



QNAP Turbo NAS

## **TS-x79** 系列硬件使用手册

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感谢您购买威联通产品。此使用手册提供 Turbo NAS 的硬件说明及相关功能介绍，请仔细阅读并依照本手册使用产品功能。

本使用手册适用于下列 Turbo NAS 型号：

TS-879 Pro、TS-1079 Pro、TS-879U-RP、TS-1279U-RP、TS-1679U-RP、TS-EC879U-RP、  
TS-EC1279U-RP、TS-EC1679U-RP、TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、  
SS-EC1879U-SAS-RP、SS-EC1279U-SAS-RP。

**注意：**

- Turbo NAS 以下简称为 NAS。
- 本手册包含威联通 Turbo NAS 系列网络储存服务器的使用说明，部份功能仅适用于特定型号，您所购买的型号可能不支持这些功能。
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2. 如要把 NAS 或任何包装内零件退回或维修，请确定货品妥善包装以确保运送无误。若货品运送期间因不妥善包装造成任何损坏，威联通一概不予负责。

## 规范声明



### FCC 声明

QNAP NAS 符合不同的 FCC 规范等级。详细信息，请参考附录 A 产品规范等级。一旦确定本产品的等级，请参考以下对应的声明。

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#### FCC A 级声明

本产品符合 FCC 规则第 15 部份。产品操作受以下两条件限制：

1. 本产品不得造成有害干扰。
2. 本产品必须接受任何接受到的干扰，包含可能造成意外操作的干扰。

注意：本产品已通过测试并符合 FCC 规则第 15 部分 A 级数位装置之限制。此等限制旨在此装置于商业环境中操作时，提供免于有害干扰之合理保护所设计。本产品产生、使用、并可能放射调频能量，若未依据指示安装及使用，可能对无线电通讯造成有害干扰。在住宅区操作本产品可能会造成有害干扰。在这种情况下，使用者必须自行解决干扰现象。

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注意：本产品已通过测试并符合 FCC 规则第 15 部分 B 级数位装置之限制。此等限制旨在为家用装置提供免于有害干扰之合理保护所设计。本产品产生、使用、并可能放射调频能量，若未依据指示安装及使用，可能对无线电通讯造成有害干扰。但特定之安装并不保证免于发生干扰。若本产品对收音机、电视之收讯造成有害干扰(可开关设备之电源确认)，建议使用者以下列一种或多种方式改善干扰状况：



- 重新调整或放置接收天线。
- 增加本产品与接收器之间的距离。
- 将本产品连接到与接收器不同的电源插座上。
- 如需协助，请洽询经销商或专业的收音机或电视技术人员。

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QNAP NAS 符合不同的 CE 规范等级。详细信息，请参考附录 A 产品规范等级。

## 本文使用的符号说明

 警告	此符号表示使用者必须严格依照说明操作，否则将会导致身体伤害甚至死亡。
 注意	此符号表示该行为可能会引致硬盘数据被清除，或不依照说明操作之情况下，可能会导致数据、硬盘或产品损毁。

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## 安全须知

1. 本产品的使用环境温度应介于 0° C - 40° C (32°F - 104°F)，相对湿度为 0% - 95%。请确保其放置场所通风良好。
2. 与本产品连接的线路和装置必须能提供本产品正常的电量(100W, 90 - 264V)，以确保其运作正常。
3. 切勿将本产品放置于直接受阳光曝晒或靠近化学药剂的场所。请确保其所在环境维持稳定的温度与湿度。
4. 清洁时本产品，先将电源插头及所有线路拔下，再以干布擦拭即可。切勿使用任何化学药剂或喷雾式清洁剂清洁本产品。
5. 为确保机器正常运作，以及避免机器过热，切勿将任何物品或重物放置于本产品上。
6. 安装硬盘时，请务必使用平头螺丝将硬盘固定在硬盘抽取盒上，以确保其运作正常。
7. 切勿使本产品靠近水源。
8. 切勿将本产品放置在不平稳的桌子或台面上，以避免因本产品滑落而损坏。
9. 使用本产品时，请留意当地的电压指示。若无法确定，请洽询经销商或当地电力公司。
10. 切勿放置任何物品于本产品的电源在线。
11. 切勿自行维修本产品。不当的拆装，可能导致触电或其它不良后果。若有任何维修问题，请洽询当地经销商。
12. 机架式系统只适用于机房，并应由授权之系统管理员管理及维护。机房必须上锁，并只允许授权人员进入。



### 警告：

- 如错误更换电池，可能会有导致爆炸的危险。更换电池时，请务必更换同类型之电池，或更换制造商建议的类型。请依照当地废弃物管理办法规定，处理使用过之电池组。
- 切勿触摸系统内之风扇，以避免严重性伤害。



## 第1章 CPU 处理器及内存规格



注意：变更威联通产品的硬件、软件或韧体，将导致产品保固完全失效。威联通不負責任何因改机导致的任何形式的产品毁损或数据流失。使用者需自行負責因变更 Turbo NAS 硬件、更改系统韧体或安装未授权的第三者应用程序而导致任何可能的数据损失或系统不稳定等问题。

系统型号	TS-879 Pro	TS-1079 Pro	TS-879U-RP
CPU 处理器	Intel® Core i3 Dual Core (3.30 GHz)	Intel® Core i3 Dual Core (3.30 GHz)	Intel® Core i3 Dual Core (3.30 GHz)
内存	2GB DDR3 RAM	2GB DDR3 RAM	4GB DDR3 RAM
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)	512MB (USB DOM)
可否更换 CPU	否	否	否
可否更换内存	否	否	是
SODIMM 插槽数目	2	2	4
硬盘插槽数目	8	10	8
扩展插槽数目	1	1	2

系统型号	TS-1279U-RP	TS-EC879U-RP	TS-EC1279U-RP
CPU 处理器	Intel® Core i3 Dual Core (3.30 GHz)	Intel® Xeon Quad Core (3.20 GHz)	Intel® Xeon Quad Core (3.20 GHz)
内存	4GB DDR3 RAM	4GB DDR3 ECC RAM	4GB DDR3 ECC RAM
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)	512MB (USB DOM)
可否更换 CPU	否	否	否
可否更换内存	是	是	是
SODIMM 插槽数目	4	4	4
硬盘插槽数目	12	8	12
扩展插槽数目	2	2	2

系统型号	TS-1679U-RP	TS-EC1679U-RP
CPU 处理器	Intel® Core i3 Dual Core (3.30 GHz)	Intel® Xeon Quad Core (3.20 GHz)
内存	4GB DDR3 RAM	4GB DDR3 ECC RAM
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)
可否更换 CPU	否	否
可否更换内存	是	是
SODIMM 插槽数目	4	4
硬盘插槽数目	16	16
扩展插槽数目	2	2

系统型号	TS-EC1279U-SAS-RP	TS-EC1679U-SAS-RP
CPU 处理器	Intel® Xeon Quad Core (3.40 GHz)	Intel® Xeon Quad Core (3.40 GHz)
内存	8GB DDR3 ECC RAM	8GB DDR3 ECC RAM
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)
可否更换 CPU	否	否
可否更换内存	是	是
SODIMM 插槽数目	4	4
硬盘插槽数目	12	16
扩展插槽数目	2	2

系统型号	<b>SS-EC2479U-SAS-RP</b>	<b>SS-EC1879U-SAS-RP</b>	<b>SS-EC1279U-SAS-RP</b>
CPU 处理器	Intel® Xeon Quad Core (3.40 GHz)	Intel® Xeon Quad Core (3.40 GHz)	Intel® Xeon Quad Core (3.40 GHz)
内存	8GB DDR3 ECC RAM	8GB DDR3 ECC RAM	8GB DDR3 ECC RAM
Flash 快闪记忆	512MB (USB DOM)	512MB (USB DOM)	512MB (USB DOM)
可否更换 CPU	否	否	否
可否更换内存	是	是	是
SODIMM 插槽数目	4	4	4
硬盘插槽数目	24	18	12
扩展插槽数目	2	2	2

## 第2章 电源按钮及系统重置按钮说明

- ✓ 电源按钮：按此按钮开启或关闭系统。

系统型号	开启系统	硬件关机	强制关机
所有型号	按一下	按 1.5 秒	按 5 秒

- ✓ 重置按钮：按此按钮重设系统至默认值。

系统型号	系统基本重设（哔一声）	系统进阶重设（哔两声）
所有型号	按 3 秒	按 10 秒

### 系统基本重设（按重设键 3 秒）

持续按系统重置按钮 3 秒，系统会哔一声。以下设定将回复至默认值：

- 系统管理员密码：admin
- TCP/IP 设定：使用动态 IP 地址
- TCP/IP 设定：关闭 Jumbo Frame
- TCP/IP 设定：若有启用 Port Trunking(适用于支持双 LAN 型号)，系统将回复设定为 Active Backup（网络容错）模式。
- 系统通讯端口：8080
- 安全等级：接受所有联机
- LCD 面板密码：空白\*
- VLAN 会被停用。
- 服务绑定：所有 NAS 服务在所有可用的网络接口上运行。

\*此功能只适用于配有 LCD 面板的机种，详情请参考 <http://www.qnap.com>。

### **系统进阶重设（按重设键 10 秒）**

持续按系统重置按钮 10 秒，系统会在第 3 秒及第 10 秒发出哔声，然后照系统网页（[控制面板]>[系统设置]>[备份/恢复]>[恢复出厂默认”]重设定，所有数据将会保存，但系统设定如使用者账号、使用者群组、网络文件夹将全部被清除，如要存取旧数据，可以照原来路径建立文件夹便可。

### 第3章 USB 单键备份

只有具备 USB 单键备份按钮的 NAS 型号提供此功能。有关详情，请访问 <http://www.qnap.com>。

系统型号	按键秒数（按单键备份按钮复制数据）
所有 NAS 型号	0.5 秒

透过前方 USB 端口执行单键备份功能

NAS 支持透过自动备份按钮直接由前方的 USB 端口将数据从外接储存装置复制数据至 NAS，或将 NAS 的数据备份至外接储存装置。要使用此功能，请依照以下步骤：

1. 确认已安装硬盘至 NAS。预设文件夹 Qusb 或 Usb 已建立。
2. 开启 NAS。
3. 在[备份站]>[外部备份] >[USB 单键备份]页面设定备份的模式。
4. 连接 USB 外接储存装置至 NAS 前方的 USB 埠。
5. 按 NAS 自动备份按钮一下。系统将根据在 NAS 上的设定备份数据。

**注意：**本功能采用增量备份，执行第一次完全备份后，系统会针对差异的档案进行备份。

## 第4章 系统灯号及蜂鸣器说明

NAS 的 LED 灯号指示系统状态；当 NAS 开启时，可以检查以下项目确定系统运作正常。注意检视灯号状态前，必须在 NAS 上正确安装好硬盘、接上电源及连接至网络。

LED	颜色	LED 状态	说明
系统状态	红/绿	绿灯/红灯每 0.5 秒 交错闪烁	<ol style="list-style-type: none"> <li>1. 硬盘格式化中。</li> <li>2. 系统初始化中。</li> <li>3. 韧体更新中。</li> <li>4. RAID 组态重建中。</li> <li>5. RAID 容量扩充 (Online RAID Capacity Expansion) 进行中。</li> <li>6. RAID 组态迁移 (Online RAID Level Migration) 进行中。</li> </ol>
		红灯常亮	<ol style="list-style-type: none"> <li>1. 硬盘异常。</li> <li>2. 硬盘群组容量已满。</li> <li>3. 硬盘群组容量将满。</li> <li>4. 系统风扇异常。</li> <li>5. 硬盘读写错误。</li> <li>6. 硬盘坏轨。</li> <li>7. RAID 降阶模式，即 RAID 5 或 RAID 6 组态有 2 颗硬盘损毁，系统数据仍能被读取。</li> <li>8. 硬件自我检查错误。</li> </ol>
		红灯每 0.5 秒闪烁	降阶模式 (RAID 1、RAID 5、RAID 6 降阶模式)。
		绿灯每 0.5 秒闪烁	<ol style="list-style-type: none"> <li>1. 系统开机中。</li> <li>2. 系统未设定。</li> <li>3. 硬盘未格式化。</li> </ol>
		绿灯常亮	系统可使用。
		关闭	所有硬盘进入待命模式。
LAN	橙	常亮	用户透过网络存取数据中并发生读写错误。
		闪烁	NAS 已连接到网络。
10 GbE <sup>1</sup>	绿	绿灯常亮	10GbE 网络扩充卡已安装。
		关闭	没有安装 10GbE 网络扩充卡。

<sup>1</sup> 10 GbE 网络扩充功能只适用于 TS-879 Pro、TS-1079 Pro、TS-879U-RP、TS-1279U-RP、TS-EC879U-RP、TS-EC1279U-RP、TS-1679U-RP、TS-EC1679U-RP、TS-870U-RP、TS-1270U-RP、TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、SS-EC1879U-SAS-RP 及 SS-EC1279U-SAS-RP。

HDD (硬盘)	红/绿	红灯闪烁	正在从网络访问 NAS。
		红灯常亮	硬盘读写错误。
		绿灯闪烁	硬盘读取中。
		绿灯常亮	硬盘可被存取。
USB	蓝	每 0.5 秒闪烁	<ol style="list-style-type: none"> <li>1. 系统侦测到有 USB 装置连接至前方的 USB 埠。</li> <li>2. 连接至系统前方的 USB 装置正被移除。</li> <li>3. 连接至系统前方的 USB 装置正被存取中。</li> <li>4. 正在复制系统数据至外接 USB/eSATA 装置，或正由外接 USB/eSATA 装置复制数据至系统。</li> </ol>
		常亮	系统侦测到前方 USB 端口有连接 USB 装置 (USB 装置已挂载至系统)。
		关闭	<ol style="list-style-type: none"> <li>1. 系统没有侦测到任何的 USB 装置。</li> <li>2. 系统已完成复制数据至前方的 USB 装置，或已完成由前方 USB 装置复制数据至系统。</li> </ol>
eSATA	橙	闪烁	资料存取中。
		关闭	系统没有侦测到任何 eSATA 装置。
存储扩展端口 状态 <sup>2</sup>	绿	关闭	未检测到扩展盒。
		常亮	检测到扩展盒。
		闪烁	正在访问扩展盒。

<sup>2</sup> 仅 TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、SS-EC1879U-SAS-RP 及 SS-EC1279U-SAS-RP 支持存储扩展端口状态 LED。



## 警示蜂鸣器：适用于所有 NAS 型号

警示蜂鸣器可于 [控制面板] > [系统设置] > [硬件] 页面关闭。

哔叫声	次数	说明
短哔 (0.5 秒)	1	<ol style="list-style-type: none"><li>1. 系统开启中。</li><li>2. (透过软件) 关闭系统中。</li><li>3. 系统重设。</li><li>4. 韧体已更新。</li></ol>
短哔 (0.5 秒)	3	NAS 数据无法从前部 USB 端口复制到外部存储设备。
短哔 (0.5 秒), 长哔 (1.5 秒)	3 (每 5 分钟)	系统风扇异常。
长哔 (1.5 秒)	2	<ol style="list-style-type: none"><li>1. 硬盘群组容量快满。</li><li>2. 硬盘群组容量已满。</li><li>3. 硬盘降阶模式。</li><li>4. 硬盘开始重建。</li><li>5. 插入或拔出了硬盘。</li></ol>
	1	<ol style="list-style-type: none"><li>1. 硬件关闭系统。</li><li>2. 系统可使用。</li></ol>

## 第5章 升级 Turbo NAS 内存（安装 RAM 模块）

### 警告：

- 以下操作说明必须由授权及合格的技术人员进行。
- 请务必依照以下说明安装 RAM 模块至 NAS，否则将有可能导致身体伤害甚至死亡。

QNAP 提供 4GB DDR3\*内存模块（可选购）及 4GB DDR3 ECC\*\*内存模块（可选购）将 NAS 的内存升级。使用者可以将额外的内存模块安装至 NAS 的主机板，升级后的内存信息可以在系统管理页面的 [系统信息] 中查阅。



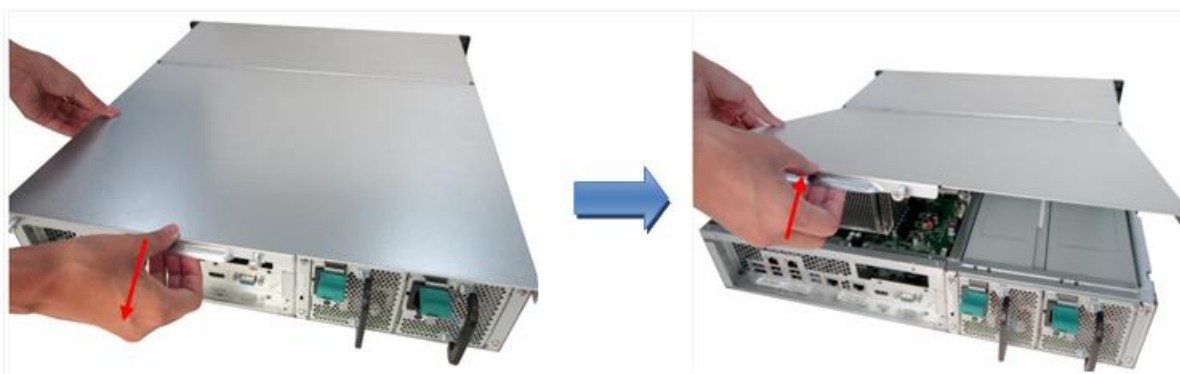
\*适用型号：TS-879U-RP、TS-1279U-RP、TS-1679U-RP、TS-870U-RP 及 TS-1270U-RP

\*\*适用型号：TS-EC879U-RP、TS-EC1279U-RP、TS-EC1679U-RP、TS-EC1279U-SAS-RP、  
TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、SS-EC1879U-SAS-RP、SS-EC1279U-SAS-RP。

1. 如图示移除 NAS 后方的两颗螺丝。



2. 握住上盖边缘沟槽拉出上盖，用双手将上盖卸下。



3. 将内存扩充槽的白色卡榫向外拨开。



4. 小心握住内存模块边缘，将模块金边上的接口与内存插槽的接口对齐，将内存推入插槽直至完全紧合。



## 第6章 安装网络扩充卡

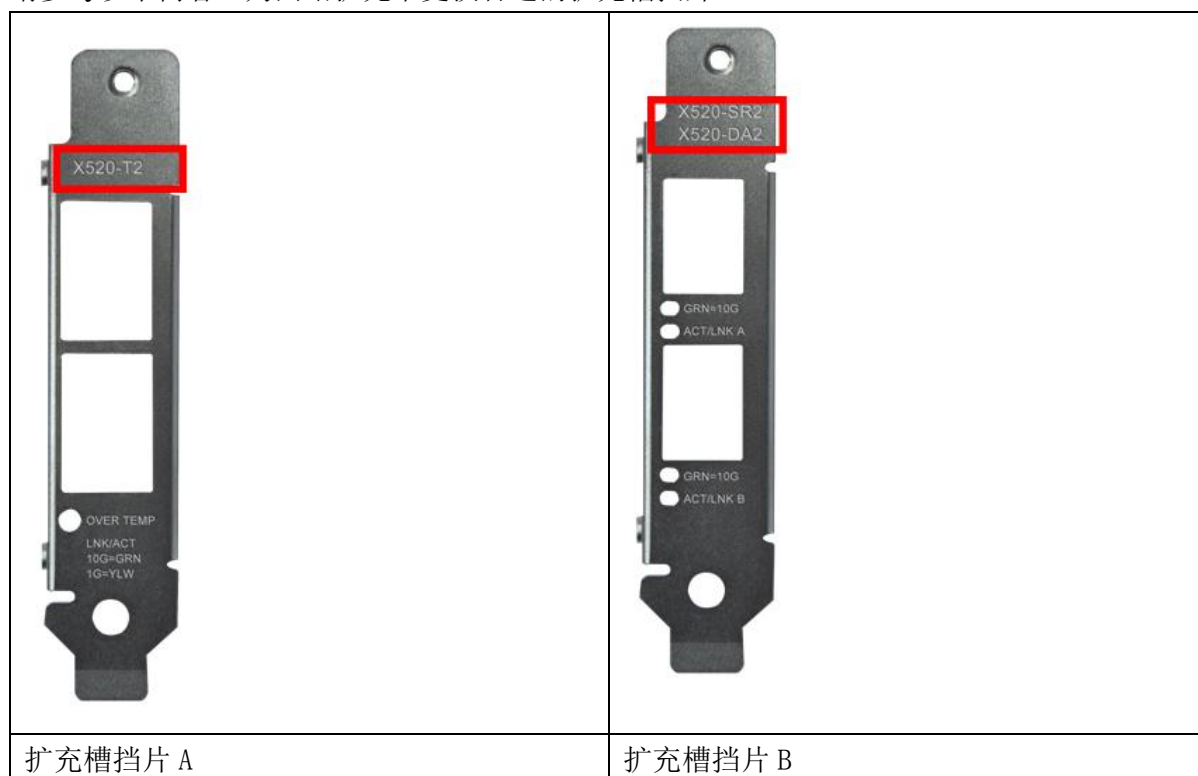
### 警告：

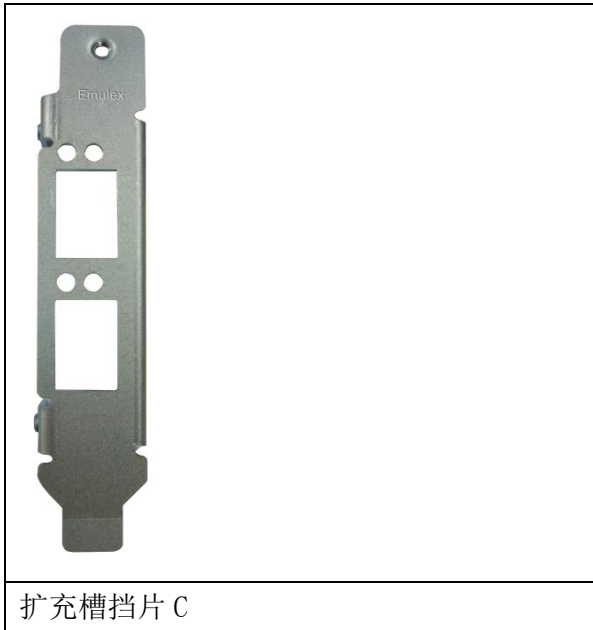
- 以下操作说明必须由授权及合格的技术人员进行。
- 请务必依照以下说明安装网络扩充卡至 NAS，否则将有可能导致身体伤害甚至死亡。

TS-x79 系列提供网络扩充插槽，使用者可以安装额外的网络扩充卡（需另购）至 NAS 的主机板增加网络频宽。

### 6.1 TS-879 Pro 及 TS-1079 Pro

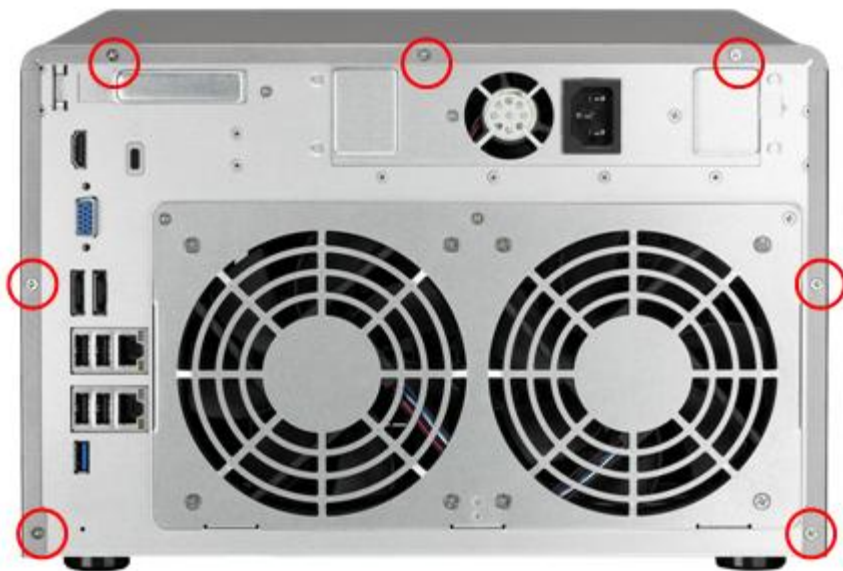
请参考以下内容，为网络扩充卡更换合适的扩充槽挡片。





	兼容网络扩充卡
扩充槽挡片 A (X520-T2)	Intel® Ethernet Server Adapter X520-T2 (E10G42B)
扩充槽挡片 B (X520-SR2/X520-DA2)	<ol style="list-style-type: none"> <li>1. Intel® Ethernet Server Adapter X520-SR2 (E10G42BFSR)</li> <li>2. Intel® Ethernet Server Adapter X520-DA2 (E10G42BTDA)</li> </ol>
扩充槽挡片 C (Emulex)	<ol style="list-style-type: none"> <li>1. Emulex OneConnect 10GbE Network Adapters, SFP+ Direct attach copper (OCe11102-NX)</li> <li>2. Emulex OneConnect 10GbE Network Adapters, Short reach optical (OCe11102-NM)</li> <li>3. Emulex OneConnect 10GbE Network Adapters, SFP+ Direct attach copper (OCe11102-IX)</li> <li>4. Emulex OneConnect 10GbE Network Adapters, Short reach optical (OCe11102-IM)</li> </ol>

1. 关闭 NAS 电源，移除 NAS 的电源变压器、网络线及其它连接装置及连接线。
2. 安装网络扩充卡前，请先戴上防静电的手腕带，并确保接地线接至地上。
3. 移除 NAS 背面的七颗螺丝。



4. 小心地移除 NAS 的外壳。



5. 移除螺丝及扩充插槽的面板。

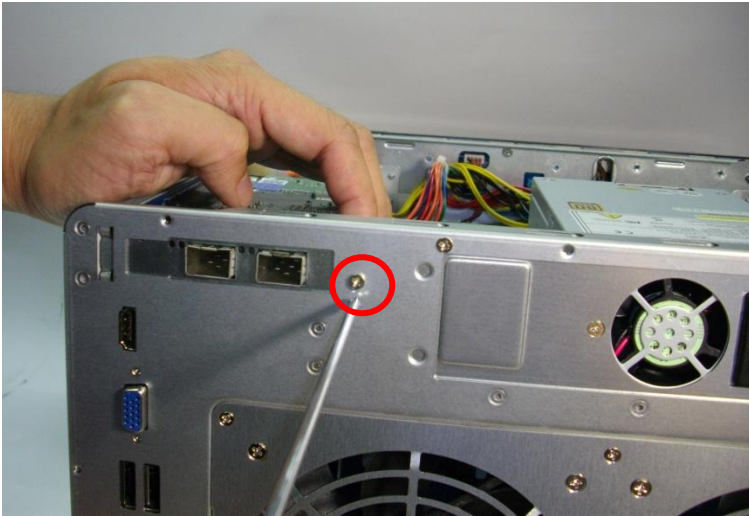


6. 小心握住网络扩充卡的边缘，将扩充卡金边上的接口与插槽的接口对齐。将网络扩充卡插入插槽直至完全紧合。





7. 锁上螺丝。

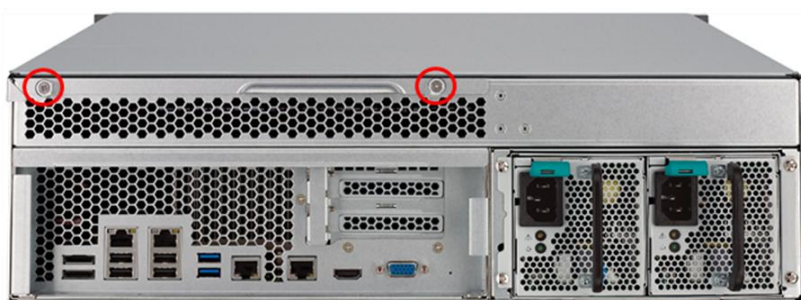


8. 将 NAS 外壳盖上并锁上螺丝，重新连接电源变压器、电源线及网络线等。

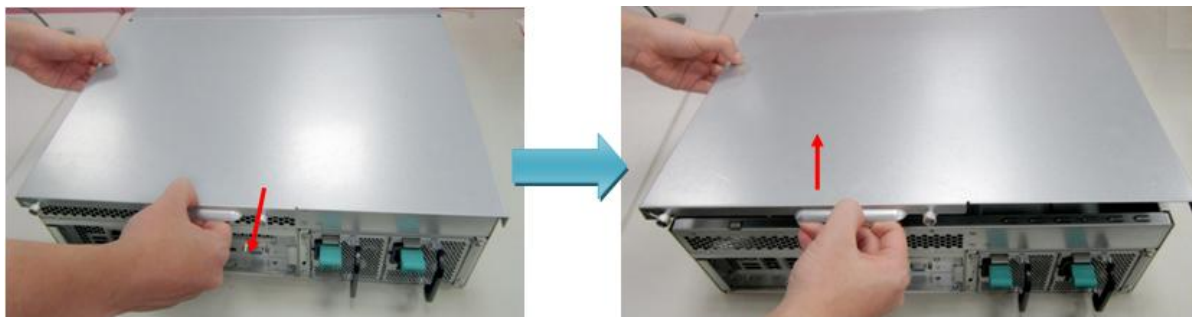
9. 要检查网络扩充卡是否成功被 NAS 侦测，请开启 NAS 电源，然后以管理者账号登入网页管理接口。在 [控制面板] > [系统设置] > [网络] > [TCP/IP] 页面检查网络接口的数目。

6.2 TS-879U-RP、TS-EC879U-RP、TS-1279U-RP、TS-EC1279U-RP、TS-1679U-RP、  
TS-EC1679U-RP、TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、  
SS-EC1879U-SAS-RP 及 SS-EC1279U-SAS-RP

1. 关闭 NAS 电源，移除 NAS 的电源变压器、网络线及其它连接装置及连接线。
2. 安装网络扩充卡前，请先戴上防静电的手腕带，并确保接地线接至地上。
3. 移除 NAS 背面的两颗螺丝。



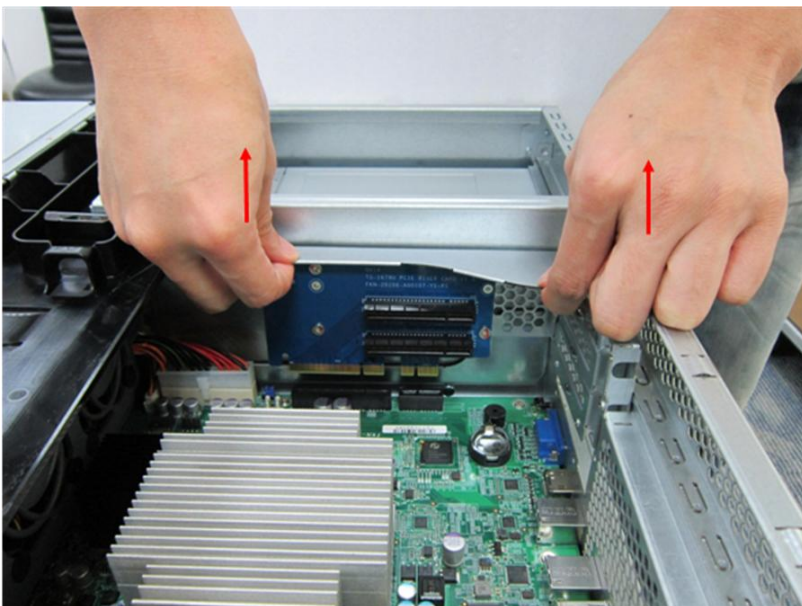
4. 握住上盖边缘沟槽拉出上盖，用双手将上盖卸下。



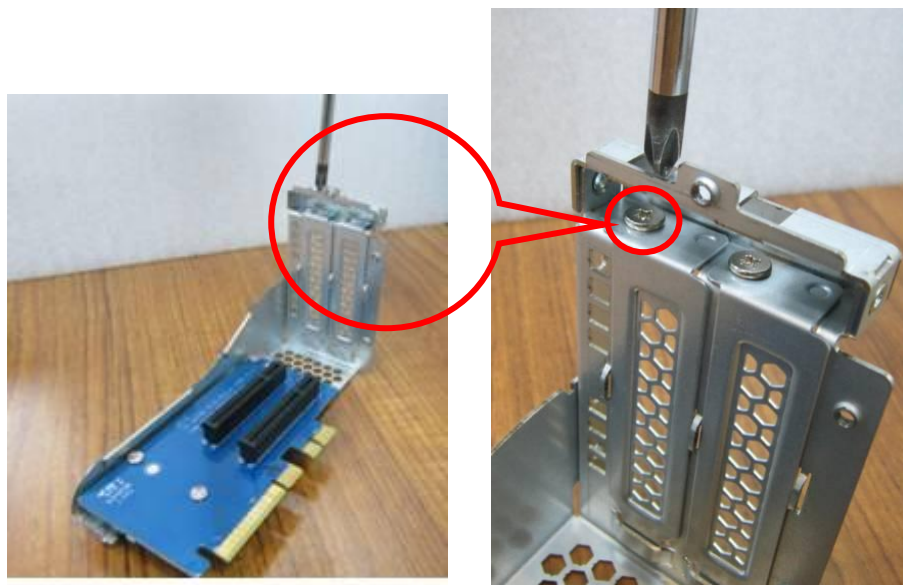
5. 如图示移除四颗螺丝。



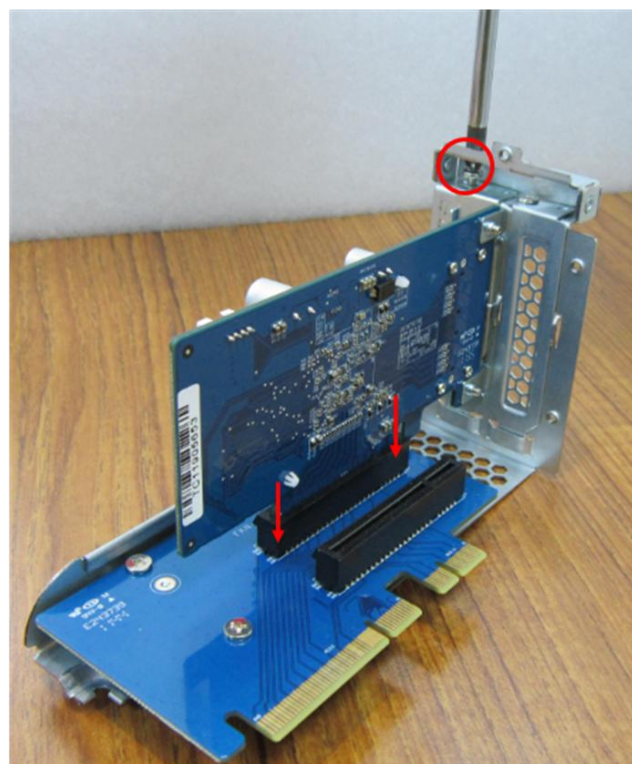
6. 握住金属扩充卡的边缘，并小心地移除扩充卡。



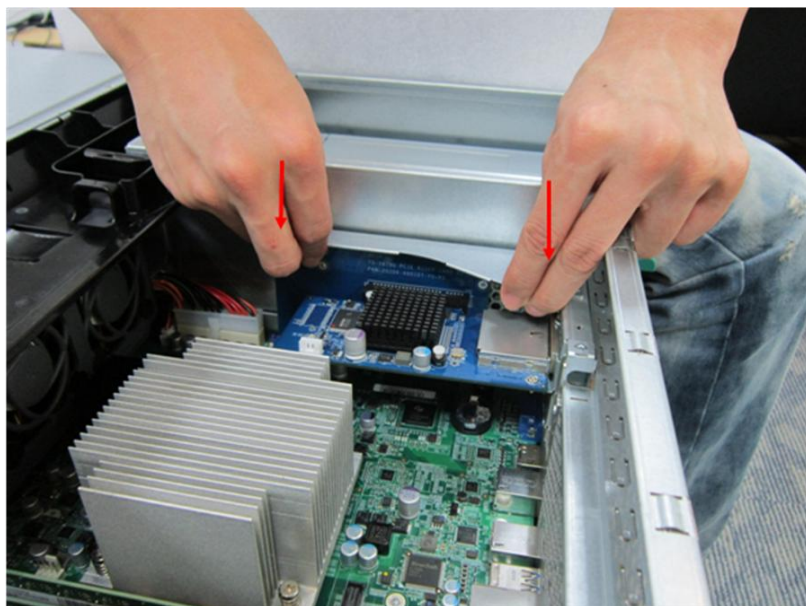
7. 移除螺丝及扩充槽的面板。



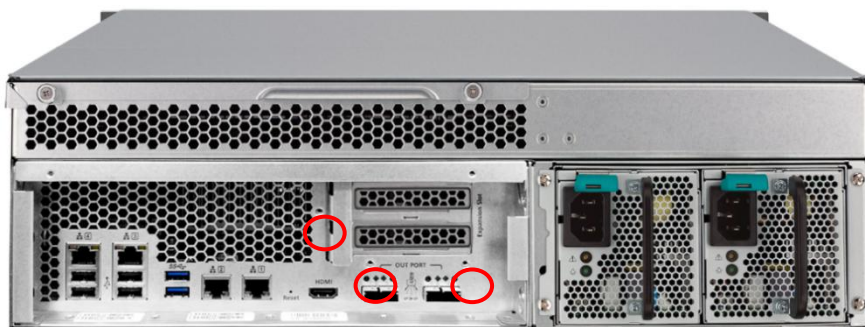
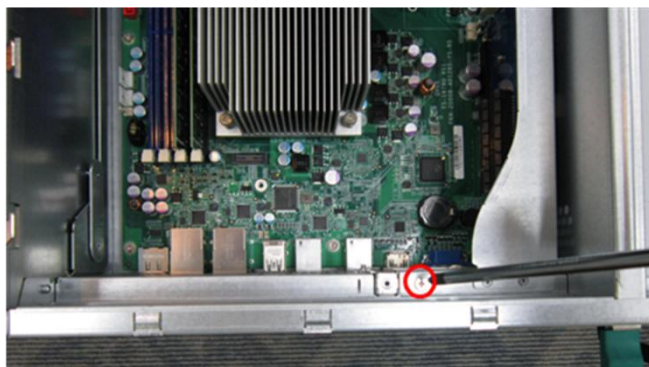
8. 将网络扩充卡插入 PCI 插槽直至完全紧合。锁上螺丝。



9. 小心握住扩充卡模块的边缘，将扩充卡金边上的接口与 PCIe 插槽的接口对齐。将扩充卡插入 PCIe 插槽直至完全紧合。



10. 锁上螺丝。将 NAS 外壳盖上并锁上螺丝。



11. 重新连接电源变压器、电源线及网络线等。
12. 要检查网络扩充卡是否成功被 NAS 侦测，请开启 NAS 电源，然后以管理者账号登入网页管理接口。在 [控制面板] > [系统设置] > [网络] > [TCP/IP] 页面检查网络接口的数目。

## 第7章 热抽换硬盘

QNAP NAS 支持各大硬盘品牌之 2.5 吋/3.5 吋 SATA 硬盘，有关支持硬盘信息，请至威联通网站查询：<http://www.qnap.com>。



### 注意：

- 威联通不负任何责任、原因下错误安装或使用硬盘所导致的产品损坏与不正常运作下的数据损失。
- 若要安装之硬盘从未被安装至 NAS，硬盘将会自动被格式化，硬盘上的数据会被清除。

系统型号	支持 3.5 吋 SATA 硬盘	支持 2.5 吋 SATA 硬盘	支持 3.5 吋 SATA 硬盘	支持 2.5 吋 SATA 硬盘	支持 SSD 固态硬盘	支持硬盘热抽换 (RAID 1 或以上磁盘组态)
TS-879 Pro, TS-1079 Pro, TS-879U-RP, TS-1279U-RP, TS-EC879U-RP, TS-EC1279U-RP, TS-1679U-RP, TS-EC1679U-RP	否	否	是	是	是	是
TS-EC1279U-SAS-RP, TS-EC1679U-SAS-RP	是	是	是	是	是	是
SS-EC2479U-SAS-RP, SS-EC1879U-SAS-RP, SS-EC1279U-SAS-RP	否	是	否	是	是	是

NAS 支持热抽换 RAID 1 组态内一颗失效硬盘或 RAID 5/RAID 6 组态内一至两颗失效硬盘。请依照以下说明热抽换 RAID 磁盘组态中失效的硬盘：

1. 登入 NAS，于 [存储管理器] > [存储群组] 中检查存储群组的状态。
2. 存储群组的状态应为[警告]，RAID 群组的状态应为[降阶]。
3. 准备一颗新的硬盘，硬盘的容量应该与原来的硬盘容量相同或大于原来的硬盘。
4. 将 NAS 的失效硬盘拔出。等待 20 秒或直至 NAS 发出两次哔声。
5. 将失效硬盘从硬盘抽取盒上移除。
6. 安装新的硬盘至硬盘抽取盒，然后安装至 NAS。
7. 系统会发出两次哔声（每次约 1.5 秒）。
8. 在管理页面再次检查硬盘群组状态，状态应为 [重建中]。



**警告：** 为避免触电，强烈建议使用者在更换硬盘前，先关闭系统。

## 第8章 RAID 回复

在系统中硬盘意外断开连接或移除的情况下，QNAP NAS 支持对故障 RAID 群组进行复原。使用者可以将未启动的 RAID1、RAID5 或 RAID6 群组回复至 [降级模式]，将未启动的 RAID 0 或 JBOD 配置回复至 [正常]。

磁盘组态	支援 RAID 回复	允许被移除的最大硬盘数目
单独硬盘	否	-
JBOD	是	1 颗或以上
RAID 0	是	1 颗或以上
RAID 1	是	1 颗或 2 颗
RAID 5	是	2 颗或以上
RAID 6	是	3 颗或以上
RAID 10	否	-

按照下述步骤复原 NAS 上未启动的 RAID 群组：

1. 确保 RAID 群组的卷状态是“未启动”。
2. 将之前从 NAS 中移除的硬盘装回原位。
3. 转到[存储管理器] > [存储群组]。选择降阶或未启动的 RAID 群组。单击[管理] > [复原]。
4. 等待约 1 分钟以完成此过程。完成后，即可访问 NAS 数据。

### 注意：

- 通过 RAID 复原将 RAID 1、RAID 5 或 RAID 6 RAID 群组从 [未启动] 回复至降阶模式后，使用者可以正常读写卷。同步后，卷状态将回复至正常状态。
- 如被移除的硬盘已损毁，复原功能将无法使用。



	一般 RAID 5	QNAP RAID 5	一般 RAID 6	QNAP RAID 6
降阶模式	N-1	N-1	N-1 & N-2	N-1 & N-2
只读保护（供实时数据备份或硬盘更换）	N/A	N-1, 在数组其余硬盘成员中发现有损坏扇区 (bad blocks)	N/A	N-2, 在数组其余硬盘成员中发现有损坏扇区 (bad blocks)
RAID 回复 (RAID 状态: 未启动)	N/A	重新安装原有硬盘至 NAS 上, 硬盘可以运转、可被辨认及存取, 硬盘的 Superblock 没有损坏。	N/A	重新安装原有硬盘至 NAS 上, 硬盘可以运转、可被辨认及存取, 硬盘的 Superblock 没有损坏。
RAID 损毁	N-2	N-2, 其余硬盘成员无法运转、被辨认及存取。	N-3	N-3, 其余硬盘成员无法运转、被辨认及存取。

N = 磁盘阵列中的硬盘数目。

## 第9章 使用 LCD 面板

\*此功能只适用于配有 LCD 面板的机种，详情请参考 <http://www.qnap.com>。

NAS 提供方便的 LCD 面板，让使用者设定硬盘组态及检视系统信息。

系统开始时，会显示服务器名称及 IP 地址：

N	A	S	5	F	4	D	E	3							
1	6	9	.	2	5	4	.	1	0	0	.	1	0	0	

第一次安装时，LCD 面板会显示侦测到的硬盘数目及 IP 地址，使用者可以视硬盘数目设定硬盘组态。

硬盘数目	预设硬盘组态	可供选择的硬盘组态*
1	Single (单独硬盘)	Single
2	RAID 1	Single -> JBOD -> RAID 0 -> RAID 1
3	RAID 5	Single -> JBOD -> RAID 0 -> RAID 5
4 或以上	RAID 5	Single -> JBOD -> RAID 0 -> RAID 5 -> RAID 6

\*按 ‘Select’ 按钮选择要设定的项目，按 ‘Enter’ 按钮确定。

例如，NAS已安装五颗硬盘，LCD面板会显示：

C	o	n	f	i	g	.	D	i	s	k	s	?		
→	R	A	I	D	5									

按 ‘Select’ 按钮浏览其它选项，如RAID 6。按 ‘Enter’ 按钮选择所需设定的组态，按 ‘Select’ 按钮选择 ‘Yes’ 。

C	h	o	o	s	e		R	A	I	D	5	?		
→	Y	e	s			N	o							

执行RAID 1、RAID 5或RAID 6设定时，系统会格式化硬盘、建立RAID磁盘阵列、格式化RAID磁盘阵列，然后将磁盘组态挂载至NAS，使用者可以在LCD面板检视进度，当进度达100%时，使用者可以存取磁盘组态（如建立共享资料夹或上载档案至NAS）。系统在完成以上步骤后，会执行RAID数据同步，使用者可以在 [存储管理器] > [卷管理] 页面检视进度，同步速度约30-60 MB/s（视硬盘型号、系统资源使用状况等而定），数据同步执行时，仍可存取磁盘。

**注意：**如RAID磁盘组态的其中一颗硬盘于同步时被移除或失效，RAID磁盘组态会进入降阶模式 (degraded mode)，装置的数据仍可被读取，当更换新的硬盘至装置时，系统便会开始重组磁盘组态。使用者可以在 [硬盘管理] 页面检视硬盘组态的状态。

若要增加硬盘群组的安全性，请于<Encrypt Volume?>设定选择 ‘Yes’ （系统预设的密钥密码为admin），若需要变更密钥密码，请透过使用者管理页面 [存储管理器] > [磁盘卷加密管理] 网页进行修改。

E	n	c	r	y	p	t		V	o	l	u	m	e	?	
→	Y	e	s			N	o								

设定完成后，面板会显示系统名称及IP地址，如NAS无法设定硬盘组态，将显示以下讯息。

C	r	e	a	t	i	n	g	.	.	.					
R	A	I	D	5		F	a	i	l	e	d				

**注意：**数据加密功能因部份国家或地区之相关法例限制而不提供。

## 使用LCD面板检视系统信息

当NAS的LCD面板显示系统名称及IP地址时，可以按 ‘Enter’ 按钮进入Main Menu（主选单）。

Main Menu提供以下选项：

1. TCP/IP
2. Physical disk
3. Volume
4. System
5. Shut down
6. Reboot
7. Password
8. Back

### 1. TCP/IP

在TCP/IP，可以检视以下项目：

- LAN IP Address
- LAN Subnet Mask
- LAN Gateway
- LAN PRI. DNS
- LAN SEC. DNS
- Enter Network Settings
  - ✓ Network Settings - DHCP
  - ✓ Network Settings - Static IP\*
  - ✓ Network Settings - BACK
- Back to Main Menu

\* 在 ‘Network Settings - Static IP’ ，可以设定 LAN 1 及 LAN 2 的 IP 地址、子网掩码、通讯闸以及 DNS。

## 2. Physical disk

在Physical disk，可以检视以下信息：

- Disk Info
- Back to Main Menu

硬盘信息包括硬盘的温度及容量。

D	i	s	k	:	1		T	e	m	p	:	5	0	°	C
S	i	z	e	:		2	3	2		G	B				

## 3. Volume

此选项显示NAS的硬盘组态，第一行显示硬盘组态及容量，第二行显示组态的硬盘成员。

R	A	I	D	5						7	5	0	G	B
D	r	i	v	e		1	2	3	4					

如有多于一个硬盘群组，按 ‘Select’ 检视相关信息。以下为RAID 5硬盘群组的讯息说明。

LCD面板讯息	硬盘组态
RAID5+S	RAID5+spare
RAID5 (D)	RAID 5 degraded mode
RAID 5 (B)	RAID 5 rebuilding
RAID 5 (S)	RAID 5 re-synchronizing
RAID 5 (U)	RAID 5 unmounted
RAID 5 (X)	RAID 5 non-activated

#### 4. System

此选项显示系统温度及风扇转速。

C	P	U		T	e	m	p	:		5	0	°	C		
S	y	s		T	e	m	p	:		5	5	°	C		

S	y	s		F	a	n	:	8	6	5	R	P	M		

#### 5. Shut down

使用此选项关闭系统，按 ‘Select’ 按钮选择 ‘Yes’，然后按 ‘Enter’ 确定。

#### 6. Reboot

使用此选项重新启动系统，按 ‘Select’ 按钮选择 ‘Yes’，然后按 ‘Enter’ 确定。

#### 7. Password

LCD面板的预设密码为空白。使用此选项变更LCD面板密码，按 ‘Yes’ 继续。

C	h	a	n	g	e		P	a	s	s	w	o	r	d	
					Y	e	s		→	N	o				

密码最多为8个数字位（0-9），输入完成后，选择 ‘OK’，按 ‘Enter’ 按钮，然后再确认一次新密码。

N	e	w		P	a	s	s	w	o	r	d	:			
														O	K

#### 8. Back

选择此项目回到主目录（Main Menu）。

## 系统讯息

当系统发生错误或异常状况时，LCD面板会显示系统讯息，按 ‘Enter’ 按钮检视讯息内容，再按一下 ‘Enter’ 可检视下一个讯息。

S	y	s	t	e	m	E	r	r	o	r	!			
P	l	s	.		C	h	e	c	k		L	o	g	s

系统讯息	说明
Sys. Fan Failed	系统风扇异常
Sys. Overheat	系统过热
HDD Overheat	硬盘过热
CPU Overheat	CPU过热
Network Lost	在Failover或Load balancing模式下，LAN 1及LAN 2网络联机中。
LAN1 Lost	LAN 1网络联机中
LAN2 Lost	LAN 2网络联机中
HDD Failure	硬盘异常
Vol1 Full	硬盘群组容量已满
HDD Ejected	硬盘被拔出
Vol1 Degraded	硬盘群组进入degraded mode（降阶模式）
Vol1 Unmounted	硬盘群组unmounted
Vol1 Nonactivate	硬盘群组未启动



## 第10章 安装电源供应器

- 10.1 TS-1279U-RP、TS-EC1279U-RP、TS-1679U-RP、TS-EC1679U-RP、TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、SS-EC1879U-SAS-RP 和 SS-EC1279U-SAS-RP。

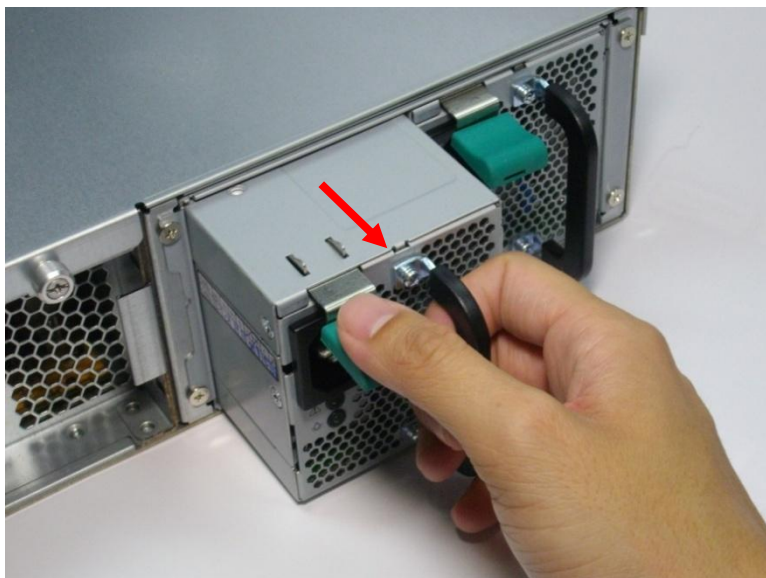
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要更换 TS-1279U-RP、TS-EC1279U-RP、TS-1679U-RP、TS-EC1679U-RP、TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP 或 SS-EC2479U-SAS-RP、SS-EC1879U-SAS-RP 和 SS-EC1279U-SAS-RP Turbo NAS 上的失效电源供应器，请参考以下说明：

1. 关闭 NAS 电源。
2. 握紧黑色手把并同时按下绿色杠杆。



3. 抽出失效的电源供应器。



4. 插入新的电源供应器至 NAS。



5. 开启 NAS。

## 10.2 TS-879U-RP、TS-EC879U-RP

以下操作说明必须由授权及合格的技术人员进行。

要更换 2U Turbo NAS 上的失效电源供应器，请参考以下说明：

1. 关闭 NAS 电源。
2. 以逆时针方向松开失效的电源供应器旁的螺丝。



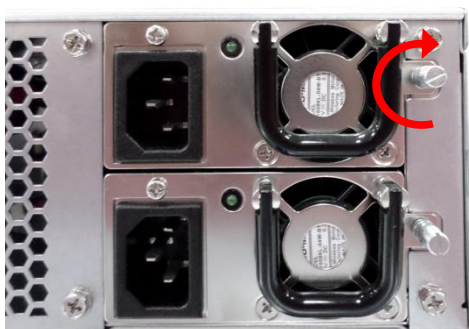
3. 拔出失效的电源供应器。



4. 插入新的电源供应器并推至末端。



5. 以顺时针方向将电源供应器旁的螺丝锁紧。



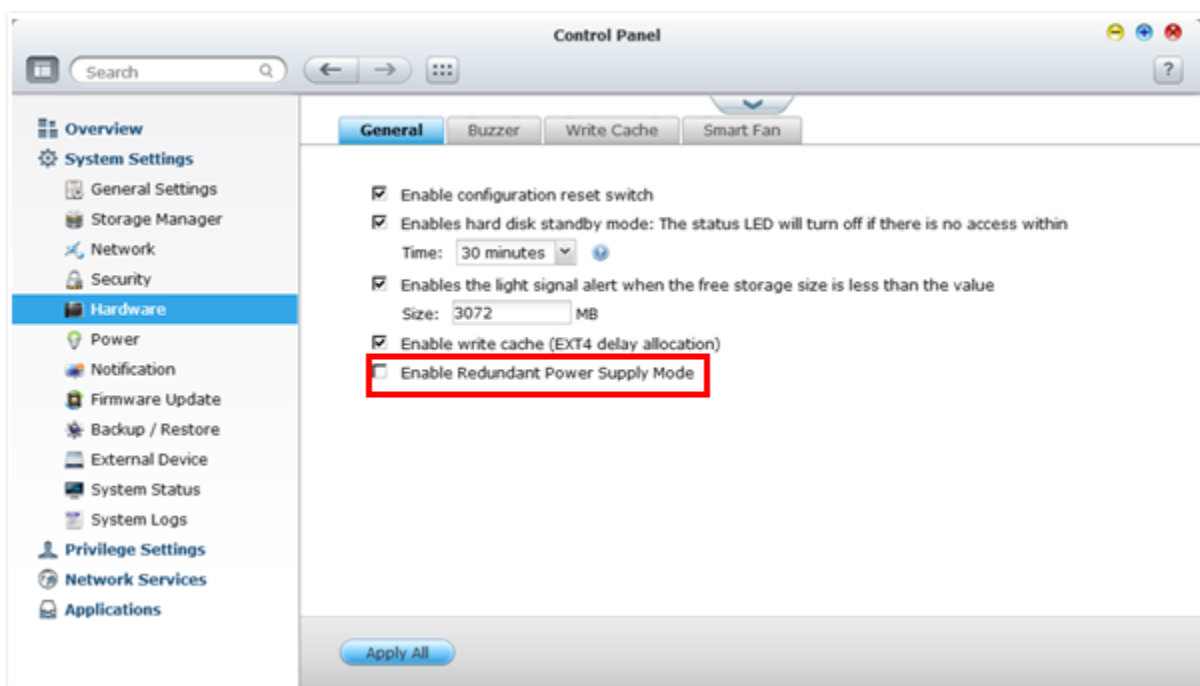
6. 开启 NAS。

### 于管理页面启动备援电源警告：

如 NAS 配备两组电源供应器，并已连接至电源插头，两颗电源供应器会同时供电（适用于 1U 及 2U 型号）。使用者可以登入 NAS 管理页面，进入[控制面板] > [系统设置] > [硬件] 启动 [备援电源供应模式]，当系统的电源供应器发生错误，如被拔除或失效，NAS 会发出声响，并在 [系统纪录] 页面记录错误讯息。

如 NAS 只安装一组电源供应器，建议不要启动此功能。

\*此功能预设关闭。



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## 附录 A 产品规范等级

NAS 型号	FCC	CE
SS-EC2479U-SAS-RP	Class A	Class A
SS-EC1879U-SAS-RP	Class A	Class A
SS-EC1279U-SAS-RP	Class A	Class A
TS-EC1679U-SAS-RP	Class A	Class A
TS-EC1279U-SAS-RP	Class A	Class A
TS-EC1679U-RP	Class A	Class A
TS-EC1279U-RP	Class A	Class A
TS-EC879U-RP	Class A	Class A
TS-1679U-RP	Class A	Class A
TS-1279U-RP	Class A	Class A
TS-879U-RP	Class A	Class A
TS-1079 Pro	Class A	Class A
TS-879 Pro	Class A	Class A

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Version 3, 29 June 2007

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