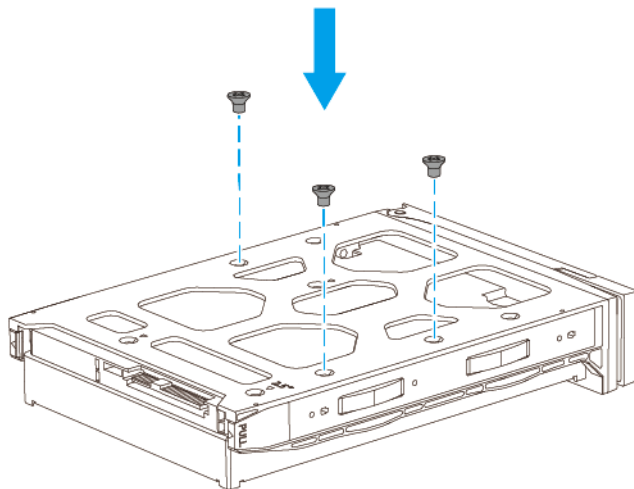


- b. 将硬盘放在托盘上，使硬盘两侧的孔与托盘两侧的孔对齐。

- c. 装上固定面板。



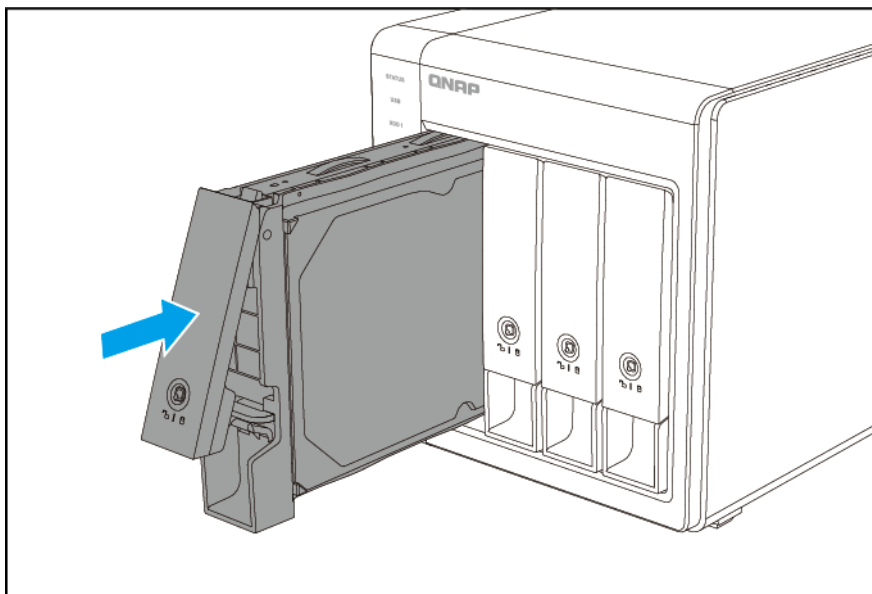
d. 可选: 装上螺丝, 进一步固定硬盘。



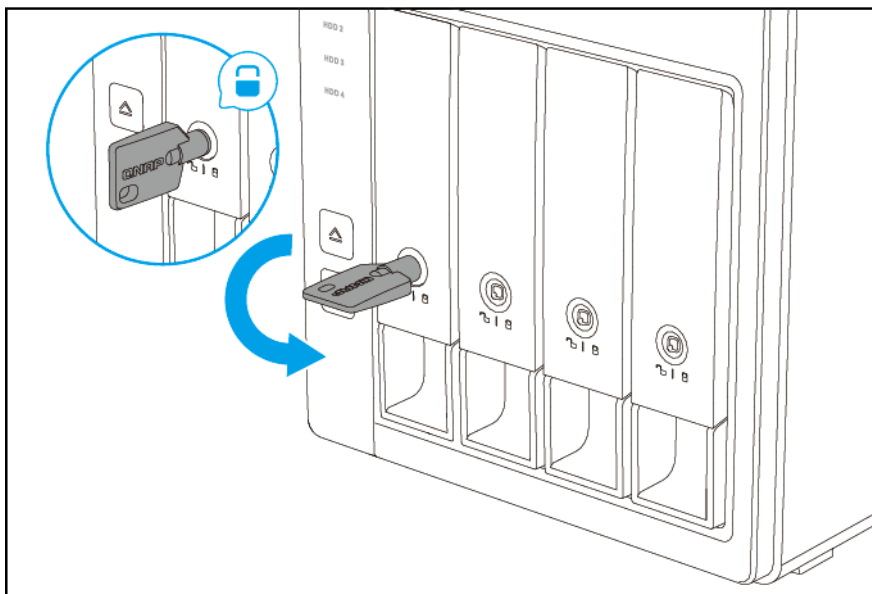
4. 将托盘装入硬盘架。

a. 将托盘插入硬盘架。

b. 推动手柄。



## c. 锁住托盘。



## 5. 启动 NAS 电源。

## 在 3.5 英寸托盘上安装 2.5 英寸硬盘和固态硬盘

### 警告

- 安装硬盘将删除硬盘上的所有数据。
- 请执行静电放电 (ESD) 规程，以避免组件损坏。



**转动的风扇叶片：**使您的双手和身体其他部位远离正在转动的风扇叶片。

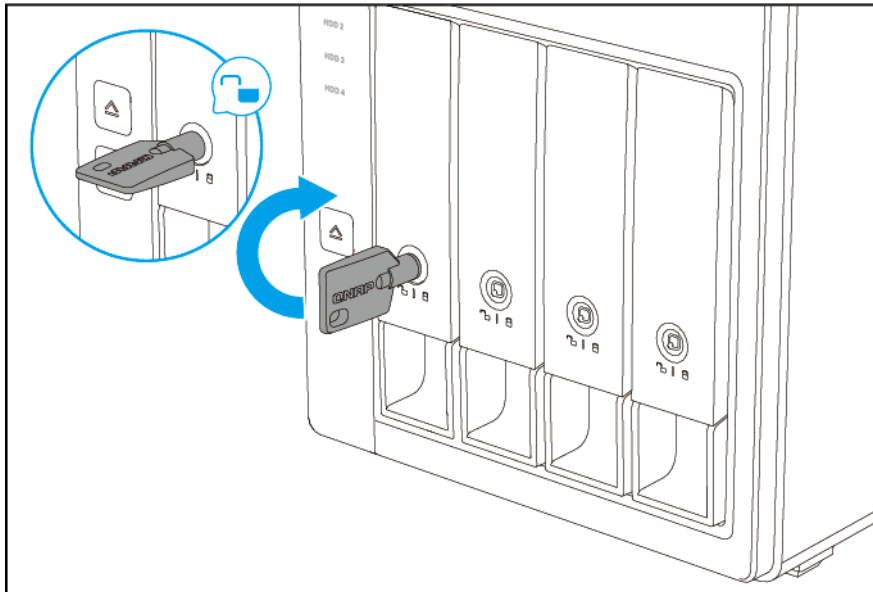


**其他运动的组件：**使您的双手和身体其他部位远离正在运动的其他组件。

## 1. 关闭 NAS 电源。

## 2. 取下硬盘托盘。

### a. 可选: 解除对托盘的锁定。



#### 注意

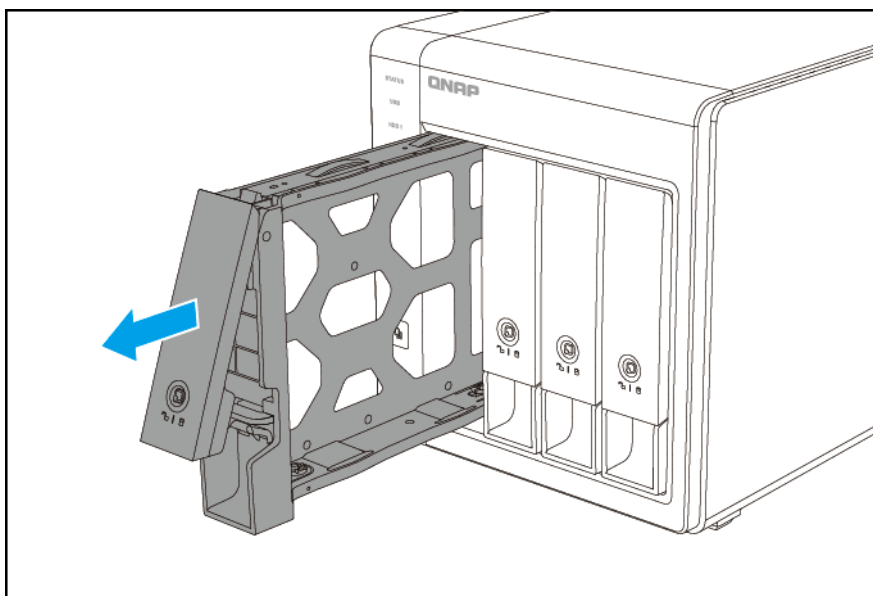
预装硬盘托盘未锁定。

#### 重要

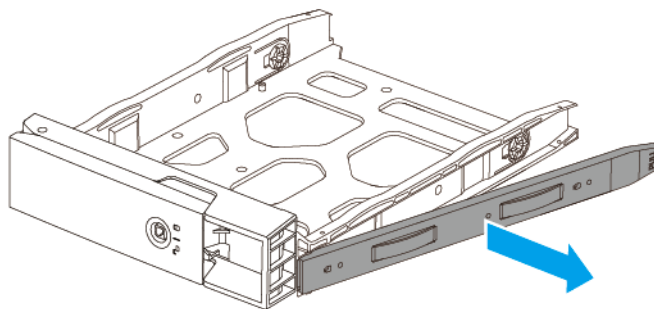
请确保将硬盘托盘钥匙存放在安全的地方。

### b. 拉动手柄以松开托盘。

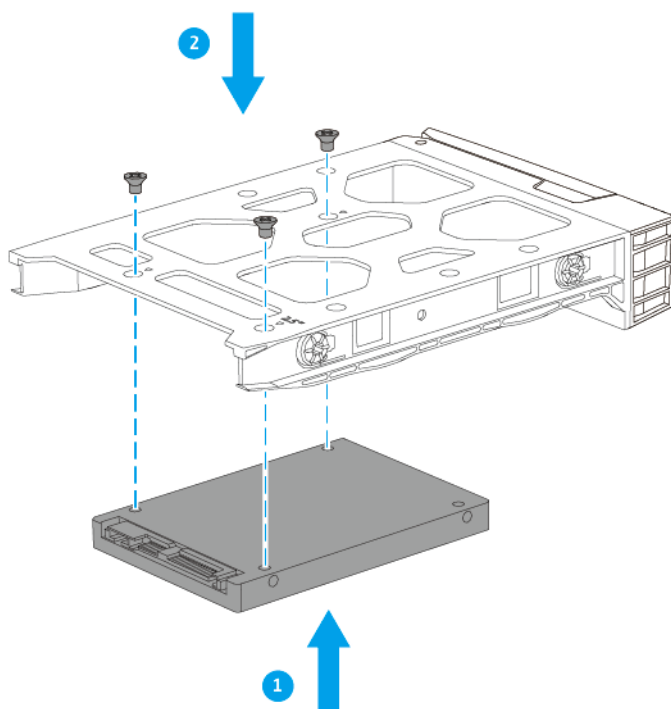
### c. 拉出托盘。



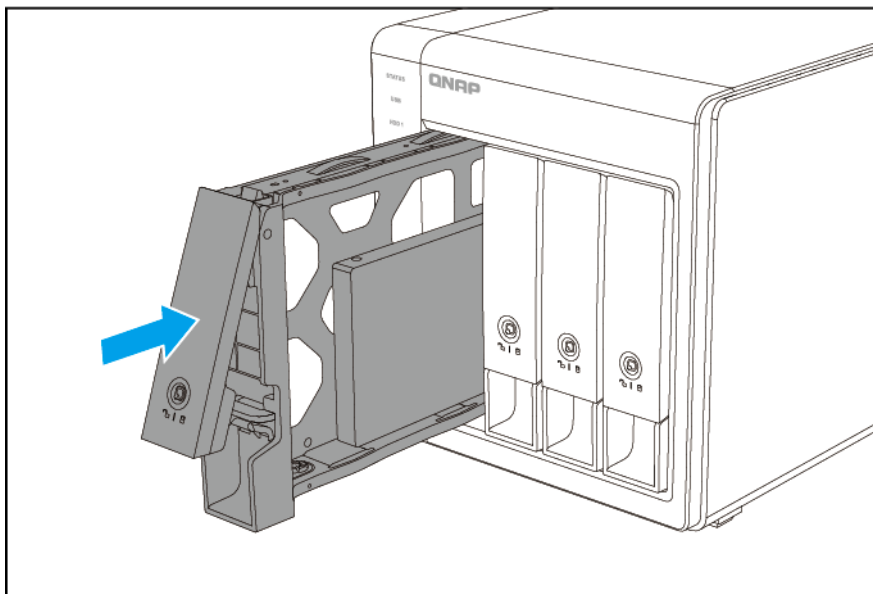
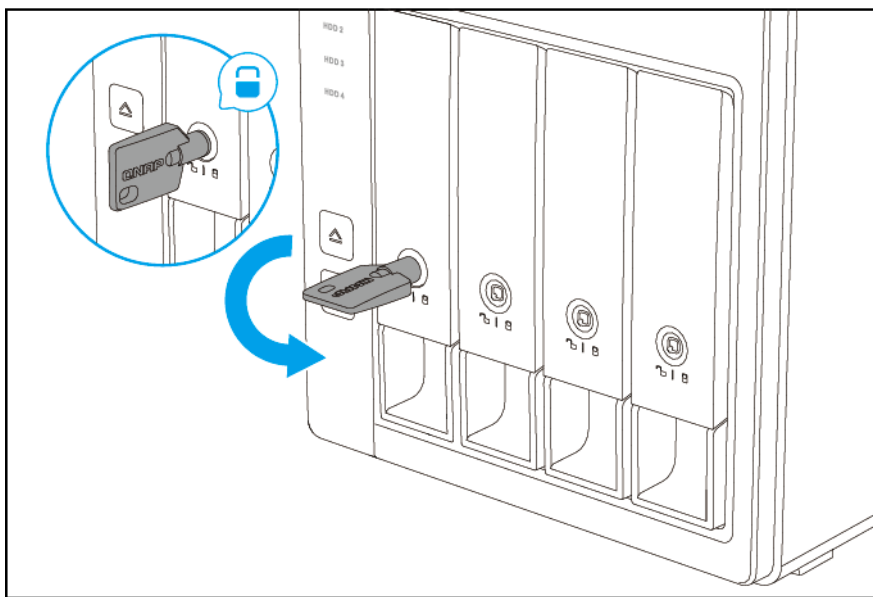
3. 将硬盘安装到托盘上。
  - a. 取下硬盘托盘两侧的固定面板。



- b. 将硬盘放在托盘上，使硬盘两侧的孔与托盘两侧的孔对齐。
  - c. 安装螺丝。



4. 将托盘装入硬盘架。
  - a. 将托盘插入硬盘架。

**b. 推动手柄。****c. 锁住托盘。****5. 启动 NAS 电源。**

## 更换内存模块

请仅使用 QNAP 内存模块，以保证系统性能和稳定性。可以从授权经销商处购买 QNAP 内存模块。



**警告**

- 请执行静电放电 (ESD) 规程，以避免组件损坏。

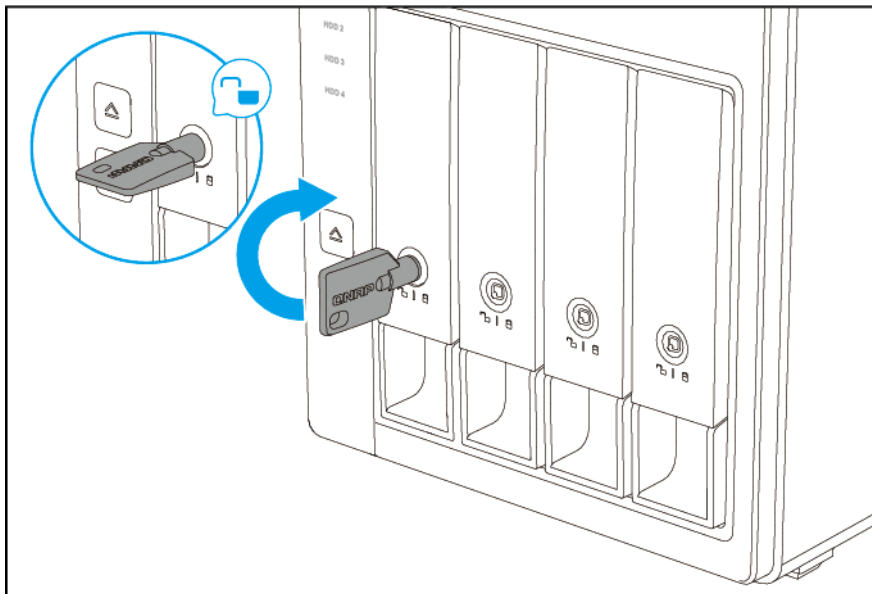


**转动的风扇叶片：**使您的双手和身体其他部位远离正在转动的风扇叶片。



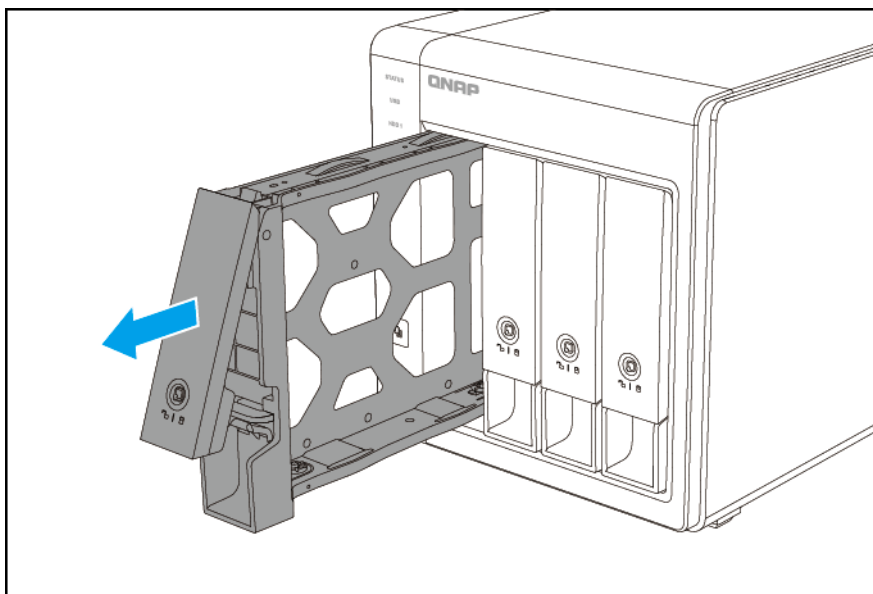
**其他运动的组件：**使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。
2. 从插座上拔下电源线。
3. 拔掉所有线缆和外接部件。
4. 取下硬盘托盘。
  - a. 可选: 解除对硬盘托盘的锁定。

**注意**

- 预装硬盘托盘未锁定。
- 请确保将硬盘托盘钥匙存放在安全的地方。

- b. 按压门锁的同时拉出硬盘托盘，取下每个托盘。

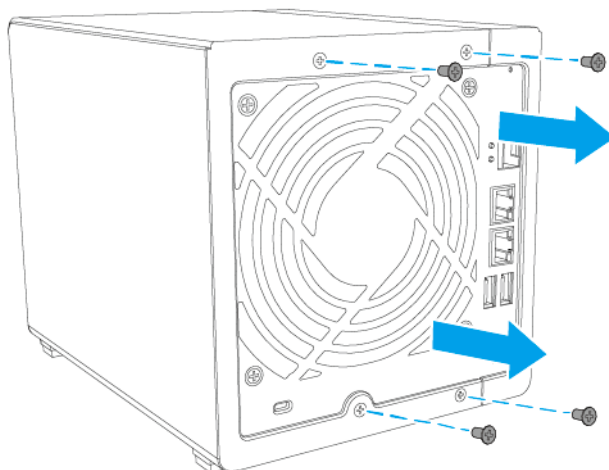


### 重要

- 请记住每个硬盘的编号。硬盘托盘需要装回原来所在的硬盘架。

5. 取下外壳盖。

- a. 松开螺丝。

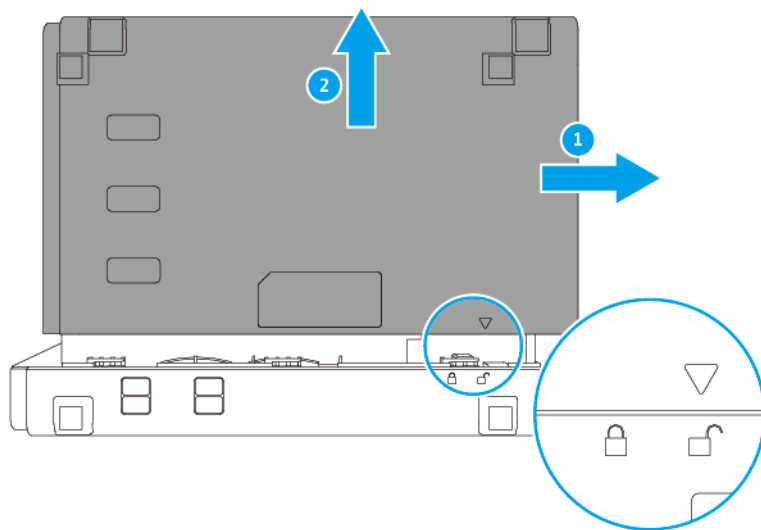


### 注意

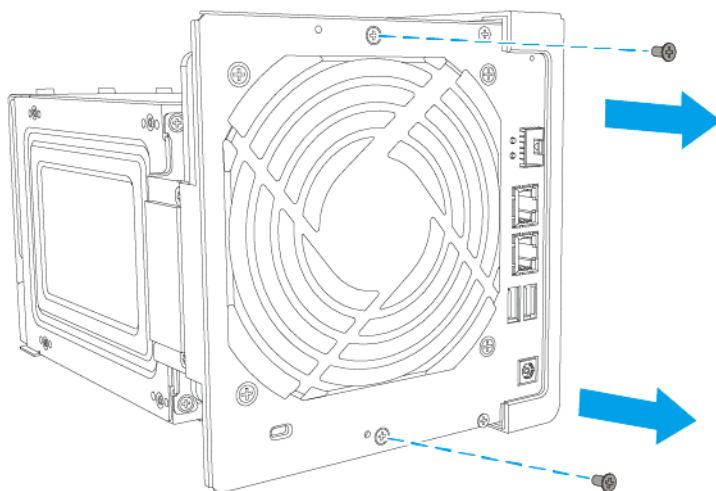
外壳盖螺丝比其他拆卸下来的螺丝要长。

- b. 将 NAS 左侧朝下放置。

- c. 将外壳盖向右滑动，使三角图标与开锁图标对齐。
- d. 向上拉起外壳盖，使其完全脱离机箱。

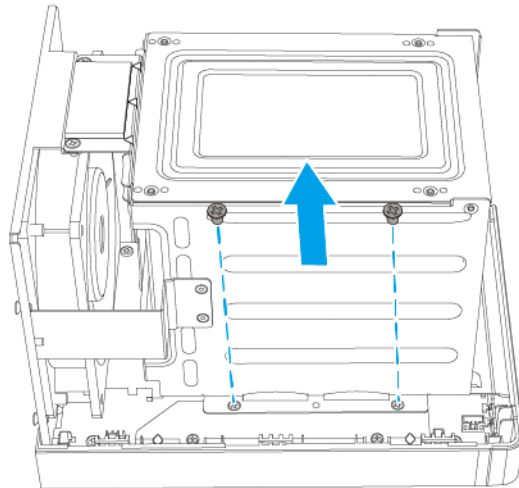
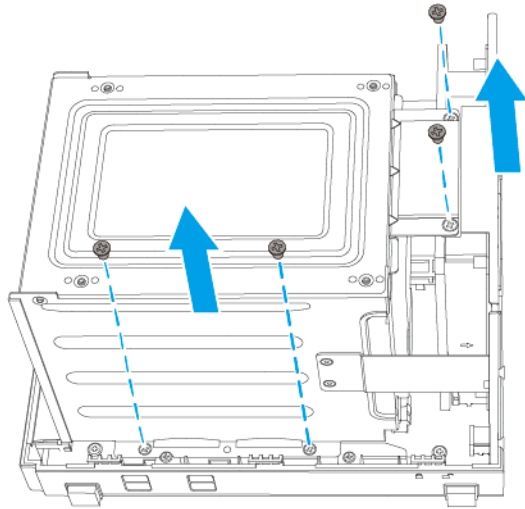


- 6. 取下 NAS 背面上下两端的螺丝。

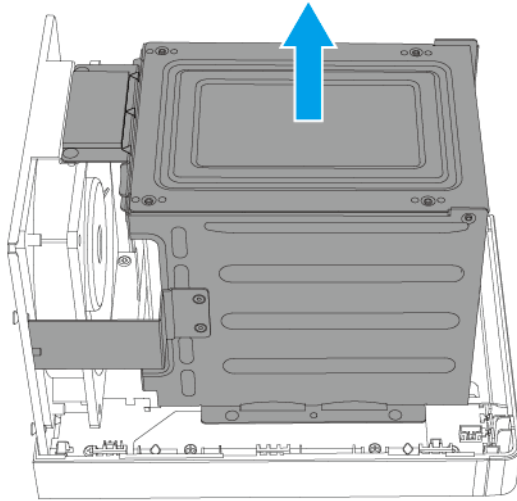


- 7. 将 NAS 左侧朝下放置。

8. 取下将硬盘托盘机箱与 NAS 相连的 6 个螺丝。

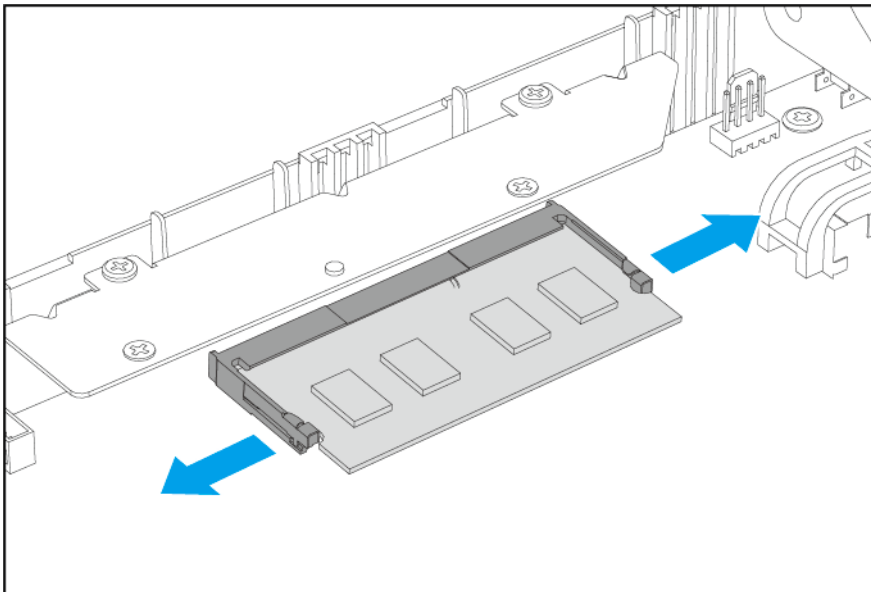


9. 小心地取下硬盘托盘机箱。



10. 取下现有模块。

- a. 同时向外推动固定夹以释放模块。



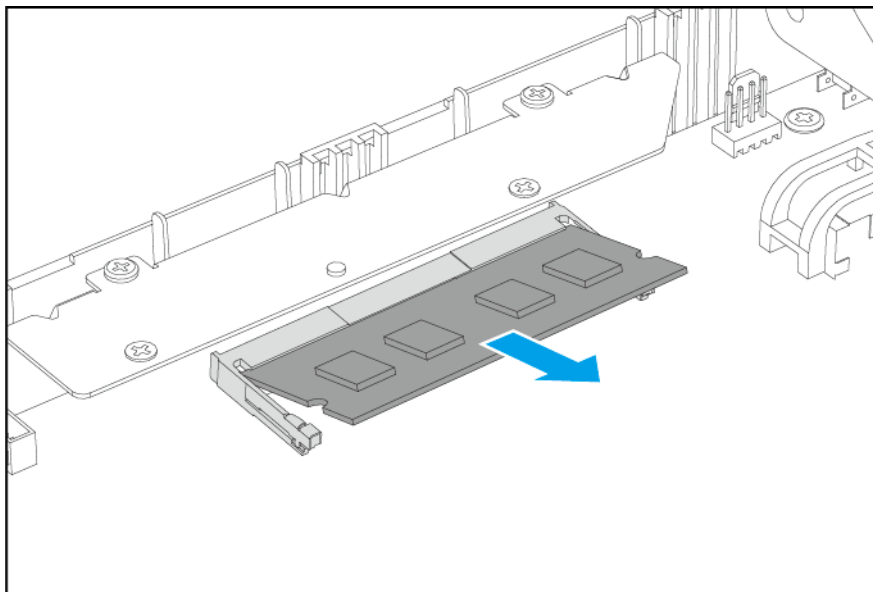
- b. 确认模块向上倾斜并已完全脱离插槽。

**警告**

如果尝试在模块尚未完全脱离时将其取出，可能会损坏模块和主板。

- c. 握住模块边缘。

d. 小心将模块滑出插槽。

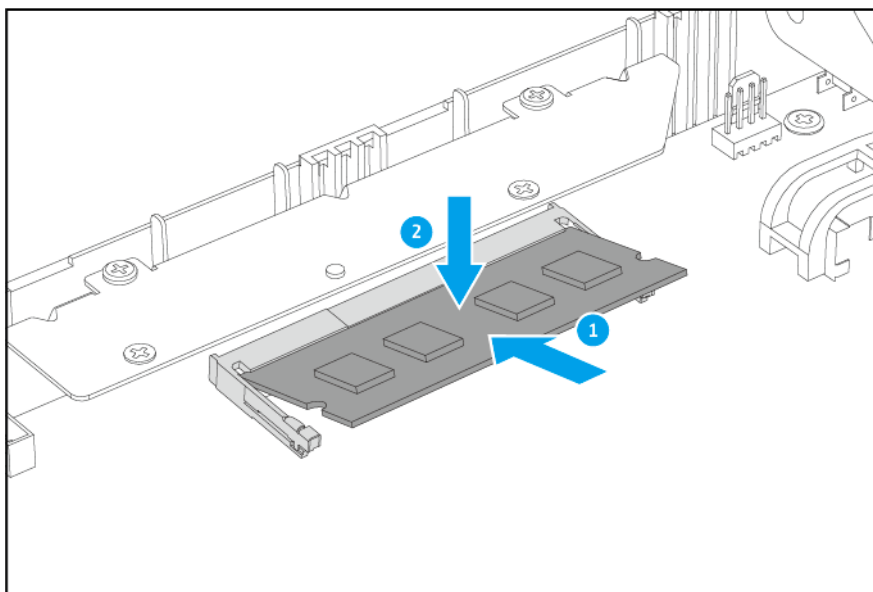


**警告**

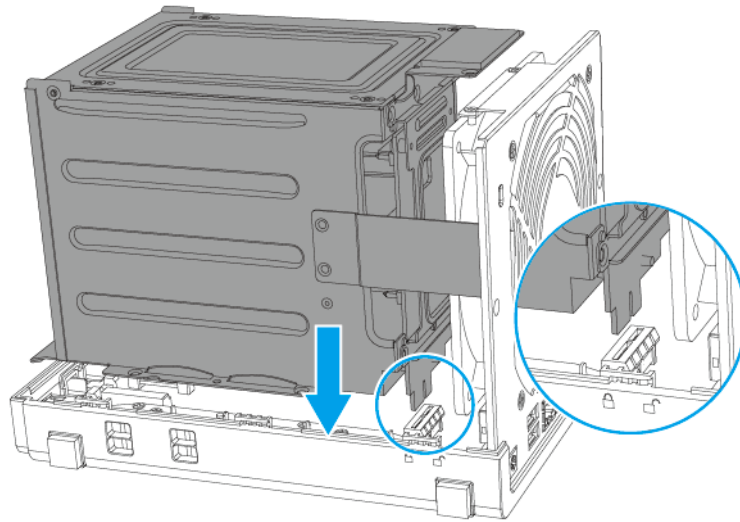
- 请勿触摸内部组件，特别是金属接头。
- 不要折弯模块。

11. 安装新模块。

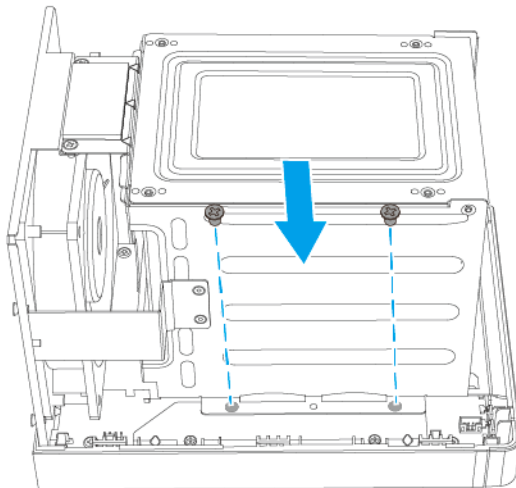
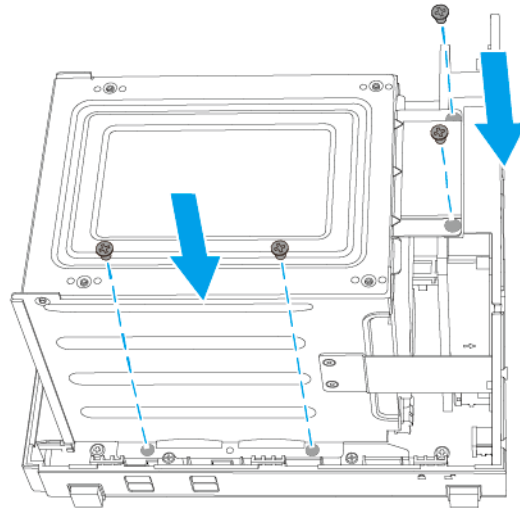
- a. 将凹口与插槽内的凸起对齐。
- b. 将模块插入插槽中。
- c. 确认金属接头已完全插入插槽中。
- d. 小心地向下按压模块，直到固定夹将模块锁定到位。



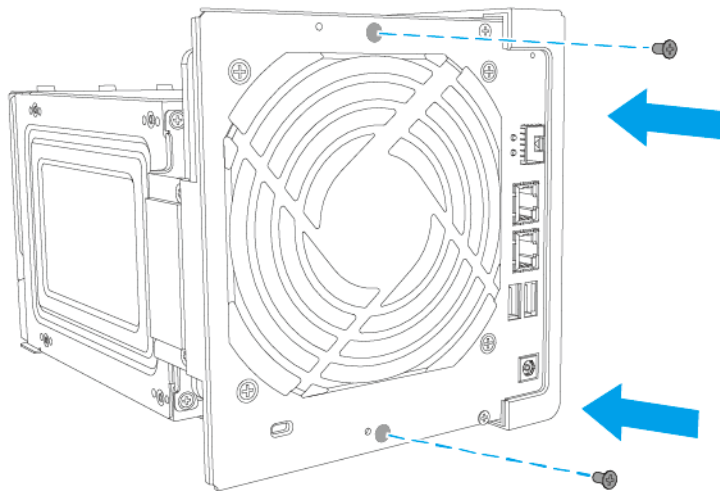
12. 将硬盘托架机箱放到 NAS 上。
  - a. 将硬盘托架机箱上的 SATA 连接器对准主板上的 SATA 插槽。
  - b. 将 SATA 连接器小心插入 SATA 插槽。



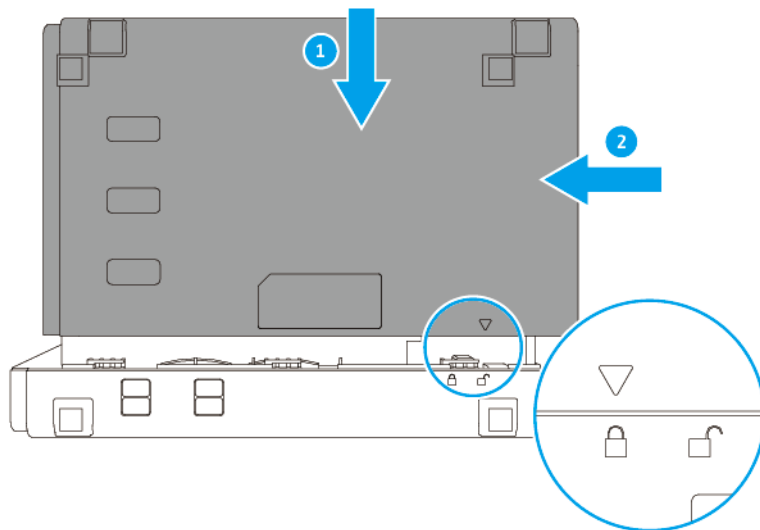
13. 装上将硬盘托盘机箱与 NAS 相连的 6 个螺丝。



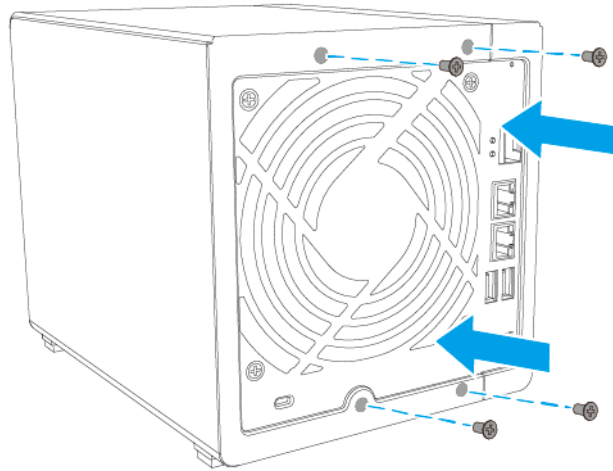


**14. 装上 NAS 背面上下两端的螺丝。****15. 安装外壳盖。**

- a. 将 NAS 左侧朝下放置。
- b. 将外壳盖上的三角图标与机箱上的开锁图标对齐。
- c. 将外壳盖滑动到机箱上。
- d. 将外壳盖向左滑动，使三角图标与闭锁图标对齐。

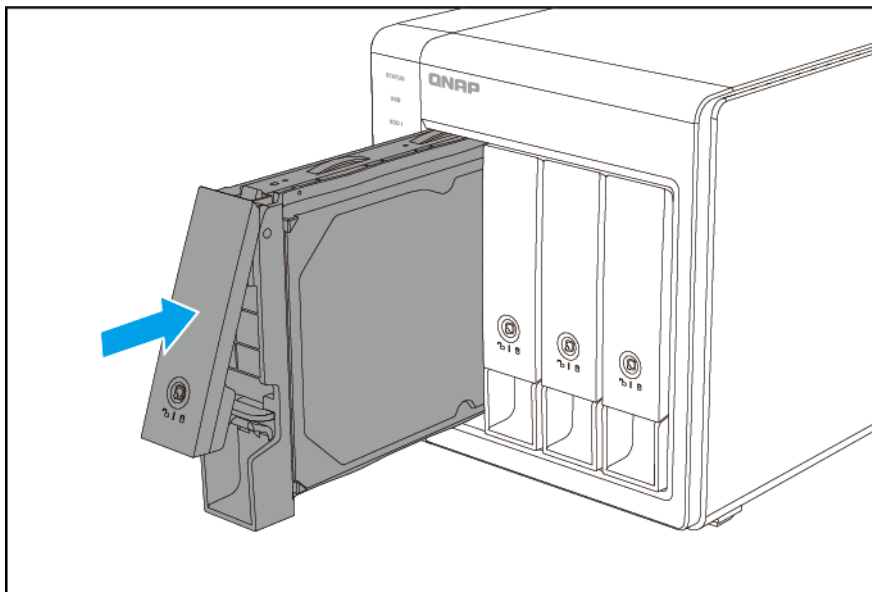


- e. 安装外壳背面的螺丝。



- 16. 将硬盘托盘装回原来所在的硬盘架。

- a. 将硬盘托盘滑入硬盘架。
- b. 推入手柄



- 17. 连接所有线缆和外接部件。
- 18. 启动 NAS 电源。
- 19. 确认 NAS 能够识别该模块。
  - a. 以管理员身份登录 QTS。
  - b. 转到控制台 > 系统 > 系统状态 > 硬件信息。
  - c. 检查内存总容量值。

## 连接 USB 扩展单元

TS-431KX 和 TS-431X3 支持 USB 扩展单元。有关详细信息，请参见下表。

您可以从 QNAP 或授权经销商处购买存储扩展配件。

有关详细信息，请转到 <https://shop.qnap.com>。

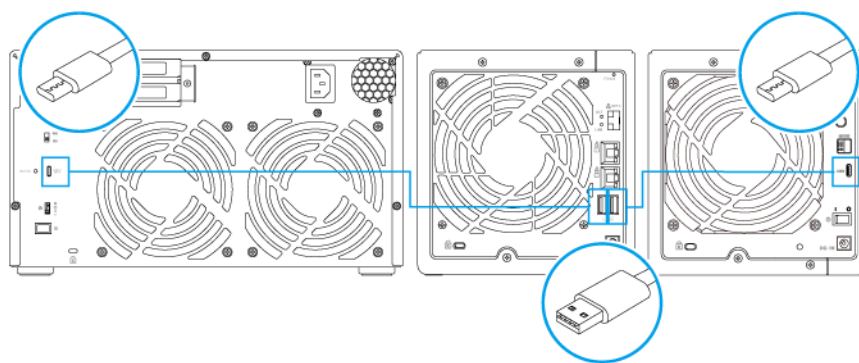
有关兼容扩展单元的列表和最大可应用扩展单元数，请转到 <http://www.qnap.com/go/compatibility-expansion>。

### 注意

USB 3.2 Gen 2 C 型至 C 型线缆和 RAIL-B02 是可选配件，必须单独购买。

扩展单元型号	描述	所需配件
TR-002	<ul style="list-style-type: none"> <li>使用 USB 3.2 Gen 2 C 型接口</li> <li>支持 SATA 硬盘</li> </ul>	<ul style="list-style-type: none"> <li>USB 3.2 Gen 2 A 型至 C 型线缆</li> <li>USB 3.2 Gen 2 C 型至 C 型线缆</li> </ul>
TR-004	<ul style="list-style-type: none"> <li>使用 USB 3.2 Gen 1 C 型接口</li> <li>支持 SATA 硬盘</li> </ul>	
TR-004U	<ul style="list-style-type: none"> <li>使用 USB 3.2 Gen 1 C 型接口</li> <li>支持 SATA 硬盘</li> </ul>	<ul style="list-style-type: none"> <li>USB 3.2 Gen 1 A 型至 C 型线缆</li> <li>USB 3.2 Gen 2 C 型至 C 型线缆</li> <li>RAIL-B02</li> </ul>
TL-D800C	<ul style="list-style-type: none"> <li>使用 USB 3.2 Gen 2 C 型接口</li> <li>支持 SATA 硬盘</li> </ul>	<ul style="list-style-type: none"> <li>USB 3.2 Gen 2 A 型至 C 型线缆</li> <li>USB 3.2 Gen 2 C 型至 C 型线缆</li> </ul>
TL-R1200C-RP	<ul style="list-style-type: none"> <li>使用 USB 3.2 Gen 2 C 型接口</li> <li>支持 SATA 硬盘</li> </ul>	<ul style="list-style-type: none"> <li>USB 3.2 Gen 2 A 型至 C 型线缆</li> <li>USB 3.2 Gen 2 C 型至 C 型线缆</li> <li>RAIL-B02</li> </ul>

1. 将扩展单元连接到 NAS。
  - a. 将 USB 线缆连接到扩展单元上的 USB C 型端口。
  - b. 将 USB 线缆连接到 NAS 上的 USB 3.2 Gen 1 A 型端口。



2. 为扩展单元接通电源。
3. 确认 NAS 能够识别扩展单元。
  - a. 以管理员身份登录 QTS。
  - b. 转到**主菜单 > 存储与快照总管 > 概述 > 系统**。
  - c. 确认扩展单元已列出。

## QTS 安装

方法	描述	要求
Qfinder Pro 安装 (推荐)	如果 NAS 已连接到您的局域网，可以执行以下操作： <ul style="list-style-type: none"> <li>• 使用 Qfinder Pro 定位 NAS。</li> <li>• 完成“智能安装指南”向导中的步骤。</li> </ul>	<ul style="list-style-type: none"> <li>• 计算机</li> <li>• 网线</li> <li>• Qfinder Pro 安装程序</li> </ul>

方法	描述	要求
云安装	<p>如果 NAS 已连接到 Internet，可以执行以下操作：</p> <ul style="list-style-type: none"> <li>• 扫描 NAS 上的二维码。</li> <li>• 指定 Cloud Key。</li> <li>• 登录您的 myQNAPcloud 帐户。</li> <li>• 使用 myQNAPcloud Link 远程访问 NAS。</li> <li>• 完成“智能安装指南”向导中的步骤。</li> </ul>	<ul style="list-style-type: none"> <li>• 完成“智能安装指南”向导中的步骤。</li> <li>• myQNAPcloud 帐户</li> <li>• Cloud Key</li> </ul>

## 使用 Qfinder Pro 安装 QTS

### 警告

安装 QTS 将删除硬盘上的所有数据。请先备份您的数据，然后再继续。

1. 启动 NAS 电源。
2. 将 NAS 连接到您的局域网中。
3. 在已连接到同一局域网的计算机上运行 Qfinder Pro。

### 注意

要下载 Qfinder Pro，请转到 <https://www.qnap.com/utilities>。

4. 在列表中找到 NAS，然后双击名称或 IP 地址。
5. 执行以下任一操作。
  - 要检查是否有可供使用的最新版本，单击**开始**。  
向导会下载可供使用的最新版本，下载完成后，NAS 会重新启动。如果没有更新的版本，向导会自动显示**智能安装指南**。
  - 要安装立即可用的版本，单击**跳过**。
6. 单击**启动智能安装指南**。
7. 指定以下信息。
  - **NAS 名称**：指定 1 至 14 个字符的名称。名称支持字母（A 到 Z、a 到 z）、数字（0 到 9）和连字符（-），但不能以连字符结尾。
  - **密码**：指定 1 至 64 个字符的管理员密码。密码支持所有 ASCII 字符。
8. 单击**下一步**。

9. 指定时区、日期和时间。

#### 提示

QNAP 建议连接到 NTP 服务器，以确保 NAS 遵循协调世界时 (UTC) 标准。

10. 单击下一步。
11. 选择**自动获取 IP 地址(DHCP)**。
12. 单击下一步。
13. 选择将用于访问 NAS 上共享文件夹的设备类型。
14. 单击下一步。
15. 检查设置。
16. 单击**应用**。  
此时会出现确认消息。

#### 警告

单击**确认**后，将先删除硬盘上的所有数据，然后再安装 QTS。

17. 单击**确认**。  
QTS 即安装完毕。

## 使用 Cloud Key 安装 QTS

#### 警告

安装 QTS 将删除硬盘上的所有数据。请先备份您的数据，然后再继续。

1. 启动 NAS 电源。
2. 将 NAS 连接到 Internet。
3. 使用以下方法之一转到“QNAP Cloud 安装”页面：
  - 在您的计算机上，转到 <http://install.qnap.com/>。
  - 使用移动设备扫描 NAS 上的二维码。

网页中会列出本地网络上所有尚未初始化的 QNAP NAS 设备。

4. 从列表中找到您的 NAS，然后单击**初始化**。

#### 注意

如果未列出您的 NAS，请按网页上的说明指定 NAS 上的 Cloud Key。

安装向导将在默认 Web 浏览器中打开。

5. 创建帐户或登录 myQNAPcloud。

**注意**

创建帐户后，您必须返回此页面才能完成安装。

6. 为 NAS 指定 myQNAPcloud 设备名称。

**注意**

- myQNAPcloud 设备名称用于远程访问 NAS。
- 因安全原因，在您的 NAS 上初始化 myQNAPcloud Link 远程连接服务后，会将其禁用。通过 LAN 连接到 QTS，然后安装 myQNAPcloud Link 可启用此服务。

7. 单击**下一步**。

8. 执行以下任一操作。

- 要检查是否有可供使用的最新版本，单击**开始**。  
向导会下载可供使用的最新版本，下载完成后，NAS 会重新启动。如果没有更新的版本，向导会自动显示**智能安装指南**。
- 要安装立即可用的版本，单击**跳过**。

9. 单击**启动智能安装指南**。

10. 指定以下信息。

- **NAS 名称**：指定 1 至 14 个字符的名称。名称支持字母（A 到 Z、a 到 z）、数字（0 到 9）和连字符（-），但不能以连字符结尾。
- **密码**：指定 1 至 64 个字符的管理员密码。密码支持所有 ASCII 字符。

11. 单击**下一步**。

12. 指定时区、日期和时间。

**提示**

QNAP 建议连接到 NTP 服务器，以确保 NAS 遵循协调世界时 (UTC) 标准。

13. 单击**下一步**。

14. 选择**自动获取 IP 地址(DHCP)**。

15. 单击**下一步**。

16. 选择将用于访问 NAS 上共享文件夹的设备类型。

17. 单击**下一步**。

18. 检查设置。

19. 单击**应用**。

此时会出现确认消息。

**警告**

单击**确认**后，将先删除硬盘上的所有数据，然后再安装 QTS。

20. 单击**确认**。  
QTS 即安装完毕。



## 4. 基本操作

本章介绍 NAS 的基本操作。

### 电源按钮

操作	用户操作	结果
启动电源	按下此按钮一次。	NAS 开机。
关闭电源	按住此按钮 1.5 秒钟。	NAS 关机。
强制关机	按住此按钮 5 秒钟。	NAS 关闭。

**重要**  
仅当 NAS 无响应时才能使用此方法。

### 重置按钮

操作	用户操作	结果
基本系统重置	按住此按钮 3 秒钟。	<p>以下设置将重置为默认值：</p> <ul style="list-style-type: none"> <li>• admin 帐户将自动启用。</li> <li>• 系统管理员密码：有关默认密码的详细信息，请参见此<a href="#">常见问题</a>。</li> <li>• TCP/IP 配置： <ul style="list-style-type: none"> <li>• 通过 DHCP 自动获取 IP 地址设置</li> <li>• 禁用巨型帧</li> <li>• 如果启用端口中继（仅限多局域网型号），则端口中继模式将重置为“主动备份(故障转移)”。</li> </ul> </li> <li>• 系统端口：8080（系统服务端口）</li> <li>• 安全等级：低（允许所有连接）</li> <li>• LCD 面板密码：（空白）</li> <li>• VLAN：禁用</li> </ul>

操作	用户操作	结果
高级系统重置	按住此按钮 15 秒钟。	恢复默认出厂设置。 <ul style="list-style-type: none"> <li>要在高级系统重置后检索旧数据，请在 NAS 上重新创建先前的文件夹结构。</li> </ul>

## LED

开启设备电源后，LED 指示灯会指示系统状态和相关信息。以下 LED 信息仅适用于硬盘已正确安装并且设备已连接到网络或主机的情况。

有关 LED 位置的详细信息，请参见[组件](#)。

### 注意

2.5 Gb 以太网 LED 仅适用于 TS-431X3。

LED	状态	描述
系统状态	红绿交替闪烁，间隔 0.5 秒	<ul style="list-style-type: none"> <li>硬盘正在格式化。</li> <li>NAS 正在初始化。</li> <li>操作系统正在更新。</li> <li>RAID 正在重建。</li> <li>正在进行在线 RAID 容量扩展。</li> <li>正在进行在线 RAID 级别迁移。</li> <li>固件正在更新。</li> </ul> <div style="background-color: #fff9c4; padding: 10px; margin-top: 10px;"> <p><b>重要</b></p> <p>更新固件时，请勿拔下电源线或 USB 缆线，也不要强行退出应用程序。</p> </div>

LED	状态	描述
系统状态	红色	<ul style="list-style-type: none"> <li>• 硬盘无效。</li> <li>• 磁盘卷的容量已满。</li> <li>• 磁盘卷的容量即将被占满。</li> <li>• 系统风扇故障。</li> <li>• 访问（读/写）数据时出错。</li> <li>• 在硬盘上检测到坏扇区。</li> <li>• NAS 处于降级只读模式（RAID 5 或 RAID 6 中的两个成员硬盘出现故障，但仍可读取数据）。</li> <li>• 硬件自检发生错误。</li> </ul>
	闪烁红色，间隔 0.5 秒	NAS 处于降级模式（RAID 1、RAID 5 或 RAID 6 中的一个成员硬盘出现故障）。
	闪烁绿色，间隔 0.5 秒	<ul style="list-style-type: none"> <li>• NAS 正在启动。</li> <li>• NAS 未配置。</li> <li>• 硬盘未格式化。</li> </ul>
	绿色	NAS 已准备就绪。
	熄灭	所有硬盘都处于待机模式。
LAN	橙色	另一台设备访问数据期间发生了读/写错误。
	闪烁橙色	正在从网络访问 NAS。
10 Gb 以太网链路	绿色	网络以 10 Gbps 的速度运行。
	熄灭	没有网络连接。
10 Gb 以太网活动	橙色	网络连接已建立。
	闪烁橙色	正在传输数据。
	熄灭	没有网络连接。
2.5 Gb 以太网速度	绿色	网络连接以 2.5 Gbps 的速度运行。
	橙色	网络连接以 1 Gbps 的速度运行。

LED	状态	描述
2.5 Gb 以太网速度	熄灭	<ul style="list-style-type: none"> <li>网络连接以 100 Mbps 的速度运行。</li> <li>没有网络连接。</li> </ul>
2.5 Gb 以太网活动	橙色	网络连接已建立。
	闪烁橙色	正在从网络访问 NAS。
	熄灭	没有网络连接。
1 Gb 以太网速度	绿色	网络连接以 1 Gbps 的速度运行。
	橙色	网络连接以 100 Mbps 的速度运行。
	熄灭	<ul style="list-style-type: none"> <li>网络连接以 10 Mbps 的速度运行。</li> <li>没有网络连接。</li> </ul>
1 Gb 以太网活动	绿色	网络连接已建立。
	闪烁绿色	正在从网络访问 NAS。
	熄灭	没有网络连接。
硬盘	闪烁红色	正在访问驱动器，但在此过程中发生读/写错误。
	红色	另一台设备访问数据期间发生了读/写错误。
	闪烁橙色	正在从网络访问 NAS。
	绿色	硬盘可供访问。
USB	闪烁蓝色，间隔 0.5 秒	<ul style="list-style-type: none"> <li>检测到 USB 设备（已连接到前 USB 端口）。</li> <li>正在从 NAS 移除 USB 设备（已连接到前 USB 端口）。</li> <li>正在访问 USB 设备（已连接到 NAS 的前 USB 端口）。</li> <li>正在与 USB 或 eSATA 设备间复制数据。</li> </ul>
	蓝色	在前 USB 端口中检测到 USB 设备。
	熄灭	<ul style="list-style-type: none"> <li>未检测到 USB 设备。</li> <li>NAS 已经完成与连接到前 USB 端口的 USB 设备间的数据复制。</li> </ul>

## USB 一键复制按钮

使用 USB 一键复制按钮，可以将数据备份从 USB 设备复制到 NAS，或将数据备份从 NAS 复制到 USB 设备。

此功能支持增量备份。NAS 只会复制在上次备份后修改或添加的文件。

## 警告音

时长	频率	描述
短提示音 (0.5 秒)	1	<ul style="list-style-type: none"> <li>NAS 正在启动。</li> <li>NAS 正在关闭 (软件关闭)。</li> <li>用户已按下“重置”按钮。</li> <li>操作系统已更新。</li> </ul>
	3	用户尝试从前面的 USB 端口将 NAS 数据复制到外部存储设备，但无法复制数据。
长提示音 (1.5 秒)	3 (每 5 分钟)	系统风扇故障。
	2	<ul style="list-style-type: none"> <li>磁盘卷的容量即将被占满。</li> <li>磁盘卷的容量已满。</li> <li>硬盘处于降级模式。</li> <li>用户已启动硬盘重建过程。</li> <li>插入或抽出硬盘。</li> </ul>
	1	<ul style="list-style-type: none"> <li>NAS 已通过强制关闭关机 (硬件关闭)。</li> <li>NAS 已成功开机并准备就绪。</li> </ul>

## 5. 故障排除

本章介绍基本故障排除信息。

### 热插拔故障硬盘

在以下情况下，NAS 支持热插拔硬盘：

- RAID 1：一个成员硬盘有故障
- RAID 5：一个成员硬盘有故障
- RAID 6：一个或两个成员硬盘有故障

1. 登录 QTS。
2. 转到**主菜单 > 存储与快照总管 > 存储 > 磁盘/VJBOD**。
3. 找到发生故障的硬盘。
4. 准备一个与故障硬盘具有相同或更大容量的新硬盘。
5. 从 NAS 中取下故障硬盘。
6. 等待 20 秒或 NAS 发出两声提示音。
7. 从硬盘托盘中取下故障硬盘。
8. 将新硬盘插入硬盘托盘中。
9. 安装新硬盘。  
此时 NAS 会发出两声提示音。
10. 转到**主菜单 > 存储与快照总管 > 存储**。
11. 找到包含新硬盘的卷，然后确认状态为正在重建。

### 强制 Qfinder Pro 或 myQNAPcloud 定位 NAS

如果在 QTS 安装过程中 Qfinder Pro 或 myQNAPcloud 无法定位 NAS，则硬盘或数据可能有故障。

1. 关闭 NAS 电源。
2. 取下所有硬盘。
3. 启动 NAS 电源。
4. 使用 Qfinder Pro 或 myQNAPcloud 定位 NAS。
5. 重新插入硬盘。
6. 继续安装 QTS。

## 恢复被意外移除的正常硬盘

NAS 支持独有的 RAID 恢复技术，可以从意外断开或移除的硬盘中恢复发生故障的 RAID 磁盘卷。用户可以将处于非活动状态的 RAID 1、RAID 5 或 RAID 6 卷恢复到降级模式，或将处于非活动状态的 RAID 0 和 JBOD 配置恢复为正常配置。

磁盘卷	RAID 恢复支持	被移除硬盘的最大数量
单个	否	不适用
JBOD	是	1
RAID 0	是	1
RAID 1	是	1
RAID 5	是	2
RAID 6	是	3
RAID 10	否	不适用

## 支持和其他资源

QNAP 提供了以下资源：

资源	URL
文档	<a href="https://docs.qnap.com">https://docs.qnap.com</a>
服务门户	<a href="https://service.qnap.com">https://service.qnap.com</a>
下载	<a href="https://download.qnap.com">https://download.qnap.com</a>
社区论坛	<a href="https://forum.qnap.com">https://forum.qnap.com</a>

## 6. 术语表

### Cloud Key

分配给每个 NAS 设备的唯一 8 位数代码

### myQNAPcloud Link

可用于通过 Internet 访问 NAS，而且不必配置复杂的端口转发设置

### myQNAPcloud

提供各种远程访问服务，如 DDNS 和 myQNAPcloud Link

### myQNAPcloud ID

用于注册 myQNAPcloud 帐户的电子邮件地址

### Qfinder Pro

一种 QNAP 实用工具，可用于查找和访问局域网中的 QNAP NAS 设备

### QTS

QNAP NAS 操作系统



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Version 3, 29 June 2007

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- 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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VCCI-B

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## 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

部件名称	有毒有害物质或元素					
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金属螺帽	0	0	0	0	0	0
电缆组装	0	0	0	0	0	0
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