



QNAP Turbo NAS

TS-x79 系列硬體使用手冊

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感謝您購買威聯通產品。此使用手冊提供 Turbo NAS 的硬體說明及相關功能介紹，請仔細閱讀並依照本手冊使用產品功能。

本使用手冊適用於下列 Turbo NAS 型號：

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 以下簡稱為 NAS。
- 本手冊包含威聯通 Turbo NAS 系列網路儲存伺服器的使用說明，部份功能僅適用於特定型號，您所購買的型號可能不支援這些功能。
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規範聲明



FCC 聲明

QNAP NAS 符合不同的 FCC 規範等級。詳細資訊，請參考附錄 A。一旦確定本產品的等級，請參考以下對應的聲明。

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FCC A 級聲明

本產品符合 FCC 規則第 15 部份。產品操作受以下兩條件限制：

1. 本產品不得造成有害干擾。
2. 本產品必須接受任何接受到的干擾，包含可能造成意外操作的干擾。

注意：本產品已通過測試並符合 FCC 規則第 15 部分 A 級數位裝置之限制。此等限制旨在於此裝置於商業環境中操作時，提供免於有害干擾之合理保護所設計。本產品產生、使用、並可能放射無線電頻率能量，若未依據指示安裝及使用，可能對無線電通訊造成有害干擾。在住宅區操作本產品可能會造成有害干擾。在這種情況下，使用者必須自行解決干擾現象。

修改：任何未經過威聯通科技股份有限公司同意，對此產品之修改，可能會讓 FCC 規範授予此使用者操作本裝置的權力變為無效。

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1. 本產品不得造成有害干擾。
2. 本產品必須接受任何接受到的干擾，包含可能造成意外操作的干擾。

注意：本產品已通過測試並符合 FCC 規則第 15 部分 B 級數位裝置之限制。此等限制旨在為家用裝置提供免於有害干擾之合理保護所設計。本產品產生、使用、並可能放射無線電頻率能量，若未依據指示安裝及使用，可能對無線電通訊造成有害干擾。但特定之安裝並不保證免於發生干擾。若本產品對收音機、電視之收訊造成有害干擾(可開關設備之電源確認)，建議使用者以下列一種或多種方式改善干擾狀況：



- 重新調整或安置接收天線。
- 增加本產品與接收器之間的距離。
- 將本產品連接到與接收器不同的電源插座上。
- 如需協助，請洽詢經銷商或專業的收音機或電視技術人員。

修改：任何未經過威聯通科技股份有限公司同意，對此產品之修改，可能會讓 FCC 規範授予此使用者操作本裝置的權力變為無效。



QNAP NAS 符合不同的 CE 規範等級。詳細資訊，請參考附錄 A。

本文使用的符號說明

 警告	此符號表示使用者必須嚴格依照說明操作，否則將會導致身體傷害甚至死亡。
 注意	此符號表示該行為可能會引致硬碟資料被清除，或不依照說明操作之情況下，可能會導致資料、硬碟或產品損毀。

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安全須知

1. 本產品的使用環境溫度應介於 0°C–40°C(32°F -104°F)，相對濕度為 0%–95%。請確保其放置場所通風良好。
2. 與本產品連接的線路和裝置必須能提供本產品正常的電量(100W, 90–264V)，以確保其運作正常。
3. 切勿將本產品放置於直接受陽光曝曬或靠近化學藥劑的場所。請確保其所在環境維持穩定的溫度與濕度。
4. 清潔時本產品，先將電源插頭及所有線路拔下，再以乾布擦拭即可。切勿使用任何化學藥劑或噴霧式清潔劑清潔本產品。
5. 為確保機器正常運作，以及避免機器過熱，切勿將任何物品或重物放置於本產品上。
6. 安裝硬碟時，請務必使用平頭螺絲將硬碟固定在硬碟抽取盒上，以確保其運作正常。
7. 切勿使本產品靠近水源。
8. 切勿將本產品放置在不平穩的桌子或檯面上，以避免因本產品滑落而損壞。
9. 使用本產品時，請留意當地的電壓指示。若無法確定，請洽詢經銷商或當地電力公司。
10. 切勿放置任何物品於本產品的電源線上。
11. 切勿自行維修本產品。不當的拆裝，可能導致觸電或其他不良後果。若有任何維修問題，請洽詢當地經銷商。
12. 機架式系統只適用於機房，並應由授權之系統管理員管理及維護。機房必須上鎖，並只允許授權人員進入。



警告：

- 如錯誤更換電池，可能會有導致爆炸的危險。更換電池時，請務必更換同類型之電池，或更換製造商建議的類型。請依照當地廢棄物管理辦法規定，處理使用過之電池組。
- 切勿觸摸系統內之風扇，以避免嚴重性傷害。

第1章 CPU 處理器及記憶體規格



注意：變更威聯通產品的硬體、軟體或韌體，將導致產品保固完全失效。威聯通不負責任何因改機導致的任何形式的產品毀損或資料流失。使用者需自行負責因變更 Turbo NAS 硬件、更改系統韌體或安裝未授權的第三者應用程式而導致任何可能的資料損失或系統不穩定等問題。

系統型號	TS-879 Pro	TS-1079 Pro	TS-879U-RP
CPU 處理器	Intel Core i3 Dual Core (3.30 GHz)	Intel Core i3 Dual Core (3.30 GHz)	Intel Core i3 Dual Core (3.30 GHz)
記憶體	2GB DDR3 RAM	2GB DDR3 RAM	4GB DDR3 RAM
Flash 快閃記憶	512MB (USB DOM)	512MB (USB DOM)	512MB (USB DOM)
可否更換 CPU	否	否	否
可否更換記憶體	否	否	可
LONG-DIMM 插槽數目	2	2	4
硬碟插槽數目	8	10	8
擴充插槽數目	1	1	2

系統型號	TS-1279U-RP	TS-EC879U-RP	TS-EC1279U-RP
CPU 處理器	Intel Core i3 Dual Core (3.30 GHz)	Intel Xeon Quad Core (3.20 GHz)	Intel Xeon Quad Core (3.20 GHz)
記憶體	4GB DDR3 RAM	4GB DDR3 ECC RAM	4GB DDR3 ECC RAM
Flash 快閃記憶	512MB (USB DOM)	512MB (USB DOM)	512MB (USB DOM)
可否更換 CPU	否	否	否
可否更換記憶體	可	可	可
LONG-DIMM 插槽數目	4	4	4
硬碟插槽數目	12	8	12
擴充插槽數目	2	2	2

系統型號	TS-1679U-RP	TS-EC1679U-RP
CPU 處理器	Intel Core i3 Dual Core (3.30 GHz)	Intel Xeon Quad Core (3.20GHz)
記憶體	4GB DDR3 RAM	4GB DDR3 ECC RAM
Flash 快閃記憶	512MB (USB DOM)	512MB (USB DOM)
可否更換 CPU	否	否
可否更換記憶體	可	可
LONG-DIMM 插槽數目	4	4
硬碟插槽數目	16	16
擴充插槽數目	2	2

系統型號	TS-EC1279U-SAS-RP	TS-EC1679U-SAS-RP
CPU 處理器	Intel® Xeon Quad Core 處理器(3.40 GHz)	Intel® Xeon Quad Core 處理器 (3.40 GHz)
記憶體	8GB DDR3 ECC RAM	8GB DDR3 ECC RAM
Flash 快閃記憶	512MB (USB DOM)	512MB (USB DOM)
可否更換 CPU	否	否
可否更換記憶體	可	可
LONG-DIMM 插槽數目	4	4
硬碟插槽數目	12	16
擴充插槽數目	2	2

系統型號	SS-EC2479U-SAS-RP	SS-EC1879U-SAS-RP	SS-EC1279U-SAS-RP
CPU 處理器	Intel® Xeon Quad Core 處理器 (3.40 GHz)	Intel® Xeon Quad Core 處理器 (3.40 GHz)	Intel® Xeon Quad Core 處理器 (3.40 GHz)
記憶體	8GB DDR3 ECC RAM	8GB DDR3 ECC RAM	8GB DDR3 ECC RAM
Flash 快閃記憶	512MB (USB DOM)	512MB (USB DOM)	512MB (USB DOM)
可否更換 CPU	否	否	否
可否更換記憶體	可	可	可
LONG-DIMM 插槽數目	4	4	4
硬碟插槽數目	24	18	12
擴充插槽數目	2	2	2

第2章 電源按鈕及系統重置按鈕說明

- ✓ 電源按鈕：按此按鈕開啟或關閉系統。

系統型號	開啟系統	硬體關機	強制關機
所有型號	按一下	按 1.5 秒	按 5 秒

- ✓ 重置按鈕：按此按鈕重設系統至預設值。

系統型號	系統基本重設（嗶一聲）	系統進階重設（嗶兩聲）
所有型號	按 3 秒	按 10 秒

系統基本重設（按重設鍵 3 秒）

持續按系統重置按鈕 3 秒，系統會嗶一聲。以下設定將回復至預設值：

- 系統管理員密碼：admin
- TCP/IP 設定：藉由自動取得動態 IP 位址設定
- TCP/IP 設定：關閉 Jumbo Frame
- TCP/IP 設定：若有啟用 Port Trunking（適用於支援雙 LAN 型號），系統將回復設定為 Active Backup（網路容錯）模式。
- 系統通訊埠：8080
- 安全等級：接受所有連線
- LCD 面板密碼：空白*
- VLAN 會被停用
- 服務分配聯結：所有 NAS 服務，都可以在所有可用網路界面上運行。

*此功能只適用於配有 LCD 面板的機種，詳情請參考 <http://www.qnap.com>。

系統進階重設（按重設鍵 10 秒）

持續按系統重置按鈕 10 秒，系統會在第 3 秒及第 10 秒發出嗶聲。利用“Control Panel(控制面板)” > “System Settings(系統設置)” > “Backup / Restore(備份/復原)” > “Restore to Factory Default(恢復原廠預設值)”的路徑，NAS 會讓所有除了已保留的資料外，將系統設定重置為預設值。所有像是使用者帳號、使用者群組、及先前所設立的網路分享資料夾全部清除。如要存取舊資料，可以照原來路徑建立資料夾便可。

第3章 USB 單鍵備份

只有擁有 USB 單鍵複製(One Touch Copy)按鈕的 NAS 機型，才能提供此功能。詳情請上網站 <http://www.qnap.com> 洽詢。

系統型號	按鍵秒數（按單鍵備份按鈕複製資料）
所有 NAS 型號	0.5 秒

透過前方 USB 埠執行單鍵備份功能

NAS 支援透過自動備份按鈕直接由前方的 USB 埠將資料從外接儲存裝置複製資料至 NAS，或將 NAS 的資料備份至外接儲存裝置。要使用此功能，請依照以下步驟：

1. 確認已安裝硬碟至 NAS。預設資料夾 Qusb 或 Usb 已建立。
2. 開啟 NAS。
3. 在“Backup Station(備份站)” > “External Backup(外部備份)” > “USB one touch copy(USB 單鍵備份)” 頁面設定備份的模式。
4. 連接 USB 外接儲存裝置至 NAS 前方的 USB 埠。
5. 按 NAS 自動備份按鈕一下。系統將根據在 NAS 上的設定備份資料。

注意：本功能採用增量備份，執行第一次完全備份後，系統會針對差異的檔案進行備份。

第4章 系統燈號及蜂鳴器說明

NAS 的 LED 燈號指示系統狀態；當 NAS 開啟時，可以檢查以下項目確定系統運作正常。注意檢視燈號狀態前，必須在 NAS 上正確安裝好硬碟、接上電源及連接至網路。

LED	顏色	LED 狀態	說明
系統狀態	紅/綠	綠燈/紅燈每 0.5 秒交錯閃爍	<ol style="list-style-type: none"> 1. 硬碟格式化中。 2. 系統初始化中。 3. 韌體更新中。 4. RAID 組態重建中。 5. 線上 RAID 容量擴充進行中。 6. 線上 RAID 組態遷移進行中。
		紅燈常亮	<ol style="list-style-type: none"> 1. 硬碟異常。 2. 硬碟群組容量已滿。 3. 硬碟群組容量將滿。 4. 系統風扇異常。 5. 硬碟讀寫錯誤。 6. 硬碟壞軌。 7. RAID 降階模式，即 RAID 5 或 RAID 6 組態有 2 顆硬碟損毀，系統資料仍能被讀取。 8. 硬體自我檢查錯誤。
		紅燈每 0.5 秒閃爍	降階模式 (RAID 1、RAID 5、RAID 6 降階模式)。
		綠燈每 0.5 秒閃爍	<ol style="list-style-type: none"> 1. 系統開機中。 2. 系統未設定。 3. 硬碟未格式化。
		綠燈常亮	系統可使用。
		關閉	所有 NAS 上的硬碟進入待命模式。
LAN	橙	常亮	使用者透過網路存取資料中並發生讀寫錯誤。
		閃爍橘燈	NAS 已與網路相連。

10 GbE ¹	綠	綠燈常亮	10GbE 網路擴充卡已安裝。
		關閉	沒有安裝 10GbE 網路擴充卡。
HDD (硬碟)	紅/綠	紅燈閃爍	正由網路存取 NAS。
		紅燈常亮	硬碟發生讀寫錯誤。
		綠燈閃爍	硬碟讀取中。
		綠燈常亮	硬碟可被存取。
USB	藍	每 0.5 秒閃爍	<ol style="list-style-type: none"> 1. 系統偵測到有 USB 裝置連接至前方的 USB 埠。 2. 連接至系統前方的 USB 裝置正被移除。 3. 連接至系統前方的 USB 裝置正被存取中。 4. 正在複製系統資料至外接 USB/eSATA 裝置，或正由外接 USB/eSATA 裝置複製資料至系統。
		常亮	系統偵測到前方 USB 埠有連接 USB 裝置 (USB 裝置已掛載至系統)。
		關閉	<ol style="list-style-type: none"> 1. 系統沒有偵測到任何的 USB 裝置。 2. 系統已完成複製資料至前方的 USB 裝置，或已完成由前方 USB 裝置複製資料至系統。
eSATA	橙	閃爍橘燈	eSata 裝置正被存取。
		關閉	系統沒有偵測到任何 eSATA 裝置。
儲存擴充插槽狀態 ²	綠	關閉	沒有偵測到任何擴充機櫃。
		綠燈	已偵測到擴充機櫃。
		閃爍綠燈	擴充機櫃正被存取。

¹ 10 GbE 網路擴充功能只適用於 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、SS-EC2479U-SAS-RP、SS-EC1879U-SAS-RP 及 SS-EC1279U-SAS-RP。

² 僅 TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、SS-EC1879U-SAS-RP 及 SS-EC1279U-SAS-RP 提供儲存擴充埠口狀態 LED。

警示蜂鳴器：適用於所有 NAS 型號

警示蜂鳴器可於“Control Panel(控制面板)” > “System Settings(系統設置)” > “Hardware(硬體)”頁面關閉。

嗶叫聲	次數	說明
短嗶 (0.5 秒)	1	<ol style="list-style-type: none">1. 系統開啟中。2. 系統關閉中 (透過軟體)。3. 系統重設。4. 韌體已更新。
短嗶 (0.5 秒)	3	系統資料無法從前端 USB 埠複製到外部除存裝置。
短嗶 (0.5 秒), 長嗶 (1.5 秒)	3 (每 5 分鐘)	系統風扇異常。
長嗶 (1.5 秒)	2	<ol style="list-style-type: none">1. 硬碟群組容量快滿。2. 硬碟群組容量已滿。3. 硬碟降階模式。4. 硬碟開始重建。5. 某硬碟正插入或拔出。
	1	<ol style="list-style-type: none">1. 硬體關閉系統。2. 系統已開啟且可使用。

第5章 升級 Turbo NAS 記憶體（安裝 RAM 模組）

警告：

- 以下操作說明必須由授權及合格的技術人員進行。
- 請務必依照以下說明安裝 RAM 模組至 NAS，否則將有可能導致身體傷害甚至死亡。

QNAP 提供 4GB DDR3*記憶體模組（可選購）及 4GB DDR3 ECC**記憶體模組（可選購）將 NAS 的記憶體升級。使用者可以將額外的記憶體模組安裝至 NAS 的主機板，升級後的記憶體資訊可以在系統管理頁面的 [系統資訊] 中查閱。



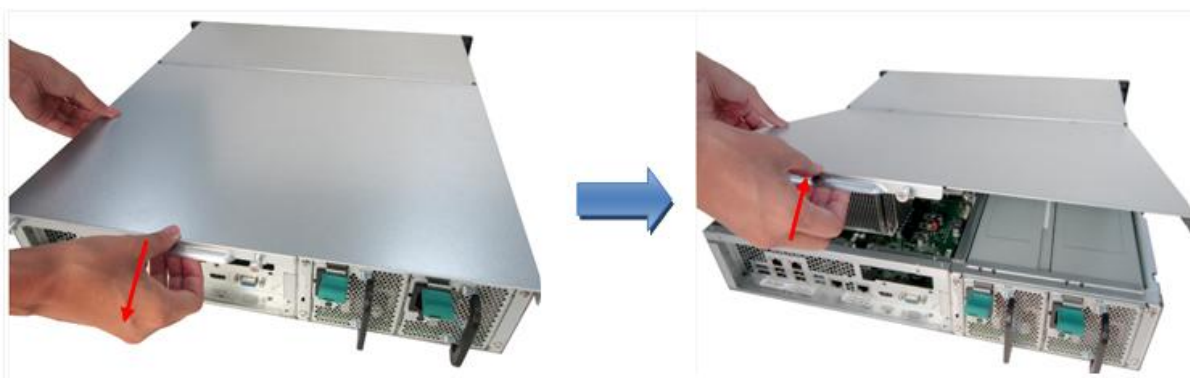
*適用型號：TS-879U-RP、TS-1279U-RP、TS-1679U-RP、TS-870U-RP 及 TS-1270U-RP

**適用型號：TS-EC879U-RP、TS-EC1279U-RP 及 TS-EC1679U-RP、
TS-EC1279U-SAS-RP、TS-EC1679U-SAS-RP、SS-EC2479U-SAS-RP、
SS-EC1879U-SAS-RP、SS-EC1279U-SAS-RP。

1. 如圖示移除 NAS 後方的兩顆螺絲。



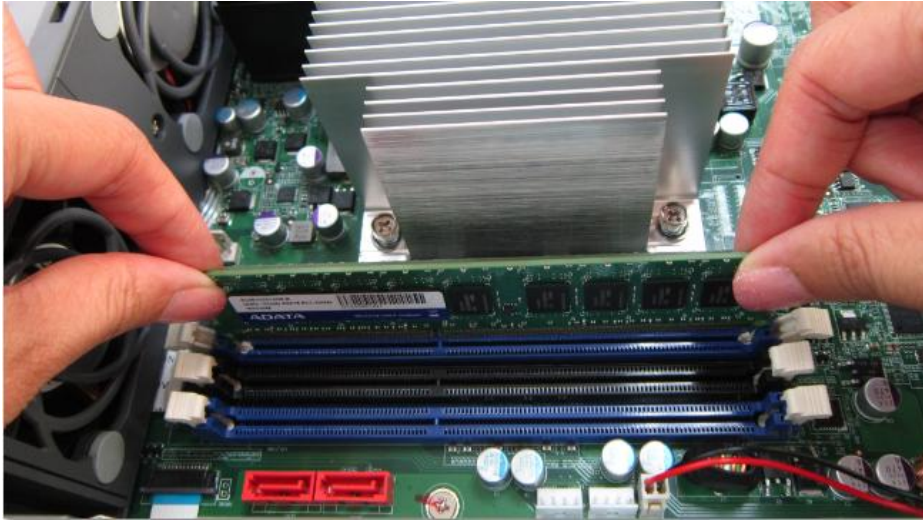
2. 握住上蓋邊緣溝槽拉出上蓋，用雙手將上蓋卸下。



3. 將記憶體擴充槽的白色卡榫向外撥開。



4. 小心握住記憶體模組邊緣，將模組金邊上的接口與記憶體插槽的接口對齊，將記憶體推入插槽直至完全緊合。



第6章 安裝網路擴充卡

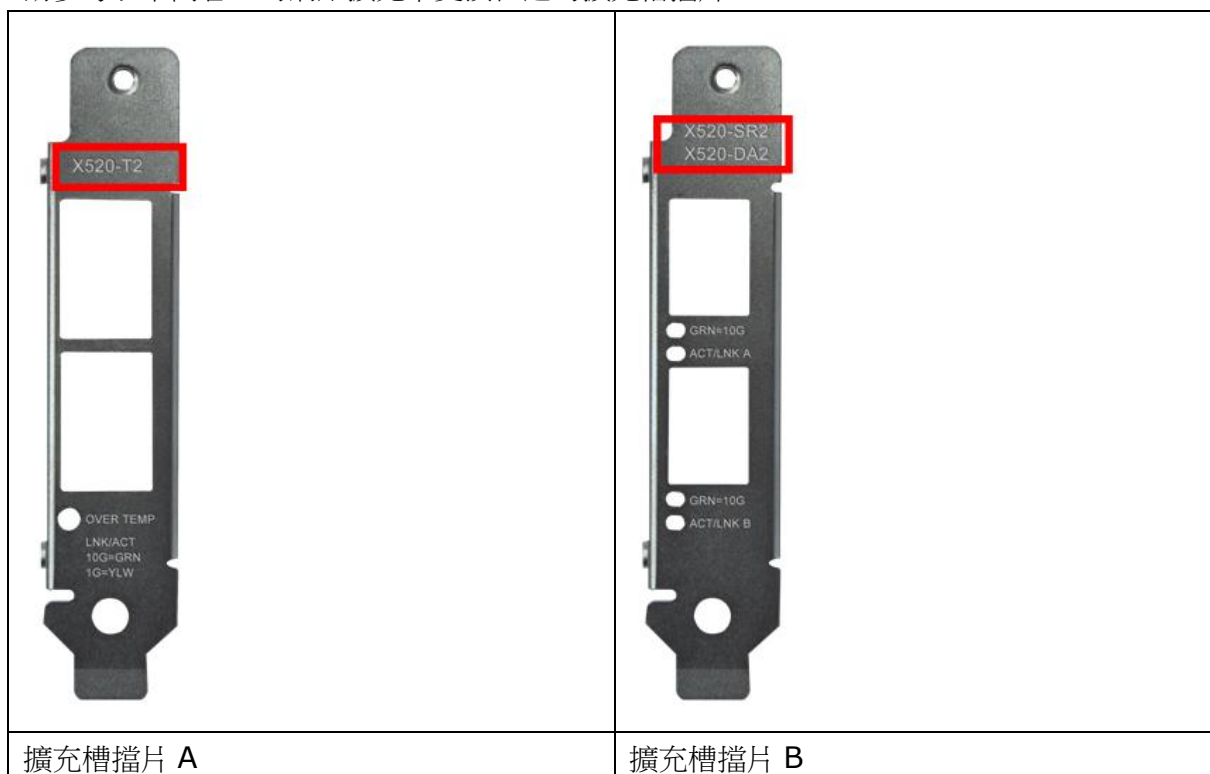
警告：

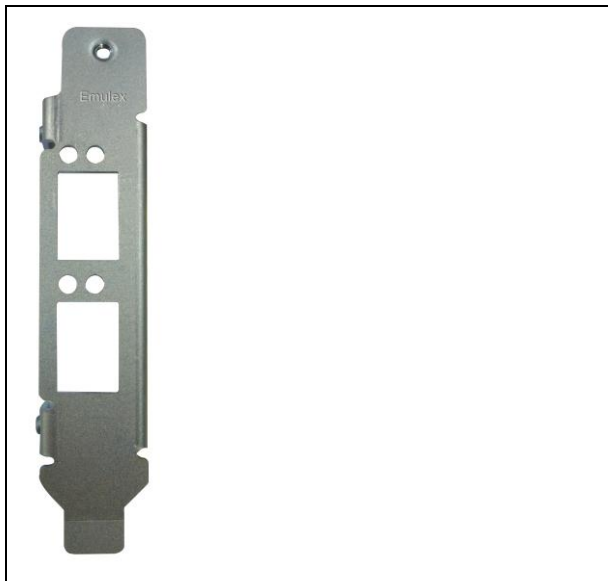
- 以下操作說明必須由授權及合格的技術人員進行。
- 請務必依照以下說明安裝網路擴充卡至 NAS，否則將有可能導致身體傷害甚至死亡。

TS-x79 系列提供網路擴充插槽，使用者可以安裝額外的網路擴充卡（需另購）至 NAS 的主機板增加網路頻寬。

6.1 TS-879 Pro 及 TS-1079 Pro

請參考以下內容，為網路擴充卡更換合適的擴充槽擋片。

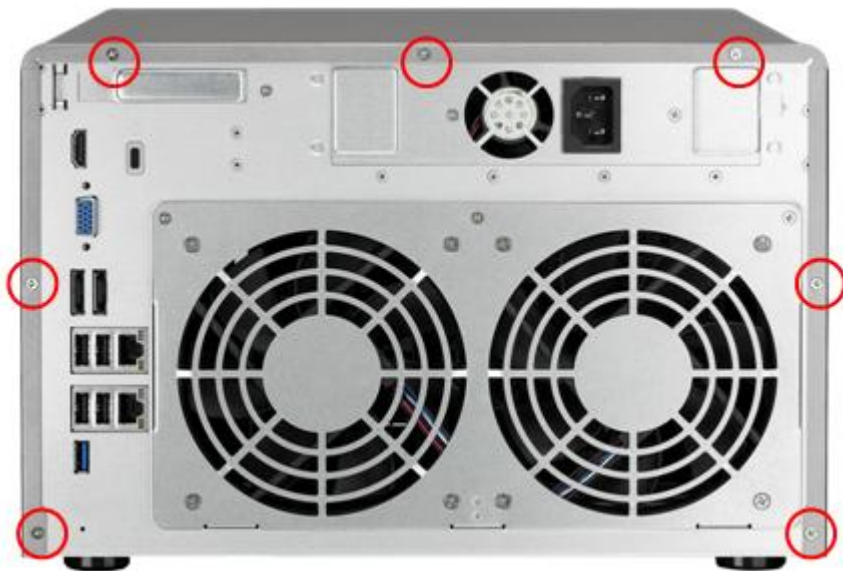




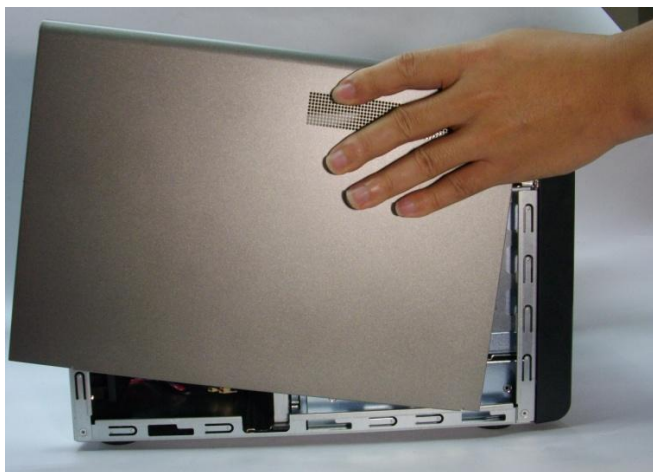
擴充槽擋片 C

	相容網路擴充卡
擴充槽擋片 A (X520-T2)	Intel® Ethernet Server Adapter X520-T2 (E10G42B)
擴充槽擋片 B (X520-SR2/X520-DA2)	<ol style="list-style-type: none"> 1. Intel® Ethernet Server Adapter X520-SR2 (E10G42BFSR) 2. Intel® Ethernet Server Adapter X520-DA2 (E10G42BTDA)
擴充槽擋片 C (Emulex)	<ol style="list-style-type: none"> 1. Emulex OneConnect 10GbE Network Adapters, SFP+ Direct attach copper (OCe11102-NX) 2. Emulex OneConnect 10GbE Network Adapters, Short reach optical (OCe11102-NM) 3. Emulex OneConnect 10GbE Network Adapters, SFP+ Direct attach copper (OCe11102-IX) 4. Emulex OneConnect 10GbE Network Adapters, Short reach optical (OCe11102-IM)

1. 關閉 NAS 電源，移除 NAS 的電源變壓器、網路線及其他連接裝置及連接線。
2. 安裝網路擴充卡前，請先戴上防靜電的手腕帶，並確保接地線接至地上。
3. 移除 NAS 背面的七顆螺絲。



4. 小心地移除 NAS 的外殼。



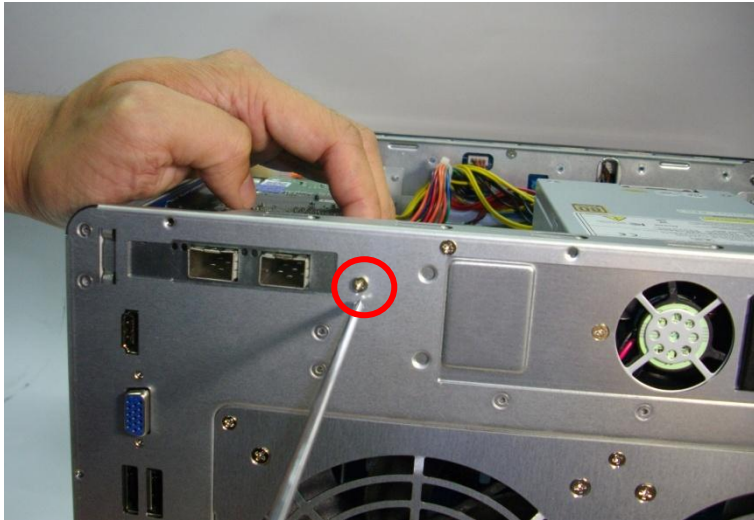
5. 移除螺絲及擴充插槽的面板。



6. 小心握住網路擴充卡的邊緣，將擴充卡金邊上的接口與插槽的接口對齊。將網路擴充卡插入插槽直至完全緊合。



7. 鎖上螺絲。

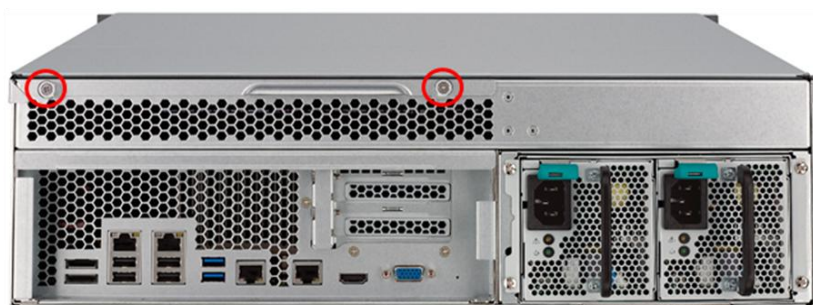


8. 將 NAS 外殼蓋上並鎖上螺絲，重新連接電源變壓器、電源線及網路線等。

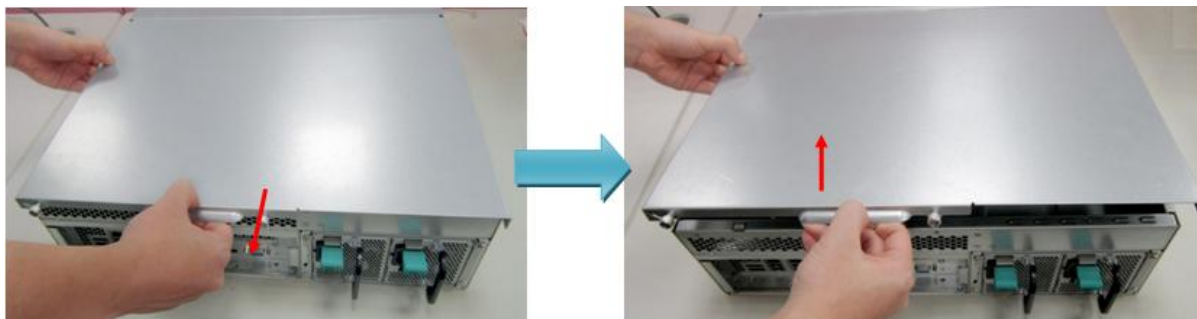
9. 要檢查網路擴充卡是否成功被 NAS 偵測，請開啟 NAS 電源，然後以管理者帳號登入網頁管理介面。在 “Control Panel(控制面板)” > “System Settings(系統設置)” > “Network”(網路) > “TCP/IP” 頁面檢查網路介面的數目。

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. 關閉 NAS 電源，移除 NAS 的電源變壓器、網路線及其他連接裝置及連接線。
2. 安裝網路擴充卡前，請先戴上防靜電的手腕帶，並確保接地線接至地上。
3. 移除 NAS 背面的兩顆螺絲。



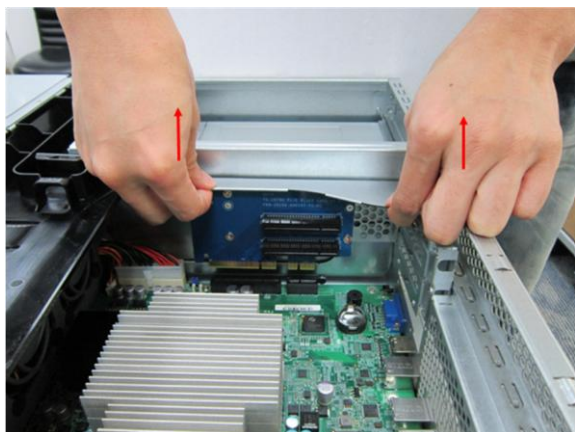
4. 握住上蓋邊緣溝槽拉出上蓋，用雙手將上蓋卸下。



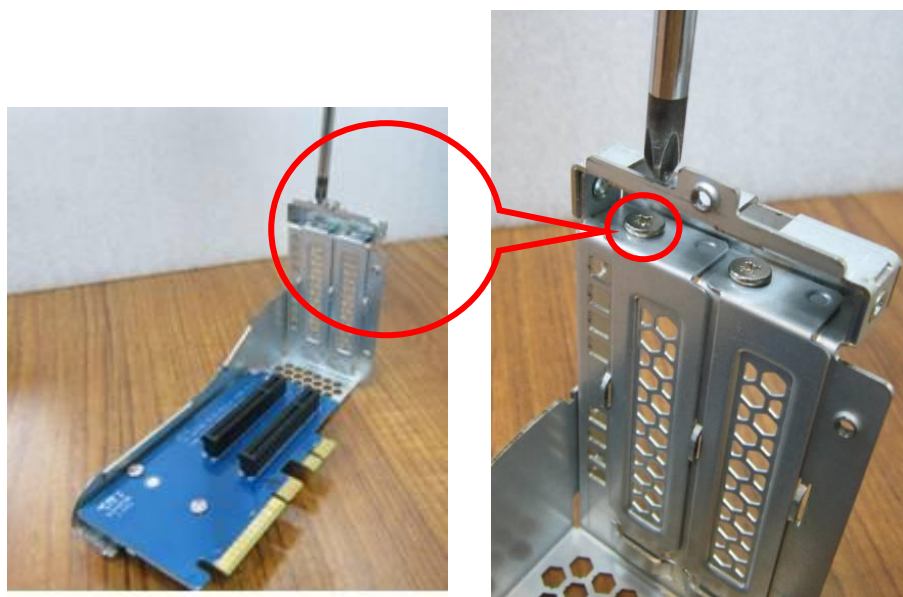
5. 如圖示移除四顆螺絲。



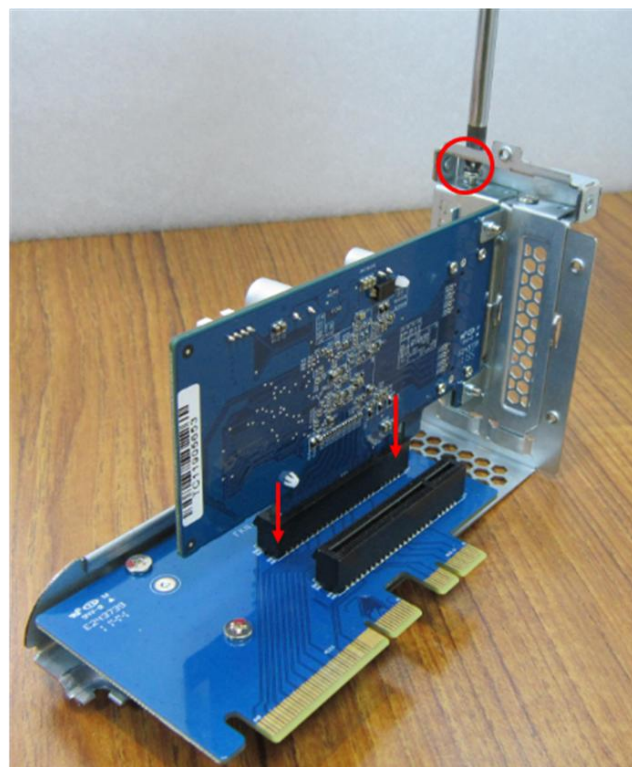
6. 握住金屬擴充卡的邊緣，並小心地移除擴充卡。



7. 移除螺絲及擴充槽的面板。



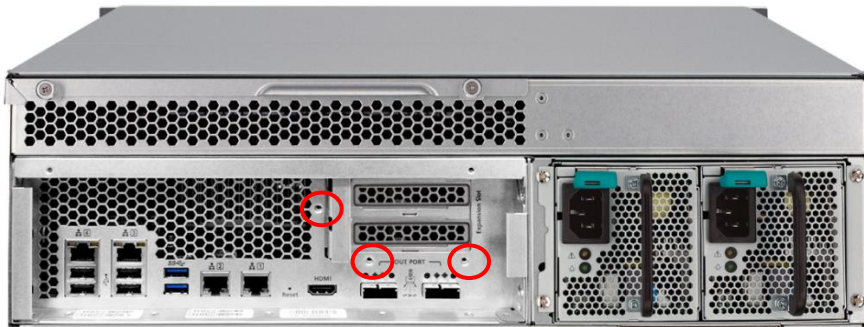
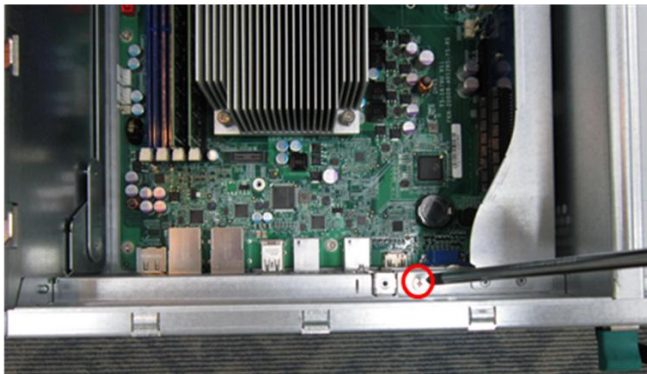
8. 將網路擴充卡插入 PCI 插槽直至完全緊合。鎖上螺絲。



9. 小心握住擴充卡模組的邊緣，將擴充卡金邊上的接口與 **PCIe** 插槽的接口對齊。將擴充卡插入 **PCIe** 插槽直至完全緊合。



10. 鎖上螺絲。將 NAS 外殼蓋上並鎖上螺絲。



11. 重新連接電源變壓器、電源線及網路線等。
12. 欲檢查網路擴充卡是否成功被 NAS 偵測，請開啟 NAS 電源，然後以管理者帳號登入網頁管理介面。在“Control Panel(控制面板)” > “System Settings(系統設置)” > “Network(網路)” > “TCP/IP” 頁面檢查網路介面的數目。

第7章 熱抽換硬碟

QNAP NAS 支援各大硬碟品牌之 2.5 吋/3.5 吋 SATA 硬碟，有關支援硬碟資訊，請至威聯通網站查詢：<http://www.qnap.com>。



注意：

- 威聯通不負責任何情況、原因下錯誤安裝或使用硬碟所導致的產品損壞與不正常運作下的資料損失。
- 若欲安裝之硬碟從未被安裝至 NAS，硬碟將會自動被格式化，硬碟上的資料會被清除。

系統型號	支援 3.5 吋 SAS 硬碟	支援 2.5 吋 SAS 硬碟	支援 3.5 吋 SATA 硬碟	支援 2.5 吋 SATA 硬碟	支援 SSD 固態硬碟	支援硬碟熱抽換 (RAID 1 或以上磁碟組態)
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

當 RAID 1 組態內一顆硬碟失效或 RAID 5/RAID 6 組態內一至兩顆硬碟失效時，NAS 可支援熱抽換。請依照以下說明熱抽換 RAID 磁碟組態中失效的硬碟：

1. 登入 NAS，於“Storage Manager(硬碟管理)” > “Storage Pools(硬碟群組)” 頁面檢查硬碟群組的狀態。
2. 硬碟群組的狀態應為“Warning(警告)” 且 RAID 群組狀態應為 “Degraded(降階模式)”。
3. 準備一顆新的硬碟，硬碟的容量應該與原來的硬碟容量相同或大於原來的硬碟。
4. 將 NAS 的失效硬碟拔出。等待 20 秒或直至 NAS 發出兩次嗶聲。
5. 將失效硬碟從硬碟抽取盒上移除。
6. 安裝新的硬碟至硬碟抽取盒，然後安裝至 NAS。
7. 系統會發出兩次嗶聲（每次約 1.5 秒）。
8. 在管理頁面再次檢查硬碟群組狀態，狀態應為 [重建中]。



警告：為避免觸電，強烈建議使用者在更換硬碟前，先關閉系統。

第8章 RAID 回復

QNAP NAS 可支援由於意外將硬碟自系統上脫離被移除時，所致之故障 RAID 組群復原。使用者可以將未啟動的 RAID 1、RAID 5 或 RAID 6 組群，回復至 [降級模式]，或將未啟動的 RAID 0 與 JBOD 組態回復至 [正常模式]。

磁碟組態	支援 RAID 回復	允許被移除的最大硬碟數目
單獨硬碟	否	-
JBOD	是	1 顆或以上
RAID 0	是	1 顆或以上
RAID 1	是	1 顆或 2 顆
RAID 5	是	2 顆或以上
RAID 6	是	3 顆或以上
RAID 10	否	-

按以下程序，復原 NAS 上未啟動的 RAID 組群：

1. 確認 RAID 組群的容量狀態為“未啟動”。
2. 將先前從 NAS 上移除的同一個硬碟，回裝至原硬碟插槽中。
3. 進入“Storage Manager(儲存管理)” > “Storage Pools(硬碟群組)”頁面。選擇降級匯未啟動的 RAID 組群。點擊“Manage(管理)” > “Recover(復原)”。
4. 等候約 1 分鐘，讓整個程序完成。當程序結束時，就能存取 NAS 資料。

注意：

- 在將 RAID 1、RAID 5 或 RAID 6 等 RAID 群組，藉由 RAID 復原，從 [未啟動] 回復至降階模式後，使用者可以正常讀寫資料。於同步後，容量狀態將回復至正常狀態。
- 如被移除的硬碟已損毀，RAID 復原功能將無法使用。

	一般 RAID 5	QNAP RAID 5	一般 RAID 6	QNAP RAID 6
降階模式	N-1	N-1	N-1 & N-2	N-1 & N-2
唯讀保護（供即時資料備份或硬碟更換）	N/A	N-1，在陣列其餘硬碟成員中發現有損壞磁區(bad blocks)	N/A	N-2，在陣列其餘硬碟成員中發現有損壞磁區(bad blocks)
RAID 回復 （RAID 狀態：未啟動）	N/A	重新安裝原有硬碟至 NAS 上，硬碟可以運轉、可被辨認及存取，硬碟的 Superblock 沒有損壞。	N/A	重新安裝原有硬碟至 NAS 上，硬碟可以運轉、可被辨認及存取，硬碟的 Superblock 沒有損壞。
RAID 損毀	N-2	N-2，其餘硬碟成員無法運轉、被辨認及存取。	N-3	N-3，其餘硬碟成員無法運轉、被辨認及存取。

N = 磁碟陣列中的硬碟數目。

第9章 使用 LCD 面板

*此功能只適用於配有 LCD 面板的機種，詳情請參考 <http://www.qnap.com>。

NAS 提供方便的 LCD 面板，讓使用者設定硬碟組態及檢視系統資訊。

系統開始時，會顯示伺服器名稱及IP位址：

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

第一次安裝時，LCD面板會顯示偵測到的硬碟數目及IP位址，使用者可以視硬碟數目設定硬碟組態。

硬碟數目	預設硬碟組態	可供選擇的硬碟組態*
1	Single (單獨硬碟)	Single (單獨硬碟)
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' 按鈕選擇要設定的項目，按 'Enter' 按鈕確定。

例如，NAS已安裝五顆硬碟，LCD面板會顯示：

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

按 'Select' 按鈕瀏覽其他選項，如RAID 6。按 'Enter' 按鈕選擇所需設定的組態，按 'Select' 按鈕選擇 'Yes'。

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

執行RAID 1、RAID 5或RAID 6設定時，系統會格式化硬碟、建立RAID磁碟陣列、格式化RAID磁碟陣列，然後將磁碟組態掛載至NAS，使用者可以在LCD面板檢視進度，當進度達100%時，使用者可以存取磁碟組態（如建立共用資料夾或上載檔案至NAS）。系統在完成以上步驟後，會執行RAID資料同步，使用者可以在"Storage Manager(儲存管理)" > "Volume Management(容量管理)" 頁面檢視進度，同步速度約30-60 MB/s（視硬碟型號、系統資源使用狀況等而定），資料同步執行時，仍可存取磁碟。

注意：如RAID磁碟組態的其中一顆硬碟於同步期間被移除或失效時，RAID磁碟組態會進入降階模式 (degraded mode)。裝置的資料仍可被讀取。當更換了新的硬碟至裝置時，系統便會開始重組磁碟組態。使用者可以在"Volume Management(容量管理)" 頁面檢視硬碟組態的狀態。

若要增加硬碟群組的安全性，請於<Encrypt Volume?>設定選擇 'Yes'（系統預設的密鑰密碼為admin），若需要變更密鑰密碼，請透過使用者管理頁面“Storage Manager(儲存管理)” > “Disk volume Encryption Management(硬碟容量加密管理)” 網頁進行修改。

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

設定完成後，面板會顯示系統名稱及IP位址，如NAS無法設定硬碟組態，將顯示以下訊息。

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

注意：資料加密功能因部份國家或地區之相關法例限制而不提供。

使用LCD面板檢視系統資訊

當NAS的LCD面板顯示系統名稱及IP位址時，可以按 'Enter' 按鈕進入Main Menu（主選單）。Main Menu提供以下選項：

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，可以檢視以下項目：

- 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'，可以設定 LAN 1 及 LAN 2 的 IP 位址、子網路遮罩、通訊閘以及 DNS。

2. Physical disk

在Physical disk，可以檢視以下資訊：

- Disk Info
- Back to Main Menu

硬碟資訊包括硬碟的溫度及容量。

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

3. Volume

此選項顯示NAS的硬碟組態，第一行顯示硬碟組態及容量，第二行顯示組態的硬碟成員。

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

如有多於一個硬碟群組，按 'Select' 檢視相關資訊。以下為RAID 5硬碟群組的訊息說明。

LCD面板訊息	硬碟組態
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

此選項顯示系統溫度及風扇轉速。

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

使用此選項關閉系統，按 'Select' 按鈕選擇 'Yes'，然後按 'Enter' 確定。

6. Reboot

使用此選項重新啟動系統，按 'Select' 按鈕選擇 'Yes'，然後按 'Enter' 確定。

7. Password

LCD面板的預設密碼為空白。使用此選項變更LCD面板密碼，按 'Yes' 繼續。

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

密碼最多為8個數字位元（0-9），輸入完成後，選擇 'OK'，按 'Enter' 按鈕，然後再確認一次新密碼。

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

8. Back

選擇此項目回到主目錄 (Main Menu)。

系統訊息

當系統發生錯誤或異常狀況時，LCD面板會顯示系統訊息，按 'Enter' 按鈕檢視訊息內容，再按一下 'Enter' 可檢視下一個訊息。

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

系統訊息	說明
Sys. Fan Failed	系統風扇異常
Sys. Overheat	系統過熱
HDD Overheat	硬碟過熱
CPU Overheat	CPU過熱
Network Lost	在Failover或Load balancing模式下，LAN 1及LAN 2網路連線中。
LAN1 Lost	LAN 1網路連線中
LAN2 Lost	LAN 2網路連線中
HDD Failure	硬碟異常
Vol1 Full	硬碟群組容量已滿
HDD Ejected	硬碟被拔出
Vol1 Degraded	硬碟群組進入degraded mode (降階模式)
Vol1 Unmounted	硬碟群組unmounted
Vol1 Nonactivate	硬碟群組未啟動

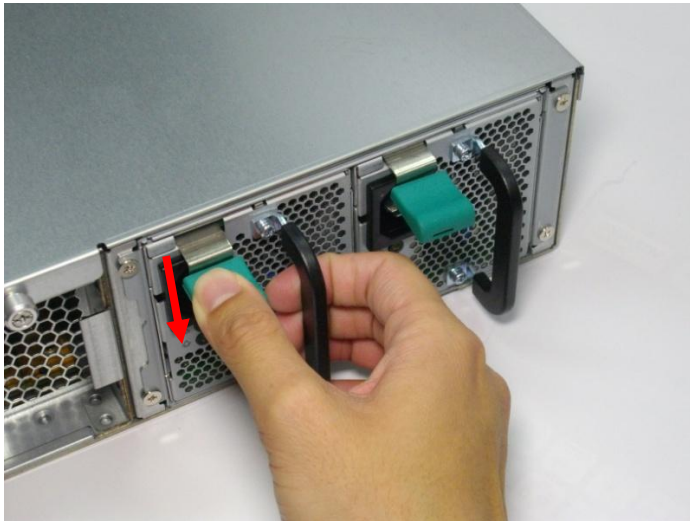
第10章 安裝電源供應器

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 以及 SS-EC1279U-SAS-RP

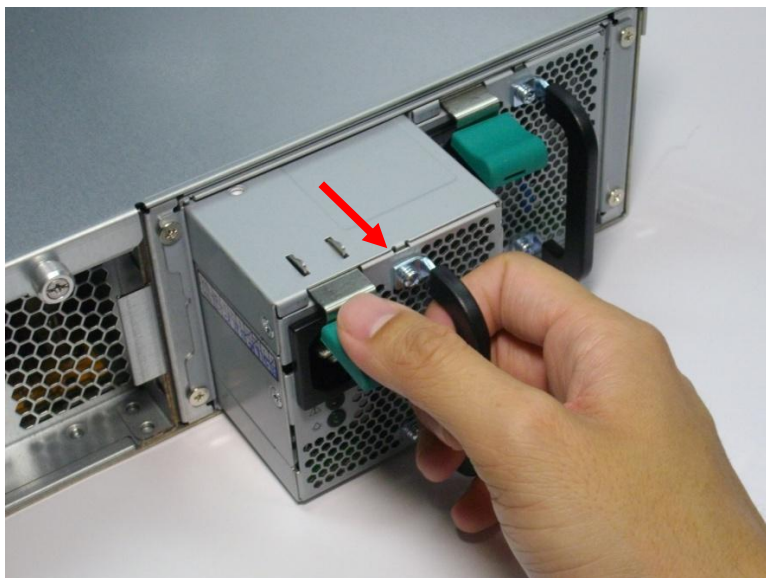
以下操作說明必須由授權及合格的技術人員進行。

欲更換 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 或 SS-EC1279U-SAS-RP Turbo NAS 等的故障電源供應器，請按以下程序進行。

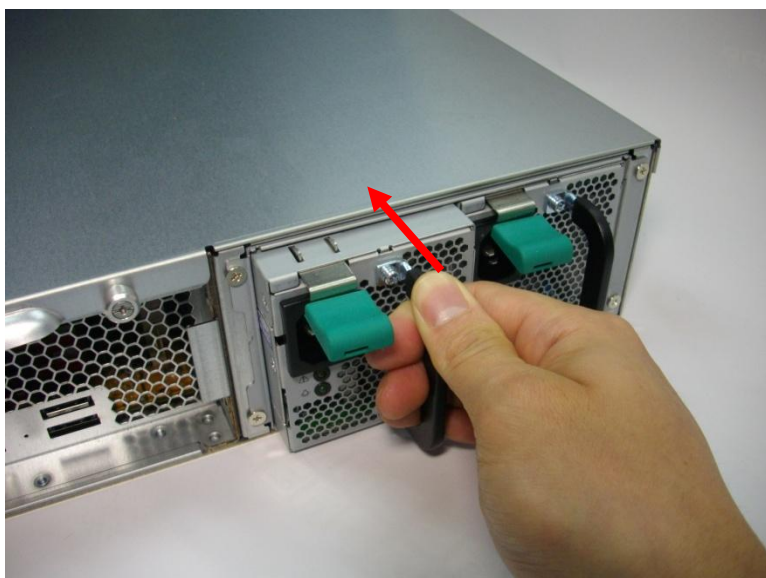
1. 關閉 NAS 電源。
2. 握緊黑色手把並同時按下綠色槓桿。



3. 抽出失效的電源供應器。



4. 插入新的電源供應器至 NAS。



5. 開啟 NAS。

10.2 TS-879U-RP, TS-EC879U-RP

以下操作說明必須由授權及合格的技術人員進行。

欲更換 2U Turbo NAS 上的失效電源供應器，請參考以下說明：

1. 關閉 NAS 電源。
2. 以逆時針方向鬆開失效的電源供應器旁的螺絲。



3. 拔出失效的電源供應器。



4. 將新的電源供應器插入 NAS。



5. 以順時針方向將電源供應器旁的螺絲鎖緊。



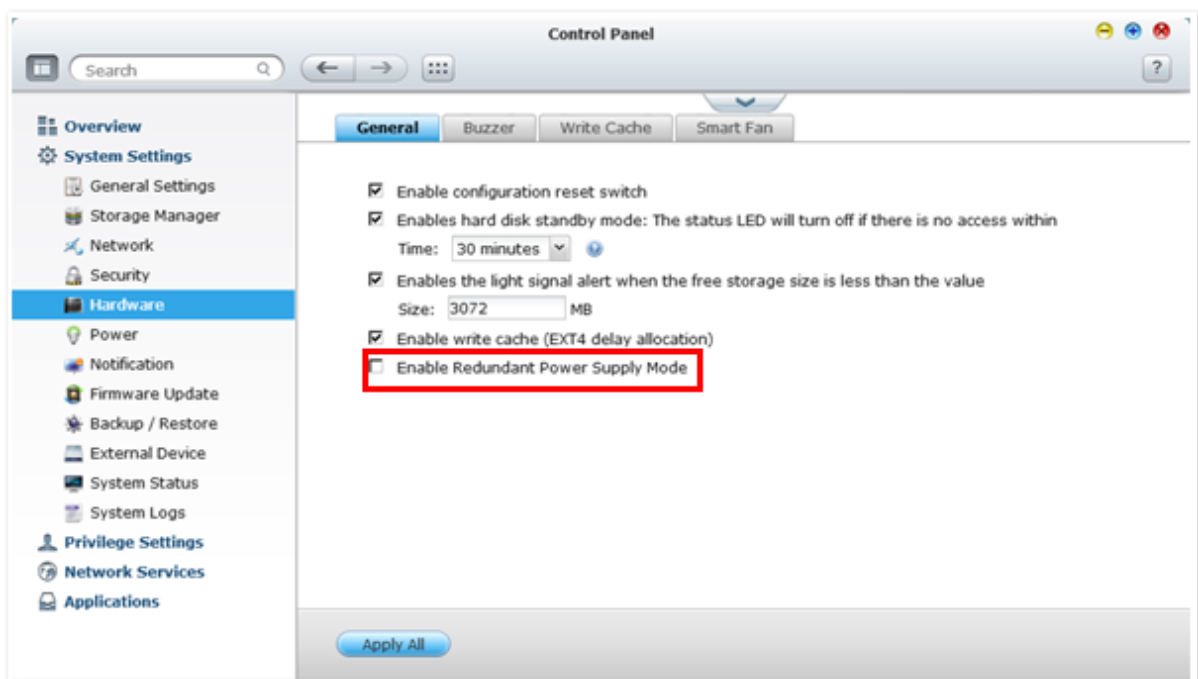
6. 開啟 NAS。

於管理頁面啟動備援電源警告：

如 NAS 配備兩組電源供應器，並已連接至電源插頭，兩顆電源供應器會同時供電（適用於 1U 及 2U 型號）。使用者可以在“Control Panel(控制面板)” > “System Settings(系統設置)” > “Hardware(硬體)” 頁面中，啟動 [備援電源供應模式]，以接收針對備援電源供應的預警警報。當系統的電源供應器被拔除或失效時，NAS 會發出聲響，並將錯誤訊息紀錄在 [系統紀錄] 裡。

如 NAS 只安裝一組電源供應器，建議不要啟動此功能。

*此功能預設為關閉。



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Email: q_supportus@qnap.com

電話：+1-909-595-2782

地址：168 University Parkway, Pomona CA 91768

服務時間：08:00-17:00 (GMT- 08:00 Pacific Time, 星期一至星期五)

附錄 A. 產品規範等級

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

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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.
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