



QNAP Turbo NAS

TVS-X82、TVS-X82T 和 TVS-1282T3

硬件用户手册

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感谢您选择 QNAP 产品！此用户手册提供 Turbo NAS 的硬件说明及相关功能介绍，请仔细阅读并严格遵守本手册的各项说明。

本用户手册适用于以下 Turbo NAS 型号：

TVS-682-PT-8G、TVS-682-i3-8G、TVS-882-i3-8G、TVS-882-i5-16G、
TVS-882-i5-16G-450W、TVS-1282-i3-8G、TVS-1282-i5-16G、TVS-1282-i7-32G、
TVS-1282-i5-16G-450W、TVS-1282-i7-32G-450W、TVS-682T-i3-8G、TVS-882T-i5-16G、
TVS-1282T-i5-16G、TVS-1282T-i7-32G、TVS-1282T3-i5-16G、TVS-1282T3-i7-32G、
TVS-1282T3-i7-64G

注意

- “Turbo NAS” 以下简称为 “NAS”。
- 部份功能仅适用于特定型号，您所购买的产品可能不支持这些功能。
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2. 如果退回 NAS 包装中的任何组件进行退款或维修，请务必妥善包装以便运输。对于因包装不当而造成的任何形式的损坏，QNAP 将不予赔偿。

规范声明



FCC 声明

QNAP NAS 符合不同的 FCC 合规性类别标准。详情请参考 0。确定设备类别后，请参考以下相应声明。

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FCC A 类声明

本设备符合 FCC 规则第 15 部分的规定。其运行需满足下面两个条件：

1. 本设备不会产生有害干扰。
2. 本设备必须承受受到的干扰，包括可能导致运行异常的干扰。

注意：经测试，本设备符合 FCC 规则第 15 部分中针对 A 类数字设备的限制标准。这些限制标准旨在提供合理的保护，以防止在商业环境中运行设备时产生有害干扰。本设备会产生、使用并可发出射频能量，如果不按说明手册安装和使用，可能会对无线电通信产生有害干扰。在住宅区运行本设备可能会造成有害干扰，用户需自付费用消除干扰。

改装：若未经 QNAP Systems, Inc. 批准对本设备进行改动，可能会导致用户失去 FCC 授予的操作本设备的资格。

FCC B 类声明

本设备符合 FCC 规则第 15 部分的规定。其运行需满足下面两个条件：

1. 本设备不会产生有害干扰。
2. 本设备必须承受受到的干扰，包括可能导致运行异常的干扰。

注意：经测试，本设备符合 FCC 规则第 15 部分中针对 B 类数字设备的限制标准。这些限制标准旨在提供合理的保护，以防止在住宅区安装设备时产生有害干扰。本设备会产生、使用并可发出射频能量，如果不按说明安装和使用，可能会对无线电通信产生有害干扰。但是，并不保证在特定安装中不会产生此类干扰。如果本设备确实对收音机或电视机接收造成有害干扰（可通过打开和关闭本设备来判定），建议用户尝试采取下列一项或多项措施来消除干扰：

- 改变接收天线的方向或位置。
- 增加本设备与接收设备之间的间距。
- 将本设备与接收设备分别接入不同回路的电源插座。
- 请咨询经销商或经验丰富的收音机/电视机技术人员以寻求帮助。

改装：若未经 QNAP Systems, Inc. 批准对本设备进行改动，可能会导致用户失去 FCC 授予的操作本设备的资格。



QNAP NAS 符合不同的 CE 合规性类别标准。详情请参考附录 A：产品合规性类别。



SJ/T 11364-2006

本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。



本产品上会附有”环境友好使用期限”的标签，此期限是估算这些物质”不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	O	O	O	O	O	O
显示	O	O	O	O	O	O
印刷电路板	O	O	O	O	O	O
金属螺帽	O	O	O	O	O	O
电缆组装	O	O	O	O	O	O
风扇组装	O	O	O	O	O	O
电力供应组 装	O	O	O	O	O	O
电池	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

本文使用的符号

 警告	此图标表示必须严格遵守说明，否则可能导致身体伤害或死亡。
 小心	此图标表示该行为可能会导致磁盘数据遭到清除或丢失，或不按说明操作可能会导致数据、磁盘或产品损毁。

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安全须知

1. NAS 的使用环境温度应介于 0°C - 40°C (32°F - 104°F)，相对湿度为 5% - 95%。请确保环境通风良好。
2. 与 NAS 连接的电源线和设备必须能提供正确的电压 (100W, 90 - 264V)。
3. 切勿将 NAS 放置于阳光直射或靠近化学药剂的场所。请确保环境维持理想的温度与湿度。
4. 清洁本产品前，先拔下电源线及所有连接线。请用干布擦拭 NAS。切勿使用任何化学药剂或喷雾式清洁剂清洁 NAS。
5. 为确保服务器正常运行，以及避免过热问题，切勿将任何物品放置于 NAS 上。
6. 安装硬盘时，请使用产品包装内的平头螺丝将硬盘固定在 NAS 上，以确保其运行正常。
7. 切勿使 NAS 靠近任何液体。
8. 切勿将 NAS 放置在不平稳的表面上，以避免因滑落而损坏。
9. 请确保 NAS 安装场所的电压正确。请洽询经销商或当地电力公司了解相关信息。
10. 切勿在电源线上放置任何物品。
11. 任何情况下，切勿尝试自行维修 NAS。不当拆装本产品，可能导致用户触电或遭受其他危险。如有疑问，请洽询经销商。
12. 机箱 NAS 型号仅应安装于服务器机房，并由获得授权的服务器或 IT 管理员来维护。服务器机房必须上锁，并只允许获得授权的人员使用钥匙或门卡进入。



警告：

- 如错误更换电池，则有爆炸危险。请务必使用相同电池或制造商建议的同等电池进行更换。请按制造商指示处置使用过的电池。
- 切勿触摸系统内的风扇，以免受到严重伤害。



Chapter 1. CPU 和内存规格



小心：修改 QNAP 产品的硬件、软件或固件会使保修失效。对修改 QNAP 产品导致的任何形式的毁损或数据丢失，QNAP 概不负责。对于因更改硬件部件、修改默认系统固件或在 QNAP 产品上安装任何未经授权的第三方应用程序而导致的各种可能的数据丢失或系统不稳定，用户应自行承担此类风险。

系统	TVS-682-PT-8G	TVS-682-i3-8G
CPU	Intel® Pentium® 处理器 G4400 双核 3.30 GHz	Intel® Core™ i3-6100 处理器 双核 3.70 GHz
内存	8GB DDR4 2133 RAM (可扩展到 64GB)	
闪存	512MB (USB DOM)	
可否更换 CPU?	否	
可否更换内存?	✓ (兼容 DDR4 RAM)	
U-DIMM 插槽	4	
硬盘插槽	6: 2 x 2.5" SSD; 4 x 2.5" /3.5" 硬盘或 SSD	
M.2 SSD 插槽	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD	
USB 端口	5: 1 x USB 3.0 端口 (正面); 4 x USB 3.0 端口 (背面);	
PCIe 插槽	2: 1 x PCIe Gen3 x16; 1 x PCIe Gen3 x4	
千兆位网络端口	4	
HDMI 输出	3	
红外传感器	✓ (QNAP 遥控器: RM-IR002)	
功率输出	250W	

系统	TVS-882-i3-8G	TVS-882-i5-16G	TVS-882-i5-16G-450W
CPU	Intel® Core™ i3-6100 处理器 双核 3.70 GHz	Intel® Core™ i5-6500 处理器四核 3.6 GHz	
内存	8GB DDR4 2133 RAM (可扩展到 64GB)	16GB DDR4 2133 RAM (可扩展到 64GB)	
闪存	512MB (USB DOM)		
可否更换	否		

CPU?		
可否更换内存?	✓ (兼容 DDR4 RAM)	
U-DIMM 插槽	4	
硬盘插槽	8: 2 x 2.5" SSD; 6 x 2.5" /3.5" 硬盘或 SSD	
M.2 SSD 插槽	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD	
USB 端口	5: 1 x USB 3.0 端口 (正面); 4 x USB 3.0 端口 (背面);	
PCIe 插槽	2: 1 x PCIe Gen3 x16; 1 x PCIe Gen3 x4	
千兆位网络端口	4	
HDMI 输出	3	
红外传感器	✓ (QNAP 遥控器: RM-IR002)	
功率输出	250W	450W

系统	TVS-1282-i3-8G	TVS-1282-i5-16G	TVS-1282-i7-32G
CPU	Intel® Core™ i3-6100 处理器 双核 3.70 GHz	Intel® Core™ i5-6500 处理器 四核 3.6 GHz	Intel® Core™ i7-6700 处理器 四核 3.4 GHz
内存	8GB DDR4 2133 RAM (可扩展到 64GB)	16GB DDR4 2133 RAM (可扩展到 64GB)	32GB DDR4 2133 RAM (可扩展到 64GB)
闪存	512MB (USB DOM)		
可否更换 CPU?	否		

可否更换内存?	✓ (兼容 DDR4 RAM)
U-DIMM 插槽	4
硬盘插槽	12: 4 x 2.5" SSD; 8 x 2.5" /3.5" 硬盘或 SSD
M.2 SSD 插槽	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD
USB 端口	5: 1 x USB 3.0 端口 (正面); 4 x USB 3.0 端口 (背面);
PCIe 插槽	3: 1 x PCIe Gen3 x8; 2 x PCIe Gen3 x4
千兆位网络端口	4
HDMI 输出	3
红外传感器	✓ (QNAP 遥控器: RM-IR002)
功率输出	250W

系统	TVS-1282-i5-16G-450W	TVS-1282-i7-32G-450W
CPU	Intel® Core™ i5-6500 处理器四核 3.6 GHz	Intel® Core™ i7-6700 处理器四核 3.4 GHz
内存	16GB DDR4 2133 RAM (可扩展到 64GB)	32GB DDR4 2133 RAM (可扩展到 64GB)
闪存	512MB (USB DOM)	
可否更换 CPU?	否	
可否更换内存?	✓ (兼容 DDR4 RAM)	
U-DIMM 插槽	4	
硬盘插槽	12:	

	4 x 2.5" SSD; 8 x 2.5" /3.5" 硬盘或 SSD
M.2 SSD 插槽	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD
USB 端口	5: 1 x USB 3.0 端口 (正面); 4 x USB 3.0 端口 (背面);
PCIe 插槽	3: 1 x PCIe Gen3 x8; 2 x PCIe Gen3 x4
千兆位网络端口	4
HDMI 输出	3
红外传感器	✓ (QNAP 遥控器: RM-IR002)
功率输出	450W

系统	TVS-682T-i3-8G	TVS-882T-i5-16G
CPU	Intel® Core™ i3-6100 处理器 双核 3.70 GHz	Intel® Core™ i5-6500 处理器四核 3.6 GHz
内存	8GB DDR4 2133 RAM (可扩展到 64GB)	16GB DDR4 2133 RAM (可扩展到 64GB)
闪存	512MB (USB DOM)	
可否更换 CPU?	否	
可否更换内存?	✓ (兼容 DDR4 RAM)	
U-DIMM 插槽	4	
硬盘插槽	6: 2 x 2.5" SSD; 4 x 2.5" /3.5" 硬盘或 SSD	8: 2 x 2.5" SSD; 6 x 2.5" /3.5" 硬盘或 SSD
M.2 SSD 插槽	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD	
USB 端口	5: 1 x USB 3.0 端口 (正面); 4 x USB 3.0 端口 (背面);	
PCIe 插槽	2: 1 x PCIe Gen3 x16; 1 x PCIe Gen3 x4	
千兆位网络端口	6: 2 x 10 GBase-T; 4 x GbE LAN 端口	
Thunderbolt2 端口	2	
HDMI 输出	3	
红外传感器	✓ (QNAP 遥控器: RM-IR002)	
功率输出	250W	

系统	TVS-1282T-i5-16G	TVS-1282T-i7-32G	TVS-1282T-i7-64G
CPU	Intel® Core™ i5-6500 处理器四核 3.6 GHz	Intel® Core™ i7-6700 处理器四核 3.4 GHz	
内存	16GB DDR4 2133 RAM (可扩展到 64GB)	32GB DDR4 2133 RAM (可扩展到 64GB)	64GB DDR4 2133 RAM 可扩展到 64GB
闪存	512MB (USB DOM)		
可否更换 CPU?	否		
可否更换内存?	✓ (兼容 DDR4 RAM)		
U-DIMM 插槽	4		
硬盘插槽	12: 4 x 2.5" SSD; 8 x 2.5" /3.5" 硬盘或 SSD		
M.2 SSD 插槽	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD		
USB 端口	5: 1 x USB 3.0 端口 (正面); 4 x USB 3.0 端口 (背面);		
千兆位网络端口	6: 2 x 10 GBase-T; 4 x GbE LAN 端口		
Thunderbolt2 端口	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD		
PCIe 插槽	3: 1 x PCIe Gen3 x8; 2* PCIe Gen3 x4 注意: 两个 PCIe Gen3 x4 插槽由 Thunderbolt™ 2 卡和 10GbE 适配器占用。		
HDMI 输出	3		
红外传感器	✓ (QNAP 遥控器: RM-IR002)		
功率输出	250W		

系统	TVS-1282T3-i5-16G	TVS-1282T3-i7-32G	TVS-1282T3-i7-64G
CPU	Intel® Core™ i5-7500 处理器四核 3.4 GHz	Intel® Core™ i7-7700 处理器四核 3.6 GHz	
内存	16GB DDR4 2133 RAM (可扩展到 64GB)	32GB DDR4 2133 RAM (可扩展到 64GB)	64GB DDR4 2133 RAM
闪存	512MB (USB DOM)		
可否更换 CPU?	否		
可否更换内存?	✓ (兼容 DDR4 RAM)		
U-DIMM 插槽	4		
硬盘插槽	12: 4 x 2.5" SSD; 8 x 2.5" /3.5" 硬盘或 SSD		
M.2 SSD 插槽	2 x M.2 2242/2260/2280/22110 SATA 6Gb/s SSD		
USB 端口	5: 1 x USB 3.0 端口 (正面); 4 x USB 3.0 端口 (背面);		
千兆位网络端口	6: 2 x 10 GBase-T; 4 x GbE LAN 端口		
Thunderbolt2 端口	2		
PCIe 插槽	3: 1 x PCIe Gen3 x8; 2 x PCIe Gen3 x4 注意: 三个 Pcie 插槽由 Thunderbolt™ 2 卡、Thunderbolt™ 3 卡和 10GbE 适配器占用。		
HDMI 输出	3		
红外传感器	✓ (QNAP 遥控器: RM-IR004)		
功率输出	250W		

Chapter 2. 电源按钮和重置按钮行为

- ✓ 电源按钮：按此按钮开机或关机。

系统	电源按钮（开机）	电源按钮（硬件关机）	电源按钮（强制关机）
所有型号	按一次	1.5 秒	5 秒

- ✓ 重置按钮：按此按钮重置系统设置。

系统	基本系统重置 （一声提示音）	高级系统重置 （两声提示音）
所有型号	3 秒	10 秒

基本系统重置（按 3 秒）

持续按重置按钮 3 秒，会听到一声提示音。以下设置将重置为默认值：

- 系统管理员密码：admin
- TCP/IP 配置：通过 DHCP 自动获取 IP 地址设置
- TCP/IP 配置：禁用巨型帧
- TCP/IP 配置：如果启用端口中继（仅限双局域网型号），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 会被禁用。
- 服务绑定：所有 NAS 服务会在所有可用的网络接口上运行。

*此功能仅适用于具有 LCD 面板的 NAS 型号。有关详细信息，请访问 <http://www.qnap.com>。

高级系统重置（按 10 秒）

持续按重置按钮 10 秒，在第 3 秒及第 10 秒可听到两声提示音。NAS 会将所有系统设置重置为默认值，与使用 Web 进行系统重置相同（“控制台” > “系统设置” > “备份/恢复” > “恢复出厂默认设置”），但会保留所有数据。不过，有些设置将被清除，例如用户、用户组以及先前创建的网络共享文件夹等。要在高级系统重置后检索旧数据，请在 NAS 上创建相同的网络共享文件夹，便可再次访问数据。

Chapter 3. USB 一键复制

此功能仅适用于具有 USB 一键复制按钮的 NAS 型号。有关更多详细信息，请访问 <http://www.qnap.com>。

系统	按键秒数（按下一键复制按钮以触发数据复制）
所有 NAS 型号	0.5 秒

通过前 USB 端口复制数据

NAS 支持使用前面的一键复制按钮，直接将数据从 USB 设备备份到 NAS，或从 NAS 备份到 USB 设备。要使用此功能，请按以下步骤操作：

1. 确保已在 NAS 上至少安装好一个硬盘并完成格式化。将创建默认网络共享文件夹 Qusb 或 Usb。
2. 启动 NAS。
3. 在“备份管理中心” > “外部备份” > “USB 一键复制”中配置“复制”按钮的行为。
4. 将 USB 存储设备连接到 NAS 前面的 USB 端口。
5. 按下“复制”按钮。USB LED 会闪烁，系统将根据 NAS 设置与 USB 设备之间进行数据复制。

注意：本功能采用增量备份。在首次数据备份后，NAS 只会复制上次备份后有更改的文件。

Chapter 4. LED 和警报蜂鸣器规格

NAS 的 LED 指示灯可指示系统状态与信息。当 NAS 启动时，可以检查以下项目以确定系统状态正常。请注意，只有用户已正确安装好硬盘、将 NAS 连接到网络和电源后，以下 LED 信息才适用。

LED	LED 状态	描述
系统状态	红绿交替闪烁，间隔 0.5 秒	<ol style="list-style-type: none"> 1. NAS 上的硬盘正在格式化。 2. NAS 正在初始化。 3. 系统固件正在更新。 4. RAID 正在重建。 5. 正在进行在线 RAID 容量扩展。 6. 正在进行在线 RAID 级别迁移。
	红色	<ol style="list-style-type: none"> 1. 硬盘无效。 2. 磁盘卷的容量已满。 3. 磁盘卷的容量将满。 4. 系统风扇故障。 5. 访问（读/写）磁盘数据时出错。 6. 在硬盘上检测到坏扇区。 7. NAS 处于降级只读模式(RAID 5 或 RAID 6 配置中的 2 个成员硬盘出现故障，仍可读取磁盘数据)。 8. 硬件自检错误。
	闪烁红色，间隔 0.5 秒	NAS 处于降级模式（RAID 1、RAID 5 或 RAID 6 配置中的一个成员硬盘出现故障）。
	闪烁绿色，间隔 0.5 秒	<ol style="list-style-type: none"> 1. NAS 正在启动。 2. NAS 未配置。 3. 硬盘未格式化。
	绿色	NAS 已准备就绪。
	熄灭	NAS 的所有硬盘都处于待机模式。
LAN	橙色	正在从网络访问磁盘数据，但在此过程中发生读/写错误。
	闪烁橙色	NAS 已连接至网络。
USB**	闪烁蓝色 间隔 0.5 秒	<ol style="list-style-type: none"> 1. 检测到 USB 设备（已连接到前 USB 端口）。 2. 正在从 NAS 移除 USB 设备（已连接到前 USB 端口）。

LED	LED 状态	描述
		3. 正在访问 USB 设备 (已连接到 NAS 的前 USB 端口)。 4. 正在与外部 USB 或 eSATA 设备间复制数据。
	蓝色	检测到前面的 USB 设备 (设备已装载后)。
	熄灭	1. 未检测到 USB 设备。 2. NAS 已经完成与连接到前 USB 端口的 USB 设备间的数据复制。
HDD	闪烁红色	正在从网络访问 NAS。
	红色	发生硬盘读/写错误。
	闪烁绿色	正在访问磁盘数据。
	绿色	硬盘可供访问。

Chapter 5. 提示音警报：所有 NAS 型号

可以在“控制台”>“系统设置”>“硬件”中禁用提示音警报。

提示音	次数	描述
短提示音（0.5 秒）	1	<ol style="list-style-type: none">1. NAS 正在启动。2. NAS 正在关闭（软件关闭）。3. 用户按下重置按钮以重置 NAS。4. 系统固件已更新。
短提示音（0.5 秒）	3	无法将 NAS 数据从前 USB 端口复制到外部存储设备。
长提示音（1.5 秒）	3, 每 5 分钟	系统风扇故障。
长提示音（1.5 秒）	2	<ol style="list-style-type: none">1. 磁盘卷的容量将满。2. 磁盘卷的容量已满。3. NAS 的硬盘处于降级模式。4. 用户启动硬盘重建过程。5. 插入或抽出硬盘。
	1	<ol style="list-style-type: none">1. NAS 已通过强制关闭关机（硬件关闭）。2. NAS 已开机并准备就绪。

Chapter 6. 热插拔硬盘

QNAP NAS 兼容主要硬盘品牌的 2.5 英寸/3.5 英寸 SATA 硬盘。有关最新的硬盘兼容性列表，请访问 <http://www.qnap.com>。



小心:

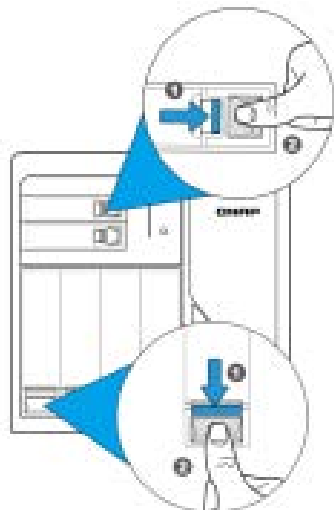
- 任何情况下，无论因任何原因，对于因硬盘安装或使用不当所导致的产品损坏/故障或数据丢失/恢复，QNAP 概不负责。
- 请注意，如果安装了从未在 NAS 上安装过的硬盘（新盘或旧盘），此硬盘将被自动执行格式化和分区，所有磁盘数据将被清除。
- 开始前，请先确保已关闭 NAS、拔掉电源适配器、网线，并移除 NAS 连接的任何其他设备/连接线。
- 请务必全程戴上防静电腕带，防止静电放电。弹簧夹应接地。

系统	支持 3.5 英寸 SATA 硬盘	支持 2.5 英寸 SATA 硬盘	支持 SSD	支持 M.2 SSD	支持热插拔硬盘 (仅限 RAID 1 或更高版本)
TVS-682-PT-8G、 TVS-682-i3-8G、 TVS-882-i3-8G、 TVS-882-i5-16G、 TVS-882-i5-16G-450W、 TVS-1282-i3-8G、 TVS-1282-i5-16G、 TVS-1282-i7-32G、 TVS-1282-i5-16G-450W 、 TVS-1282-i7-32G-450W 、 TVS-682T-i3-8G、 TVS-882T-i5-16G、 TVS-1282T-i5-16G、 TVS-1282T-i7-32G、 TVS-1282T-i7-64G、 TVS-1282T3-i5-16G、 TVS-1282T3-i7-32G、 TVS-1282T3-i7-64G	是	是	是	是	是

6.1 安装硬盘

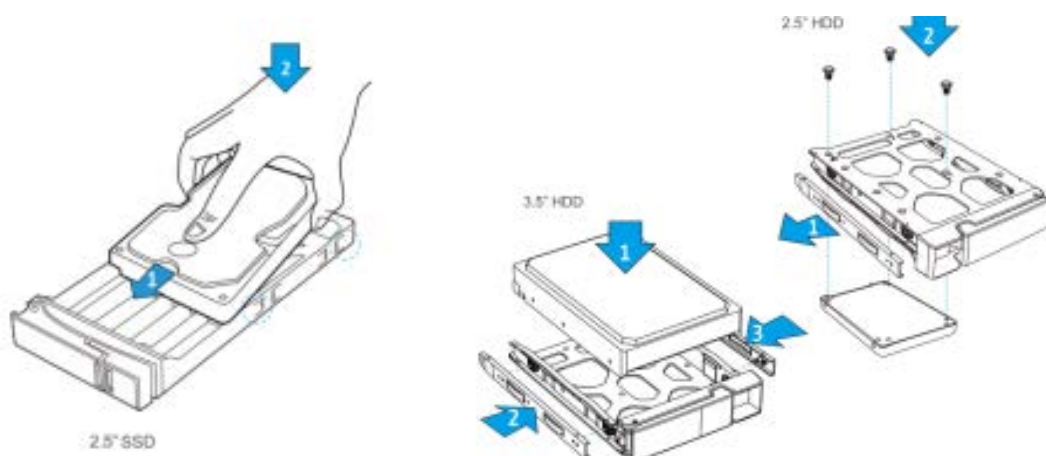
按照以下步骤在 NAS 上安装硬盘。

1. 拉下硬盘锁以释放锁紧机构，按托盘按钮，随即将弹出退出杆，拉出托盘。



2. 安装硬盘

- a. 对于 2.5" SSD，将 SSD 滑入插槽中，直到 SSD 斜靠在支撑表面，然后按下 SSD，直到听到“喀嚓声”，并确保四个夹子将 SSD 固定到位。
- b. 对于 3.5" 硬盘，从托盘上取下两个支架（捏住标有“pull”的一端，将支架拉出）。将硬盘放在托盘上，然后夹住两个支架。
- c. 对于 2.5" 硬盘，仅取下 2.5" 螺丝孔（标于托盘底部）旁边的支架。拧紧硬盘托盘背面的三个螺丝。

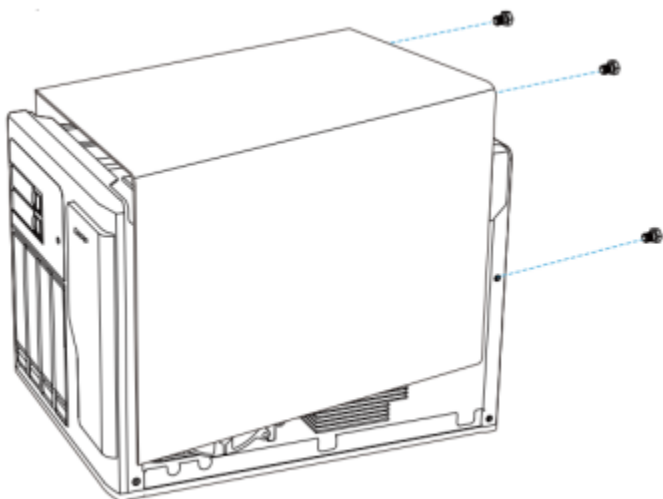


3. 将硬盘托盘插入 NAS，一直向后推，然后将退出杆向后推，直到听到喀嚓声，然后拉起托盘锁，确保托盘完全固定到系统中。

6.2 安装 M.2 SSD

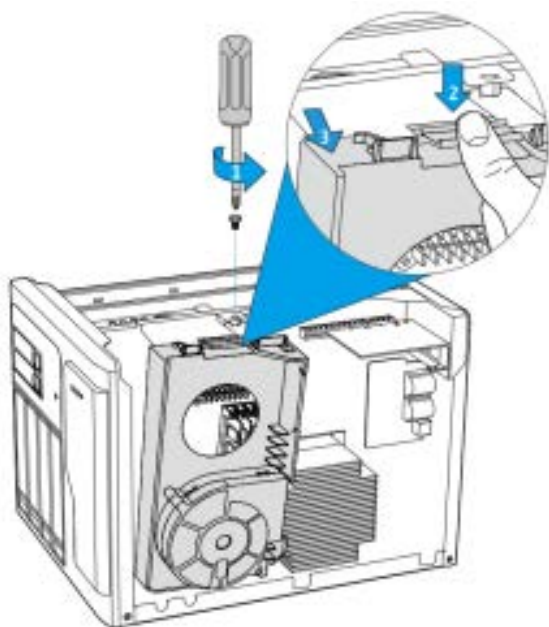
按照以下步骤在 NAS 上安装 M.2 SSD。

1. 从后面松开螺丝，取下盖板(TVS-682 系列 :3 个螺丝 ;TVS-882 系列 :6 个螺丝 ;TVS-1282 系列 : 7 个螺丝。)

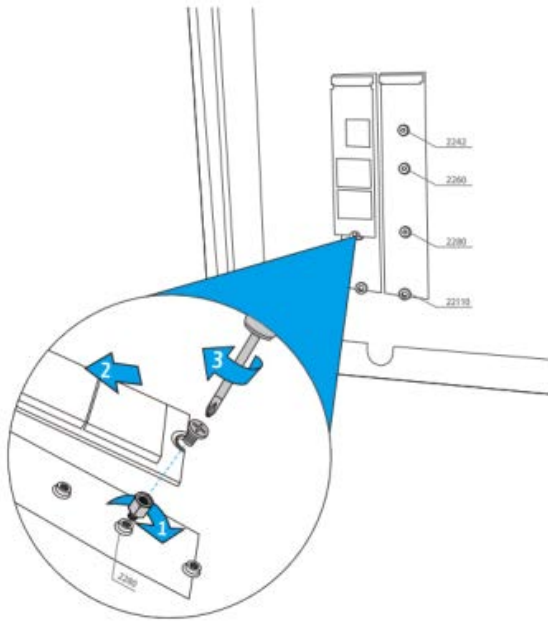


显示的上图仅供演示之用。

2. 拔下连接到主板的线缆，松开风扇模块上的螺丝，按下挂钩，然后拉出模块。



3. TVS-x82 系列有两个 M.2 SSD 插槽，支持 4 种不同的 M.2 SSD 尺寸(2242、2260、2280 和 22110)。根据您的 M.2 SSD 尺寸移动支撑螺丝并将其固定到适当位置。然后将 M.2 SSD 插入插槽，并用附带的螺丝将其固定到位。



4. 重新安装风扇模块并拧紧螺丝，重新连接线缆，将盖板放回并拧紧所有螺丝。

6.3 热插拔硬盘

RAID 1 中的 1 个成员硬盘或者 RAID 5 或 RAID 6 中的 1-2 个成员硬盘崩溃时，NAS 支持热插拔硬盘。如果 RAID 配置中的成员硬盘发生故障，请按照以下步骤热插拔硬盘。

1. 登录 NAS，然后在“存储空间总管”>“存储池”查看存储池状态。
2. 存储池状态应为“警告”，RAID 组状态应为“降级”。
3. 准备一个新硬盘来替换故障硬盘。新硬盘的容量应该等于或大于故障硬盘的容量。
4. 从 NAS 中拔下故障硬盘。等待大约 20 秒或 NAS 发出两次提示音。
5. 从硬盘托盘中取下故障硬盘。
6. 将新硬盘安装到硬盘托盘中。将其插入 NAS 中。
7. 服务器应该发出两次持续 1.5 秒的提示音。
8. 检查 Web 管理页面上的卷状态。卷应该会重建。



警告： 在更换硬盘之前，强烈建议关闭 NAS 以降低触电风险。

Chapter 7. 升级 QNAP NAS 的内存（安装 RAM 模块）



警告：

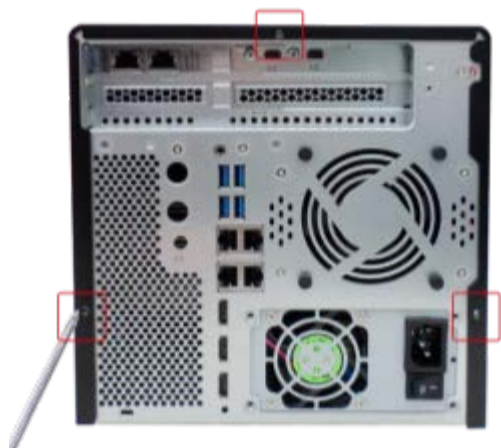
- 以下说明必须由授权且合格的技术人员执行。
- 在 NAS 上安装 RAM 模块时，请严格遵守相关说明，否则可能导致身体伤害或死亡。
- 开始前，请先确保已关闭 NAS、拔掉电源适配器、网线，并移除 NAS 连接的任何其他设备/连接线。
- 请务必全程戴上防静电腕带，防止静电放电。弹簧夹应接地。
- 安装两个内存模块时，建议在两个插槽使用大小相同且类型/型号最好也一样的内存模块。

QNAP 为用户提供不同的 RAM 模块（可选购），用于升级 NAS 的内存。



请按照以下步骤，为 NAS 加装内存模块。

1. 从后面松开螺丝，取下盖板（TVS-682 系列：3 个螺丝；TVS-882 系列：6 个螺丝；TVS-1282 系列：7 个螺丝。）

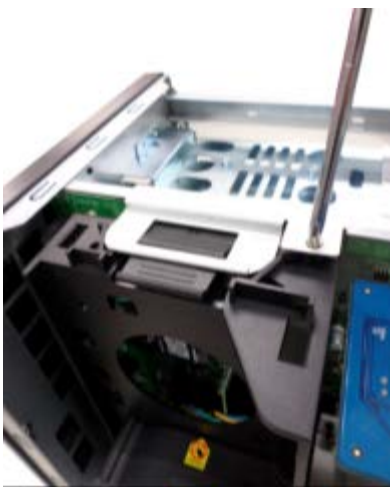


显示的上图仅供演示之用。

2. 取下 NAS 的外壳盖。



3. 拔下连接到主板的线缆，松开风扇模块上的螺丝，按下挂钩，然后拉出模块。



4. 拉开每侧的固定夹，以便取下模块。取下已安装的内存模块。



注意： 支持的最大内存总和为 32GB。

5. 将内存模块向下按入插槽，直到其卡入到位。确保内存模块正确放置，卡入到位。将升级后的模块安装在蓝色或黑色插槽中。



6. 重新安装风扇模块并将线缆重新连接到主板上，装上外壳盖并拧紧螺丝。将电源适配器和连接线接回 NAS。
7. 要检查内存模块是否被 NAS 识别，请启动 NAS 并以管理员身份登录到 Web 界面。转到“系统

状态” > “系统信息”，并检查“硬件信息”中的内存总容量。

System Information	Network Status	System Service	Hardware Information	Resource Monitor
My NAS ▾		Refresh		
CPU				Intel(R) Core(TM) i7-6700 CPU @ 3.40GHz
CPU usage				2.2 %
Total memory				8 GB (7941.5 MB usable)
Free memory				7458.2 MB
Memory slot 1 (Channel A, DIMM 1)				4 GB (Transcend Information)
Memory slot 2 (Channel B, DIMM 2)				--
Memory slot 3 (Channel A, DIMM 3)				4 GB (Transcend Information)
Memory slot 4 (Channel B, DIMM 4)				--

Chapter 8. 安装扩展卡



警告：

- 以下说明必须由授权且合格的技术人员执行。
- 在 NAS 上安装网络扩展卡时，请严格遵守相关说明，否则可能导致身体伤害或死亡。
- 开始前，请先确保已关闭 NAS、拔掉电源适配器、网线，并移除 NAS 连接的任何其他设备/连接线。
- 在安装网络扩展卡之前，请戴上防静电腕带，以防止静电放电。弹簧夹应接地。

一些 NAS 型号为网络扩展提供了扩展槽。将额外的网络扩展卡（可选购）插入到 NAS 的主板，以增加网络连接选择。请参考位于 <http://qnap.com/compatibility> 的兼容性列表。

TVS-x82T 系列有一个双端口 10GBase-T 网络扩展卡和双端口 Thunderbolt 2 卡，TVS-x82 系列提供了空 PCIe 插槽，用户可根据需要安装扩展卡。

为此，请按照以下步骤操作：

1. 从后面松开螺丝，取下盖板（TVS-682 系列：3 个螺丝；TVS-882 系列：6 个螺丝；TVS-1282 系列：7 个螺丝。）取下 NAS 的外壳盖。



2. 安装扩展卡

- a. 使用 Gen.3 x 4 或 Gen.3 x 8 PCIe 插槽 (TVS-1282)
 - i. 将 NAS 转到 CPU 侧，松开螺丝，取下支架。



- ii. 抓住扩展卡的边缘。将卡的金手指一侧的凹口与 PCIe 插槽中的凹口对齐。将扩展卡插入 PCIe 插槽，直到不能进一步插入。



- iii. 拧紧螺丝以固定扩展卡。



- iv. 安装风扇模块，关闭外壳盖，并拧紧螺丝。将电源适配器和连接线接至 NAS。
 - v. 要检查扩展卡是否被 NAS 识别，请启动 NAS 并以管理员身份登录到 Web 界面，然后转到“系统管理”。
- b. 使用 Gen.3 x 16 或 Gen.3 x 8 PCIe 插槽 (TVS-1282)
- i. 将 NAS 转到系统侧，松开螺丝，取下支架。



- ii. 抓住扩展卡的边缘。将卡的金手指一侧的凹口与 PCIe 插槽中的凹口对齐。将扩展卡插入 PCIe 插槽，直到不能进一步插入。



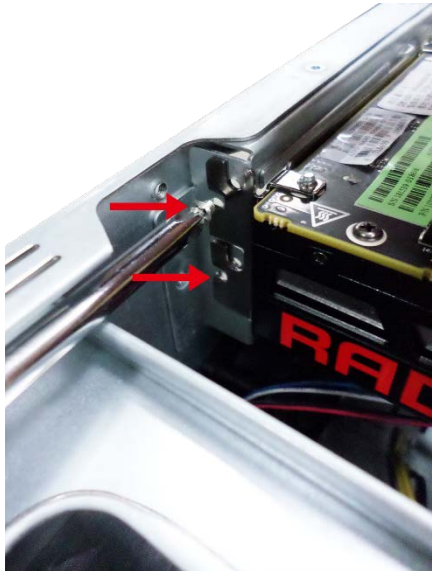
- iii. 拧紧螺丝以将扩展卡固定到位。
 - iv. 安装风扇模块，关闭外壳盖，并拧紧螺丝。将电源适配器和连接线接至 NAS。
 - v. 要检查扩展卡是否被 NAS 识别，请启动 NAS 并以管理员身份登录到 Web 界面，然后转到“系统管理”。
- c. 在 Gen.3 x 8 PCIe 插槽中安装显卡 (TVS-1282)
- i. 将 NAS 转到侧面，松开螺丝，然后取下支架。



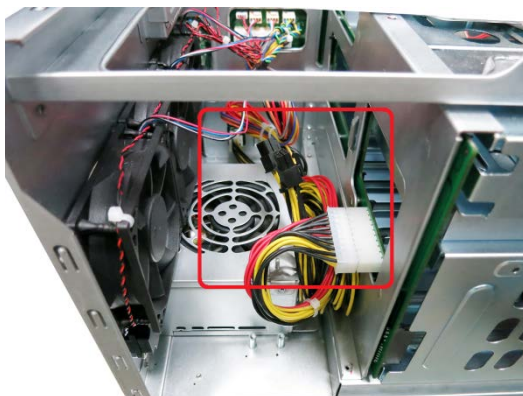
- ii. 抓住显卡的边缘。将卡的金手指一侧的凹口与 PCIe 插槽中的凹口对齐。将显卡插入 PCIe 插槽，直到不能进一步插入。

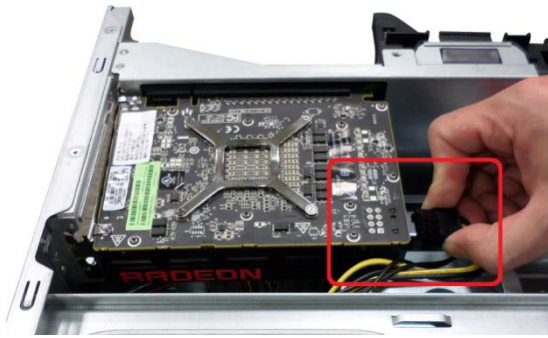


iii. 拧紧螺丝以完全固定显卡。



iv. 找到以下标记区域中所示的电源线。将电源线连接到显卡。





- v. 安装风扇模块，关闭外壳盖，并拧紧螺丝。将电源适配器和连接线接至 NAS。
- vi. 要检查显卡是否被 NAS 识别，请启动 NAS 并以管理员身份登录，然后转到“系统管理”。

Chapter 9. RAID 恢复

QNAP NAS 支持在意外断开连接或意外从系统中取出硬盘时恢复发生故障的 RAID 组。用户可以将处于非活动状态的 RAID 1、RAID 5 或 RAID 6 组恢复到降级模式，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	支持 RAID 恢复	允许移除的最大磁盘数
单个	否	-
JBOD	是	1 个或多个
RAID 0	是	1 个或多个
RAID 1	是	1 个或 2 个
RAID 5	是	2 个或多个
RAID 6	是	3 个或多个
RAID 10	否	-

按照以下步骤恢复 NAS 上处于非活动状态的 RAID 组：

1. 确保 RAID 组的卷状态为“非活动”。
2. 将先前从 NAS 中取出的硬盘装回到相同的硬盘插槽。
3. 转到“存储管理器”>“存储池”。选择处于降级或非活动状态的 RAID 组。单击“管理”>“恢复”。
4. 等待大约 1 分钟，以完成该过程。完成后，便可以访问 NAS 数据。

注意：

- 通过 RAID 恢复将 RAID 1、RAID 5 或 RAID 6 RAID 组从“非活动”恢复到降级模式后，用户可以正常读取或写入卷。同步后，卷状态将恢复为正常。
- 如果断开连接的硬盘成员已损坏，RAID 恢复功能将失效。

	标准 RAID 5	QNAP RAID 5	标准 RAID 6	QNAP RAID 6
降级模式	N-1	N-1	N-1 和 N-2	N-1 和 N-2
只读保护（供实时数据 备份与硬盘更换）	不适用	N-1, 在阵列的正常硬 盘中发现坏块。	不适用	N-2, 在阵列的正常硬 盘中发现坏块。
RAID 恢复 （RAID 状态：非活 动）	不适用	如果将所有原硬盘重 新插入到 NAS 中， 并且可以旋转、识别和 访问它们，则表示硬盘 超级块未损坏。	不适用	如果将所有原硬盘重新 插入到 NAS 中，并且 可以旋转、识别和访问 它们，则表示硬盘超级 块未损坏。
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NAS 型号	FCC	CE
TVS-682-PT-8G、TVS-682-i3-8G、 TVS-882-i3-8G、TVS-882-i5-16G、 TVS-882-i5-16G-450W、 TVS-1282-i3-8G、TVS-1282-i5-16G、 TVS-1282-i7-32G、 TVS-1282-i5-16G-450W、 TVS-1282-i7-32G-450W、 TVS-682T-i3-8G、TVS-882T-i5-16G、 TVS-1282T-i5-16G、TVS-1282T-i7-32G、 TVS-1282T-i7-64G、 TVS-1282T3-i5-16G、 TVS-1282T3-i7-32G、 TVS-1282T3-i7-64G	B 类	B 类

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Version 3, 29 June 2007

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