



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"> TS-453-4G TS-453-8G | <ul style="list-style-type: none"> TS-653D-4G TS-653D-8G |
| 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"> 4 GB RAM: 1 x 4 GB SODIMM DDR4 8 GB RAM: 2 x 4 GB SODIMM DDR4 | <ul style="list-style-type: none"> 4 GB RAM: 1 x 4 GB SODIMM DDR4 8 GB RAM: 2 x 4 GB SODIMM DDR4 |
| 内存插槽 | 2 x SODIMM DDR4 | | |
| | <div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 10px;">  </div> <div> <p>重要</p> <ul style="list-style-type: none"> 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。 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。 </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 |
| |  注 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"> • 3.5 英寸 SATA 机械硬盘 • 2.5 英寸 SATA 机械硬盘 • 2.5 英寸 SATA 固态硬盘 | | |
| 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 | |
| |  提示 有关兼容扩展卡的列表，请转到 https://www.qnap.com/compatibility 。 | | |
| USB 端口 | 正面： <ul style="list-style-type: none"> • 1 x USB 3.2 A 型  注 此 USB 端口支持一键复制。 背面： <ul style="list-style-type: none"> • 1 x USB 3.2 A 型 • 3 x USB 2.0 A 型 | | |
| HDMI 端口 | 1 x HDMI 2.0 (60 Hz 时最高 4096 x 2160) | | |
| 界面 | | | |
| 红外传感器 | 1 | | |
| |  注 QNAP RM-IR004 遥控器是可选配件，需另购。 | | |
| 按钮 | <ul style="list-style-type: none"> • 电源 • 重置 • USB 一键复制 | | |
| 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) |
| |  注 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"> 无冷凝相对湿度: 5% 至 95% 湿球温度: 27°C (80.6°F) | | |
| 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"> • TS-253D: 8 • TS-453D: 16 • TS-653D: 24 |
| 适用于 2.5 英寸硬盘的螺丝 | <ul style="list-style-type: none"> • TS-253D: 6 • TS-453D: 12 • TS-653D: 18 |
| 快速安装指南 (QIG) | 1 |

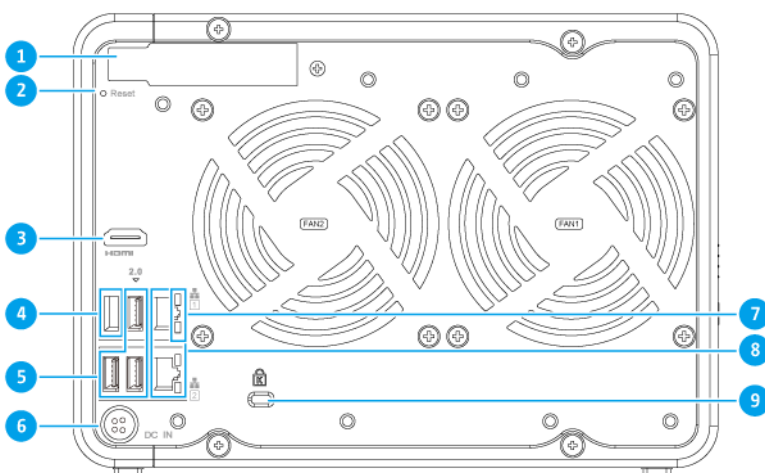
组件

前面板



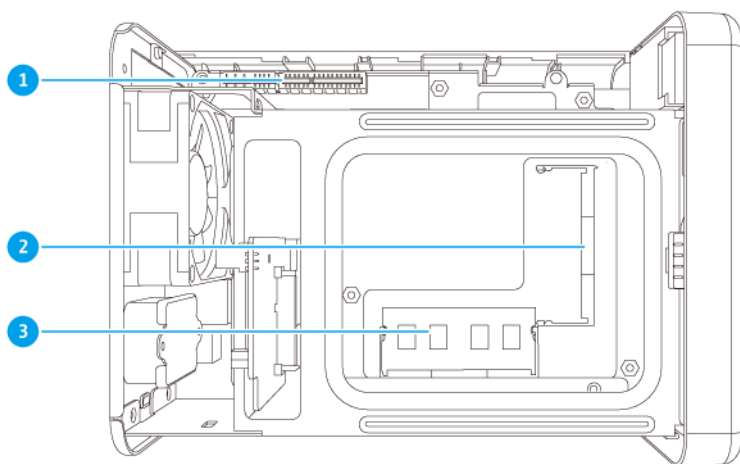
| 编号 | 组件 | 编号 | 组件 |
|----|---------|----|--------------------------|
| 1 | 电源按钮 | 5 | 硬盘 LED |
| 2 | 状态 LED | 6 | USB 3.2 Gen 1 一键复制 A 型端口 |
| 3 | LAN LED | 7 | USB 一键复制按钮 |
| 4 | USB LED | - | - |

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 | - | - |

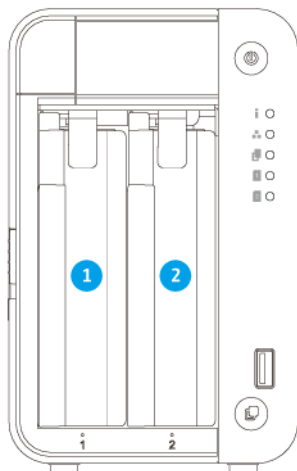
右面板



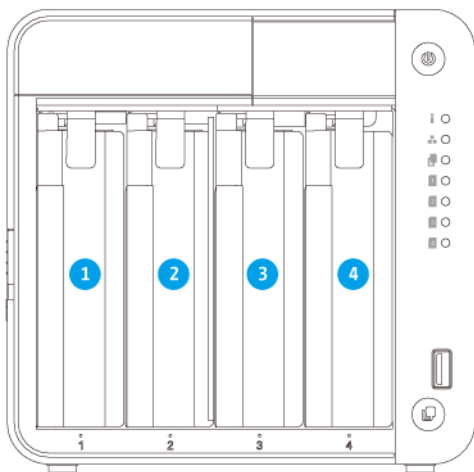
注
图像不含机箱。

| 编号 | 组件 | 编号 | 组件 |
|----|---|----|--------|
| 1 | PCIe 2.0 x2  注 TS-253D 具有 PCIe 2.0 x4 插槽。 | 3 | 内存插槽 2 |
| 2 | 内存插槽 1 | - | - |

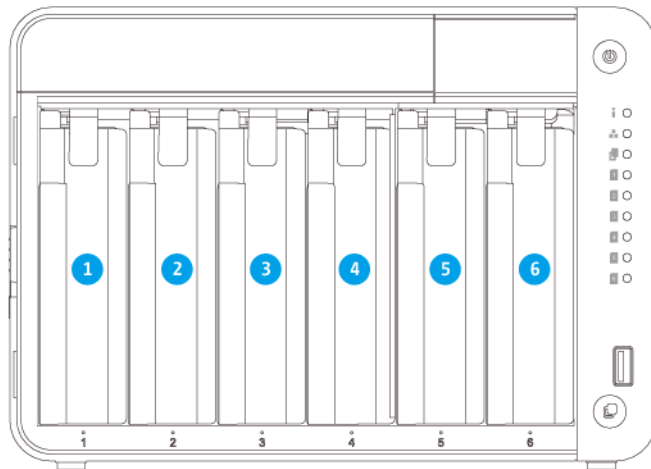
硬盘编号



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，经培训的维修技师必须先拔下所有 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"> • 室温：0°C 至 40°C (32 至 104°F) • 无冷凝相对湿度：5% 至 95% • 湿球温度：27°C (80.6°F) • 平坦的防静电表面，无直射阳光、液体或化学药剂 |
| 硬件和外围设备 | <ul style="list-style-type: none"> • 存储硬盘 有关兼容硬盘型号的列表，请转到 https://www.qnap.com/compatibility。 • 网线 |
| 工具 | <ul style="list-style-type: none"> • 1 号或 2 号十字螺丝刀 • 防静电腕带 |

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。

•



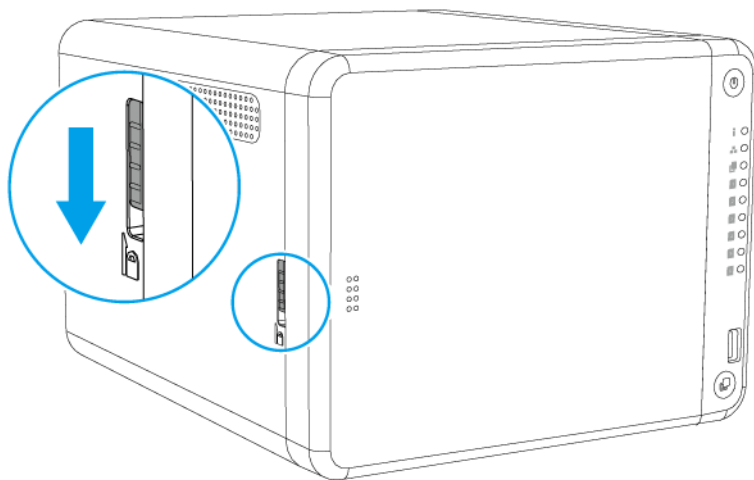
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

•

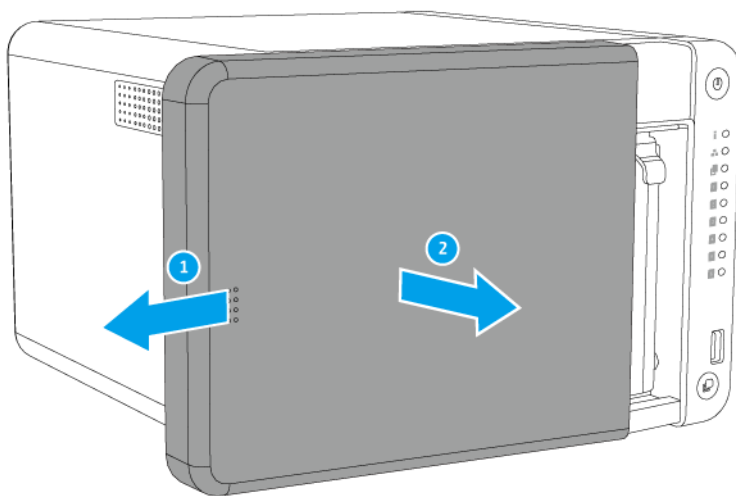


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

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。

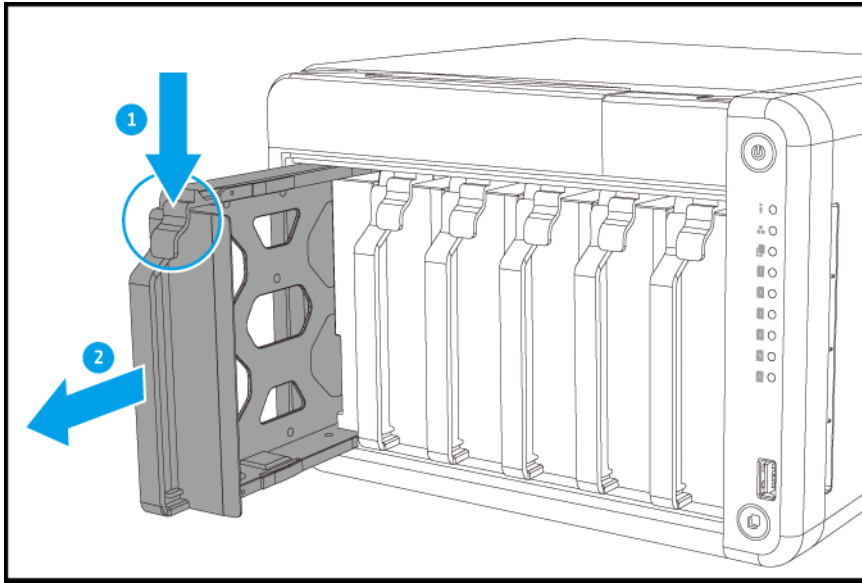


c. 将前盖向左滑动，然后拉出。



3. 取下硬盘托盘。

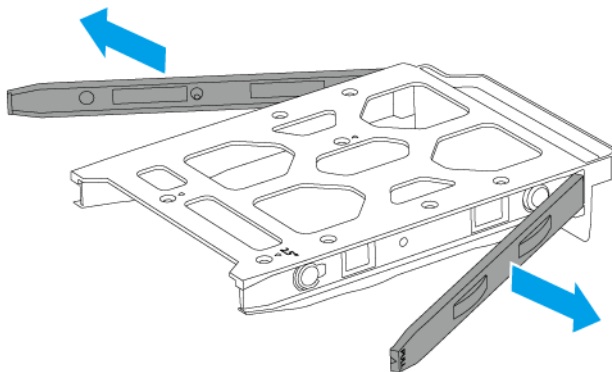
a. 按压门锁的同时拉出硬盘托盘，取下该托盘。



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。

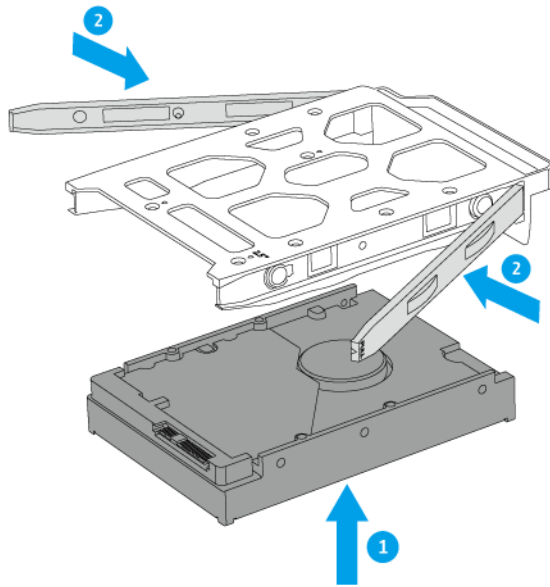
- b. 向外拉动托盘手柄。
- c. 拉出托盘。
4. 将硬盘安装到托盘上。
 - a. 取下硬盘托盘两侧的固定面板。



- 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。

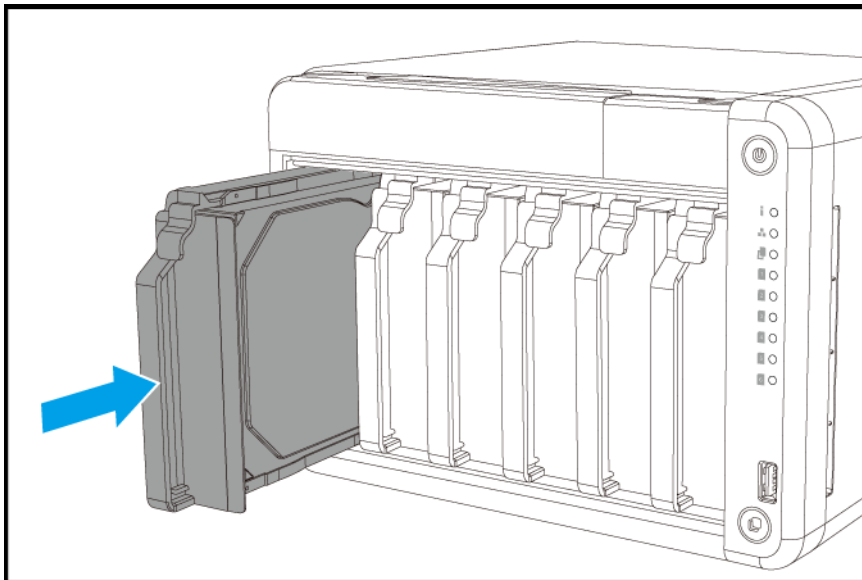


注
安装螺丝后即可转运安装了 HDD 的 NAS。



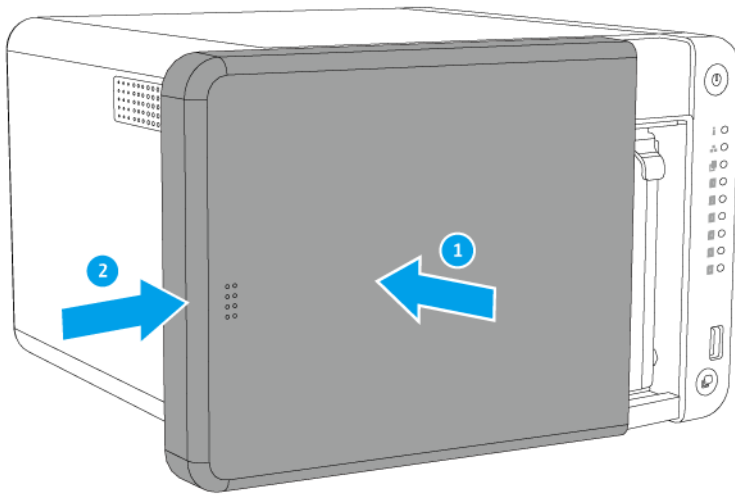
5. 将托盘装入硬盘架。

- a. 将托盘插入硬盘架。
- b. 推动手柄。

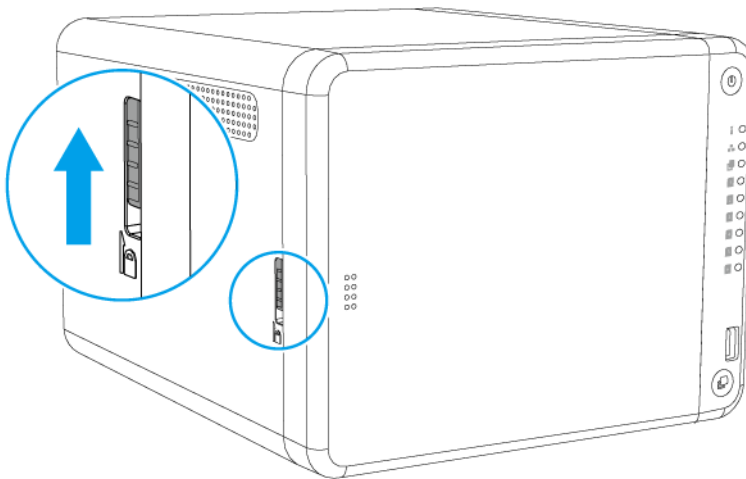


6. 安装前盖。

- 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。

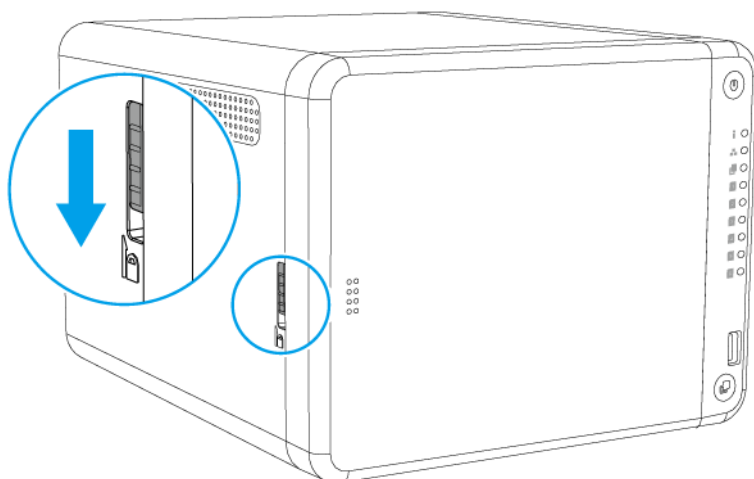


转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

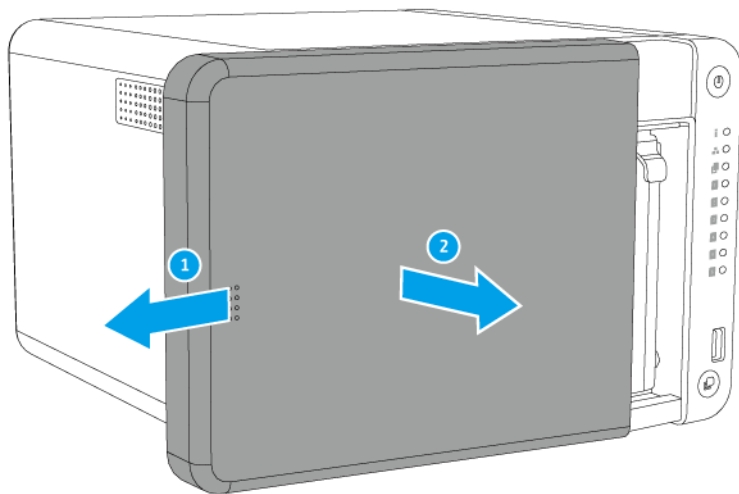


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

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。

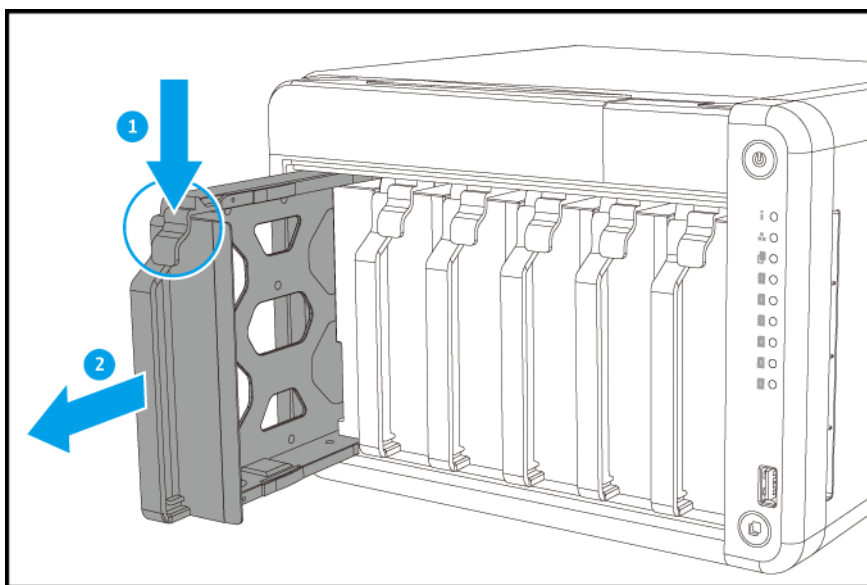


- c. 将前盖向左滑动，然后拉出。



3. 取下硬盘托盘。

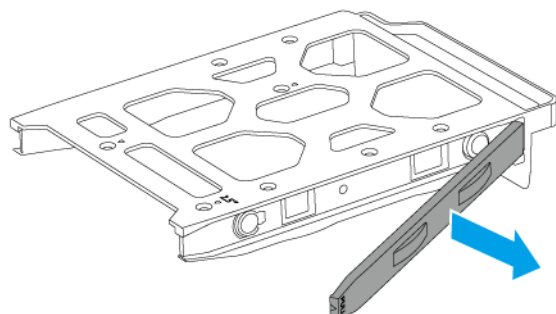
- a. 按压门锁的同时拉出硬盘托盘，取下该托盘。



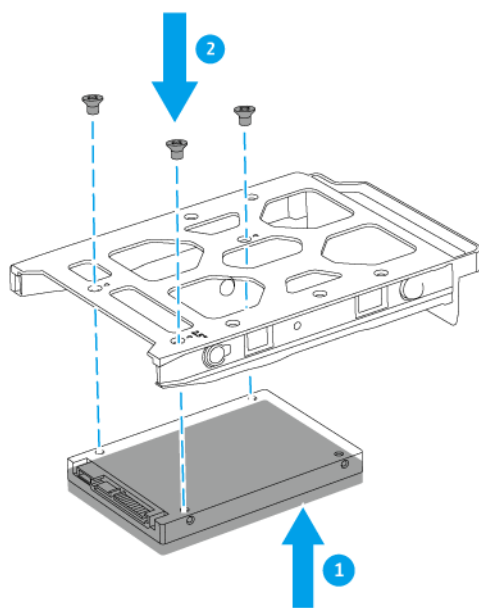
重要

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。

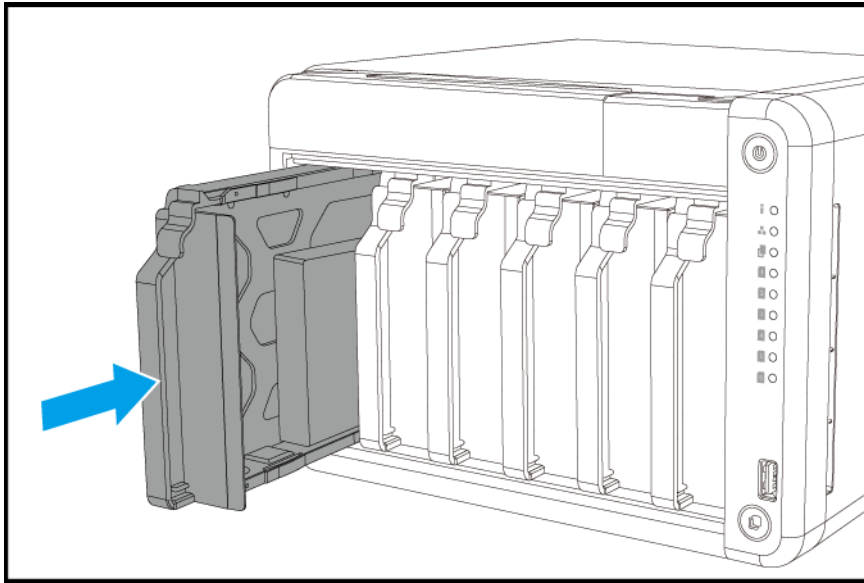
- b. 向外拉动托盘手柄。
 - c. 拉出托盘。
- ### 4. 将硬盘安装到托盘上。
- a. 取下硬盘托盘右侧的固定面板。



- 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。

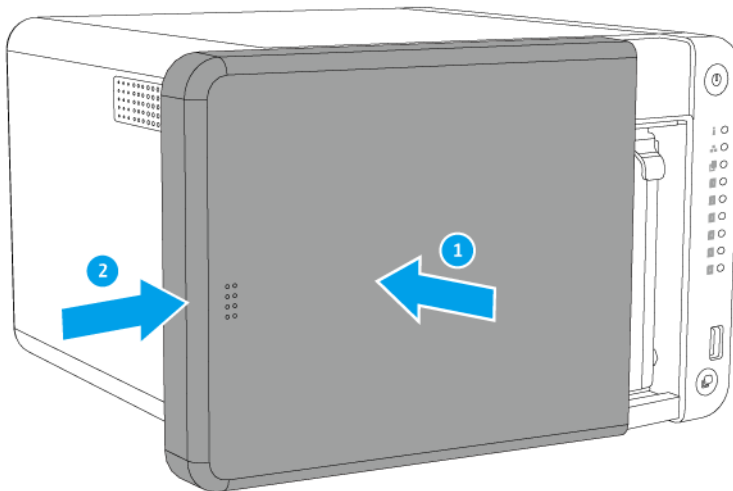


- 5. 将托盘装入硬盘架。
 - a. 将托盘插入硬盘架。
 - b. 推动手柄。

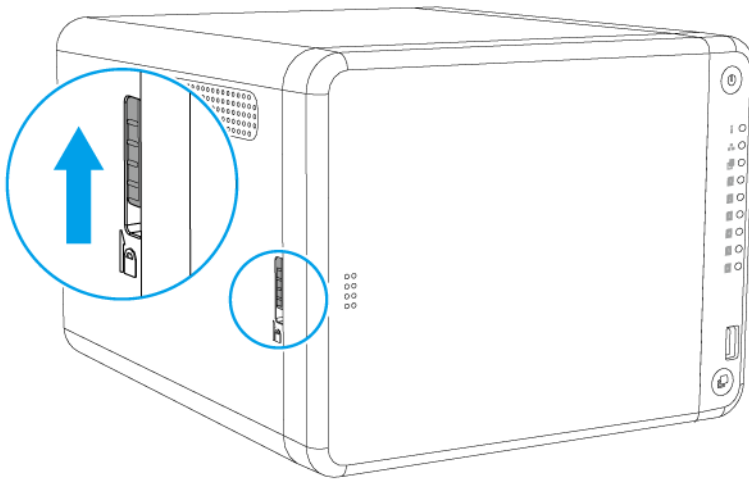


6. 安装前盖。

- 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。



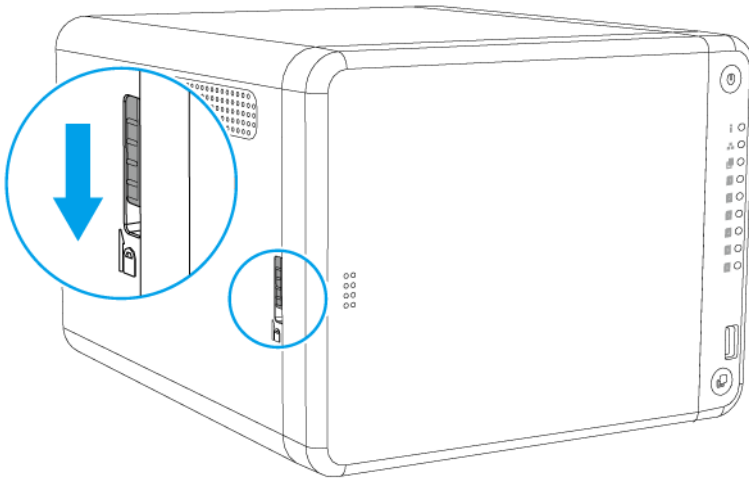
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。



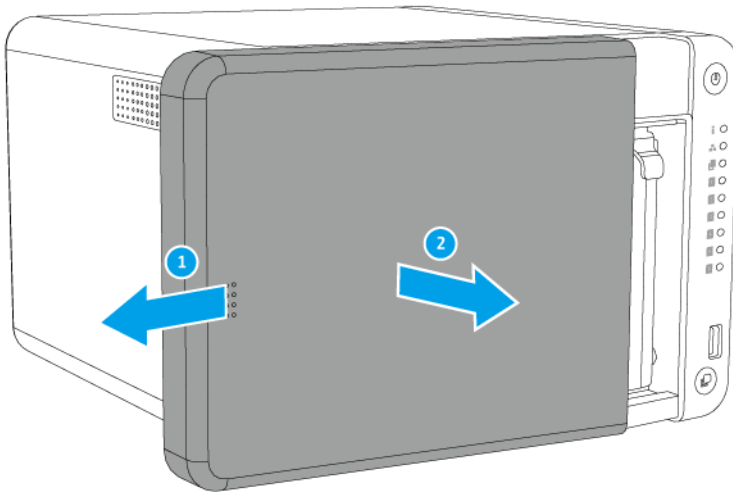
其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

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。

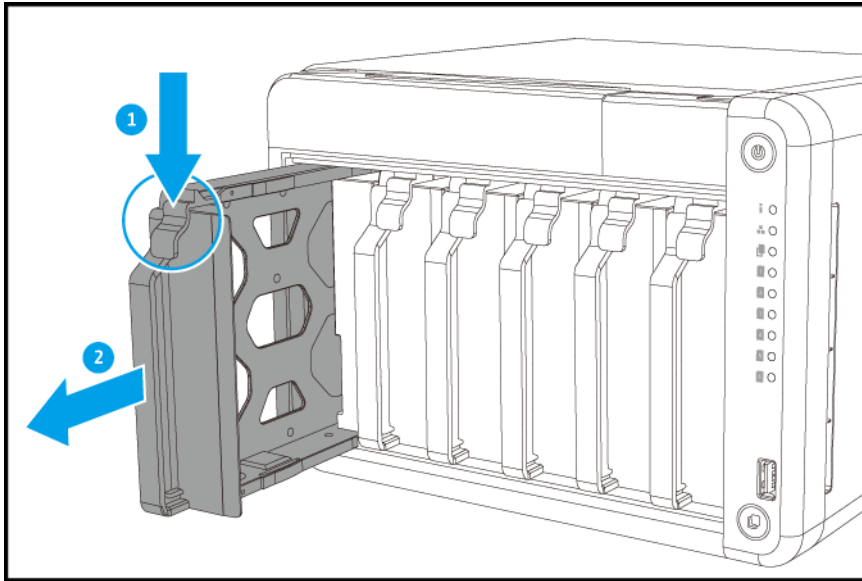


- b. 向下滑动锁扣，解除对前盖的锁定。



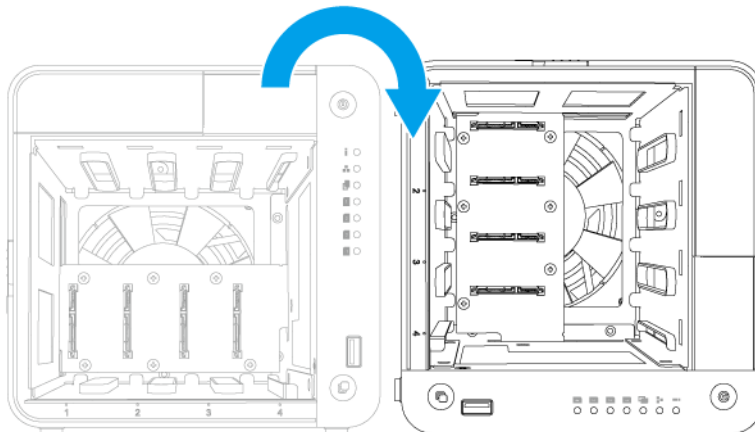
5. 取下硬盘托盘。

- a. 按压门锁的同时拉出硬盘托盘，取下该托盘。

**重要**

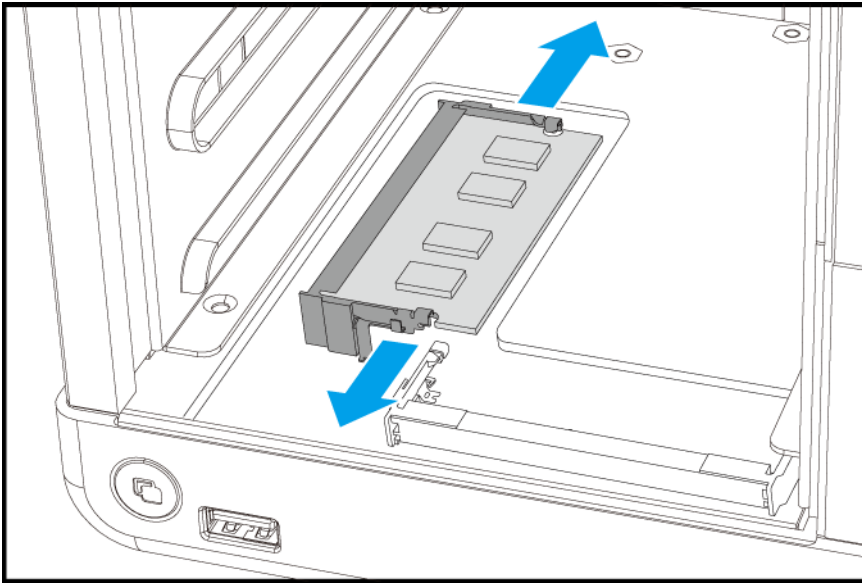
请记住每个硬盘的编号。硬盘托盘需要装回原来所在的硬盘架。

- 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。

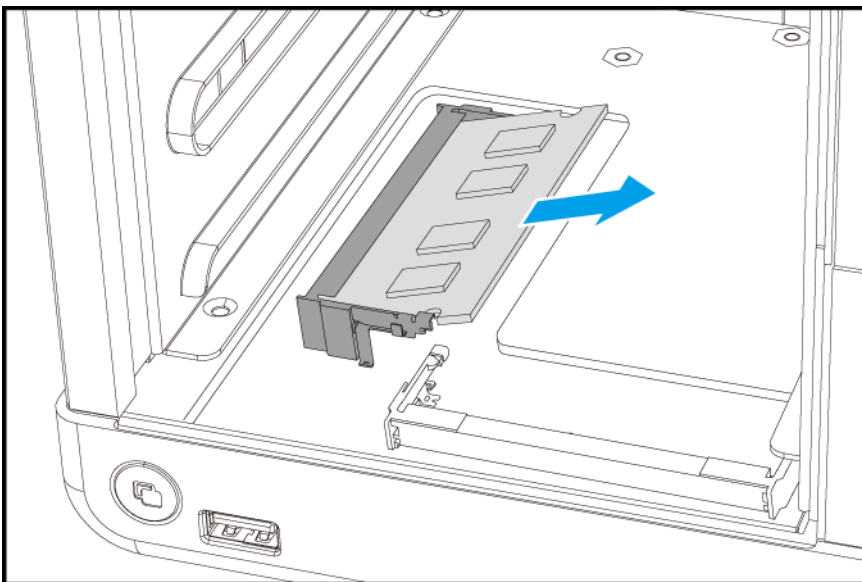


警告

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。

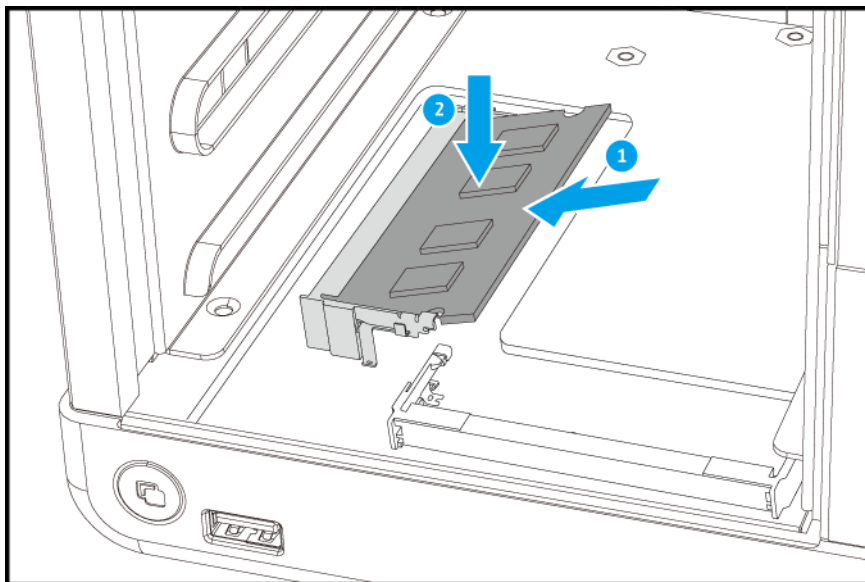


警告

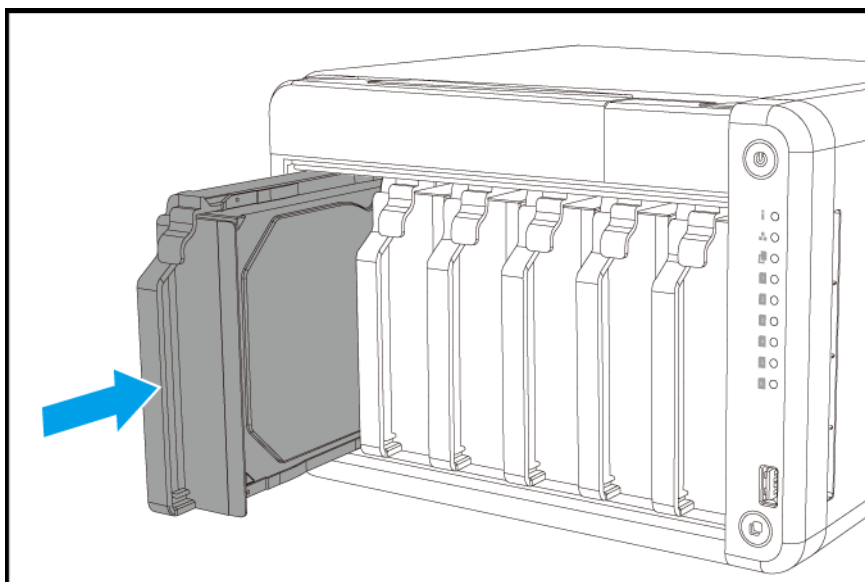
- 请勿触摸内部组件，特别是金属接头。
- 不要折弯模块。

8. 安装新模块。

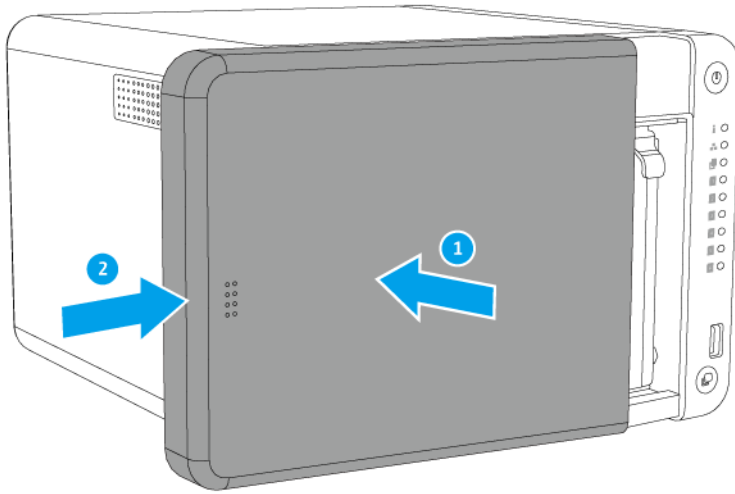
- a. 将凹口与插槽内的凸起对齐。
- b. 将模块插入插槽中。
- c. 确认金属接头已完全插入插槽中。
- d. 小心地向下按压模块，直到固定夹将模块锁定到位。



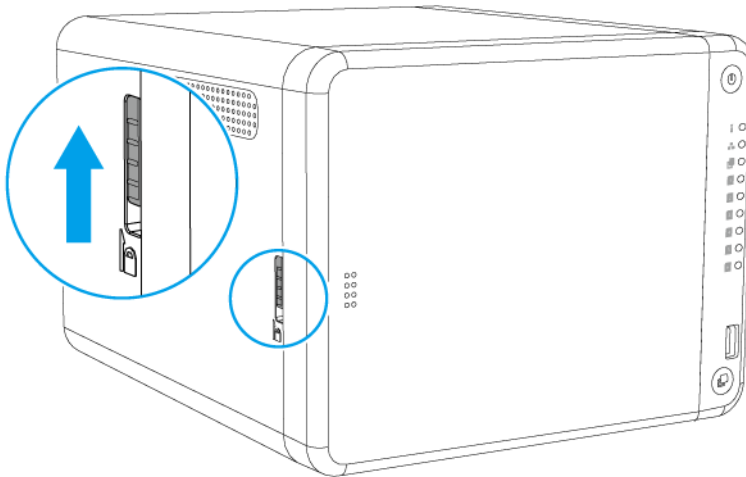
9. 将托盘装入硬盘架。
 - a. 将托盘插入硬盘架。
 - b. 推动手柄。



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。

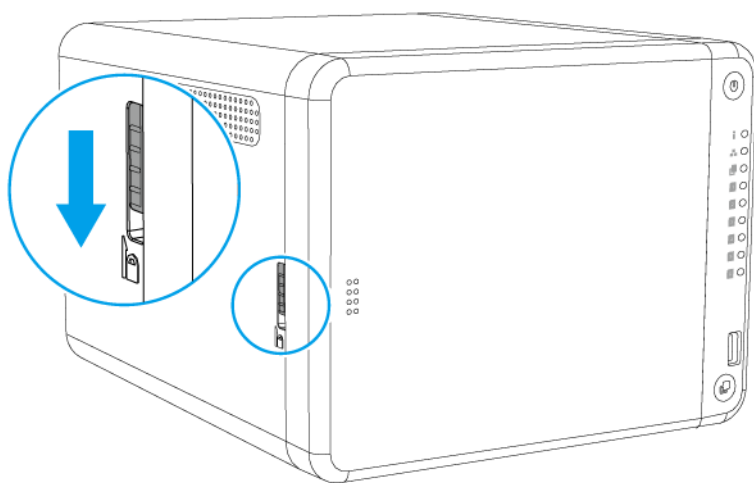


转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

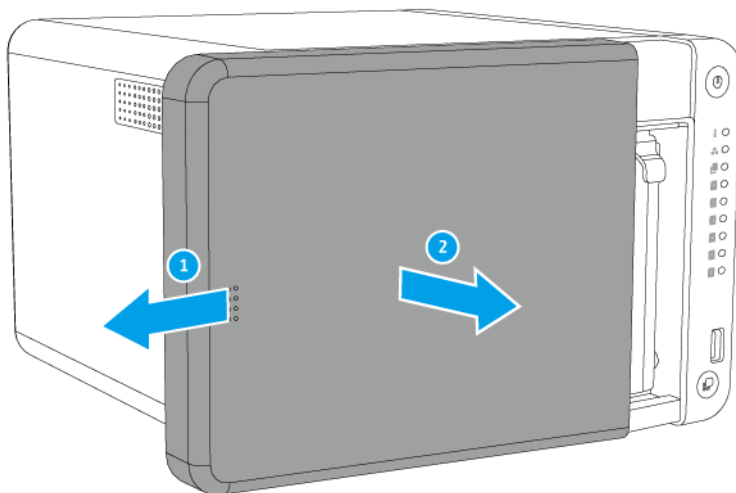


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

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。

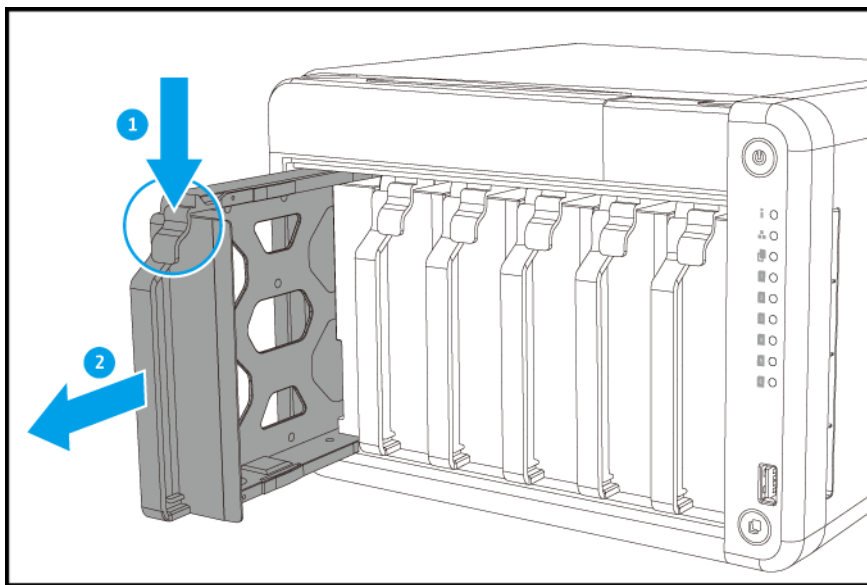


- c. 将前盖向左滑动，然后拉出。



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。

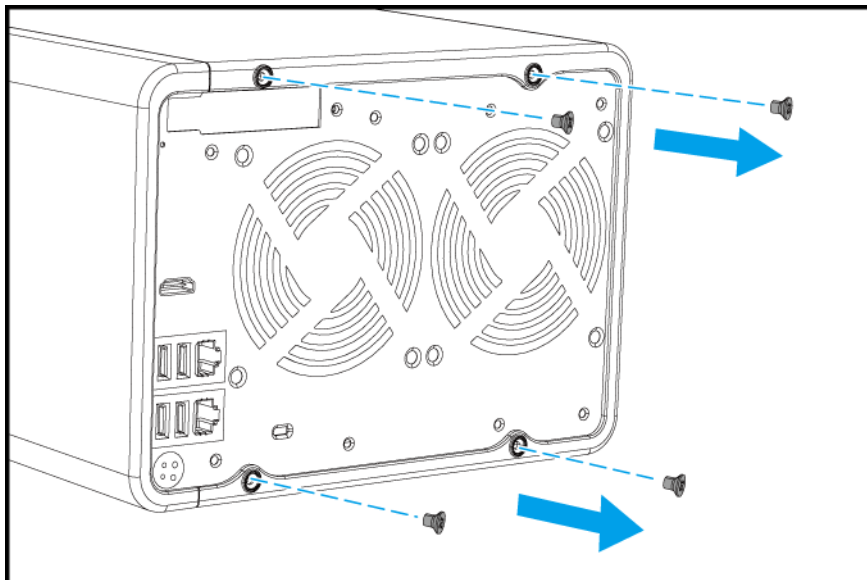
6. 取下外壳盖。

- a. 从 NAS 背面卸下用于将外壳盖连接到机箱的螺丝。

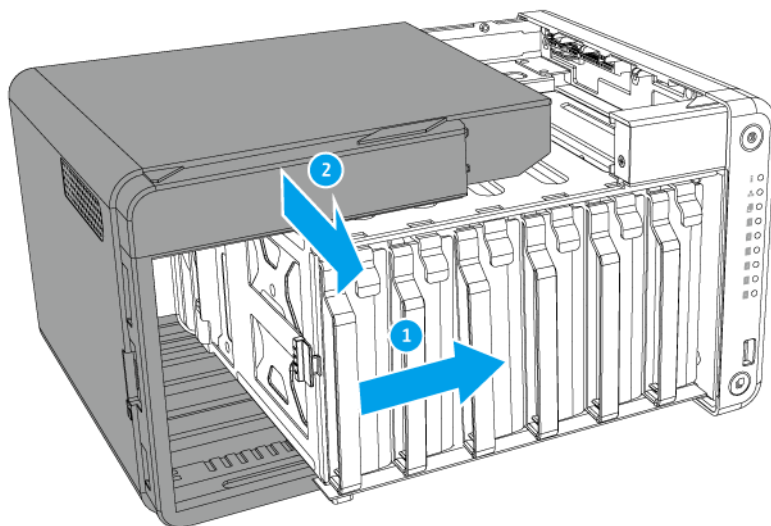


注
螺丝数量因型号而异。

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

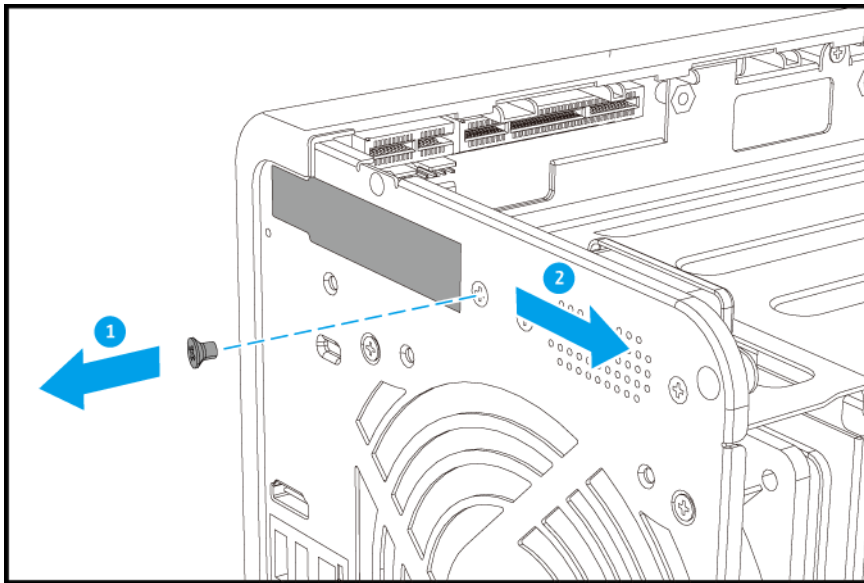


- 向下按压外壳盖的顶部，然后拉动机箱。
- 将机箱向右拉动，直到其完全脱离外壳盖。

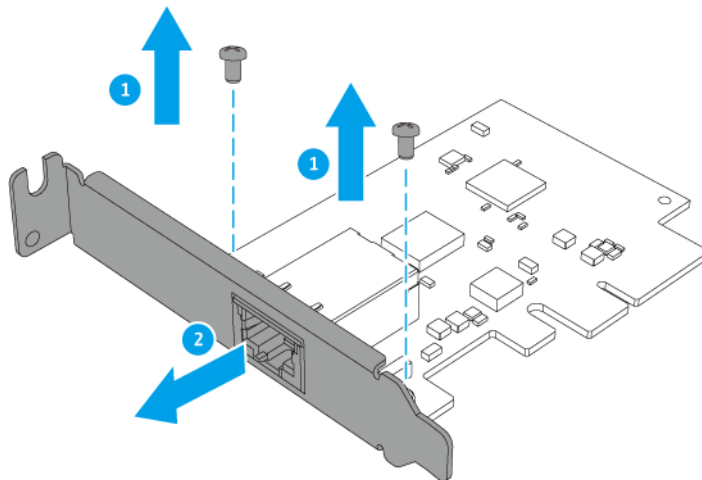


7. 取下 PCIe 盖板。

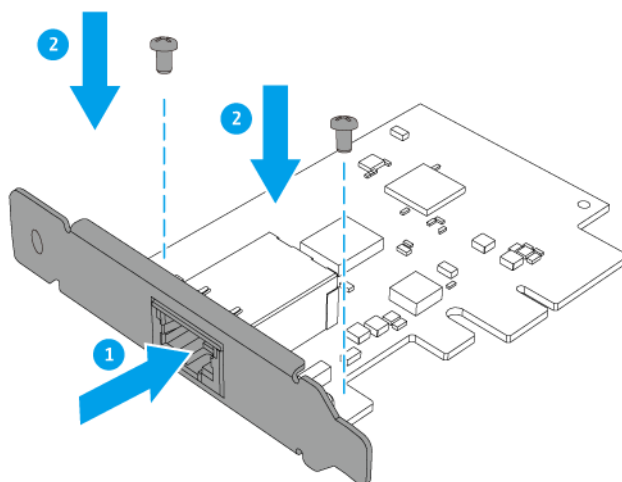
- 取下用于将盖板固定到支架的螺丝。
- 将盖板从插槽中拉出。



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。



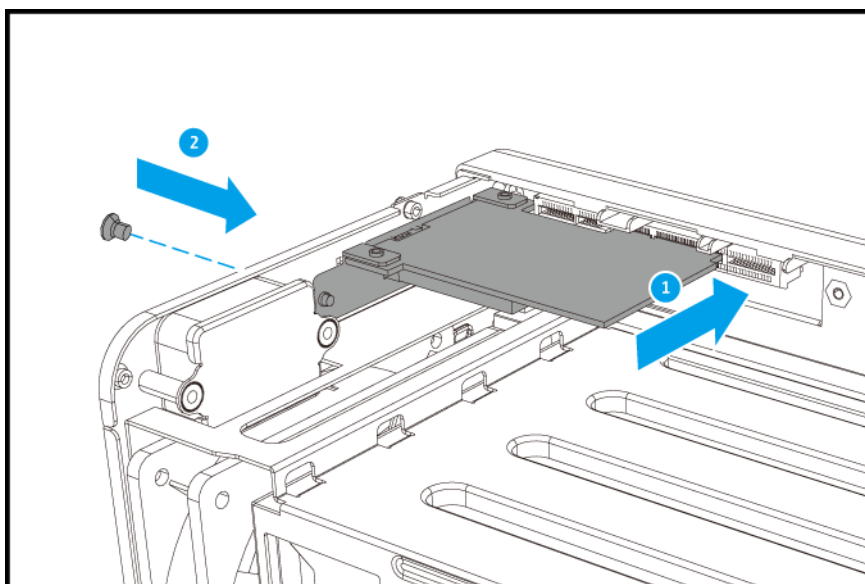
- b. 小心地从扩展卡取下支架。
 - c. 使用相同的螺丝将 QNAP 支架安装到扩展卡上。



d. 确认支架不会移动。

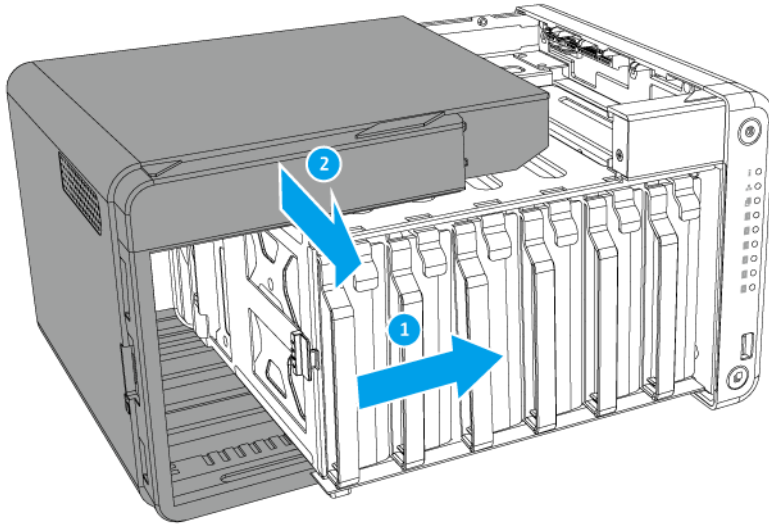
9. 安装扩展卡。

- a. 握住卡片边缘。
- b. 将其插入插槽中。
- c. 安装螺丝。



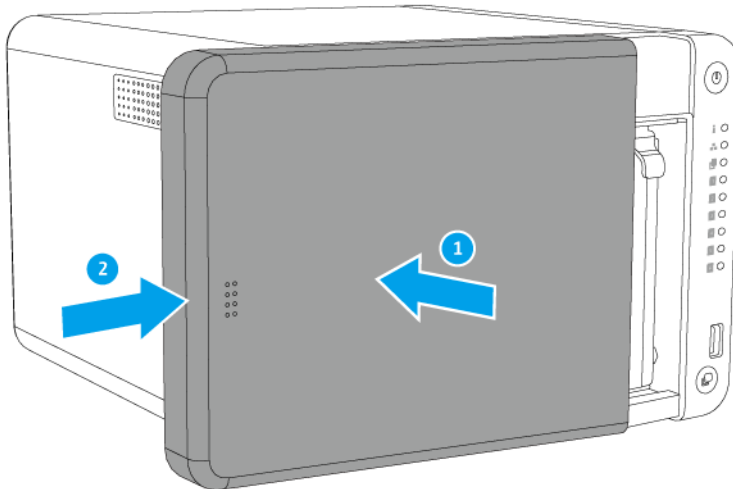
10. 安装外壳盖。

- a. 将外壳盖向右滑动至与机箱接触，然后再拉动外壳盖。

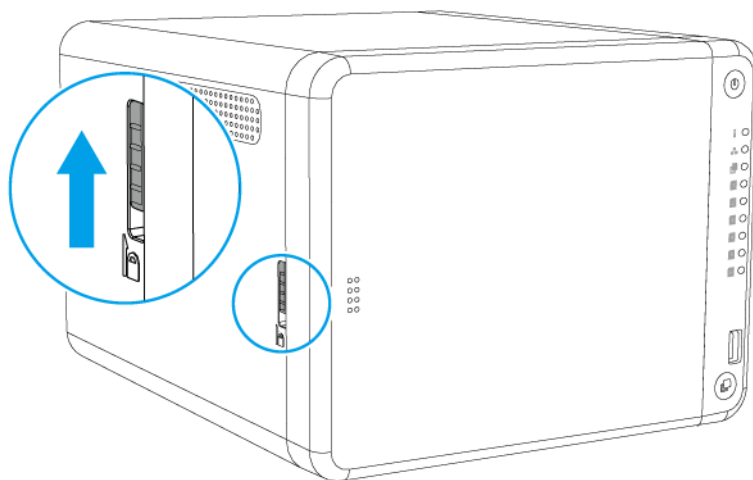


11. 安装前盖。

- 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

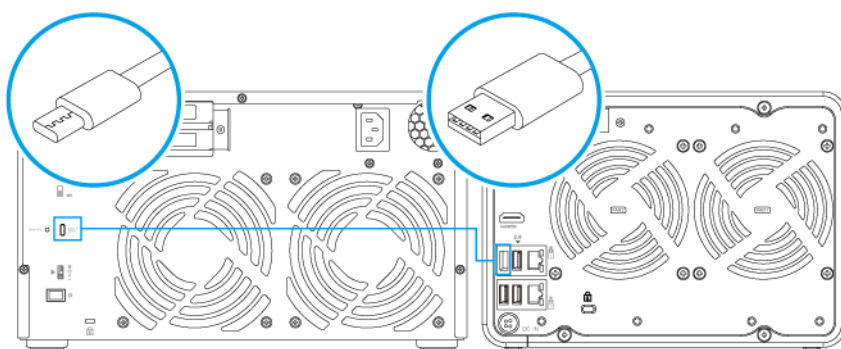
有关扩展单元兼容性和支持的最大扩展单元数的详细信息，请转到 <https://www.qnap.com/en/compatibility-expansion/>

| 扩展单元型号 | 描述 | 所需配件 |
|-----------|---|---|
| TR-002 | <ul style="list-style-type: none"> 使用 USB 3.2 Gen 2 C 型接口 支持 SATA | USB 3.2 Gen 2 A 型至 C 型线缆 |
| TR-004 | <ul style="list-style-type: none"> 使用 USB 3.2 Gen 1 C 型接口 支持 SATA | USB 3.2 Gen 1 A 型至 C 型线缆 |
| TL-D400S | <ul style="list-style-type: none"> 使用 SFF-8088 接口 支持 SATA HDD/SSD | <ul style="list-style-type: none"> 1 x SFF-8088 连接器线缆 QXP-400eS-A1164 主机总线适配器 |
| TL-D800S | <ul style="list-style-type: none"> 使用 SFF-8088 接口 支持 SATA HDD/SSD | <ul style="list-style-type: none"> 2 x SFF-8088 连接器线缆 QXP-800eS-A1164 主机总线适配器 |
| TL-D1600S | <ul style="list-style-type: none"> 使用 SFF-8088 接口 支持 SATA HDD/SSD | <ul style="list-style-type: none"> 4 x SFF-8088 至 SFF-8644 连接器线缆 QXP-1600eS 主机总线适配器 |

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 > 概述 > 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。

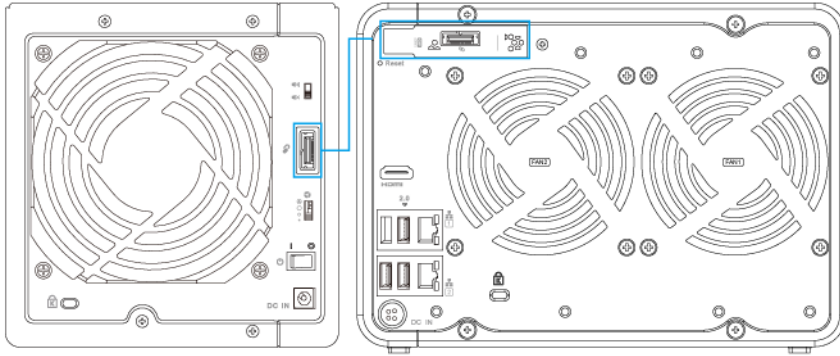


重要

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 > 概述 > 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"> • 使用 Qfinder Pro 定位 NAS。 • 完成“智能安装指南”向导中的步骤。 | <ul style="list-style-type: none"> • 计算机 • 网线 • Qfinder Pro 安装程序 |

| 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"> • 扫描 NAS 上的二维码。 • 指定 Cloud Key。 • 登录您的 myQNAPcloud 帐户。 • 使用 myQNAPcloud Link 远程访问 NAS。 • 完成“智能安装指南”向导中的步骤。 | <ul style="list-style-type: none"> • 计算机或移动设备 • myQNAPcloud 帐户 • CloudKey |
| 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"> • 将 NAS 连接到所需的硬件。 • 完成“智能安装指南”向导中的步骤。 | <ul style="list-style-type: none"> • 监视器 • HDMI 线缆 • USB 键盘或遥控器（仅部分型号提供） |

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"> • 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。 <p> 提示 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。</p> <ul style="list-style-type: none"> • TCP/IP 配置： <ul style="list-style-type: none"> • 使用动态 IP 地址 • 禁用巨型帧 • 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)”。 • 系统端口：8080（系统服务端口） • 安全等级：低（允许所有连接） • VLAN：禁用 |

| 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">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。 |

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"> • 硬盘正在格式化。 • NAS 正在初始化。 • 操作系统正在更新。 • RAID 正在重建。 • 正在进行在线 RAID 容量扩展。 • 正在进行在线 RAID 级别迁移。 |
| | 红色 | <ul style="list-style-type: none"> • 硬盘无效。 • 磁盘卷的容量已满。 • 磁盘卷的容量即将被占满。 • 系统风扇故障。 • 访问（读/写）数据时出错。 • 在硬盘上检测到坏扇区。 • 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）。 • 硬件自检发生错误。 |
| | 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"> • NAS 正在启动。 • NAS 未配置。 • 硬盘未格式化。 |
| | 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"> • 以太网端口已连接至千兆位网络。 • 以太网端口已连接至 2.5 千兆位网络。 • 以太网端口已连接至 10 兆位网络。 • 以太网端口已连接至 100 兆位网络。 |
| | 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"> • 以太网端口已连接至千兆位网络。 • 以太网端口已连接至 100 兆位网络。 |
| | 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"> 以太网端口已接入千兆位网络并正在传输数据。 以太网端口已接入 2.5 Gb 网络并正在传输数据。 以太网端口已接入 10 兆位网络并正在传输数据。 以太网端口已接入 100 兆位网络并正在传输数据。 |
| | 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"> 正在装载 USB 设备（已连接到 USB 一键复制端口）。 正在断开与 USB 设备（已连接到 USB 一键复制端口）的连接。 正在访问 USB 设备（已连接到 USB 一键复制端口）。 |
| | 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"> NAS 正在启动。 NAS 正在关闭（软件关闭）。 用户已按下“重置”按钮。 操作系统已更新。 |
| | 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">• 磁盘卷的容量即将被占满。• 磁盘卷的容量已满。• 硬盘处于降级模式。• 用户已启动硬盘重建过程。• 插入或抽出硬盘。 |
| | 1 | <ul style="list-style-type: none">• NAS 已通过强制关闭关机 (硬件关闭) 。• NAS 已成功开机并准备就绪。 |

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，然后确认状态为正在重建。

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 | https://docs.qnap.com |
| 服务门户 | https://service.qnap.com |
| 下载 | https://download.qnap.com |
| 社区论坛 | https://forum.qnap.com |

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

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Version 3, 29 June 2007

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2. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it.

“Object code” means any non-source form of a work.

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