

TS-x32PXU

TS-432PXU
TS-432PXU-RP
TS-832PXU
TS-832PXU-RP
TS-1232PXU
TS-1232PXU-RP

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-x32PXU 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 设备的基本信息。

关于 TS-x32PXU

TS-x32PXU 是一款专为中小企业 IT 环境设计的机架式 NAS，配有四核 1.7 GHz 处理器。它特有两个 10 Gb 以太网 SFP+ 端口和两个 2.5 Gb 以太网端口，可提供高网络带宽以简化文件访问、备份、媒体传输和团队协作。NAS 支持 PCIe 可扩展性，可添加 M.2 SSD 高速缓存和 2.5 Gb 以太网和 5 Gb 以太网带宽。TS-x32PXU RP 型号配有冗余电源以确保最长的服务运行时间。

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	硬盘架	内存	电源
TS-432PXU-2G	4	2 GB	单一
TS-432PXU-RP-2G			冗余
TS-832PXU-4G	8	4 GB	单一
TS-832PXU-RP-4G			冗余
TS-1232PXU-4G	12	4 GB	单一
TS-1232PXU-RP-4G			冗余

组件	TS-432PXU TS-432PXU-RP	TS-832PXU TS-832PXU-RP	TS-1232PXU TS-1232PXU-RP
处理器	Annapurna Labs AL324		
CPU	4 核 1.7 GHz		
频率	4 核 1.7 GHz		
架构	ARM 64 位		
加密引擎	支持		
内存			
预安装内存	2 GB RAM: 1 x 2 GB UDIMM DDR4	4 GB RAM: 1 x 4 GB UDIMM DDR4	

组件	TS-432PXU TS-432PXU-RP	TS-832PXU TS-832PXU-RP	TS-1232PXU TS-1232PXU-RP
内存插槽	1 x Long-DIMM DDR4  注 <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。 		
最大内存	16 GB RAM: 1 x 16 GB		
存储			
硬盘架	4 x 3.5 英寸 SATA 6 Gbps	8 x 3.5 英寸 SATA 6 Gbps	12 x 3.5 英寸 SATA 6 Gbps
	 提示 硬盘架向后兼容 SATA 3 Gbps 硬盘。		
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	支持		
热插拔	支持		
网络			
10 Gb 以太网端口	2 x 10 GbE SFP+		
2.5 Gb 以太网端口	2 x 2.5 GbE RJ45  重要 避免将这些端口连接到供电设备或以太网供电 (PoE) 端口，否则可能会损坏电涌保护功能。		
网络唤醒	是 (2.5 GbE RJ45)		
外部 I/O 端口和扩展插槽			
PCIe 插槽	1 x PCIe 2.0 x2  注 PCIe 带宽限制可能会限制附加卡的性能。		
USB 端口	4 x USB 3.2 Gen 1 A 型		
界面			
按钮	<ul style="list-style-type: none"> 电源 重置 		
尺寸			
外形规格	1U 机架式	2U 机架式	
尺寸 (高 x 宽 x 深)	44 x 439 x 499 mm (1.73 x 17.28 x 19.64 英寸)	89 x 482 x 534 mm (3.50 x 18.97 x 21.02 英寸)	

组件	TS-432PXU TS-432PXU-RP	TS-832PXU TS-832PXU-RP	TS-1232PXU TS-1232PXU-RP
净重	<ul style="list-style-type: none"> TS-432PXU: 6.53 kg (14.39 磅) TS-432PXU-RP: 8.12 kg (17.90 磅) 	<ul style="list-style-type: none"> TS-832PXU: 9.45 kg (20.83 磅) TS-832PXU-RP: 10.94 kg (24.11 磅) 	<ul style="list-style-type: none"> TS-1232PXU: 9.85 kg (21.71 磅) TS-1232PXU-RP: 11.34 kg (25.00 磅)
其他			
电源单元	<ul style="list-style-type: none"> TS-432PXU: 250W, 100-240V AC, 50/60 Hz TS-432PXU-RP: 2 x 250W, 100-240V AC, 50/60 Hz 	<ul style="list-style-type: none"> TS-832PXU: 250W, 100-240V AC, 50/60 Hz TS-832PXU-RP: 2 x 250W, 100-240V AC, 50/60 Hz 	<ul style="list-style-type: none"> TS-1232PXU: 250W, 100-240V AC, 50/60Hz TS-1232PXU-RP: 2 x 250W, 100-240V AC, 50/60 Hz
系统电池	CR2032 锂电池 (3V)		
噪声声级	<ul style="list-style-type: none"> TS-432PXU: 38 db(A) TS-432PXU-RP: 39 db(A) 	<ul style="list-style-type: none"> TS-832PXU: 24.9 db(A) TS-832PXU-RP: 30.6 dB(A) 	32.2 db(A)
风扇	系统: 2 x 40 mm 12V DC 风扇	系统: 2 x 70 mm 12V DC 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"> 无冷凝相对湿度: 5% 至 95% 湿球温度: 27°C (80.6°F) 		



提示

有关兼容的硬盘型号和扩展卡的列表, 请转到 <https://www.qnap.com/compatibility>。

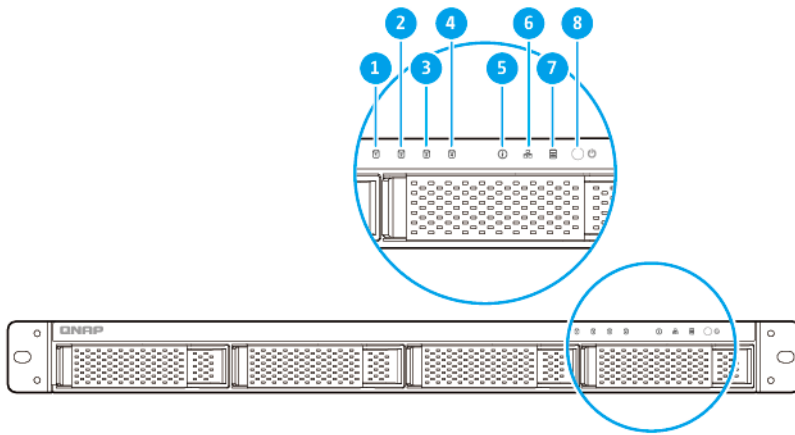
包装内容

项目	数量
TS-x32PXU	1
电源线	<ul style="list-style-type: none"> TS-432PXU、TS-832PXU、TS-1232PXU: 1 TS-432PXU-RP、TS-832PXU-RP、TS-1232PXU-RP: 2
以太网线	1 x 1GbE (Cat5e)
适用于 3.5 英寸硬盘的螺丝	<ul style="list-style-type: none"> TS-432PXU、TS-432PXU-RP: 16 TS-832PXU、TS-832PXU-RP: 32 TS-1232PXU、TS-1232PXU-RP: 48
适用于 2.5 英寸硬盘的螺丝	<ul style="list-style-type: none"> TS-432PXU、TS-432PXU-RP: 12 TS-832PXU、TS-832PXU-RP: 24 TS-1232PXU、TS-1232PXU-RP: 36

项目	数量
手柄套件	TS-432PXU、TS-432PXU-RP <ul style="list-style-type: none"> • 2 x 手柄 • 2 x 角码 • 8 x 螺丝
快速安装指南 (QIG)	1

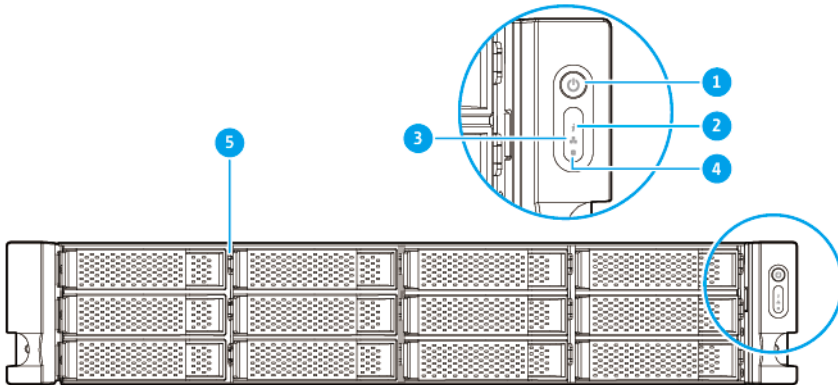
组件

前面板



TS-432PXU、TS-432PXU-RP

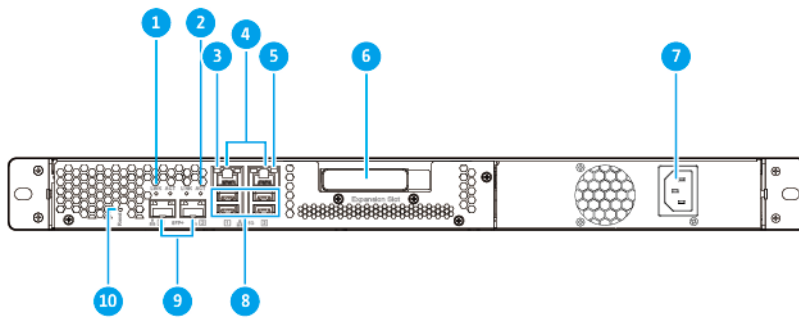
编号	组件	编号	组件
1	硬盘 1 LED	5	状态 LED
2	硬盘 2 LED	6	LAN LED
3	硬盘 3 LED	7	扩展单元 LED
4	硬盘 4 LED	8	电源按钮



TS-832PXU、TS-832PXU-RP、TS-1232PXU、TS-1232PXU-RP

编号	组件	编号	组件
1	电源按钮	4	扩展单元 LED
2	状态 LED	5	硬盘 LED
3	LAN LED	-	-

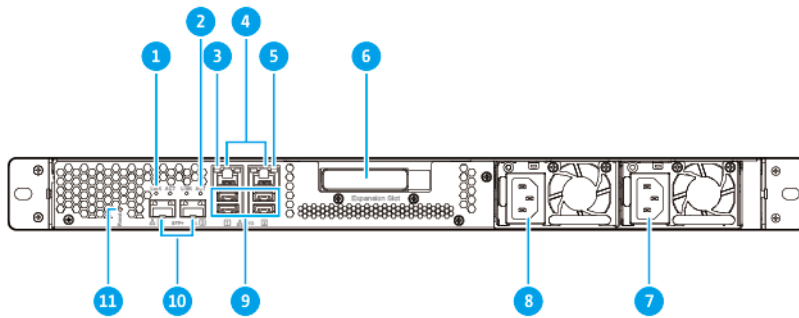
后面板



TS-432PXU

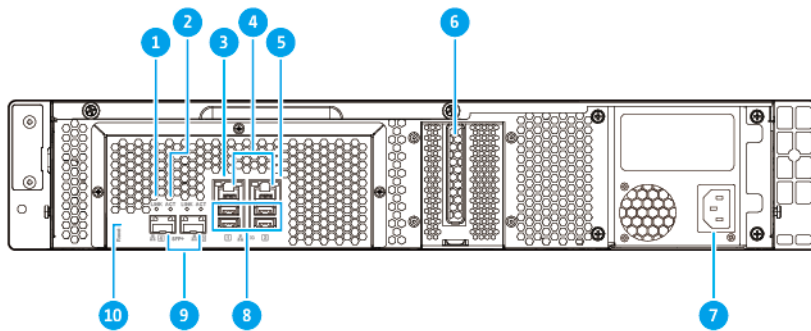
编号	组件	编号	组件
1	10 Gb 以太网链路 LED	6	PCIe 半高盖板
2	10 Gb 以太网活动 LED	7	电源单元

编号	组件	编号	组件
3	2.5 Gb 以太网链路 LED	8	USB 3.2 Gen 1 A 型端口
4	2.5 Gb 以太网端口 (RJ45)	9	10 Gb 以太网端口 (SFP+)
5	2.5 Gb 以太网活动 LED	10	重置按钮



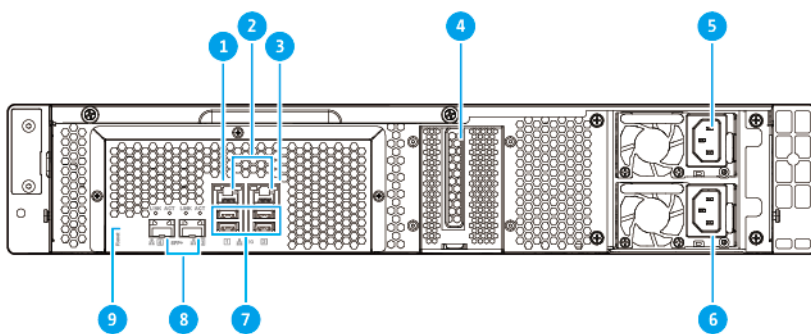
TS-432PXU-RP

编号	组件	编号	组件
1	10 Gb 以太网链路 LED	7	电源单元 1
2	10 Gb 以太网活动 LED	8	电源单元 2
3	2.5 Gb 以太网链路 LED	9	USB 3.2 Gen 1 A 型端口
4	2.5 Gb 以太网端口 (RJ45)	10	10 Gb 以太网端口 (SFP+)
5	2.5 Gb 以太网活动 LED	11	重置按钮
6	PCIe 半高盖板	-	-



TS-832PXU、TS-1232PXU

编号	组件	编号	组件
1	10 Gb 以太网链路 LED	6	PCIe 半高盖板
2	10 Gb 以太网活动 LED	7	电源单元 1
3	2.5 Gb 以太网链路 LED	8	USB 3.2 Gen 1 A 型端口
4	2.5 Gb 以太网端口 (RJ45)	9	10 Gb 以太网端口 (SFP+)
5	2.5 Gb 以太网活动 LED	10	重置按钮

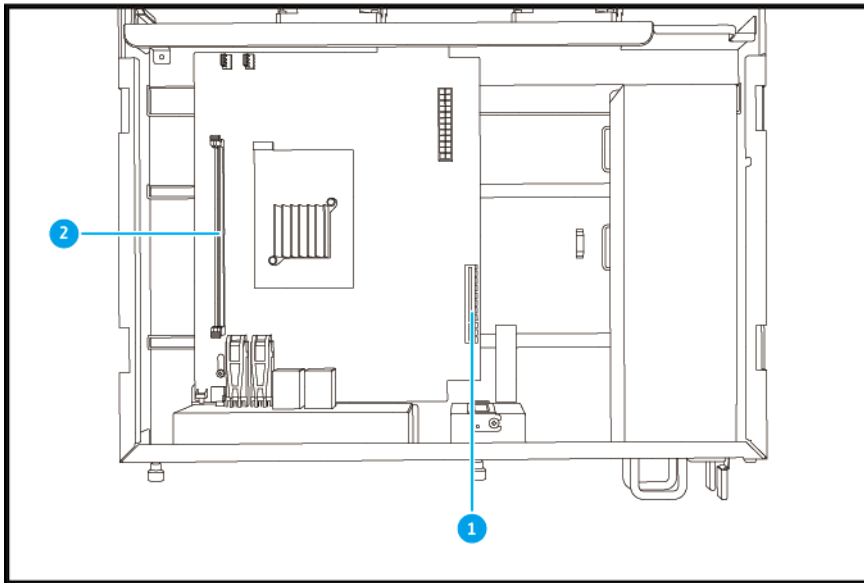


TS-832PXU-RP、TS-1232PXU-RP

编号	组件	编号	组件
1	2.5 Gb 以太网链路 LED	6	电源单元 2

编号	组件	编号	组件
2	2.5 Gb 以太网端口 (RJ45)	7	USB 3.2 Gen 1 A 型端口
3	2.5 Gb 以太网活动 LED	8	10 Gb 以太网端口 (SFP+)
4	PCIe 半高盖板	9	重置按钮
5	电源单元 1	-	-

系统主板



编号	组件	编号	组件
1	PCIe 插槽 1 (PCIe 2.0 x2)	2	内存插槽 1 (通道 A, DIMM 1)

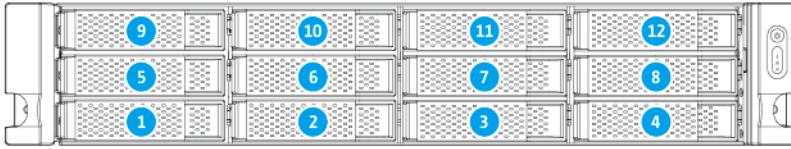
硬盘编号



TS-432PXU、TS-432PXU-RP



TS-832PXU、TS-832PXU-RP



TS-1232PXU、TS-1232PXU-RP

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。
- 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。



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，必须由经培训的维修技师从设备拔下所有 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

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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。

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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 • 无可能阻塞 NAS 通风或者压住 NAS 或电源线的物品
硬件和外围设备	<ul style="list-style-type: none"> • 存储硬盘 <p>注 有关兼容硬盘型号的列表，请转到 https://www.qnap.com/compatibility。</p> <ul style="list-style-type: none"> • 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 英寸硬盘和固态硬盘](#)

有关兼容的硬盘和扩展卡的列表，请转到 <https://www.qnap.com/en/compatibility/>。

3. 将 NAS 连接到网络。
4. 可选: 更换内存模块。
有关详细信息, 请参见以下主题:
 - 在 [TS-432PXU](#) 和 [TS-432PXU-RP](#) 上更换内存模块
 - 在 [TS-832PXU](#)、[TS-832PXU-RP](#)、[TS-1232PXU](#) 和 [TS-1232PXU-RP](#) 上更换内存模块
5. 可选: 安装扩展卡。
有关详细信息, 请参见以下主题:
 - 在 [TS-432PXU](#) 或 [TS-432PXU-RP](#) 上安装扩展卡
 - 在 [TS-832PXU](#)、[TS-832PXU-RP](#)、[TS-1232PXU](#) 或 [TS-1232PXU-RP](#) 上安装扩展卡
6. 可选: 连接扩展单元。
有关详细信息, 请参见以下主题:
 - 连接 [USB 扩展单元](#)
 - 连接 [SATA JBOD 扩展单元](#)
7. 连接电源线和所有适用的线缆。
8. 启动 NAS 电源。
9. 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。

安装硬盘

TS-x32PXU 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。

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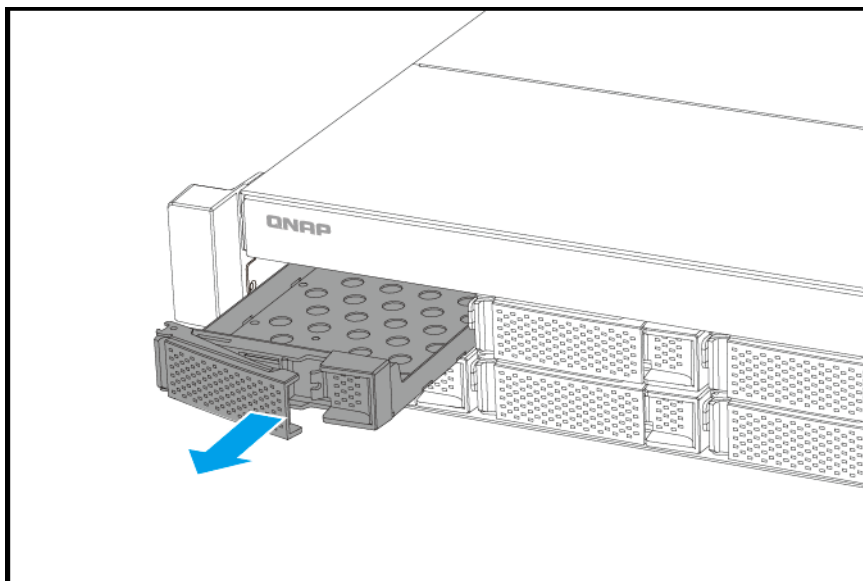
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

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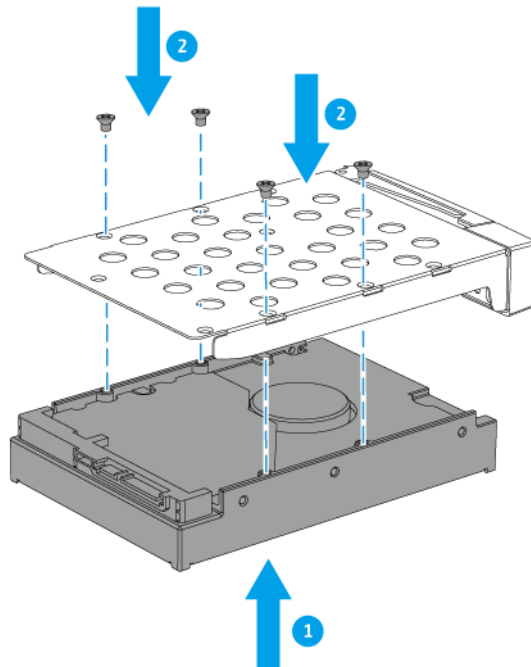


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。
2. 取下硬盘托盘。
 - a. 向外拉动托盘手柄。
 - b. 拉出托盘。

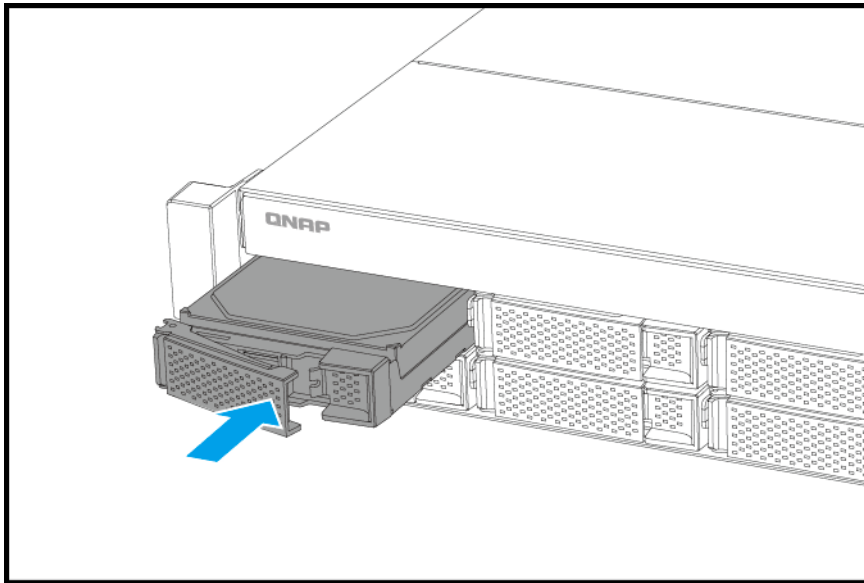


3. 将硬盘安装到托盘上。
 - a. 将硬盘放在托盘上，使硬盘底部的孔与托盘底部的孔对齐。
 - b. 装上螺丝，将硬盘锁定在托盘上。



4. 将托盘装入硬盘架。
 - a. 将托盘插入硬盘架。

- b. 推动手柄。



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。

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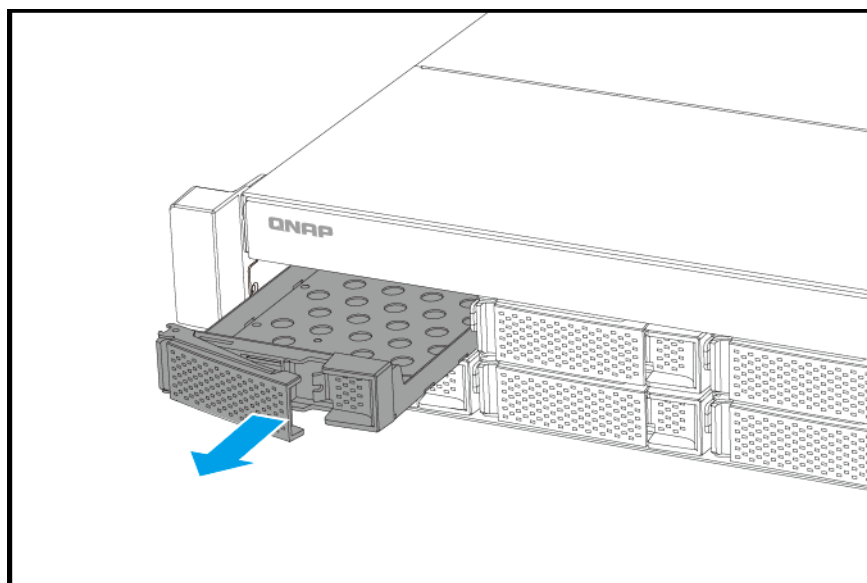
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

•

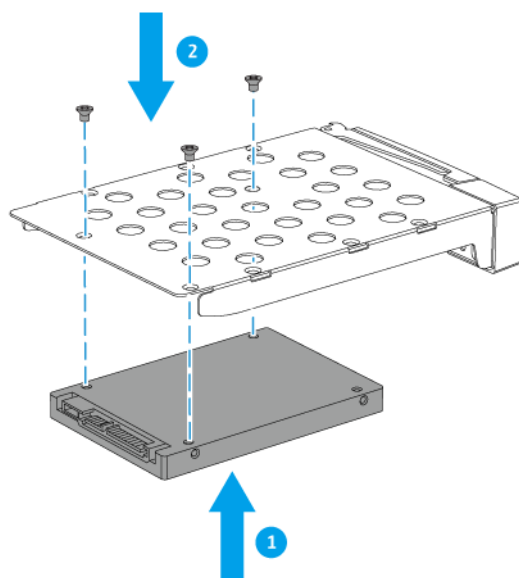


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。
2. 取下硬盘托盘。
 - a. 向外拉动托盘手柄。
 - b. 拉出托盘。

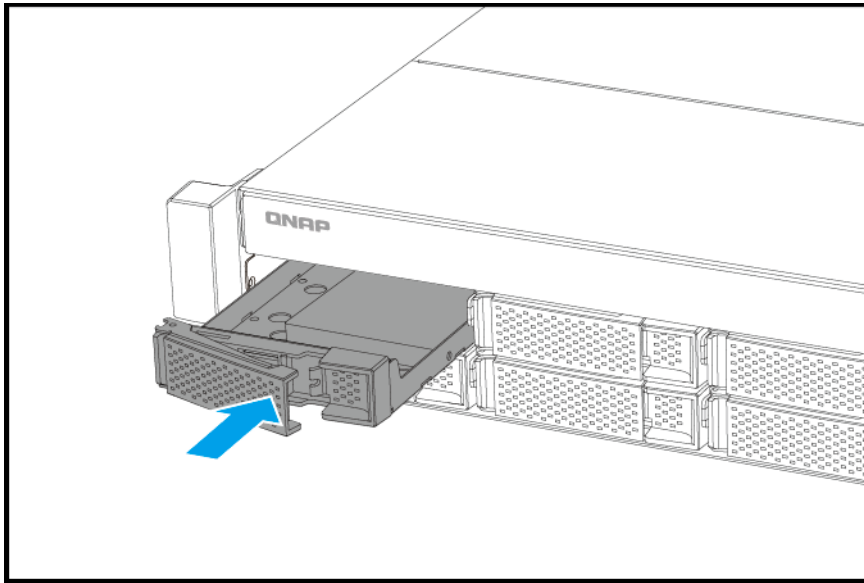


3. 将硬盘安装到托盘上。
 - a. 将硬盘放在托盘上，使硬盘底部的孔与托盘底部的孔对齐。
 - b. 安装螺丝。



4. 将托盘装入硬盘架。
 - a. 将托盘插入硬盘架。

- b. 推动手柄。



5. 启动 NAS 电源。

更换内存模块

在 TS-432PXU 和 TS-432PXU-RP 上更换内存模块

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

- 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。

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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。

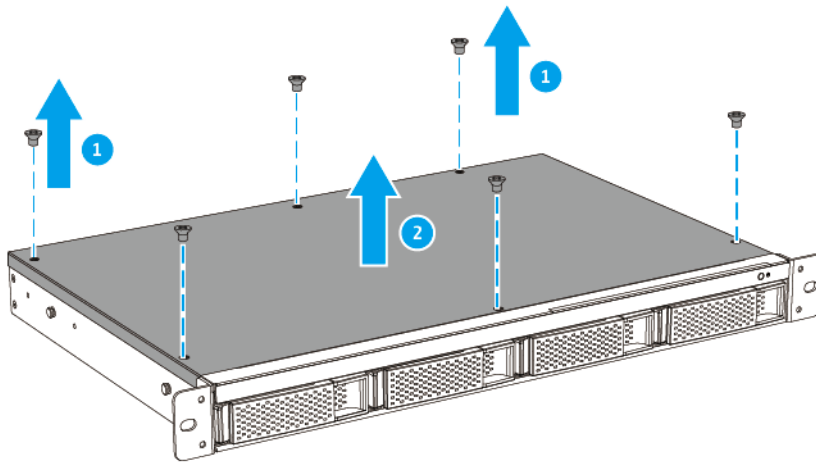
•



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. 关闭设备。
2. 从插座上拔下电源线。
3. 拔掉所有线缆和外接部件。
4. 取下外壳盖。
 - a. 取下螺丝。

- b. 从设备上提起盖板。



5. 取下现有模块。

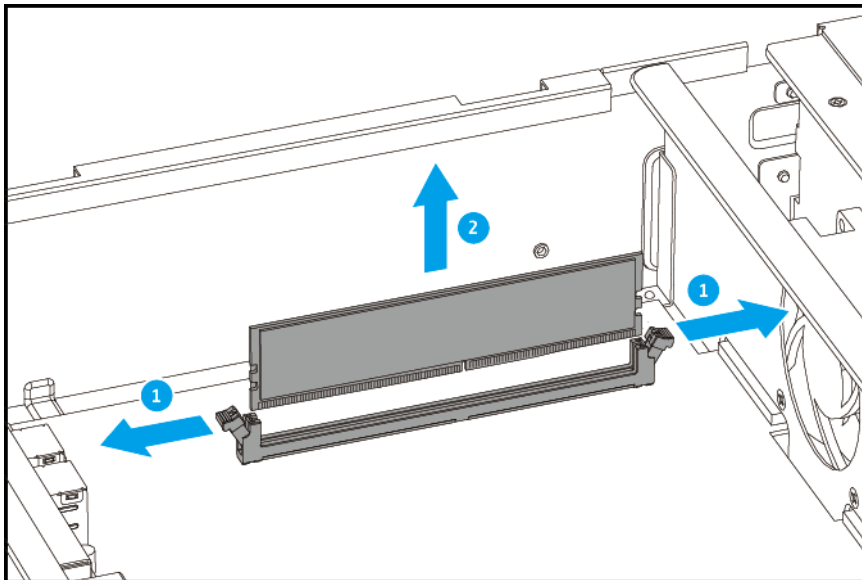
- a. 同时向外推动固定夹以释放模块。



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。

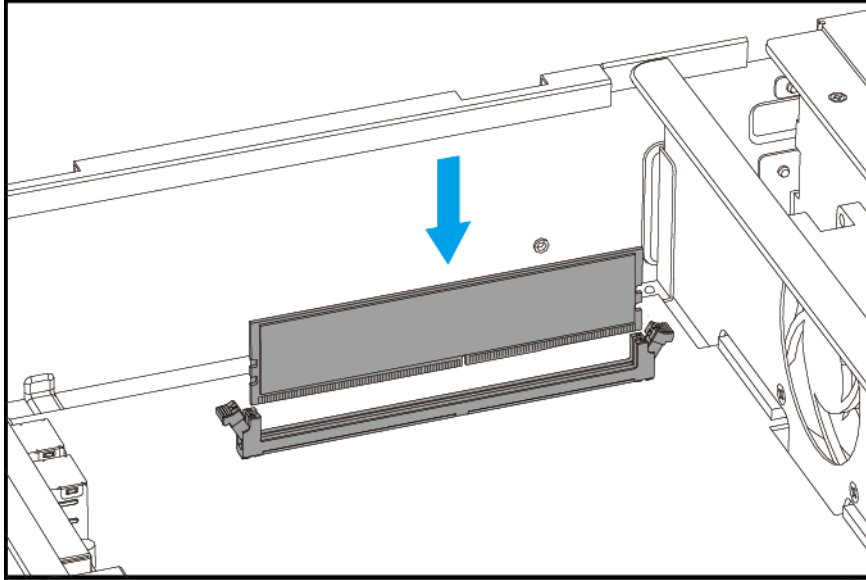
- b. 握住模块边缘。
c. 小心将模块滑出插槽。



6. 安装新模块。

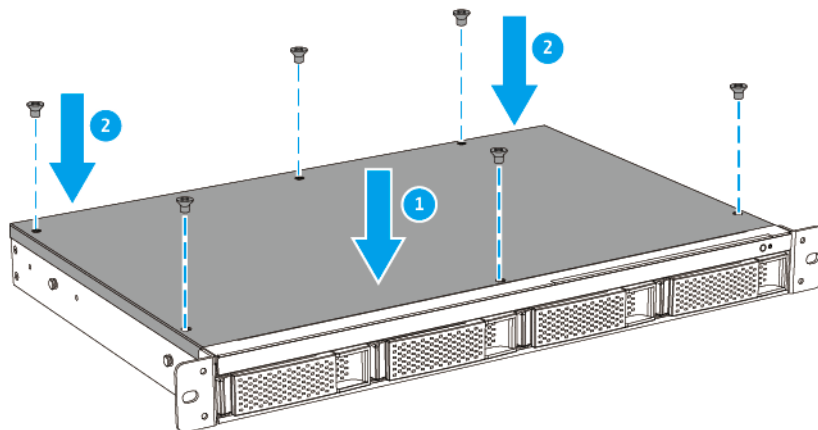
- a. 将凹口与插槽内的凸起对齐。

- 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。



7. 安装外壳盖。

- a. 将盖板放在设备上。
- b. 装上将外壳盖连接到机箱上的螺丝。



8. 连接所有线缆和外接部件。
9. 启动设备。
10. 确认设备能够识别该模块。

- 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。

在 TS-832PXU、TS-832PXU-RP、TS-1232PXU 和 TS-1232PXU-RP 上更换内存模块

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

- 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。

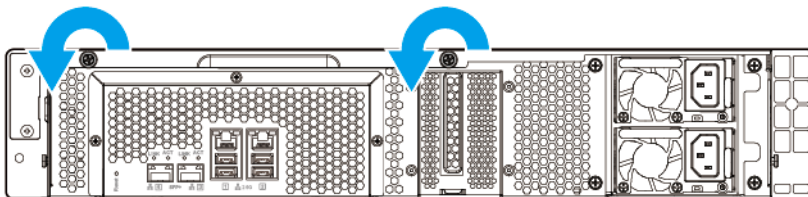


转动风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

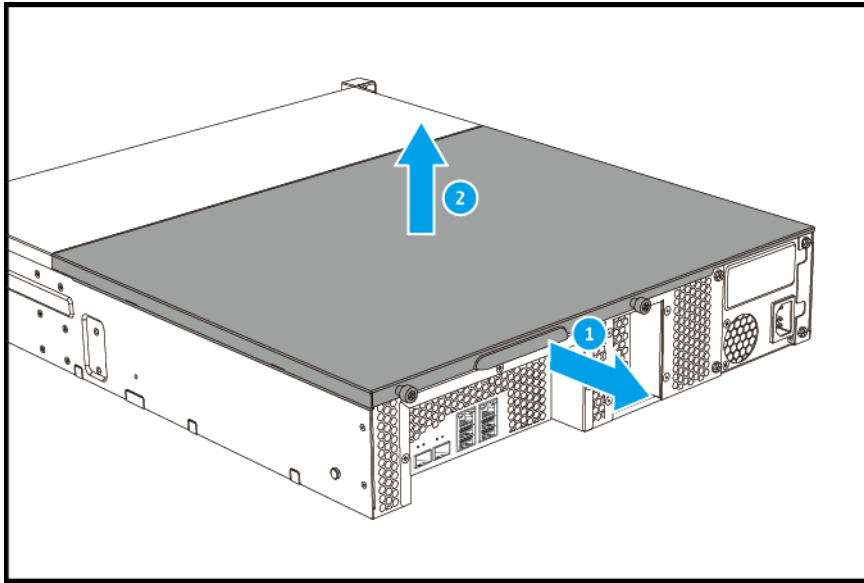


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭设备。
2. 从插座上拔下电源线。
3. 拔掉所有线缆和外接部件。
4. 取下外壳盖。
 - a. 松开螺丝。



- b. 将盖板向后滑动。
- c. 从设备上提起盖板。



5. 可选: 取下现有模块。

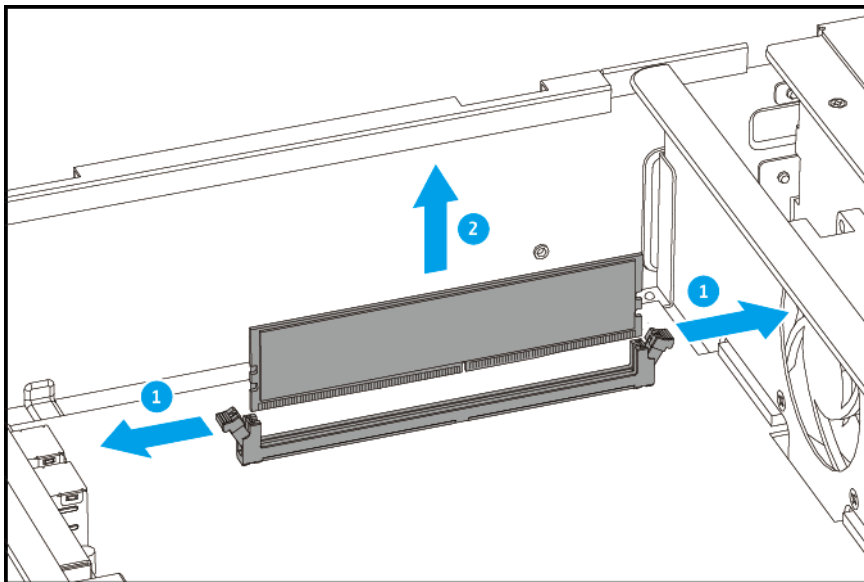
- a. 同时向外推动固定夹以释放模块。



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。

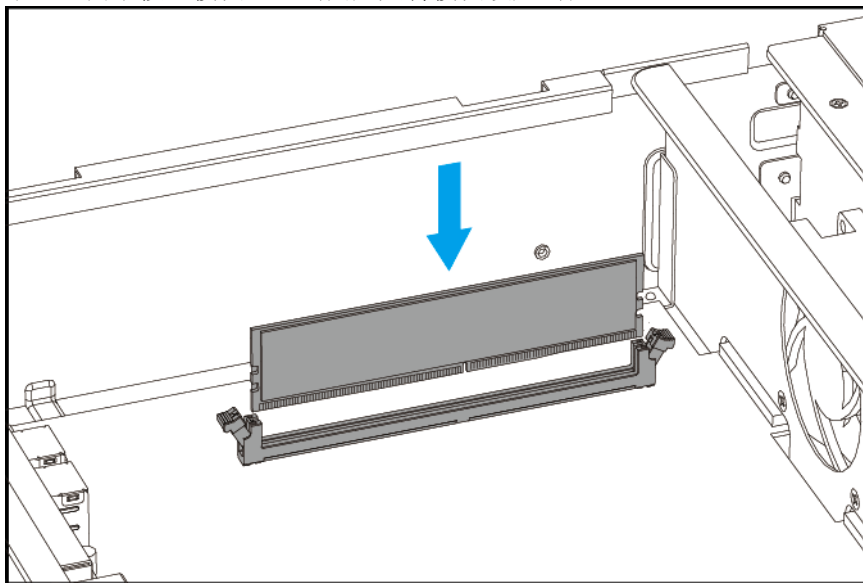
- b. 握住模块边缘。
c. 小心将模块滑出插槽。



6. 安装新模块。

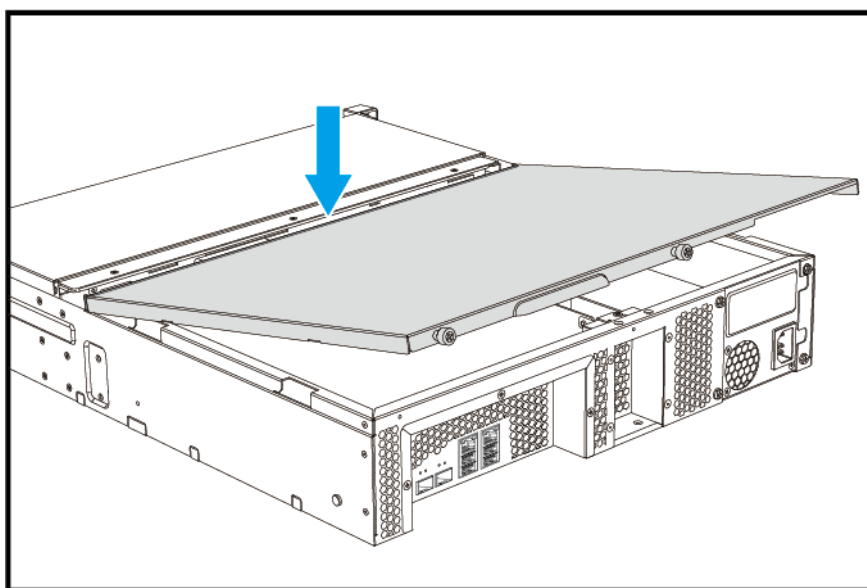
- a. 将凹口与插槽内的凸起对齐。
b. 将模块插入插槽中。

- 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。

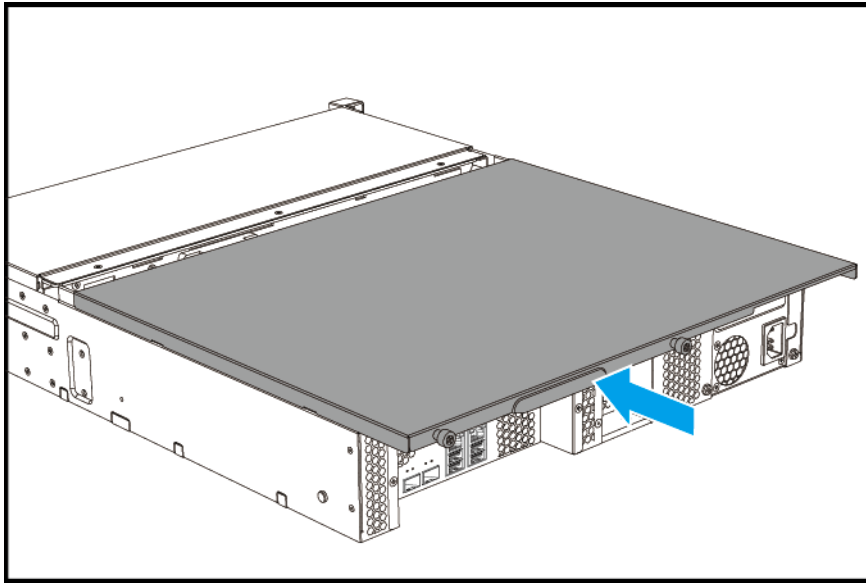


7. 安装外壳盖。

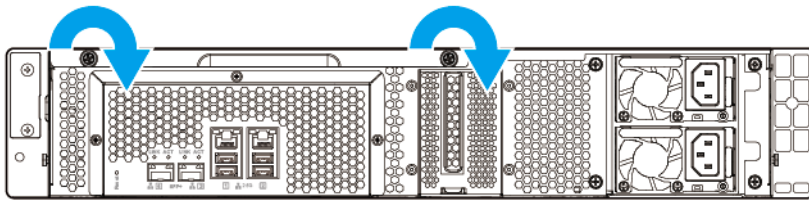
- a. 将盖板放在设备上。



- b. 将盖板向前滑动。



c. 拧紧螺丝。



8. 连接所有线缆和外接部件。
9. 启动设备。
10. 确认设备能够识别该模块。
 - 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

在 TS-432PXU 或 TS-432PXU-RP 上安装扩展卡



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。

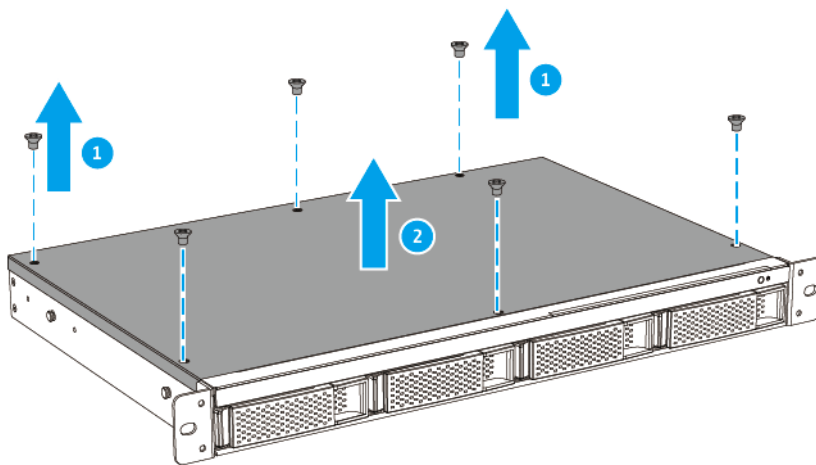


转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。



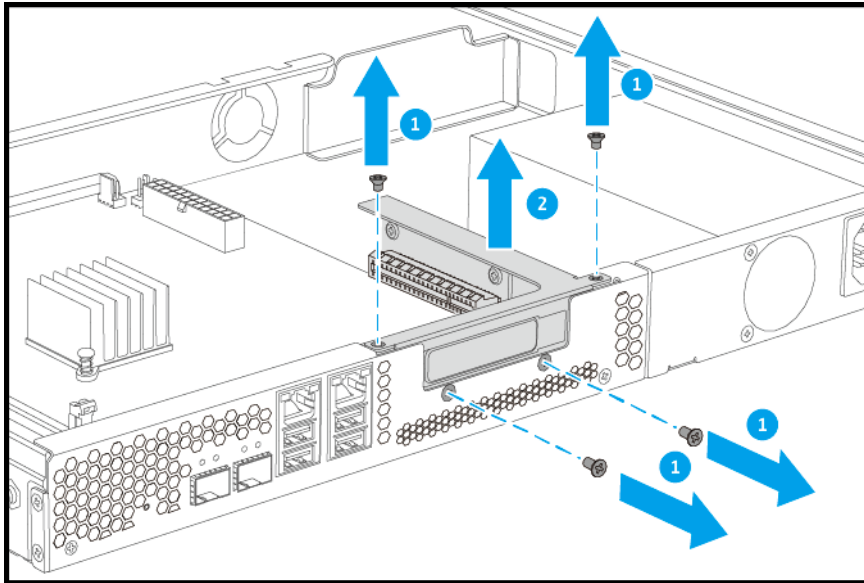
其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 在 QNAP 网站上查看您的型号支持的扩展卡和支架。
 - a. 转到 www.qnap.com/compatibility。
 - b. 单击依 NAS 检索。
 - c. 指定 NAS 的硬盘架数量和具体型号。
 - d. 在**装置类型**下，选择组件或设备类型。
 - e. 在列表中找到具体的组件或设备机型。
 - f. 可选: 单击相应的**备注**图标可查看更多信息。
2. 关闭设备。
3. 从插座上拔下电源线。
4. 拔掉所有线缆和外接部件。
5. 取下外壳盖。
 - a. 取下螺丝。
 - b. 从设备上提起盖板。



6. 取下 PCIe 支架。

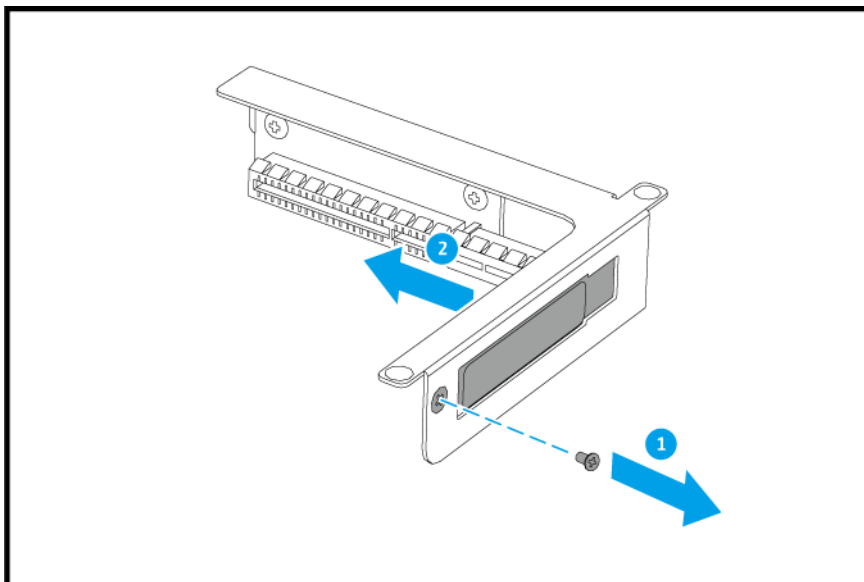
- a. 卸下用于将支架固定到机箱的螺丝。



- b. 将支架从机箱上取下。

7. 取下 PCIe 盖板。

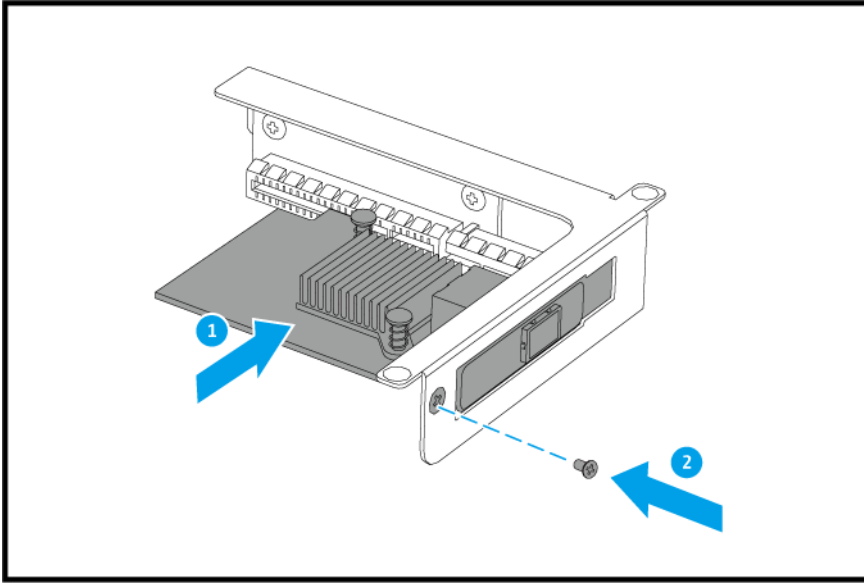
- a. 取下用于将盖板固定到支架的螺丝。
- b. 将盖板从插槽中拉出。



8. 安装扩展卡。

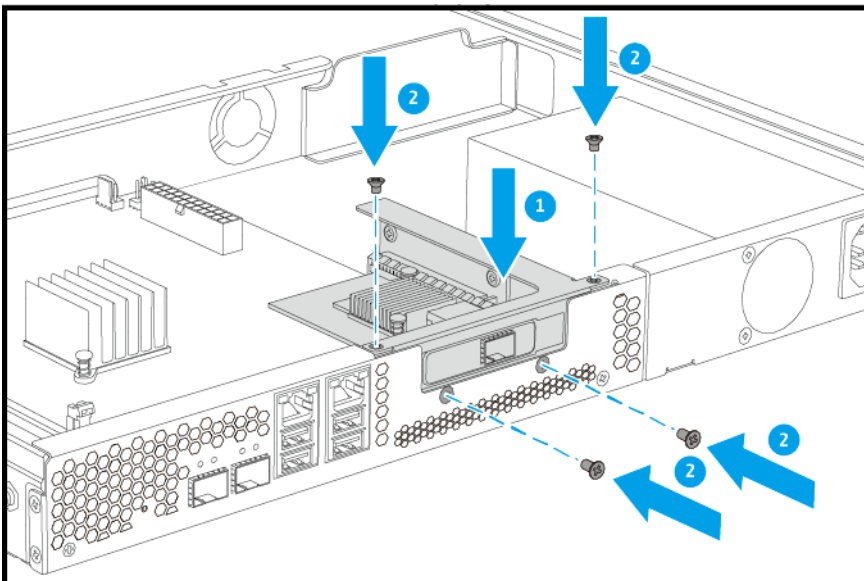
- a. 握住卡片边缘。
- b. 将其插入插槽中。

c. 安装螺丝。



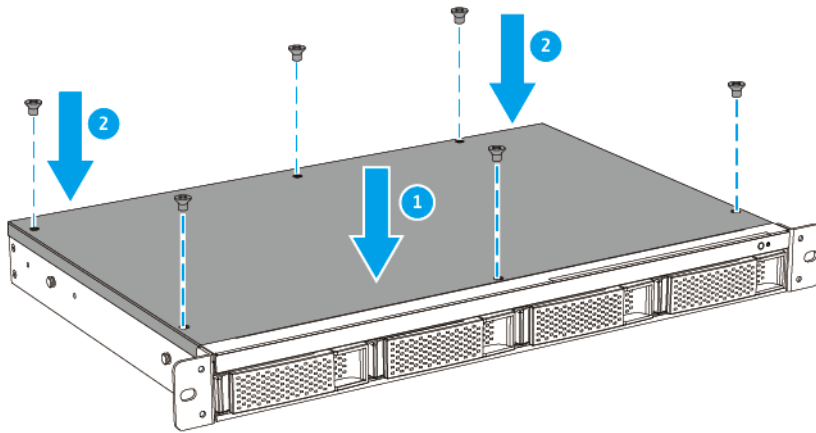
9. 插入 PCIe 支架。

- a. 将支架上的 PCIe 连接器插入系统主板上的 PCIe 插槽。
- b. 装上将支架固定到机箱的螺丝。



10. 安装外壳盖。

- a. 将盖板放在设备上。
- b. 装上将顶盖连接到机箱上的螺丝。



11. 连接所有线缆和外接部件。
12. 将电源线连接到插座。
13. 启动设备。

在 TS-832PXU、TS-832PXU-RP、TS-1232PXU 或 TS-1232PXU-RP 上安装扩展卡



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。



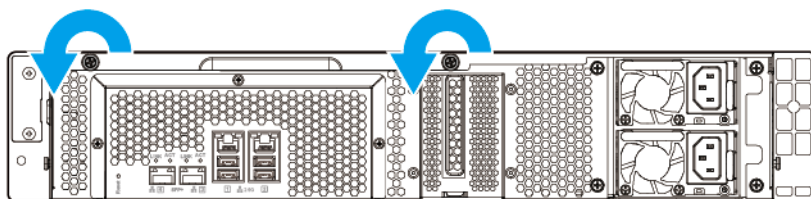
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。



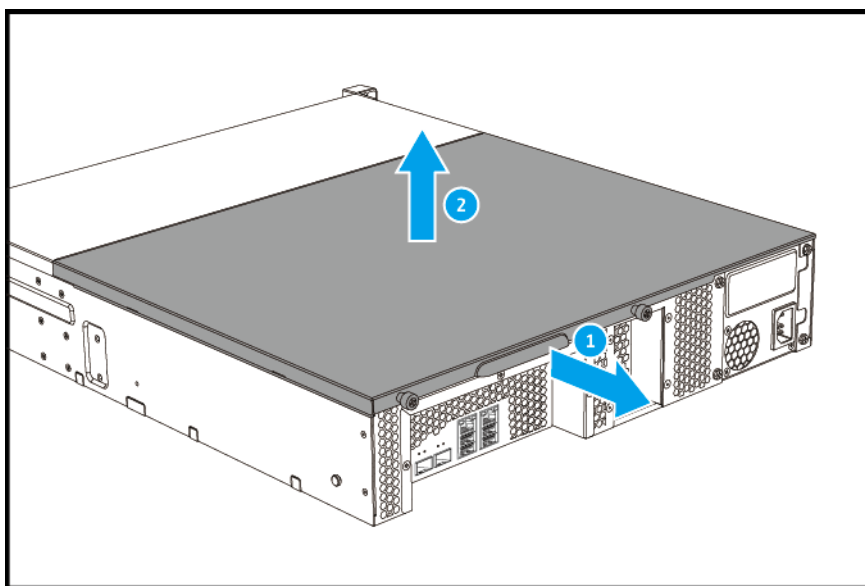
其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 在 QNAP 网站上查看您的型号支持的扩展卡和支架。
 - a. 转到 www.qnap.com/compatibility。
 - b. 单击 **依 NAS 检索**。
 - c. 指定 NAS 的硬盘架数量和具体型号。
 - d. 在 **装置类型** 下，选择组件或设备类型。
 - e. 在列表中找到具体的组件或设备机型。

- f. 可选: 单击相应的备注图标可查看更多信息。
2. 关闭设备。
 3. 从插座上拔下电源线。
 4. 拔掉所有线缆和外接部件。
 5. 取下外壳盖。
 - a. 松开螺丝。

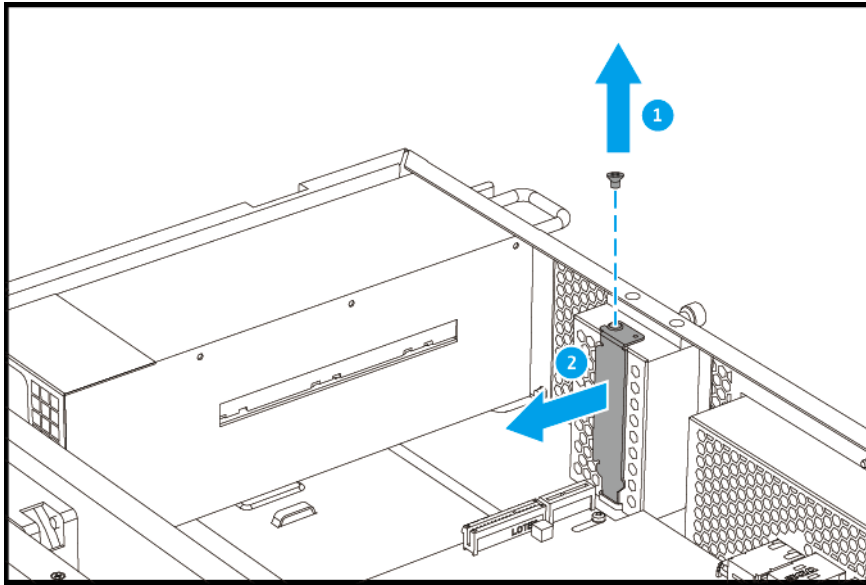


- b. 将盖板向后滑动。
- c. 从设备上提起盖板。



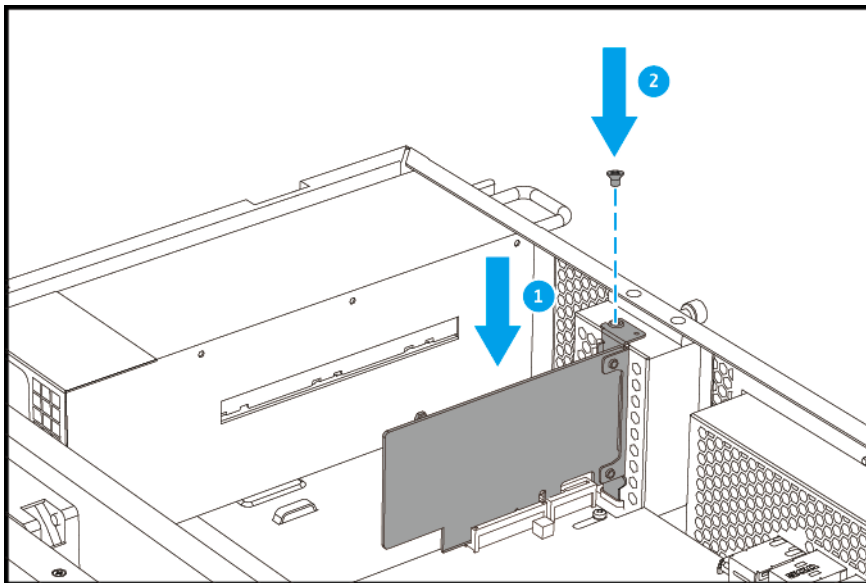
6. 取下 PCIe 盖板。

- a. 取下用于将盖板固定到支架的螺丝。
- b. 将盖板从插槽中拉出。



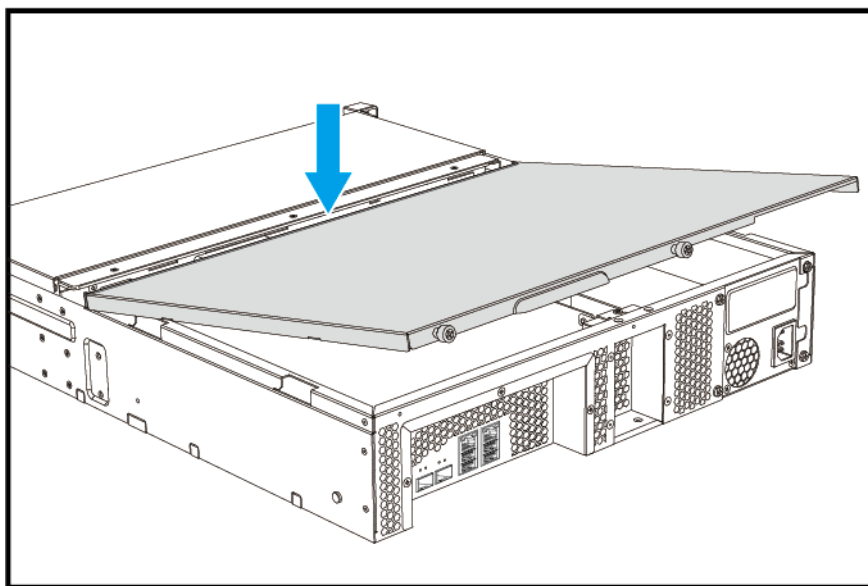
7. 安装扩展卡。

- a. 握住卡片边缘。
- b. 将其插入插槽中。
- c. 安装螺丝。

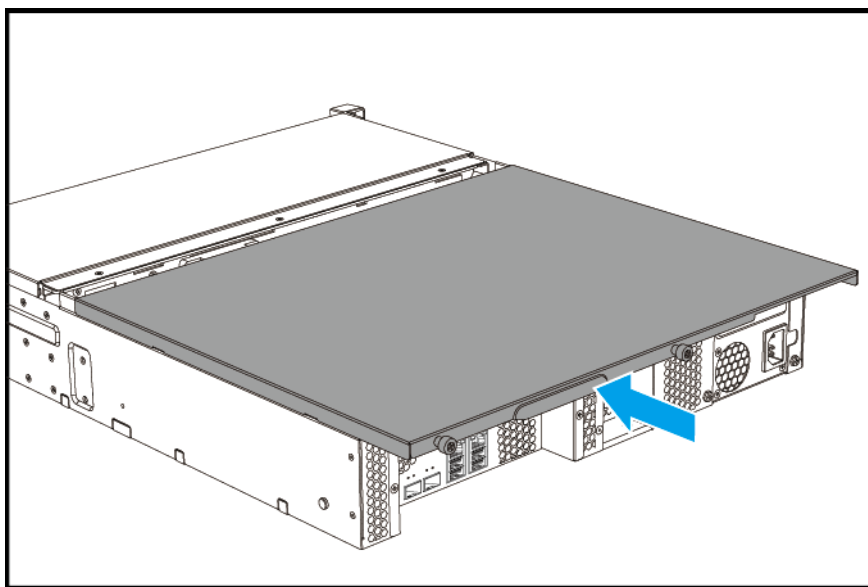


8. 安装外壳盖。

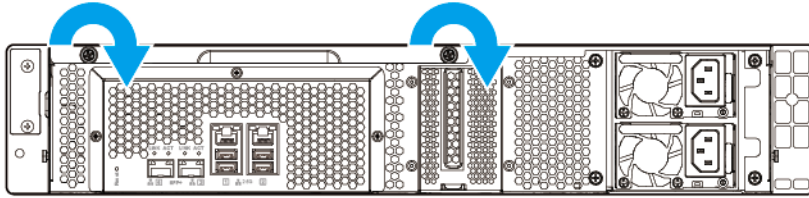
- a. 将盖板放在设备上。



b. 将盖板向前滑动。



c. 拧紧螺丝。



9. 连接所有线缆和外接部件。
10. 将电源线连接到插座。
11. 启动设备。

热插拔冗余电源单元



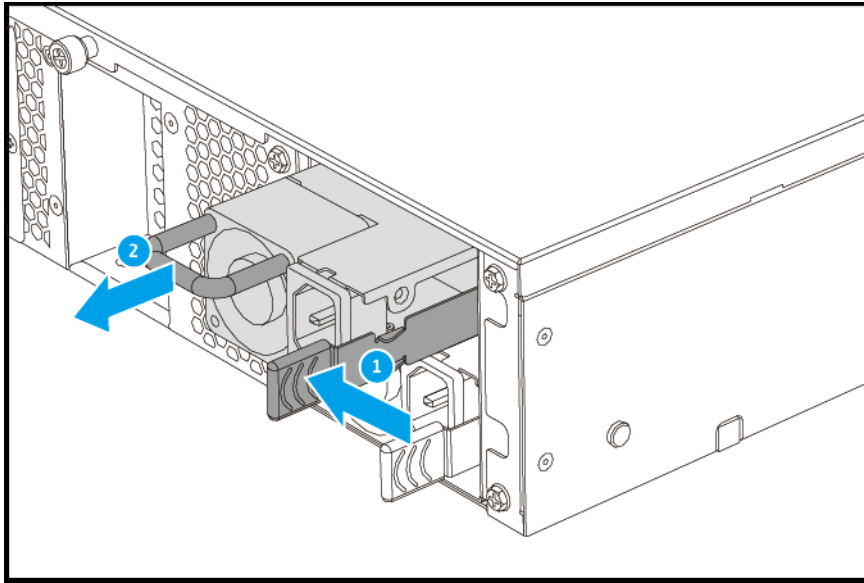
警告

- 触电危险。
-

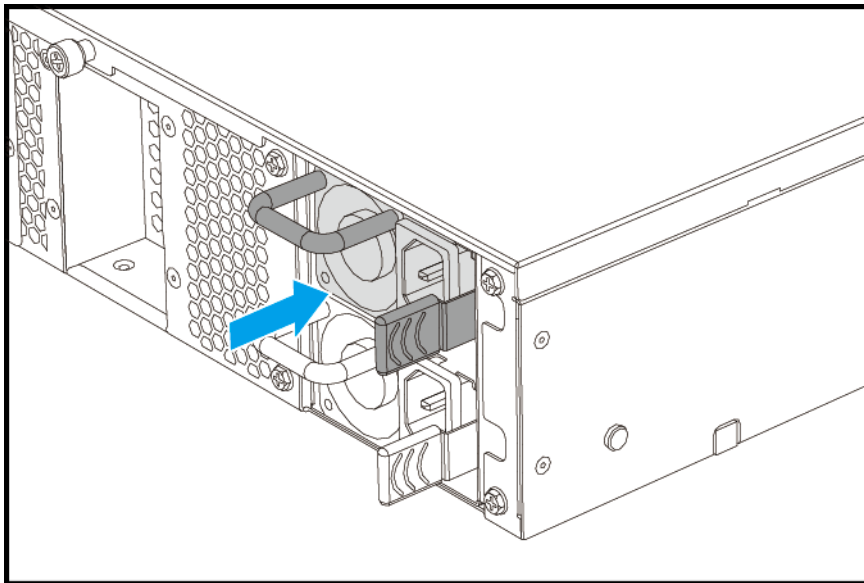


NAS 可能有一条或多条冗余电源单元 (PSU) 线。为避免受到严重伤害，安装或更换系统组件前，必须由经培训的维修技师拔下所有 PSU 线。

1. 关闭 NAS 电源。
2. 从插座和要更换的电源单元 (PSU) 上拔下电源线。
3. 向手柄方向紧按门锁并拉出 PSU。



4. 插入新 PSU。



5. 将电源线连接到 PSU 和插座。
6. 启动设备。
7. 启用 PSU 故障警报。
 - a. 以管理员身份登录 QTS。
 - b. 转到**控制台 > 系统 > 硬件 > 一般设置**。
 - c. 选择**启用冗余电源模式**。
 - d. 单击**全部应用**。

安装扩展单元

TS-x32PXU 支持 SATA JBOD 扩展单元和 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>。

扩展单元型号	描述	所需配件
TL-D400S	<ul style="list-style-type: none"> 使用 SATA 6 Gbps (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 SATA 6 Gbps (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 至 SFF-8644 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
TL-R400S	<ul style="list-style-type: none"> 使用 SATA 6 Gbps (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 RAIL-B02
TL-R1200S-RP	<ul style="list-style-type: none"> 使用 SFF-8088 至 SFF-8644 接口 支持 SATA/HDD/SSD 	<ul style="list-style-type: none"> 3 x SFF-8088 至 SFF-8644 连接器线缆 QXP-1600eS 主机总线适配器 RAIL-B02
TR-002	<ul style="list-style-type: none"> 使用 USB 3.2 Gen 2 C 型接口 支持 SATA 硬盘 	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 硬盘 	USB 3.2 Gen 2 A 型至 C 型线缆
TR-004U	<ul style="list-style-type: none"> 使用 USB 3.2 Gen 1 C 型接口 支持 SATA 硬盘 	<ul style="list-style-type: none"> USB 3.2 Gen 1 A 型至 C 型线缆 RAIL-B02
TL-D800C	<ul style="list-style-type: none"> 使用 USB 3.2 Gen 2 C 型接口 支持 SATA 硬盘 	<ul style="list-style-type: none"> USB 3.2 Gen 2 A 型至 C 型线缆 可选：QNAP QXP-10G2U3A USB 3.2 Gen 2 PCIe 卡

扩展单元型号	描述	所需配件
TL-R1200C-RP	<ul style="list-style-type: none"> 使用 USB 3.2 Gen 2 C 型接口 支持 SATA 硬盘 	<ul style="list-style-type: none"> USB 3.2 Gen 2 A 型至 C 型线缆 RAIL-B02 可选：QNAP QXP-10G2U3A USB 3.2 Gen 2 PCIe 卡

连接 SATA JBOD 扩展单元

要将 TS-x32PXU 连接到 SATA JBOD 扩展单元，必须在 NAS 中安装主机总线适配器。

有关所需配件的详细信息，请参见[安装扩展单元](#)。

1. 关闭 NAS 电源。
2. 在 PCIe 插槽上安装主机总线适配器。

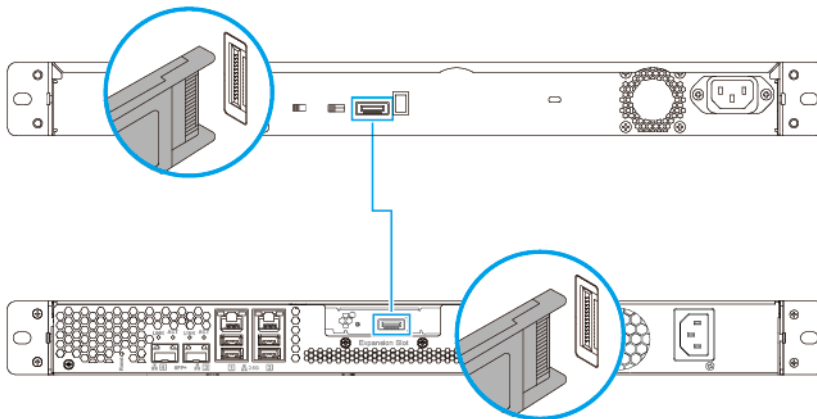


注

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

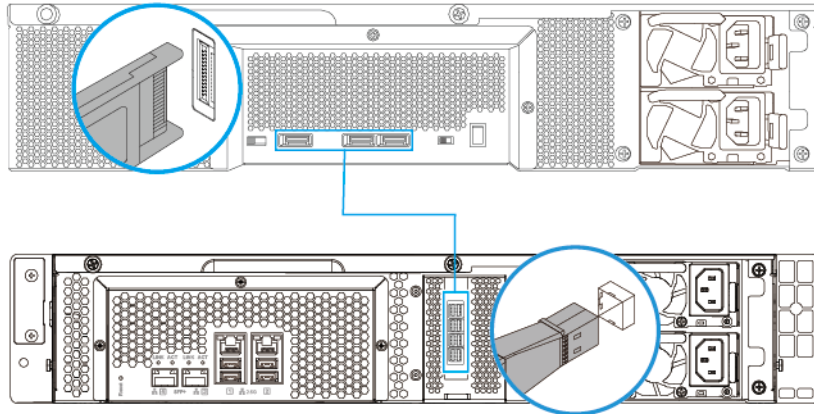
有关详细信息，请参见[安装扩展单元](#)。

3. 按以下拓扑将扩展单元连接到 NAS。



注

此图显示了 TL-R400S 与 TS-432PXU 之间的连接。



注
此图显示了 TL-1200S 与 TS-1232PXU-RP 之间的连接。

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。
 - c. 确认扩展单元已列出。

连接 USB 扩展单元

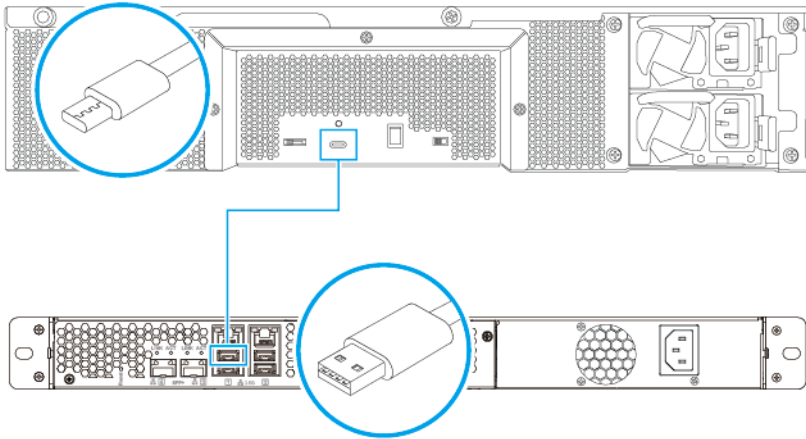
要将 TS-x32PXU 连接到 USB 扩展单元，需要 USB A 型至 USB C 型线缆。

有关所需配件的详细信息，请参见[安装扩展单元](#)。

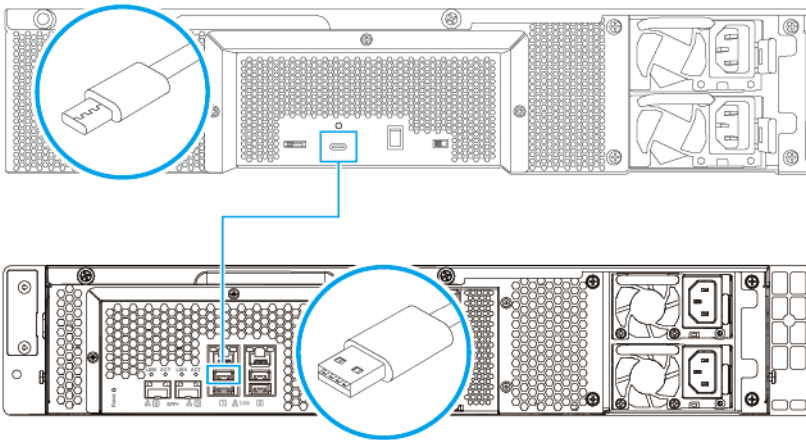
1. 将扩展单元连接到 NAS。
 - a. 将 USB 线缆连接到 NAS 上的 USB 3.2 Gen 2 A 型端口。



注
要扩展 USB 3.2 Gen 2 A 型商品的容量，请在扩展单元上安装 QNAP QXP-10G2U3A PCIe 卡。
有关扩展单元扩展卡兼容性的详细信息，请参见[安装扩展单元](#)。



注
此图显示了 TL-R1200C-RP 与 TS-432PXU 之间的连接。



注
此图显示了 TL-R1200C-RP 与 TS-1232PXU-RP 之间的连接。

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。

安装手柄

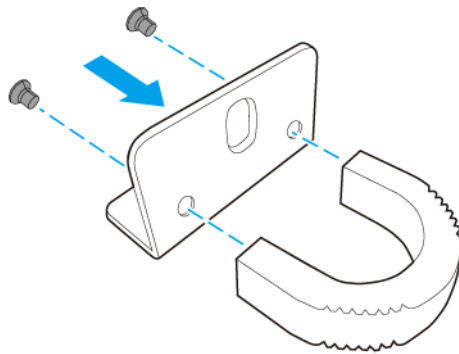
安装手柄可以便于拿取和固定 NAS。



注

TS-432PXU 和 TS-432PXU-RP 的手柄需要人工安装。

1. 关闭 NAS 电源。
2. 将手柄安装到角码上。
 - a. 将手柄上的开孔对准角码上的两个圆螺丝孔。
 - b. 装上螺丝，将手柄固定在角码上。



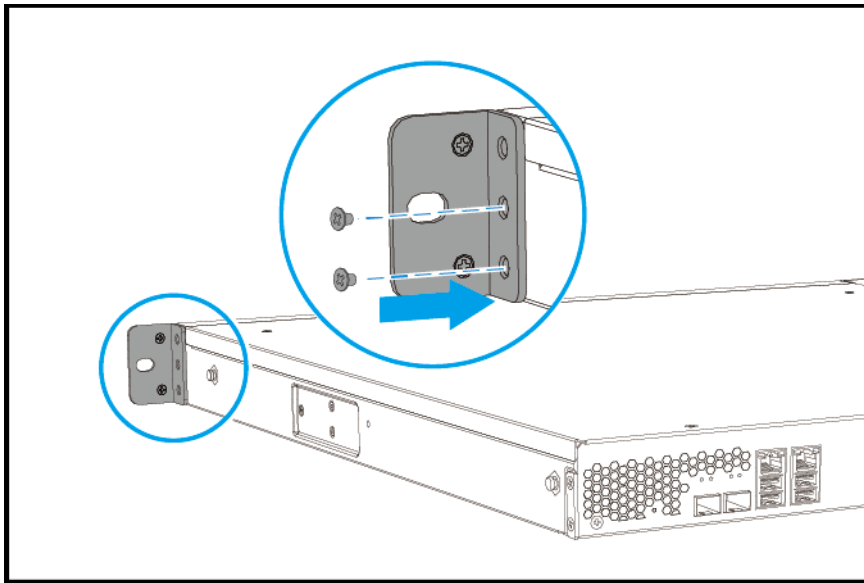
3. 将角码安装到设备上。
 - a. 将角码上的孔对准机箱上的孔。



注

确保手柄与前面板朝向一致。

- b. 安装螺丝。



4. 将第二个手柄安装到机箱的另一侧。
5. 启动 NAS 电源。

导轨套件



注

- 导轨套件未随 NAS 提供，必须单独购买。有关详细信息，请联系授权经销商或转到 <http://shop.qnap.com>。
- 有关导轨套件安装的信息，可在导轨套件包装随附的安装指南中找到。

型号	兼容的导轨套件
<ul style="list-style-type: none"> • TS-432PXU • TS-432PXU-RP • TS-832PXU • TS-832PXU-RP • TS-1232PXU • TS-1232PXU-RP 	RAIL-B02

QTS 安装

方法	描述	要求
Qfinder Pro 安装（推荐）	<p>如果 NAS 已连接到您的局域网，可以执行以下操作：</p> <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
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 • Cloud Key

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。
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**。
此时会出现**输入 NAS 名称和管理员密码**屏幕。
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**。
此时会出现**设置日期和时间**屏幕。
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**。
此时会出现**配置网络设置**屏幕。
11. 选择**自动获取 IP 地址(DHCP)**。
12. 单击**下一步**。
此时会出现**跨平台文件传输服务**屏幕。
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**。
此时会出现**摘要**屏幕。
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

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。

- 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。

- 单击下一步。

- 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**。

- 单击**启动智能安装指南**。

- 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。

- 单击下一步。

此时会出现**设置日期和时间**屏幕。

- 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。

- 单击下一步。

此时会出现**配置网络设置**屏幕。

- 选择**自动获取 IP 地址(DHCP)**。

- 单击下一步。

此时会出现**跨平台文件传输服务**屏幕。

- 选择将用于访问 NAS 上共享文件夹的设备类型。

- 单击下一步。

此时会出现**摘要**屏幕。

- 检查设置。

- 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。	设备开机。
关闭电源	按住此按钮 1.5 秒钟。	设备关机。
强制关机	按住此按钮 10 秒钟。	设备关机。

 **重要**
 仅当设备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：默认密码为第一个 MAC 地址（去掉特殊字符），以大写字母表示。例如，如果第一个 MAC 地址为 00-08-9B-F6-15-75，则管理员密码将为 00089BF61575。 <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  提示 您可以使用 Qfinder Pro 找到第一个 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"> • TCP/IP 配置： <ul style="list-style-type: none"> • 通过 DHCP 自动获取 IP 地址设置 • 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） • LCD 面板密码：（空白） • 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。

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[前面板](#)。

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。 设备正在初始化。 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。 设备处于降级只读模式（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	设备处于降级模式（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"> 设备未配置。 硬盘未格式化。
	绿色	设备已就绪。
	熄灭	所有硬盘都处于待机模式。

LED	状态	描述
云端硬盘	闪烁红色	正在访问数据，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	硬盘就绪。
	熄灭	未检测到硬盘。
LAN	橙色	<ul style="list-style-type: none"> 网络连接正在运行。 <div style="border-left: 2px solid #0070C0; padding-left: 10px; margin-top: 10px;">  注 LAN LED 只能检测到设备的内置以太网端口连接，无法检测到网络扩展卡的以太网端口连接状态。 </div>
	闪烁橙色	正在从网络访问设备。
	熄灭	设备未连接至网络。
10 GB 以太网 (SFP+) 链路	绿色	网络连接以 10 Gbps 的速度运行
	熄灭	没有网络连接。
10 GB 以太网 (SFP+) 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。
	熄灭	<ul style="list-style-type: none"> 网络连接以 100 Mbps 的速度运行。 没有网络连接。
2.5 Gb 以太网活动	橙色	网络连接已建立。
	闪烁橙色	正在从网络访问设备。
	熄灭	没有网络连接。
扩展	橙色	检测到 QNAP JBOD 或 RAID 扩展单元。
	熄灭	未检测到 JBOD 扩展单元。

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 正在重置配置 (重置按钮)。 • NAS 正在重置配置和重新启动 (重置按钮)。 • 操作系统已更新。 • 设备正在从睡眠模式中唤醒。
	3	无法检测到已安装的磁盘。
长提示音 (1.5 秒)	3 (每 5 分钟)	<ul style="list-style-type: none"> • 电源发生错误。 • 系统风扇故障。 • 风扇模块已移除。 • 已安装的风扇模块兼容。 • 发生系统风扇错误。 • NAS 已开机。 • NAS 已完成固件更新。
	2	<ul style="list-style-type: none"> • 存储池的容量即将被占满。 • 存储池的容量已满。 • 发生存储池状态错误。 • 磁盘卷的容量即将被占满。 • 磁盘卷的容量已满。 • 发生卷状态错误。 • 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。 • iSCSI 的容量即将被占满。
	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。
长提示音和短提示音	一长两短	JBOD 扩展单元已移除。

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 类型	磁盘数量	情形
RAID 1	2	一个成员硬盘有故障。
RAID 5	≥ 3	一个成员硬盘有故障。
RAID 6	≥ 4	一个或两个成员硬盘有故障。
RAID 10	≥ 4（必须为偶数）	处于两个不同对中的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. 从设备中取下故障硬盘。
6. 等待 20 秒或设备发出两声提示音。
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

磁盘卷	RAID 恢复支持	磁盘数量	被移除硬盘的最大数量
单盘	否	1	不适用
JBOD	是	≥ 2	
RAID 0	是		
RAID 1	是	2	1
RAID 5	是	≥ 3	
RAID 6	是	≥ 4	2
RAID 10	否	≥ 4 (必须为偶数)	

支持和其他资源

QNAP 提供了以下资源：

资源	URL
文档	https://download.qnap.com
兼容性列表	https://www.qnap.com/compatibility
NAS 迁移兼容性	https://www.qnap.com/en/nas-migration
扩展单元兼容性	http://www.qnap.com/go/compatibility-expansion
服务门户	https://service.qnap.com
产品支持状态	https://www.qnap.com/en/product/eol.php
下载	https://download.qnap.com
社区论坛	https://forum.qnap.com
QNAP 配件商店	https://shop.qnap.com

6. 术语表

Cloud Key

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 Link

可用于通过 Internet 访问 QNAP 设备，而且不必配置复杂的端口转发设置

QNAP ID

用户帐户，可用于使用 myQNAPcloud 远程访问和其他 QNAP 服务

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

本章提供有关保修、免责声明、许可和联邦法规的信息。

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电力供应组装	0	0	0	0	0	0
电池	0	0	0	0	0	0

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。