



QNAP

JBOD 设备

TL-R1200C-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 TL-R1200C-RP JBOD 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 JBOD 扩展单元 JBOD 设备的基本信息。

关于 TL-R1200C-RP

QNAP JBOD 设备旨在提高 NAS 或计算机的容量和实用性，并提供多种存储应用程序。安装在 JBOD 设备中的硬盘可以通过主机设备单独管理，也可以配置为软件 RAID 进行管理。TL-R1200C-RP 采用 USB 3.1 Gen 2 C 型端口，以确保 JBOD 设备和主机设备之间的数据传输快速且高效。TL-R1200C-RP 与在 Windows®、Mac® 或 Linux® 操作系统上运行的设备兼容。

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 保修条款和条件](#)。

组件	TL-R1200C-RP
订购信息	
存储	
硬盘架	12 x 3.5 英寸 SATA 6 Gbps
硬盘兼容性	3.5 英寸硬盘架： <ul style="list-style-type: none"> • 3.5 英寸 SATA 机械硬盘 • 2.5 英寸 SATA 机械硬盘 • 2.5 英寸 SATA 固态硬盘
热插拔	支持
外部 I/O 端口和扩展插槽	
USB 端口	1 x USB 3.1 Gen 2 C 型
接口	
按钮	<ul style="list-style-type: none"> • 电源 <div style="display: flex; align-items: center;"> <div> <p>重要 QNAP 建议在关闭 JBOD 设备的电源后至少等待两秒钟，然后再接通电源。</p> </div> </div> <ul style="list-style-type: none"> • 风扇 • 警告音
尺寸	
外形规格	2U 机架式
尺寸（高 x 宽 x 深）	88.6 x 482 x 562.5 mm (3.49 x 18.98 x 22.15 英寸)

组件	TL-R1200C-RP
净重	11.03 kg (24.32 磅)
其他	
导轨兼容性	RAIL-B02  注 <ul style="list-style-type: none"> 导轨套件未随 JBOD 设备提供，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。
电源单元	TL-R1200C-RP: 2 x 250W, 100 - 240V AC, 50/60 Hz  警告 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。
系统电池	CR2032 锂电池 (3V, 225 mAh)  警告 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。  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	33.4 dB(A)  注 噪声声级在距 JBOD 设备一米以内的旁观者位置测得。测试 JBOD 设备安装了最大数量的硬盘以低速运行。
风扇	系统: 2 x 7 cm, 12V DC 智能风扇  警告 为避免人员受伤或组件受损，JBOD 设备连接电源时，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)



提示

型号规格如有更改，恕不另行通知。要查看最新规格，请转到 <https://www.qnap.com>。

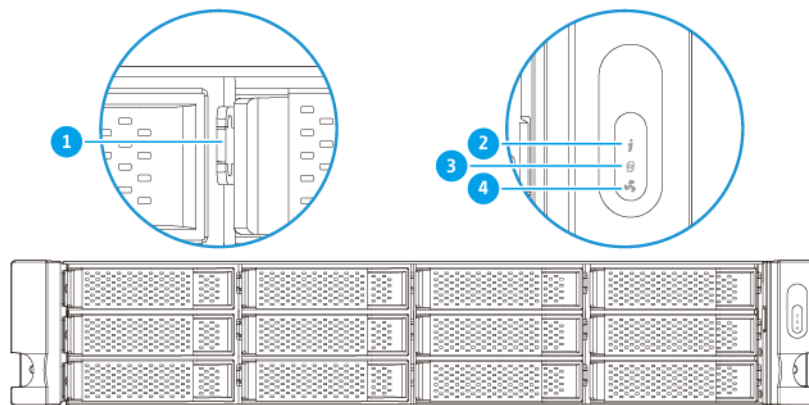
包装内容

项目	数量
TL-R1200C-RP	1
电源线	2
USB 3.1 Gen 2 C 型至 USB A 型连接器线缆	1

项目	数量
适用于 3.5 英寸硬盘的螺丝	48
适用于 2.5 英寸硬盘的螺丝	36
快速安装指南 (QIG)	1

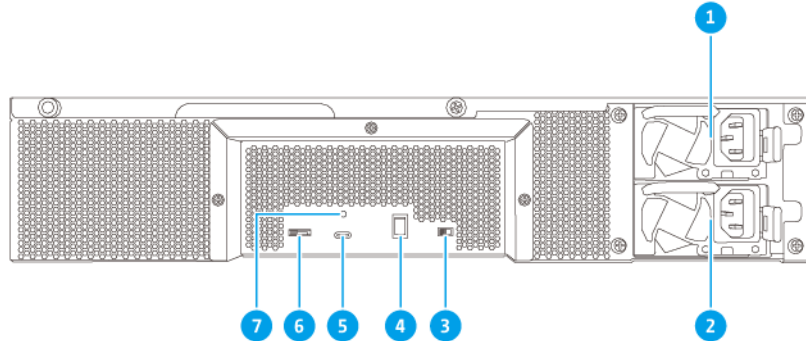
组件

前面板



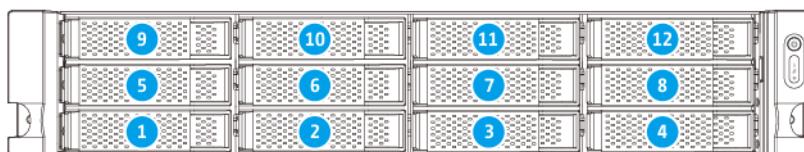
编号	组件	编号	组件
1	硬盘 LED	3	链接 LED
2	状态 LED	4	风扇错误 LED

后面板



编号	组件	编号	组件
1	电源单元 1	5	USB 3.1 Gen 2 C 型端口
2	电源单元 2	6	风扇转速开关
3	警告音开关	7	USB 线夹槽
4	电源开关	-	-

硬盘编号



安全信息

以下说明有助于确保个人安全和环境安全。在执行任何操作之前，请仔细阅读这些说明。

一般说明

- NAS 应存放在通过器具、锁和钥匙或任何安保措施限制进入的安全场所。
- 只有经过授权并掌握技能的合格人员才能实际接触 NAS，相关人员需了解所有限制措施、安全预防措施和安装维护流程。
- 为避免潜在伤害或组件的损坏，请务必等硬盘和其他内部系统组件冷却后再触碰。
- 请执行静电放电 (ESD) 规程，以避免可能的人员受伤或组件受损。

电源

- 为降低失火或触电风险，请确保只将电源线连接到接地良好的电源插座。



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

类别	项目
硬件和外围设备	<ul style="list-style-type: none"> • NAS 或计算机 • 存储硬盘 <p> 提示 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 • USB 连接器线缆
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 JBOD 设备

1. 将 JBOD 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 JBOD 设备安装在机架上。
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](#)
4. 连接电源线。
5. 将 JBOD 设备连接到 NAS 或计算机。
有关详细信息，请参见以下主题：
 - [将 JBOD 设备连接到 NAS](#)
 - [将 JBOD 设备连接到计算机](#)
6. 启动 JBOD 设备电源。

3. 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。

硬盘安装

QNAP JBOD 设备兼容 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。
-



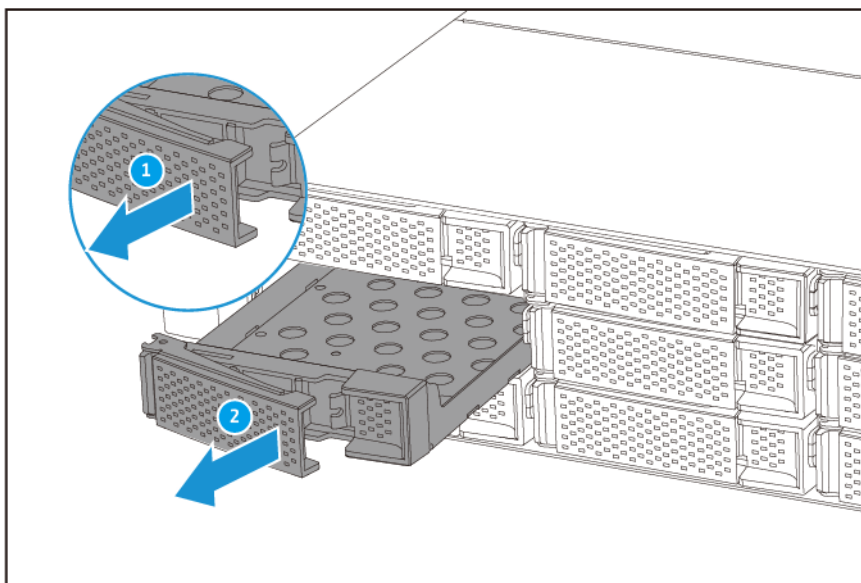
转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

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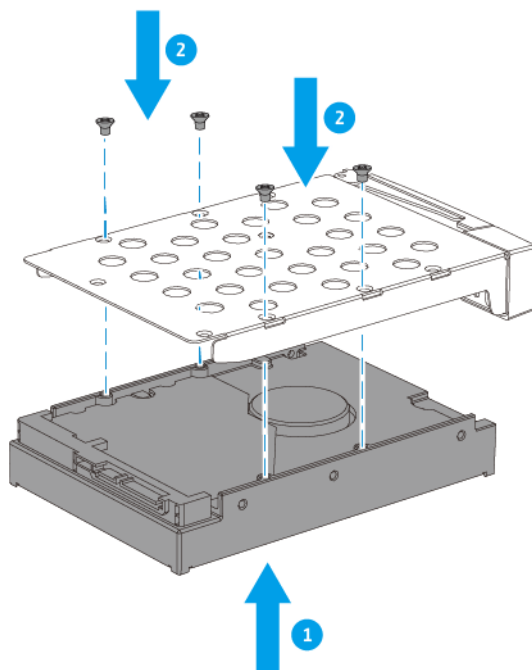


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 JBOD 设备电源。
2. 取下硬盘托盘。
 - a. 拉动手柄以松开托盘。
 - b. 拉出托盘。

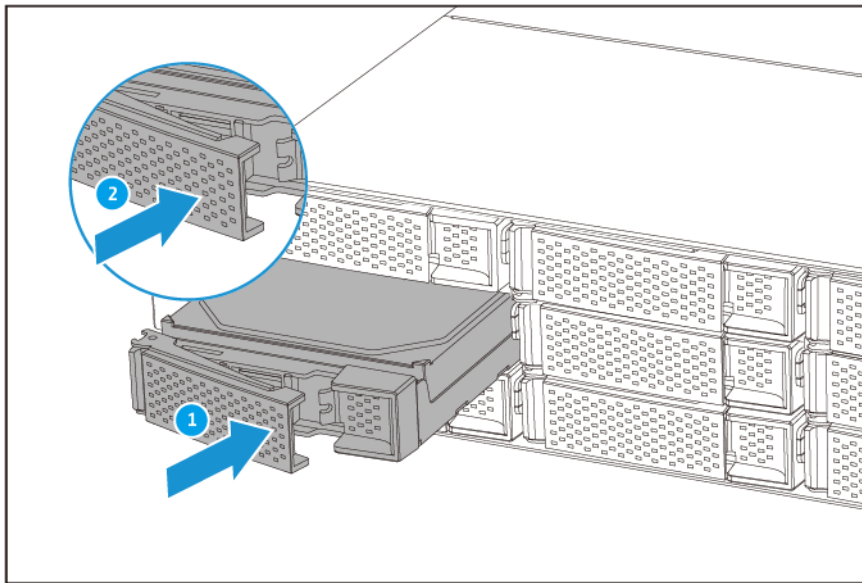


3. 将硬盘安装到托盘上。
 - a. 将硬盘放在托盘上，使硬盘底部的孔与托盘底部的孔对齐。
 - b. 装上螺丝，进一步固定硬盘。

**重要**

QNAP 建议在转运设备时将螺丝装到硬盘托盘上。

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 JBOD 设备电源。



注
JBOD 设备最长可能需要 30 秒才能检测到新硬盘。

在 3.5 英寸托盘上安装 2.5 英寸硬盘

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。

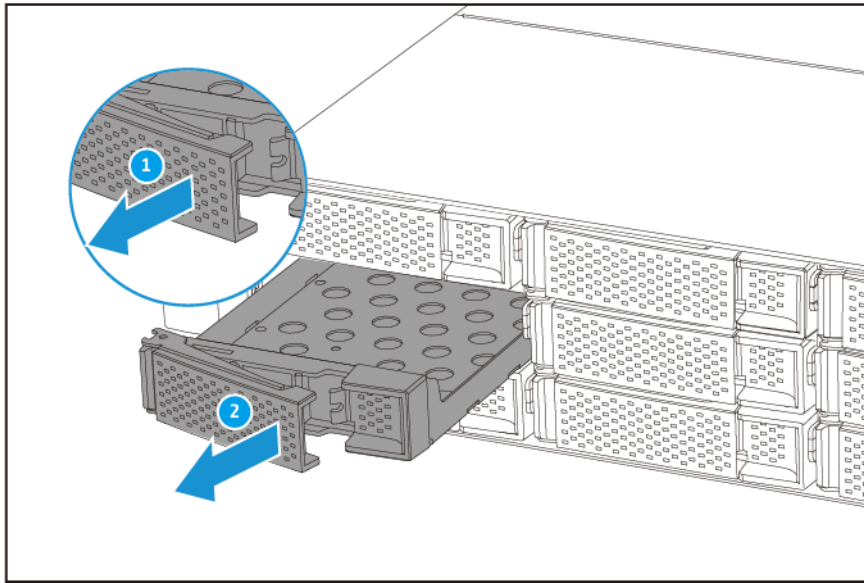


转动的风扇叶片：使您的双手和身体其他部位远离正在转动的风扇叶片。

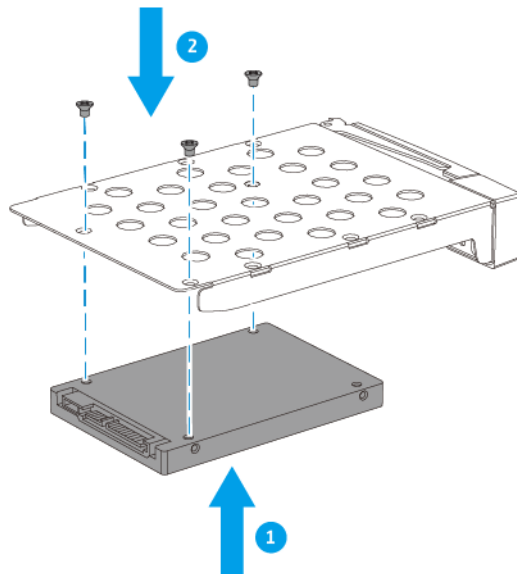


其他运动的组件：使您的双手和身体其他部位远离正在运动的其他组件。

1. 关闭 JBOD 设备电源。
2. 取下硬盘托盘。
 - a. 拉动手柄以松开托盘。
 - b. 拉出托盘。

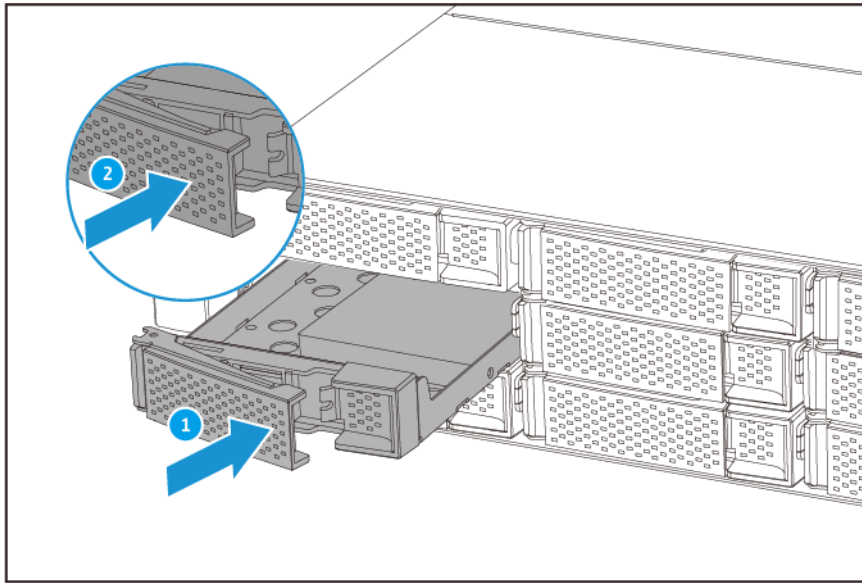


3. 将硬盘安装到托盘上。
 - a. 将硬盘放在托盘上，使硬盘底部的孔与托盘底部的孔对齐。
 - b. 安装螺丝。



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 JBOD 设备电源。



注
JBOD 设备最长可能需要 30 秒才能检测到新硬盘。

将 JBOD 设备连接到 NAS



重要

- QTS 最多支持两个 JBOD 设备。
- QNAP JBOD 设备不支持 USB 2.0 连接。
- 根据已安装的硬盘数量，JBOD 设备消耗的 USB 端点数量可能会多于主机设备在单个 USB 连接上支持的数量。因此，主机设备可能无法识别安装在 JBOD 设备中的所有硬盘。
可以在主机设备中安装一个 USB 扩展卡来解决此问题。您可以从 QNAP 或授权经销商处购买兼容的 USB 扩展卡。

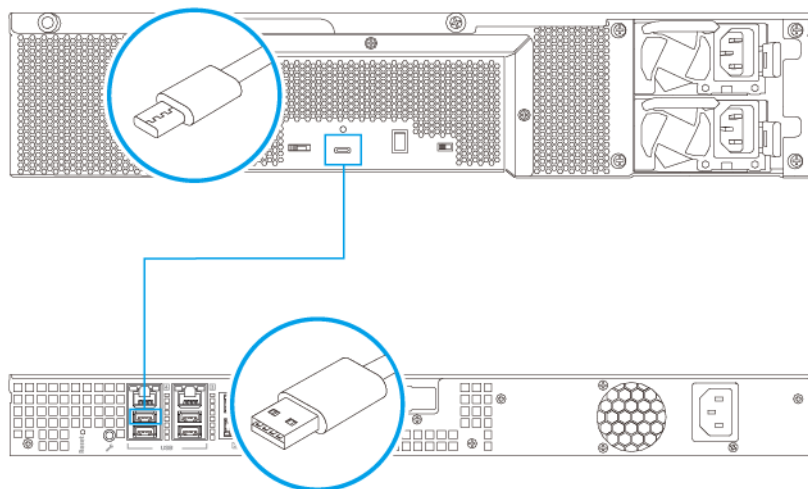


警告

- 不要使用 USB Hub 将 JBOD 设备连接到主机设备。
- 在短时间内反复断开外部设备与主机设备的连接并重新连接时，可能会发生启动故障。QNAP 建议在将外部设备重新连接到主机设备之前等待 10 秒。

1. 关闭 NAS 电源。
2. 关闭 JBOD 设备电源。
3. 将 JBOD 设备连接到 NAS。
 - a. 将 USB 线缆连接到 JBOD 设备上的 USB 3.1 Gen 2 C 型端口。
 - b. 将 USB 线缆连接到 NAS 上的 USB A 型端口。

- c. 可选: 将第二个 JBOD 设备连接到 NAS。



4. 启动 JBOD 设备电源。
5. 启动 NAS 电源。
6. 确认 NAS 能够识别该 JBOD 设备。
 - 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。
 - c. 确认 JBOD 设备已列出。



注

NAS 最长可能需要 30 秒才能检测到 JBOD 设备和安装的硬盘。

将 JBOD 设备连接到计算机



重要

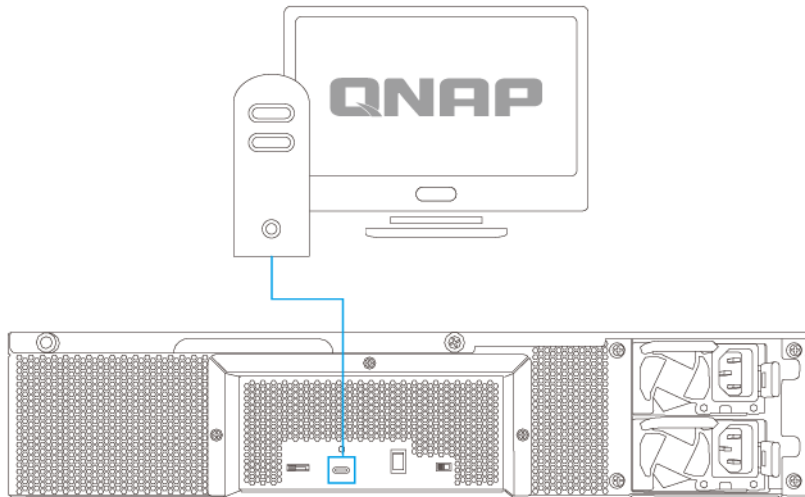
- QNAP JBOD 设备不能同时连接到多个主机。
- QNAP JBOD 设备不支持 USB 2.0 连接。
- 根据已安装的硬盘数量，JBOD 设备消耗的 USB 端点数量可能会多于主机设备在单个 USB 连接上支持的数量。因此，主机设备可能无法识别安装在 JBOD 设备中的所有硬盘。
可以在主机设备中安装一个 USB 扩展卡来解决此问题。您可以从 QNAP 或授权经销商处购买兼容的 USB 扩展卡。



警告

- 不要使用 USB Hub 将 JBOD 设备连接到主机设备。
- 在短时间内反复断开外部设备与主机设备的连接并重新连接时，可能会发生启动故障。QNAP 建议在将外部设备重新连接到主机设备之前等待 10 秒。

1. 关闭计算机电源。
2. 关闭 JBOD 设备电源。
3. 将 JBOD 设备连接到计算机。
 - a. 将 USB 线缆连接到 JBOD 设备上的 USB 3.1 Gen 2 C 型端口。
 - b. 将 USB 线缆连接到计算机上的 USB 端口。
 - c. 可选: 将其他 JBOD 设备连接到计算机。



4. 启动 JBOD 设备电源。
5. 启动计算机电源。
6. 确认计算机能够识别该 JBOD 设备。
 - a. 转到计算机的磁盘管理实用程序或在 Windows 或 Ubuntu 中打开 QNAP JBOD Manager。
 - b. 确认 JBOD 设备已列出。

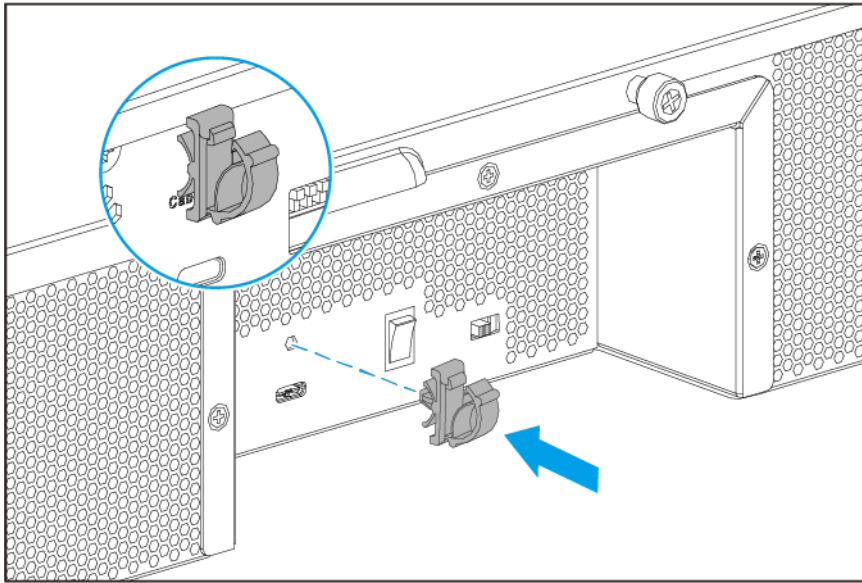
安装 USB 线缆夹



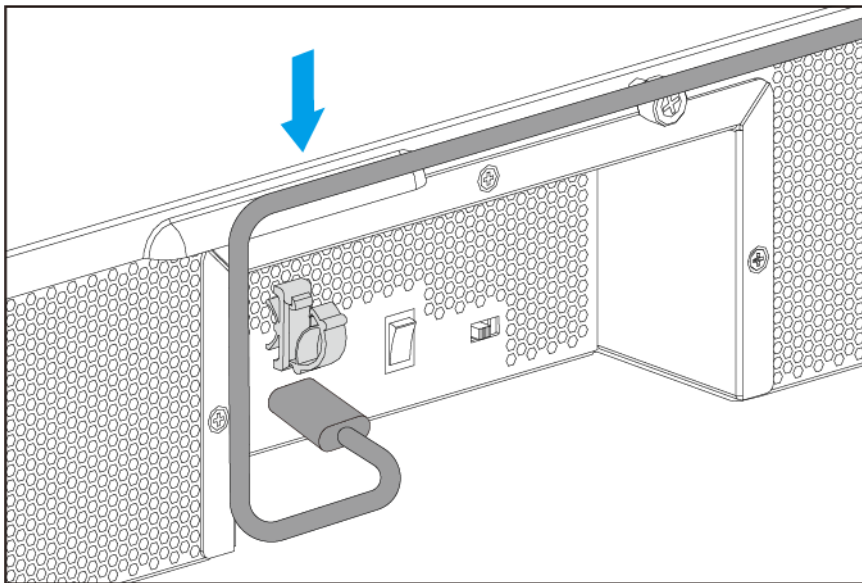
重要

USB 线缆夹将线缆固定在设备附近，以免对线缆或附近组件造成潜在损坏。

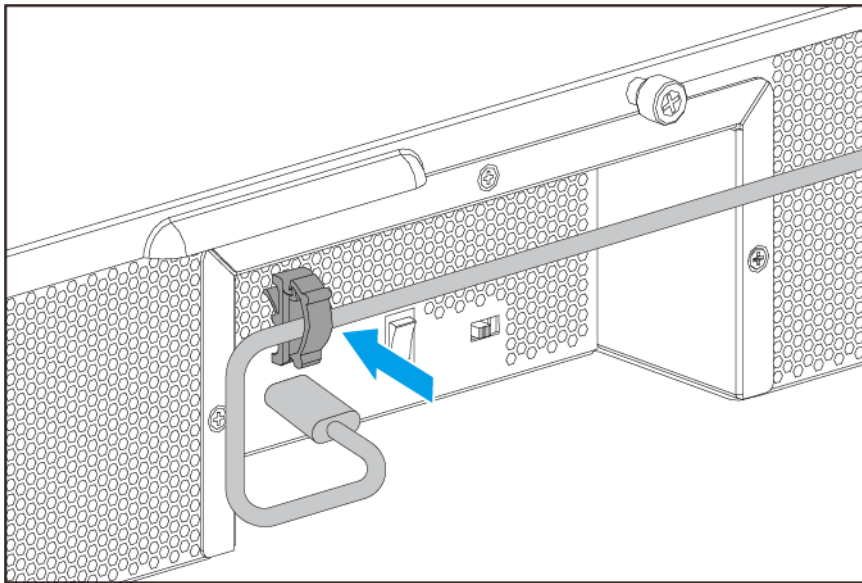
1. 将线缆夹插入到线夹槽中。



2. 将线缆插入线缆夹中。

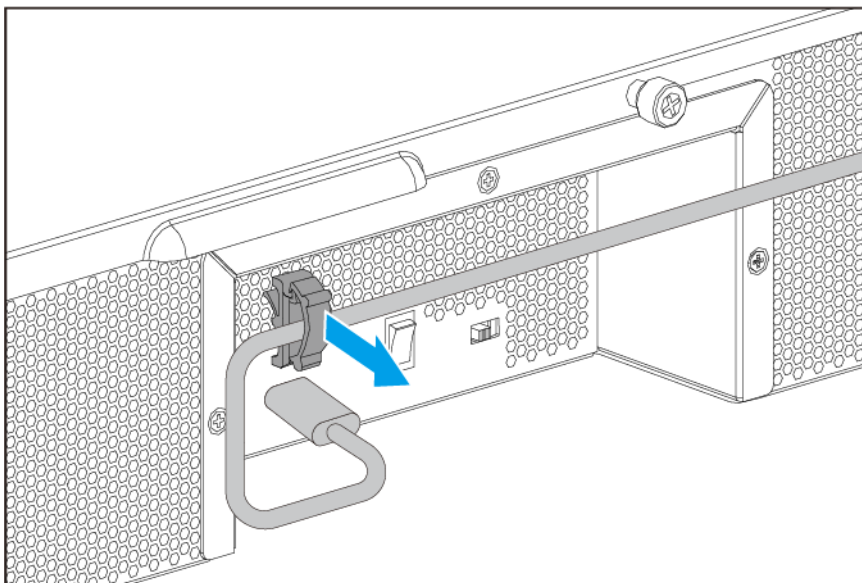


3. 闭合线缆夹以固定线缆。

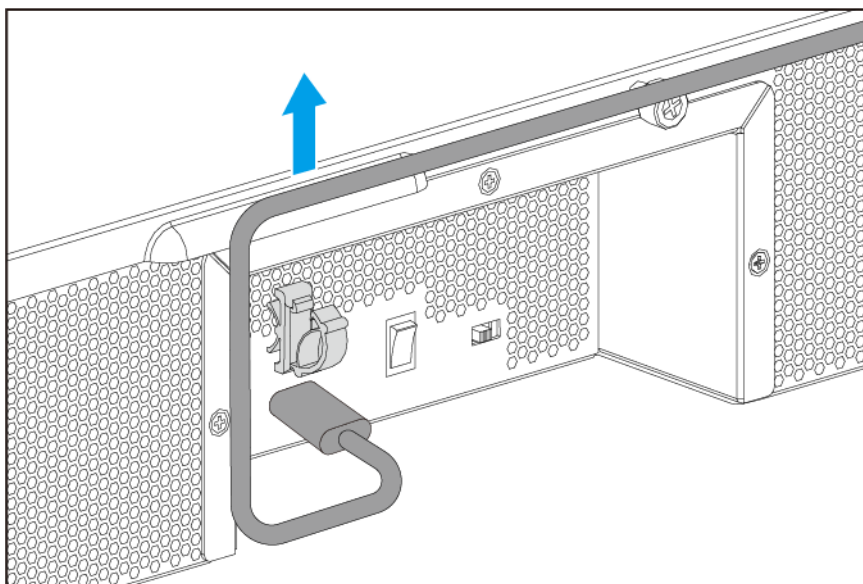


从 USB 线缆夹中取出 USB 线缆

1. 打开线缆夹。



2. 将线缆从线缆夹中取出。



热插拔冗余电源单元

配有冗余电源单元 (PSU) 的 JBOD 设备支持热插拔。

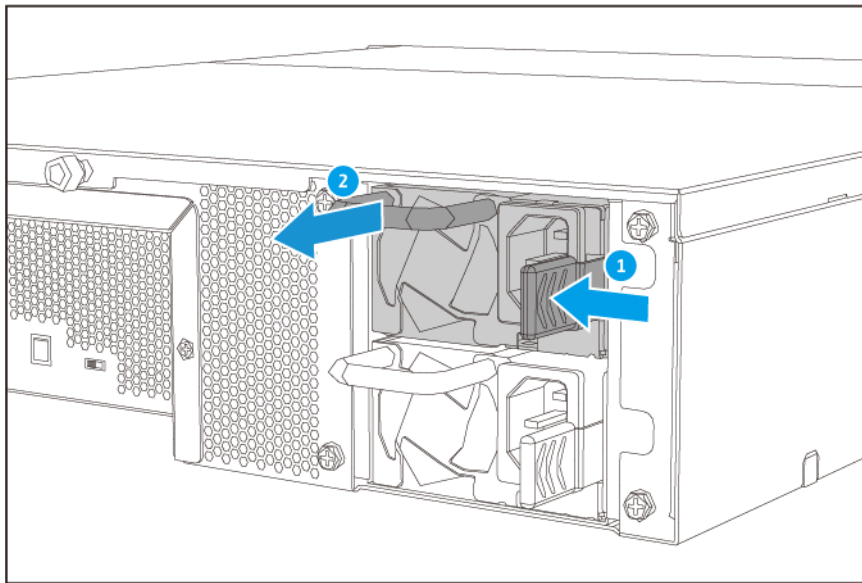


警告

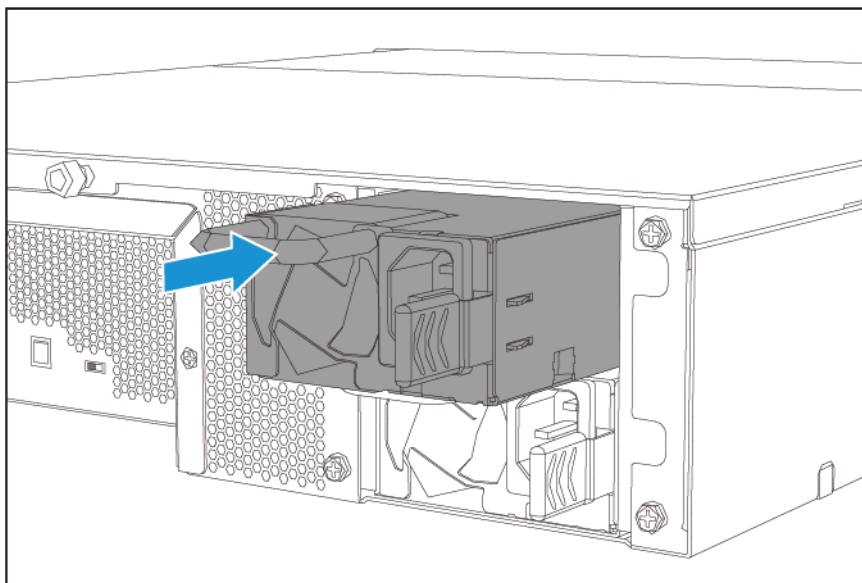


NAS 可能有一条或多条冗余电源单元 (PSU) 线。为避免受到严重伤害，安装或更换系统组件前，必须由经培训的维修技师拔下所有 PSU 线。

1. 关闭 JBOD 设备电源。
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 JBOD 设备电源。

导轨套件

TL-R1200C-RP 兼容以下型号：

- RAIL-B02

导轨套件未随 JBOD 设备提供，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。

4. 基本操作

本章介绍 JBOD 设备的基本操作。

LED

开启 JBOD 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 JBOD 设备已连接的情况。

有关 LED 位置的详细信息，请参见[组件](#)。

LED	状态	描述
系统状态	绿色	JBOD 设备准备就绪。
	红色	<ul style="list-style-type: none"> 系统风扇故障。 系统温度超过 65°C。
链路	绿色	JBOD 设备已连接至主机设备。
	熄灭	JBOD 设备未连接至主机设备。
风扇	红色	系统风扇故障。
硬盘	绿色	<ul style="list-style-type: none"> JBOD 设备已开机。 硬盘可供访问。
	闪烁绿色	正在访问数据。
	红色	发生硬盘读/写错误。



注

只有在连接至 NAS 或运行 QTS、QTS hero 或 QNAP JBOD Manager 的计算机时，硬盘 LED 才能工作。

警告音



注

使用 JBOD 设备后面板上的警告音开关可以打开和关闭警告音。
有关详细信息，请参见[后面板](#)。

时长	频率	描述
短提示音（0.5 秒）	1	<ul style="list-style-type: none"> 与 JBOD 设备的链路已接通。 与 JBOD 设备的链路已中断。
长提示音（2 秒）	3（每 5 分钟）	<ul style="list-style-type: none"> 系统风扇故障。 系统温度超过阈值。 <div style="border-left: 2px solid #0070C0; padding-left: 10px; margin-top: 10px;"> <p>注</p> <ul style="list-style-type: none"> 默认的温度警告阈值为 65°C。您可以使用 QNAP JBOD Manager 将该阈值设置为介于 55°C 至 69°C 之间的温度。 温度临界阈值为 70°C。 </div>

风扇转速开关

JBOD 设备的后面板有一个风扇转速开关，用于手动配置系统风扇的转速。

风扇转速设置：

- 自动
当设置为“自动”时，风扇转速会根据 JBOD 设备的内部温度自动改变。
- 高
- 中
- 低

有关详细信息，请参见[后面板](#)。

5. 故障排除

本章介绍基本故障排除信息。

强制存储与快照总管或 QNAP JBOD Manager 识别 JBOD 设备

如果“存储与快照总管”或 QNAP JBOD Manager 在运行期间找不到 JBOD 设备，则硬盘或数据可能有故障。

1. 关闭 JBOD 设备电源。
2. 取下所有硬盘。
3. 启动 JBOD 设备电源。
4. 使用“存储与快照总管”或 QNAP JBOD Manager 找到 JBOD 设备。
5. 重新插入硬盘。
6. 继续操作。

热插拔故障硬盘

在以下情况下，JBOD 设备支持热插拔硬盘：

- RAID 1：一个成员硬盘有故障
- RAID 5：一个成员硬盘有故障
- RAID 10：
 - 一个成员硬盘有故障
 - 两个成员硬盘有故障
- RAID 50：每个磁盘子组一个成员硬盘有故障
- RAID 60：每个磁盘子组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 > 外部存储设备。
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 JBOD 设备中取下故障硬盘。
6. 等待 30 秒或 JBOD 设备发出两次提示音。
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。
JBOD 设备发出两次提示音。
10. 等待 30 秒或 JBOD 设备发出两次提示音。

11. 转到主菜单 > 存储与快照总管 > 存储空间 > 存储/快照
12. 找到包含新硬盘的卷，然后确认状态为正在重建。

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

QTS

QNAP NAS 操作系统

QNAP JBOD Manager

适用于 Windows、Linux 和 macOS 的软件实用程序，可用于查看和配置 QNAP JBOD 设备

存储与快照总管

可用于查看和配置连接到 QNAP NAS 的 QNAP JBOD 设备的 QTS 实用工具

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Version 3, 29 June 2007

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