



QNAP

TS-hx77XU-RP

TS-h977XU-RP
TS-h1277XU-RP

使用者指南

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1. 前言





關於本指南

本指南涵蓋 QNAP TS-hx77XU-RP NAS 的相關資訊，以及安裝硬體的逐步指示。此外，本指南也提供基本操作說明與疑難排解資訊。

適用對象

本文件的適用對象為消費者與儲存空間管理員。本指南預設使用者對於儲存與備份概念有基本的認識。

慣用符號

| 符號 | 說明 |
|---|-----------------------------|
|  | 注意事項。用於提供預設組態設定與其他補充資訊。 |
|  | 重要注意事項。用於提供必要組態設定及其他重要資訊。 |
|  | 提示。用於提供任務執行或組態設定的建議或替代方式。 |
|  | 警告。忽略此類資訊可能導致潛在損失、受傷甚至死亡事故。 |

2. 產品概觀

本章介紹 QNAP TS-hx77XU-RP NAS 的基本資訊。

關於 TS-hx77XU-RP

TS-hx77XU-RP NAS 搭載 AMD Ryzen™ 處理器，是資料儲存、備份、分享和集中化管理的卓越解決方案。TS-hx77XU-RP 具備功能強大的全新 AMD Ryzen™ 處理器，可於 QNAP NAS ZFS 檔案作業系統類型的 QuTS hero 上執行。TS-hx77XU-RP 具有通用的 PCIe 擴充卡插槽和最高可擴充至 64 GB 的記憶體，可滿足不斷變化的業務需求。每個 TS-hx77XU-RP 還配有四個網路連接埠（兩個 10GbE SFP+ 和兩個 1GbE RJ45），增加頻寬和傳輸率，以及一個預先安裝的雙埠 10GbE-T RJ45 網路擴充卡。此外，TS-hx77XU-RP 也能運用 AES-NI 加密引擎來提升加密檔案的傳輸速度。

硬體規格



提示

型號規格如有變更，恕不另行通知。若要查看最新規格，請前往 <https://www.qnap.com>。

| 訂購料號 | 硬碟插槽 | 記憶體 | 電源供應器 |
|--------------------------|------|--------------------|-------|
| TS-h977XU-RP-3700X-32G | 9 | AMD Ryzen™ 7 3700X | 備援 |
| TS-h1277XU-RP-3700X-32G | 12 | AMD Ryzen™ 7 3700X | 備援 |
| TS-h1277XU-RP-3700X-128G | 12 | AMD Ryzen™ 7 3700X | 備援 |

| 元件 | TS-h977XU-RP-3700X-32G | TS-h1277XU-RP-3700X-32G | TS-h1277XU-RP-3700X-128G |
|-------|---|-------------------------|-----------------------------------|
| 處理器 | | | |
| CPU | AMD Ryzen™ 7 3700X | | |
| 頻率 | 8 核心/16 執行緒 3.4 GHz 基頻/4.4 GHz 超頻 | | |
| 架構 | x86 64 位元 | | |
| 加密引擎 | AES-NI | | |
| 記憶體 | | | |
| 預載記憶體 | 32 GB RAM : 2 x 16 GB UDIMM DDR4 | | 128 GB RAM : 4 x 32 GB UDIMM DDR4 |
| 記憶體插槽 | 4 x Long-DIMM DDR4 | | |
| | <div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 10px;"> </div> <div> <p>重要</p> <ul style="list-style-type: none"> • 僅限使用 QNAP 記憶體模組以維護系統效能和穩定性。若是具有一個以上記憶體插槽的 NAS 硬碟，請使用規格相同的 QNAP 記憶體模組。 • 使用不支援的記憶體模組會導致效能降級、產生錯誤，或造成作業系統無法啟動。 </div> </div> | | |
| 最大記憶體 | 64 GB RAM : 4 x 16 GB | | 128 GB RAM : 4 x 32 GB |
| 快閃記憶體 | 5 GB (雙啟動作業系統防護) | | |
| 儲存 | | | |

| 元件 | TS-h977XU-RP-3700X-32G | TS-h1277XU-RP-3700X-32G | TS-h1277XU-RP-3700X-128G |
|------------------|--|--|--------------------------|
| 硬碟插槽 | <ul style="list-style-type: none"> • 4 x 3.5 吋 SATA 6 Gbps • 5 x 2.5 吋 SATA 6 Gbps | 12 x 3.5 吋 SATA 6 Gbps | |
| |  注意 硬碟插槽與 SATA 3 Gbps 硬碟回溯相容。 | | |
| 硬碟相容性 | 3.5 吋插槽： <ul style="list-style-type: none"> • 3.5 吋 SATA 硬碟 • 2.5 吋 SATA 硬碟 • 2.5 吋 SATA 固態硬碟 2.5 吋插槽： <ul style="list-style-type: none"> • 2.5 吋 SATA 硬碟 • 2.5 吋 SATA 固態硬碟  重要 2.5 吋硬碟托盤僅可容納高度不超過 9.5 mm 的硬碟。 | | |
| SSD 快取加速技術支援 | <ul style="list-style-type: none"> • 3.5 吋硬碟插槽：1 至 4 • 2.5 吋硬碟插槽：5 至 9 | 3.5 吋硬碟插槽：1 至 12 | |
| | 選購：M.2 SSD 擴充卡上的 M.2 SSD 插槽 | | |
| 熱抽換 | 支援 | | |
| 網路 | | | |
| 10 Gigabit 乙太網路埠 | <ul style="list-style-type: none"> • 2 x 10GbE SFP+ SmartNIC • 2 x 10GbaseT RJ45 | | |
| Gigabit 乙太網路埠 | 2 x GbE RJ45 | | |
| 外接 I/O 埠和擴充插槽 | | | |
| PCIe 插槽 | 1 x PCIe 3.0 x16 | <ul style="list-style-type: none"> • 2 x PCIe 3.0 x4 • 2 x PCIe 3.0 x8  注意 特定 PCIe 擴充槽受相鄰 PCIe 擴充槽中安裝擴充卡之影響。如需詳細資訊，請參見： 更換擴充卡 。 | |
| |  提示 請前往 https://www.qnap.com/compatibility 查看相容的擴充卡清單。 | | |
| USB 連接埠 | <ul style="list-style-type: none"> • 4 x USB 3.2 Gen 1 A 型 • 1 x USB 3.2 Gen 2 (10Gbps) 5V/1A A 型 | <ul style="list-style-type: none"> • 4 x USB 3.2 Gen 1 A 型 • 1 x USB 3.2 Gen 2 (10Gbps) 5V/3A C 型 • 1 x USB 3.2 Gen 2 (10Gbps) 5V/1A A 型 | |
| HDMI 連接埠 | 選用：PCIe 擴充卡 | | |
| 介面 | | | |

| 元件 | TS-h977XU-RP-3700X-32G | TS-h1277XU-RP-3700X-32G | TS-h1277XU-RP-3700X-128G |
|----------------|--|---|--------------------------|
| 顯示面板 | 單色背光 LCD 顯示面板 | | |
| 按鈕 | <ul style="list-style-type: none"> • 電源 • 重設 | | |
| 尺寸 | | | |
| 外型 | 1U 機架式 | 2U 機架式 | |
| 尺寸 (高 x 寬 x 深) | 43.3 x 482.6 x 505.54 mm (1.70 x 19.00 x 19.90 吋) | 88.3 x 482 x 562 mm (3.48 x 18.98 x 22.13 吋) | |
| 淨重 | 8.62 kg (19.00 lbs) | 13.73 kg (30.27 lbs) | |
| 其他 | | | |
| 滑軌相容性 | RAIL-B02  注意 <ul style="list-style-type: none"> • NAS 不含機架滑軌，必須另外購買。如需詳細資訊，請聯絡授權經銷商或前往 http://shop.qnap.com。 • 如需安裝機架滑軌的相關資訊，請參見機架滑軌包裝中的安裝指南。 | | |
| 電源供應器 | <ul style="list-style-type: none"> • TS-h977XU-RP：2 x 300W · 100-240V AC · 50/60 Hz • TS-h1277XU-RP：2 x 300W · 100-240V AC · 50/60 Hz | | |
| 系統電池 | CR2032 鋰電池 (3V · 225 mAh)  重要 請遵照當地法規或電池製造商的指示處置廢棄電池。 | | |
| 噪音值 | 43.8 dB(A) | 37.2 dB(A) | |
| |  注意 從旁觀者位置 (距 NAS 一公尺內) 測試噪音值。在測試用的 NAS 中安裝最多數量的硬碟，並以低速運行。 | | |
| 風扇 | 系統：3 x 40 mm · 12V DC 風扇 | 系統：2 x 70 mm · 12V DC 風扇 | |
| 操作溫度 | 0°C 到 40°C (32°F 到 104°F) | | |
| 相對濕度 | <ul style="list-style-type: none"> • 不凝結相對溼度：5% 至 95% • 濕球溫度：27°C (80.6°F) | | |

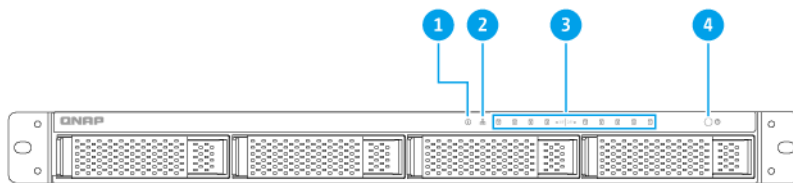
包裝內容

| 項目 | 數量 |
|--------------|---|
| TS-hx77XU-RP | 1 |
| 電源線 | 2 |
| 乙太網路線 | <ul style="list-style-type: none"> • 2 x 1GbE (黑色 Cat5e) • 1 x 10GbE (藍色 Cat6a) |
| 2.5 吋硬碟用螺絲 | <ul style="list-style-type: none"> • TS-h977XU-RP：36 • TS-h1277XU-RP：36 |

| 項目 | 數量 |
|--------------|---|
| 3.5 吋硬碟用螺絲 | <ul style="list-style-type: none"> • TS-h977XU-RP : 16 • TS-h1277XU-RP : 48 |
| 快速安裝手冊 (QIG) | 1 |

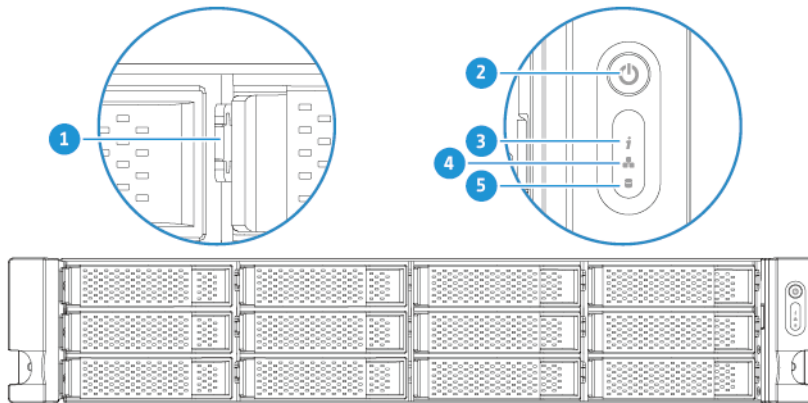
元件

前方面板



TS-h977XU-RP

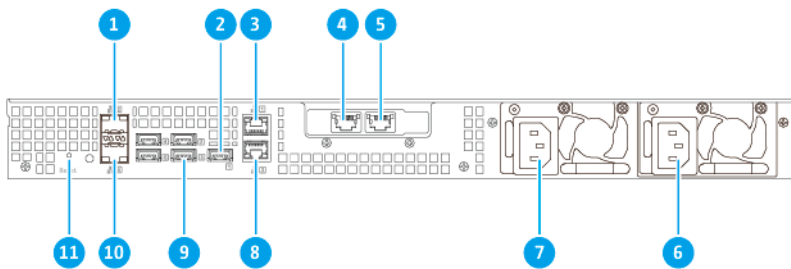
| | | | |
|---|-----------|---|----------|
| 1 | 狀態 LED 燈 | 3 | 硬碟 LED 燈 |
| 2 | LAN LED 燈 | 4 | 電源按鈕 |



TS-h1277XU-RP

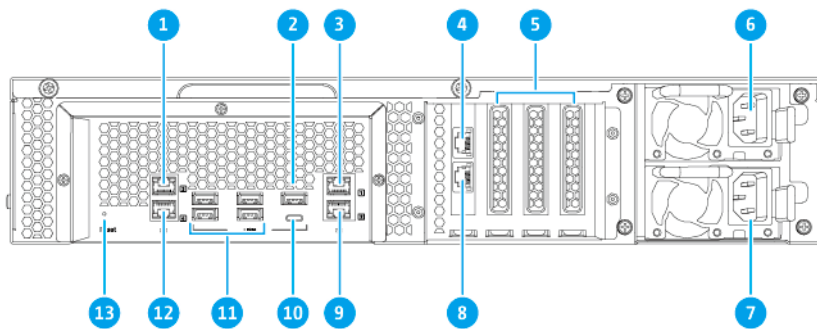
| | | | |
|---|----------|---|------------|
| 1 | 硬碟 LED 燈 | 4 | LAN LED 燈 |
| 2 | 電源按鈕 | 5 | 擴充設備 LED 燈 |
| 3 | 狀態 LED 燈 | - | - |

背部面板



TS-h977XU-RP

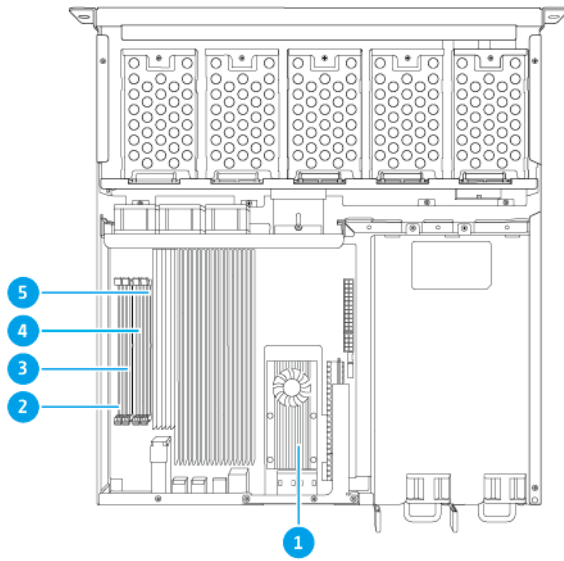
| 編號 | 元件 | 編號 | 元件 |
|----|--------------------------|----|----------------------|
| 1 | 乙太網路埠 3 (10GbE SFP+) | 7 | 電源供應器 1 |
| 2 | USB 3.2 Gen 2 A 型連接埠 | 8 | 乙太網路埠 2 (GbE RJ45) |
| 3 | 乙太網路埠 1 (GbE RJ45) | 9 | USB 2.0 A 型連接埠 |
| 4 | 乙太網路埠 6 (10Gbase-T RJ45) | 10 | 乙太網路埠 4 (10GbE SFP+) |
| 5 | 乙太網路埠 5 (10Gbase-T RJ45) | 11 | 重設按鈕 |
| 6 | 電源供應器 2 | - | - |




TS-h1277XU-RP

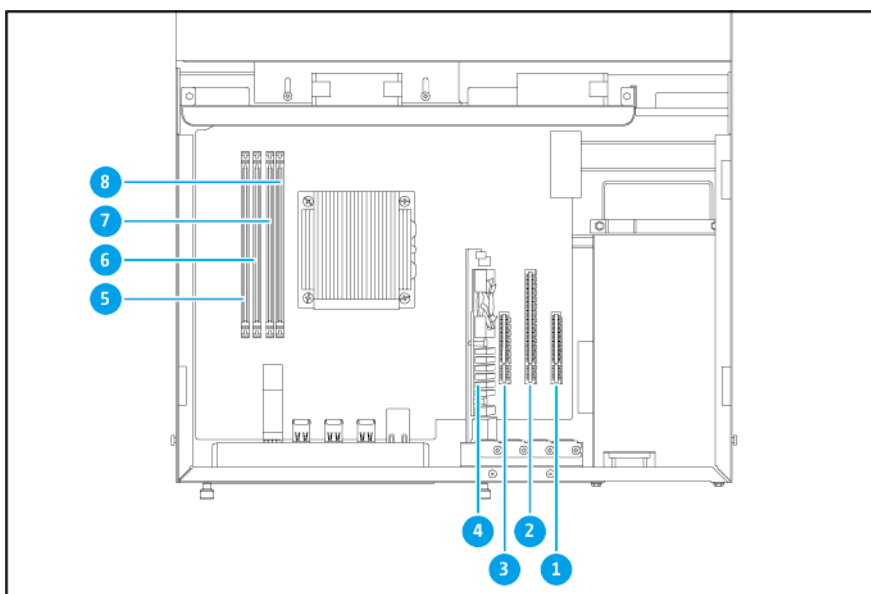
| 編號 | 元件 | 編號 | 元件 |
|----|--------------------------|----|--------------------------|
| 1 | 乙太網路埠 3 (10GbE SFP+) | 8 | 乙太網路埠 5 (10Gbase-T RJ45) |
| 2 | USB 3.2 Gen 2 A 型連接埠 | 9 | 乙太網路埠 2 (GbE RJ45) |
| 3 | 乙太網路埠 1 (GbE RJ45) | 10 | USB 3.2 Gen 2 C 型連接埠 |
| 4 | 乙太網路埠 6 (10Gbase-T RJ45) | 11 | USB 2.0 A 型連接埠 |
| 5 | PCIe 長蓋 | 12 | 乙太網路埠 4 (10GbE SFP+) |
| 6 | 電源供應器 1 | 13 | 重設按鈕 |
| 7 | 電源供應器 2 | - | - |

系統板




TS-h977XU-RP

| 編號 | 元件 | 編號 | 元件 |
|----|--|----|---------|
| 1 | PCIe 3.0 x16 插槽 1  注意 此 PCIe 槽已安裝一個雙埠 10GBASE-T 擴充卡。 | 4 | 記憶體插槽 3 |
| 2 | 記憶體插槽 1 | 5 | 記憶體插槽 4 |
| 3 | 記憶體插槽 2 | - | - |

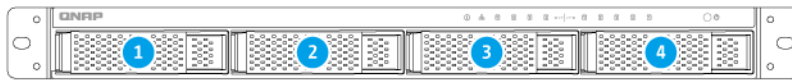


TS-h1277XU-RP

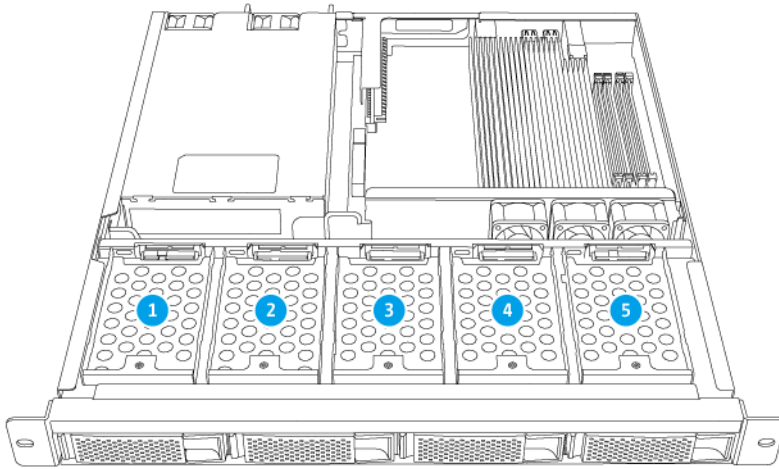
| 編號 | 元件 | 編號 | 元件 |
|----|------------------|----|---------|
| 1 | PCIe 3.0 x4 插槽 1 | 5 | 記憶體插槽 1 |
| 2 | PCIe 3.0 x8 插槽 2 | 6 | 記憶體插槽 2 |
| 3 | PCIe 3.0 x4 插槽 3 | 7 | 記憶體插槽 3 |
| 4 | PCIe 3.0 x8 插槽 4 | 8 | 記憶體插槽 4 |


注意
 此 PCIe 槽已安裝一個雙埠 10GBASE-T 擴充卡。

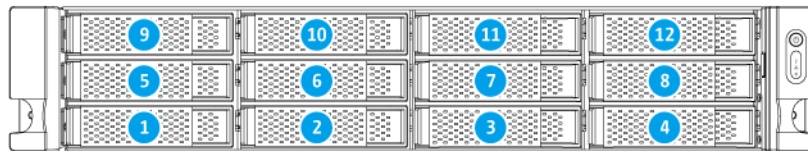
硬碟編號



TS-h977XU-RP 3.5 吋托盤



TS-h977XU-RP 2.5 吋托盤



TS-h1277XU-RP

安裝需求

| 類別 | 項目 |
|---------|---|
| 環境 | <ul style="list-style-type: none"> • 室溫：0°C 到 40°C (32°F 到 104°F) • 不凝結相對溼度：5% 至 95% • 濕球溫度：27°C (80.6°F) • 平坦且防靜電的表面，不受陽光直射，亦不與液體或化學物質接觸 |
| 硬體和週邊設備 | <ul style="list-style-type: none"> • 儲存硬碟 請前往 https://www.qnap.com/compatibility 以查看相容的硬碟機型清單。 • 網路線 |
| 工具 | <ul style="list-style-type: none"> • 1 號或 2 號十字螺絲起子 • 防靜電腕帶 |

安全資訊

以下指示幫助確保人身安全及環境安全。執行任何操作前，請仔細閱讀本安全指示。

一般指示

- NAS 應放置在實施進出管制的場所，控管方式包括工具、鎖鑰或其他安全機制。
- 唯有具技能且獲得授權的合格裝置管理員能夠存取 NAS；合格裝置管理員必須熟悉所有管制方法、安全注意事項、安裝及保養程序。
- 為避免受傷或元件損壞，在觸碰硬碟及其他內部系統元件前，請先確認其是否已經冷卻。
- 請遵守靜電放電 (ESD) 程序以防止潛在傷害或元件損壞。

電源

- 為了降低走火或觸電風險，務必只將電源線連接至適當的接地電源插座。



裝置至少配備一條電源供應器 (PSU) 的電源線。為防止嚴重傷害事故發生，在安裝或替換系統元件前，應由受過訓練的技術人員拔下所有 PSU 電源線。

系統電池

- 更換電池時，請務必使用相同類型的電池，以免電池爆炸造成受傷或元件損壞。
- 請遵照當地法規或電池製造商的指示妥善處置廢棄電池。

移動零件

-



轉動中之風扇葉片：裝置連接至電源時，請使身體部位遠離轉動中之風扇葉片。

-



移動元件：使身體部位遠離其他移動元件。

設定 NAS



重要

設定 NAS 或安裝 NAS 元件前，請詳閱[安全資訊](#)中所有安全要求及資訊。

1. 將 NAS 裝置放置在符合需求的環境。
如需詳細資訊，請參見：[安裝需求](#)。
2. 選擇性: 更換記憶體模組。
如需詳細資訊，請參見：[更換記憶體模組](#)。
3. 選擇性: 更換擴充卡。
如需詳細資訊，請參見：[更換擴充卡](#)。
4. 將 NAS 安裝到機架上。
5. 安裝硬碟。
如需詳細資訊，請參見下列主題：
 - [在 3.5 吋托盤上安裝 3.5 吋硬碟](#)
 - [在 3.5 吋托盤上安裝 2.5 吋硬碟或固態硬碟](#)
 - [在 TS-h977XU-RP 的 2.5 吋托盤上安裝 2.5 吋固態硬碟](#)
6. 連接電源線與所有適用的網路線。
7. 開啟 NAS。
8. 安裝 QuTS hero。
如需詳細資訊，請參見：[QuTS hero 安裝](#)。
9. 登入 QuTS hero。

3. 安裝與設定

本章介紹特定硬體及韌體的安裝與設定步驟。

硬體安裝

本節介紹安裝硬碟、記憶體模組以及擴充卡的相關資訊。

硬碟安裝

TS-hx77XU-RP 與 3.5 吋硬碟、2.5 吋硬碟，以及 2.5 吋固態硬碟相容。

在 3.5 吋托盤上安裝 3.5 吋硬碟



警告

- 安裝硬碟與安裝 QuTS hero 會刪除硬碟上的所有資料。

-



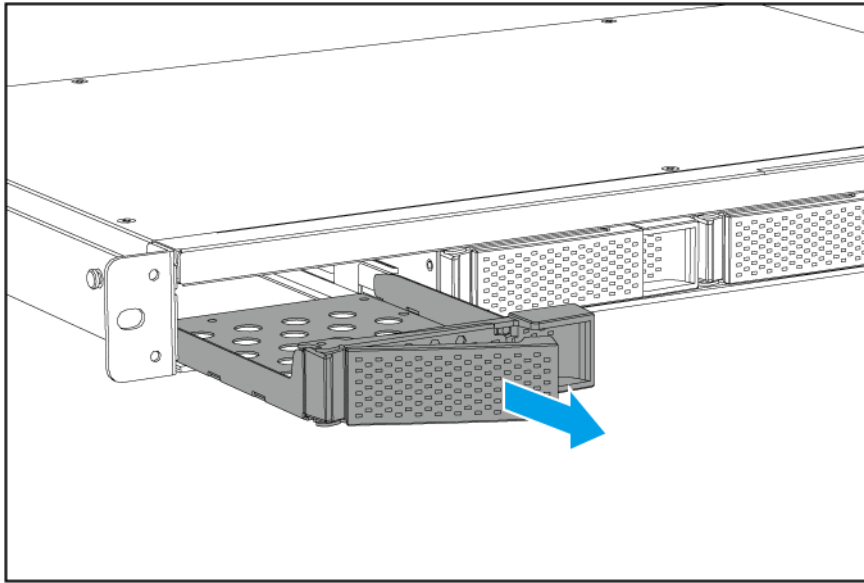
轉動中之風扇葉片：使雙手及其他身體部位遠離轉動中之風扇葉片。

-



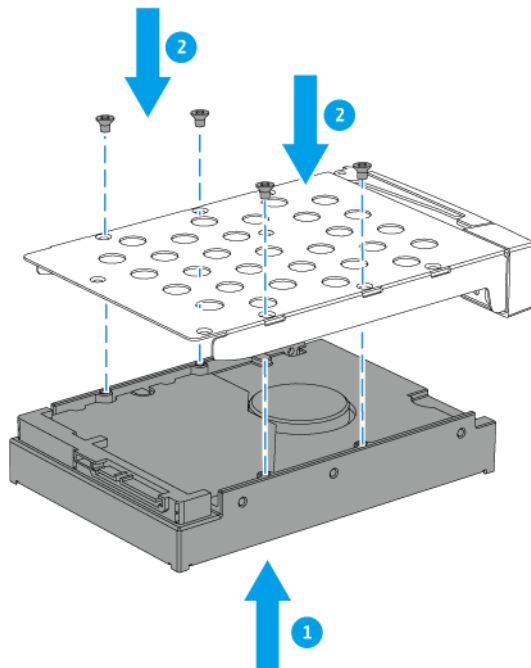
其他移動元件：使雙手及其他身體部位遠離其他移動元件。

1. 關閉 NAS 電源。
2. 抽出硬碟托盤。
 - a. 拉把手以鬆開托盤。
 - b. 將托盤拉出。



3. 在托盤上安裝硬碟。

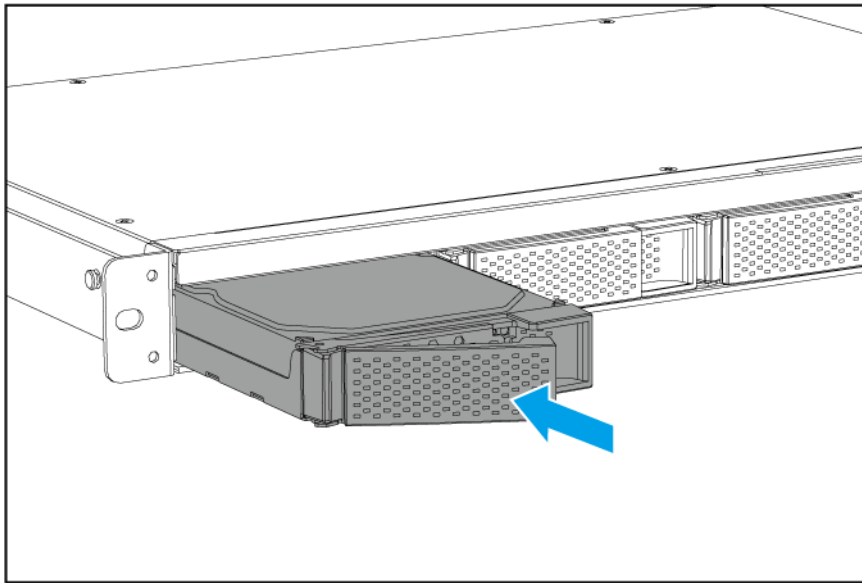
- a. 將硬碟放在托盤上，讓硬碟底部的孔洞與托盤底部的孔洞對齊。
- b. 鎖上螺絲。



4. 將托盤裝入插槽。

- a. 將托盤插入插槽。

- b. 推入把手。



5. 開啟 NAS。

在 3.5 吋托盤上安裝 2.5 吋硬碟或固態硬碟



警告

- 安裝硬碟與安裝 QuTS hero 會刪除硬碟上的所有資料。

•



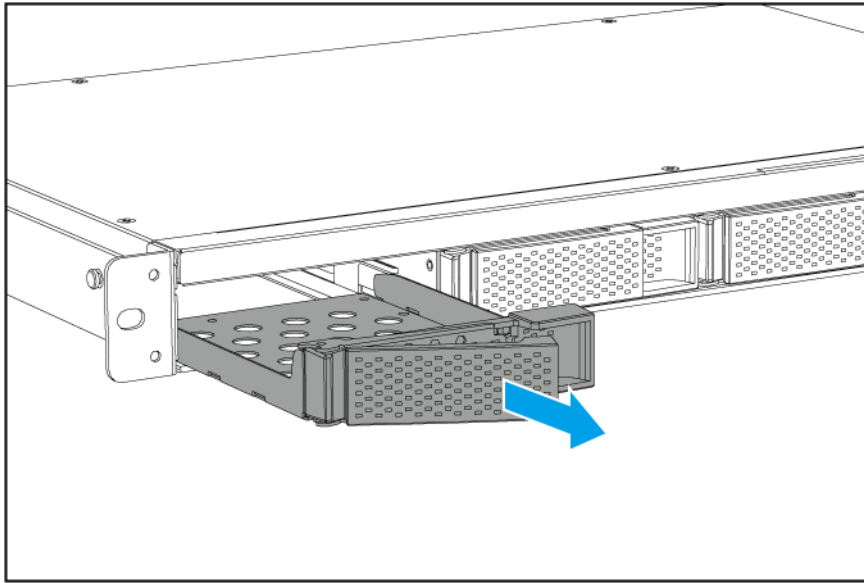
轉動中之風扇葉片：使雙手及其他身體部位遠離轉動中之風扇葉片。

•



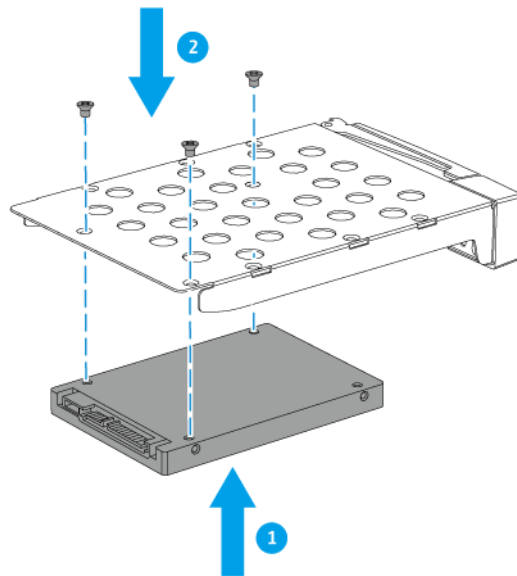
其他移動元件：使雙手及其他身體部位遠離其他移動元件。

1. 關閉 NAS 電源。
2. 抽出硬碟托盤。
 - a. 拉把手以鬆開托盤。
 - b. 將托盤拉出。



3. 在托盤上安裝硬碟。

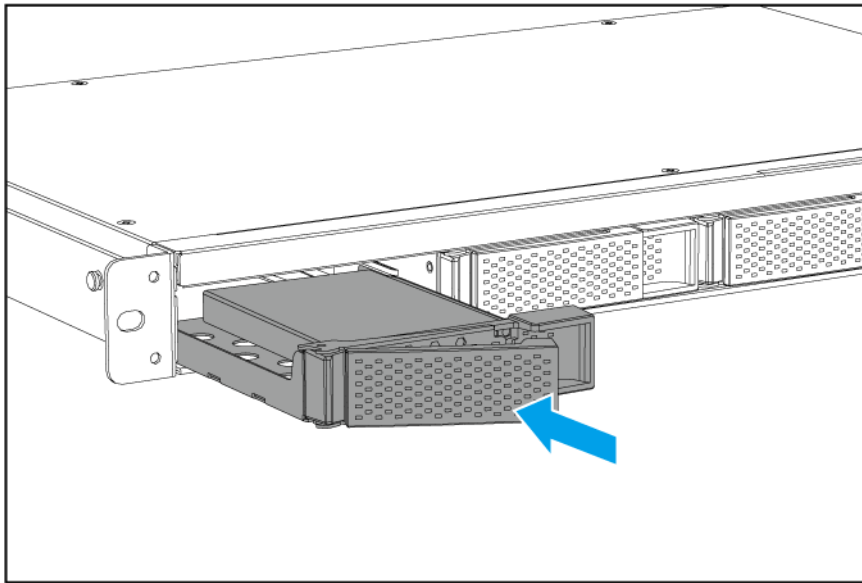
- a. 將硬碟放在托盤上，讓硬碟底部的孔洞與托盤底部的孔洞對齊。
- b. 鎖上螺絲。



4. 將托盤裝入插槽。

- a. 將托盤插入插槽。

- b. 推入把手。



5. 開啟 NAS。

在 TS-h977XU-RP 的 2.5 吋托盤上安裝 2.5 吋固態硬碟



警告

- 安裝硬碟與安裝 QuTS hero 會刪除硬碟上的所有資料。

-



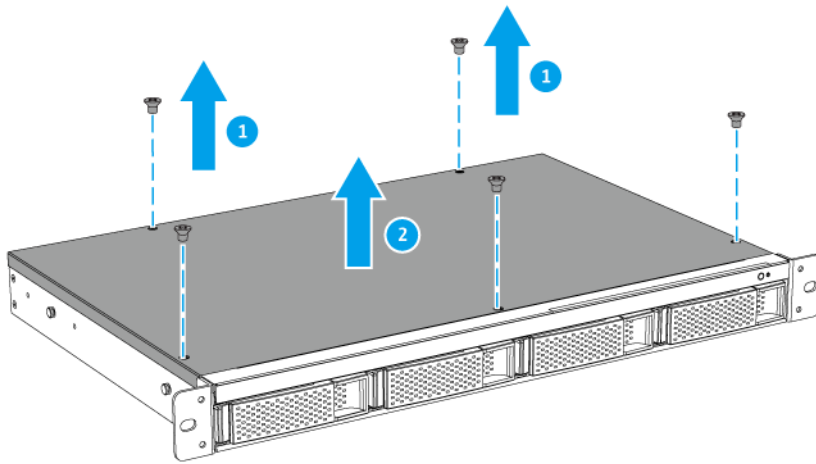
轉動中之風扇葉片：使雙手及其他身體部位遠離轉動中之風扇葉片。

-



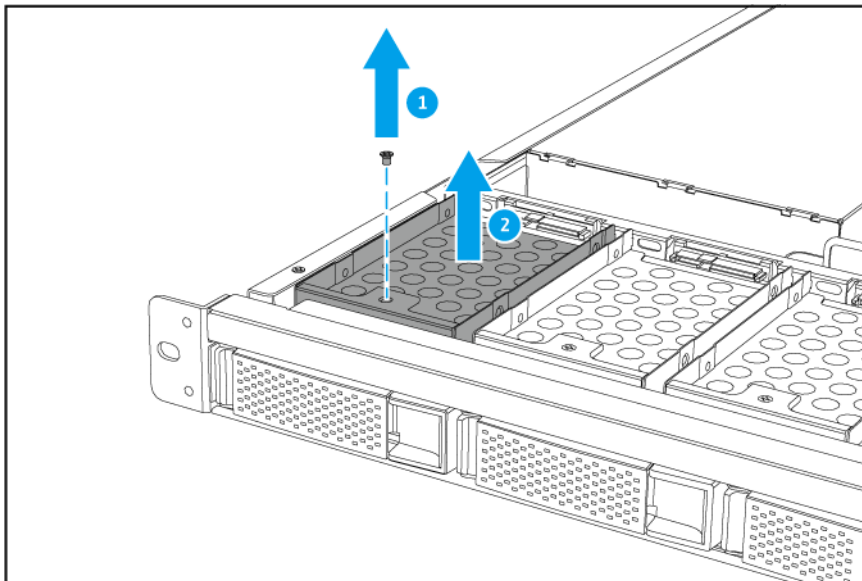
其他移動元件：使雙手及其他身體部位遠離其他移動元件。

1. 關閉 NAS 電源。
2. 取下機殼蓋。
 - a. 取下螺絲。
 - b. 拿起殼蓋。



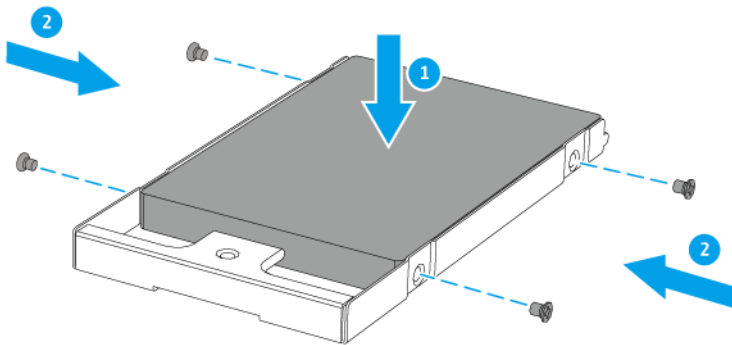
3. 抽出硬碟托盤。

- a. 取下螺絲。
- b. 將托盤拉出。



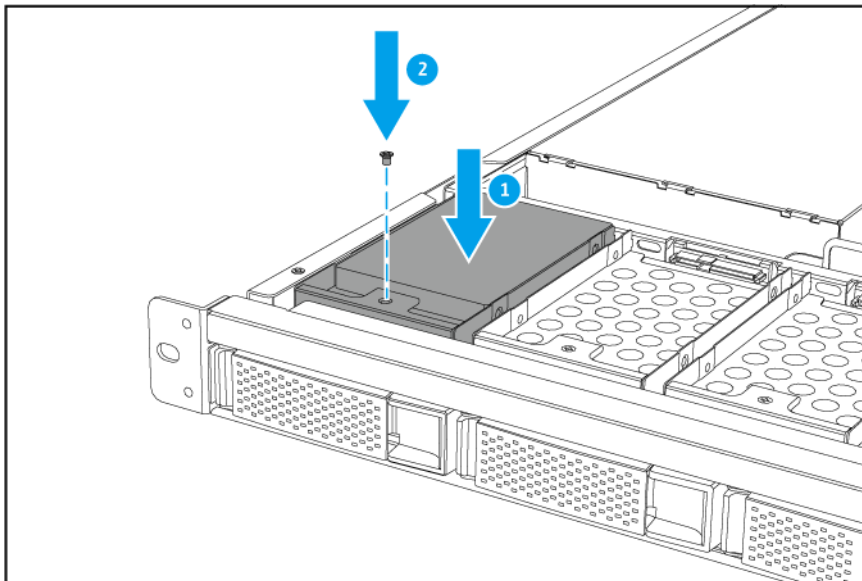
4. 在托盤上安裝硬碟。

- a. 將硬碟放在托盤上，讓硬碟底部的孔洞與托盤底部的孔洞對齊。
- b. 鎖上螺絲。



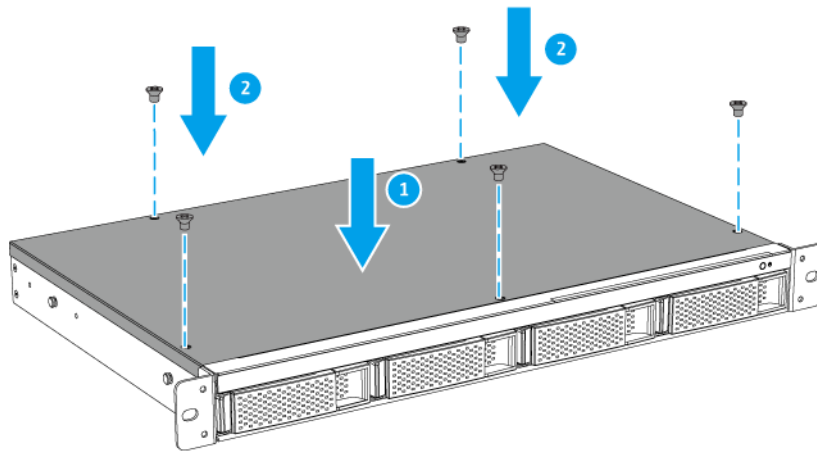
5. 將托盤裝入插槽。

- a. 將托盤插入插槽。
- b. 鎖上螺絲。



6. 裝上機殼蓋。

- a. 將殼蓋放在 NAS 上。
- b. 鎖上螺絲。



7. 開啟 NAS。

更換記憶體模組

TS-hx77XU-RP 具有四個記憶體插槽。您可以升級記憶體模組以增加 NAS 的記憶體容量。

僅使用相同類型與容量的 QNAP 記憶體模組，以維持系統效能和穩定性。您可向授權經銷商購買 QNAP 記憶體模組。

更換 TS-h977XU-RP 上的記憶體模組



重要

QNAP 建議成對安裝記憶體模組。

- 確認每對皆使用相同的記憶體模組。
- 按順序安裝記憶體模組組合，並依照文中指示裝在指定插槽。
- 將記憶體模組以兩個或四個為一組進行安裝。當安裝兩個記憶體模組時，請將記憶體安裝在插槽 1 和 3。當安裝四個模組時，則請將記憶體安裝在插槽 1、3、2 和 4。

如需插槽編號的詳細資訊，請參見：[系統板](#)。



警告

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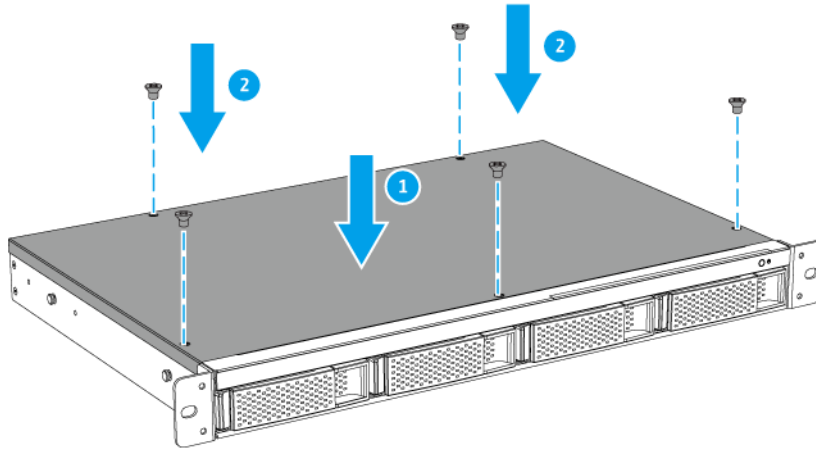
轉動中之風扇葉片：使雙手及其他身體部位遠離轉動中之風扇葉片。

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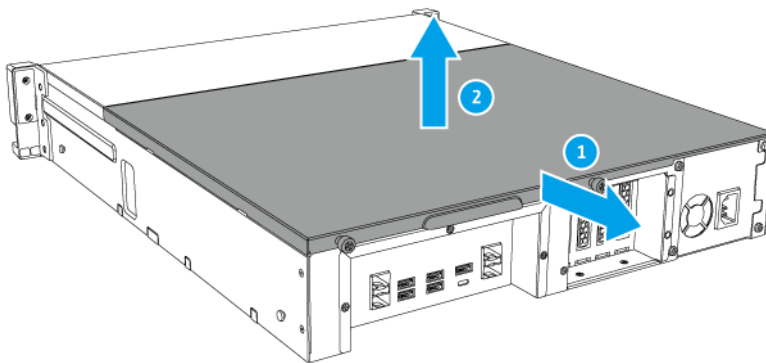


其他移動元件：使雙手及其他身體部位遠離其他移動元件。

1. 關閉 NAS 電源。
2. 從電源插座拔下電源線。
3. 中斷所有連接線和外接裝置的連線。
4. 取下機殼蓋。
 - a. 取下螺絲。



- b. 將殼蓋往後推。
- c. 提起殼蓋，使其脫離 NAS。

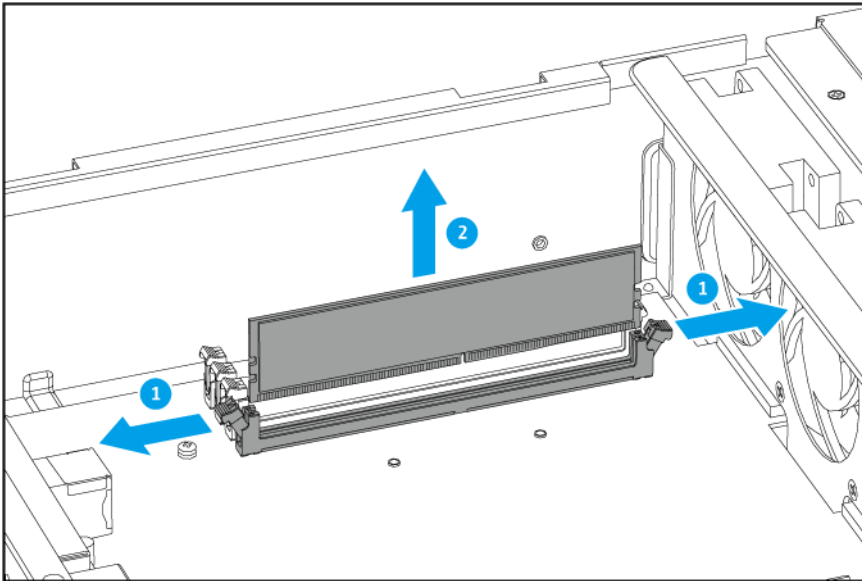


5. 取下現有的記憶體模組。
 - a. 將固定夾同時往外推以鬆開記憶體模組。

**警告**

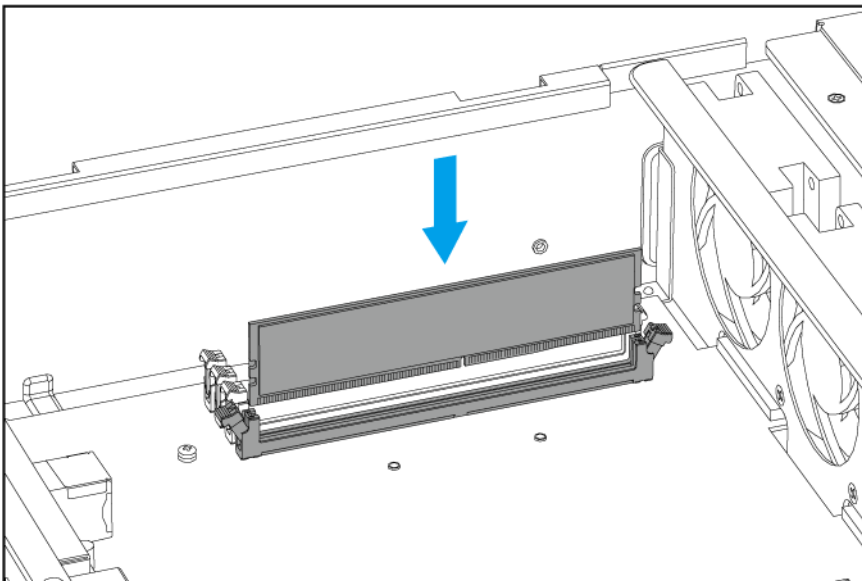
若嘗試取下未完全鬆脫的記憶體模組，可能會損壞記憶體模組與主機板。

- b. 握住模組的邊緣。



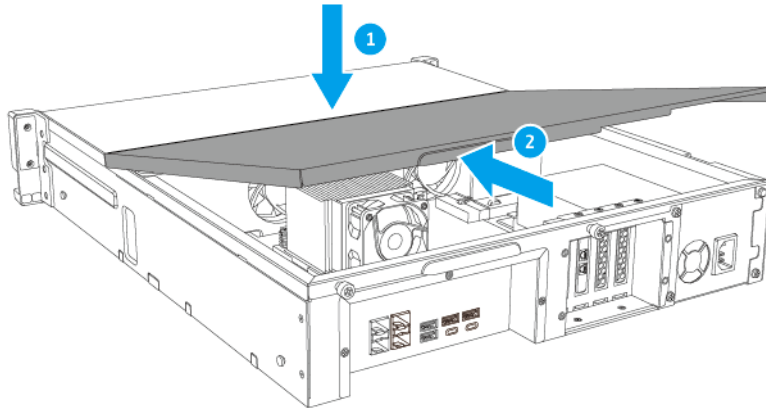
6. 安裝新的記憶體模組。

- a. 將接口與插槽的凸出部分對齊。
- b. 將記憶體模組插入插槽。
- c. 確認金屬接頭已完全插入插槽。
- d. 小心按下記憶體模組，直到固定夾正確扣住記憶體模組。



7. 裝上機殼蓋。

- a. 將殼蓋放在 NAS 上。
- b. 將殼蓋往前推。



8. 連上所有連接線和外接裝置。
9. 開啟 NAS。
10. 確認 NAS 可辨識記憶體模組。
 - a. 以管理員身分登入 QuTS hero。
 - b. 前往 [控制台] > [系統] > [系統狀態] > [硬體資訊]。
 - c. 查看 [總記憶體] 的值。

更換 TS-h1277XU-RP 上的記憶體模組



重要

QNAP 建議成對安裝記憶體模組。

- 確認每對皆使用相同的記憶體模組。
- 按順序安裝記憶體模組組合，並依照文中指示裝在指定插槽。
- 將記憶體模組以兩個或四個為一組進行安裝。當安裝兩個記憶體模組時，請將記憶體安裝在插槽 1 和 3。當安裝四個模組時，則請將記憶體安裝在插槽 1、3、2 和 4。

如需插槽編號的詳細資訊，請參見：[系統板](#)。



警告

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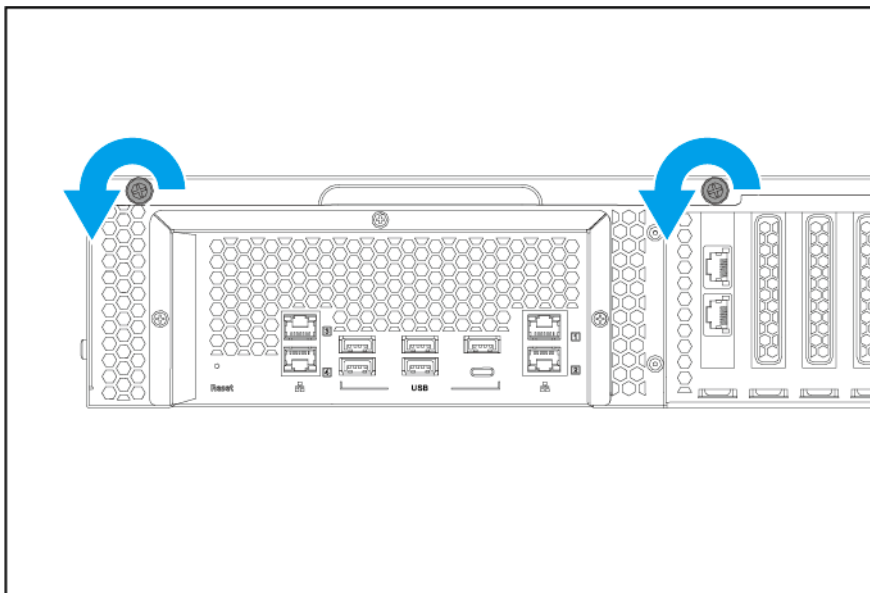


轉動中之風扇葉片：使雙手及其他身體部位遠離轉動中之風扇葉片。

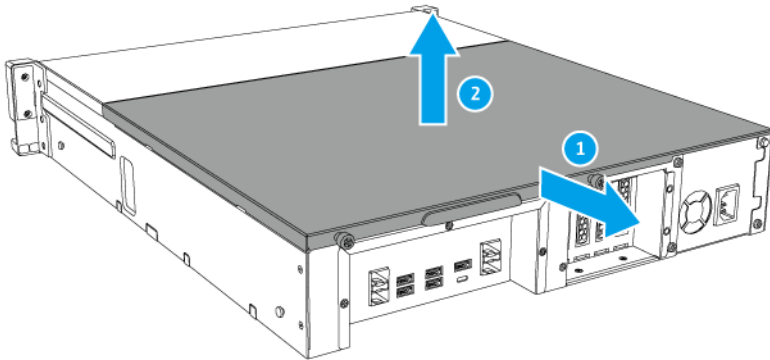


其他移動元件：使雙手及其他身體部位遠離其他移動元件。

1. 關閉 NAS 電源。
2. 從電源插座拔下電源線。
3. 中斷所有連接線和外接裝置的連線。
4. 取下機殼蓋。
 - a. 鬆開螺絲。



- b. 將殼蓋往後推。
 - c. 提起殼蓋，使其脫離 NAS。



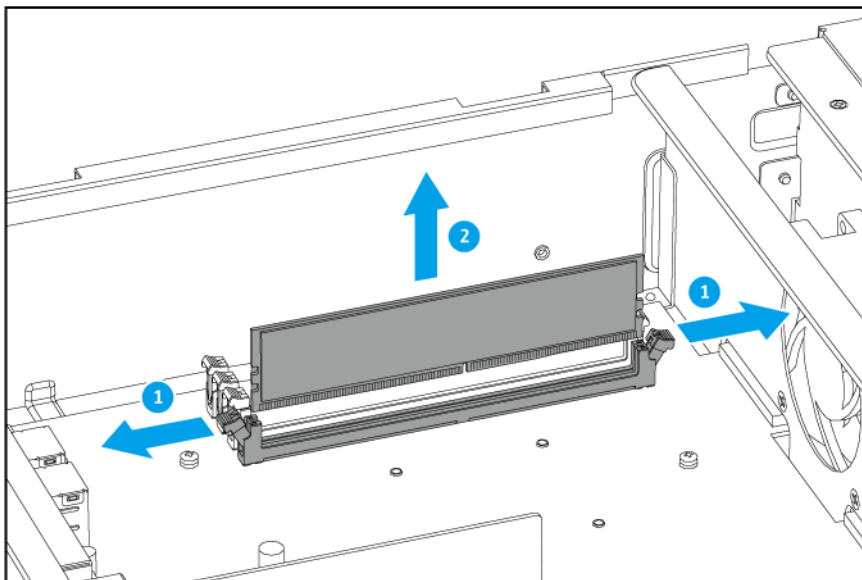
5. 取下現有的記憶體模組。
 - a. 將固定夾同時往外推以鬆開記憶體模組。



警告

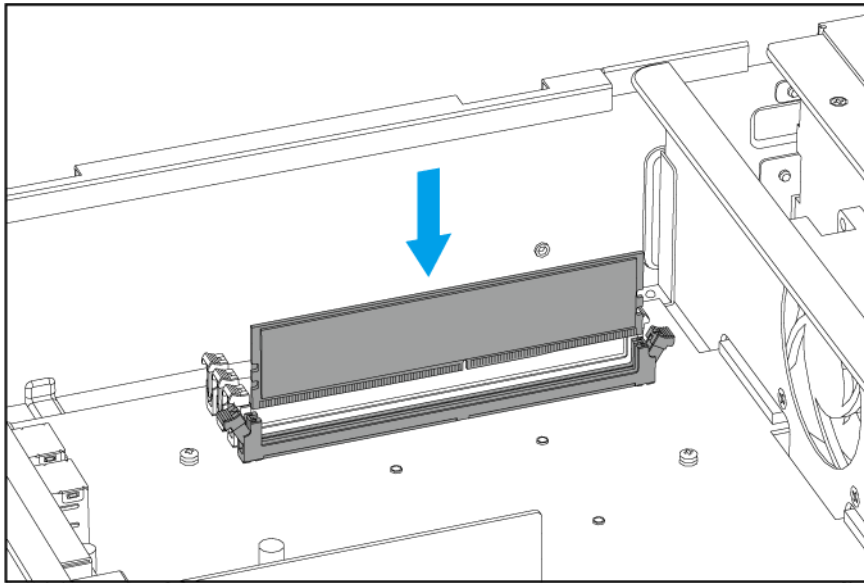
若嘗試取下未完全鬆脫的記憶體模組，可能會損壞記憶體模組與主機板。

- b. 握住模組的邊緣。



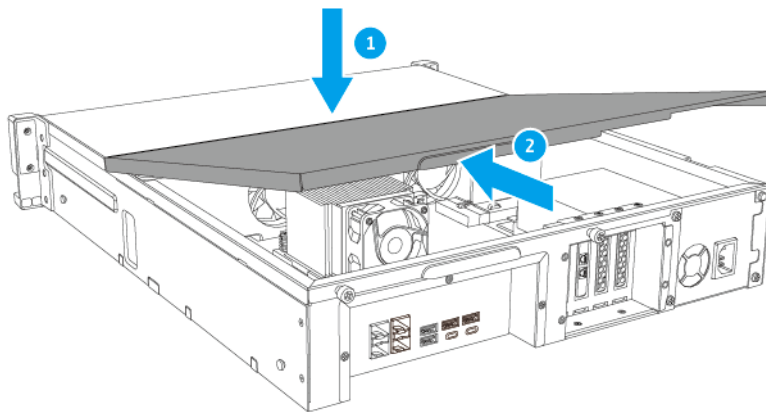
6. 安裝新的記憶體模組。
 - a. 將接口與插槽的凸出部分對齊。
 - b. 將記憶體模組插入插槽。
 - c. 確認金屬接頭已完全插入插槽。

- d. 小心按下記憶體模組，直到固定夾正確扣住記憶體模組。

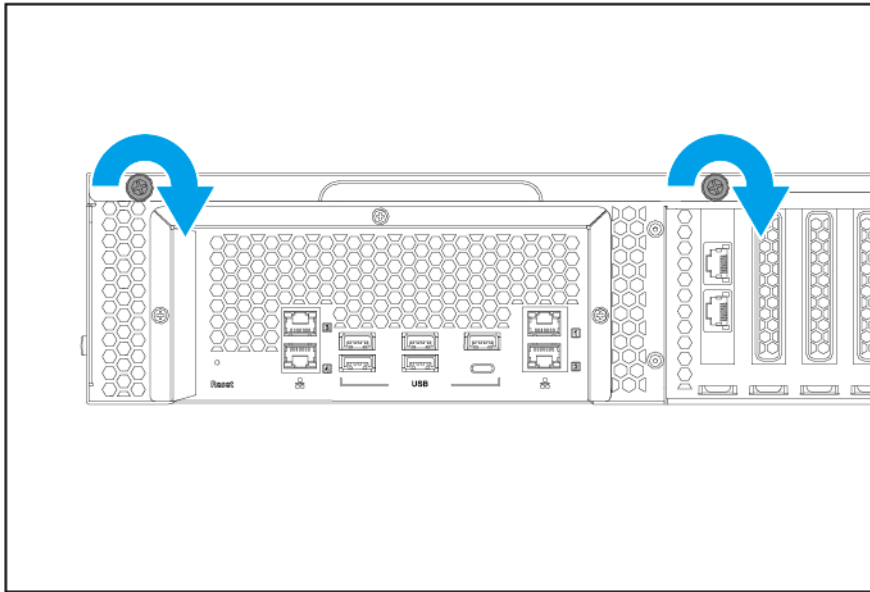


7. 裝上機殼蓋。

- a. 將殼蓋放在 NAS 上。
- b. 將殼蓋往前推。



- c. 鎖緊螺絲。



8. 連上所有連接線和外接裝置。
9. 開啟 NAS。
10. 確認 NAS 可辨識記憶體模組。
 - a. 以管理員身分登入 QuTS hero。
 - b. 前往 [控制台] > [系統] > [系統狀態] > [硬體資訊]。
 - c. 查看 [總記憶體] 的值。

更換擴充卡

TS-hx77XU-RP 支援特定的擴充卡，其中部分需要使用 QNAP PCIe 固定片。在公司網站購買的 QNAP 品牌擴充卡會隨附所有 QNAP NAS 型號適用的必要固定片。

更換 TS-h977XU-RP 上的擴充卡



注意

PCIe 3.0 x4 插槽已預先安裝一個雙埠 10GBase-T 網路擴充卡。



警告

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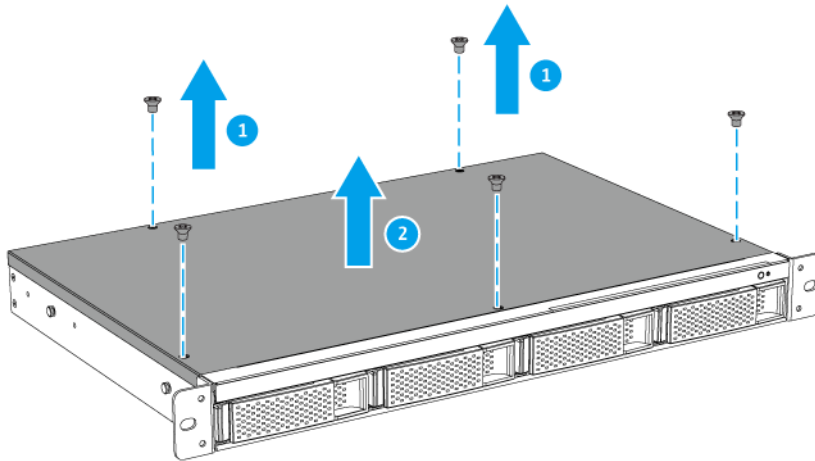
轉動中之風扇葉片：使雙手及其他身體部位遠離轉動中之風扇葉片。

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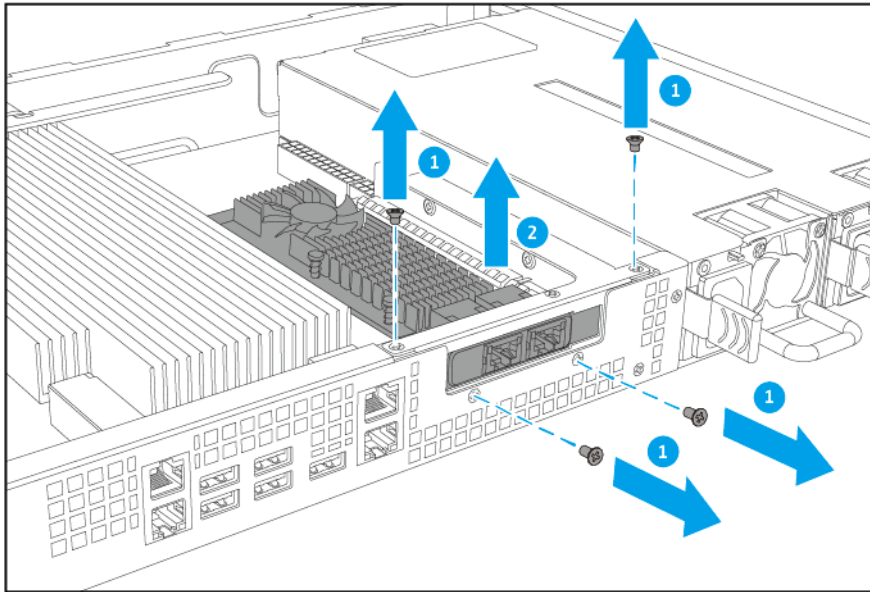
其他移動元件：使雙手及其他身體部位遠離其他移動元件。

1. 關閉 NAS 電源。
2. 從電源插座拔下電源線。
3. 中斷所有連接線和外接裝置的連線。
4. 取下機殼蓋。
 - a. 取下螺絲。
 - b. 拿起殼蓋。

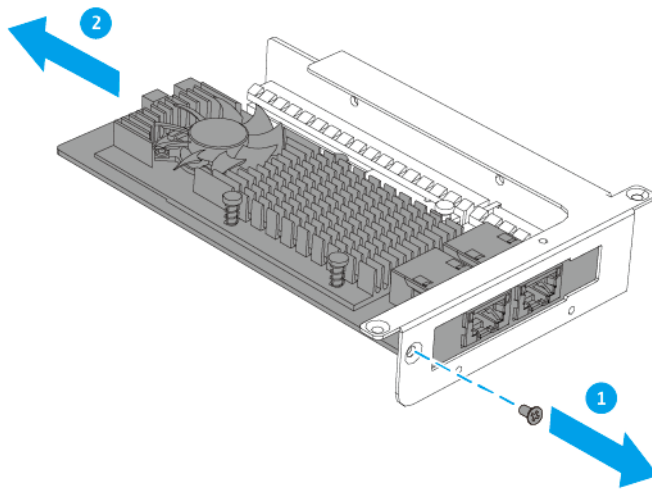
**警告**

為避免受傷或元件損壞，在觸碰硬碟及其他內部系統元件前，請先確認其是否已經冷卻。

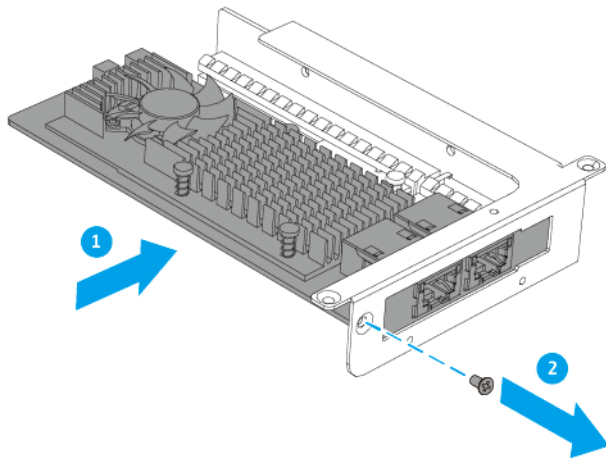
5. 取下 PCIe 模組。
 - a. 取下模組的螺絲。
 - b. 從機殼移除模組。



6. 取下現有的擴充卡。
- a. 取下用於固定 PCIe 固定片和機殼的螺絲。
 - b. 握住擴充卡的邊緣。
 - c. 小心將卡拉出插槽。

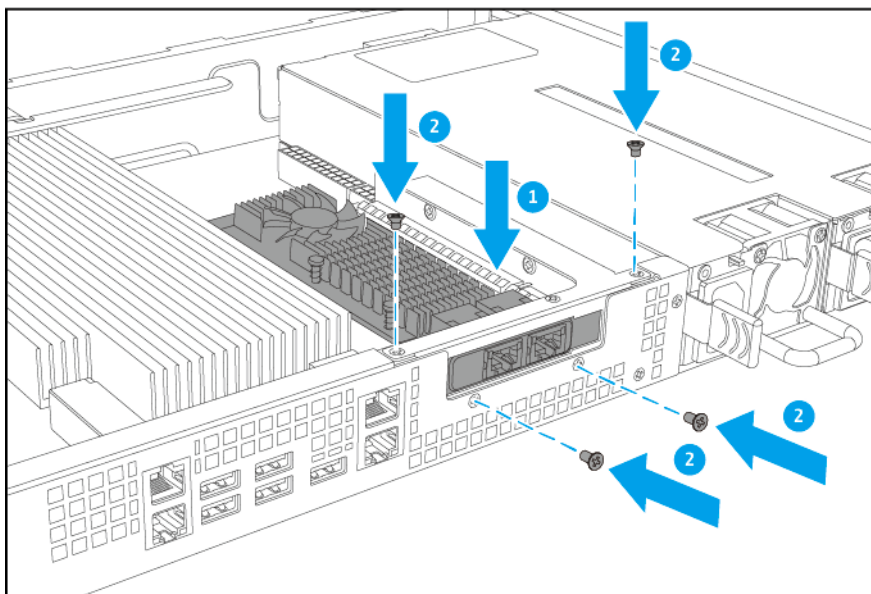


7. 安裝新的擴充卡。
- a. 握住擴充卡的邊緣。
 - b. 將擴充卡插入插槽。
 - c. 鎖上螺絲。



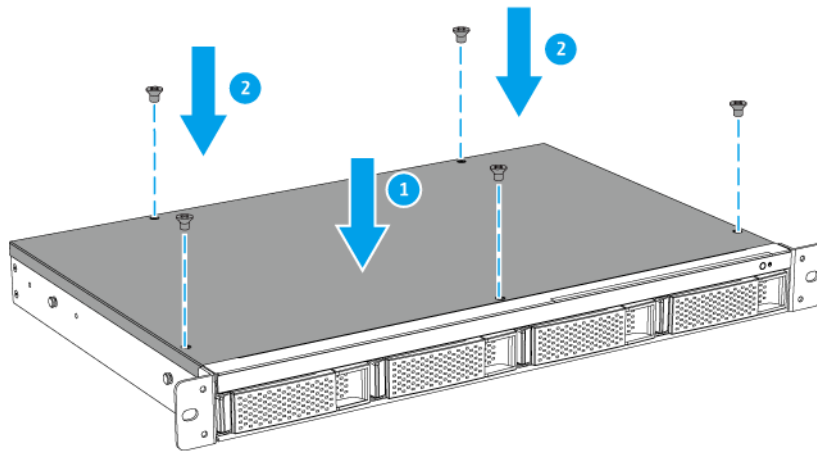
8. 安裝 PCIe 模組。

- a. 將 PCIe 模組對齊系統板。
- b. 將 PCIe 模組接頭插入系統板插槽。
- c. 鎖上螺絲。



9. 裝上機殼蓋。

- a. 將殼蓋放在 NAS 上。
- b. 鎖上螺絲。



10. 連上所有連接線和外接裝置。
11. 將電源線插入電源插座。
12. 開啟 NAS 電源。

更換 TS-h1277XU-RP 上的擴充卡



注意

- PCIe 3.0 x8 插槽 4 已預先安裝一個雙埠 10Gbase-T 網路擴充卡。
- 如果擴充卡安裝在插槽 1，插槽 2 的速度將從 x8 降到 x4。
- 如果擴充卡安裝在插槽 3，插槽 4 的速度將從 x8 降到 x4。



警告

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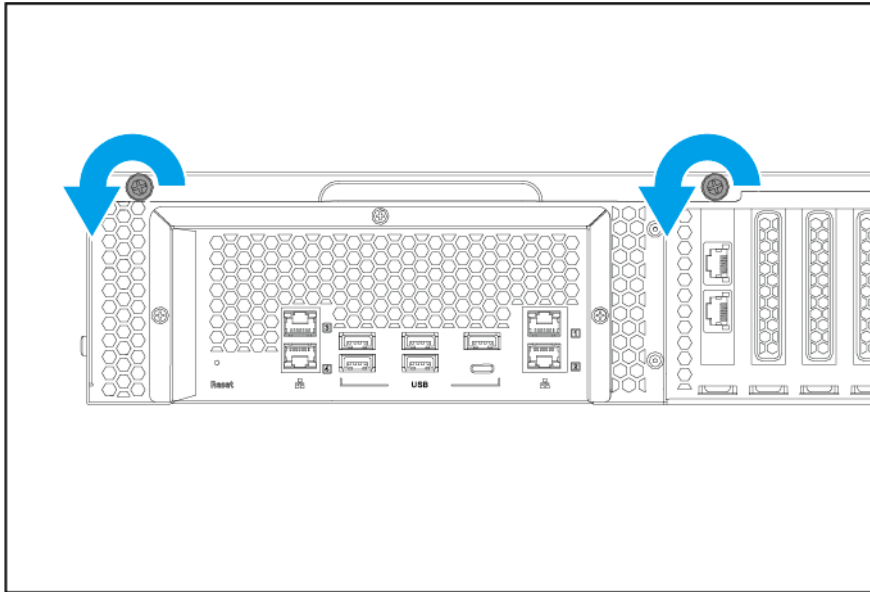
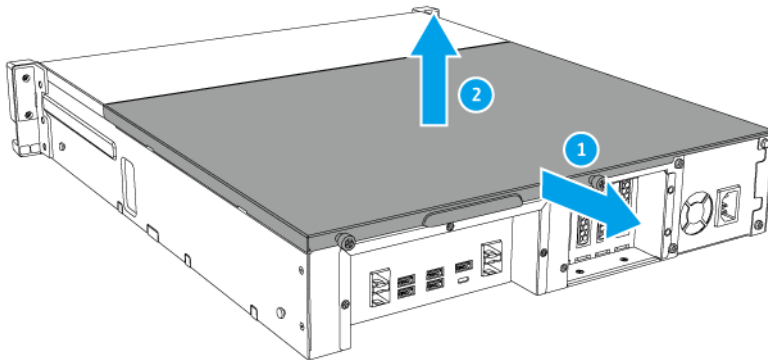
轉動中之風扇葉片：使雙手及其他身體部位遠離轉動中之風扇葉片。

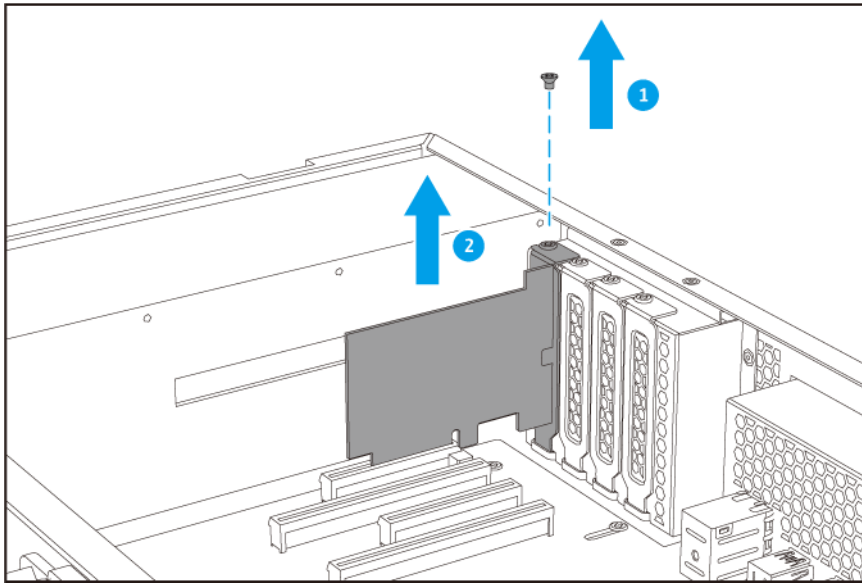
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其他移動元件：使雙手及其他身體部位遠離其他移動元件。

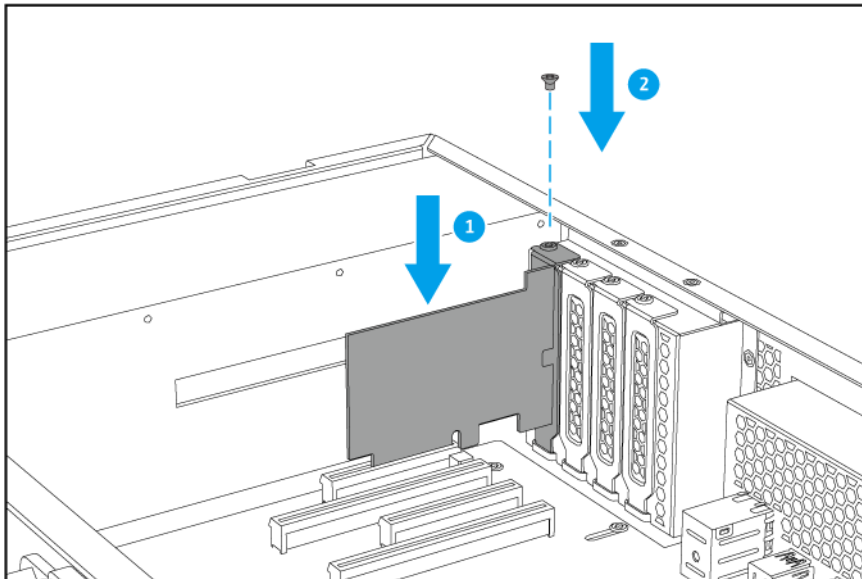
1. 關閉 NAS 電源。
2. 從電源插座拔下電源線。
3. 中斷所有連接線和外接裝置的連線。

4. 取下機殼蓋。**a. 鬆開螺絲。****b. 將殼蓋往後推。****c. 提起殼蓋，使其脫離 NAS。****5. 取下現有的擴充卡。****a. 取下用於固定 PCIe 固定片和機殼的螺絲。****b. 握住擴充卡的邊緣。****c. 小心將卡拉出插槽。**



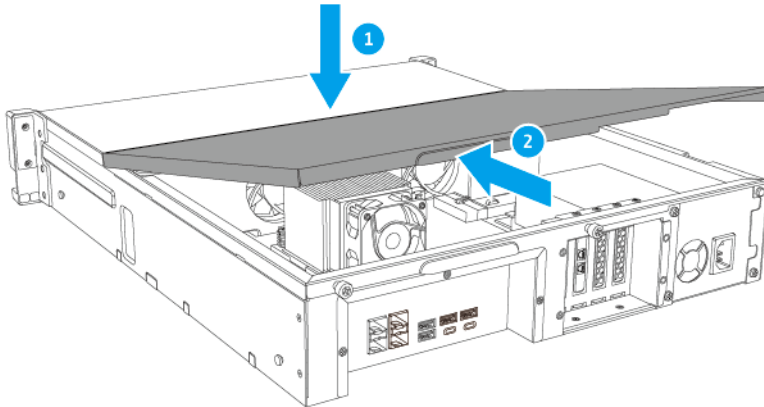
6. 安裝新的擴充卡。

- a. 握住擴充卡的邊緣。
- b. 將擴充卡插入插槽。
- c. 鎖上螺絲。

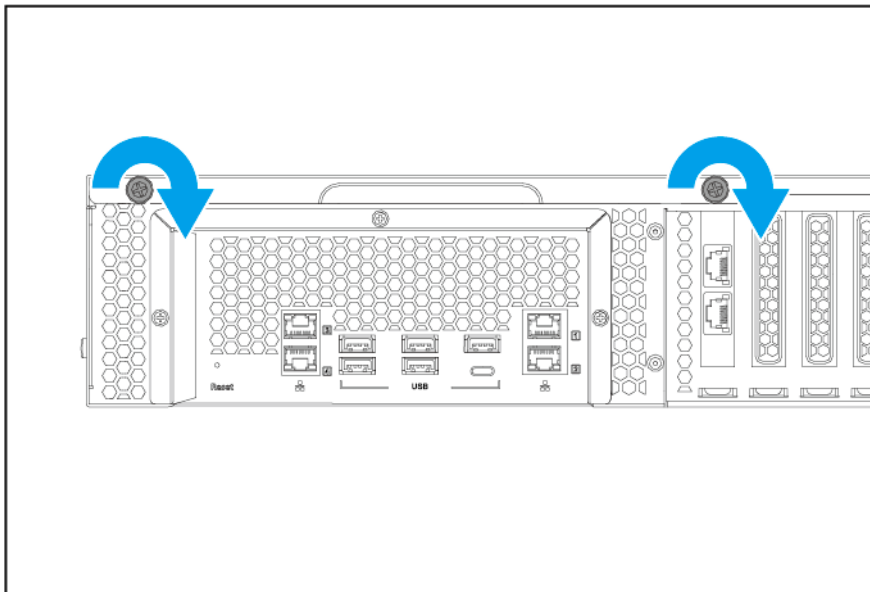


7. 裝上機殼蓋。

- a. 將殼蓋放在 NAS 上。
- b. 將殼蓋往前推。



c. 鎖緊螺絲。



8. 連上所有連接線和外接裝置。
9. 將電源線插入電源插座。
10. 開啟 NAS 電源。

熱抽換備援電源供應器

隨附備援電源供應器 (PSU) 的 NAS 裝置支援熱抽換。

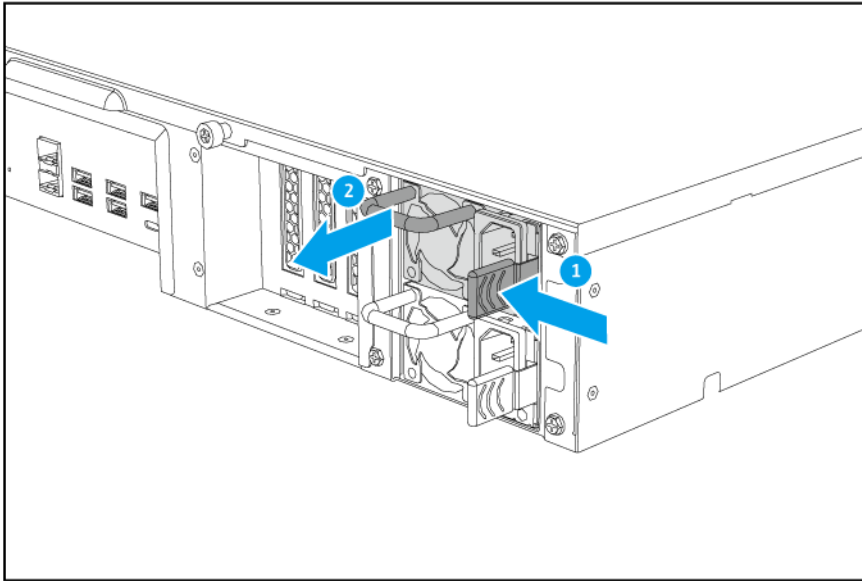


警告

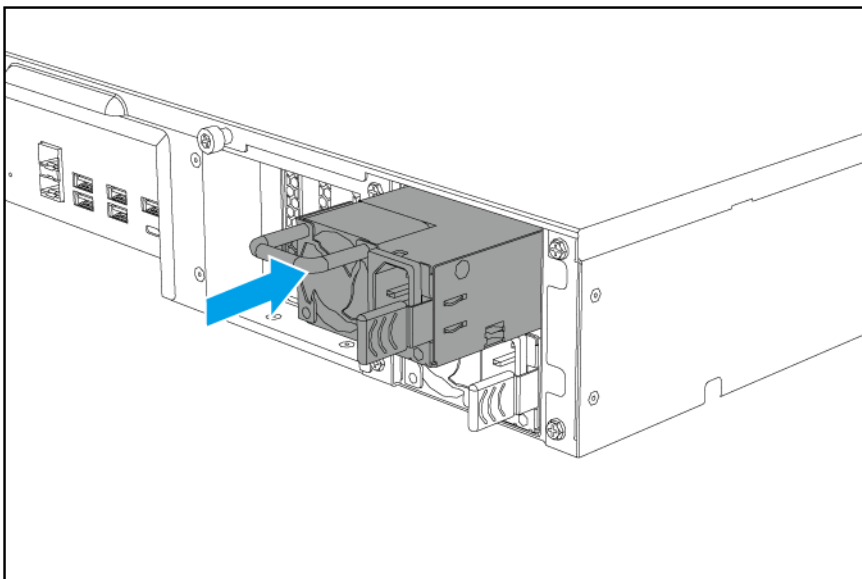


NAS 至少配備一條電源供應器 (PSU) 的電源線。為防止嚴重傷害事故發生，在安裝或替換系統元件前，應由受過訓練的技術人員拔下所有 PSU 電源線。

1. 關閉 NAS 電源。
2. 從電源插座和更換的電源供應器上拔下電源線。
3. 朝把手方向按住門門，然後拉出電源供應器。



4. 插入新的電源供應器。



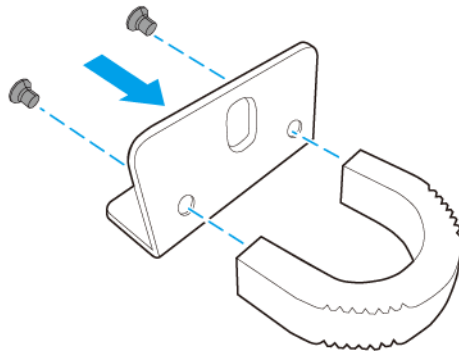
5. 將電源線連上電源供應器並插入電源插座。

6. 開啟 NAS。
7. 啟用電源供應器故障警訊。
 - a. 以管理員身分登入 QuTS hero。
 - b. 前往 [控制台] > [系統] > [硬體] > [一般]。
 - c. 選擇 [啟動備援電源模式]。
 - d. 按一下 [全部套用]。

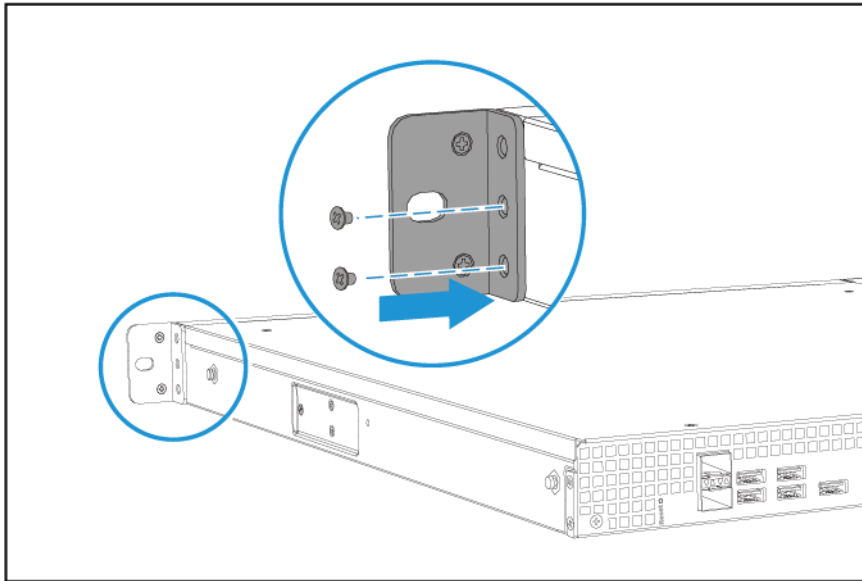
在 TS-h977XU-RP 上安裝把手

安裝把手即可輕鬆且穩固地拿取機架上的 NAS。TS-h977XU-RP 上的把手需要進行手動安裝。

1. 關閉 NAS 電源。
2. 將把手安裝到角形托座上。
 - a. 將把手開口對齊角形托座上的螺絲孔洞。
 - b. 鎖上螺絲，將把手鎖定在角形托座上。



3. 在 NAS 上安裝角形托座。
 - a. 將角形托座上的孔洞對齊機殼左側的孔洞。
 - b. 請確定把手與前面板面對相同的方向。
 - c. 鎖上螺絲，將角形托座鎖定在機殼上。



4. 在機殼的另一側安裝第二個把手。
5. 開啟 NAS。

機架滑軌

NAS 不含機架滑軌，必須另外購買。如需詳細資訊，請聯絡授權經銷商或前往 <http://shop.qnap.com>。

TS-hx77XU-RP 與下列機架滑軌型號相容：

| 型號 | 相容機架滑軌 |
|---|----------|
| <ul style="list-style-type: none"> • TS-h977XU-RP • TS-h1277XU-RP | RAIL-B02 |

您可以在機架滑軌的包裝中找到安裝資訊。

安裝擴充設備

TS-hx77XU-RP 支援 SAS 擴充設備、USB 擴充設備和 SATA JBOD 擴充設備。如需詳細資訊，請參見下方表格。

您可以向 QNAP 或授權經銷商購買儲存擴充配件。

如需詳細資訊，請瀏覽：<https://shop.qnap.com/>。

如需相容擴充設備清單以及適用擴充設備的數量上限，請前往：<http://www.qnap.com/go/compatibility-expansion>。

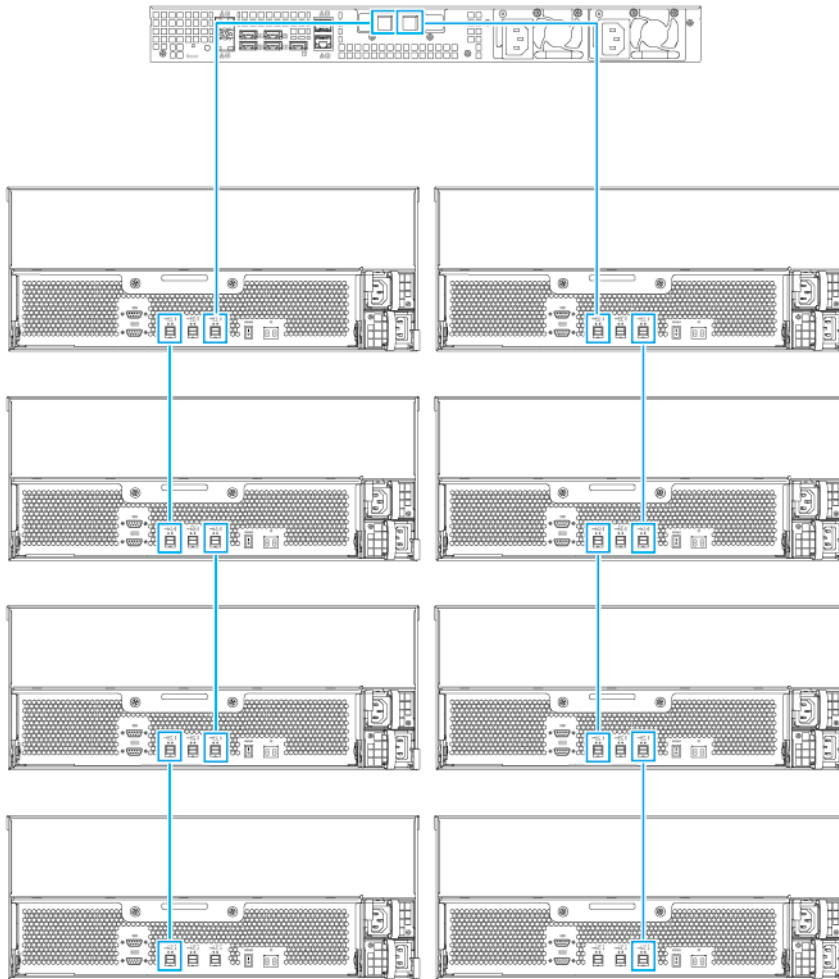
| 擴充設備型號 | 說明 | 必要配件 |
|---------------|---|---|
| REXP-1620U-RP | <ul style="list-style-type: none"> • 使用 SAS 12 Gbps (SFF-8644) 介面 • 支援 SAS/SATA HDD/SSD | <ul style="list-style-type: none"> • SAS-12G2E 儲存擴充卡 • Mini-SAS SFF-8644 連接線 • RAIL-A03-57 |
| REXP-1220U-RP | <ul style="list-style-type: none"> • 使用 SAS 12 Gbps (SFF-8644) 介面 • 支援 SAS/SATA HDD/SSD | |
| REXP-1610U-RP | <ul style="list-style-type: none"> • 使用 SAS 6 Gbps (SFF-8644) 介面 • 支援 SATA/HDD/SSD | |
| REXP-1210U-RP | <ul style="list-style-type: none"> • 使用 SAS 6 Gbps (SFF-8644) 介面 • 支援 SATA/HDD/SSD | |
| TL-D400S | <ul style="list-style-type: none"> • 使用 SAS 6 Gbps (SFF-8088) 介面 • 支援 SATA/HDD/SSD | <ul style="list-style-type: none"> • 1 x SFF-8088 接頭纜線 • QXP-400eS-A1164 主機匯流排介面卡 |
| TL-D800S | | <ul style="list-style-type: none"> • 2 x SFF-8088 接頭纜線 • QXP-800eS-A1164 主機匯流排介面卡 |
| TL-D1600S | | <ul style="list-style-type: none"> • 4 x SFF-8088 轉 SFF-8644 接頭纜線 • QXP-1600eS 主機匯流排介面卡 |
| TL-R400S | | <ul style="list-style-type: none"> • 1 x SFF-8088 接頭纜線 • QXP-400eS-A1164 主機匯流排介面卡 • RAIL-B02 |
| TL-R1200S-RP | | <ul style="list-style-type: none"> • 3 x SFF-8088 轉 SFF-8644 接頭纜線 • QXP-1600eS 主機匯流排介面卡 • RAIL-B02 |
| TR-002 | <ul style="list-style-type: none"> • 使用 USB 3.2 Gen 2 C 型介面 • 支援 SATA | USB 3.2 Gen 2 A 型轉 C 型連接線 |
| TR-004 | <ul style="list-style-type: none"> • 使用 USB 3.2 Gen 1 C 型介面 • 支援 SATA | USB 3.2 Gen 1 A 型轉 C 型連接線 |
| TR-004U | | <ul style="list-style-type: none"> • USB 3.2 Gen 1 A 型轉 C 型連接線 • RAIL-B02 |

| 擴充設備型號 | 說明 | 必要配件 |
|--------------|---|---|
| TL-D800C | <ul style="list-style-type: none"> • 使用 USB 3.2 Gen 2 C 型介面 • 支援 SATA | USB 3.2 Gen 2 A 型轉 C 型連接線 |
| TL-R1200C-RP | | <ul style="list-style-type: none"> • USB 3.2 Gen 2 A 型轉 C 型連接線 • RAIL-B02 |

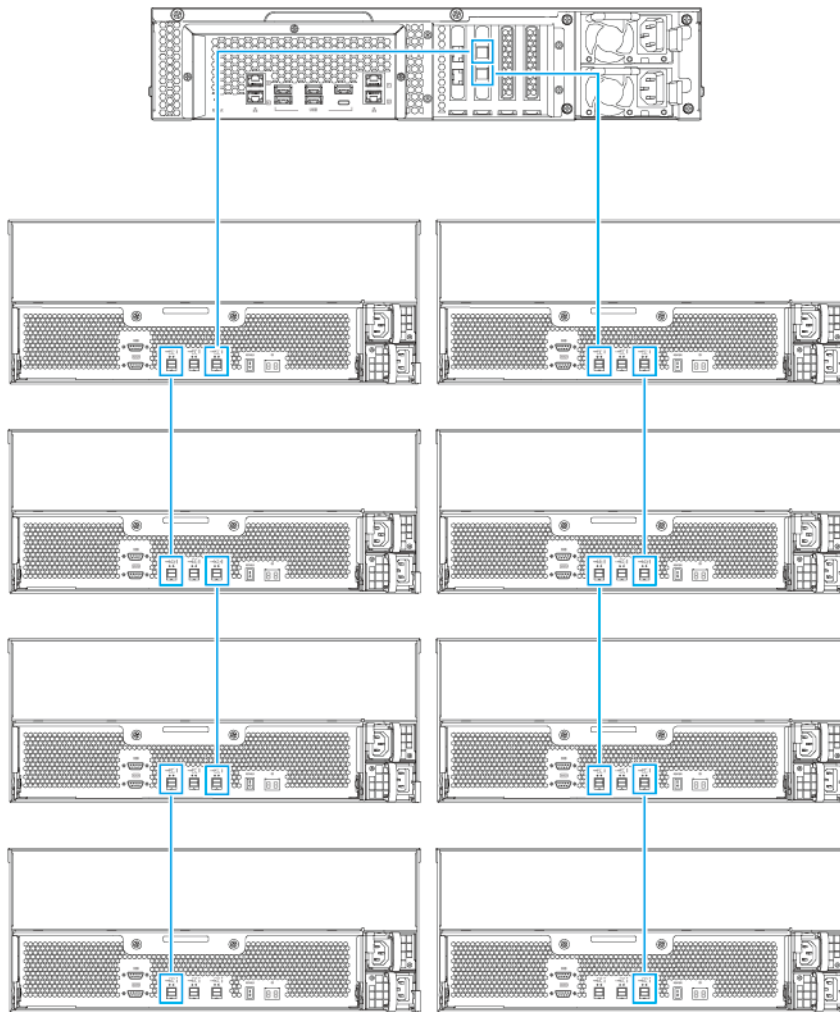
連接 SAS 擴充設備

若要連接 TS-hx77XU-RP 至 SAS 擴充設備，NAS 必須安裝儲存擴充卡。如需必要配件的詳細資訊，請參見：[安裝擴充設備](#)。

1. 在 PCIe 插槽安裝儲存擴充卡。
如需詳細資訊，請參見：[更換擴充卡](#)。
2. 請按照下列拓樸圖，將擴充設備連接到 NAS。



TS-h977XU-RP



TS-h1277XU-RP

3. 開啟擴充設備的電源。
4. 確認 NAS 可辨識所有擴充設備。
 - a. 以管理員身分登入 QuTS hero。
 - b. 前往 [主選單] > [儲存與快照總管] > [總覽] > [系統]。
 - c. 確認畫面列出擴充設備。

連線 SATA JBOD 擴充設備

若要連接 TS-hx77XU-RP 至 SATA JBOD 擴充設備，必須先在 NAS 安裝主機匯流排介面卡。如需必要配件的詳細資訊，請參見：[安裝擴充設備](#)。

1. 關閉 NAS 電源。
2. 在 PCIe 插槽安裝主機匯流排介面卡。



重要

連接 SATA JBOD 擴充裝置至主機裝置需要 QNAP QXP 主機匯流排介面卡。第三方主機匯流排介面卡與 QNAP JBOD 擴充裝置不相容。

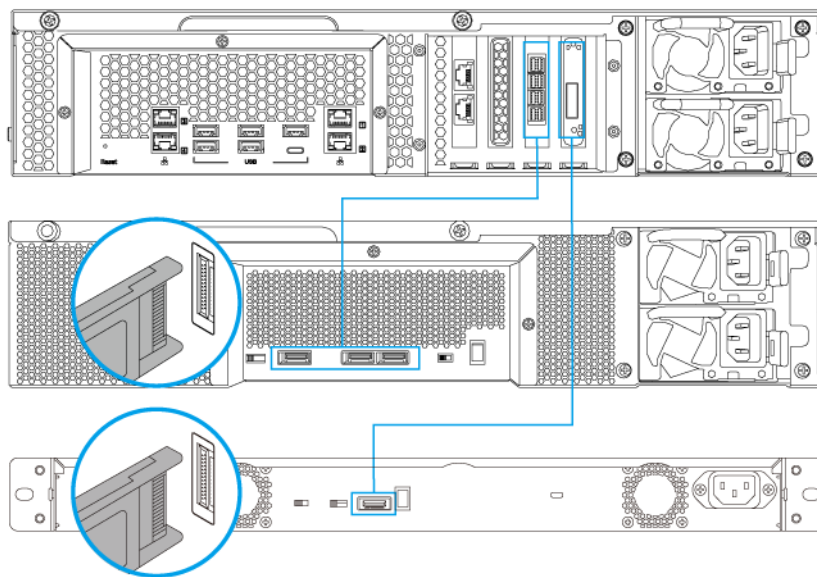
如需詳細資訊，請參見：[更換擴充卡](#)。

3. 請按照下列拓模圖，將擴充設備連接到 NAS。



注意

本圖顯示 NAS 連接至 JBOD 擴充設備 TL-R400S 及 TL-R1200S-RP。

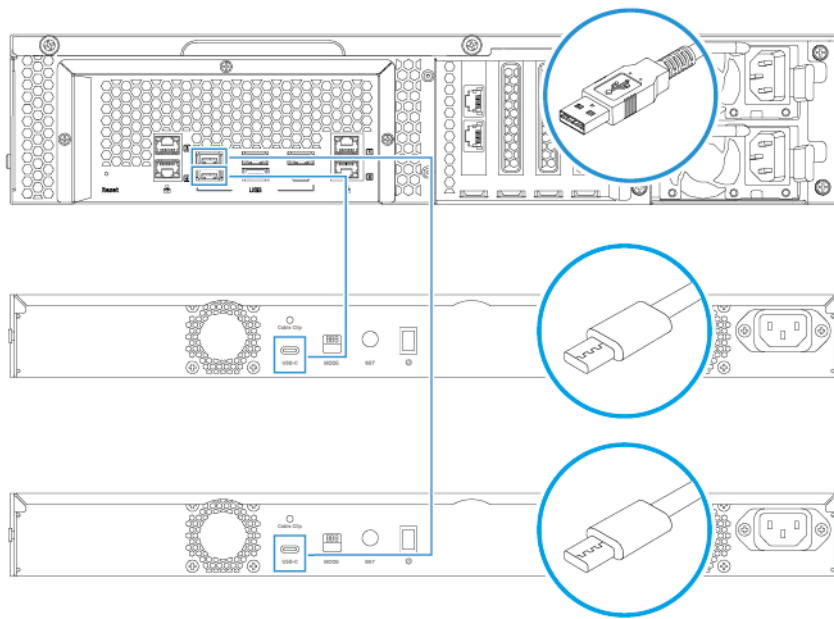


4. 開啟 SATA JBOD 擴充設備的電源。
5. 開啟 NAS。
6. 確認 NAS 可辨識所有擴充設備。
 - a. 以管理員身分登入 QuTS hero。
 - b. 前往 [主選單] > [儲存與快照總管] > [總覽] > [系統]。
 - c. 確認畫面列出擴充設備。

連接 USB 擴充設備

若要将 TS-h977XU-RP 連接到 USB 擴充設備，需要使用 USB A 型轉 USB C 型的連接線或轉接器。如需必要配件的詳細資訊，請參見：[安裝擴充設備](#)。

1. 將擴充設備連接至 NAS。
 - a. 將 USB 連接線接至擴充設備上的 USB C 型連接埠。
 - b. 將 USB 連接線接至 NAS 上的 USB 3.2 Gen 1 A 型連接埠。



2. 開啟擴充設備的電源。
3. 確認 NAS 可辨識所有擴充設備。
 - a. 以管理員身分登入 QuTS hero。
 - b. 前往 [主選單] > [儲存與快照總管] > [總覽] > [系統]。
 - c. 確認畫面列出擴充設備。

QuTS hero 安裝

TS-hx77XU-RP 使用 QNAP QuTS hero 作業系統。您可以使用下列其中一種方式安裝 QuTS hero：

| 方法 | 描述 | 需求 |
|--------------------------|---|---|
| Qfinder Pro 安裝 (建議使用) | 如果 NAS 已連接您的區域網路，您可以執行下列操作： <ul style="list-style-type: none"> • 使用 Qfinder Pro 定位 NAS。 • 完成「智慧安裝導引」精靈中的步驟。 | <ul style="list-style-type: none"> • 電腦 • 網路線 • Qfinder Pro 安裝程式 |

| 方法 | 描述 | 需求 |
|------|---|---|
| 雲端安裝 | <p>如果 NAS 已連接網際網路，您可以執行下列操作：</p> <ul style="list-style-type: none"> • 掃描 NAS 上的 QR 碼。 • 指定 Cloud Key。 • 登入 myQNAPcloud 帳號。 • 使用 myQNAPcloud Link 遠端存取您的 NAS。 • 完成「智慧安裝導引」精靈中的步驟。 | <ul style="list-style-type: none"> • 電腦或行動裝置 • myQNAPcloud 帳號 • CloudKey |

使用 Qfinder Pro 安裝 QuTS hero



警告

安裝 QuTS hero 會刪除硬碟上的所有資料。繼續操作前請先備份資料。



注意

您可以隨時回復到 QTS 作業系統。如需詳細資訊，請參見《QuTS hero 使用者指南》。

1. 開啟 NAS。
2. 將 NAS 連接至區域網路。
3. 在連接相同區域網路的電腦上執行 Qfinder Pro。



注意

若要下載 Qfinder Pro，請前往 <https://www.qnap.com/utilities>。

4. 在清單中找到 NAS，然後按兩下它的名稱或 IP 位址。
「智慧安裝導引」隨即在預設的網頁瀏覽器中開啟。
5. 按一下 [啟動智慧安裝導引]。
6. 指定下列資訊：
 - **NAS 名稱**：指定 1 到 14 個字元的名稱。名稱支援使用英文字母 (A 到 Z、a 到 z)、數字 (0 到 9) 以及連字號 (-)，但不能以連字號做結尾。
 - **密碼**：指定 1 到 64 個字元的管理員密碼。密碼支援使用所有 ASCII 字元。
7. 按一下 [下一步]。
8. 指定時區、日期和時間。



提示

QNAP 建議連接至 NTP 伺服器，以確保 NAS 符合國際標準時間 (UTC) 的標準。

9. 按一下 [下一步]。
10. 選擇 [自動取得 IP 位址 (DHCP)]。
11. 按一下 [下一步]。

12. 選擇將用於存取 NAS 共用資料夾的裝置類型。
13. 按一下 [下一步]。
14. 檢視設定值。
15. 按一下 [套用]。
確認訊息隨即出現。

**警告**

按一下 [確認] 後，系統會在安裝 QuTS hero 前刪除硬碟的所有資料。

16. 按一下 [確認]。
QuTS hero 已安裝。

使用 Cloud Key 安裝 QuTS hero

**警告**

安裝 QuTS hero 會刪除硬碟上的所有資料。繼續操作前請先備份資料。

**注意**

您可以隨時回復到 QTS 作業系統。如需詳細資訊，請參見《QuTS hero 使用者指南》。

1. 開啟 NAS。
2. 將 NAS 連接至網際網路。
3. 使用下列其中一種方式前往 QNAP 雲端安裝頁面：
 - 使用電腦前往 <http://install.qnap.com/>。
 - 使用行動裝置掃描 NAS 上的 QR 碼。

該網頁列出區域網路內所有未初始化的 QNAP NAS 裝置。

4. 在清單中找出自己的 NAS，然後按一下 [初始化]。

**注意**

如果未列出您的 NAS，請按照網頁上的指示指定 NAS 的 Cloud Key。

安裝精靈隨即在預設的網頁瀏覽器中開啟。

5. 建立帳號或登入 myQNAPcloud。

**注意**

建立帳號之後，必須返回此頁面完成安裝步驟。

6. 指定 NAS 的 myQNAPcloud 裝置名稱。

**注意**

- 遠端存取 NAS 時，需要用到 myQNAPcloud 裝置名稱。
- 基於安全考量，NAS 將於初始化後停用 myQNAPcloud Link 遠端連線服務。日後若要再度啟用，請透過區域網路連接至 QuTS hero，然後安裝 myQNAPcloud Link。

7. 按一下 [下一步]。
「智慧安裝導引」隨即在預設的網頁瀏覽器中開啟。

8. 按一下 [啟動智慧安裝導引] 。
9. 指定下列資訊：
 - **NAS 名稱**：指定 1 到 14 個字元的名稱。名稱支援使用英文字母 (A 到 Z、a 到 z)、數字 (0 到 9) 以及連字號 (-)，但不能以連字號做結尾。
 - **密碼**：指定 1 到 64 個字元的管理員密碼。密碼支援使用所有 ASCII 字元。
10. 按一下 [下一步] 。
11. 指定時區、日期和時間。

**提示**

QNAP 建議連接至 NTP 伺服器，以確保 NAS 符合國際標準時間 (UTC) 的標準。

12. 按一下 [下一步] 。
- [編輯網路設定] 畫面隨即出現。
13. 選擇 [自動取得 IP 位址 (DHCP)] 。
14. 按一下 [下一步] 。
- [跨平台檔案傳輸服務] 畫面隨即出現。
15. 選擇將用於存取 NAS 共用資料夾的裝置類型。
16. 按一下 [下一步] 。
- [摘要] 視窗隨即顯示。
17. 檢視設定值。
18. 按一下 [套用] 。
- 確認訊息隨即出現。

**警告**


按一下 [確認] 後，系統會在安裝 QuTS hero 前刪除硬碟的所有資料。

19. 按一下 [確認] 。
- QuTS hero 已安裝。

4. 基本操作

本章介紹 NAS 的基本操作。

電源按鈕

| 操作 | 使用者動作 | 結果 |
|------|-------------|--|
| 開啟電源 | 按一下按鈕。 | NAS 電源開啟。 |
| 關閉電源 | 按住按鈕 1.5 秒。 | NAS 電源關閉。 |
| 強制關機 | 按住按鈕 5 秒。 | NAS 關機。  重要 僅在 NAS 沒有回應時使用此方法。 |

重設按鈕

| 操作 | 使用者動作 | 結果 |
|--------|------------|--|
| 系統基本重設 | 按住按鈕 3 秒。 | <p>以下設定將回復至預設值：</p> <ul style="list-style-type: none"> 系統管理員密碼：無特殊字元的介面卡 1 MAC 位址。例如，若介面卡 1 的 MAC 位址為 11:22:33:44:55:66，則管理員密碼為 112233445566。 <p> 提示 您可以透過 Qfinder Pro 找到介面卡 1 MAC 位址。黏貼至裝置的標籤亦將位址列為 MAC1。</p> <ul style="list-style-type: none"> TCP/IP 設定： <ul style="list-style-type: none"> 使用動態 IP 位址 停用 Jumbo Frame 若已啟用 Port Trunking (僅適用於支援多 LAN 的型號)，系統將重設為「Active Backup (網路容錯)」模式。 系統通訊埠：8080 (系統服務埠) 安全等級：低 (接受所有連線) LCD 面板密碼：(空白) VLAN：已停用 |
| 系統進階重設 | 按住按鈕 15 秒。 | <p>回復為出廠預設值。</p> <ul style="list-style-type: none"> 若要在系統進階重設後取得舊有資料，請在 NAS 上重建先前的資料夾結構。 |

LED 燈號

LED 燈號指示 NAS 開機時的系統狀態與相關資訊。下列 LED 燈號資訊僅適用於已正確安裝硬碟，且 NAS 已連線至網路的狀態下。

如需 LED 燈號的位置資訊，請參見：[前方面板](#)。

| LED | 狀態 | 說明 |
|------|------------------|---|
| 系統狀態 | 綠燈與紅燈每 0.5 秒交錯閃爍 | <ul style="list-style-type: none"> • 硬碟正在格式化。 • NAS 正在初始化。 • 作業系統正在更新。 • RAID 重建作業正在進行。 • 線上 RAID 容量擴充正在進行。 • 線上 RAID 組態遷移正在進行。 |
| | 紅燈 | <ul style="list-style-type: none"> • 硬碟無效。 • 磁碟區容量已滿。 • 磁碟區容量將滿。 • 系統風扇異常。 • 資料存取（讀寫）錯誤。 • 硬碟壞軌。 • NAS 處於降階唯讀模式（RAID 5 或 RAID 6 有兩個硬碟故障，但資料仍可讀取）。 • 硬體自我檢查發生錯誤。 |
| | 紅燈每 0.5 秒閃爍 | NAS 處於降階模式（RAID 1、RAID 5 或 RAID 6 有一個硬碟故障）。 |
| | 綠燈每 0.5 秒閃爍 | <ul style="list-style-type: none"> • NAS 啟動中。 • NAS 未設定。 • 硬碟未格式化。 |
| | 綠燈 | NAS 已就緒。 |
| | 關閉 | 所有硬碟處於待命模式。 |
| LAN | 橙燈 | NAS 網路連線使用中。 |
| | 橙燈閃爍 | 正在存取 NAS。 |
| | 關閉 | 無網路連結。 |
| 硬碟 | 綠燈 | 硬碟已就緒。 |
| | 綠燈閃爍 | 正在存取硬碟。 |
| | 紅燈 | 發生讀寫錯誤。 |
| | 紅燈閃爍 | 在 QuTS hero 上找到硬碟。 |
| 擴充設備 | 橙燈 | 已連接一個擴充設備。 |
| | 關閉 | 未連接擴充設備。 |

警示音

| 期間 | 頻率 | 描述 |
|--------------|----------------|---|
| 短嗶 (0.5 秒) | 1 聲 | <ul style="list-style-type: none"> • NAS 啟動中。 • NAS 關閉中 (軟體關機)。 • 使用者按下 [重設] 按鈕。 • 作業系統已更新。 |
| | 3 聲 | 使用者嘗試將 NAS 資料複製到正面 USB 埠中的外接儲存裝置，但資料無法複製。 |
| 短嗶 (1.5 秒) | 3 聲 (每 5 分鐘) | 系統風扇異常。 |
| | 2 聲 | <ul style="list-style-type: none"> • 磁碟區容量將滿。 • 磁碟區容量已滿。 • 硬碟進入降階模式。 • 使用者開始硬碟重建程序。 • 插入或抽出硬碟。 |
| | 1 聲 | <ul style="list-style-type: none"> • NAS 強制關機 (硬體關機)。 • NAS 成功開機且可供使用。 |

5. 疑難排解

本章介紹基本的疑難排解資訊。

強制 Qfinder Pro 或 myQNAPcloud 定位 NAS

如果 Qfinder Pro 或 myQNAPcloud 在安裝 QuTS hero 期間找不到 NAS，表示硬碟或資料出現問題。

1. 關閉 NAS 電源。
2. 移除所有硬碟。
3. 開啟 NAS。
4. 使用 Qfinder Pro 或 myQNAPcloud 定位 NAS。
5. 將硬碟重新插入。
6. 繼續執行 QuTS hero 安裝作業。

熱抽換故障硬碟

NAS 支援熱抽換下列情況的硬碟：

- RAID 1：一個硬碟故障
- RAID 5：一個硬碟故障
- RAID 6：一個或兩個硬碟故障

1. 登入 QuTS hero。
2. 前往 [主選單] > [儲存空間總管] > [儲存空間] > [磁碟/VJBOD]。
3. 找出故障的硬碟。
4. 準備一個新的硬碟，且容量至少與故障硬碟相同。
5. 將 NAS 的故障硬碟拔出。
6. 等待 20 秒或等到 NAS 發出兩次嗶聲。
7. 將故障硬碟從硬碟托盤取下。
8. 將新的硬碟插入硬碟托盤。
9. 安裝新的硬碟。
NAS 會發出兩次嗶聲。
10. 前往 [主選單] > [儲存空間總管] > [儲存空間]。
11. 找出新硬碟所在的磁碟區，然後確認其狀態為 [重建中]。

支援和其他資源

QNAP 提供下列資源：

| 資源 | URL |
|--------|---|
| 文件 | https://docs.qnap.com |
| 服務入口網站 | https://service.qnap.com |
| 下載 | https://download.qnap.com |
| 社群論壇 | https://forum.qnap.com |

6. 詞彙

CloudKey

指定至每個 NAS 裝置的唯一 8 位數代碼

myQNAPcloud Link

讓您透過網際網路存取 NAS，無需配置複雜的連接埠轉址設定

myQNAPcloud

提供各種遠端存取服務，例如 DDNS 與 myQNAPcloud Link

myQNAPcloud ID

用來註冊 myQNAPcloud 帳號的電子郵件地址

Qfinder Pro

QNAP 應用工具可讓您定位和存取區域網路內的 QNAP NAS 裝置

QuTS hero

QNAP NAS 作業系統配備 ZFS 檔案系統

7. 聲明

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Version 3, 29 June 2007

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FCC 聲明

FCC A 級聲明



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VCCI-A

經濟部標準檢驗局聲明



D33B77
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SJ/T 11364-2006



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|--------|-----------|-----------|-----------|-----------------|---------------|-----------------|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (CR(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 壳体 | 0 | 0 | 0 | 0 | 0 | 0 |
| 显示 | 0 | 0 | 0 | 0 | 0 | 0 |
| 印刷电路板 | 0 | 0 | 0 | 0 | 0 | 0 |
| 金属螺帽 | 0 | 0 | 0 | 0 | 0 | 0 |
| 电缆组装 | 0 | 0 | 0 | 0 | 0 | 0 |
| 风扇组装 | 0 | 0 | 0 | 0 | 0 | 0 |
| 电力供应组装 | 0 | 0 | 0 | 0 | 0 | 0 |
| 电池 | 0 | 0 | 0 | 0 | 0 | 0 |

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