



**QNAP**

# TS-x53D

TS-253D

TS-453D

TS-653D

用户指南

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# 1. 前言





## 关于本指南

本指南提供有关 QNAP TS-x53D NAS 的信息以及有关硬件安装的分步说明。此外，还提供了有关基本操作和故障排除信息的说明。

## 受众

本文档的目标读者为用户和存储管理员。本指南假定用户已对存储和备份概念有基本了解。

## 文档约定

符号	描述
	注释，提供默认配置设置和其他补充信息。
	重要注释，提供有关所需配置设置的信息以及其他关键信息。
	提示，提供有关执行某项任务或配置设置的建议或备选方法。
	警告，提供警告信息，如果忽略此信息，可能会导致潜在损失、伤害甚至死亡。

## 2. 产品概述


本章提供有关 QNAP TS-x53D NAS 的基本信息。





### 关于 TS-x53D


TS-x53D 由 Intel® Celeron® 四核 2.0 GHz NAS 提供支持，该 NAS 配备了 2.5 GbE 连接，脉冲频率高达 2.7 GHz。除了两个内置 2.5 GbE 端口之外，TS-x53D 还支持 QNAP 网络适配器。它特有三个 USB 2.0 端口和两个 USB 3.2 第 1 代端口。TS-x53D 具有双硬盘架、四硬盘架和六硬盘架的不同型号，支持多云备份、云存储网关、4K HDMI 输出和实时格式转换。

### 硬件规格

订购部件号	硬盘架	内存	电源
TS-253D-4G	2	4 GB	单个
TS-453D-4G	4	4 GB	单个
TS-453D-8G	4	8 GB	单个
TS-653D-4G	6	4 GB	单个
TS-653D-8G	6	8 GB	单个

组件	TS-253D	TS-453D	TS-653D
订购信息			
订购部件号	TS-253D-4G	<ul style="list-style-type: none"> <li>• TS-453-4G</li> <li>• TS-453-8G</li> </ul>	<ul style="list-style-type: none"> <li>• TS-653D-4G</li> <li>• TS-653D-8G</li> </ul>
处理器			
CPU	Intel® Celeron® J4125		
频率	4 核 2.0 GHz/2.7 GHz 脉冲		
架构	x86 64 位		
加密引擎	AES-NI		
内存			
预安装内存	4 GB RAM: 1 x 4 GB SODIMM DDR4	<ul style="list-style-type: none"> <li>• 4 GB RAM: 1 x 4 GB SODIMM DDR4</li> <li>• 8 GB RAM: 2 x 4 GB SODIMM DDR4</li> </ul>	<ul style="list-style-type: none"> <li>• 4 GB RAM: 1 x 4 GB SODIMM DDR4</li> <li>• 8 GB RAM: 2 x 4 GB SODIMM DDR4</li> </ul>
内存插槽	2 x SODIMM DDR4		
	<div style="display: flex; align-items: flex-start;"> <div style="text-align: center; margin-right: 10px;">  </div> <div> <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> </div> </div>		
最大内存	8 GB RAM: 2 x 4 GB		
闪存	4 GB (双重引导操作系统保护)		
存储			

组件	TS-253D	TS-453D	TS-653D
硬盘架	2 x 3.5 英寸 SATA 6 Gbps	4 x 3.5 英寸 SATA 6 Gbps	6 x 3.5 英寸 SATA 6 Gbps
	 <b>注</b> SATA 6 Gbps 还向后兼容 SATA 3 Gbps。		
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 2	3.5 英寸硬盘架：1 至 4	3.5 英寸硬盘架：1 至 6
热插拔	支持		
网络			
2.5 Gb 以太网端口	2 x 2.5 GbE RJ45		
外部 I/O 端口和扩展插槽			
PCIe 插槽	1 x PCIe Gen 2.0 x4	1 x PCIe Gen 2.0 x2	
	 <b>提示</b> 有关兼容扩展卡的列表，请转到 <a href="https://www.qnap.com/compatibility">https://www.qnap.com/compatibility</a> 。		
USB 端口	正面： <ul style="list-style-type: none"> <li>• 1 x USB 3.2 A 型</li> </ul>  <b>注</b> 此 USB 端口支持一键复制。 背面： <ul style="list-style-type: none"> <li>• 1 x USB 3.2 A 型</li> <li>• 3 x USB 2.0 A 型</li> </ul>		
HDMI 端口	1 x HDMI 2.0 (60 Hz 时最高 4096 x 2160)		
界面			
红外传感器	1  <b>注</b> QNAP RM-IR004 遥控器是可选配件，需另购。		
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)	168 x 105 x 226 mm (6.61 x 4.13 x 8.90 英寸)	168 x 170 x 226 mm (6.61 x 6.69 x 8.90 英寸)	168 x 235 x 226 mm (6.61 x 9.25 x 8.90 英寸)
净重	1.48 kg (3.26 磅)	2.37 kg (5.22 磅)	2.87 kg (6.33 磅)
其他			

组件	TS-253D	TS-453D	TS-653D
电源单元	65W, 100-240V AC	90W, 100-240V AC	120W, 100-240V AC
功耗	12.448 W	25.98 W	35.437 W
系统电池	CR2032 锂电池 (3V, 225 mAh)		
噪声声级	17.1 dB(A)	21.1 dB(A)	21.3 dB(A)
	 <b>注</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	1 x 70mm, 12V DC	1 x 120mm, 12V DC	2 x 90mm, 12V DC
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		



#### 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>。

## 包装内容

项目	数量
TS-x53D NAS	1
交流电源适配器	1
电源线	1
以太网线	2 x Cat5e
适用于 3.5 英寸硬盘的螺丝	<ul style="list-style-type: none"> <li>• TS-253D: 8</li> <li>• TS-453D: 16</li> <li>• TS-653D: 24</li> </ul>
适用于 2.5 英寸硬盘的螺丝	<ul style="list-style-type: none"> <li>• TS-253D: 6</li> <li>• TS-453D: 12</li> <li>• TS-653D: 18</li> </ul>
快速安装指南 (QIG)	1

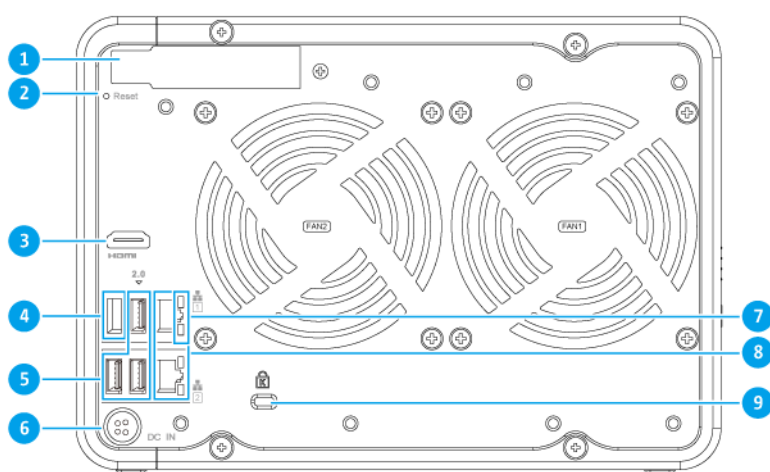
## 组件

## 前面板



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

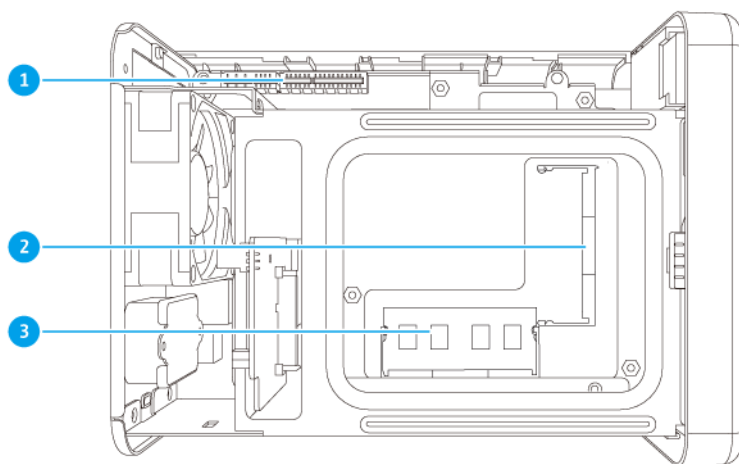
## 后面板





编号	组件	编号	组件
1	PCIe 半高盖板	6	电源输入
2	重置按钮	7	2.5 Gb 以太网端口 (RJ45)
3	HDMI 2.0 端口	8	2.5 Gb 以太网 LED
4	USB 3.2 Gen 1 A 型端口	9	Kensington 安全锁孔
5	USB 2.0 A 型端口	-	-

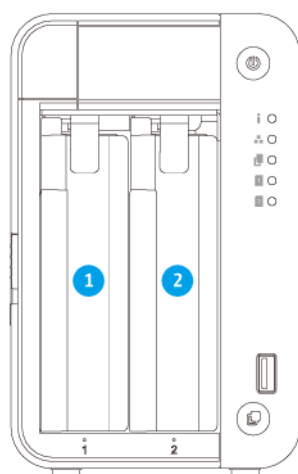
## 右面板



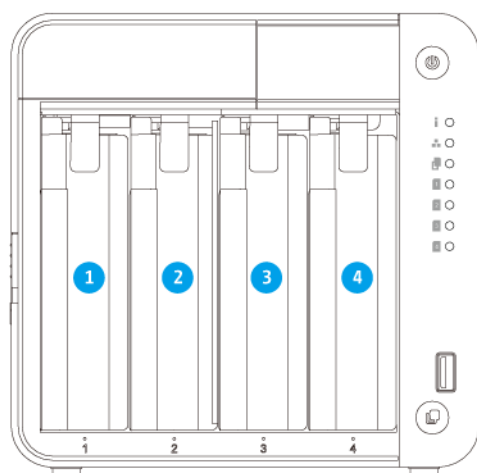
**注**  
图像不含机箱。

编号	组件	编号	组件
1	PCIe 2.0 x2  <b>注</b> TS-253D 具有 PCIe 2.0 x4 插槽。	3	内存插槽 2
2	内存插槽 1	-	-

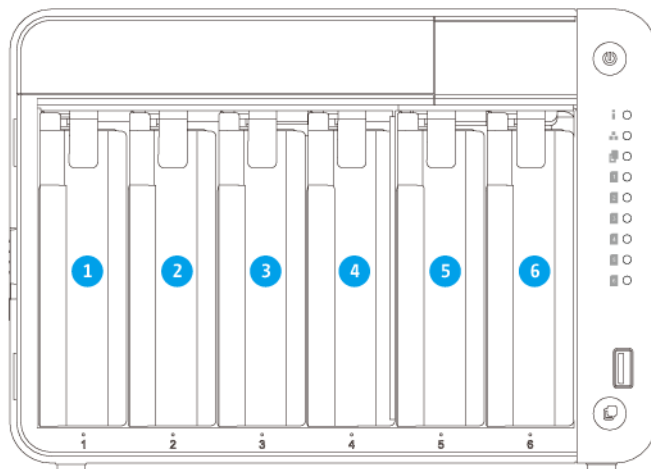
## 硬盘编号



### TS-253D



### TS-453D



## TS-653D

### 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

- NAS 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 NAS，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。
- 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

- 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。



设备可能有一条或多条冗余电源单元 (PSU) 线。为避免受到严重伤害，安装或更换系统组件前，必须由经培训的维修技师拔下所有 PSU 线。

#### 系统电池

- 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。

## 运动的部件



**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正在转动的风扇叶片。



**运动的组件：** 使您的身体各部位远离正在运动的其他组件。

## 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> </ul>
硬件和外围设备	<ul style="list-style-type: none"> <li>• 存储硬盘 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>• 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。  
有关详细信息，请参见[安装要求](#)。
2. 安装硬盘。  
有关详细信息，请参见以下内容：
  - [在 3.5 英寸硬盘架上安装 3.5 英寸硬盘](#)
  - [在 3.5 英寸硬盘架上安装 2.5 英寸硬盘和固态硬盘](#)
3. 可选: 更换内存模块。  
有关详细信息，请参见[更换内存模块](#)。
4. 可选: 安装扩展卡。  
有关详细信息，请参见[安装扩展卡](#)。
5. 连接电源线和所有适用的线缆。

6. 启动 NAS 电源。
7. 安装 QTS。  
有关详细信息，请参见 [QTS 安装](#)。
8. 登录 QTS。

## 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。

### 安装硬盘

TS-x53D 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 英寸硬盘架上安装 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。

•



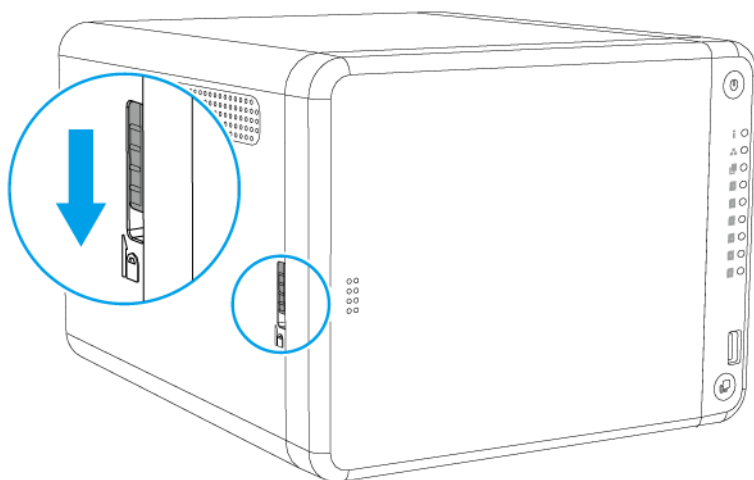
**转动的风扇叶片：**使您的双手和身体其他部位远离正在转动的风扇叶片。

•

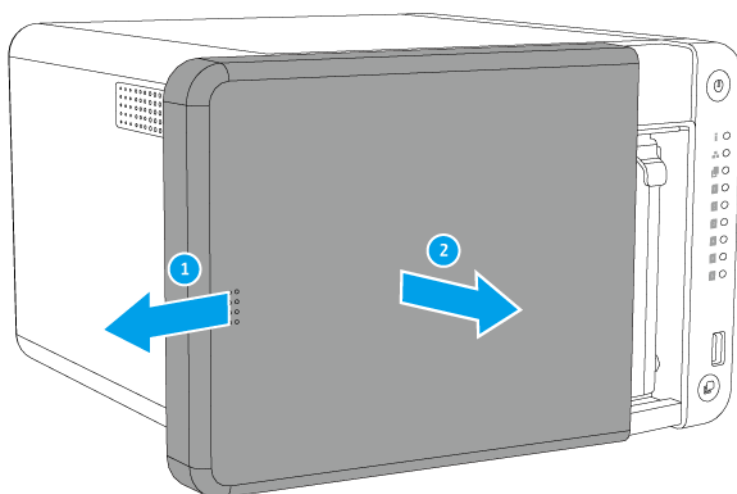


**其他运动的组件：**使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。
2. 取下前盖。
  - a. 找到 NAS 左侧的锁紧机构。
  - b. 向下滑动锁扣以释放前盖。

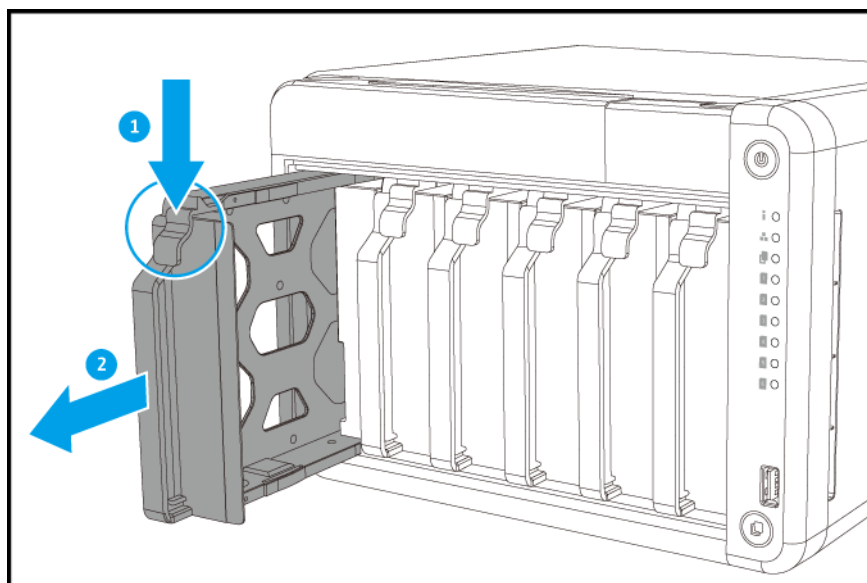


c. 将前盖向左滑动，然后拉出。



3. 取下硬盘托盘。

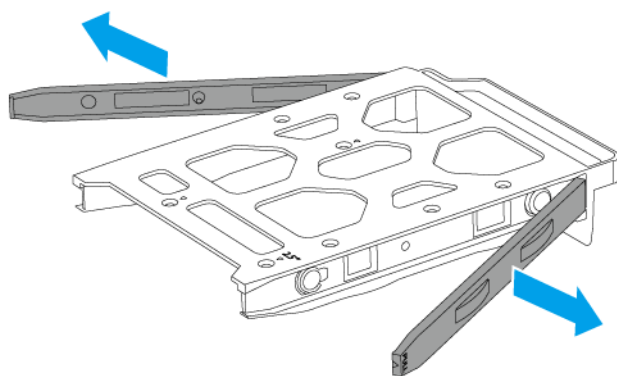
a. 按压门锁的同时拉出硬盘托盘，取下该托盘。



### 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。

- b. 向外拉动托盘手柄。
- c. 拉出托盘。
4. 将硬盘安装到托盘上。
  - a. 取下硬盘托盘两侧的固定面板。

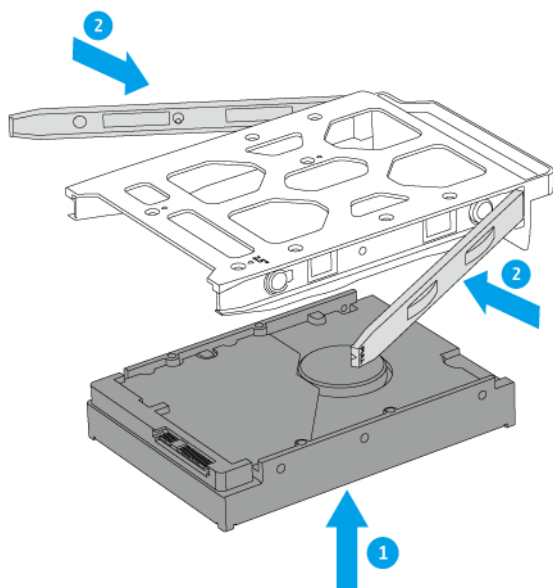


- b. 将硬盘放在托盘上，使硬盘底部的孔与托盘底部的孔对齐。
- c. 装上固定面板，将硬盘锁定在托盘上。

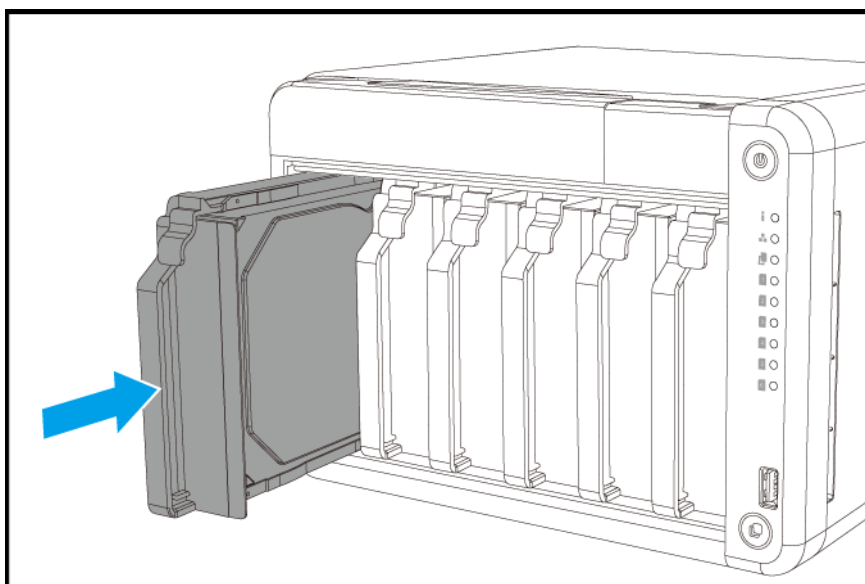




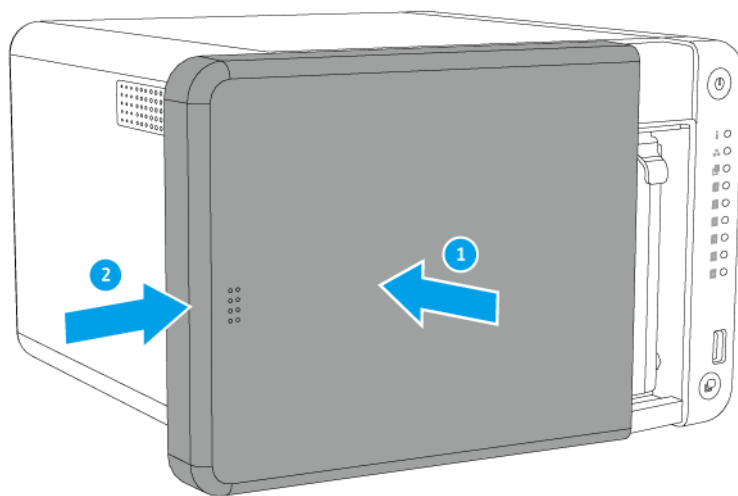
**注**  
安装螺丝后即可转运安装了 HDD 的 NAS。



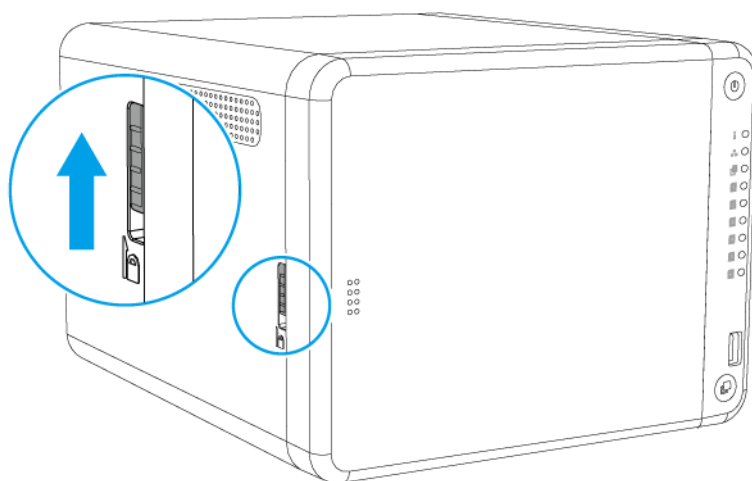
5. 将托盘装入硬盘架。
  - a. 将托盘插入硬盘架。
  - b. 推动手柄。



6. 安装前盖。
  - a. 将前盖与外壳上的凹槽对齐，然后向右滑动。



b. 向上滑动锁扣，固定前盖。



7. 启动 NAS 电源。

### 在 3.5 英寸硬盘架上安装 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。

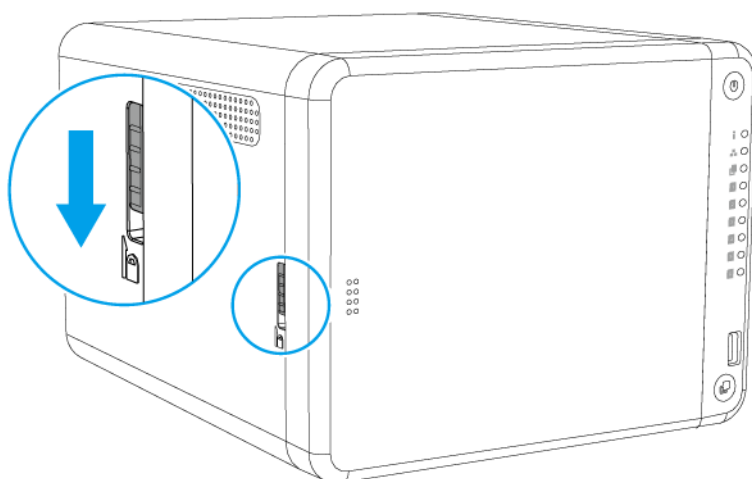


**转动的风扇叶片：**使您的双手和身体其他部位远离正在转动的风扇叶片。

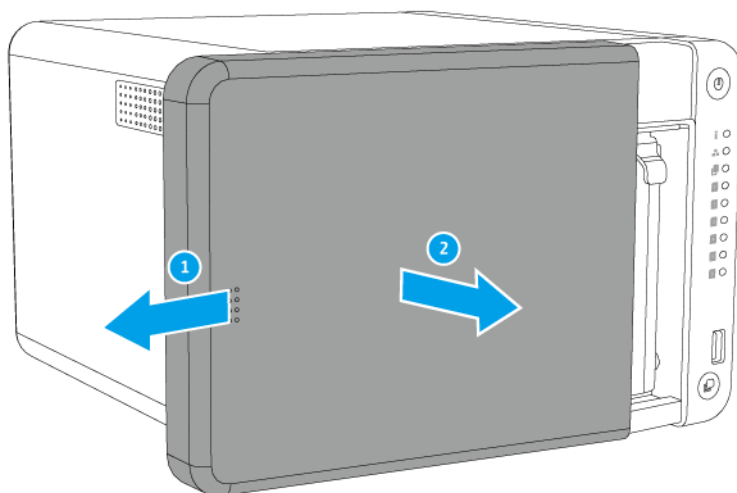


**其他运动的组件：**使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。
2. 取下前盖。
  - a. 找到 NAS 左侧的锁紧机构。
  - b. 向下滑动锁扣以释放前盖。

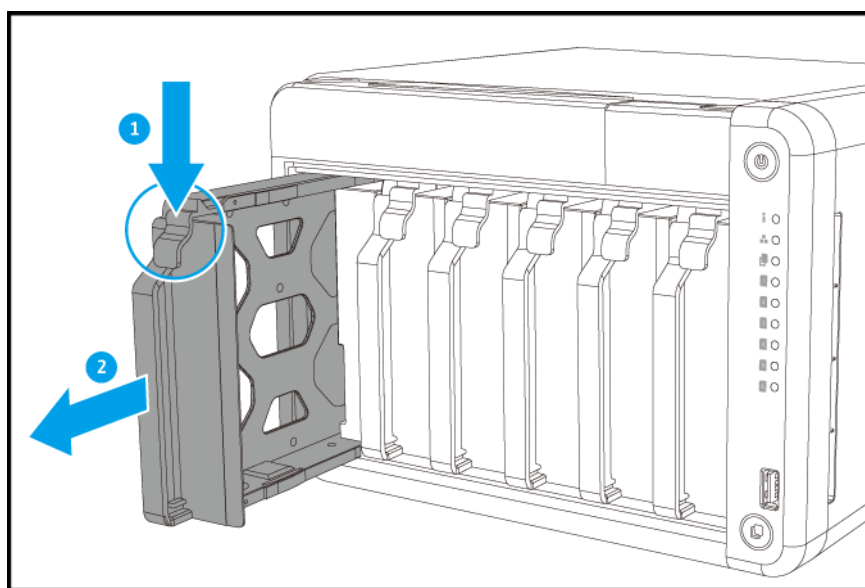


- c. 将前盖向左滑动，然后拉出。



### 3. 取下硬盘托盘。

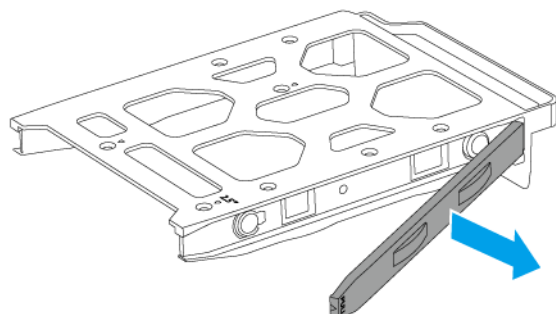
- a. 按压门锁的同时拉出硬盘托盘，取下该托盘。



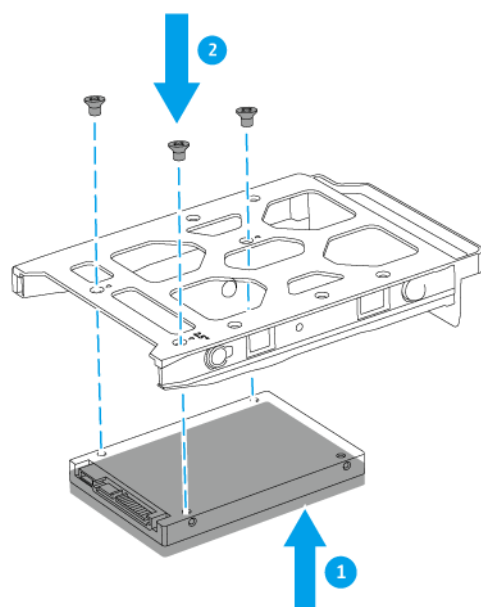
#### 重要

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。

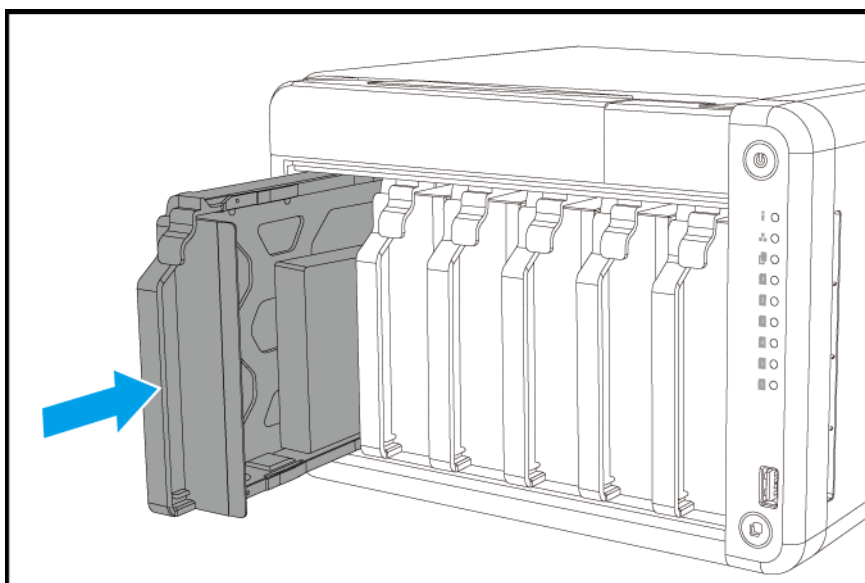
- b. 向外拉动托盘手柄。
  - c. 拉出托盘。
- ### 4. 将硬盘安装到托盘上。
- a. 取下硬盘托盘右侧的固定面板。



- b. 将硬盘放在托盘上，使硬盘底部的孔与托盘底部的孔对齐。
- c. 安装螺丝。

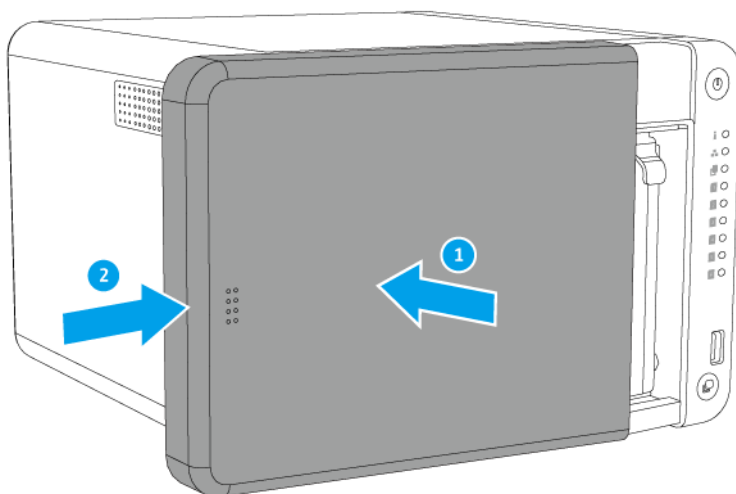


5. 将托盘装入硬盘架。
  - a. 将托盘插入硬盘架。
  - b. 推动手柄。

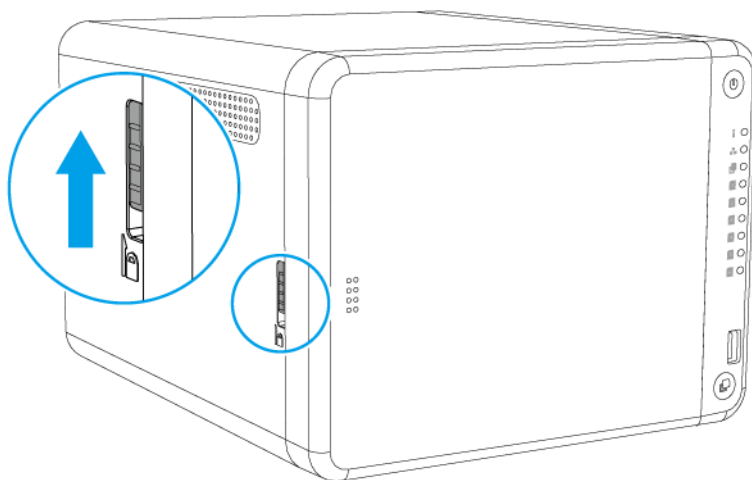


**6. 安装前盖。**

- a.** 将前盖与外壳上的凹槽对齐，然后向右滑动。



- b.** 向上滑动锁扣，固定前盖。



7. 启动 NAS 电源。

## 更换内存模块

NAS 有两个内存插槽。您可以通过升级内存模块来增加 NAS 的内存容量。只能使用类型和容量均相同的 QNAP 模块，以保持系统性能和稳定性。可以从授权经销商处购买 QNAP 内存模块。



### 重要

确保每对模块都完全相同。  
有关插槽编号的详细信息，请参见[右面板](#)。



### 警告

- 只有合格人员才能执行以下步骤。不遵守说明可能会导致重伤或死亡。
- 请执行静电放电 (ESD) 规程，以避免组件损坏。



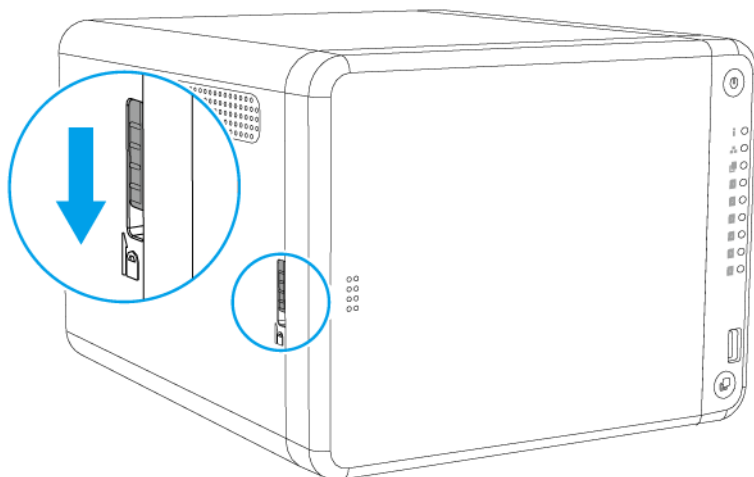
**转动的风扇叶片：**使您的双手和身体其他部位远离正在转动的风扇叶片。



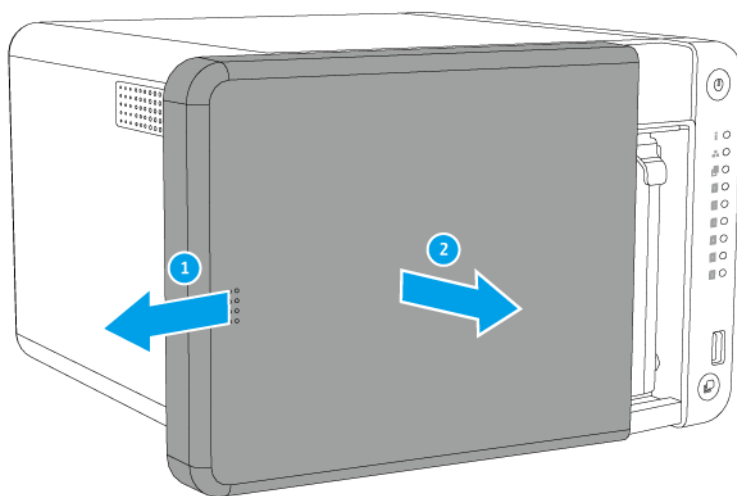
**其他运动的组件：**使您的双手和身体其他部位远离正在运动的其他组件。

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. 取下前盖。

- a. 找到 NAS 左侧的锁紧机构。



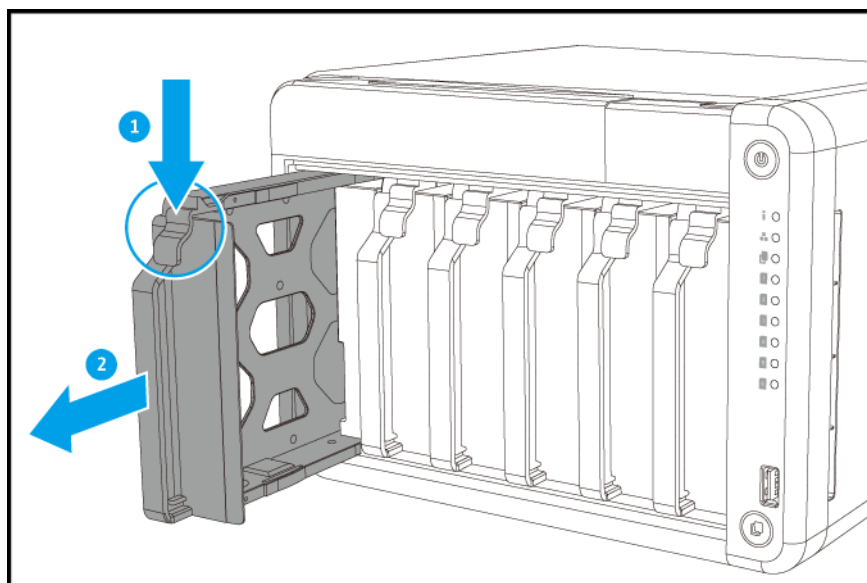
- b. 向下滑动锁扣，解除对前盖的锁定。



5. 取下硬盘托盘。

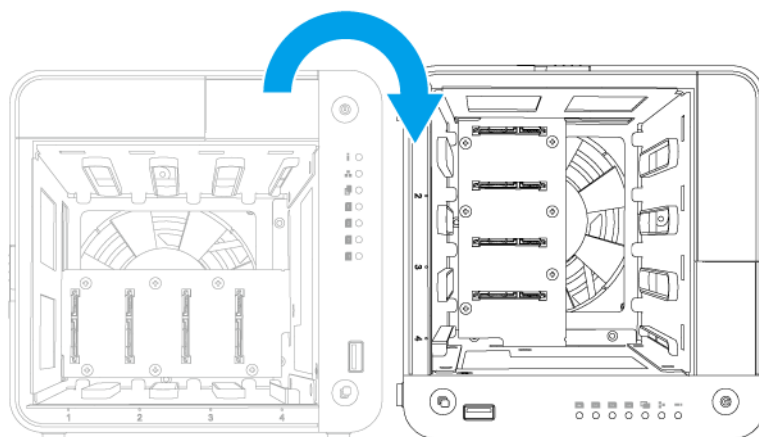
- a. 按压门锁的同时拉出硬盘托盘，取下该托盘。



**重要**

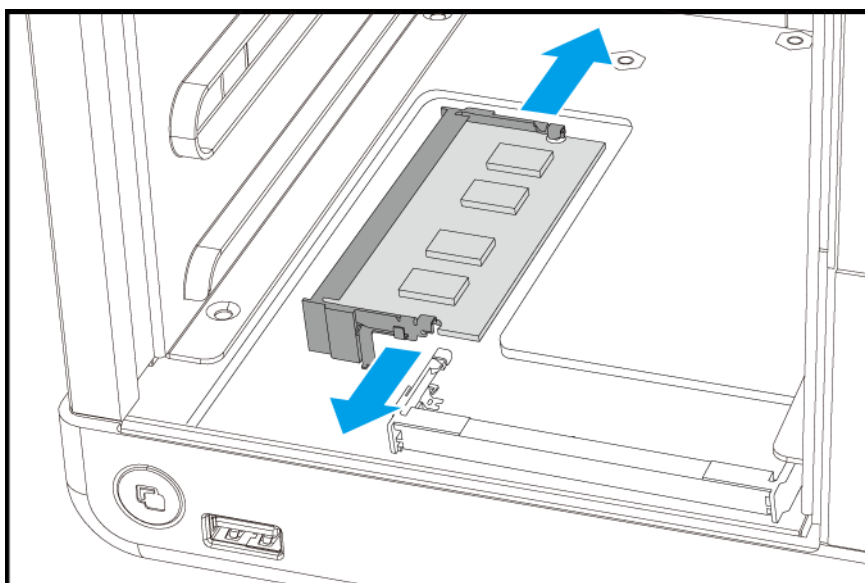
请记住每个硬盘的编号。硬盘托盘需要装回原来所在的硬盘架。

- b. 向外拉动托盘手柄。
  - c. 拉出托盘。
6. 将 NAS 右侧朝下放置。

**注**

此图显示了 TS-453D 型号。

7. 可选: 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。

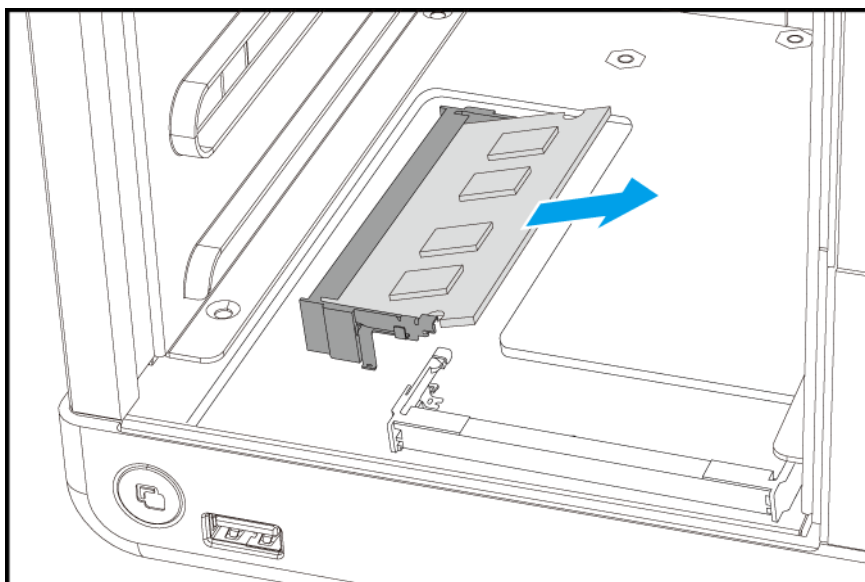


#### 警告

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。

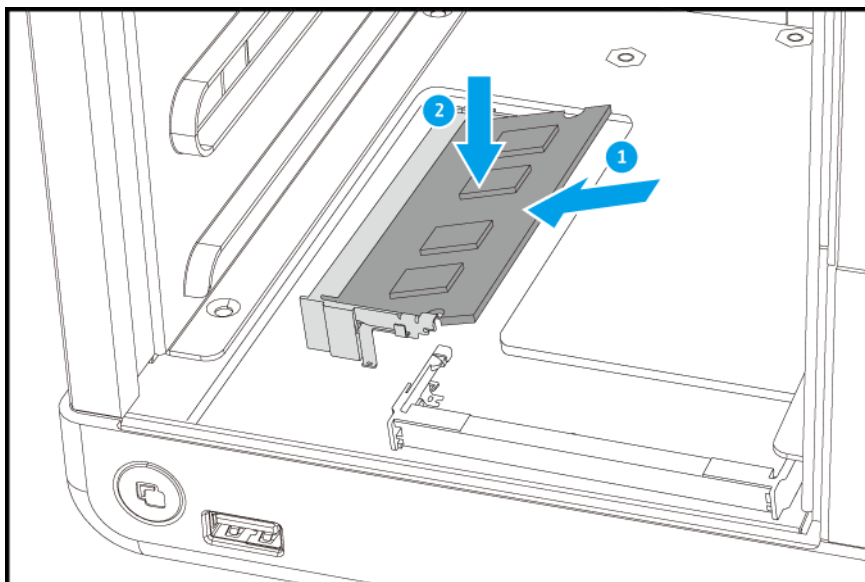


#### 警告

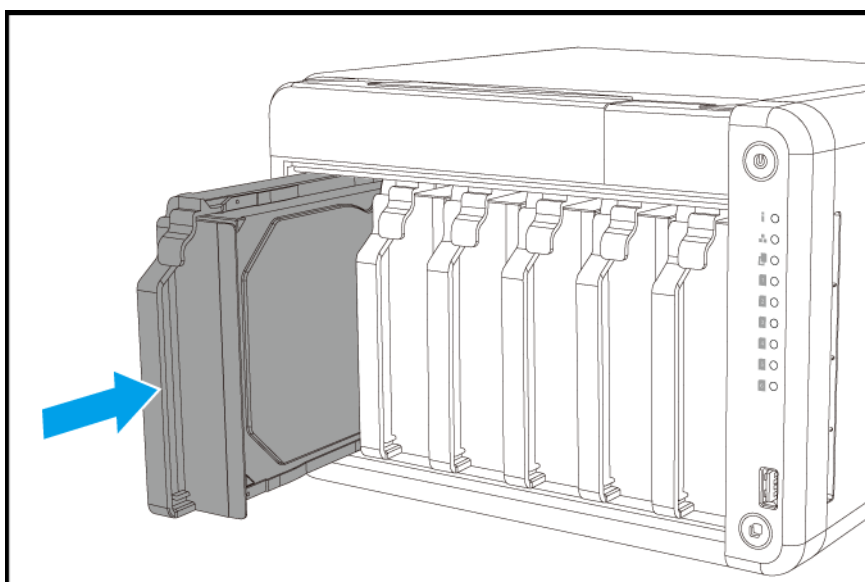
- 请勿触摸内部组件，特别是金属接头。
- 不要折弯模块。

8. 安装新模块。

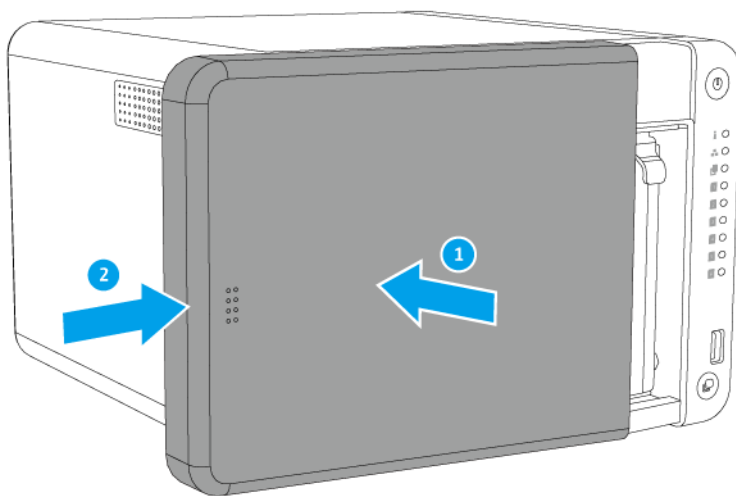
- a. 将凹口与插槽内的凸起对齐。
- b. 将模块插入插槽中。
- c. 确认金属接头已完全插入插槽中。
- d. 小心地向下按压模块，直到固定夹将模块锁定到位。



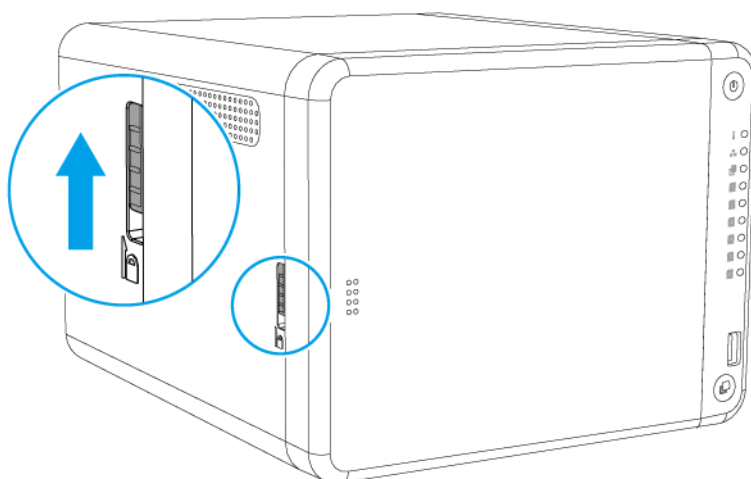
9. 将托盘装入硬盘架。
  - a. 将托盘插入硬盘架。
  - b. 推动手柄。



10. 安装前盖。
  - a. 将前盖与外壳上的凹槽对齐，然后向右滑动。



b. 向上滑动锁扣，固定前盖。



11. 连接所有线缆和外接部件。
12. 启动 NAS 电源。
13. 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。

## 安装扩展卡

TS-x53D 支持精选的扩展卡。从公司网站购买的 QNAP 品牌扩展卡随附有适合所有 QNAP NAS 型号的支架。TS-x53D 系列采用半高扁平支架。



### 注

有关兼容网络适配器的列表，请转到 <https://www.qnap.com/compatibility/>



### 警告

- 只有合格人员才能执行以下步骤。不遵守说明可能会导致重伤或死亡。
- 请执行静电放电 (ESD) 规程，以避免组件损坏。

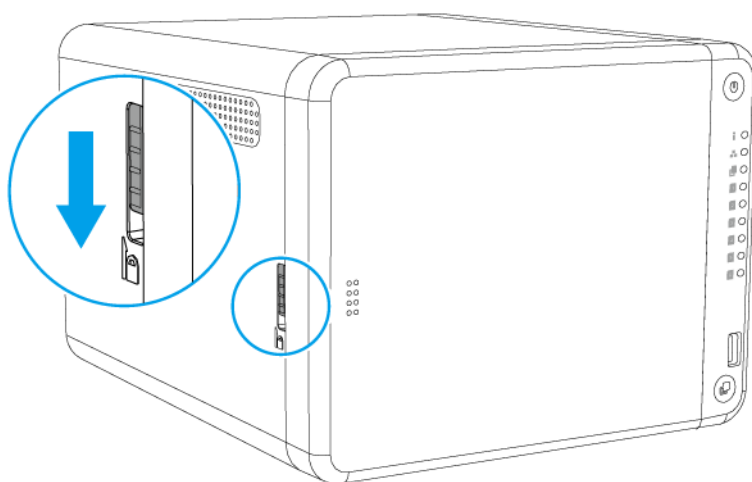


**转动的风扇叶片：**使您的双手和身体其他部位远离正在转动的风扇叶片。

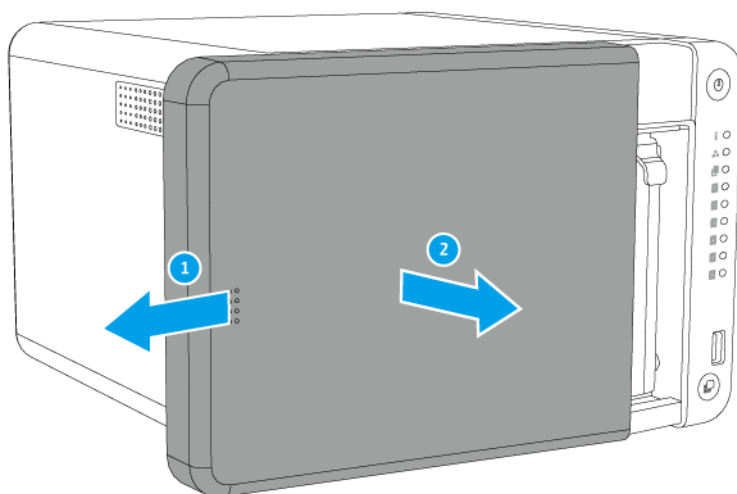


**其他运动的组件：**使您的双手和身体其他部位远离正在运动的其他组件。

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. 取下前盖。
  - a. 找到 NAS 左侧的锁紧机构。
  - b. 向下滑动锁扣，解除对前盖的锁定。

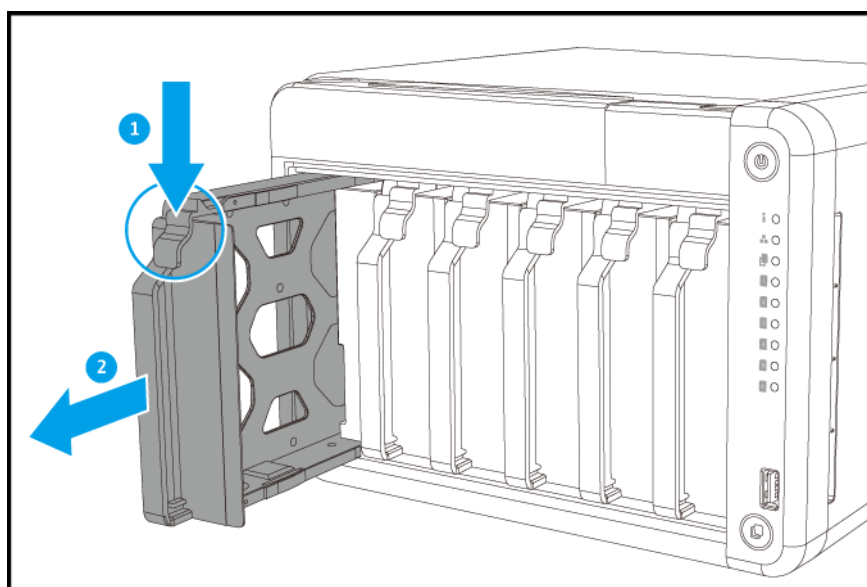


- c. 将前盖向左滑动，然后拉出。



5. 取下硬盘托盘。

- a. 按压门锁的同时拉出硬盘托盘，取下该托盘。



- b. 向外拉动托盘手柄。

- c. 拉出托盘。

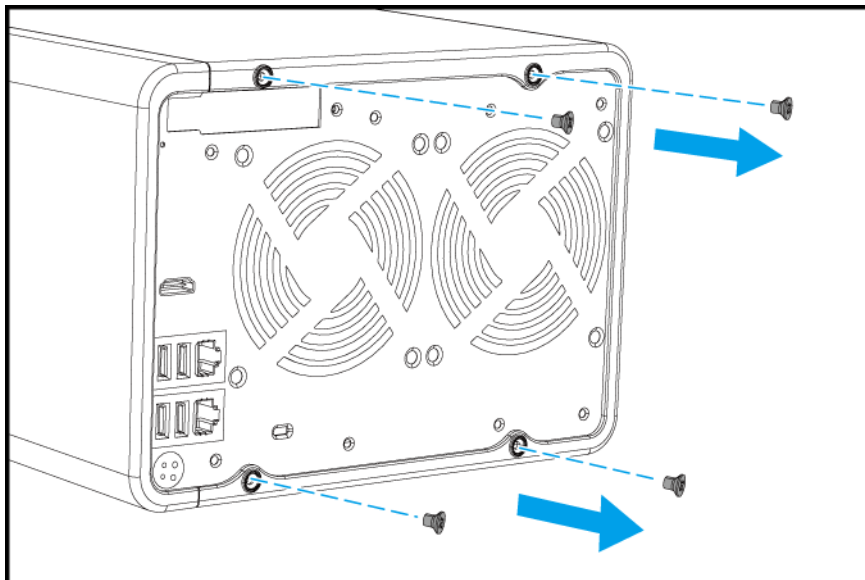
6. 取下外壳盖。

- a. 从 NAS 背面卸下用于将外壳盖连接到机箱的螺丝。

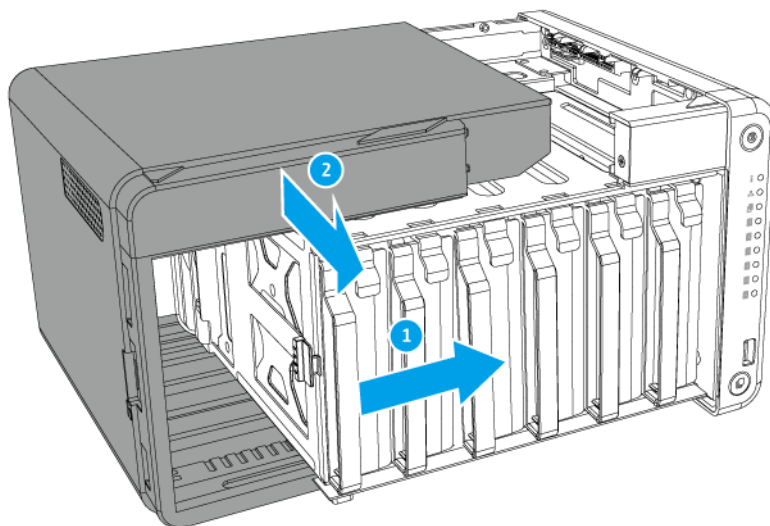


**注**  
螺丝数量因型号而异。

- TS-253D: 2 个螺丝
- TS-453D: 3 个螺丝
- TS-653D: 4 个螺丝

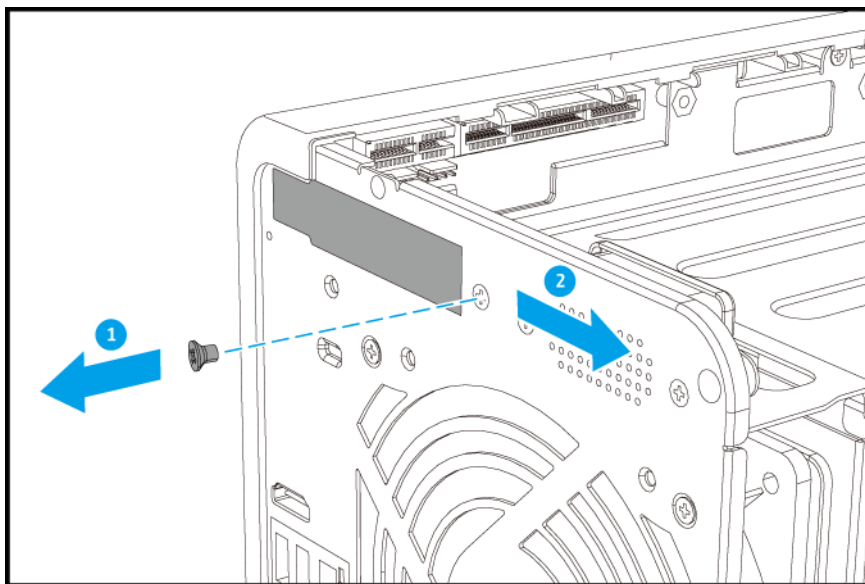


- 向下按压外壳盖的顶部，然后拉动机箱。
- 将机箱向右拉动，直到其完全脱离外壳盖。



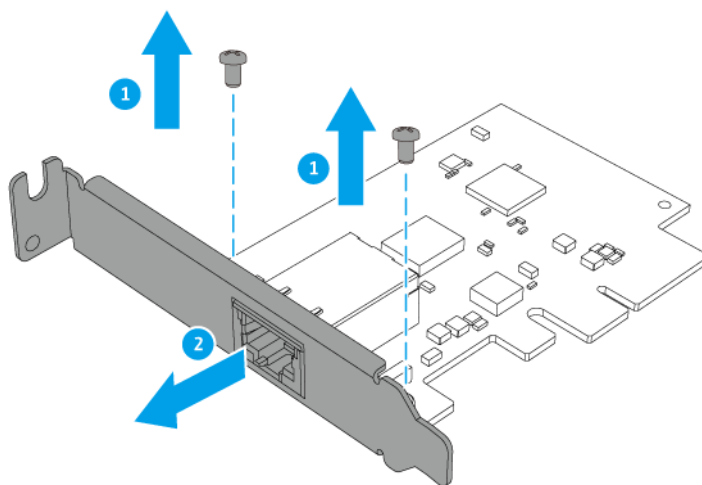
## 7. 取下 PCIe 盖板。

- 取下用于将盖板固定到支架的螺丝。
- 将盖板从插槽中拉出。



8. 可选: 将 QNAP 支架安装到扩展卡上。

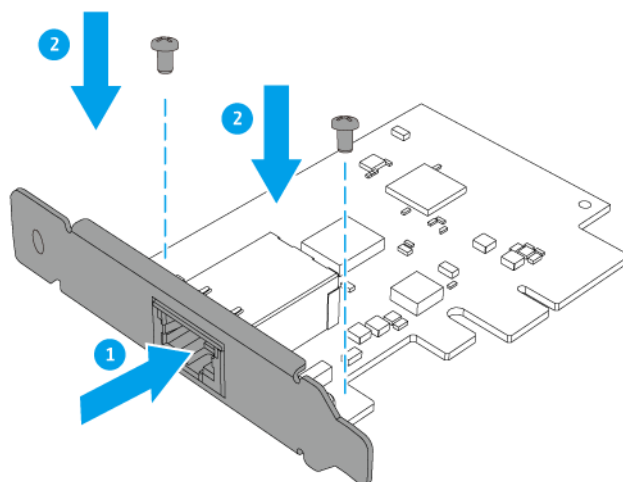
a. 卸下现有支架的所有螺丝。



b. 小心地从扩展卡取下支架。

c. 使用相同的螺丝将 QNAP 支架安装到扩展卡上。

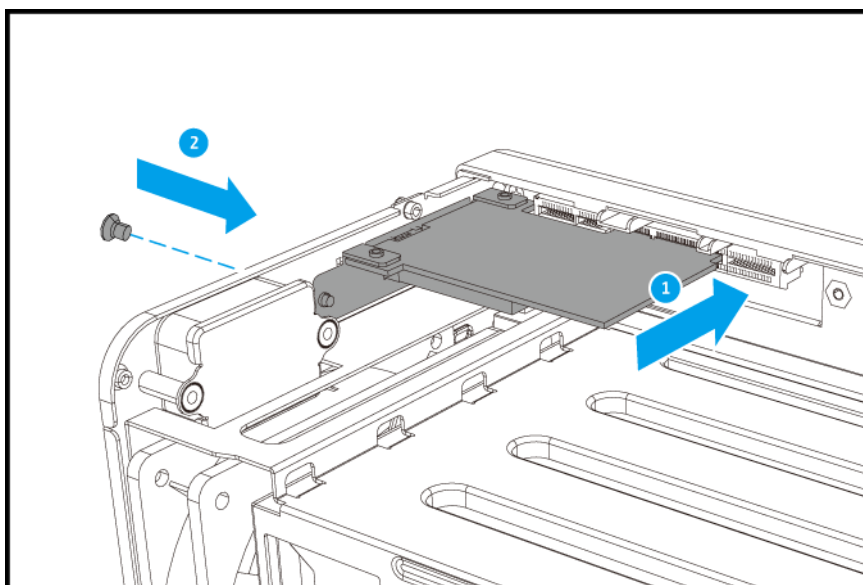




d. 确认支架不会移动。

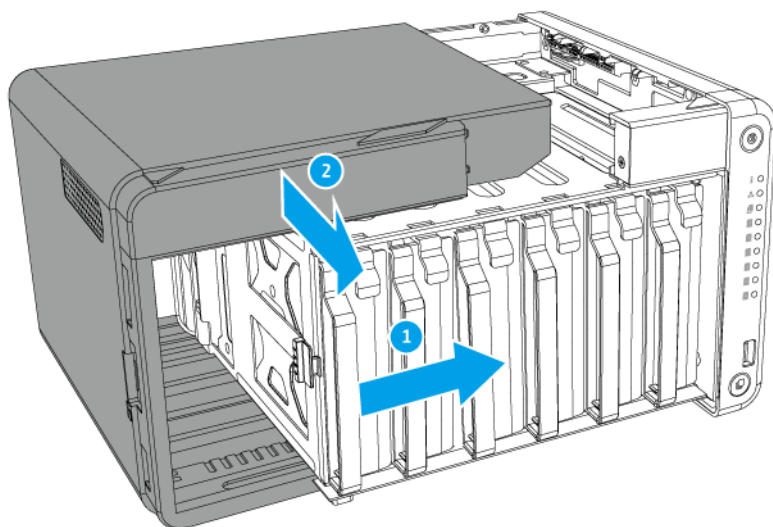
#### 9. 安装扩展卡。

- a. 握住卡片边缘。
- b. 将其插入插槽中。
- c. 安装螺丝。



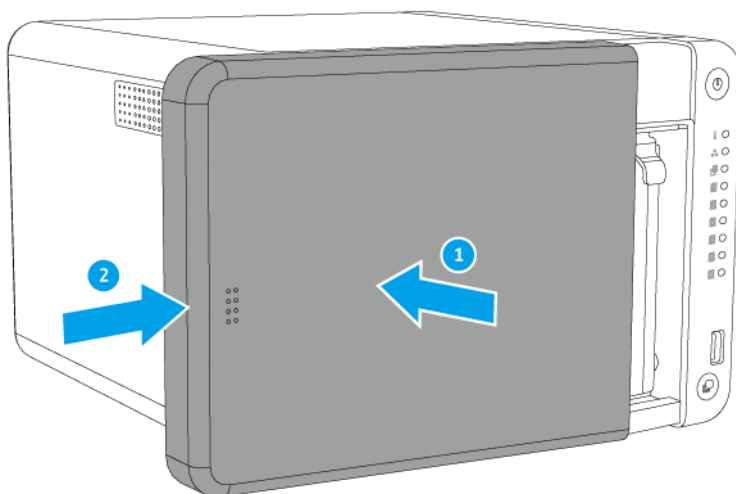
#### 10. 安装外壳盖。

- a. 将外壳盖向右滑动至与机箱接触，然后再拉动外壳盖。

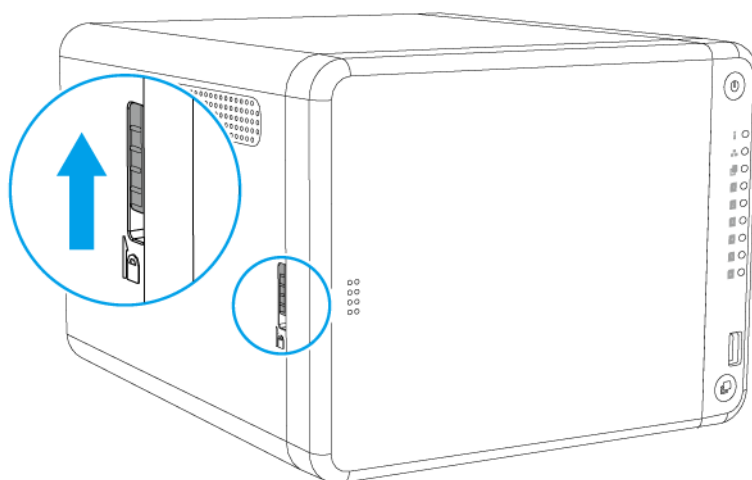


## 11. 安装前盖。

- a. 将前盖与外壳上的凹槽对齐，然后向右滑动。



- b. 向上滑动锁扣，固定前盖。



12. 连接所有线缆和外接部件。

13. 将电源线连接到插座。

14. 启动 NAS 电源。

## 安装扩展单元

TS-x53D 支持 USB 和 SATA JBOD 扩展单元。有关详细信息，请参见下表。



**注**

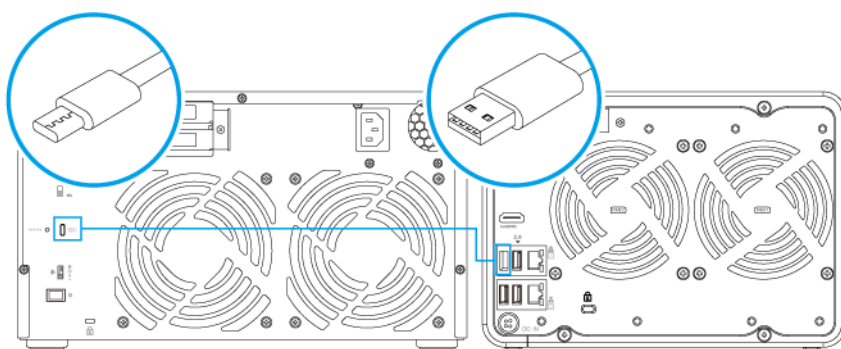
有关扩展单元兼容性和支持的最大扩展单元数的详细信息，请转到 <https://www.qnap.com/en/compatibility-expansion/>

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</li> </ul>	USB 3.2 Gen 2 A 型至 C 型线缆
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</li> </ul>	USB 3.2 Gen 1 A 型至 C 型线缆
TL-D400S	<ul style="list-style-type: none"> <li>使用 SFF-8088 接口</li> <li>支持 SATA HDD/SSD</li> </ul>	<ul style="list-style-type: none"> <li>1 x SFF-8088 连接器线缆</li> <li>QXP-400eS-A1164 主机总线适配器</li> </ul>
TL-D800S	<ul style="list-style-type: none"> <li>使用 SFF-8088 接口</li> <li>支持 SATA HDD/SSD</li> </ul>	<ul style="list-style-type: none"> <li>2 x SFF-8088 连接器线缆</li> <li>QXP-800eS-A1164 主机总线适配器</li> </ul>
TL-D1600S	<ul style="list-style-type: none"> <li>使用 SFF-8088 接口</li> <li>支持 SATA HDD/SSD</li> </ul>	<ul style="list-style-type: none"> <li>4 x SFF-8088 至 SFF-8644 连接器线缆</li> <li>QXP-1600eS 主机总线适配器</li> </ul>

## 连接 USB 扩展单元

TS-x53D 需要 USB A 型至 USB C 型线缆或转接头才能连接到 USB 扩展单元。有关所需配件的详细信息，请参见[安装扩展单元](#)。有关兼容扩展单元和支持的最大单元数，请参见 <https://www.qnap.com/go/compatibility-expansion>。

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 > 总览 > 系统。
  - c. 确认扩展单元已列出。

## 连接 SATA JBOD 扩展单元

TS-x53D 要求在 NAS 上安装主机总线适配器才能连接到 SATA JBOD 扩展单元。有关所需配件的详细信息，请参见[安装扩展单元](#)。有关兼容扩展单元和支持的最大单元数，请参见 <https://www.qnap.com/go/compatibility-expansion>。

1. 关闭 NAS 电源。
2. 在 PCIe 插槽上安装主机总线适配器。

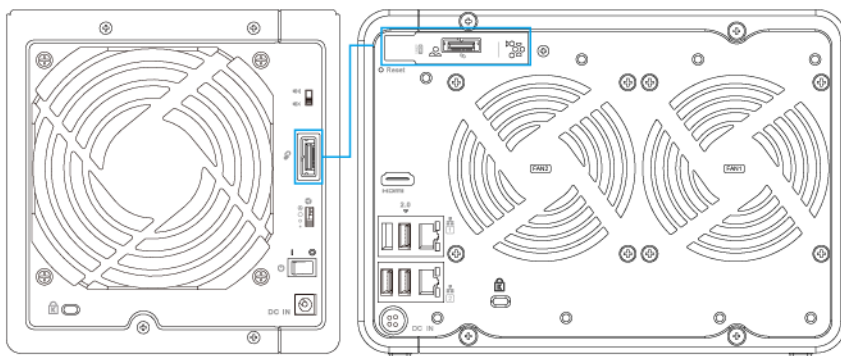


### 重要

将 SATA JBOD 设备连接到主机设备时，需要 QNAP QXP SATA 主机总线适配器。第三方主机适配器与 QNAP JBOD 设备不兼容。

有关详细信息，请参见[安装扩展卡](#)。

### 3. 按以下拓扑将扩展单元连接到 NAS。



#### 注

需要 SFF-8088 线缆将 TS-x53D 连接到桌面 NAS。SATA JBOD 包装中提供线缆。

4. 启动 SATA JBOD 扩展单元电源。
5. 启动 NAS 电源。
6. 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 > 总览 > 系统。
    - a. 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>• 计算机或移动设备</li> <li>• myQNAPcloud 帐户</li> <li>• CloudKey</li> </ul>
本地安装	<p>如果 NAS 支持 HDMI 输出，可以执行以下操作：</p> <ul style="list-style-type: none"> <li>• 将 NAS 连接到所需的硬件。</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>• 监视器</li> <li>• HDMI 线缆</li> <li>• USB 键盘或遥控器（仅部分型号提供）</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

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。  
智能安装指南将在默认 Web 浏览器中打开。
5. 单击启动智能安装指南。
6. 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。
7. 单击下一步。
8. 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。

9. 单击下一步。

10. 选择**自动获取 IP 地址(DHCP)**。
11. 单击**下一步**。
12. 选择将用于访问 NAS 上共享文件夹的设备类型。
13. 单击**下一步**。
14. 检查设置。
15. 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。

16. 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**

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**

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**

- 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**。  
**智能安装指南**将在默认 Web 浏览器中打开。

8. 单击**启动智能安装指南**。
9. 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。
10. 单击**下一步**。
11. 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。

12. 单击**下一步**。
13. 选择**自动获取 IP 地址(DHCP)**。
14. 单击**下一步**。
15. 选择将用于访问 NAS 上共享文件夹的设备类型。
16. 单击**下一步**。
17. 检查设置。
18. 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。

19. 单击**确认**。  
QTS 即安装完毕。

## 使用 HDMI 连接安装 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. 将 HDMI 显示器连接到 NAS。
2. 将 USB 键盘连接到 NAS。
3. 启动 NAS 电源。  
此时会出现“智能安装指南”的**欢迎**屏幕。
4. 选择**启动智能安装指南**。
5. 选择**否，跳过此过程**。
  - 启用多媒体功能后，可以在“存储与快照总管”中配置磁盘后安装多媒体应用程序。
  - 有关在 QTS 上启用多媒体功能的详细信息，请参见《QTS 用户指南》的“系统管理”一节。
6. 选择**稍后配置**。  
有关配置磁盘的详细信息，请参见《QTS 用户指南》的“存储与快照总管”一节。



7. 检查设置。
8. 单击下一步。
9. 检查设置。
10. 单击下一步。  
此时会出现**确认**屏幕。

**警告**

单击**下一步**后，将先删除硬盘上的所有数据，然后再安装 QTS。


11. 单击下一步。  
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>系统管理员密码：适配器 1 的 MAC 地址，无特殊字符。例如，如果适配器 1 的 MAC 地址为 11:22:33:44:55:66，则管理员密码将为 112233445566。</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <b>提示</b>            您可以使用 Qfinder Pro 找到适配器 1 的 MAC 地址。设备上粘贴的标签也会在 MAC1 下列出此地址。         </div> <ul style="list-style-type: none"> <li>TCP/IP 配置：             <ul style="list-style-type: none"> <li>使用动态 IP 地址</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>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>

## 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。

## LED

开启 NAS 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 NAS 已连接到网络的情况。

有关 LED 位置的详细信息，请参见[组件](#)。

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> </ul>
	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	正在访问硬盘，但在此过程中发生读/写错误。
	闪烁橙色	正在从网络访问 NAS。
2.5 千兆位 LAN (正面)	橙色	<ul style="list-style-type: none"> <li>• 以太网端口已连接至千兆位网络。</li> <li>• 以太网端口已连接至 2.5 千兆位网络。</li> <li>• 以太网端口已连接至 10 兆位网络。</li> <li>• 以太网端口已连接至 100 兆位网络。</li> </ul>
	熄灭	没有网络连接。
2.5 Gb 速度 LAN (背面)	绿色	以太网端口已连接至 2.5 千兆位网络。
	橙色	<ul style="list-style-type: none"> <li>• 以太网端口已连接至千兆位网络。</li> <li>• 以太网端口已连接至 100 兆位网络。</li> </ul>
	熄灭	以太网端口已连接至 10 兆位网络。

LED	状态	描述
2.5 Gb 活动 LAN (背面)	橙色	没有数据传输。
	闪烁橙色	<ul style="list-style-type: none"> <li>以太网端口已接入千兆位网络并正在传输数据。</li> <li>以太网端口已接入 2.5 Gb 网络并正在传输数据。</li> <li>以太网端口已接入 10 兆位网络并正在传输数据。</li> <li>以太网端口已接入 100 兆位网络并正在传输数据。</li> </ul>
	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	发生硬盘读/写错误。
	闪烁绿色	正在访问数据。
	绿色	硬盘可供访问。
硬盘状态	绿色	硬盘就绪。
	闪烁绿色	正在访问硬盘。
	红色	发生硬盘读/写错误。
	闪烁红色	QTS 正在定位硬盘。
	熄灭	未检测到硬盘或硬盘未初始化。
硬盘活动	绿色	硬盘就绪。
	闪烁绿色	正在访问硬盘。
	熄灭	未检测到任何硬盘。
USB 一键复制端口	闪烁蓝色，每秒 2 次	<ul style="list-style-type: none"> <li>正在装载 USB 设备（已连接到 USB 一键复制端口）。</li> <li>正在断开与 USB 设备（已连接到 USB 一键复制端口）的连接。</li> <li>正在访问 USB 设备（已连接到 USB 一键复制端口）。</li> </ul>
	蓝色	已装载 USB 设备（已连接到 USB 一键复制端口）。
	熄灭	未检测到 USB 设备。

## 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。

时长	频率	描述
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。

### 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。

### 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 > 存储空间总管 > 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 > 存储空间总管 > 存储空间。
11. 找到包含新硬盘的卷，然后确认状态为重建中。

### 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

### **CloudKey**

分配给每个 NAS 设备的唯一 8 位数代码

### **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

## 7. 声明

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Version 3, 29 June 2007

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## FCC 声明

### FCC B 类声明



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## 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
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电池	0	0	0	0	0	0
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