



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: flex-start;"> <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) 		

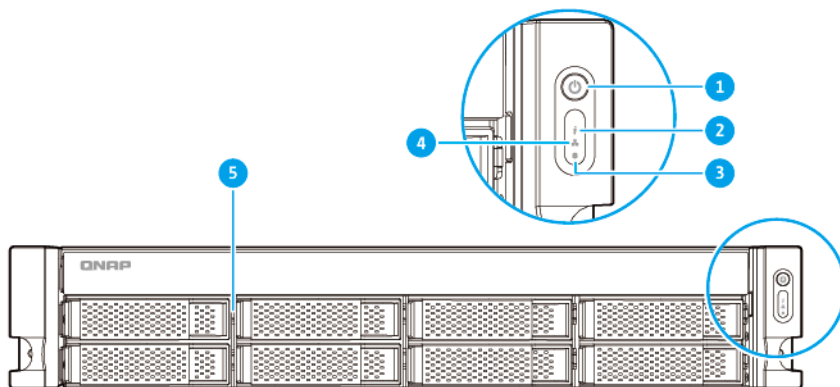
包装内容

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

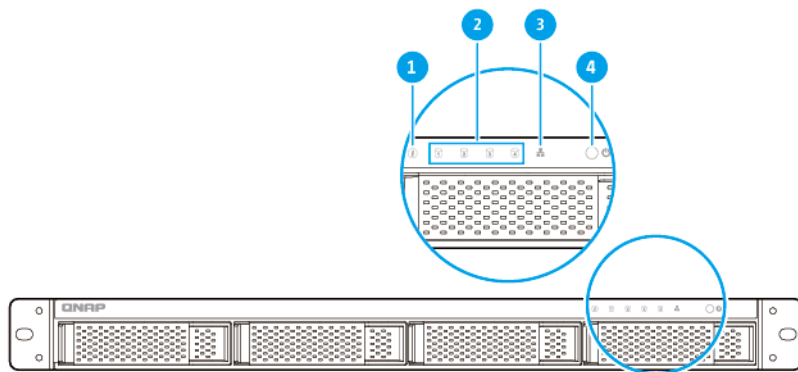
组件

前面板



TS-853DU-RP、TS-1253DU-RP

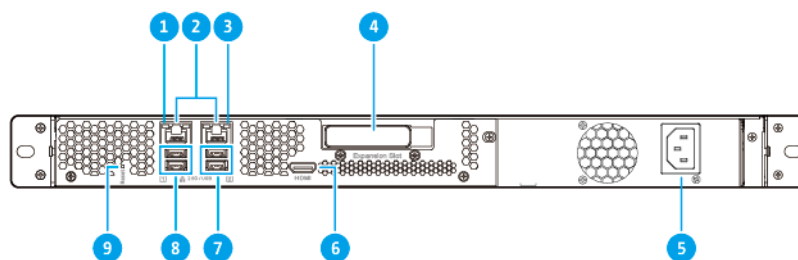
编号	组件	编号	组件
1	电源按钮	4	LAN LED
2	状态 LED	5	硬盘 LED
3	扩展单元 LED	-	-



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

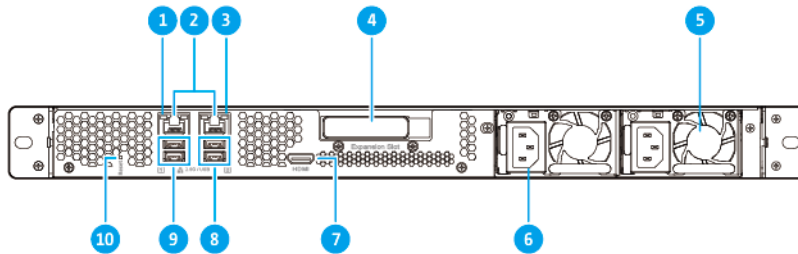
后面板



TS-453DU

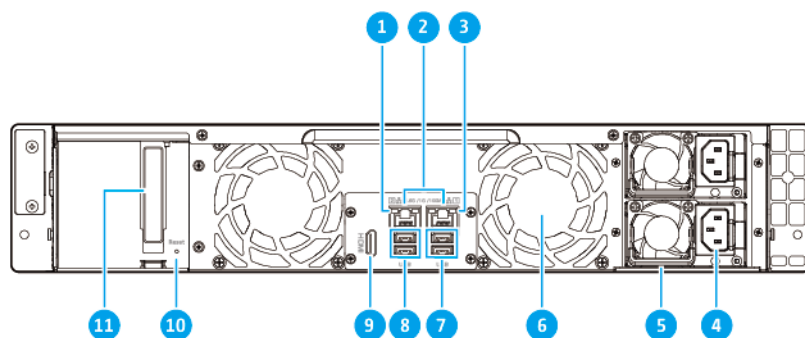
编号	组件	编号	组件
1	2.5 Gb 以太网活动 LED	6	HDMI v1.4b 端口

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



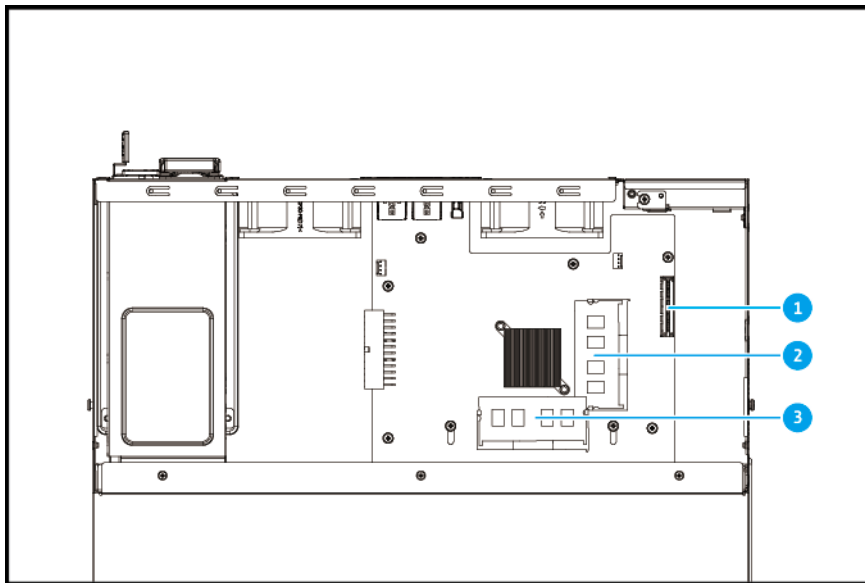
TS-853DU-RP、TS-1253DU-RP

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



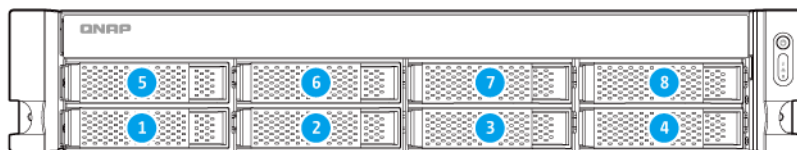
注
图像不含外壳盖。

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	-	-

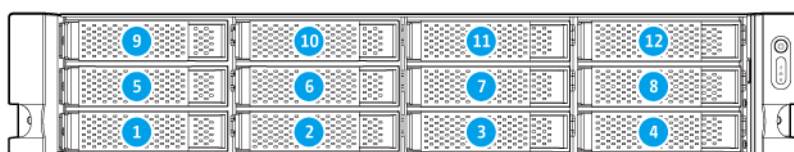
硬盘编号



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，经培训的维修技师必须先从设备拔下所有 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。

•

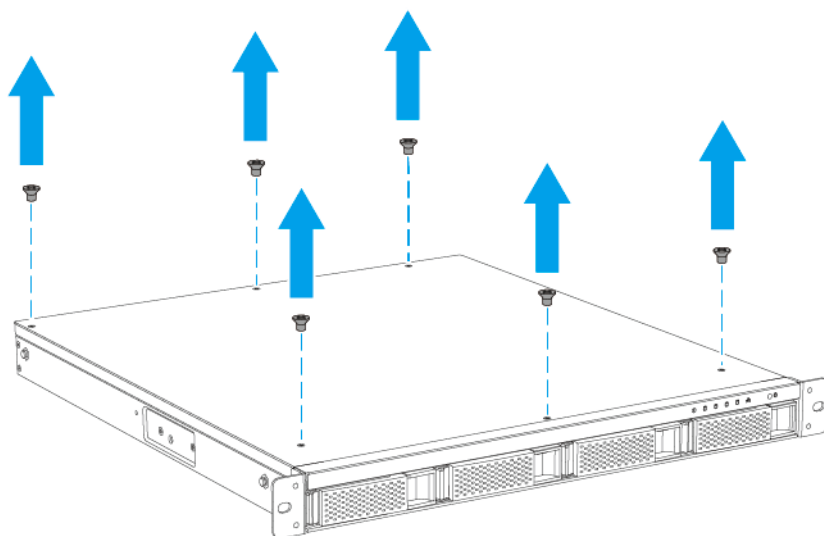


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

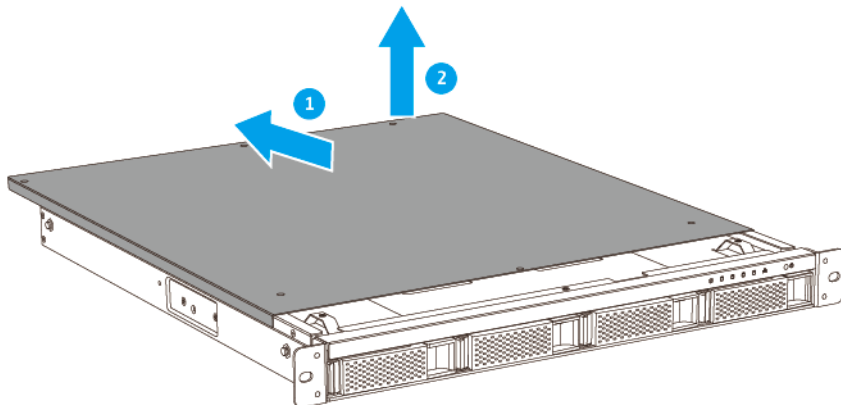
1. 关闭 NAS 电源。
2. 从插座上拔下电源线。
3. 拔掉所有线缆和外接部件。
4. 取下外壳盖。

• TS-453DU、TS-453DU-RP

1. 卸下用于将外壳盖连接到机箱的螺丝。

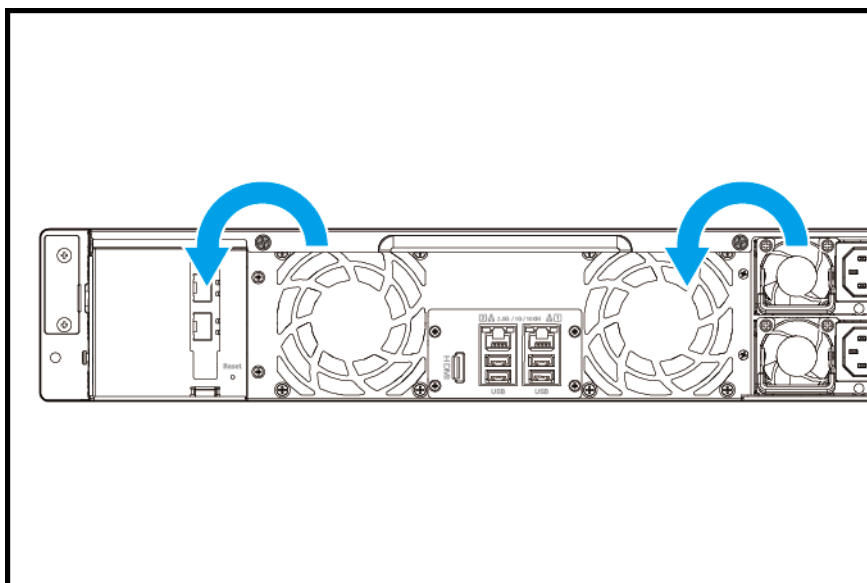


2. 将盖板向后滑动。
3. 从 NAS 上提起盖板。

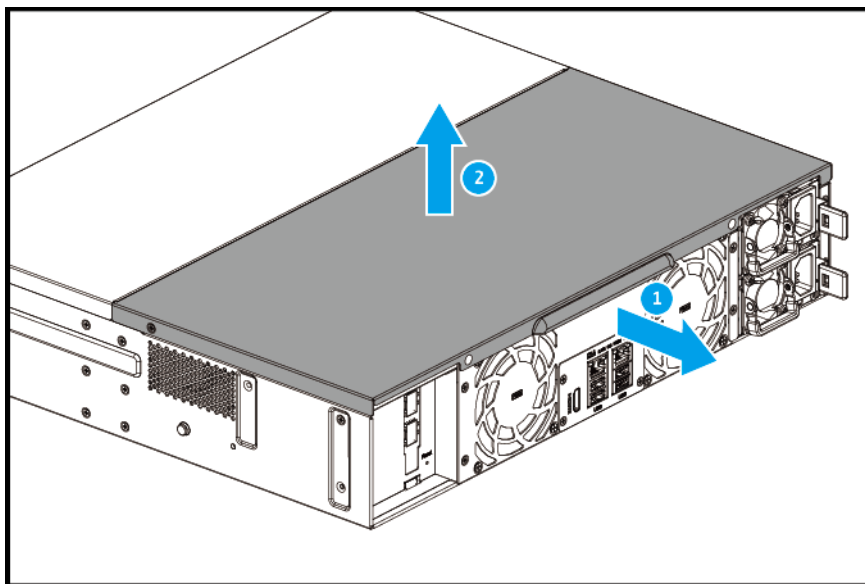


- TS-853DU-RP、TS-1253DU-RP

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。

•

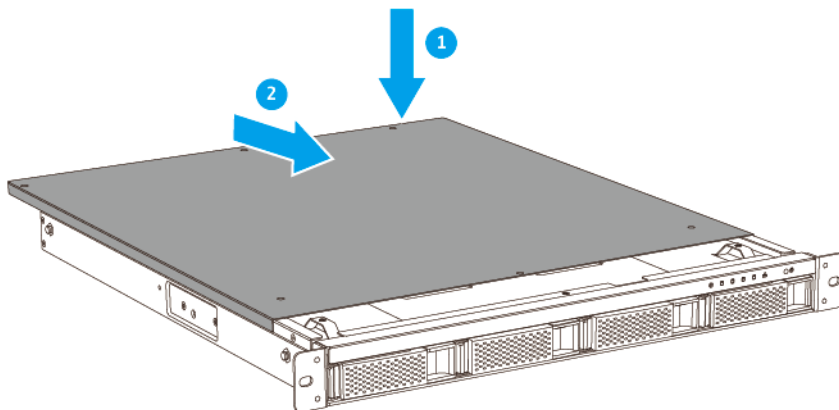


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

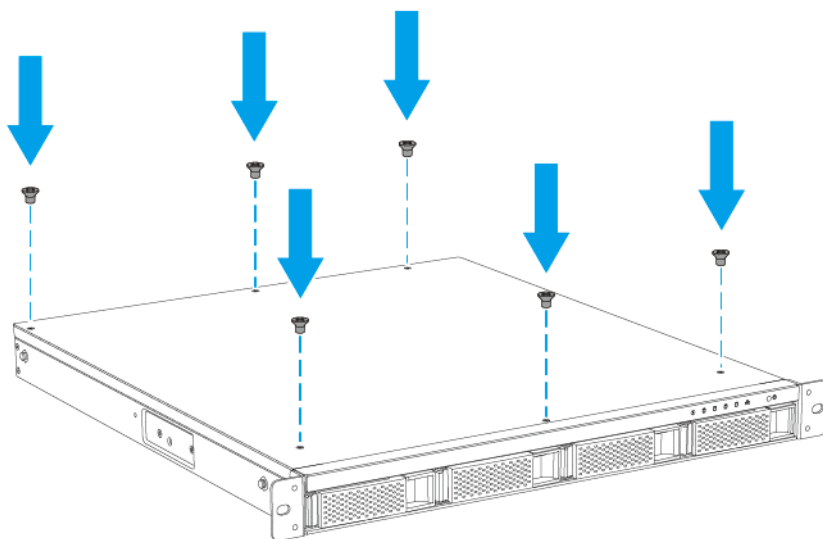
1. 安装外壳盖。

- TS-453DU、TS-453DU-RP

1. 将盖板放在 NAS 上。
2. 将盖板向前滑动。

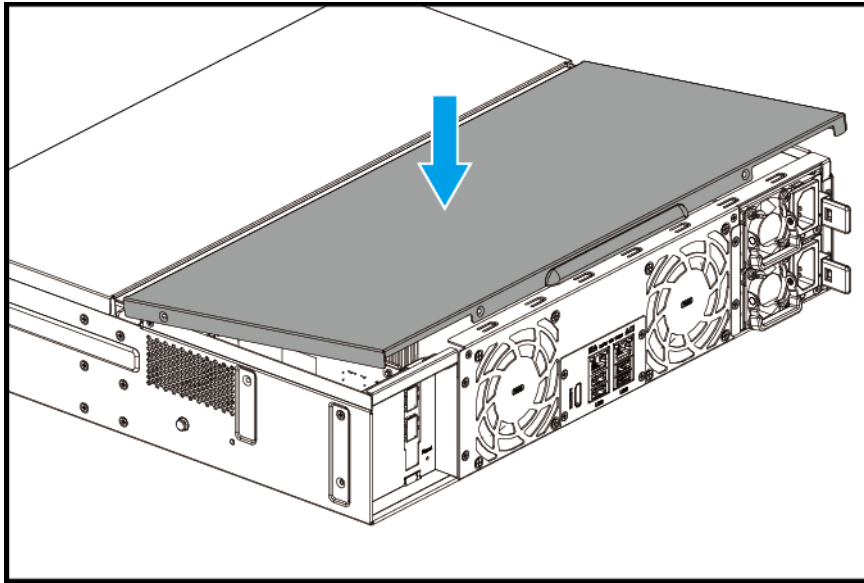


3. 装上用于将外壳盖连接到机箱的螺丝。

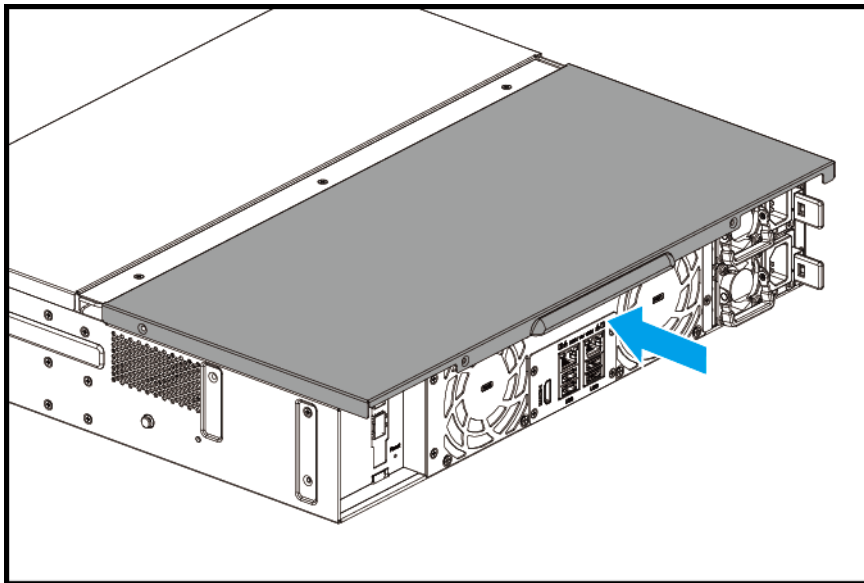


• TS-853DU-RP、TS-1253DU-RP

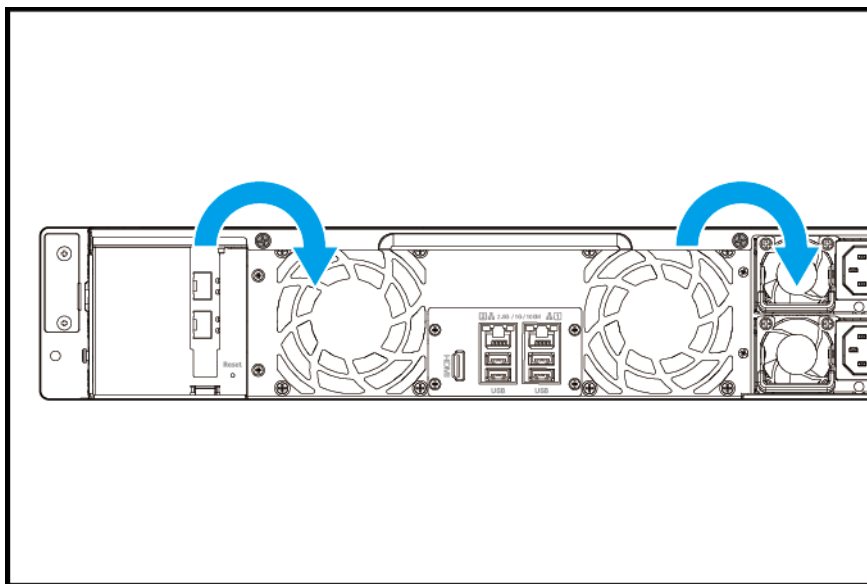
1. 将盖板放在 NAS 上。



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。



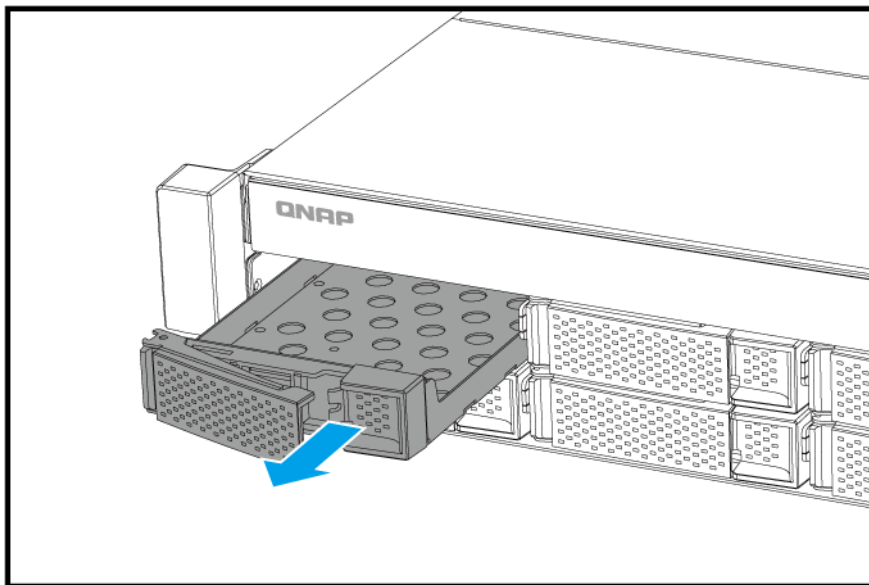
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。



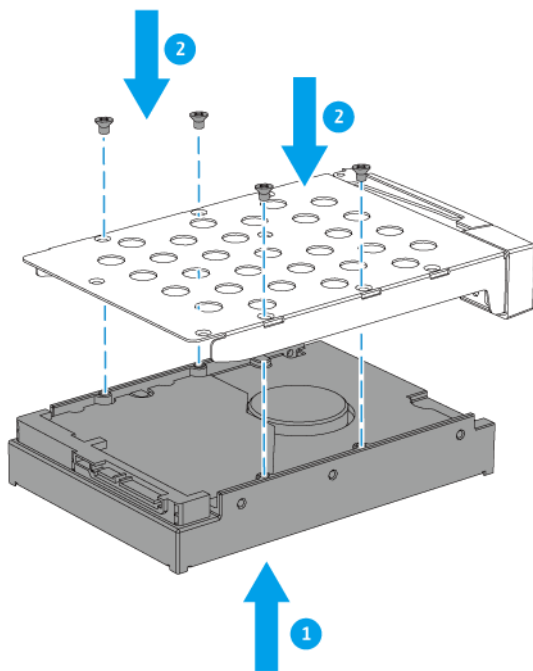
其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。
2. 取下硬盘托盘。

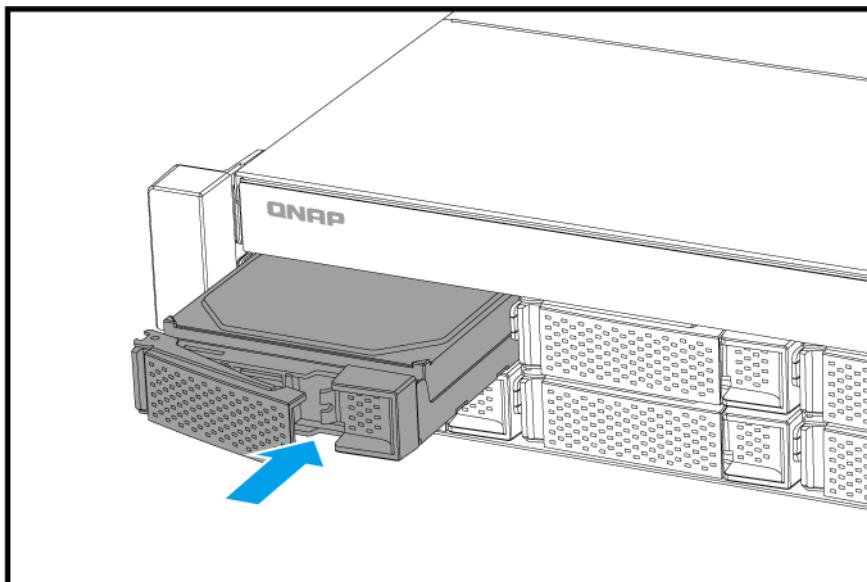
- a. 向外拉动托盘手柄。
- b. 拉出托盘。



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。



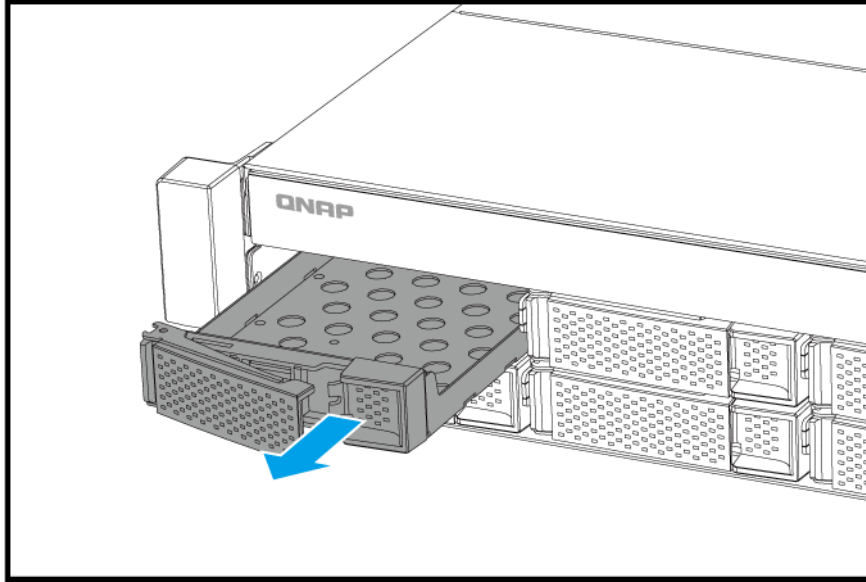
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。



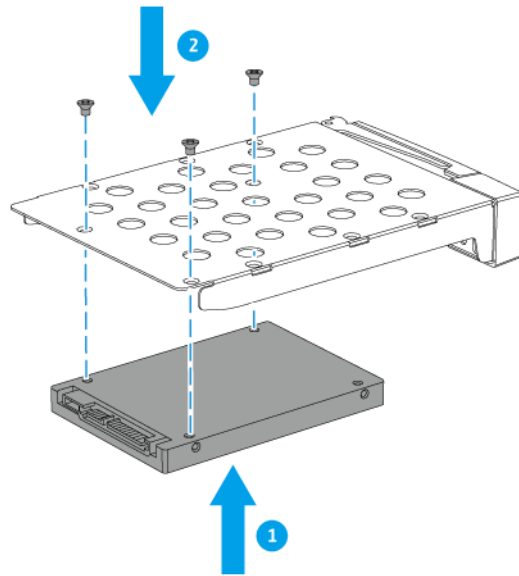
其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 NAS 电源。

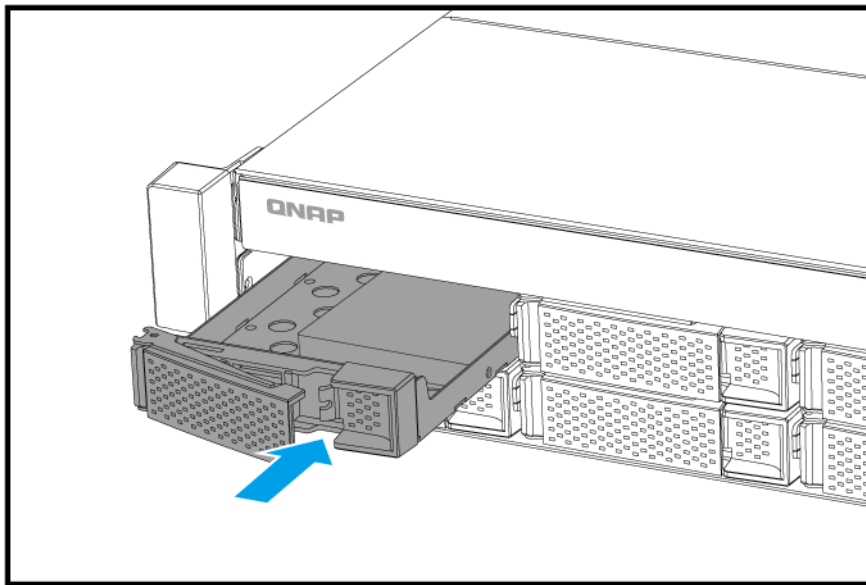
2. 取下硬盘托盘。
 - a. 向外拉动托盘手柄。
 - b. 拉出托盘。



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。

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。

•



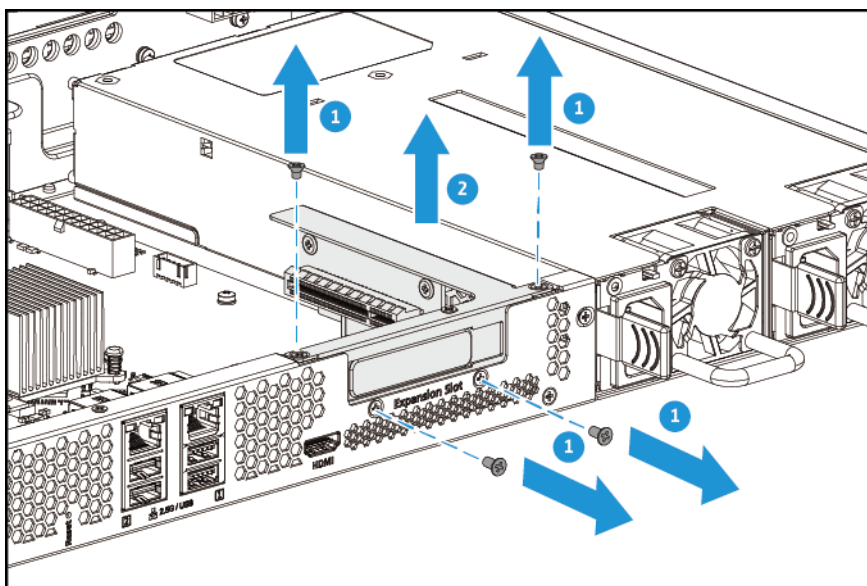
其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。



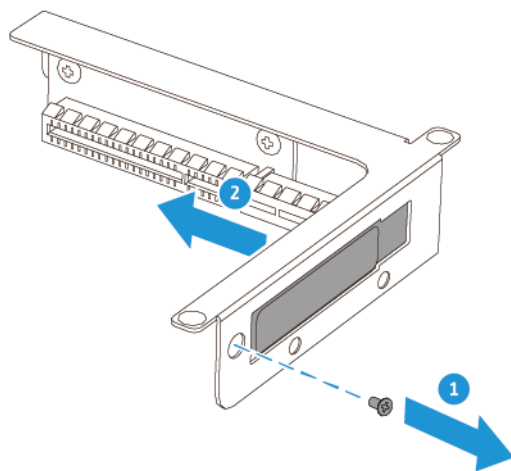
注

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。

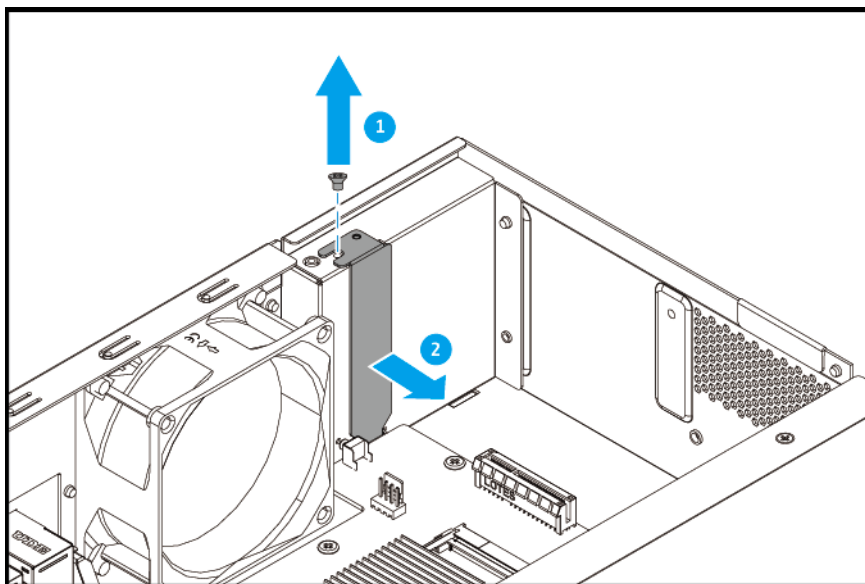
1. 取下外壳盖。
有关详细信息，请参见[取下外壳盖](#)。
2. 取下 PCIe 盖板。
 - TS-453DU、TS-453DU-RP
 1. 取下用于将盖板固定到支架的螺丝。
 2. 将支架从插槽中拉出。



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。

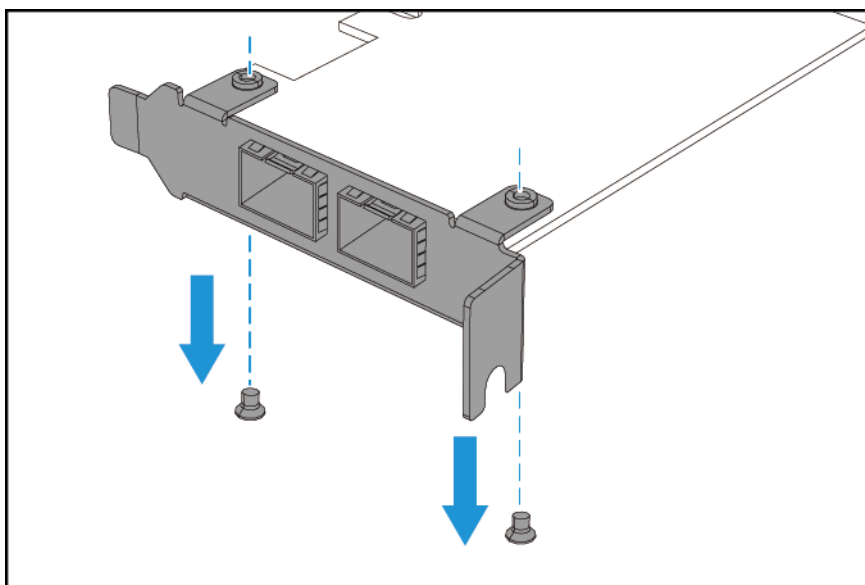


- TS-853DU-RP、TS-1253DU-RP
 1. 取下用于将盖板固定到支架的螺丝。
 2. 将支架从插槽中拉出。



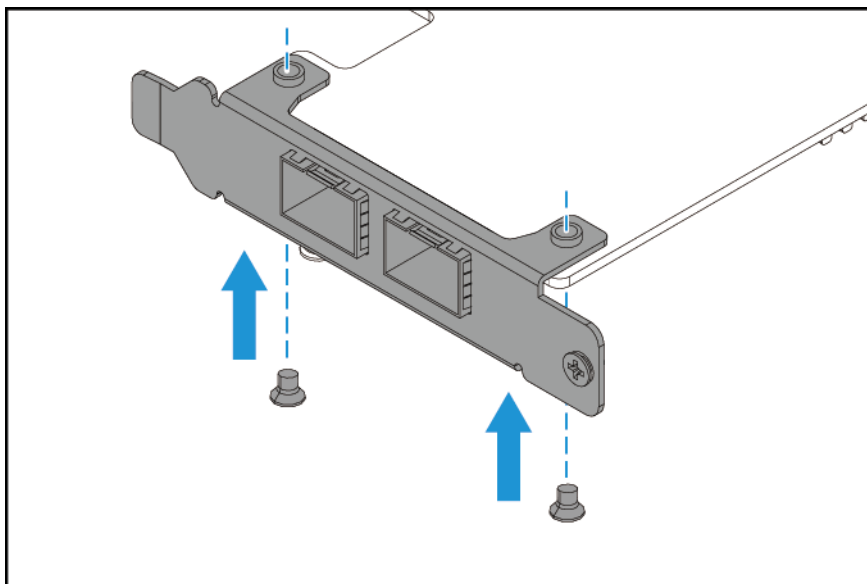
3. 可选: 将 QNAP 支架安装到扩展卡上。

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。

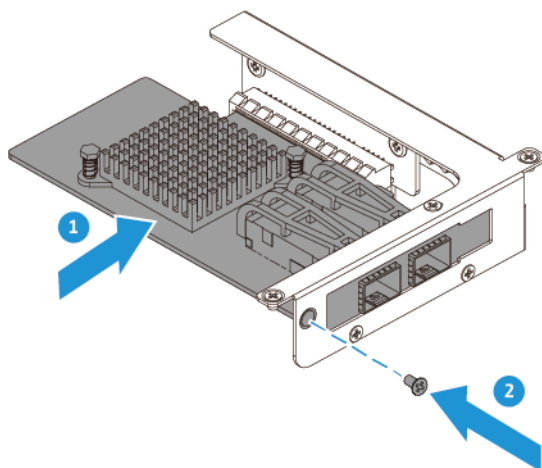


d. 确认支架不会移动。

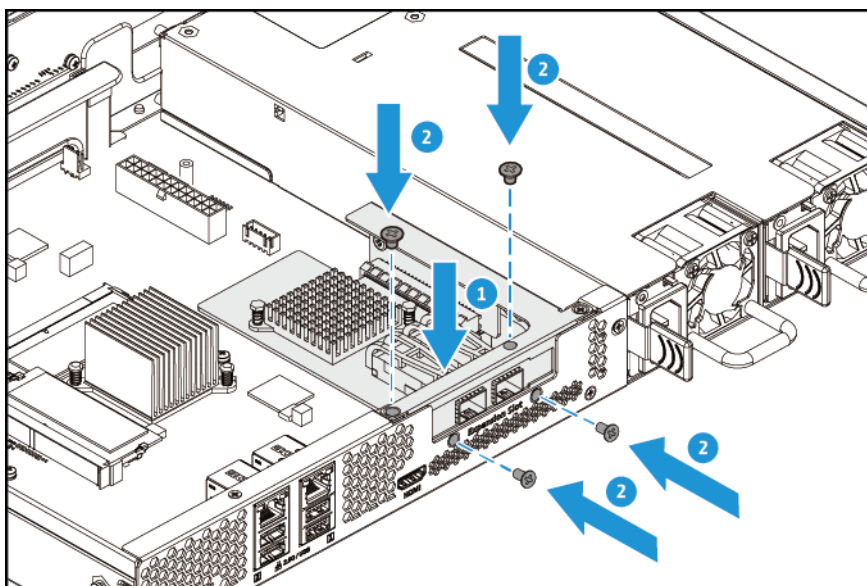
4. 安装扩展卡。

• 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。

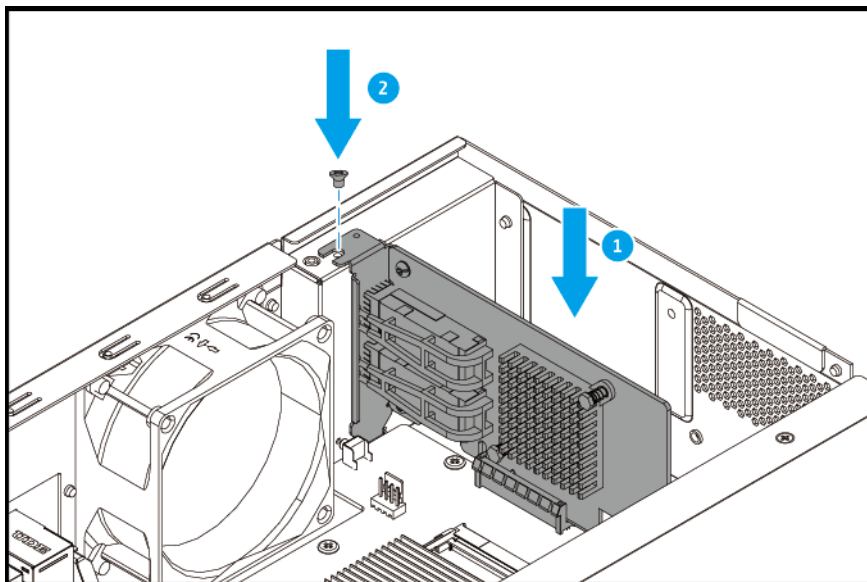


4. 将支撑卡插入插槽中。
5. 安装螺丝。



• 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。

-



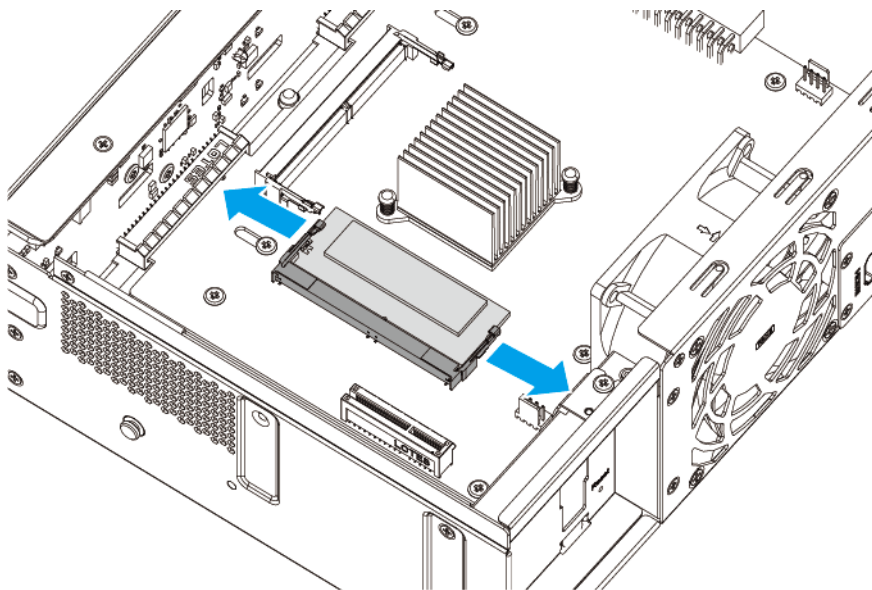
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

-



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。

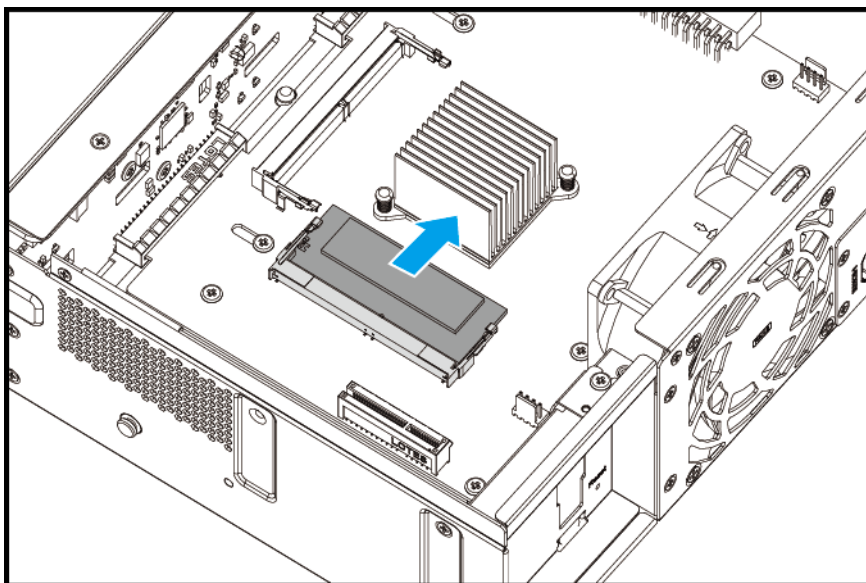


- b. 确认模块向上倾斜并已完全脱离插槽。

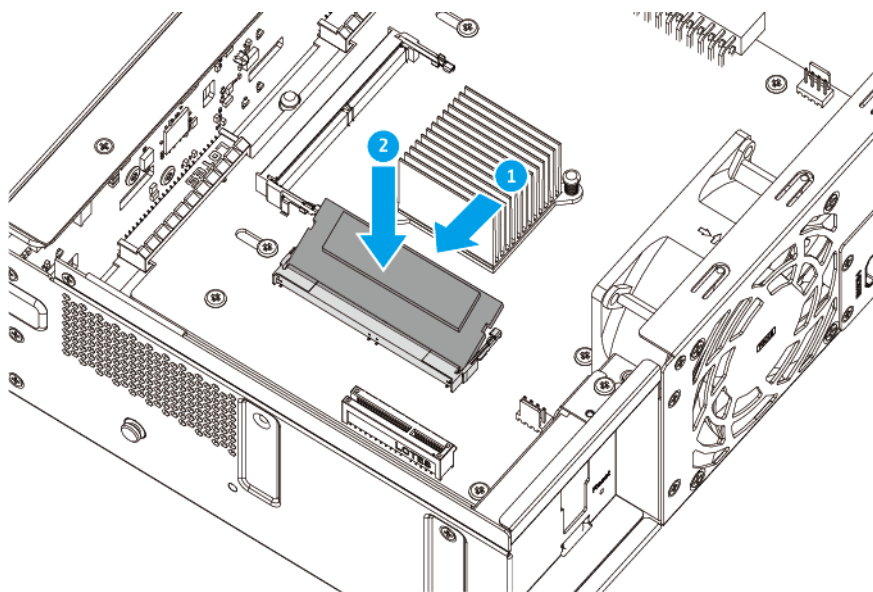
**警告**

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。

**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



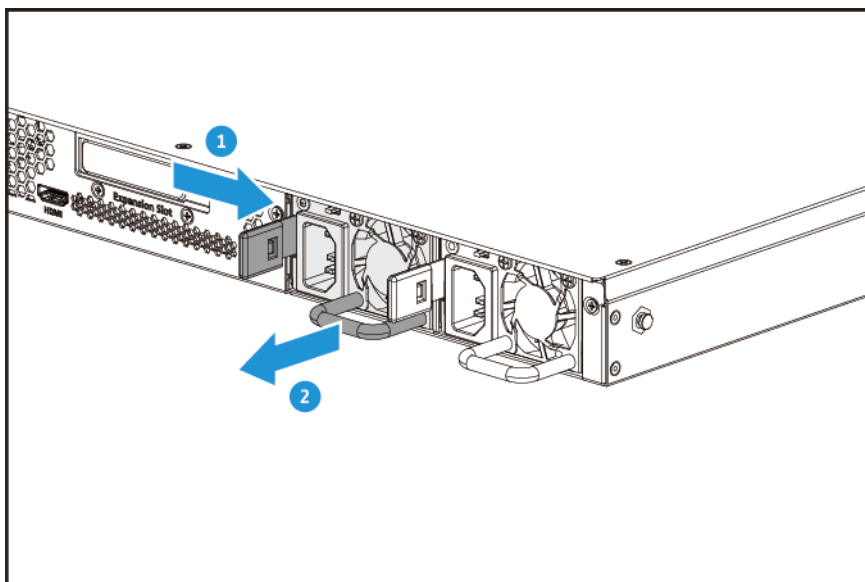
警告



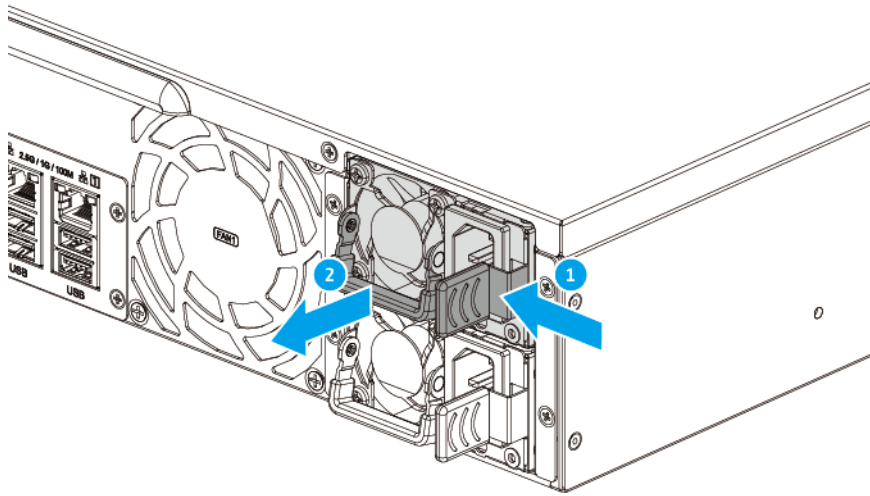
NAS 可能有一条或多条冗余电源单元 (PSU) 线。为避免受到严重伤害，安装或更换系统组件前，经培训的维修技师必须先拔下所有 PSU 线。

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

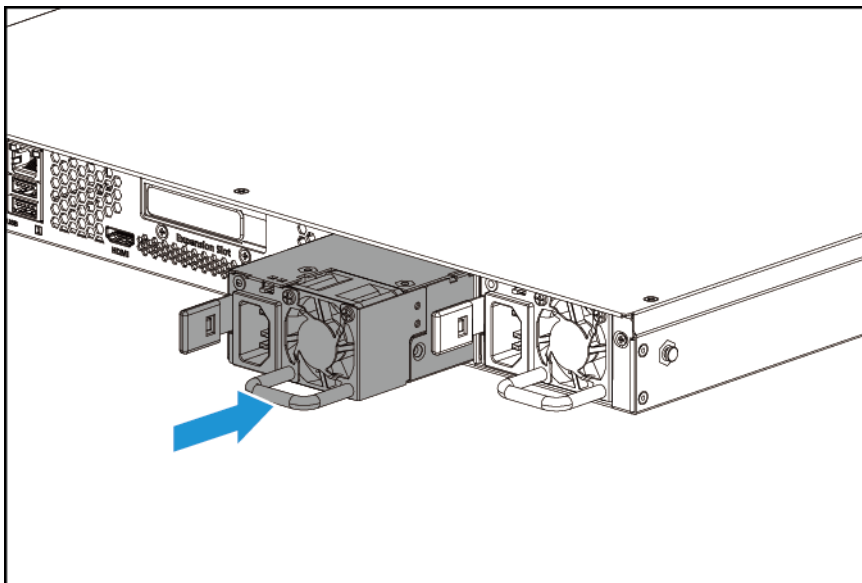


- TS-853DU-RP、TS-1253DU-RP

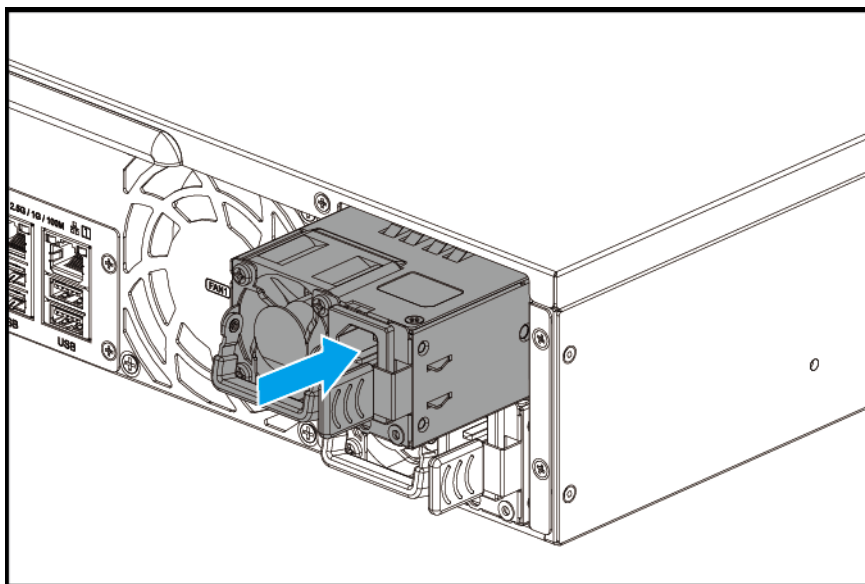


4. 插入新 PSU。

- 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/>。

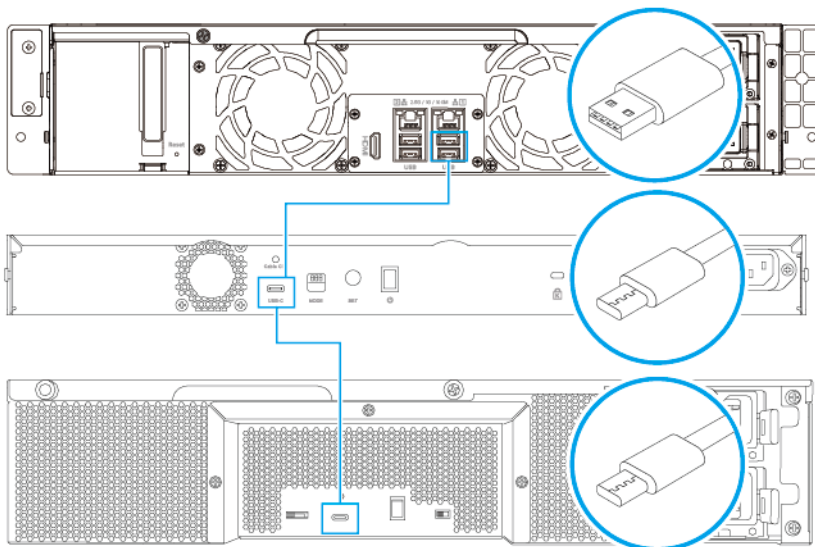
扩展单元型号	描述	所需配件
TR-004U	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 1 C 型接口 • 支持 SATA 硬盘 	<ul style="list-style-type: none"> • USB 3.2 Gen 1 A 型至 C 型线缆 • RAIL-B02
TL-R1200C-RP	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 2 C 型接口 • 支持 SATA 硬盘 	<ul style="list-style-type: none"> • USB 3.2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

扩展单元型号	描述	所需配件
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。

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-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。

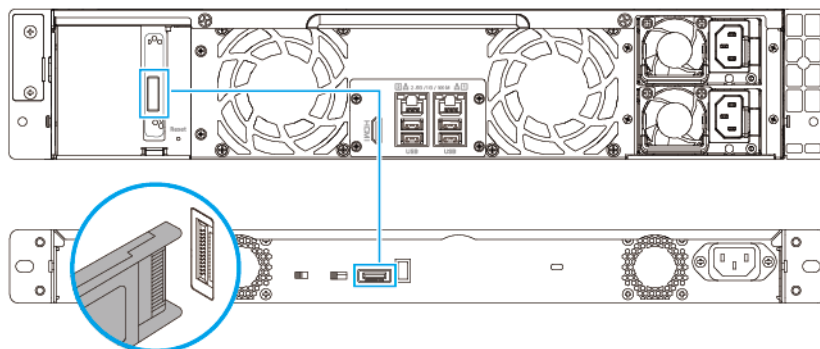
有关详细信息，请参见[安装扩展卡](#)。

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。

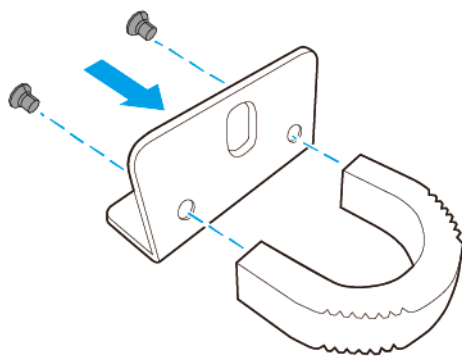
b. 转到**主菜单 > 存储与快照总管 > 概述 > 存储空间 > 系统**。

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。

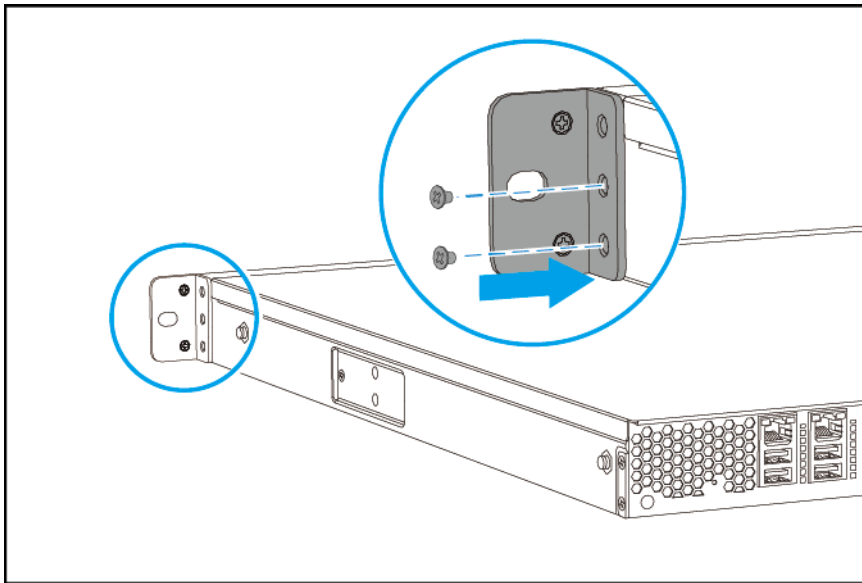


3. 将角码安装到 NAS 上。
 - a. 将角码上的孔对准机箱上的孔。



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

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。 • 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; margin-top: 10px;"> <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="margin-top: 10px;">  <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> <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 缆线, 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-853DU -RP TS-1253D U-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 > 磁盘/VJBOD**。
3. 找到发生故障的硬盘。
4. 准备一个与故障硬盘具有相同或更大容量的新硬盘。
5. 从 NAS 中取下故障硬盘。
6. 等待 20 秒或 NAS 发出两声提示音。
7. 从硬盘托盘中取下故障硬盘。
8. 将新硬盘插入硬盘托盘中。
9. 安装新硬盘。
此时 NAS 会发出两声提示音。
10. 转到**主菜单 > 存储与快照总管 > 存储**。
11. 找到包含新硬盘的卷，然后确认状态为正在重建。

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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The precise terms and conditions for copying, distribution and modification follow.

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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.

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