



QNAP

TS-x53DU

TS-453DU
TS-453DU-RP
TS-853DU-RP
TS-1253DU-RP

用户指南

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1. 前言





关于本指南

本指南提供有关设备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 TS-x53DU NAS 的基本信息。

关于 TS-x53DU

TS-x53DU 由 Intel® Celeron® J4125 四核 2.0 GHz 处理器提供支持，支持不同的磁盘存储配置，可以更好地满足您的虚拟化和数据存储需求。此产品最高支持 8 GB 的 DDR4 内存，并配有一个 SATA 6 Gbps 硬盘接口。

TS-x53DU 还特有两个 2.5 Gb 以太网端口、两个 USB 3.2 Gen 1 端口、两个 USB 2.0 端口和一个 PCIe 2.0 x2 插槽，具有更强的可扩展性和灵活性。

硬件规格






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-453DU-4G	4	4 GB	单个
TS-453DU-RP-4G	4	4 GB	冗余
TS-853DU-RP-4G	8	4 GB	冗余
TS-1253DU-RP-4G	12	4 GB	冗余

组件	TS-453DU TS-453DU-RP	TS-853DU-RP	TS-1253DU-RP
处理器	Intel® Celeron® J4125		
CPU	Intel® Celeron® J4125		
频率	4 核/4 线程 2.00 GHz 基本/2.70 GHz 脉冲		
架构	x86 64 位		
加密引擎	AES-NI		
内存	4 GB: 1 x 4 GB SODIMM DDR4		
预安装内存	4 GB: 1 x 4 GB SODIMM DDR4		
内存插槽	2 x SODIMM DDR4		
	<div style="display: flex; align-items: center;"> <div style="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-453DU TS-453DU-RP	TS-853DU-RP	TS-1253DU-RP
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
	 注 SATA 6 Gbps 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	设备对所有硬盘均支持 SSD 缓存加速。		
热插拔	支持		
网络			
2.5 Gb 以太网端口	2 x 2.5 GbE RJ45  注 2.5 Gb 以太网端口可提供 4 种网络连接速度：2.5G、1G、100M 和 10M。		
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  提示 有关兼容扩展卡的列表，请转到 https://www.qnap.com/compatibility 。		
USB 端口	<ul style="list-style-type: none"> • 2 x USB 2.0 A 型 • 2 x USB 3.2 Gen 1 A 型 		
HDMI 端口	1 个 HDMI v1.4b (30 Hz 时分辨率最高 3840 x 2160)		
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)	<ul style="list-style-type: none"> • TS-453DU 43.3 x 482.6 x 483.9 mm (1.70 x 19.00 x 19.05 英寸) • TS-453DU-RP 43.3 x 482.6 x 508.7 mm (1.70 x 19.00 x 20.03 英寸) 	88.7 x 482.2 x 423.8 mm (3.49 x 18.98 x 16.69 英寸)	

组件	TS-453DU TS-453DU-RP	TS-853DU-RP	TS-1253DU-RP
净重	<ul style="list-style-type: none"> TS-453DU: 6.66 kg (14.55 磅) TS-453DU-RP: 8.12 kg (17.90 磅) 	8.89 kg (19.60 磅)	9.43 kg (20.79 磅)
其他			
导轨兼容性	RAIL-B02		
电源单元	<ul style="list-style-type: none"> TS-453DU: 1 x 250W, 100-240V AC, 50-60Hz TS-453DU-RP: 2 x 250W, 100-240V AC, 50-60Hz 	2 x 300W, 100-240V AC, 50-60Hz	2 x 300W, 100-240V AC, 50-60Hz
系统电池	CR2032 锂电池 (3V, 225 mAh)  警告 为避免潜在伤害或组件的损坏，请务必等硬盘和其他内部系统组件冷却后再触碰。  重要 请按当地法规或电池制造商的指示处置使用过的电池。		
噪声声级	TS-453DU: 38 dB(A) TS-453DU-RP: 37.5 dB(A)	23.6 dB(A)	24.6 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	系统: 2 x 40 mm, 12V DC	系统: 2 x 80 mm, 12V DC	
 警告  为避免潜在伤害或组件的损坏，NAS 连接电源时，切勿触及风扇。			
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) 		

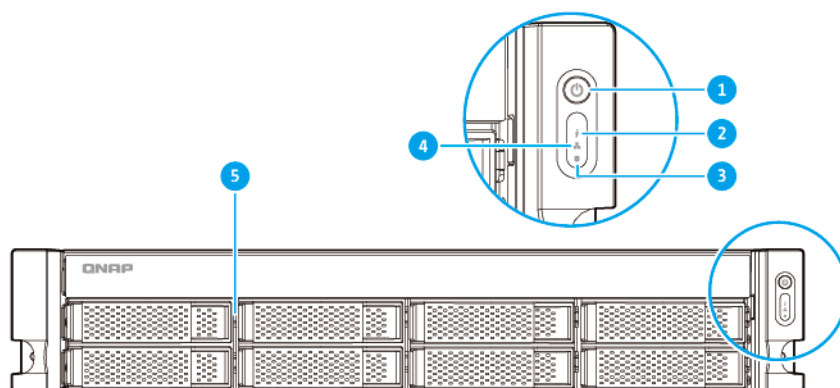
包装内容

项目	数量
TS-x53DU	1
电源线	<ul style="list-style-type: none"> TS-x53DU 型号: 1 TS-x53DU-RP 型号: 2
以太网线	1 x CAT5e 线缆

项目	数量
适用于 3.5 英寸硬盘的螺丝	<ul style="list-style-type: none"> • TS-453DU、TS-453DU-RP: 16 • TS-853DU-RP: 32 • TS-1253DU-RP: 48
适用于 2.5 英寸硬盘的螺丝	<ul style="list-style-type: none"> • TS-453DU、TS-453DU-RP: 12 • TS-853DU-RP: 24 • TS-1253DU-RP: 36
手柄套件	TS-453DU、TS-453DU-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

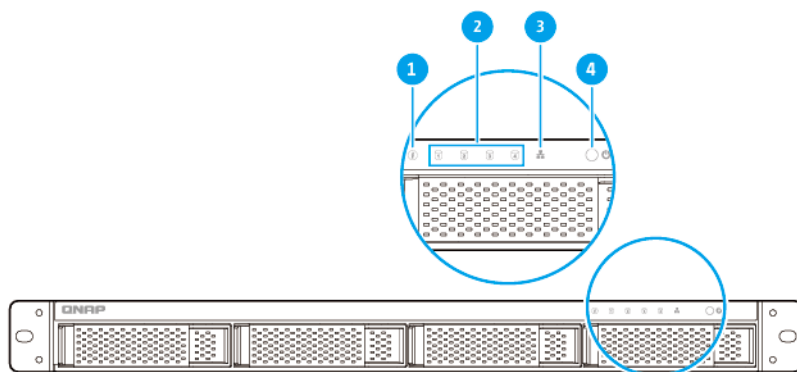
组件

前面板



TS-853DU-RP、TS-1253DU-RP

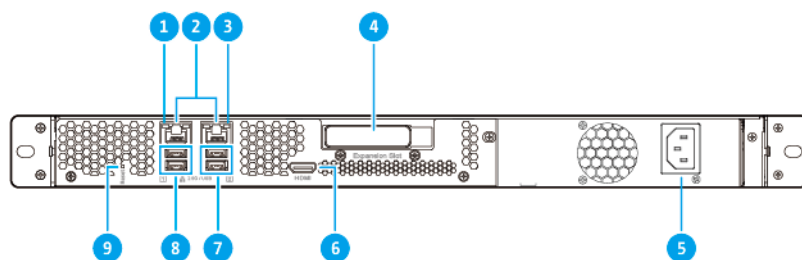
编号	组件	编号	组件
1	电源按钮	4	LAN LED
2	状态 LED	5	硬盘 LED
3	扩展单元 LED	-	-



TS-453DU、TS-453DU-RP

编号	组件	编号	组件
1	状态 LED	3	LAN LED
2	硬盘 LED	4	电源按钮

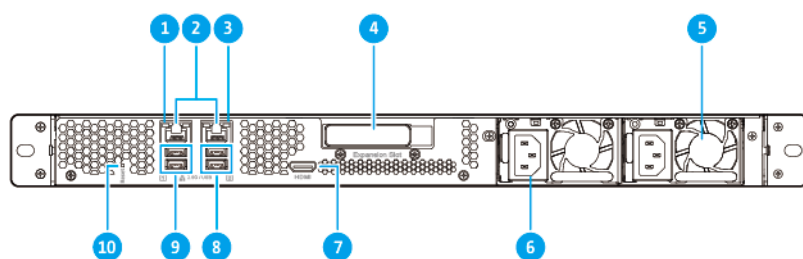
后面板



TS-453DU

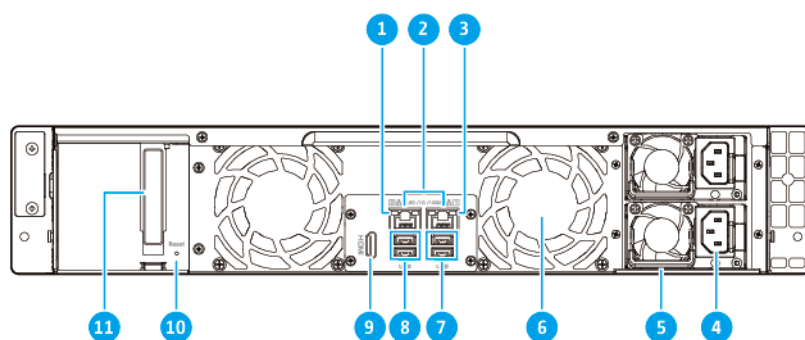
编号	组件	编号	组件
1	2.5 Gb 以太网活动 LED	6	HDMI v1.4b 端口

编号	组件	编号	组件
2	2.5 Gb 以太网端口 (RJ45) 注 这些端口支持网络唤醒配置。	7	USB 3.2 Gen 1 A 型端口
3	2.5 Gb 以太网速度 LED	8	USB 2.0 A 型端口
4	PCIe 半高盖板	9	重置按钮
5	电源输入	-	-



TS-453DU-RP

编号	组件	编号	组件
1	2.5 Gb 以太网活动 LED	6	电源输入
2	2.5 Gb 以太网端口 (RJ45) 注 这些端口支持网络唤醒配置。	7	HDMI 1.4b 端口
3	2.5 Gb 以太网速度 LED	8	USB 3.2 Gen 1 A 型端口
4	PCIe 半高盖板	9	USB 2.0 A 型端口
5	电源单元	10	重置按钮

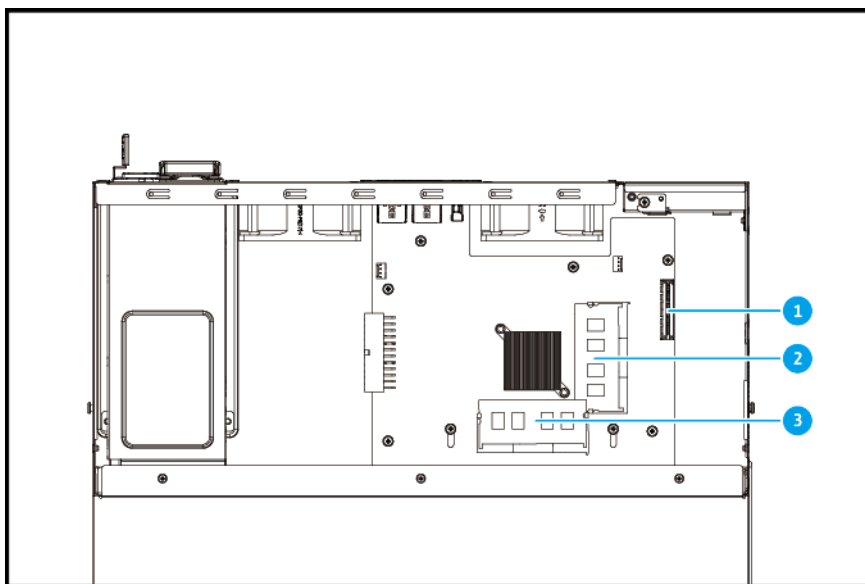


TS-853DU-RP、TS-1253DU-RP

编号	组件	编号	组件
1	2.5 Gb 以太网活动 LED	7	USB 3.2 Gen 1 A 型端口
2	2.5 Gb 以太网端口	8	USB 2.0 A 型端口
3	2.5 Gb 以太网速度 LED	9	HDMI 1.4b 端口
4	电源输入	10	重置按钮
5	电源单元	11	PCIe 半高盖板
6	系统风扇	-	-

注
这些端口支持网络唤醒配置。

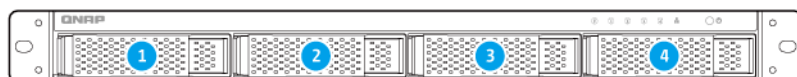
系统主板



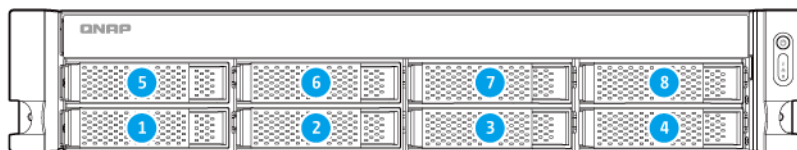
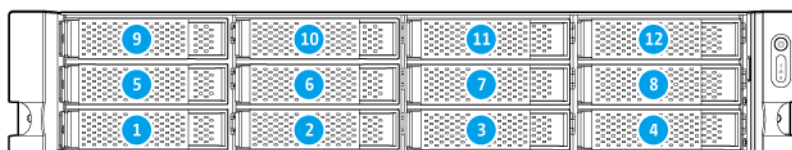
注
图像不含外壳盖。

编号	组件	编号	组件
1	PCIe 2.0 x2 插槽	3	内存插槽 2
2	内存插槽 1	-	-

硬盘编号



TS-453DU、TS-453DU-RP

**TS-853DU-RP****TS-1253DU-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

•



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

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. 将 NAS 安装在机架上。
有关详细信息，请参见[导轨套件](#)和[安装手柄](#)。
3. 安装硬盘。
有关详细信息，请参见以下主题：
 - [在 3.5 英寸托盘上安装 3.5 英寸硬盘](#)
 - [在 3.5 英寸托盘上安装 2.5 英寸硬盘或固态硬盘](#)
 有关兼容硬盘型号的列表，请转到 <https://www.qnap.com/compatibility>。
4. 可选: 安装扩展卡。
有关详细信息，请参见[安装扩展卡](#)。
5. 将 NAS 连接到网络。
6. 可选: 连接扩展单元。
有关详细信息，请参见[连接 USB 扩展单元](#)和[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](#)。
10. 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。

取下外壳盖



警告

•



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。

•

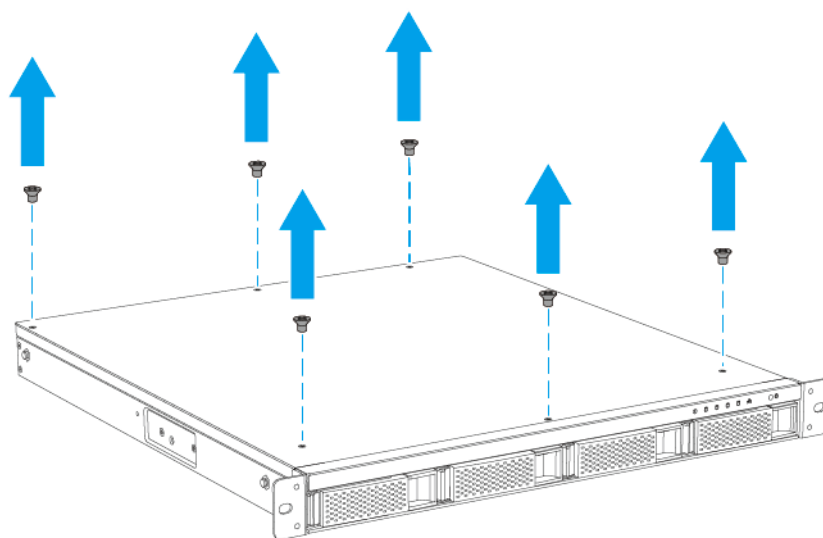


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

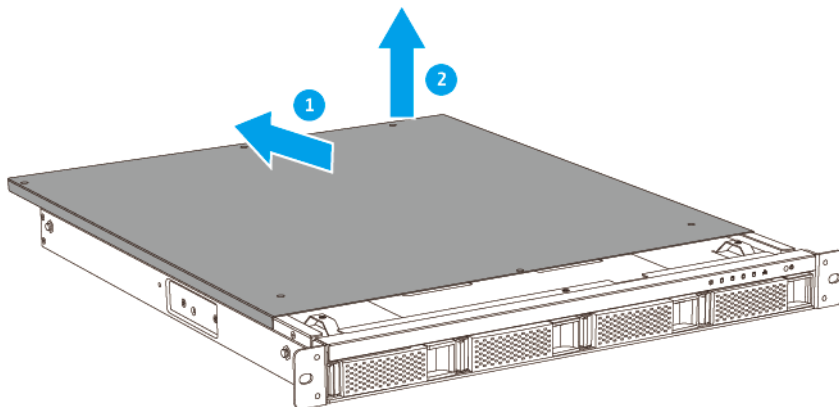
1. 关闭 NAS 电源。
2. 从插座上拔下电源线。
3. 拔掉所有线缆和外接部件。
4. 取下外壳盖。

• TS-453DU、TS-453DU-RP

1. 卸下用于将外壳盖连接到机箱的螺丝。

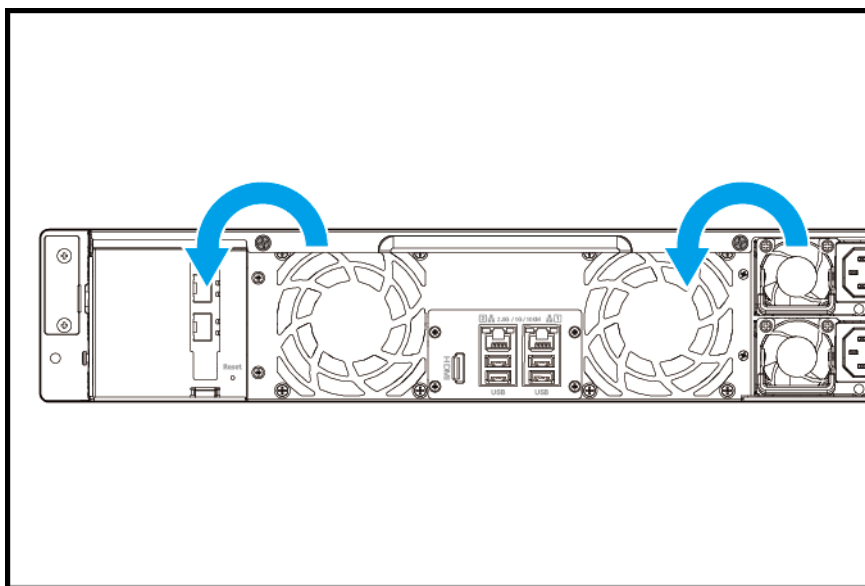


2. 将盖板向后滑动。
3. 从 NAS 上提起盖板。

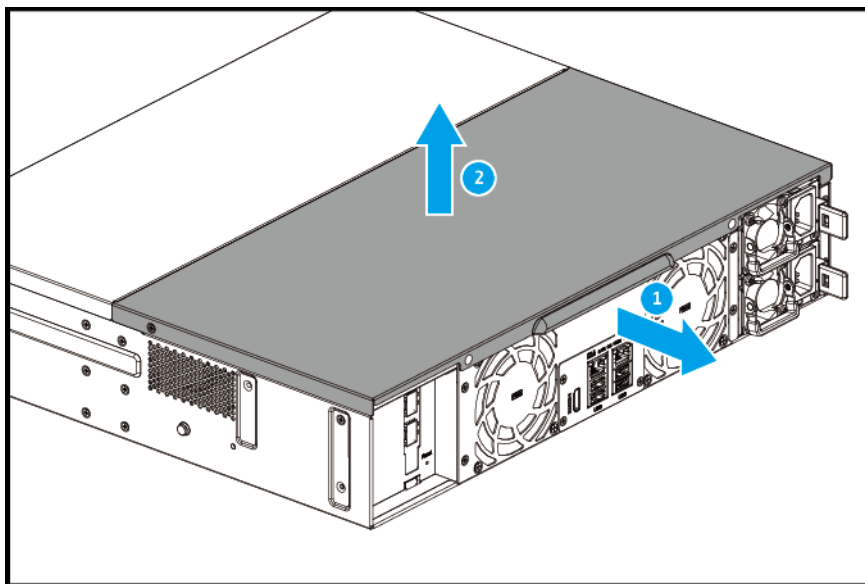


• TS-853DU-RP、TS-1253DU-RP

1. 松开螺丝。



2. 将盖板向后滑动。
3. 从 NAS 上提起盖板。



安装外壳盖



警告



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。

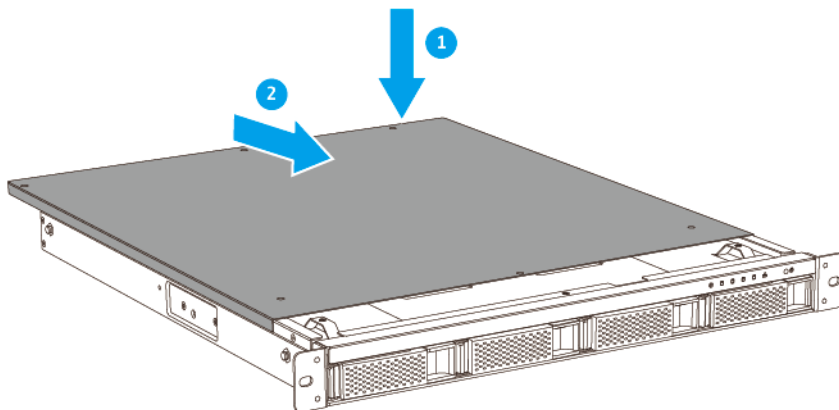


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

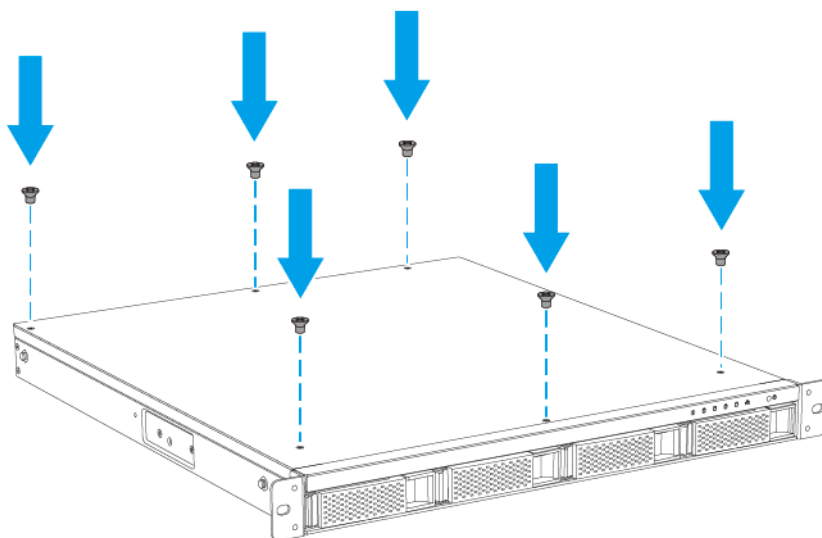
1. 安装外壳盖。

- TS-453DU、TS-453DU-RP

1. 将盖板放在 NAS 上。
2. 将盖板向前滑动。

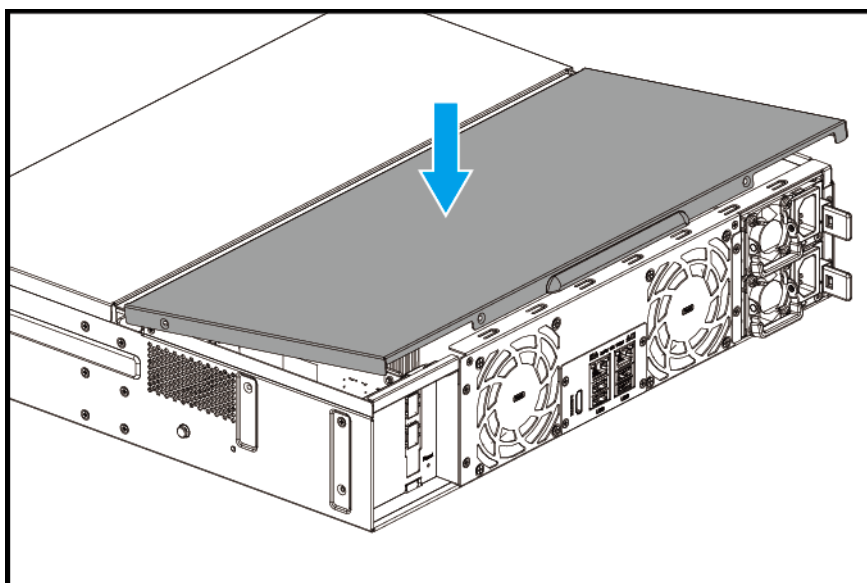


3. 装上用于将外壳盖连接到机箱的螺丝。

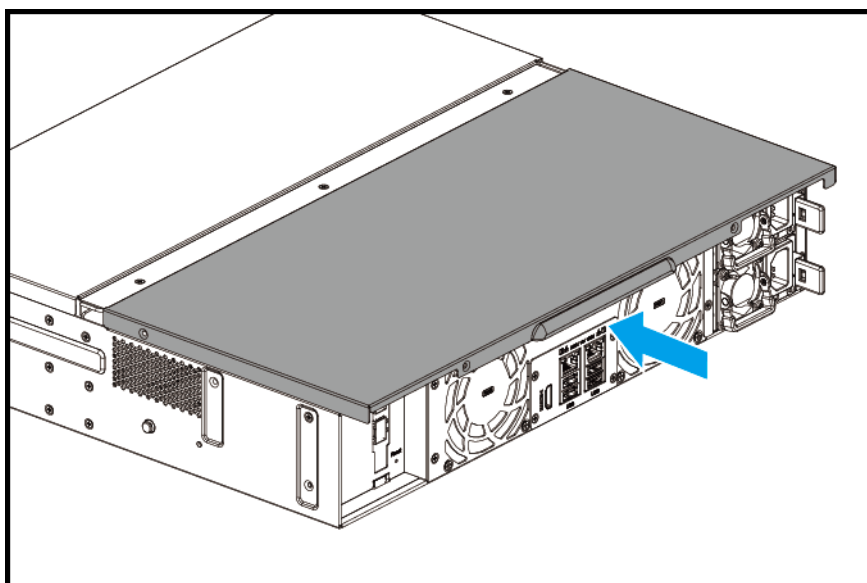


• TS-853DU-RP、TS-1253DU-RP

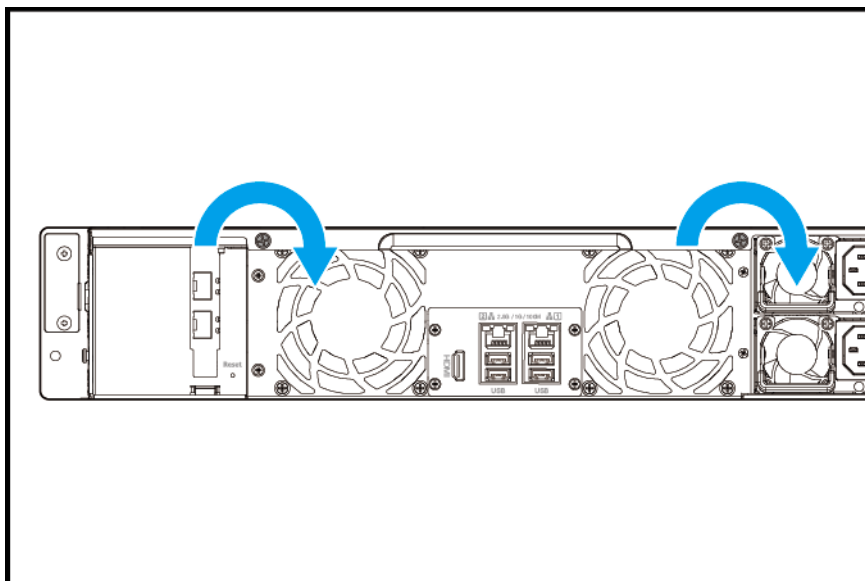
1. 将盖板放在 NAS 上。



2. 将盖板向前滑动。



3. 拧紧螺丝。



2. 连接所有线缆和外接部件。
3. 将电源线连接到插座。
4. 启动 NAS 电源。

硬盘安装

TS-x53DU 兼容 3.5 英寸和 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



提示

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



警告

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



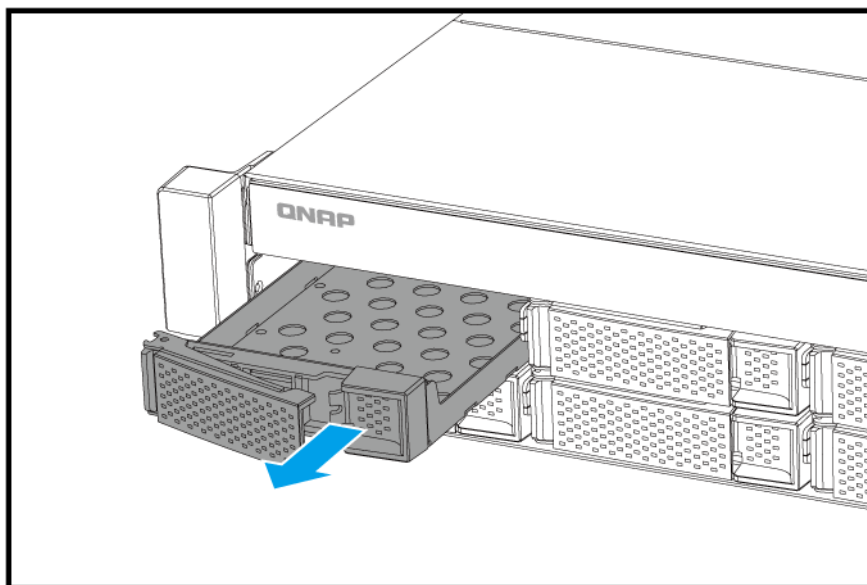
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。



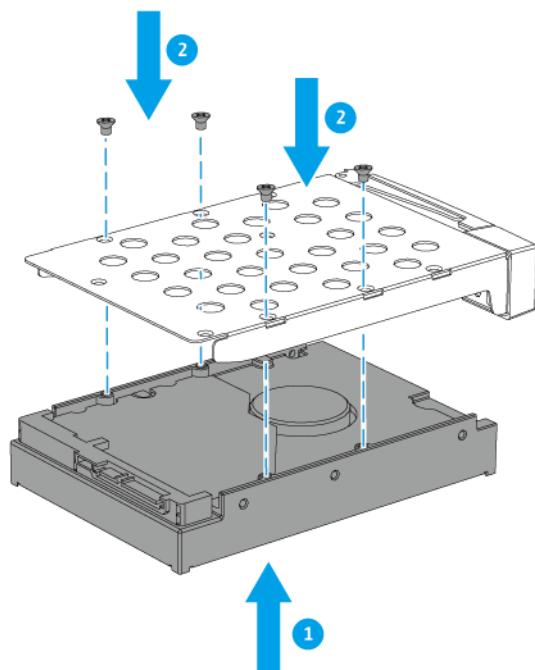
其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。

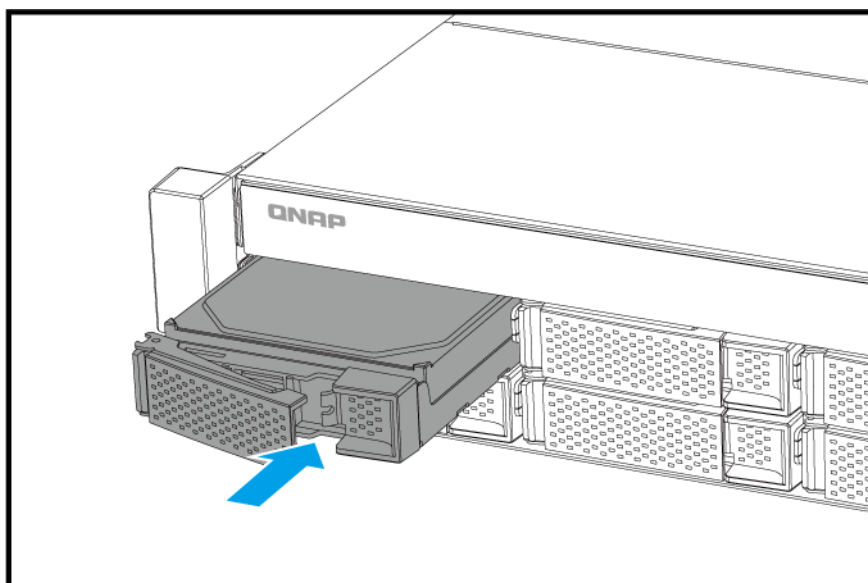
2. 取下硬盘托盘。
 - a. 向外拉动托盘手柄。
 - b. 拉出托盘。



3. 将硬盘安装到托盘上。
 - a. 将托盘放在硬盘上，使托盘上的孔与硬盘上的孔对齐。
 - b. 安装螺丝。



4. 将托盘装入硬盘架。
 - a. 将托盘插入硬盘架。
 - b. 将托盘滑入硬盘架。
 - c. 推动手柄。
 - d. 锁住托盘。



5. 启动 NAS 电源。

在 3.5 英寸托盘上安装 2.5 英寸硬盘或固态硬盘



提示

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



警告

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



转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

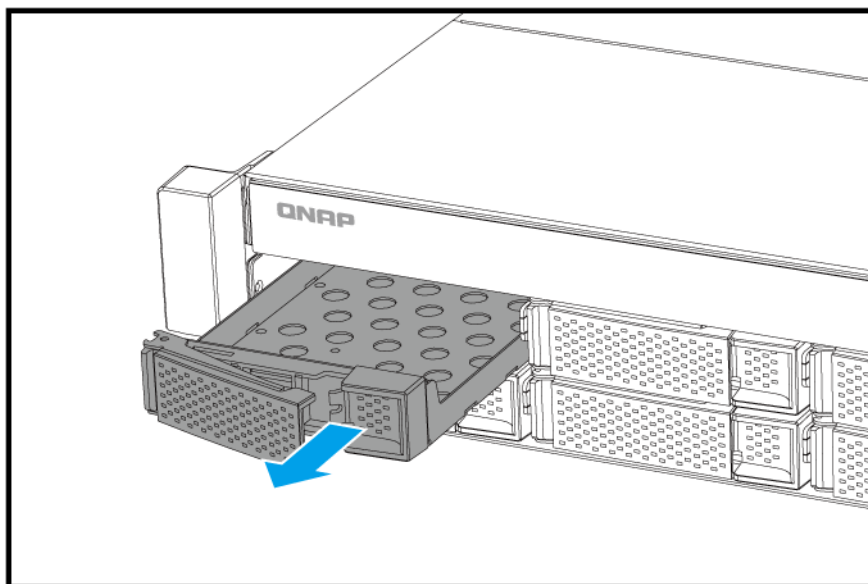


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

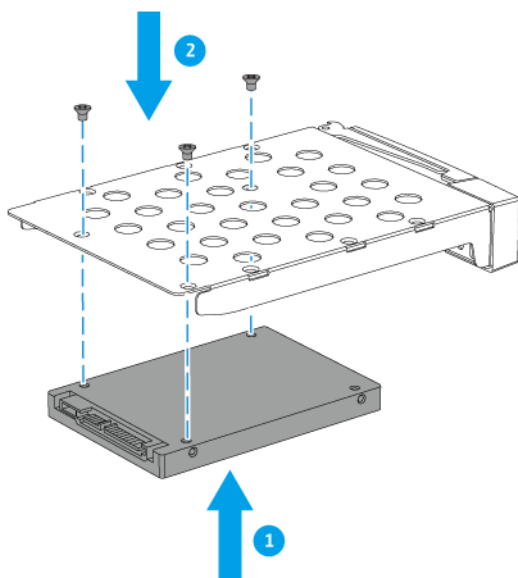
1. 关闭 NAS 电源。

2. 取下硬盘托盘。

- 向外拉动托盘手柄。
- 拉出托盘。

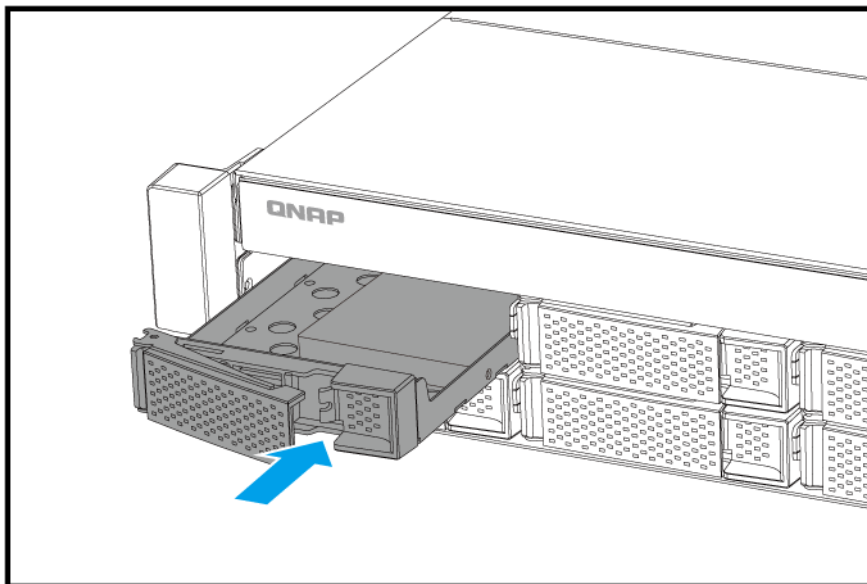


3. 将硬盘安装到托盘上。
 - a. 将托盘放在硬盘上，使托盘上的孔与硬盘上的孔对齐。
 - b. 安装螺丝。



4. 将托盘装入硬盘架。

- a. 将托盘插入硬盘架。
- b. 将托盘滑入硬盘架。
- c. 推动手柄。
- d. 锁住托盘。



5. 启动 NAS 电源。

安装扩展卡

TS-x53DU 支持精选的扩展卡，其中一些需要 QNAP PCIe 支架。从公司网站购买的 QNAP 品牌扩展卡随附有适合 TS-x53DU 的支架。



警告

-



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。



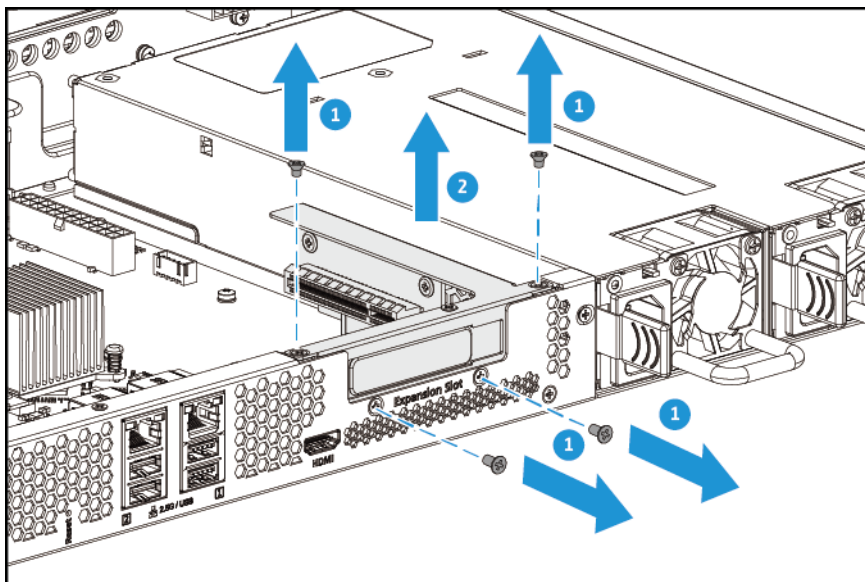
注

安装前请检查扩展卡电源要求和兼容性列表。有关更多信息，请参见 www.qnap.com/compatibility。

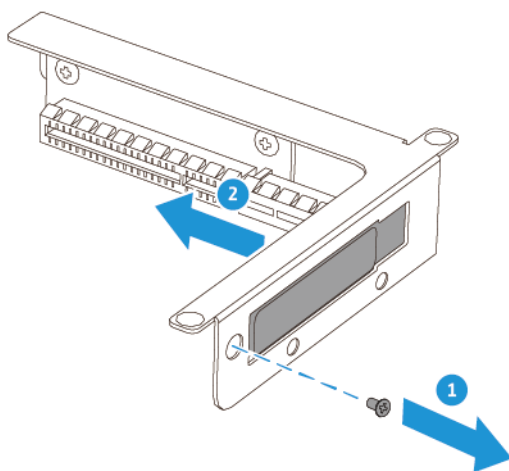
1. 取下外壳盖。
有关详细信息，请参见[取下外壳盖](#)。
2. 取下 PCIe 盖板。

- TS-453DU、TS-453DU-RP

1. 取下用于将盖板固定到支架的螺丝。
2. 将支架从插槽中拉出。

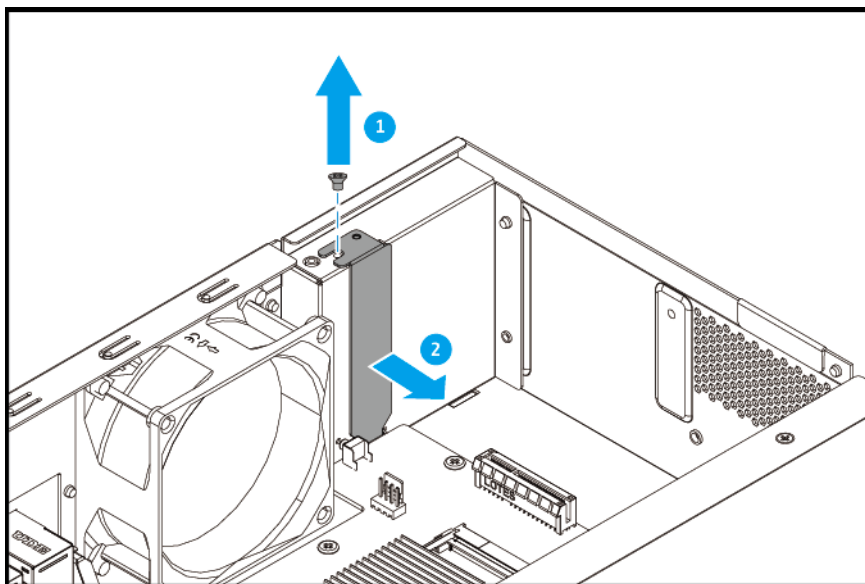


3. 取下用于将盖板固定到支架的螺丝。
4. 将盖板从插槽中拉出。



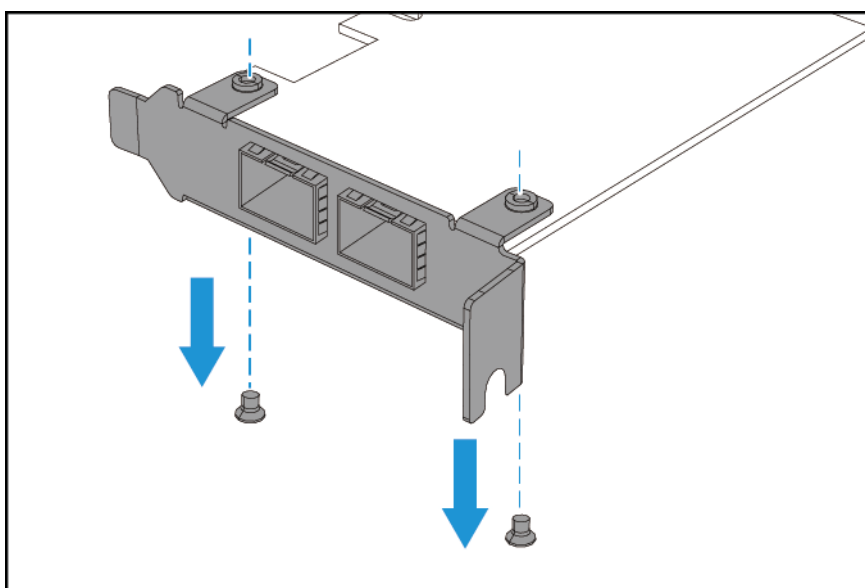
- TS-853DU-RP、TS-1253DU-RP

1. 取下用于将盖板固定到支架的螺丝。
2. 将支架从插槽中拉出。



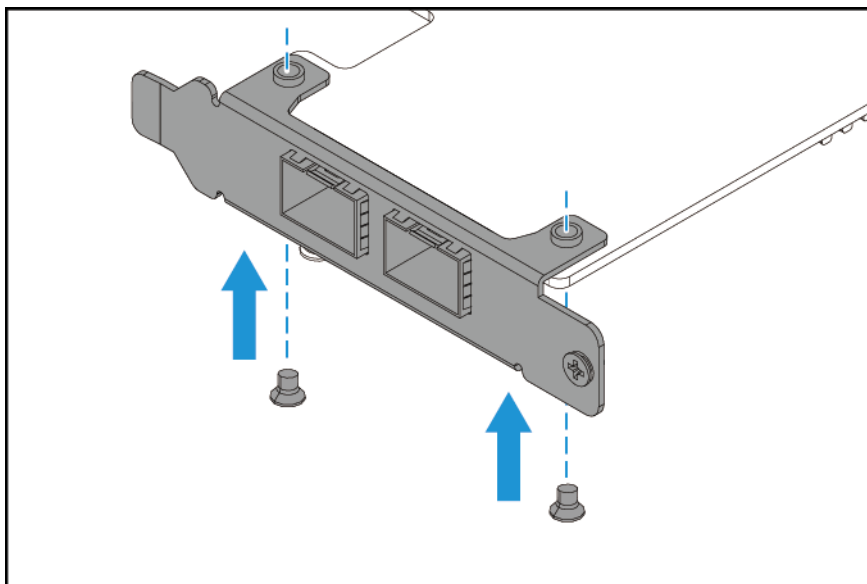
3. 可选: 将 QNAP 支架安装到扩展卡上。

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。

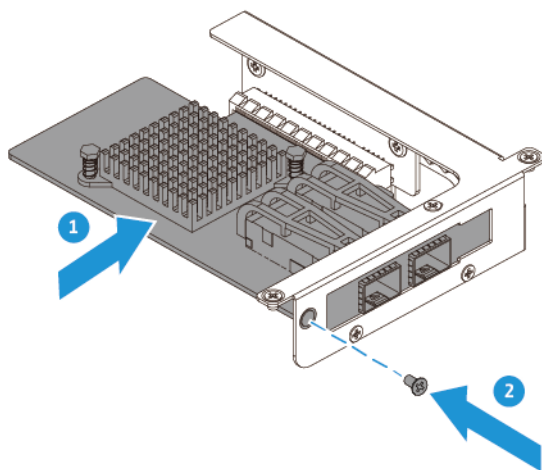


d. 确认支架不会移动。

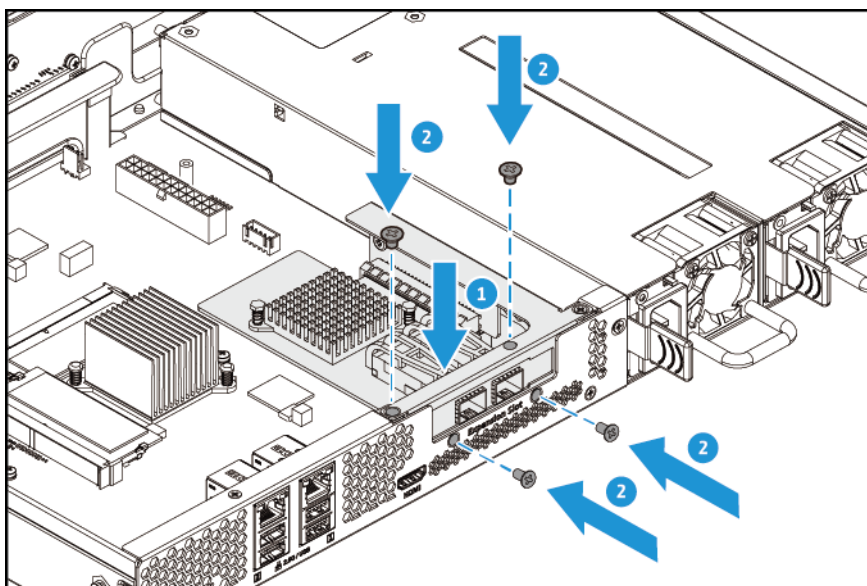
4. 安装扩展卡。

• TS-453DU、TS-453DU-RP

1. 握住卡片边缘。
2. 将卡片插入支撑卡槽中。
3. 安装螺丝。

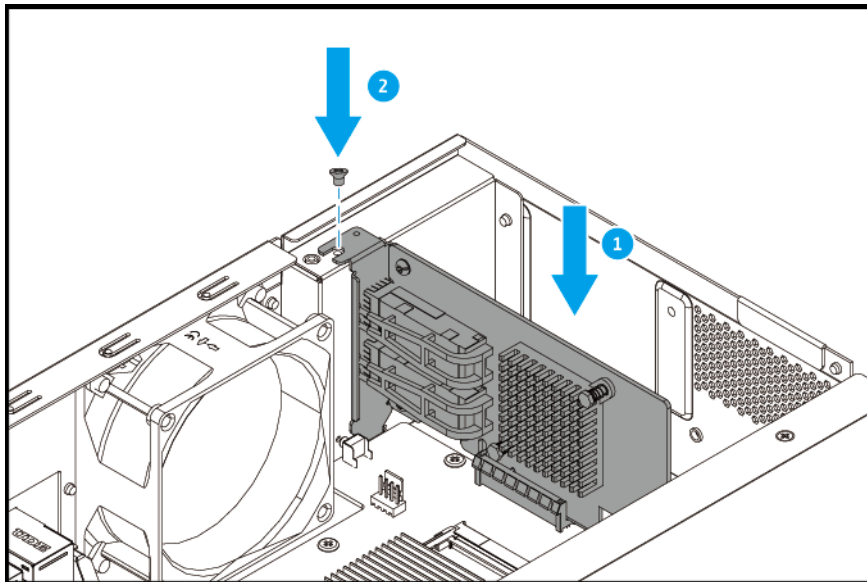


4. 将支撑卡插入插槽中。
5. 安装螺丝。



- TS-853DU-RP、TS-1253DU-RP

1. 握住卡片边缘。
2. 将其插入插槽中。
3. 安装螺丝。



5. 安装外壳盖。
有关详细信息，请参见[安装外壳盖](#)。

更换内存模块

TS-x53DU 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 and 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

确保两个内存模块完全相同。



警告

- 请执行静电放电 (ESD) 规程，以避免组件损坏。

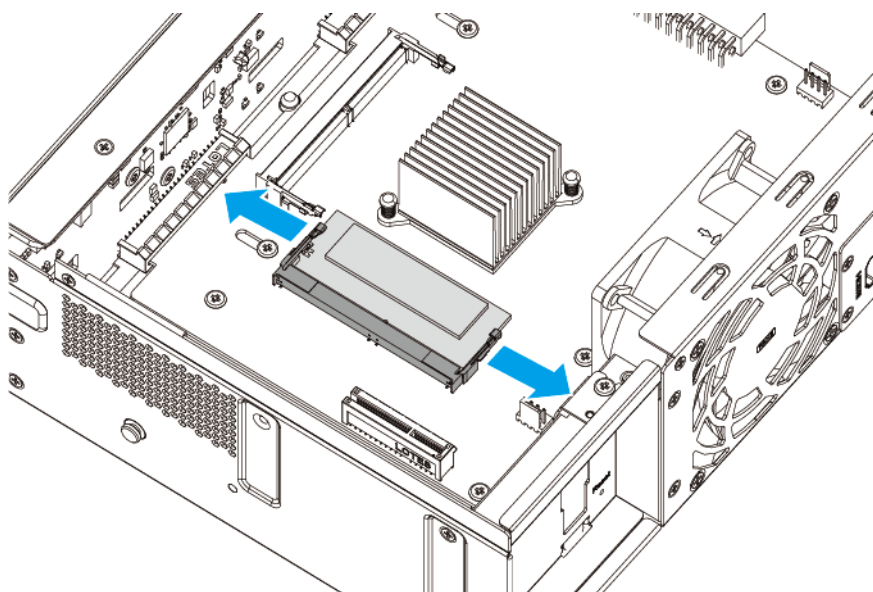


转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。



其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。
2. 从插座上拔下电源线。
3. 拔掉所有线缆和外接部件。
4. 取下外壳盖。
有关详细信息，请参见[取下外壳盖](#)。
5. 取下现有模块。
 - a. 同时向外推动固定夹以释放模块。

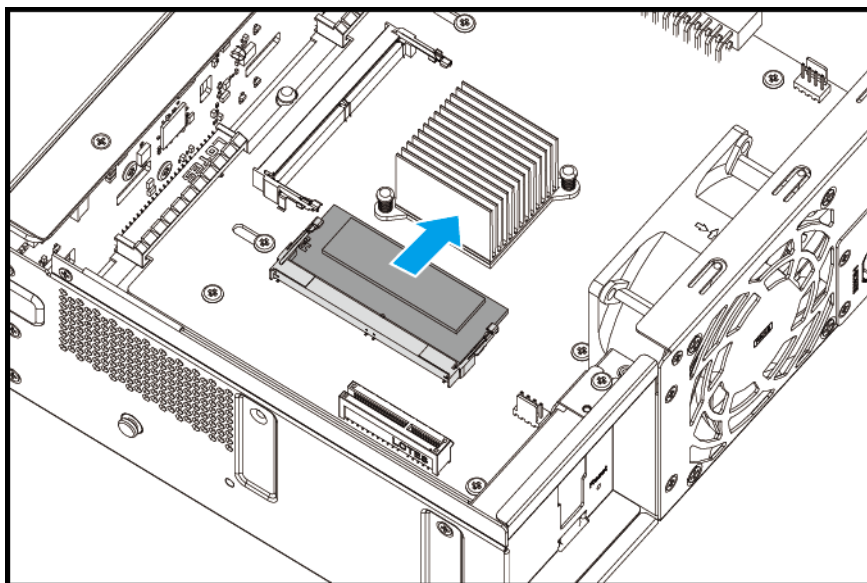


- b. 确认模块向上倾斜并完全脱离插槽。

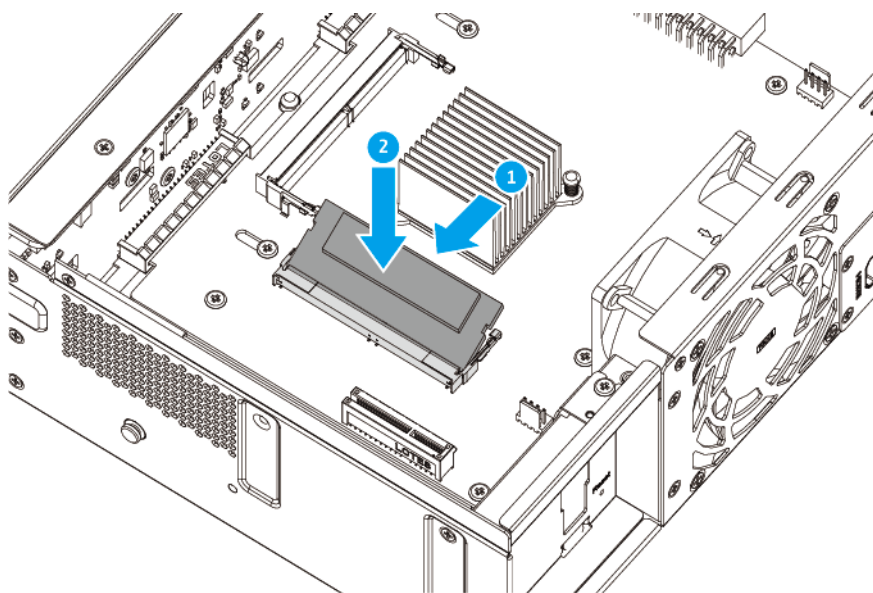
**警告**

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。

**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。**

有关详细信息，请参见[安装外壳盖](#)。

8. 连接所有线缆和外接部件。
9. 连接所有线缆和外接部件。
10. 启动 NAS 电源。
11. 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。

热插拔冗余电源单元



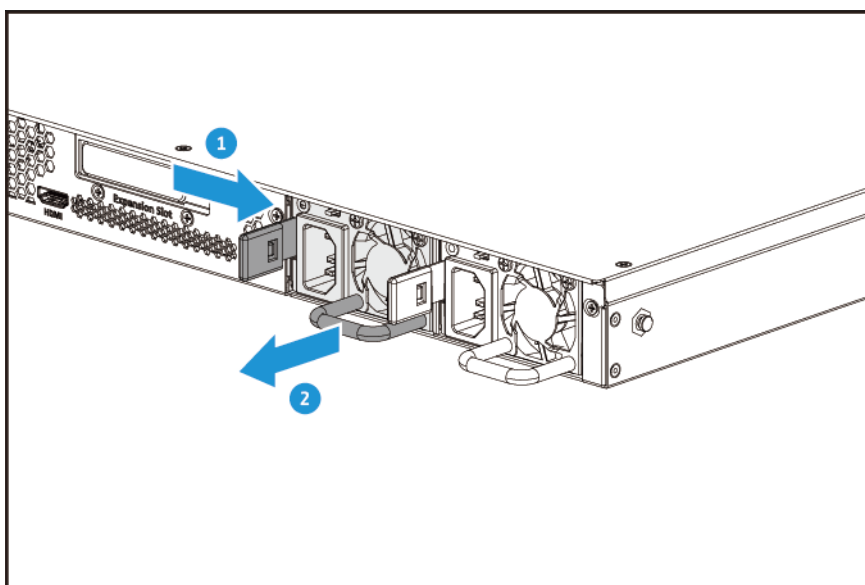
警告



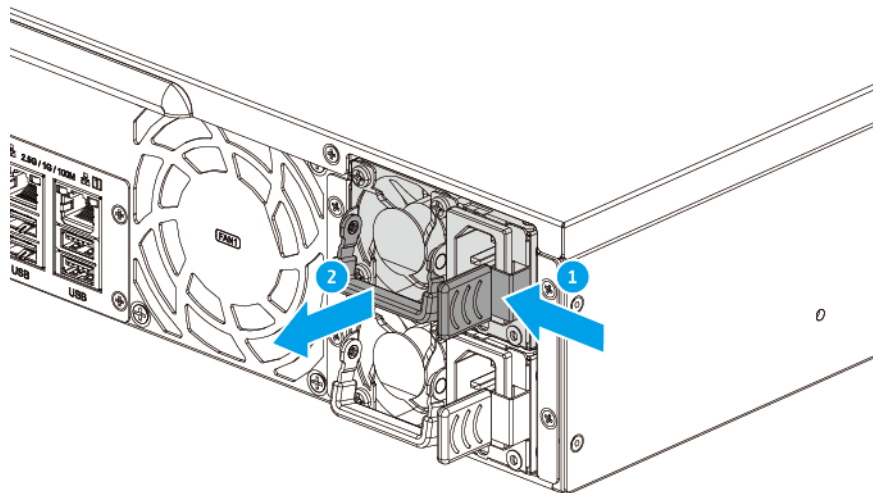
NAS 可能有一条或多条冗余电源单元 (PSU) 线。为避免受到严重伤害，安装或更换系统组件前，必须由经培训的维修技师拔下所有 PSU 线。

1. 关闭 NAS 电源。
2. 从插座和要更换的 PSU 上拔下电源线。
3. 向手柄方向紧按住门锁并拉出 PSU。

- TS-453DU-RP

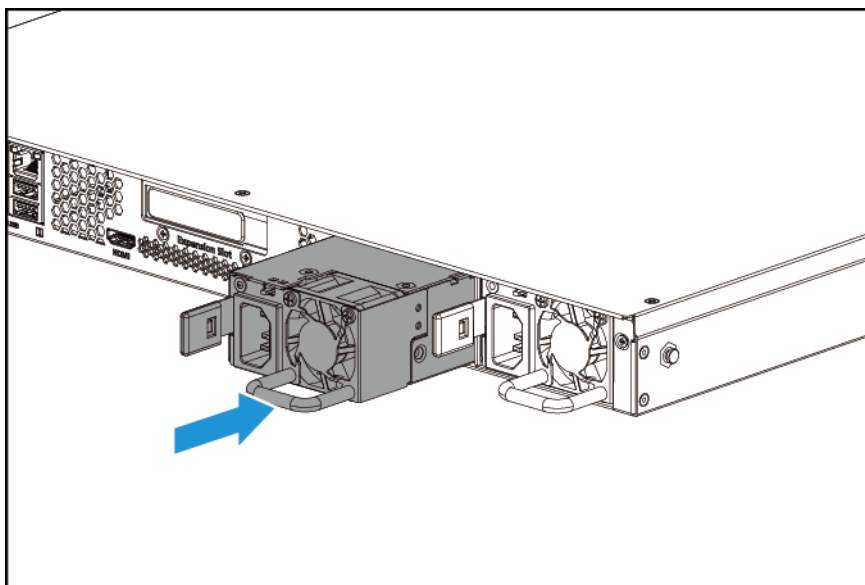


- TS-853DU-RP、TS-1253DU-RP

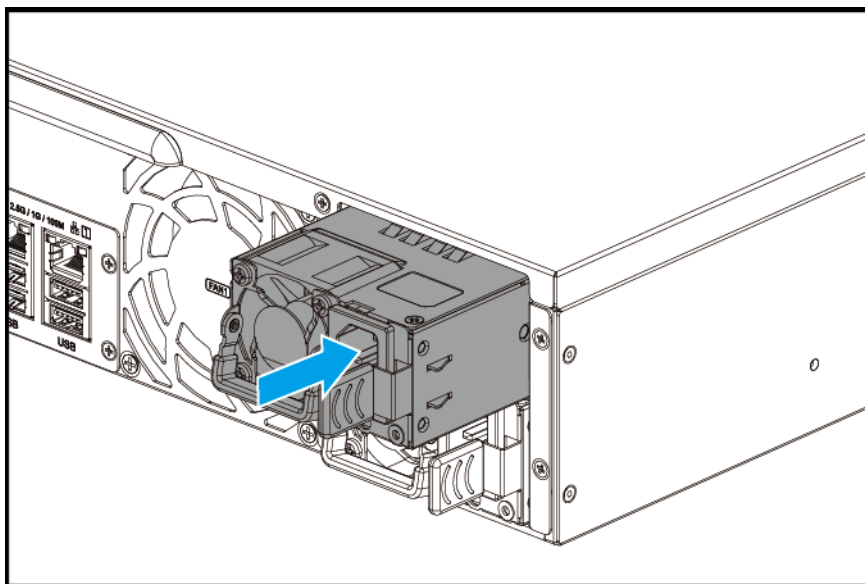


4. 插入新 PSU。

- TS-453DU-RP



- TS-853DU-RP、TS-1253DU-RP



5. 将电源线连接到 PSU 和插座。
6. 启动 NAS 电源。
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**应用**。

安装扩展单元

TS-x53DU 同时兼容 SATA 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/>。

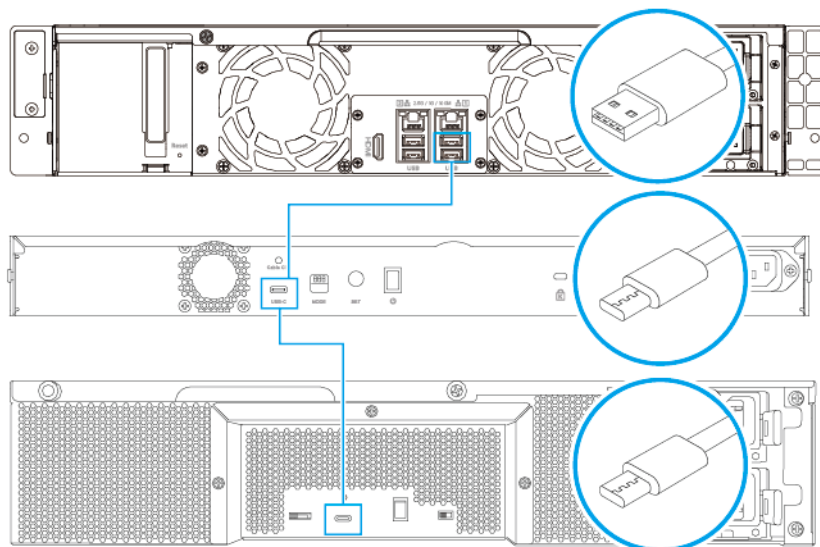
扩展单元型号	描述	所需配件
TR-004U	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 1 C 型接口 • 支持 SATA 硬盘 	<ul style="list-style-type: none"> • USB 3.2 Gen 1 A 型至 C 型线缆 • RAIL-B02
TL-R1200C-RP	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 2 C 型接口 • 支持 SATA 硬盘 	<ul style="list-style-type: none"> • USB 3.2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

扩展单元型号	描述	所需配件
TL-D400S	<ul style="list-style-type: none"> 使用 SAS 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 SAS 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 SAS 6 Gbps (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
TL-R400S	<ul style="list-style-type: none"> 使用 SAS 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 SAS 6 Gbps (SFF-8088) 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

连接 USB 扩展单元

TS-x53DU 最多支持连接两个 USB 扩展单元。

- 将扩展单元连接到 NAS。
 - 将 USB 线缆连接到扩展单元上的 USB C 型端口。
 - 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-x53DU 最多支持两个 SATA JBOD 扩展单元。要连接 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。



重要

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。

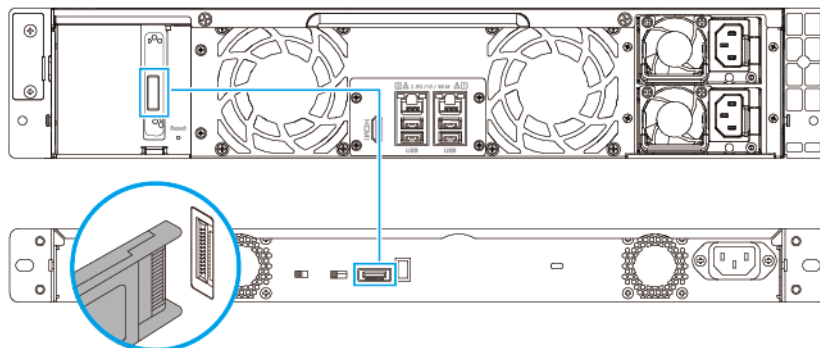
有关详细信息，请参见[安装扩展卡](#)。

3. 按以下拓扑将扩展单元连接到 NAS。



注

此图显示了将 NAS 连接到 TL-R400S JBOD 设备。

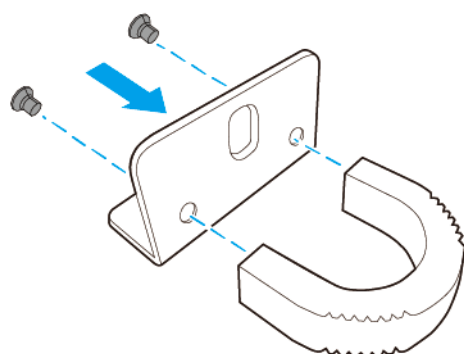


4. 启动 SATA JBOD 扩展单元电源。
5. 启动 NAS 电源。
6. 确认 NAS 能够识别扩展单元。
 - a. 以管理员身份登录 QTS。
 - b. 转到主菜单 > 存储与快照总管 > 概述 > 存储空间 > 系统。
 - c. 确认扩展单元已列出。

安装手柄

安装手柄可以便于拿取和将 NAS 更牢固地固定在机架上。TS-453DU 和 TS-453DU-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。

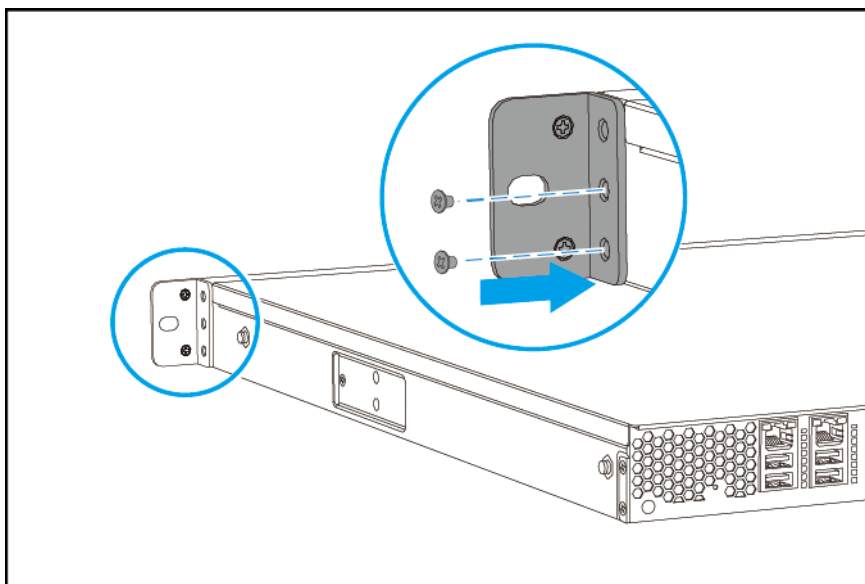


3. 将角码安装到 NAS 上。
 - a. 将角码上的孔对准机箱上的孔。



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

TS-x53DU 兼容以下型号：

- RAIL-B02

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>。

安装信息位于导轨套件包中。

QTS 安装

TS-x53DU 使用 QNAP QTS 操作系统。可以使用以下任一方法安装 QTS。

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。 <p>有关详细信息，请参见使用 Qfinder Pro 安装 QTS。</p>	<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。 • 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。 <p>有关详细信息，请参见使用 Cloud Key 安装 QTS。</p>	<ul style="list-style-type: none"> • 计算机或移动设备 • 网线 • myQNAPcloud 帐户 • Cloud Key
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。 <p>有关详细信息，请参见使用 HDMI 连接安装 QTS。</p>	<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 或准备好 QNAP 红外遥控器（仅部分型号提供）。
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。	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 5 秒钟。	设备关机。 <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"></div> <div> <p>重要 仅当设备无响应时才能使用此方法。</p> </div> </div> <div style="display: flex; align-items: flex-start; margin-top: 10px;"> <div style="margin-right: 10px;"></div> <div> <p>注 强制关机后，风扇会非常快速地旋转约 3 秒钟。这属于正常现象。</p> </div> </div>

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。 <div style="display: flex; align-items: flex-start; margin-top: 10px;"> <div style="margin-right: 10px;"></div> <div> <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> </div> </div> <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） 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[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。 • 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。 • 固件正在更新。 <p> 重要 更新固件时，请勿拔下电源线或 USB 线缆，也不要强行退出应用程序。</p>	
	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。 • 系统温度超过阈值。 	
	闪烁红色，间隔 0.5 秒	NAS 处于降级模式（RAID 1 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"> • 设备正在启动。 • 设备未配置。 • 硬盘未格式化。 	
	闪烁绿色，间隔 2 秒	所有硬盘都处于待机模式。	
	闪烁绿色，间隔 1 秒	设备未配置。	
	绿色	设备已就绪。	
	熄灭	<ul style="list-style-type: none"> • 所有硬盘都处于待机模式。 • 设备已关机。 	
	LAN	橙色	另一台设备访问数据期间发生了读/写错误。
		闪烁橙色	正在从网络访问设备。
2.5 Gb 速度 LAN（背面）	绿色	网络连接以 2.5 Gbps 的速度运行。	
	橙色	<ul style="list-style-type: none"> • 网络连接以 1 Gbps 的速度运行。 • 网络连接以 100 Mbps 的速度运行。 	
	熄灭	网络连接以 10 Mbps 的速度运行。	

LED	状态	描述
2.5 Gb 活动 LAN (背面)	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。
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	<ul style="list-style-type: none"> 发生硬盘读/写错误。 硬盘温度超过阈值。
	闪烁绿色	<ul style="list-style-type: none"> 正在访问数据。 正在复制数据。
	绿色	<ul style="list-style-type: none"> 硬盘可供访问。 设备已开机。
	熄灭	未检测到硬盘。
扩展单元 <ul style="list-style-type: none"> TS-853D U-RP TS-1253 DU-RP 	蓝色	连接了 QNAP USB 或 SATA 外部存储设备。
	熄灭	未连接任何 USB 或 SATA 外部存储设备。

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。
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 > 存储与快照总管 > 存储空间 > 磁盘/VJBOD。
3. 找到发生故障的硬盘。
4. 准备一个与故障硬盘具有相同或更大容量的新硬盘。
5. 从 NAS 中取下故障硬盘。
6. 等待 20 秒或 NAS 发出两声提示音。
7. 从硬盘托盘中取下故障硬盘。
8. 将新硬盘插入硬盘托盘中。
9. 安装新硬盘。
此时 NAS 会发出两声提示音。
10. 转到主菜单 > 存储与快照总管 > 存储空间。
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

Cloud Key

分配给每个 NAS 设备的唯一 8 位数代码

myQNAPcloud Link

可用于通过 Internet 访问 NAS，而且不必配置复杂的端口转发设置

myQNAPcloud

提供各种远程访问服务，如 DDNS 和 myQNAPcloud Link

myQNAPcloud ID

用于注册 myQNAPcloud 帐户的电子邮件地址

Qfinder Pro

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

QTS

QNAP NAS 操作系统

7. 声明

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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.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work’s System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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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
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