




QNAP

TS-i410X

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 保修条款和条件](#)。

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地方使用。

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门锁。
- 如果导轨完全展开并拔掉门锁, 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。

2. 产品概述

本章提供有关 QNAP TS-i410X 设备的基本信息。

关于 TS-i410X

TS-i410X NAS 具有 10 GbE 连接功能以加速虚拟化应用及其他任务，还具有用于回放及实时格式转换的 4K HDMI 输出功能，以及使用 SSD 缓存而优化的 SSD 性能以提升 IOPS 性能。它专为恶劣环境设计，可在 -40°C 至 70°C (-40°F 至 158°F) 的温度下工作，而其 9V-36V DC 宽范围电源也是工厂、仓库、运输和其他恶劣环境的理想之选。

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](#)。

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-i410X-8G	4	8 GB	单一

组件	TS-i410X-8G
处理器	
CPU	Intel® Atom® x6425E
频率	4 核/4 线程 2.0 GHz 基本/3.0 GHz 脉冲
架构	x86 64 位
加密引擎	AES-NI
显卡	适用于第十代 Intel® 处理器的 Intel® UHD Graphics

组件	TS-i410X-8G
内存	
预安装内存	8 GB RAM
最大内存	8 GB RAM
闪存	4 GB (双重引导操作系统保护)
存储	
硬盘架	4 x 2.5 英寸 SATA 6 Gbps
	<p>提示</p> <p>硬盘架向后兼容 SATA 3 Gbps 硬盘。</p>
硬盘兼容性	<p>2.5 英寸硬盘架：</p> <ul style="list-style-type: none"> • 2.5 英寸 SATA 固态硬盘
	<p>注意</p> <p>有关兼容的硬盘型号和扩展卡的列表，请转到 https://www.qnap.com/compatibility。</p>
SSD 缓存加速支持	此设备对所有硬盘均支持 SSD 缓存加速。
热插拔	此设备对所有硬盘均支持热插拔。
网络	
10 千兆位网络接口	2 x 10G BASE-T (10G/5G/2.5G/1G)
外部 I/O 端口和扩展插槽	
USB 端口	4 x USB 3.2 Gen 2 A 型
HDMI 端口	1 x HDMI 1.4b (30Hz 时分辨率最高 3840 x 2160)
界面	
按钮	<ul style="list-style-type: none"> • 电源 • 重置

组件	TS-i410X-8G
尺寸	
外形规格	立式
尺寸 (高 x 宽 x 深)	65 x 180 x 254 mm (2.56 x 7.09 x 10 英寸)
净重	2.54 kg (5.6 磅)
其他	
电源单元	<ol style="list-style-type: none"> 1. 外部电源适配器 90W 及以上, 100-240V AC 2. 9-36V DC 输入 <p>警告 为避免人员受伤或组件受损, 请勿同时插入两个电源输入。</p>
系统电池	<p>CR2032 锂电池 (3V, 225 mAh)</p> <p>警告</p> <ul style="list-style-type: none"> • 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。 <p>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。</p>
工作温度	-40°C 至 70°C (-40 至 158°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)
安装支架	<ul style="list-style-type: none"> • VESA 支架: 75 x 75 mm (2.95 x 2.95 英寸) • 承重: > 15 kg (33.07 磅) • M4x6 螺丝 • 孔深: 7.5 mm (0.26 英寸) • 齿槽深度: 5 mm (0.20 英寸)

提示

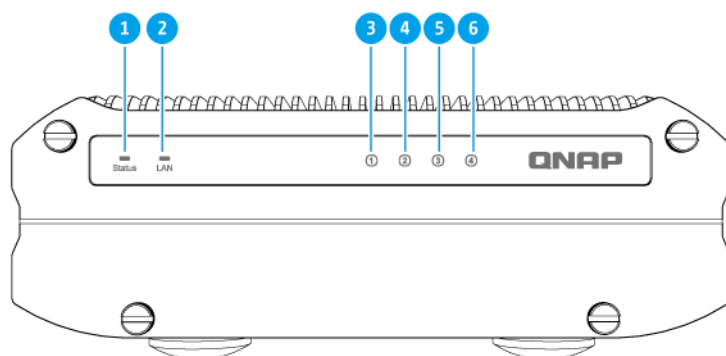
有关兼容的硬盘型号和扩展卡的列表，请转到 <https://www.qnap.com/compatibility>。

包装内容

项目	数量
TS-i410X	1
交流电源适配器	1
以太网线	1 x Cat6a (RJ45)
适用于 2.5 英寸硬盘的螺丝	16
快速安装指南 (QIG)	1

组件

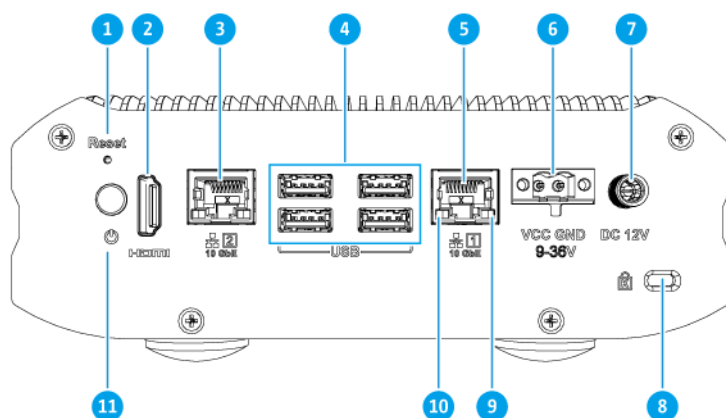
前面板



编号	组件	编号	组件
1	状态 LED	4	硬盘 2 LED
2	LAN LED	5	硬盘 3 LED

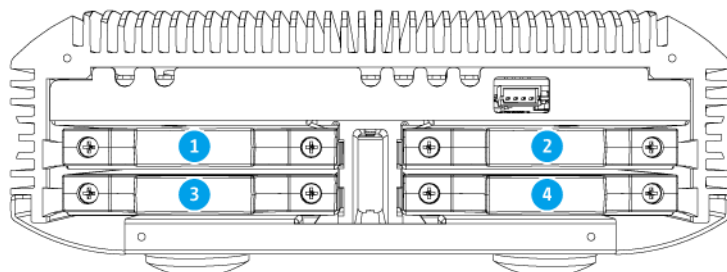
编号	组件	编号	组件
3	硬盘 1 LED	6	硬盘 4 LED

后面板



编号	组件	编号	组件
1	重置按钮	7	电源输入：DC 12V
2	HDMI 1.4b 端口	8	Kensington 安全锁孔
3	10G BASE-T RJ45 端口 1	9	10 Gb 以太网活动 LED
4	USB 3.2 Gen 2 (10Gbps) A 型端口	10	10 Gb 以太网速度 LED
5	10G BASE-T RJ45 端口 2	11	电源按钮
6	电源输入：VCC GND 9-36V	-	-

硬盘编号



注意

此图显示取下了前盖的设备。

安装要求

类别	项目
环境	<ul style="list-style-type: none"> • 室温：-40°C 至 70°C (-40 至 158°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"> • 计算机或 NAS • 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 • 平头螺丝刀 • 防静电腕带

设置 NAS

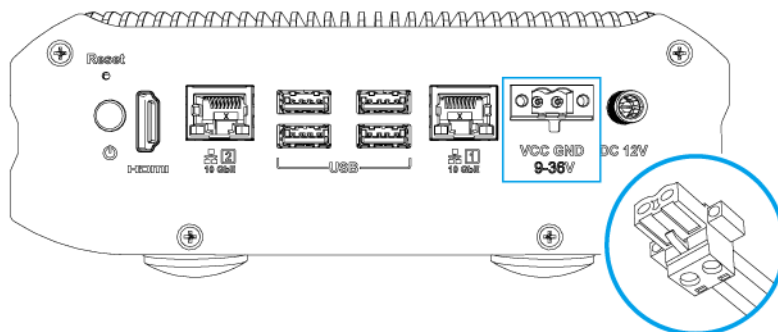
重要

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，请参见在[2.5 英寸托盘上安装 2.5 英寸固态硬盘](#)。
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。

注意

可选的 VCC GND 9-36V 输入需要欧式接线端子连接器。



警告

为避免人员受伤或组件受损，请勿同时插入两个电源输入。

5. 启动 NAS 电源。
6. 安装 QTS。
有关详细信息，请参见[QTS 安装](#)。
7. 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和连接扩展单元的信息。

在 2.5 英寸托盘上安装 2.5 英寸固态硬盘

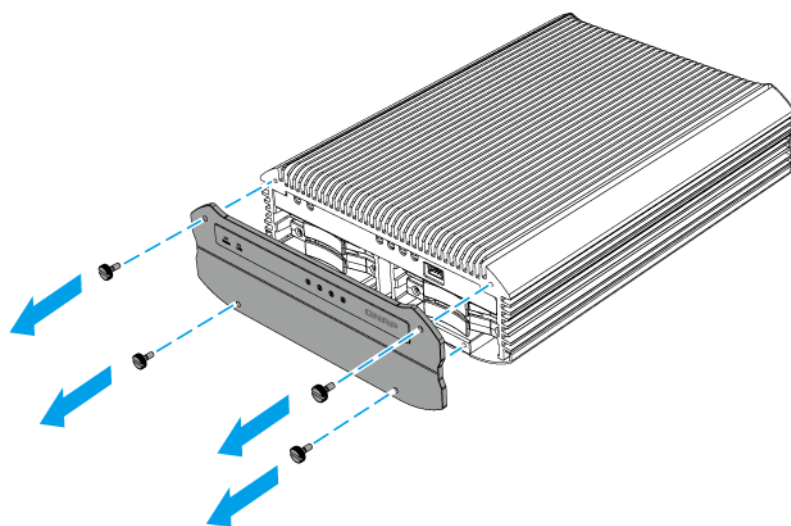
警告

- 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。



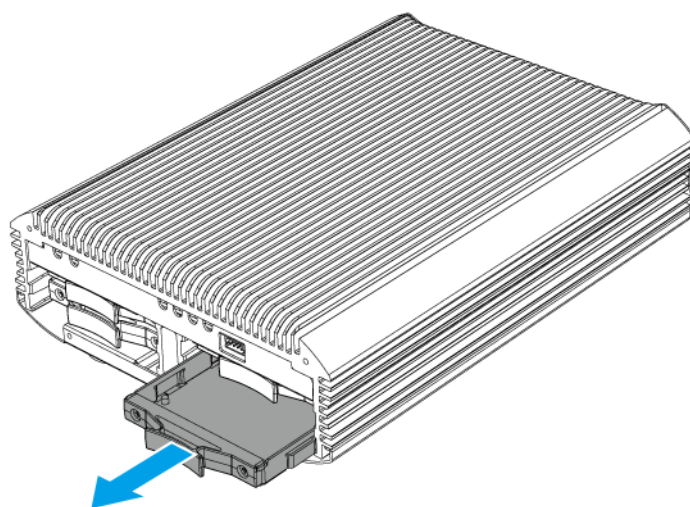
- **运动的其他组件：**使您的双手和身体其他部位远离正在运动的其他组件。
- 使用工业级宽温 SSD 时，必须将 QTS 中的磁盘警告设置调整至 85°C，才能匹配宽温 SSD 的工作温度上限。您可以设置一次，然后将其应用于所有磁盘。在 QTS 中，常规商用 SSD 的默认温度设置为 70°C。

1. 关闭 NAS 电源。
2. 取下前盖。



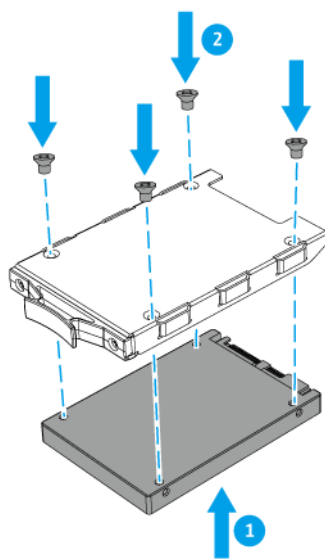
3. 取下硬盘托盘。

- a. 拉出托盘。**



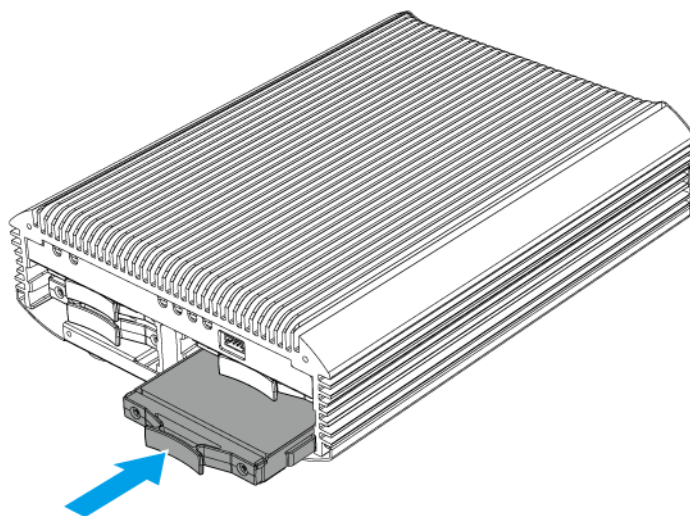
4. 将硬盘安装到托盘上。

- 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。**

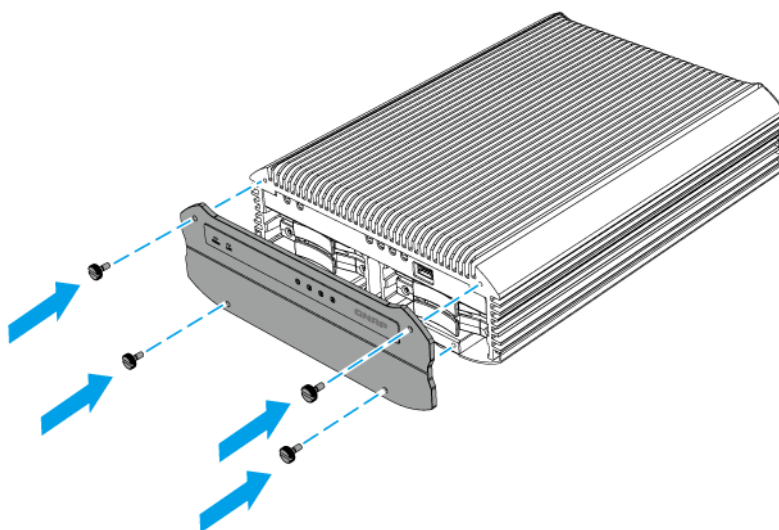


- b. 安装螺丝。**

5. 将托盘装入硬盘架。
 - a. 将托盘插入硬盘架。



6. 安装前盖。



7. 启动 NAS 电源。

连接 USB 扩展单元

TS-i410X 最多支持连接两个 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。

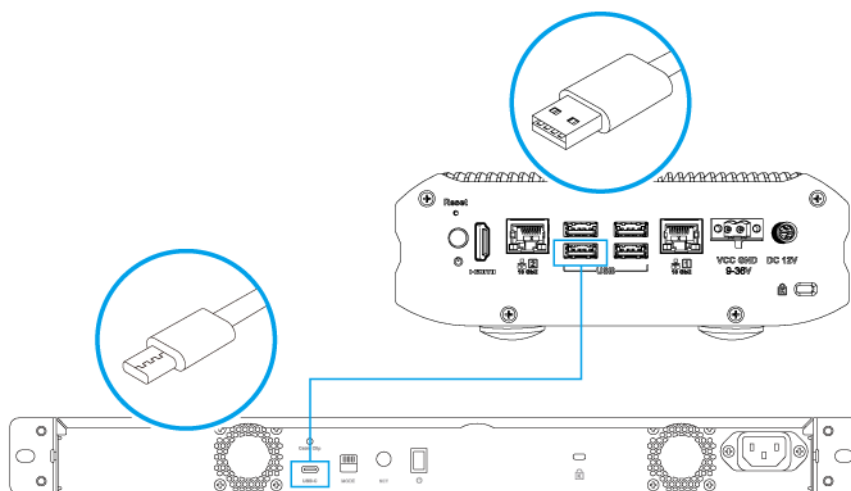
有关详细信息，请转到 <https://shop.qnap.com/>。

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	需要的配件
TR-002	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 1 C 型接口 • 支持 SATA HDD/SSD 	<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
TR-004	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 1 C 型接口 • 支持 SATA HDD/SSD 	<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
TR-004U	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 1 C 型接口 • 支持 SATA HDD/SSD 	<ul style="list-style-type: none"> • USB 3.2 Gen 1 A 型至 C 型线缆 • RAIL-B02
TL-D800C	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 2 C 型接口 • 支持 SATA HDD/SSD 	<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-R1200C-RP	<ul style="list-style-type: none"> • 使用 USB 3.2 Gen 2 C 型接口 • 支持 SATA HDD/SSD 	<ul style="list-style-type: none"> • USB 3.2 Gen 2 A 型至 C 型线缆 • RAIL-B02

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 2 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。

QTS 安装

TS-i410X 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

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。

重要

要保护您的 NAS 免受暴力破解攻击，请在 QTS 安装期间创建新的系统管理员帐户，以禁用默认“admin”帐户。

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。

注意

要下载 Qfinder Pro，请转到 <https://www.qnap.com/utilities>。

4. 单击下一步。

QNAP 保修服务页面将在默认 Web 浏览器中打开。

5. 单击检查保修期。

QNAP 保修服务窗口将在新 Web 页中打开。

重要

您可以在 [QNAP 保修服务](#) 中查看设备保修策略或购买延长保修计划。

6. 关闭保修页面。

智能安装指南将在默认 Web 浏览器中打开。

7. 单击下一步。

此时会出现输入 NAS 名称和管理员密码屏幕。

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。用户名支持字母 (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 ([])、反斜线 (\)、竖线 (|)、分号 (;)、冒号 (:)、撇号 (')、引号 (")、逗号 (,)、小于号 (<)、大于号 (>)、斜线 (/)、问号 (?)、百分号 (%)
- **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。
- **确认密码**: 再次输入新管理员密码。

9. 单击下一步。

此时会出现设置日期和时间屏幕。

10. 使用以下任意方法指定时区、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。

方式	用户操作
与计算机或设备时间同步	选择与计算机/设备时间一致 NAS 时间与用于配置时间的计算机或设备一致。
手动输入	<p>a. 选择手动输入。</p> <p>b. 指定日期和时间。 NAS 日期和时间与配置的时间一致。</p>

方式	用户操作
自动与 Internet 时间服务器同步	单击 自动与 Internet 时间服务器同步 。 NAS 时间与 NTP 服务器一致。

11. 单击**下一步**。
此时会出现**配置网络设置**屏幕。

12. 使用以下任意方法配置网络设置。

方式	用户操作
自动获取 IP 地址(DHCP)	选择 自动获取 IP 地址(DHCP) 。 系统将自动检测和配置 IP 地址设置。
使用静态 IP 地址	<p>a. 选择使用静态 IP 地址 此时会出现 IP 地址配置页。</p> <p>b. 指定以下 IP 地址配置：</p> <ul style="list-style-type: none"> • 接口 • IP 地址 • 子网掩码 • 默认网关 • 主 DNS 服务器 • 次要 DNS 服务器

13. 单击**下一步**。
此时会出现**Thunderbolt 连接**页。

注意

仅当设备支持 Thunderbolt 时才会出现此页面。您需要使用 Thunderbolt 线缆将设备连接到计算机。

14. 单击**下一步**。
此时会出现**摘要**屏幕。
15. 检查设置。
16. 单击**应用**。
此时会出现确认消息。

警告

单击**确认**后，将先删除硬盘上的所有数据，然后再安装 QTS。

17. 单击**确认**。
QTS 即安装完毕。

使用 Cloud Key 安装 QTS

警告

安装 QTS 将删除硬盘上的所有数据。请先备份您的数据，然后再继续。

重要

要保护您的 NAS 免受暴力破解攻击，请在 QTS 安装期间创建新的系统管理员帐户，以禁用默认“admin”帐户。

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：
 - 在计算机上，转到您所在区域的站点，下载 QTS：
 - 中国：<https://install.qnap.com.cn>
 - 全球：<https://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**。

注意

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 QTS，然后安装 myQNAPcloud Link 可启用此服务。

7. 单击下一步。

QNAP **保修服务**页面将在默认 Web 浏览器中打开。

8. 单击检查保修期。

QNAP **保修服务**窗口将在新 Web 页中打开。

重要

您可以在 **QNAP 保修服务**中查看设备保修策略或购买延长保修计划。

9. 关闭保修页面。

智能安装指南将在默认 Web 浏览器中打开。

10. 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。用户名支持字母 (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 ([])、反斜线 (\)、竖线 (|)、分号 (;)、冒号 (:)、撇号 (')、引号 (")、逗号 (,)、小于号 (<)、大于号 (>)、斜线 (/)、问号 (?)、百分号 (%) 或 "admin"。
- **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。
- **确认密码**: 再次输入新管理员密码。

11. 单击下一步。

此时会出现**设置日期和时间**屏幕。

12. 使用以下任意方法指定时区、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。

方式	用户操作
与计算机或设备时间同步	选择与 计算机/设备时间一致 NAS 时间与用于配置时间的计算机或设备一致。
手动输入	a. 选择手动输入。 b. 指定日期和时间。 NAS 日期和时间与配置的时间一致。
自动与 Internet 时间服务器同步	单击 自动与 Internet 时间服务器同步 。 NAS 时间与 NTP 服务器一致。

13. 单击下一步。

此时会出现**配置网络设置**屏幕。

14. 使用以下任意方法配置网络设置。

方式	用户操作
自动获取 IP 地址(DHCP)	选择 自动获取 IP 地址(DHCP) 。 系统将自动检测和配置 IP 地址设置。
使用静态 IP 地址	<p>a. 选择使用静态 IP 地址。 此时会出现 IP 地址配置页。</p> <p>b. 指定以下 IP 地址配置：</p> <ul style="list-style-type: none"> • 接口 • IP 地址 • 子网掩码 • 默认网关 • 主 DNS 服务器 • 次要 DNS 服务器

15. 单击**下一步**。
此时会出现 **Thunderbolt 连接**页。

注意

仅当设备支持 Thunderbolt 时才会出现此页面。您需要使用 Thunderbolt 线缆将设备连接到计算机。

16. 单击**下一步**。
此时会出现**摘要**屏幕。

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。

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。

重要
仅当设备无响应时才能使用此方法。

重置按钮

操作	用户操作	结果
基本系统重置	按住此按钮 3 秒钟。	<p>以下设置将重置为默认值：</p> <ul style="list-style-type: none"> • 系统管理员密码：有关默认密码的详细信息，请参见此常见问题。 • TCP/IP 配置： <ul style="list-style-type: none"> • 通过 DHCP 自动获取 IP 地址设置 • 禁用巨型帧 • 如果启用端口中继（仅限多局域网型号），则端口中继模式将重置为“主动备份(故障转移)”。 • 系统端口：8080（系统服务端口） • 安全等级：低（允许所有连接） • LCD 面板密码：（空白） • VLAN：禁用
高级系统重置	按住此按钮 15 秒钟。	<p>恢复默认出厂设置。</p> <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。 <div style="background-color: #fff9c4; padding: 5px; margin-top: 10px;"> <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> </div>
	红色	<ul style="list-style-type: none"> • 硬盘无效。 • 磁盘卷的容量已满。 • 磁盘卷的容量即将被占满。 • 系统风扇故障。 • 访问（读/写）数据时出错。 • 在硬盘上检测到坏扇区。 • 设备处于降级只读模式（RAID 5 或 RAID 6 中的两个成员硬盘出现故障，但仍可读取数据）。 • 硬件自检发生错误。
	闪烁红色，间隔 0.5 秒	设备处于降级模式（RAID 1、RAID 5 或 RAID 6 中的一个成员硬盘出现故障）。
	闪烁绿色，间隔 0.5 秒	<ul style="list-style-type: none"> • 设备正在启动。 • 设备未配置。 • 硬盘未格式化。

LED	状态	描述
系统状态	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	网络连接正在运行。
	闪烁橙色	正在从网络访问设备。
	熄灭	设备未连接至网络。
10 Gb 以太网 (RJ45) 速度	绿色	10 GbE 网络连接已建立。
	橙色	网络连接正以低于 10 Gbps 的速度运行。
	熄灭	没有网络连接。
10 Gb 以太网 (RJ45) 活动	橙色	网络连接已建立。
	闪烁橙色	正在传输数据。
	熄灭	没有网络连接。
硬盘	闪烁红色	正在访问数据，但在此过程中发生读/写错误。
	红色	发生硬盘读/写错误。
	闪烁绿色	正在访问数据。
	绿色	硬盘就绪。
	熄灭	未检测到硬盘。

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。 按下重置按钮 3 秒钟后，NAS 将重置配置。 按下重置按钮 10 秒钟后，NAS 将重置配置并重新启动。 操作系统已更新。

时长	频率	描述
短提示音 (0.5 秒)	3	<ul style="list-style-type: none"> 无法检测到已安装的磁盘。 固件已更新。
长提示音 (1.5 秒)	3 (每 5 分钟)	<ul style="list-style-type: none"> 电源发生错误。 系统风扇故障。 风扇模块已移除。 无法将 NAS 数据复制到连接到前 USB 端口的外部存储设备。
	2	<ul style="list-style-type: none"> 存储池的容量即将被占满。 存储池的容量已满。 发生存储池状态错误。 磁盘卷的容量即将被占满。 磁盘卷的容量已满。 硬盘处于降级模式。 硬盘正在重建。 发生卷状态错误。 插入或抽出硬盘。
	1	<ul style="list-style-type: none"> NAS 已关机。 NAS 已通过强制关闭关机 (硬件关闭)。 NAS 已成功开机并准备就绪。
长提示音和短提示音	1 长提示音和 2 短提示音	JBOD 扩展单元已移除。

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。

NAS 迁移要求

只能将硬盘迁移到特定的 NAS 型号，具体取决于源 NAS。有关兼容直接 NAS 迁移功能的 NAS 型号的列表，请参见 <https://www.qnap.com/go/nas-migration>。

设备必须符合以下要求：

- QTS NAS 支持多种类型的 NAS 迁移：
 - ARM NAS 至 ARM NAS
 - x86 NAS 至 x86 NAS
 - ARM NAS 至 x86 NAS

注意

无法从 x86 NAS 迁移至 ARM NAS。

- 目标 NAS 必须在与源 NAS 相同的 QTS 版本（或更高版本）上运行。
- 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，可以使用 HBS 3 迁移现有数据。有关详细信息，请参见[使用 HBS 3 迁移 NAS 数据](#)。

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
注册的 myQNAPcloud 名称	注册的 myQNAPcloud 名称不会迁移。
加密的磁盘卷	如果 NAS 不支持文件系统加密，加密的磁盘卷不会迁移。 <div style="background-color: #ffe6e6; padding: 10px; border: 1px solid #ccc;"> <p>警告</p> <p>为防止数据丢失，请备份加密磁盘卷的加密密钥并将其保存在安全的位置。也可以选择迁移之前解密磁盘卷。</p> </div>

数据和设置	NAS 迁移后
共享文件夹	<p>所有共享文件夹及其中存储的下载文件都会得到保留。</p> <p>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。</p> <p>重要 迁移后，必须重新配置目标 NAS 上的文件夹权限。</p>
网络	<ul style="list-style-type: none"> 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、USB QuickAccess 等。 在 QTS 4.3.5 或更早版本上运行源 NAS 时，必须重新配置网络设置。
Windows AD 配置	必须重新配置 Windows AD 配置。
许可证	<p>许可证不会迁移。</p> <p>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。</p>
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 QTS。
目标 NAS 会自动检查最新固件更新。

使用 HBS 3 迁移 NAS 数据

对于不支持直接迁移的 NAS 型号，可以首先初始化目标 NAS，然后使用 HBS 3 将数据从源 NAS 复制到目标 NAS。

准备目标 NAS

1. 登录 QTS。
2. 创建一个或多个存储池。
有关详细信息，请参见《QTS 用户指南》的“创建存储池”主题。
3. 创建一个或多个卷。
有关详细信息，请参见《QTS 用户指南》的“创建卷”主题。
4. 在目标 NAS 上创建共享文件夹。
有关详细信息，请参见《QTS 用户指南》的“创建共享文件夹”主题。
5. 将 HBS 3 安装到目标 NAS 上。
 - a. 转到 **App Center**。
 - b. 搜索 HBS 3。
 - c. 单击**安装**。
HBS 3 已安装在目标 NAS 上。
6. 启用目标 NAS 上的远程服务器设置。
 - a. 转到 **App Center > HBS 3 > 服务 > RTRR 服务器**。
 - b. 单击**启用 RTRR 服务器**。
此时会出现“RTRR 服务器设置”窗口。

c. 指定 RTRR 服务器设置。

设置	描述
密码	指定由以下各组中的任何字符构成，包含 1 至 16 个字符的密码： <ul style="list-style-type: none"> • 字母：A 至 Z、a 至 z • 数字：0 至 9 • 特殊字符：.-_~!@#\$%^&(){} • 不以空格开头或结尾。
端口	指定用于访问 RTRR 服务器的端口号。

7. 单击应用。

此时会出现确认窗口。

8. 单击确定。

已完成远程服务器设置。

创建单向同步作业

1. 在源 NAS 上，转到 **App Center > HBS 3 > 同步**。

2. 单击**立即同步**。

3. 选择**单向同步作业**。

此时会出现**创建同步作业**窗口。

4. 单击**远程 NAS**。

5. 单击**添加新帐户**。

此时会出现**创建存储空间**窗口。

6. 选择目标 NAS 作为目标存储空间并指定以下内容：

设置	描述
名称	用于标识存储空间的名称。
IP 地址/主机名	用于访问存储空间的 IP 地址或主机名。 <div style="background-color: #fff9c4; padding: 5px; border: 1px solid #ccc;"> <p>提示 单击 🔍 扫描可用设备。</p> </div>
端口	用于访问存储空间的端口号。 此值必须介于 1 至 65535 之间。

设置	描述
密码	用于访问存储空间的密码。
使用 SSL 连接	访问远程 NAS 时需要 SSL 连接。

7. 可选: 测试连接。

测试	描述
检测服务器	测试所选存储空间的可访问性。
速度测试	测试所选存储空间的网络连接速度。

8. 单击**创建**。

9. 单击**选择**。

10. 选择配对文件夹。

重要

- 所选文件夹中的所有子文件夹和文件都会被选中。
- 每个作业最多只能同步 16 个配对文件夹。

a. 在来源的下方，单击 **+**。
此时会打开一个对话框。

b. 选择一个文件夹。

c. 单击**确定**。
该对话框关闭。

d. 在目标的下方，单击 **+**。
此时会打开一个对话框。

e. 选择一个文件夹。

f. 单击**确定**。

g. 可选: 必要时可以添加更多配对文件夹。

11. 单击**下一步**。
此时会出现**计划**屏幕。

12. 选择**立即同步**。

13. 单击**下一步**。
此时会出现**规则**屏幕。

14. 可选: 配置作业规则。

15. 单击**下一步**。
此时会出现**摘要**屏幕。
16. 查看作业摘要。
17. 单击**创建**。
源 NAS 运行创建的单向同步作业。

注意

将共享文件夹从源 NAS 迁移到目标 NAS 可能需要数分钟。

将本地用户或组设置导入目标 NAS

1. 启动源 NAS 的电源。
2. 从源 NAS 备份用户或组设置。
 - a. 登录 QTS。
 - b. 转到**控制台 > 权限 > 用户**。
 - c. 单击**创建**，然后单击**导入/导出用户**。
此时会出现**导入/导出用户**窗口。
 - d. 选择**导出用户和用户组设置**。
 - e. 单击**下一步**。
NAS 用户和用户组设置将导出为文件，并下载到您的计算机上。
3. 源 NAS 上的用户设置已导入目标 NAS。
 - a. 在目标 NAS 上，登录 QTS。
 - b. 转到**控制台 > 权限 > 用户**。
 - c. 单击**创建**，然后单击**导入/导出用户**。
 - d. 选择**导入用户及用户群组设置**。

注意

可以选择向新创建的用户发送通知邮件或覆盖重复用户。

- e. 在您的计算机上，选择从源 NAS 导出的用户设置文件。
源 NAS 用户设置文件已导入目标 NAS。

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 QTS 安装过程中 Qfinder Pro 或 myQNAPcloud 无法定位 NAS，则硬盘或数据可能有故障。

1. 关闭 NAS 电源。
2. 取下所有硬盘。
3. 启动 NAS 电源。
4. 使用 Qfinder Pro 或 myQNAPcloud 定位 NAS。
5. 重新插入硬盘。
6. 继续安装 QTS。

热插拔故障硬盘

在以下情况下，NAS 支持热插拔硬盘：

RAID 类型	磁盘数量	情形
RAID 1	2	一个成员硬盘有故障。
RAID 5	≥ 3	一个成员硬盘有故障。
RAID 6	≥ 4	一个或两个成员硬盘有故障。
RAID 10	≥ 4 (必须为偶数)	每个子组的一个磁盘有故障。

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

10. 转到主菜单 > 存储与快照总管 > 存储 > 存储/快照。

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 组。用户可以从降级模式恢复非活动 RAID 1、RAID 5、RAID 6 或 RAID 10 组。

RAID 类型	RAID 恢复支持	磁盘数量	磁盘容错数量
单一	否	1	不适用
JBOD	否	≥ 2	不适用
RAID 0	否	≥ 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。

支持和其他资源

QNAP 提供了以下资源：

资源	URL
文档	https://download.qnap.com
兼容性列表	https://www.qnap.com/compatibility
NAS 迁移兼容性	https://www.qnap.com/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	https://download.qnap.com
社区论坛	https://forum.qnap.com

资源	URL
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

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

QNAP ID

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

QTS

QNAP NAS 操作系统

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Version 3, 29 June 2007

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- c.** Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d.** Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

- e. Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

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