QNAP

TS-h765eU

用户指南

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1. 重要信息

原始包装

请保留原始包装和包装材料。如果要将产品退货或寄回进行修理，请使用原始包装以免损坏。

对于因包装不当受损的产品，QNAP 保留不提供退款或保修服务的权利。

硬件缺陷

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。

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。

⚠ 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。

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

> ## ⚠ 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。
>
> ⚡ 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电源单元线。

运动的部件

> ## ⚠ 警告
>
> **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任何正在转动的风扇叶片。
>
> **运动的组件：** 使您的身体各部位远离任何正在运动的其他组件。
>
> 设备不适合在儿童可能会出现的场所使用。

系统电池

> ## ⚠ 警告
>
> **摄入危险**
>
> - 此产品配有纽扣电池。
> - 请避免儿童接触电池。
> - 如果被吞食，锂纽扣电池可能会在 2 小时内导致严重或致命伤害。
> - 如果您认为可能电池已被吞食或部于身体的某个部位，请立即就医求助。

- 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。
- 即使是使用过的电池，也可能会导致严重伤害或死亡。
- 有关诊疗信息，请致电当地中毒控制中心。
- 有关设备中纽扣电池类型和电压的信息，请参见硬件规格表。

- 非充电电池不可充电。

- 请勿强行放电、充电、拆卸、加热或焚烧。这样做可能会导致因通风、泄漏或爆炸造成的化学烧伤而导致的伤害。

- 确保电池按照极性（+ 和 -）正确安装。

- 请勿将新旧电池或不同品牌、不同类型的电池（如碱性电池、碳锌电池、充电电池等）混用。

- 对于长时间不使用的设备，请根据当地法规取出并立即回收或处理电池。

- 始终完全固定电池盒。如果电池盒无法牢固关闭，请停止使用本产品，取出电池，并将电池置于儿童接触不到的地方。

导轨套件

机架式型号可能需要导轨套件以便安装到服务器机架或机柜上。

为确保设备和人身安全，在安装导轨套件和安装设备之前，请仔细阅读导轨套件的安装说明。

要检查您的设备是否为机架式设备，请参见硬件规格表。

⚠ 警告

- 当导轨套件安装在服务器机架上时，除安装或拆卸设备外，请勿将导轨完全展开或拔掉闩锁。

- 如果导轨完全展开并拔掉闩锁，可能会导致重型设备坠落。这可能会导致设备损坏，以及严重甚至致命的伤害。

- 在准备导轨以安装或拆卸设备前，请仔细阅读并确保理解安装说明。

- 安装或拆卸设备时，请勿在设备或导轨上放置任何物品或增加任何额外的负重。

- 安装设备时，请将设备完全推入服务器机架，使导轨完全锁住，并将设备固定在服务器机架上。

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2. 产品概述

本章提供有关 QNAP 设备的基本信息。

关于 TS-h765eU

TS-h765eU 搭载 Intel Atom® x7405C 四核 3.4 GHz Turbo 处理器及具有带内 ECC 的 DDR5 内存。NAS 具有三个可热插拔的 E1.S NVMe PCIe 硬盘架和四个 SATA 6 Gbps 硬盘架，可用于机械硬盘和固态硬盘。TS-h765eU 是一种现代存储解决方案，可简化文件管理、自动执行任务并确保关键应用的数据可用性，从而增强团队协作和生产力。

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。

组件	TS-h765eU-4G
处理器	
CPU	Intel Atom® x7405C
频率	4 核 3.4 GHz 脉冲
架构	x86 64 位
加密引擎	AES-256
内存	

组件	TS-h765eU-4G
内存插槽	1 x DDR5 SODIMM **重要** • 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。 **注意** 此内存插槽支持带内 ECC，可对存储在 RAM 中的数据进行错误检查和纠正，确保数据的准确性和可靠性。安装的内存模块中为带内 ECC 功能预留了部分内存容量。
预安装内存	8 GB RAM：1 x 8 GB DDR5 SODIMM
最大内存	16 GB RAM：1 x 16 GB DDR5 SODIMM
闪存	8 GB（双重引导操作系统保护）
存储	
硬盘架	• 4 x 3.5 英寸 SATA 6 Gbps **提示** 硬盘架向后兼容 SATA 3 Gbps 硬盘。 • 3 x E1.S NVMe / NVMe PCIe Gen 3 x2 **注意** 每个 ES.1 硬盘架都预装了用于安装 M.2 SSD 的 QDA-E1SM 适配器。

组件	TS-h765eU-4G
硬盘兼容性	3.5 英寸硬盘架： • 3.5 英寸 SATA 机械硬盘 • 2.5 英寸 SATA 固态硬盘 E1.S NVMe PCIe SSD • M.2 2280 PCIe NVMe 固态硬盘 • E1.S NVMe 固态硬盘（最高 15 mm） **重要** 9.5 mm 和 15 mm E1.S 固态硬盘需要 QNAP 硬盘托盘 TRAY-E1S-01。此硬盘托盘必须单独购买。 **提示** 有关兼容硬盘型号的列表，请转到 https://www.qnap.com/compatibility。
热插拔	此设备对所有硬盘均支持热插拔。
SSD 缓存加速支持	此设备对所有硬盘均支持 SSD 缓存加速。
网络	
2.5 Gb 网络接口	2 x 2.5 GbE RJ45 **注意** 2.5 Gb 以太网端口支持以下网络连接速度：2.5 Gbps、1 Gbps、100 Mbps、10 Mbps
网络唤醒	是
外部 I/O 端口和扩展插槽	
USB 端口	• 1 x USB 3.2 Gen 1 A 型 • 1 x USB 2.0
界面	
按钮	• 电源 • 重置

| 组件	TS-h765eU-4G
尺寸	
外形规格	1U 机架式
尺寸（高 x 宽 x 深）	43.3 x 430 x 292.1 mm （1.7 x 16.93 x 11.5 英寸）
净重	4.51 kg（9.94 磅）
其他	
导轨兼容性	• RAIL-B02 • RAIL-S01 **注意** • 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 https://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。有关详细信息，请转到 https://www.qnap.com/go/product/rail-kit。
电源单元	150W 适配器，100-240V
系统电池	CR2032 锂电池（3V，225 mAh） **警告** • 此电池为纽扣电池。如果被吞食，锂纽扣电池可能会在 2 小时内导致严重或致命伤害。请避免儿童接触电池。 • 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。 **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。
风扇	3 x 40 mm，12V DC 风扇
工作温度	0˚C 至 40˚C（32 至 104˚F）

组件	TS-h765eU-4G
相对湿度	• 无冷凝相对湿度：5% 至 95% • 湿球温度：27°C (80.6°F)
安全锁孔	Kensington 安全锁孔

包装内容

项目	数量
TS-h765eU	1
电源线	1
以太网线	1 x Cat5e **注意** Cat5e 以太网线支持的传输速度高达 2.5 Gbps。
适用于 3.5 英寸硬盘的螺丝	16
适用于 2.5 英寸硬盘的螺丝	12
快速安装指南 (QIG)	1

组件

前面板
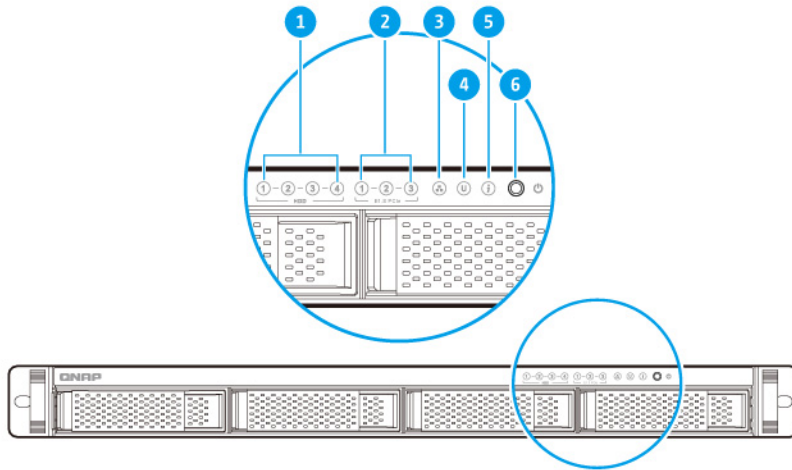
编号	组件	编号	组件
1	硬盘 LED	4	扩展单元 LED
2	M.2 SSD LED	5	状态 LED
3	LAN LED	6	电源按钮

组件

后面板
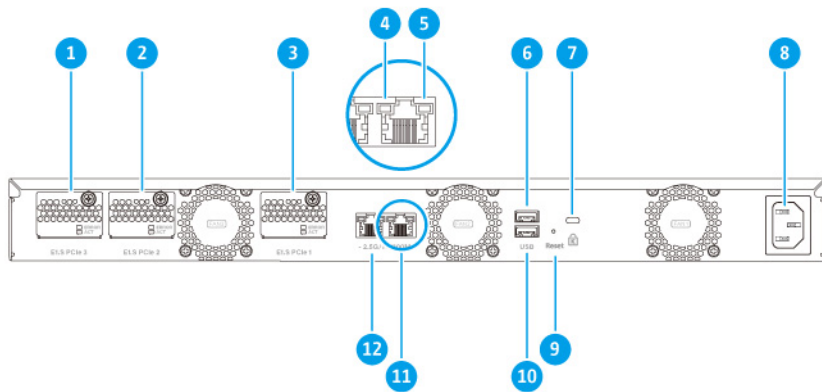
编号	组件	编号	组件
1	E1.S/M.2 PCIe 插槽 3	7	Kensington 安全锁孔
2	E1.S/M.2 PCIe 插槽 2	8	电源输入
3	E1.S/M.2 PCIe 插槽 1	9	重置按钮
4	2.5 Gb 以太网速度 LED	10	USB 3.2 Gen 1 A 型端口
5	2.5 Gb 以太网活动 LED	11	2.5 Gb 以太网端口 (RJ45) 1
6	USB 2.0 A 型端口	12	2.5 Gb 以太网端口 (RJ45) 2

系统主板
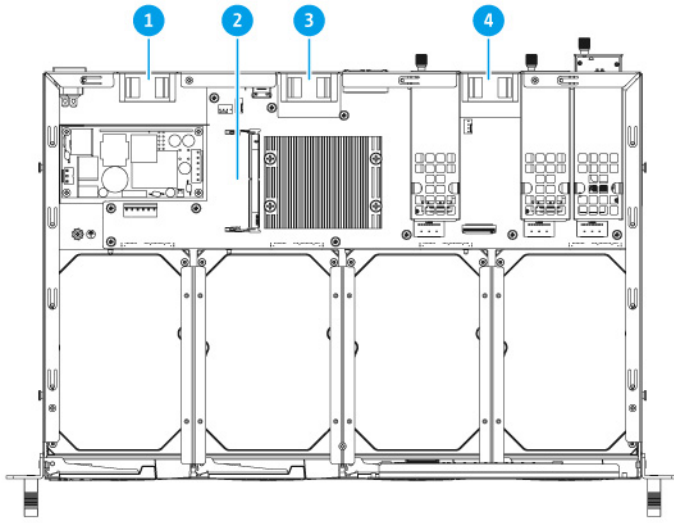
编号	组件	编号	组件
1	系统风扇 1	3	系统风扇 2
2	内存插槽	4	系统风扇 3

硬盘编号

安装要求

类别	项目
环境	· 室温：0℃ 至 40℃（32 至 104℉） · 无冷凝相对湿度：5% 至 95% · 湿球温度：27℃ (80.6℉) · 平坦的防静电表面，无直射阳光、液体或化学药剂 · 无可能阻塞设备通风或者压住设备或电源线的物品
硬件和外围设备	· 存储硬盘 **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。 · 网线
工具	· 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，请参见以下内容：

   · 在 3.5 英寸托盘上安装 2.5 英寸固态硬盘

   · 在 3.5 英寸托盘上安装 3.5 英寸硬盘

   · 安装 M.2 固态硬盘

3. 可选: 连接扩展单元。
   有关详细信息，请参见连接 USB 扩展单元。

4. 连接电源线和所有适用的线缆。

5. 启动 NAS 电源。

6. 安装 QuTS hero。
有关详细信息，请参见 QuTS hero 安装。

7. 登录 QuTS hero。

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、扩展卡和扩展单元的信息。

硬盘安装

TS-h765eU 系列兼容 3.5 英寸硬盘、2.5 英寸固态硬盘、M.2 固态硬盘和 ES.1 固态硬盘。

> **重要**
>
> 9.5 mm 和 15 mm E1.S 固态硬盘需要 QNAP 硬盘托盘 TRAY-E1S-01。此硬盘托盘必须单独购买。

在 3.5 英寸托盘上安装 2.5 英寸固态硬盘

> **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。
>
> - **运动的其他组件：** 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。
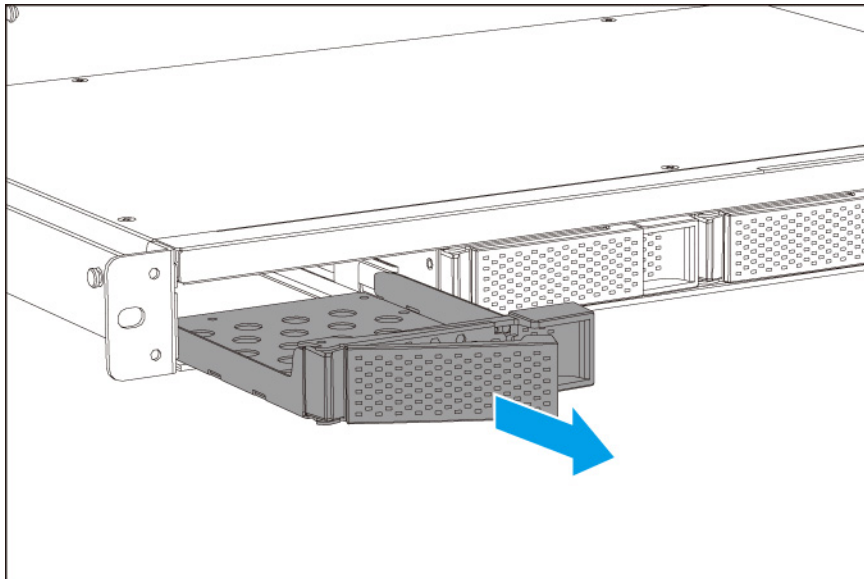
    a. 向外拉动托盘手柄。

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。
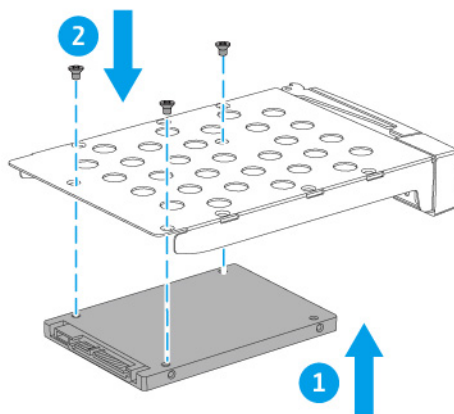
b. 安装螺丝。

4. 将托盘装入硬盘架。
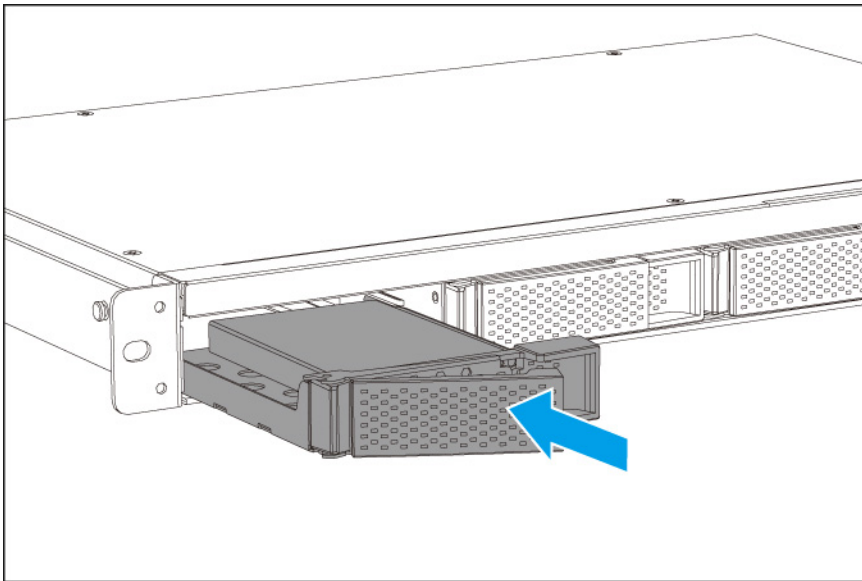
    a. 将托盘插入硬盘架。

    b. 推动手柄。

5. 启动 NAS 电源。

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。
>
> -
>   **运动的其他组件：** 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。
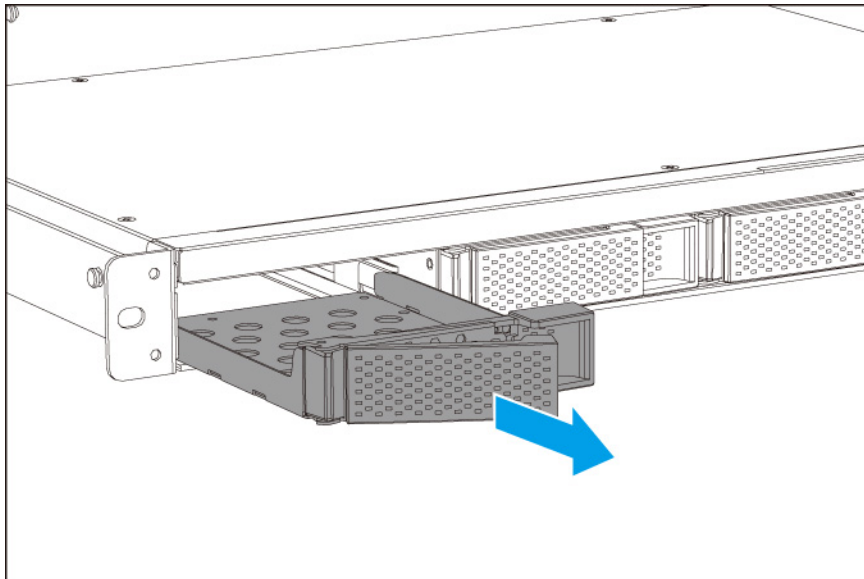
3. 将硬盘安装到托盘上。

    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。
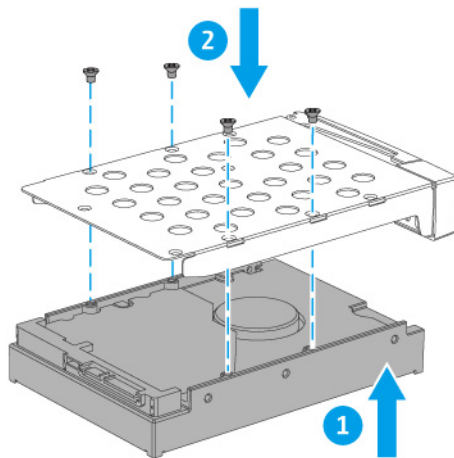
4. 将托盘装入硬盘架。

    a. 将托盘插入硬盘架。
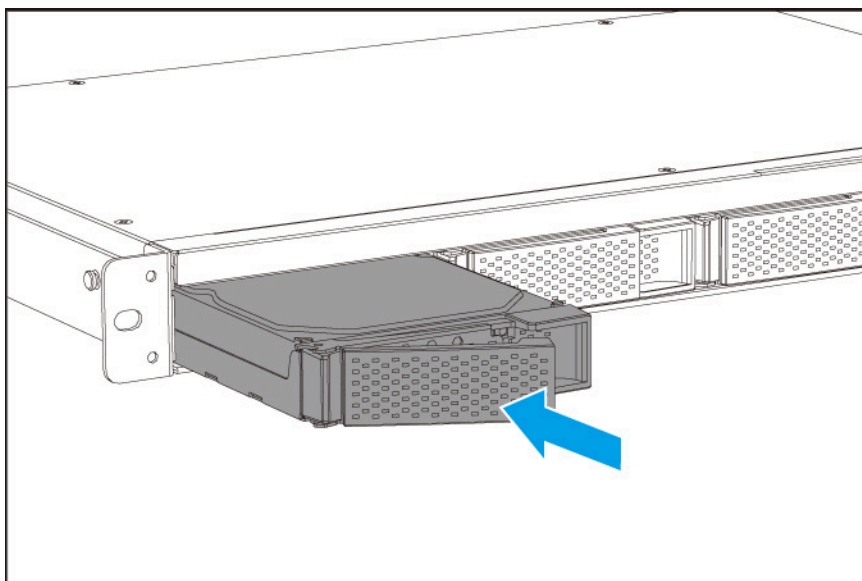
    b. 推动手柄。

5. 启动 NAS 电源。

安装 M.2 固态硬盘

TS-h765eU 的后面板上有三个 M.2 SSD 托盘。

- 有关兼容的 M.2 SSD 的列表，请转到 https://www.qnap.com/compatibility。

- 硬盘托盘预装了用于安装 M.2 SSD 的 QDA-E1SM 适配器。

> **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。

1. 取下硬盘托盘。

    a. 松开将托盘固定到机箱的螺丝。

b. 拉出托盘。
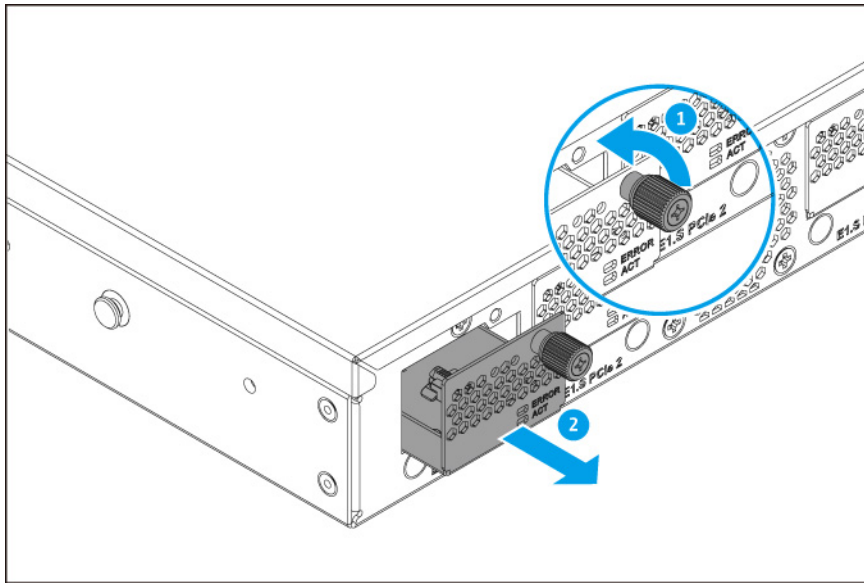
2. 可选: 在 M.2 SSD 上安装散热片。

> **注意**
>
> - 散热片未随 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
>   https://shop.qnap.com/。
>
> - 散热片高度不得超过 4.5 mm。

a. 在 M.2 SSD 上找到控制器。

> **注意**
> 控制器位置因 M.2 SSD 的型号和制造商而异。
> 有关详细信息,请参阅文档或联系制造商。

b. 取下散热片的保护膜。

c. 将散热片安装到控制器上。
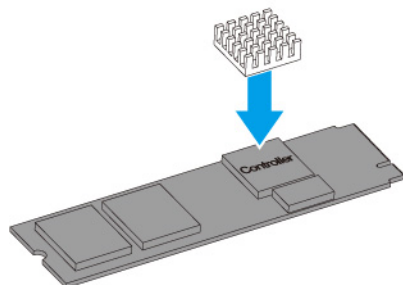
3. 可选: 将一个或多个导热片装到硬盘托盘上。

> **注意**
>
> • 导热片未随 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
>   https://shop.qnap.com。
>
> • 建议使用 QNAP TPAD-M2SSD-04 导热片。TPAD-M2SSD-04 有厚导热片和薄导热片，用
>   于安装单面和双面 SSD。

> **重要**
>
> 请勿直接在 SSD 上安装导热片。M.2 SSD 适配器的空间不足以容纳安装了导热片的 SSD。请
> 将导热片安装在硬盘托盘上未被适配器挡住的区域。

a. 将厚导热片装到硬盘托盘上。
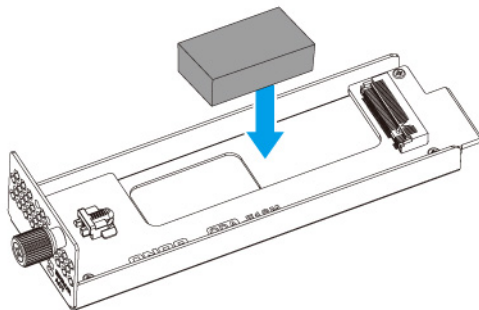
b. 在厚导热片上安装薄导热片。

> **注意**
> 此步骤仅适用于单面 SSD。如果安装的是双面 SSD，请跳过此步骤。
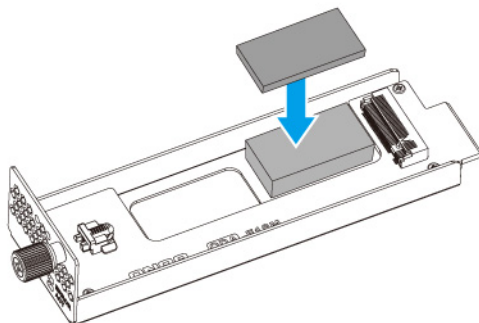
4. 安装 M.2 SSD。

    a. 将 M.2 SSD 插入插槽中。
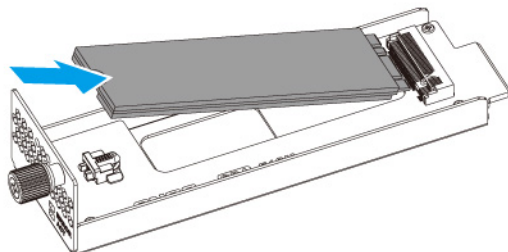
    b. 小心按下 M.2 SSD。
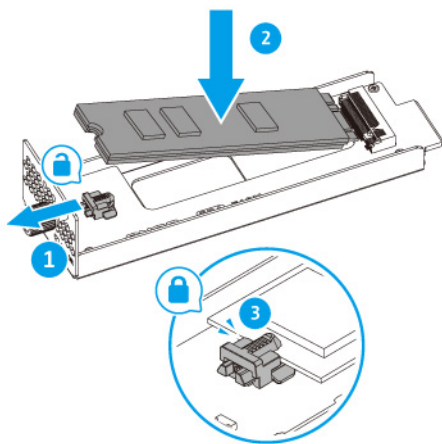
5. 将托盘装入硬盘架。

    a. 将托盘插入硬盘架。
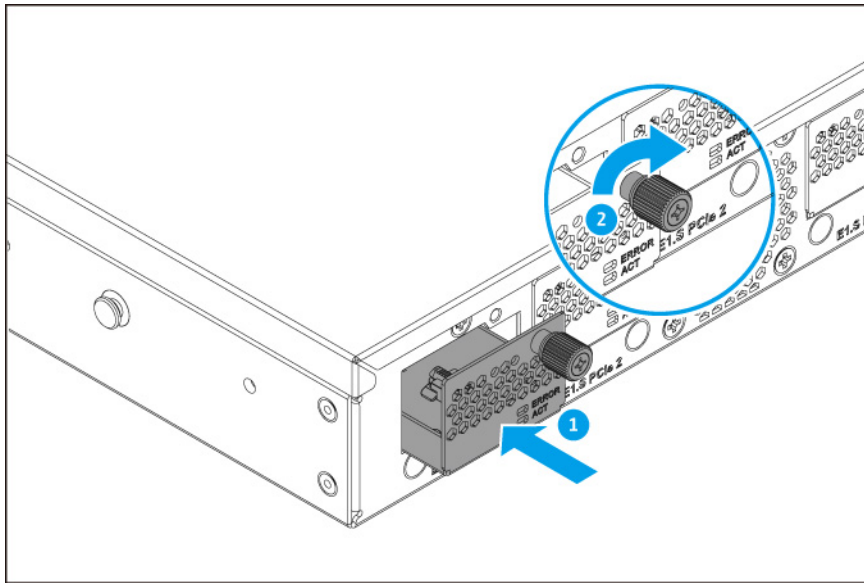
b. 拧紧将托盘固定到机箱的螺丝。

安装 5.9 mm E1.S 固态硬盘

有关兼容的 E1.S SSD 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。

1. 取下硬盘托盘。

a. 松开将托盘固定到机箱的螺丝。

b. 拉出托盘。
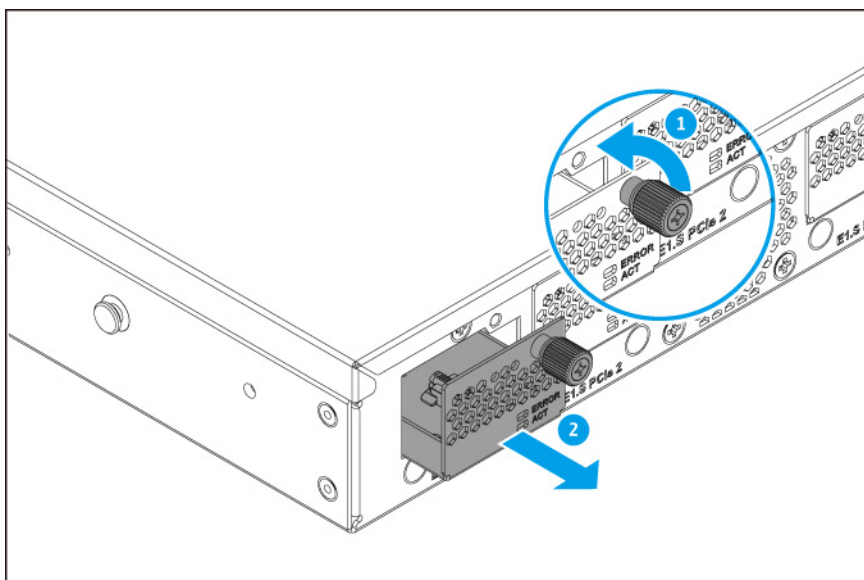
2. 安装 E1.S SSD。

    a. 卸下用于将 M.2 SSD 适配器固定到盘架的螺丝。

> **注意**
> 硬盘托盘预装了 QDA-E1SM 适配器。

    b. 取下 M.2 SSD 适配器。
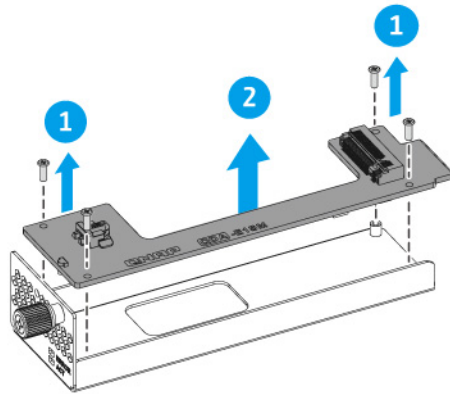
    c. 将硬盘放在盘架上，使硬盘上的孔与盘架上的孔对齐。

    d. 装上螺丝，将硬盘固定在盘架上。
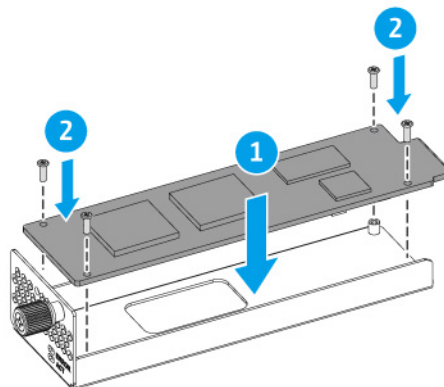
3. 将托盘装入硬盘架。

    a. 将托盘插入硬盘架。
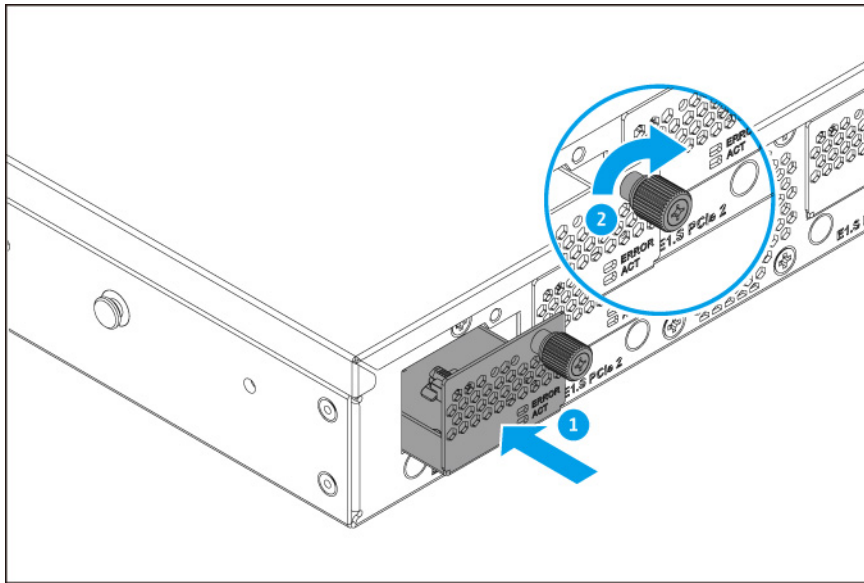
b. 拧紧将托盘固定到机箱的螺丝。

安装 9.5 mm 和 15 mm E1.S 固态硬盘

- 9.5 mm 和 15 mm E1.S 固态硬盘需要单独购买的 QNAP 硬盘托盘 TRAY-E1S-01。

- 有关兼容的 E1.S SSD 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。

1. 取下硬盘托盘。

    a. 松开将托盘固定到机箱的螺丝。
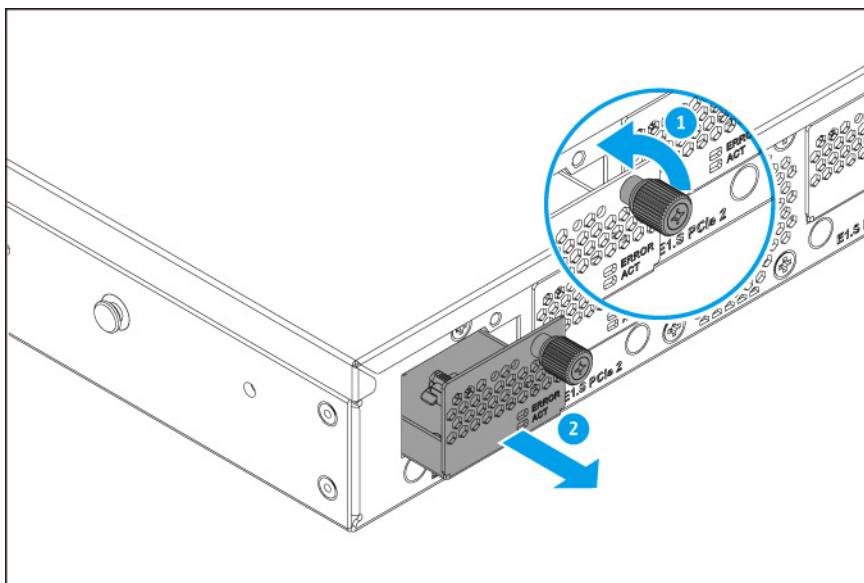
b. 拉出托盘。

2. 安装 E1.S SSD。

    a. 将硬盘放在 TRAY-E1S-01 托盘底座上，让硬盘上的孔与托盘底座上的孔对齐。

    b. 装上螺丝，将硬盘固定在托盘底座上。
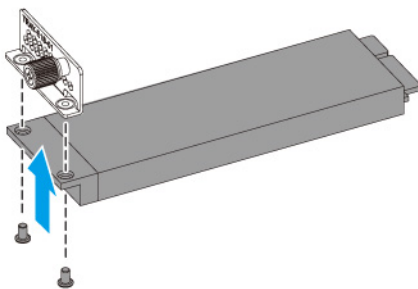
3. 将托盘装入硬盘架。

    a. 将托盘插入硬盘架。
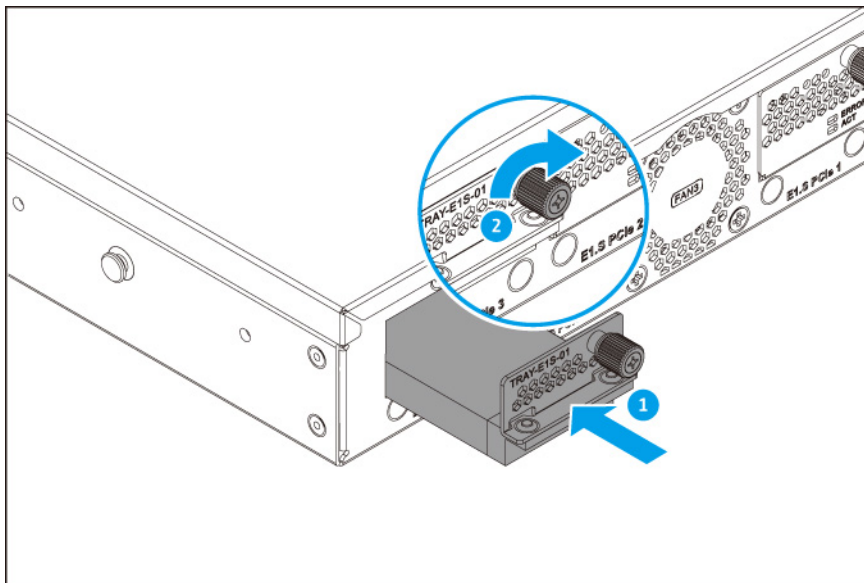
b. 拧紧将托盘固定到机箱的螺丝。

安装 QXG-ES10G1T 网络扩展卡

> **警告**
>
> • 请执行静电放电 (ESD) 规程，以避免组件损坏。

1. 取下硬盘托盘。

   a. 松开将托盘固定到机箱的螺丝。

   b. 拉出托盘。
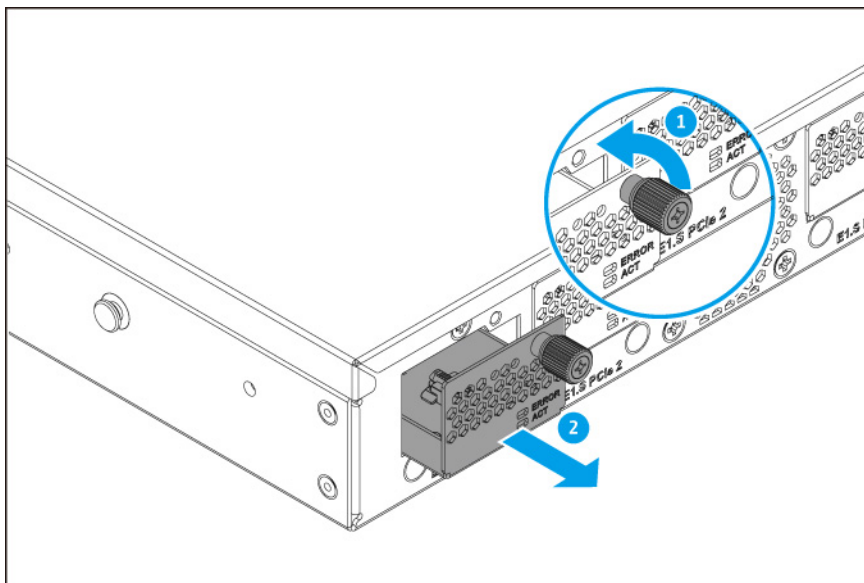
2. 将 QXG-ES10G1T 扩展卡托盘装入托架。

   a. 将托盘插入硬盘架。

b. 拧紧将托盘固定到机箱的螺丝。
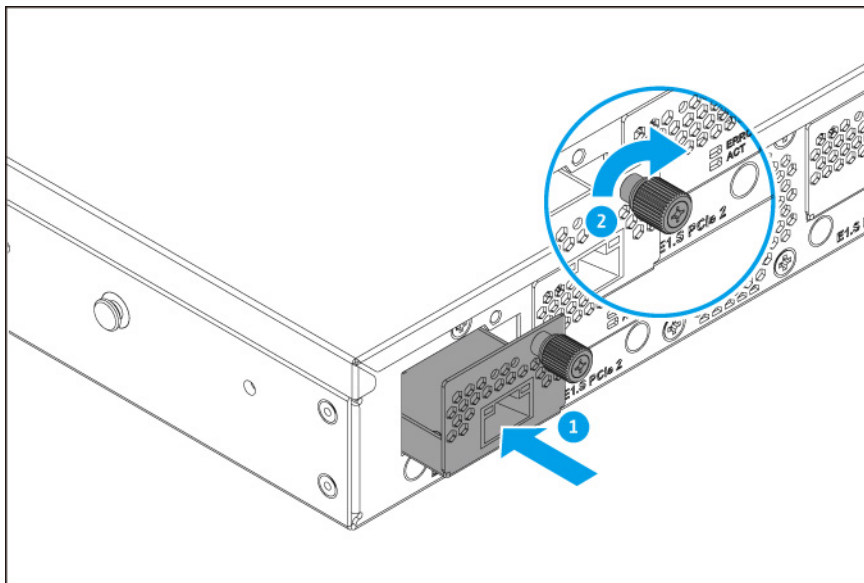
更换内存模块

TS-h765eU 有一个内存插槽。您可以通过升级内存模块来增加 NAS 的内存容量。

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**
>
> -
>   **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。
>
> -
>   **运动的其他组件：**使您的双手和身体其他部位远离正在运动的其他组件。
>
> - 请执行静电放电 (ESD) 规程，以避免组件损坏。

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. 取下顶盖。

   a. 卸下用于将顶盖固定到机箱的螺丝。
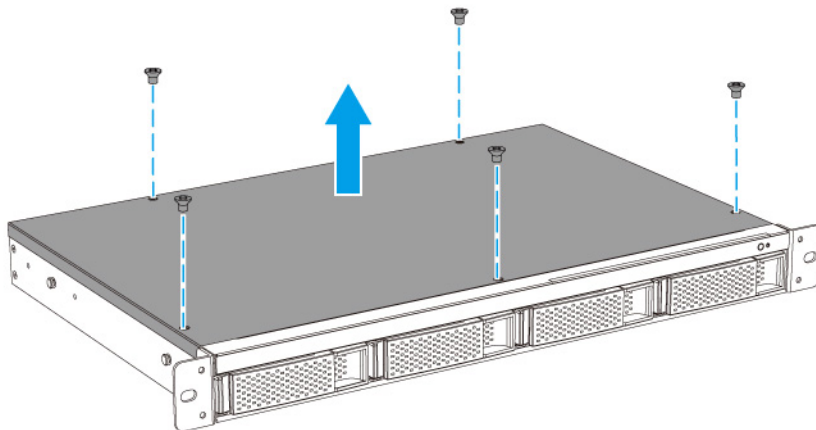
   b. 将顶盖向后滑动。

   c. 从设备上提起顶盖。
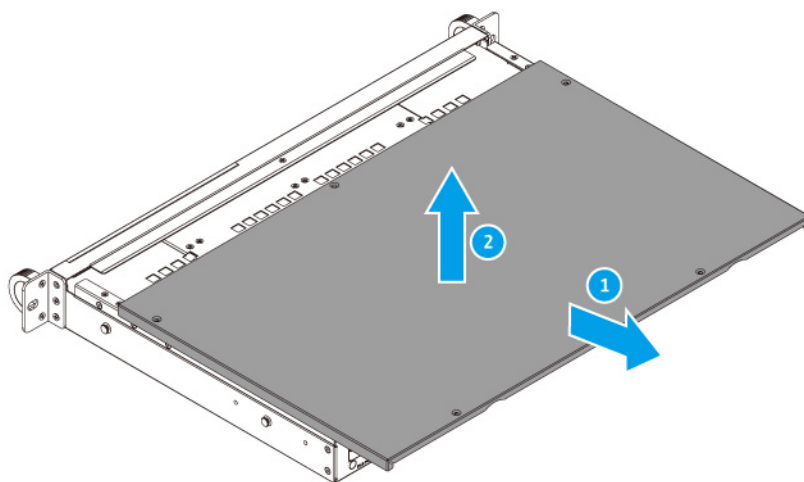
5. 取下已安装的内存模块。

    a. 同时向外推动固定夹以释放模块。
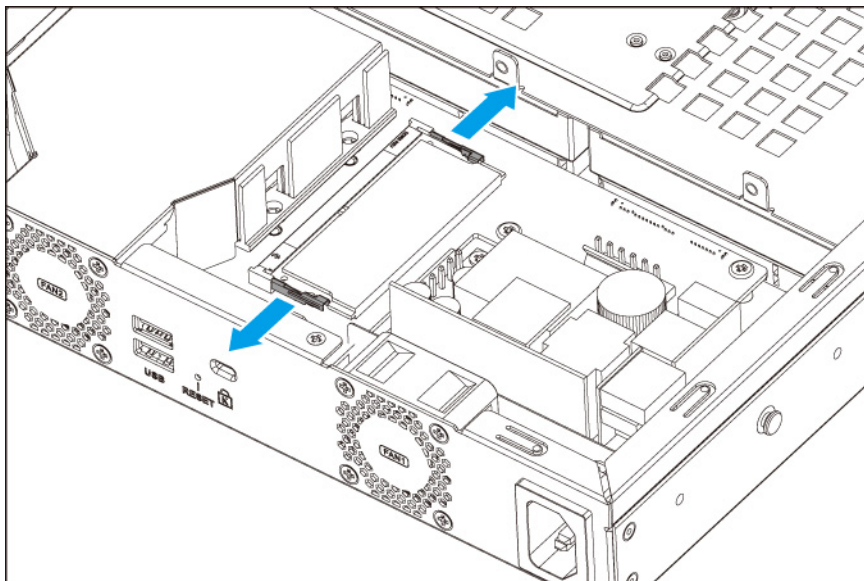
    b. 确认模块向上倾斜并已完全脱离插槽。

> **警告**
> 如果尝试在模块尚未完全脱离时将其取出，可能会损坏模块和系统主板。

    c. 握住模块边缘。
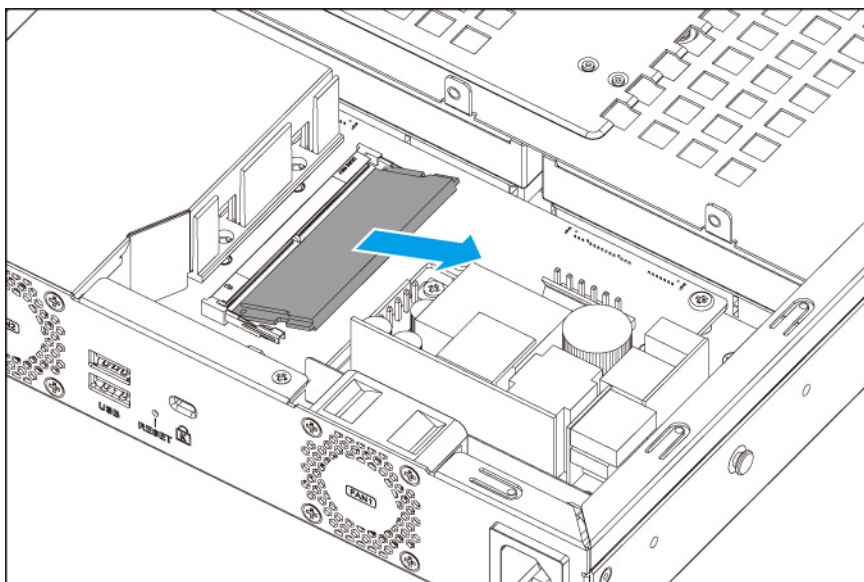
d. 小心将模块滑出插槽。

> **警告**
>
> - 请勿触摸内部组件，特别是金属接头。
> - 不要折弯模块。

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。
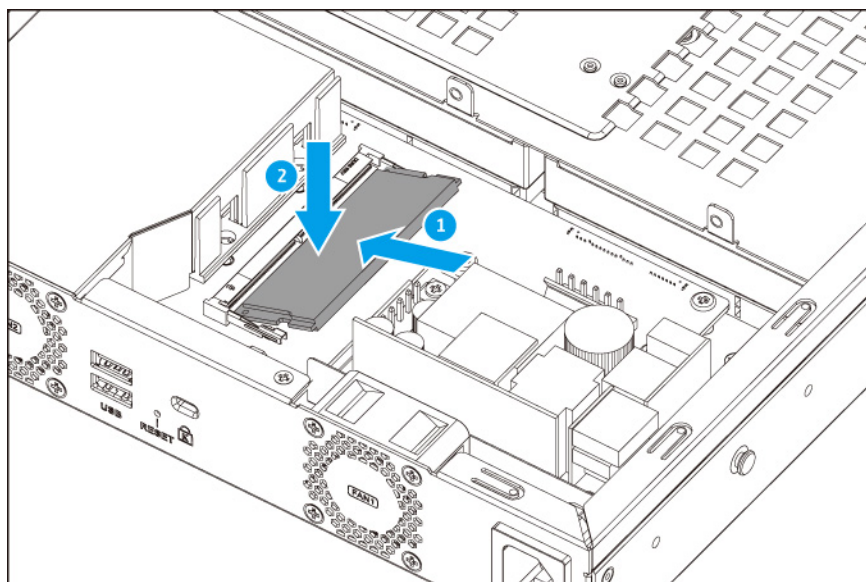
7. 安装顶盖。

    a. 将盖板放在设备上。

b. 将顶盖向前滑动。
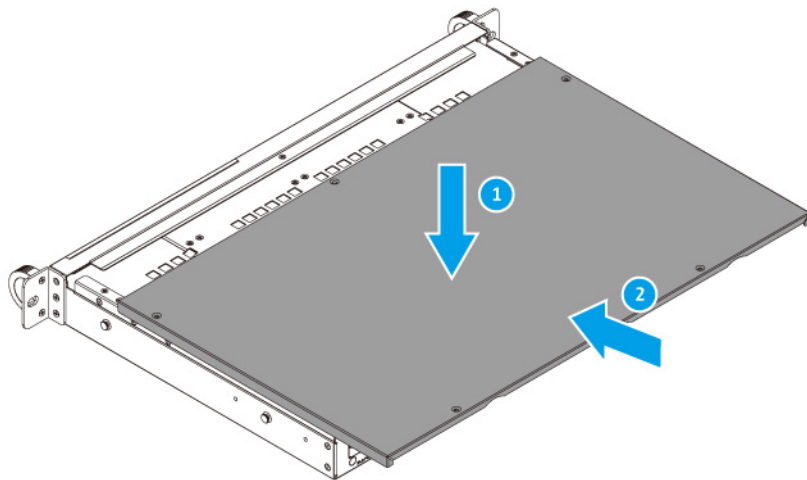
c. 装上用于将顶盖固定到机箱的螺丝。
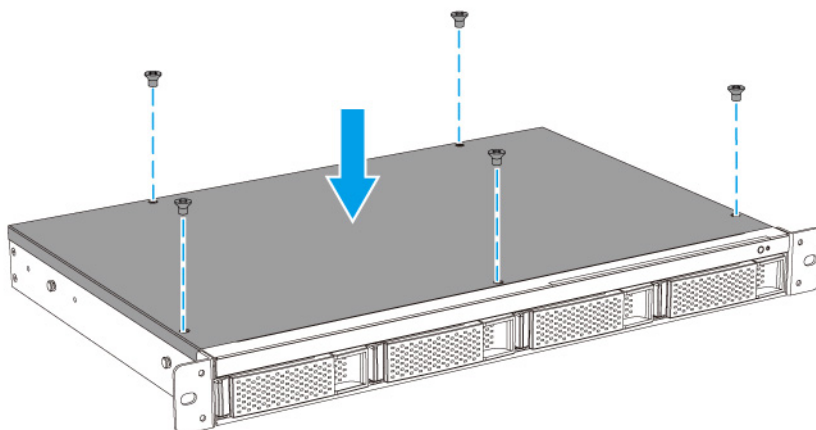
8. 连接所有线缆和外接部件。

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 QuTS hero。

    b. 转到**控制台** > **系统** > **系统状态** > **硬件信息**。

    c. 检查**总内存**值。

连接 USB 扩展单元

NAS 支持 5 个 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 https://www.qnap.com/go/compatibility-expansion。

扩展单元型号	描述	所需配件
TR-002	· 使用 USB 3.2 Gen 2 C 型接口 · 支持 SATA HDD/SSD	USB 3.2 Gen 2 A 型至 C 型线缆
TR-004	· 使用 USB 3.2 Gen 1 C 型接口 · 支持 SATA HDD/SSD	USB 3.2 Gen 2 A 型至 C 型线缆
TR-004U	· 使用 USB 3.2 Gen 1 C 型接口 · 支持 SATA HDD/SSD	· USB 3.2 Gen 1 A 型至 C 型线缆 · RAIL-B02
TL-D800C	· 使用 USB 3.2 Gen 2 C 型接口 · 支持 SATA HDD/SSD	USB 3.2 Gen 2 A 型至 C 型线缆
TL-R1200C-RP	· 使用 USB 3.2 Gen 2 C 型接口 · 支持 SATA HDD/SSD	· USB 3.2 Gen 2 A 型至 C 型线缆 · RAIL-B02

1. 关闭 NAS 电源。

2. 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。

连接 USB 扩展单元

b. 将 USB 线缆连接到 NAS 后面板上的 USB 3.2 Gen 1 A 型端口。
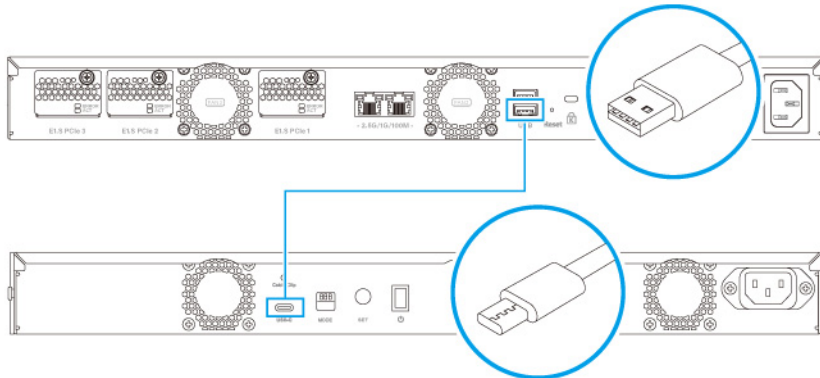
3. 为扩展单元接通电源。

4. 启动 NAS 电源。

5. 确认 NAS 能够识别扩展单元。

    a. 以管理员身份登录 QuTS hero。

    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。

导轨套件

导轨套件未随设备提供，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。

TS-h765eU 兼容以下导轨套件型号：

型号	兼容的导轨套件
TS-h765eU	• RAIL-B02 • RAIL-S01

安装信息位于导轨套件包中。

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-h765eU 的手柄需要人工安装。

1. 关闭 NAS 电源。

2. 将角码安装到设备上。

    a. 将角码上的孔对准机箱上的孔。

> **注意**
> 确保手柄与前面板朝向一致。

    b. 装上螺丝，将角码固定到机箱上。
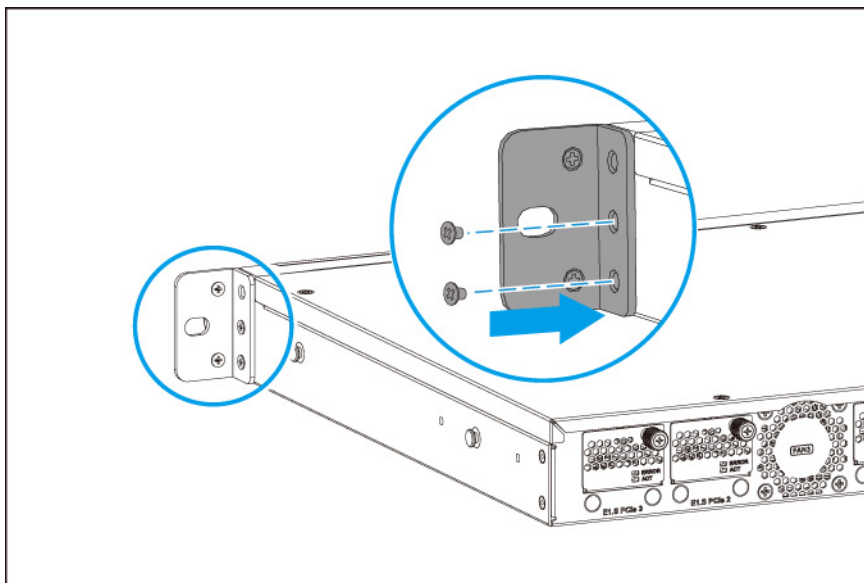
3. 将第二个手柄安装到机箱的另一侧。

4. 启动 NAS 电源。

QuTS hero 安装

TS-h765eU 使用 QNAP QuTS hero 操作系统。可以使用以下任一方法安装 QuTS hero。

方法	描述	要求
Qfinder Pro 安装（推荐）	如果 NAS 已连接到您的局域网，可以执行以下操作： • 使用 Qfinder Pro 定位 NAS。 • 完成"智能安装指南"向导中的步骤。 > **注意** > 有关详细信息，请参见使用 Qfinder Pro 初始化 QuTS hero。	• 计算机 • 网线 • Qfinder Pro 安装程序

方法	描述	要求
云安装	如果 NAS 已连接到 Internet，可以执行以下操作： • 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。 **注意** 有关详细信息，请参见使用云安装网站初始化 QuTS hero。	• 计算机或移动设备 • myQNAPcloud 帐户 • Cloud Key

使用 Qfinder Pro 初始化 QuTS hero

您可以使用 Qfinder Pro 初始化 QuTS hero，前者是一个实用工具，设计用于帮助您在网络上查找并管理 QNAP 设备。

> **警告**
> 安装 QuTS hero 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. 启动设备。

2. 将设备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。

   > **注意**
   > 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. 如果屏幕显示其他操作系统，请单击 **QuTS hero**。

   > **注意**
   > 仅当 NAS 支持安装多个操作系统且安装的默认操作系统不是 QuTS hero 时，才需要执行此步骤。

   NAS 将重新启动，智能安装屏幕会显示 QuTS hero 作为要安装的操作系统。

6. 单击**启动智能安装指南**。
   此时会出现**安装固件**窗口。

7. 使用以下任意方法安装固件：

安装方法	步骤
自动	单击**开始**。 自动搜索可用固件更新并安装固件。
手动安装	a. 单击**手动安装**。 此时会出现**安装固件**窗口。 b. 单击**浏览**。 此时会出现上传文件窗口。 c. 选择文件。 d. 单击**打开**。 启动固件安装。
跳过	单击**跳过**。 跳过固件安装。

8. 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。

- **用户名**：指定包含 1 至 32 个字符的管理员用户名。用户名可以包含字母（A 到 Z、a 到 z）、数字（0 到 9）、和连字符 (-)、多字节中文、日文、韩文和俄文字符。
用户名不得包含以下特殊字符：重音符 (')、星号 (*)、等号 (=)、加号 (+)、方括号 ([ ])、花括号 ({})、斜线 (\)、竖线 (|)、分号 (;)、冒号 (:)、撇号 (')、引号 (")、逗号 (,)、小于号 (<)、大于号 (>)、反斜线 (/)、问号 (?)、百分号 (%)、美元符号 ($) 和空格。

> **重要**
>
> 要保护您的 NAS 免受暴力破解攻击，请在 QuTS hero 初始化期间创建新的系统管理员帐户，以禁用默认"admin"帐户。

- **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。

9. 单击**下一步**。

10. 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。

11. 单击**下一步**。
此时会出现**配置网络设置**屏幕。

12. 选择**自动获取 IP 地址(DHCP)**。

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**初始化**后，将先删除硬盘上的所有数据，然后再安装 QuTS hero。

16. 单击**初始化**。
QuTS hero 初始化即开始。此过程可能需要几分钟时间才能完成。
初始化之后，您可以单击**转到 NAS 管理**以开始使用 QuTS hero 并配置其他设置。

使用云安装网站初始化 QuTS hero

您可以在云安装网站上初始化 QuTS hero，此网站设计用于帮助您设置 QNAP 设备。

> **警告**
> 初始化 QuTS hero 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. 启动设备。

2. 将设备连接到 Internet。

3. 使用以下方法之一转到"QNAP Cloud 安装"网站：
   - 在计算机上，转到您所在区域的专用网站。
       - 全球：https://install.qnap.com
       - 中国：https://install.qnap.com.cn
   - 或使用移动设备扫描 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**。

> **提示**
> 如果您的 NAS 已连接到 Internet，您还可以转到 https://install.qnap.com/set 以输入印刷在 NAS 上的 Cloud Key。这样即使 NAS 与您的计算机不在同一网络上，您也可以初始化 NAS。

   安装向导将在默认 Web 浏览器中打开。

5. 创建帐户或登录 myQNAPcloud。

> **注意**
> 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。

> **注意**
>
> - 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 QuTS hero，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. 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**。

- 如果屏幕显示其他操作系统，请单击 **QuTS hero**。
NAS 将重新启动，智能安装屏幕会显示 QuTS hero 作为要安装的操作系统。

9. 单击**启动智能安装指南**。
此时会出现**安装固件**窗口。

10. 使用以下任意方法安装固件：

安装方法	步骤
自动	单击**开始**。 自动搜索可用固件更新并安装固件。
手动安装	**a.** 单击**手动安装**。 此时会出现**安装固件**窗口。 **b.** 单击**浏览**。 此时会出现上传文件窗口。 **c.** 选择文件。 **d.** 单击**打开**。 启动固件安装。
跳过	单击**跳过**。 跳过固件安装。

11. 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。

- **用户名**：指定包含 1 至 32 个字符的管理员用户名。用户名可以包含字母（A 到 Z、a 到 z）、数字（0 到 9）、和连字符 (-)、多字节中文、日文、韩文和俄文字符。
  用户名不得包含以下特殊字符：重音符 (`)、星号 (*)、等号 (=)、加号 (+)、方括号 ([ ])、花括号 ({})、斜线 (\)、竖线 (|)、分号 (;)、冒号 (:)、撇号 (')、引号 (")、逗号 (,)、小于号 (<)、大于号 (>)、反斜线 (/)、问号 (?)、百分号 (%)、美元符号 ($) 和空格。

> **重要**
>
> 要保护您的 NAS 免受暴力破解攻击，请在 QuTS hero 初始化期间创建新的系统管理员帐户，以禁用默认"admin"帐户。

- **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。

12. 单击**下一步**。

13. 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。

14. 单击**下一步**。
   此时会出现**配置网络设置**屏幕。

15. 选择**自动获取 IP 地址(DHCP)**。

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**初始化**后，将先删除硬盘上的所有数据，然后再安装 QuTS hero。

19. 单击**初始化**。
   QuTS hero 初始化即开始。此过程可能需要几分钟时间才能完成。
   初始化之后，您可以单击**转到 NAS 管理**以开始使用 QuTS hero 并配置其他设置。

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 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

重要

要保护您的设备免受暴力破解攻击，QNAP 建议在系统重置后禁用默认 `admin` 帐户。要禁用默认 `admin` 帐户，您必须先创建新管理员帐户，注销 `admin` 帐户，然后使用新帐户登录。

操作	用户操作	结果

基本系统重置	按住此按钮 3 秒钟。	以下设置将重置为默认值：
		
		• admin 帐户将自动启用。
		
		• 系统管理员密码：有关默认密码的详细信息，请参见此常见问题。
		
		• TCP/IP 配置：
		
		    • 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

高级系统重置	按住此按钮 10 秒钟。	恢复默认出厂设置。 • 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。

系统状态 LED

状态	描述
红绿交替闪烁，间隔 0.5 秒	• 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。

状态	描述
红色	• 硬盘无效。 • 卷的容量已满。 • 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）。
绿色	设备已就绪。
闪烁绿色，间隔 0.5 秒	• 设备未配置。 • 硬盘未格式化。
熄灭	• 所有硬盘都处于待机模式。 • 设备已关机。

硬盘 LED

状态	描述
闪烁红色	正在访问数据，在此过程中发生了硬盘读/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。

硬盘状态 LED

状态	描述
绿色	硬盘就绪。
红色	发生硬盘读/写错误。
闪烁红色，每秒 5 次	操作系统正在定位硬盘。
熄灭	未检测到硬盘。

硬盘活动 LED

状态	描述
绿色	硬盘就绪。
闪烁绿色	正在访问硬盘。
熄灭	未检测到硬盘。

LAN LED

状态	描述
橙色	网络连接已建立。
闪烁橙色	正在从网络访问设备。
熄灭	设备未连接至网络。

2.5 Gb 以太网速度 LED

状态	描述
绿色	网络连接正以 2.5 Gbps 的速度运行。
橙色	• 网络连接正以 1 Gbps 的速度运行。 • 网络连接正以 100 Mbps 的速度运行。

状态	描述
熄灭	• 网络连接正以 10 Mbps 的速度运行。 • 没有网络连接。

2.5 Gb 以太网活动 LED

状态	描述
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。

警告音

时长	频率	描述
短提示音（0.5 秒）	1	• NAS 正在启动。 • 按下重置按钮 3 秒钟后，NAS 将重置配置。 • 按下重置按钮 15 秒钟后，NAS 将重置配置并重新启动。 • 操作系统已更新。
长提示音（1.5 秒）	3（每 5 分钟）	• 系统风扇故障。 • 风扇模块已移除。
	2	• 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。 • 硬盘正在重建。 • 插入或抽出硬盘。
	1	• 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. NAS 迁移

通过将所有硬盘从源 NAS 安装到目标 NAS，可以将数据和设置从当前 NAS 迁移到另一个型号的 NAS，从而使中断次数降到最低。迁移后，目标 NAS 上将保留 RAID 配置和其他设置。

QuTS hero NAS 迁移

NAS 迁移要求

只能将硬盘和系统设置迁移到特定的 NAS 型号，具体取决于源 NAS。有关与直接 NAS 迁移兼容的 NAS 型号的列表，请参见 https://www.qnap.com/en/nas-migration。

设备必须符合以下要求：

- 目标 NAS 必须在与源 NAS 相同的 QuTS hero 版本（或更高版本）上运行。

> **重要**
> 由于文件系统不兼容，因此不支持 QTS NAS 和 QuTS hero NAS 之间的系统迁移。

> **警告**
> 在 QTS NAS 和 QuTS hero NAS 之间迁移硬盘可能导致数据损坏。

- 目标 NAS 必须有足够可用的硬盘架，以容纳要从源 NAS 迁移的所有硬盘。

对于不支持 NAS 迁移的 NAS 型号，请参见如何使用 HBS3 在 QTS 和 QuTS hero 之间迁移数据和文件夹权限。

NAS 迁移后的状态和设置变化

迁移后，NAS 数据和设置的状态会发生变化。

数据和设置	NAS 迁移后
注册 myQNAPcloud 名称	注册的 myQNAPcloud 名称不会迁移。
对共享文件夹加密	如果 NAS 不支持文件系统加密，加密的共享文件夹不会迁移。 **警告** 为防止数据丢失，请备份加密共享文件夹的加密密钥并将其保存在安全的位置。也可以选择在迁移之前解密共享文件夹。

数据和设置	NAS 迁移后
共享文件夹	所有共享文件夹及其中存储的下载文件都会得到保留。 **警告** 为防止数据丢失，请在迁移之前备份加密共享文件夹的加密密钥或密码，并将其保存在安全的位置。 **重要** 迁移后，必须重新配置目标 NAS 上的文件夹权限。
网络	如果目标 NAS 上的网络端口数量或规格与源 NAS 不同，则以下网络和虚拟设置可能会更改并需要重新配置：端口中继、虚拟机、Thunderbolt 等。
Windows AD 配置	必须重新配置 Windows AD 配置。
许可证	许可证不会迁移。 **警告** 为防止丢失所有软件许可证，QNAP 建议在数据迁移之前停用源 NAS 上的许可证。
应用程序	如果目标 NAS 的 RAM 少于源 NAS，则以下功能和应用程序可能无法运行：Virtualization Station、Qsirch 和快照。
服务	只能使用目标 NAS 支持的服务。
多媒体功能	默认情况下，会禁用某些多媒体功能。

迁移 NAS

重要

执行 NAS 迁移之前，请确保您已了解所有要求以及迁移后可能发生的变化。
有关详细信息，请参见以下主题：

- NAS 迁移要求
- NAS 迁移后的状态和设置变化

1. 关闭源 NAS 和目标 NAS。

2. 取下硬盘。

> **重要**
> QNAP 建议在安装硬盘时按照源 NAS 硬盘顺序安装。拆除硬盘时，记下硬盘托盘顺序。

    a. 从源 NAS 中取下硬盘。

    b. 从目标 NAS 中取下硬盘托盘。

3. 安装硬盘。

    a. 将源 NAS 硬盘安装到目标 NAS 硬盘托盘上。

    b. 将硬盘托盘插入目标 NAS 中。

4. 启动目标 NAS 的电源。

5. 在目标 NAS 上以管理员身份登录 QuTS hero。
目标 NAS 会自动检查最新固件更新。

6. 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 QuTS hero 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 QuTS hero。

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。
RAID 50	≥ 6	每个子组的一个磁盘有故障。
Triple Mirror	3 的倍数。（例如，3、6、9、12 个磁盘等。）	一个或两个成员硬盘有故障。
RAID-TP	≥ 5	一个、两个或三个成员硬盘有故障。

1. 登录 QuTS hero。

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** > **存储/快照**。

11. 找到包含新硬盘的存储池，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。用户可以从降级模式恢复非活动 RAID 1、RAID 5、RAID 6、RAID 10 或 RAID 50 组。

RAID 类型	RAID 恢复支持	磁盘数量	磁盘容错数量
单盘	是	1	不适用
JBOD	是	≥ 2	不适用
RAID 0	是	≥ 2	不适用
RAID 1	是	2	1
RAID 5	是	≥ 3	1
RAID 6	是	≥ 4	2
RAID 10	是	≥ 4（必须为偶数）	每个子组的一个磁盘有故障。
RAID 50	是	≥ 6	每个子组的一个磁盘有故障。
Triple Mirror	是	3 的倍数。（例如，3、6、9、12 个磁盘等。）	2
RAID-TP	是	≥ 5	3

支持和其他资源

QNAP 提供了以下资源：

资源	URL
文档	https://download.qnap.com

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

7. 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 设备

QuTS hero

采用 ZFS 文件系统的 QNAP NAS 操作系统

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Version 3, 29 June 2007

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