



**QNAP**

# JBOD 擴充裝置

TL-R1220Sep-RP  
TL-R1620Sep-RP

使用者指南

# 目錄

<b>1. 前言</b>	
關於本指南.....	3
適用對象.....	3
慣用符號.....	3
<b>2. 產品概觀</b>	
關於 QNAP JBOD 擴充裝置.....	4
硬體規格.....	4
包裝內容.....	5
元件.....	5
前方面板.....	6
背部面板.....	7
硬碟編號.....	8
安全資訊.....	8
安裝需求.....	10
設定 JBOD 擴充裝置.....	10
<b>3. 硬體安裝</b>	
安裝硬碟.....	12
在 3.5 吋托盤上安裝 3.5 吋硬碟.....	12
在 3.5 吋托盤上安裝 2.5 吋硬碟或固態硬碟.....	14
連接 JBOD 擴充裝置至 NAS.....	16
連接 JBOD 擴充裝置至伺服器.....	17
網路設置.....	19
多路徑 I/O 的網路設置.....	19
連結彙總控制通訊協定的網路設置.....	21
多路徑 I/O 及連結彙總控制通訊協定的網路設置.....	23
熱抽換備援電源供應器.....	24
機架滑軌.....	26
<b>4. 基本操作</b>	
電源按鈕.....	27
LED 燈號.....	28
警示音.....	29
<b>5. 疑難排解</b>	
強制「儲存與快照總管」或 QNAP JBOD Manager 辨識 JBOD 擴充裝置.....	30
熱抽換故障硬碟.....	30
支援和其他資源.....	31
<b>6. 詞彙</b>	
QNAP JBOD Manager.....	32
QTS.....	32
QuTS hero.....	32
儲存與快照總管.....	32
<b>7. 聲明</b>	
有限保固.....	33
免責聲明.....	33
GNU Public License.....	33

CE 聲明.....	41
FCC 聲明.....	41
VCCI 聲明.....	41
經濟部標準檢驗局聲明.....	42
SJ/T 11364-2006.....	42

# 1. 前言





## 關於本指南

本指南涵蓋 QNAP TL-R1220Sep-RP 和 TL-R1620Sep-RP SAS JBOD 擴充裝置的相關資訊，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 JBOD 擴充裝置的基本資訊。

### 關於 QNAP JBOD 擴充裝置

QNAP JBOD 擴充裝置的目的為提升 NAS 或電腦的容量及應用，並支援多項儲存應用程式。您可以獨立管理已安裝的硬碟，或透過主機裝置設置為軟體 RAID 群組。TL-R1220Sep-RP 和 TL-R1620Sep-RP 具有 12 個和 16 個 3.5 吋 SATA/SAS 12 Gbps 硬碟插槽和 4 個 SFF-8644 連接埠。

### 硬體規格



#### 警告


- 如果您的 QNAP 產品有硬體瑕疵，請將產品寄回 QNAP 或 QNAP 授權服務中心進行維修或換貨。只要您或未經授權的第三方嘗試修復產品或執行產品維修流程，皆會導致產品保固失效。
- 對於因未獲授權進行修改或安裝不支援之第三方應用程式所導致的任何損害或資料遺失，QNAP 一概不予負責。
- 如需詳細資訊，請參見：[QNAP 保固條款與條件](#)。



#### 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>。

元件	TL-R1220Sep-RP	TL-R1620Sep-RP
儲存空間		
硬碟插槽	<ul style="list-style-type: none"> <li>• 12 x 3.5 吋 SAS 12 Gbps</li> <li>• 12 x 3.5 吋 SAS 6 Gbps</li> <li>• 12 x 3.5 吋 SATA 6 Gbps</li> </ul>	<ul style="list-style-type: none"> <li>• 16 x 3.5 吋 SAS 12 Gbps</li> <li>• 16 x 3.5 吋 SAS 6 Gbps</li> <li>• 16 x 3.5 吋 SATA 6 Gbps</li> </ul>
硬碟相容性	3.5 吋插槽： <ul style="list-style-type: none"> <li>• 3.5 吋 SATA 硬碟</li> <li>• 3.5 吋 SAS 硬碟</li> </ul> 2.5 吋插槽： <ul style="list-style-type: none"> <li>• 2.5 吋 SATA 硬碟</li> <li>• 2.5 吋 SAS 硬碟</li> <li>• 2.5 吋 SATA 固態硬碟</li> </ul>	
熱抽換	支援	
外接 I/O 埠和擴充插槽		
SFF 連接埠	4 x SFF-8644	
介面		
按鈕	電源	
尺寸		
外型	2U 機架式	3U 機架式

元件	TL-R1220Sep-RP	TL-R1620Sep-RP
尺寸 (高 x 寬 x 深)	88.65 x 482.2 x 423.8 mm (3.49 x 18.98 x 16.68 in)	131.3 x 482.2 x 425.3 mm (5.17 x 18.98 x 16.74 in)
淨重	9.19 kg (20.26 lbs)	11.48 kg (25.30 lbs)
其他	滑軌相容性 Rail-B02  <b>注意</b> <ul style="list-style-type: none"> <li>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 <a href="http://shop.qnap.com">http://shop.qnap.com</a>。</li> </ul>	
電源供應器	2 x 300W · 100-240V AC · 50/60 Hz	2 x 550W · 100-240V AC · 50/60 Hz
噪音值	33.9 dB(A)	36 dB(A)
風扇	2 x 80 mm · 12V DC 風扇	3 x 80 mm · 12V DC 風扇
操作溫度	<ul style="list-style-type: none"> <li>不凝結相對溼度：5% 至 95%</li> <li>濕球溫度：27°C (80.6°F)</li> </ul>	



#### 提示

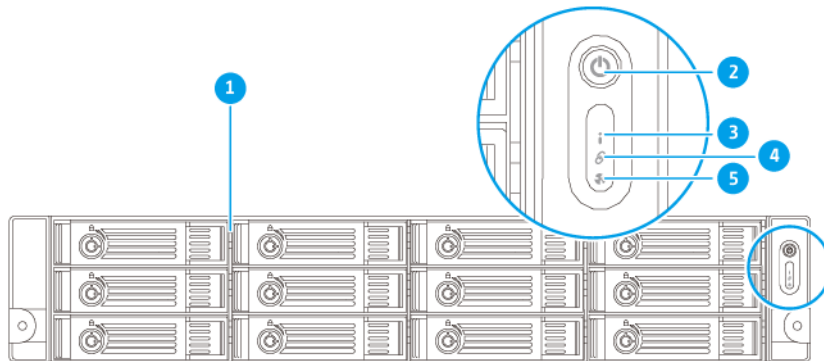
請前往 <https://www.qnap.com/compatibility> 查看相容的硬碟機型清單。

## 包裝內容

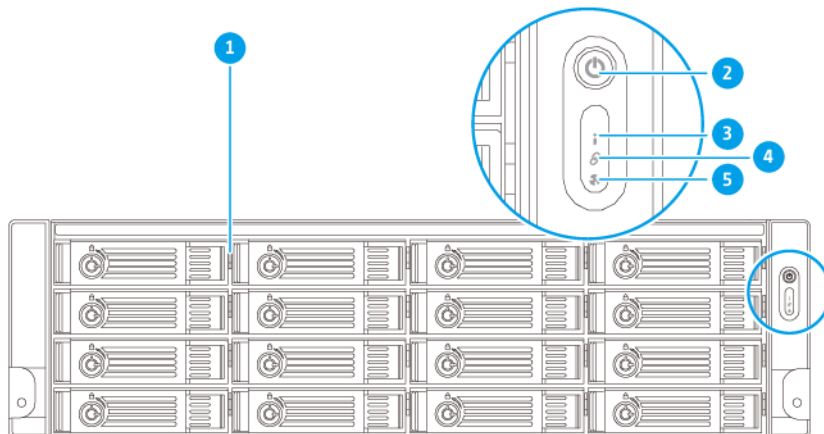
項目	數量
JBOD 擴充裝置	1
電源線	1
SF-8644 連接器纜線	1
3.5 吋硬碟用螺絲	<ul style="list-style-type: none"> <li>TL-R1220Sep-RP：48</li> <li>TL-R1620Sep-RP：64</li> </ul>
2.5 吋硬碟用螺絲	<ul style="list-style-type: none"> <li>TL-R1220Sep-RP：36</li> <li>TL-R1620Sep-RP：48</li> </ul>
快速安裝手冊 (QIG)	1

## 元件

## 前方面板



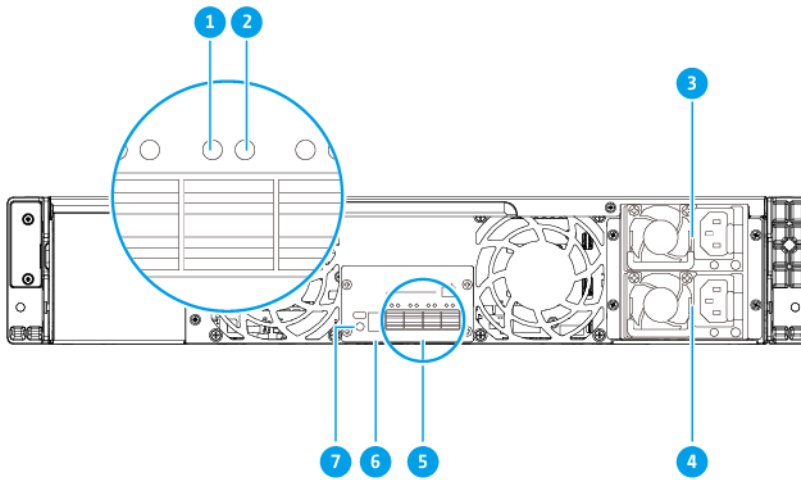
### TL-R1220Sep-RP



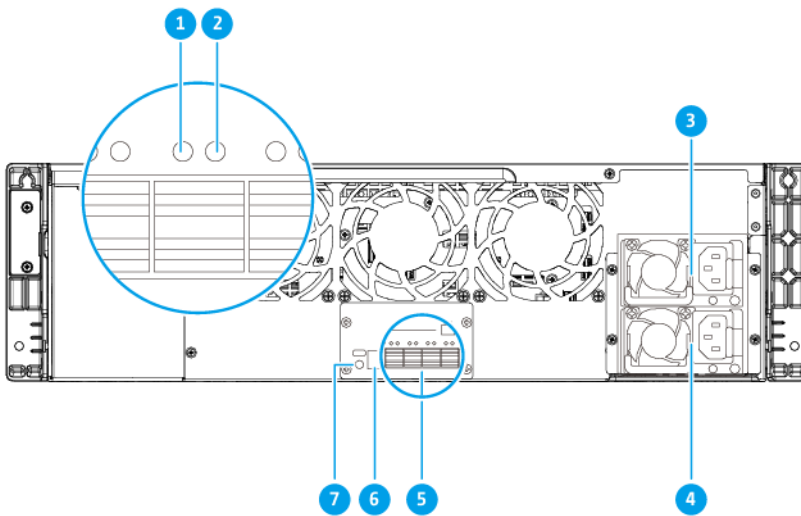
### TL-R1620Sep-RP

編號	元件	編號	元件
1	硬碟 LED 燈	4	連線 LED 燈
2	電源按鈕	5	風扇錯誤 LED 燈
3	狀態 LED 燈	-	-

## 背部面板




### TL-R1220Sep-RP



### TL-R1620Sep-RP

編號	元件	編號	元件
1	SAS 存取 LED 燈	5	SFF-8644 連接埠
2	SAS 連結 LED 燈	6	機箱 ID
			<p><b>注意</b>                      當 JBOD 連接作業系統時，裝置會指定一個數字給 JBOD。在數字 9 以後，會依照字母順序指定一個字母：A、b、c、d、E、F、g。</p>

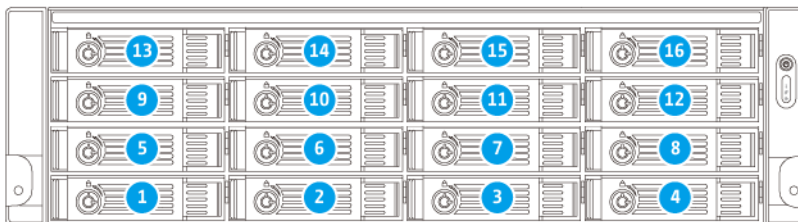


編號	元件	編號	元件
3	電源埠 1	7	3.5 mm 輸出插孔  <b>注意</b> 此連接埠僅用於工程目的。
4	電源埠 2	-	-

## 硬碟編號



### TL-R1220Sep-RP



### TL-R1620Sep-RP

## 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

- 裝置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裝置；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正確接地的電源插座。



具有備援電源供應器的裝置可能配備一條或多條電源供應器 (PSU) 電源線。為防止嚴重傷害事故發生，在安裝或更換系統元件前，所有 PSU 電源線必須由經訓練之維修技術人員從裝置拔除。

## 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。

## 移動的零件



**轉動的風扇葉片：**裝置連接至電源時，請使身體部位遠離正在轉動的風扇葉片。



**移動的元件：**使身體部位遠離正在移動的其他元件。

## 安裝需求

類別	項目
環境	<ul style="list-style-type: none"> <li>室溫：0°C 到 40°C ( 32°F 到 104°F )</li> <li>不凝結相對溼度：5% 至 95%</li> <li>濕球溫度：27°C (80.6°F)</li> <li>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</li> </ul> <p>進出管制</p> <ul style="list-style-type: none"> <li>裝置應放置在實施進出管制的安全場所，控管方式包括工具、鎖鑰或其他安全機制。</li> <li>唯有受過訓練且獲得授權的合格裝置管理員能夠存取裝置；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。</li> </ul>
硬體和週邊設備	<ul style="list-style-type: none"> <li>NAS 或電腦</li> <li>儲存硬碟</li> </ul> <p> <b>提示</b> 請前往 <a href="https://www.qnap.com/compatibility">https://www.qnap.com/compatibility</a> 查看相容的硬碟機型清單。</p> <ul style="list-style-type: none"> <li>一或多條 SF-8644 接頭纜線</li> <li>主機匯流排介面卡</li> </ul> <p> <b>重要</b> 連接 JBOD 擴充裝置至主機裝置需要 QXP-820S-B3408、QXP-1620S-B3616W 及 SAS-12G2E 主機匯流排介面卡。第三方主機匯流排介面卡可能與 QNAP JBOD 擴充裝置不相容。</p>
工具	<ul style="list-style-type: none"> <li>1 號或 2 號十字螺絲起子</li> <li>防靜電腕帶</li> </ul>

## 設定 JBOD 擴充裝置



### 重要

設定 JBOD 擴充裝置或安裝 JBOD 擴充裝置元件前，請詳閱 [安全資訊](#) 中所有安全要求及資訊。

- 將 JBOD 擴充裝置放置於符合需求的環境。  
如需詳細資訊，請參見：[安裝需求](#)。
- 將 JBOD 擴充裝置安裝到機架上。  
如需詳細資訊，請參見：[機架滑軌](#)。
- 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](#)
4. 連上電源線。
  5. 連接 JBOD 擴充裝置至 NAS 或伺服器。  
如需詳細資訊，請參見下列主題：
    - [連接 JBOD 擴充裝置至 NAS](#)
    - [連接 JBOD 擴充裝置至伺服器](#)
  6. 開啟 JBOD 擴充裝置。

### 3. 硬體安裝

本節介紹如何安裝硬碟、連接 JBOD 擴充裝置到 NAS 或伺服器、網路設置，以及熱抽換備援電源供應器。

#### 安裝硬碟

QNAP JBOD 擴充裝置與 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

•



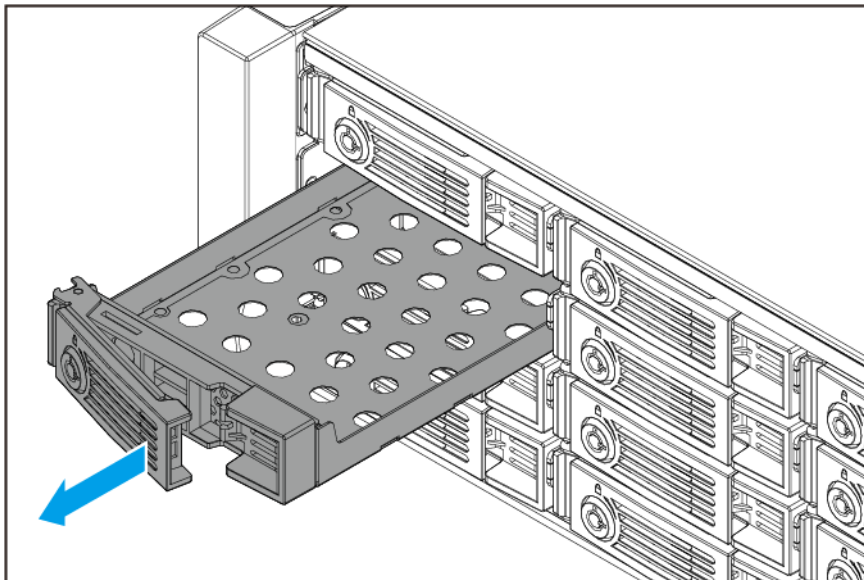
轉動的風扇葉片：使雙手及身體其他部位遠離正在轉動的風扇葉片。

•



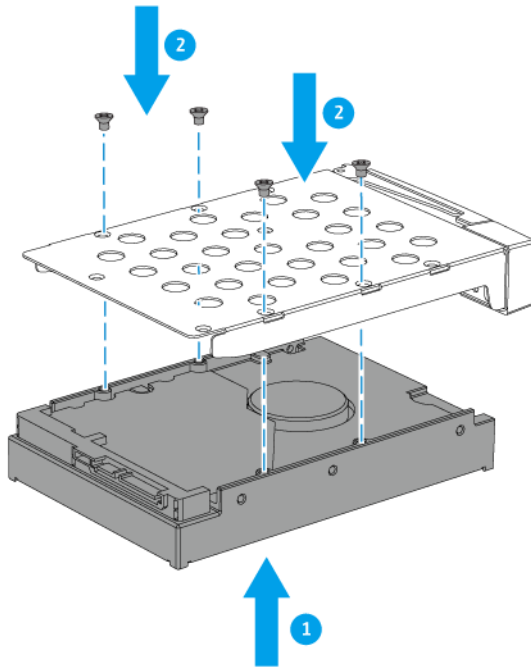
其他移動的元件：使雙手及身體其他部位遠離正在移動的其他元件。

1. 關閉 JBOD 裝置的電源。
2. 取出硬碟托盤。
  - a. 拉把手以鬆開托盤。
  - b. 將托盤拉出。



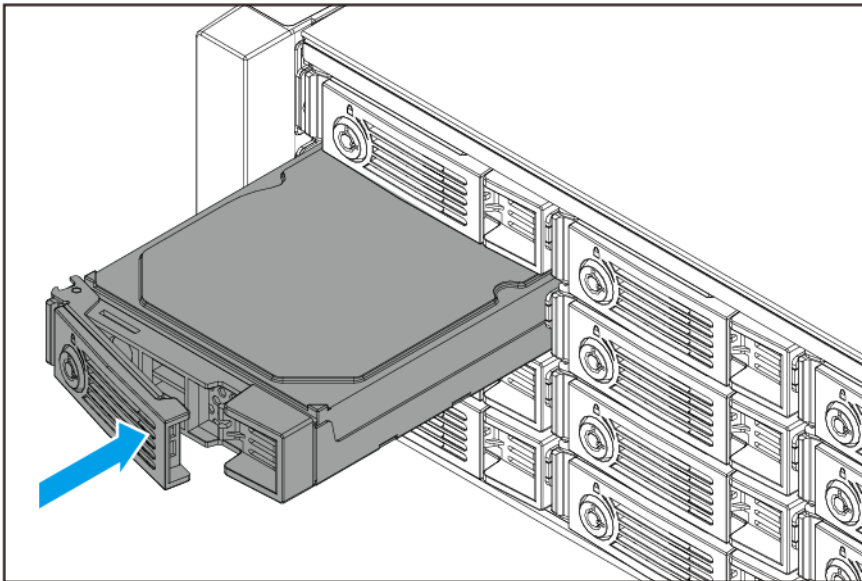
3. 在托盤上安裝硬碟。
  - a. 將硬碟放在托盤上，讓硬碟底部的孔洞與托盤底部的孔洞對齊。

- 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 JBOD 裝置的電源。

**注意**

JBOD 擴充裝置可能需要長達 30 秒的時間，才能偵測到新的裝置。

**在 3.5 吋托盤上安裝 2.5 吋硬碟或固態硬碟****警告**

•



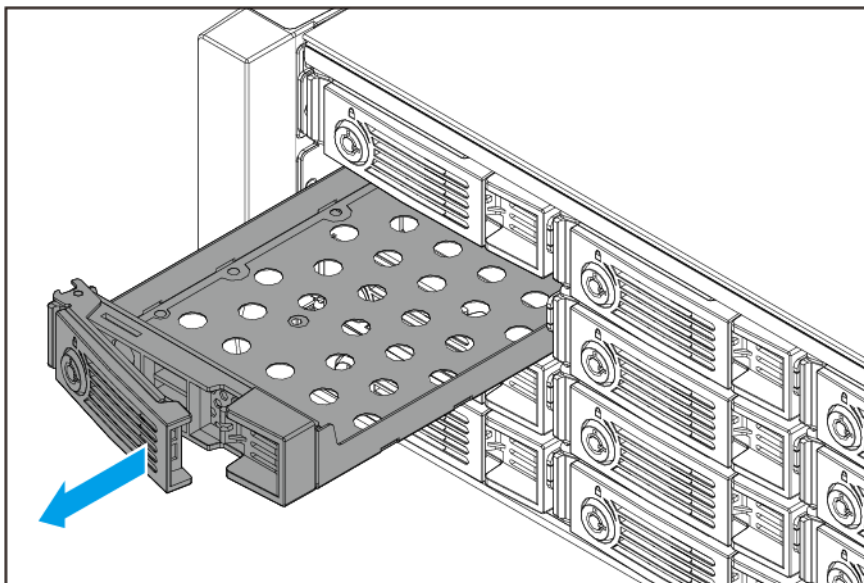
**轉動的風扇葉片：**使雙手及身體其他部位遠離正在轉動的風扇葉片。

•

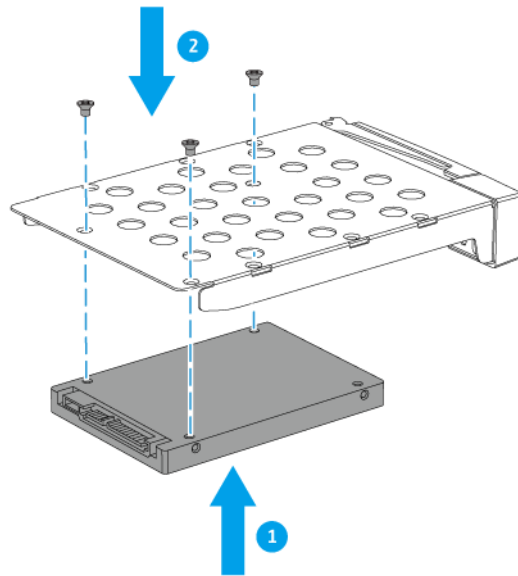


**其他移動的元件：**使雙手及身體其他部位遠離正在移動的其他元件。

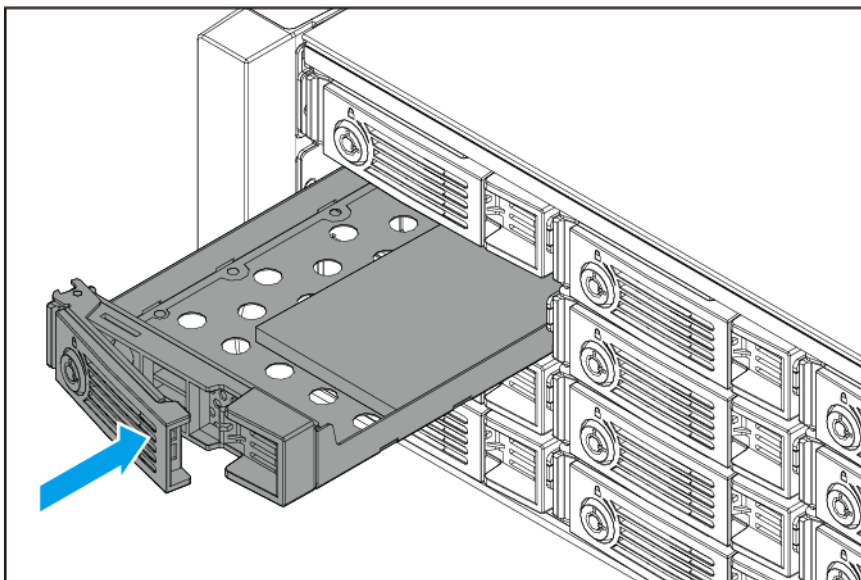
1. 關閉 JBOD 裝置的電源。
2. 取出硬碟托盤。
  - a. 拉把手以鬆開托盤。
  - b. 將托盤拉出。



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 JBOD 裝置的電源。



**注意**

JBOD 擴充裝置可能需要長達 30 秒的時間，才能偵測到新的裝置。

**連接 JBOD 擴充裝置至 NAS**

QTS 最多可支援八台 JBOD 擴充裝置。

NAS 必須執行 QuTS hero h4.5.1 或 QTS 4.5.1 ( 或之後的版本 ) 。

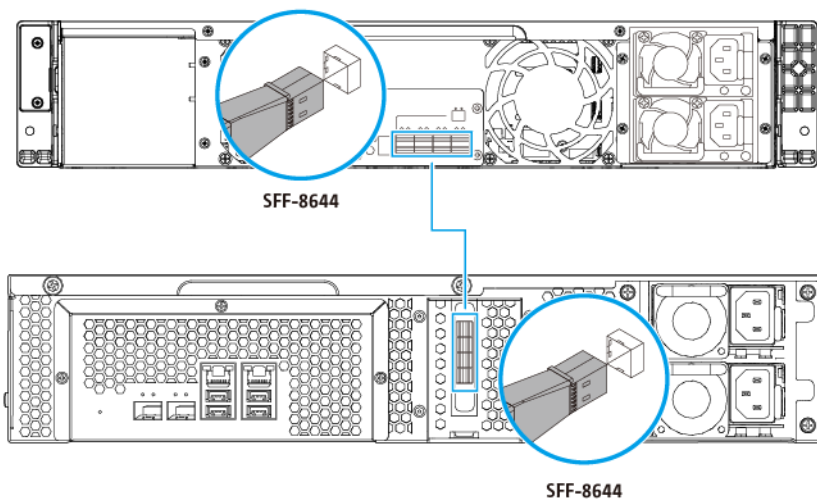
1. 關閉 NAS 。
  2. 關閉 JBOD 擴充裝置 。
  3. 連接 JBOD 擴充裝置至 NAS 。
- a. 將一條或以上的 SFF-8644 接頭纜線連接至 JBOD 擴充裝置的 SFF-8644 連接埠 。
  - b. 將一條或以上的 SFF-8644 接頭纜線連接至安裝於 NAS 的主機匯流排介面卡的 SFF-8644 連接埠 。

**注意**

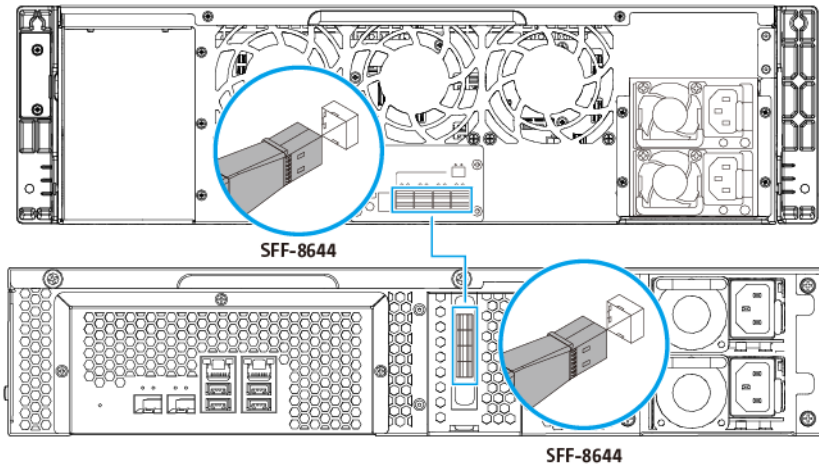
- 參照 NAS 使用者指南的硬體安裝章節中關於安裝擴充卡之指示 。
- SFF 纜線之最大建議長度為 1 公尺。使用更長的纜線可能降低訊號或效能 。

**重要**

連接 JBOD 擴充裝置至主機裝置需要 QNAPQXP-820S-B3408, QXP-1620S-B3616W 及 SAS-12G2E 主機匯流排介面卡 。



**TL-R1220Sep-RP**



### TL-R1620Sep-RP

4. 開啟 JBOD 擴充裝置。
5. 開啟 NAS。
6. 確認 NAS 可辨識 JBOD 擴充裝置。
  - a. 請以管理員身分登入 QTS。
  - b. 前往 [ 主選單 ] > [ 儲存與快照總管 ] > [ 總覽 ] > [ 儲存空間 ]。
  - c. 確認畫面列出 JBOD 擴充裝置。



#### 注意

NAS 可能需要長達 30 秒的時間，才能偵測到 JBOD 擴充裝置及已安裝的硬碟。

### 連接 JBOD 擴充裝置至伺服器

一台 Windows 或 Linux 伺服器可支援不限數量的 JBOD 擴充裝置。

1. 關閉伺服器。
2. 關閉 JBOD 擴充裝置。
3. 連接 JBOD 擴充裝置至伺服器。
  - a. 將一條或以上的 SFF-8644 接頭纜線連接至 JBOD 擴充裝置的 SFF-8644 連接埠。
  - b. 將一條或以上的 SFF-8644 接頭纜線連接至安裝於 NAS 的主機匯流排介面卡的 SFF-8644 連接埠。



#### 注意

- 參照 NAS 使用者指南的硬體安裝章節中關於安裝擴充卡之指示。
- SFF 纜線之最大建議長度為 1 公尺。使用更長的纜線可能降低訊號或效能。



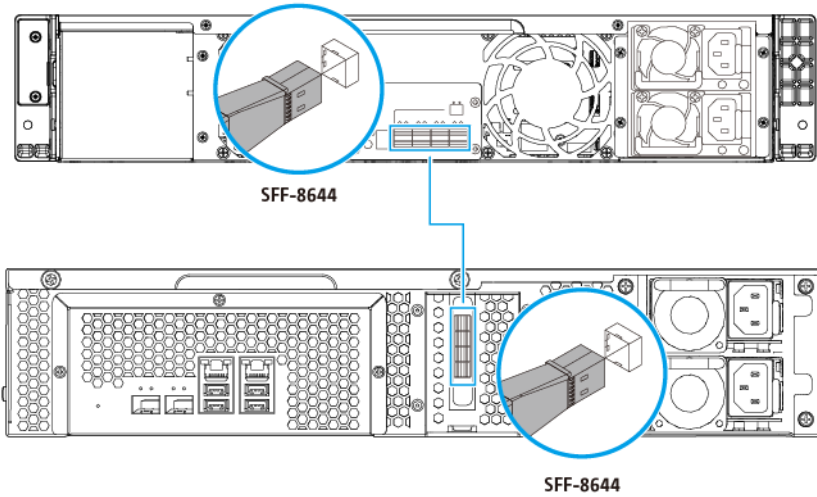
**重要**

連接 JBOD 擴充裝置至主機裝置需要 QNAPQXP-820S-B3408, QXP-1620S-B3616W 及 SAS-12G2E 主機匯流排介面卡。

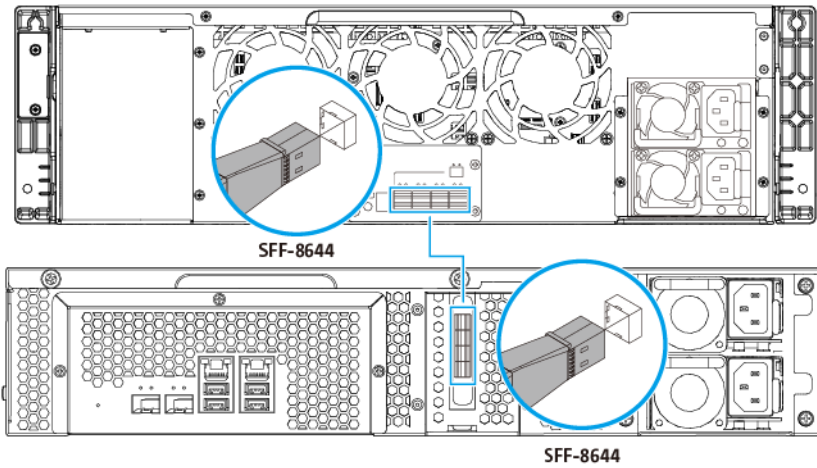


**注意**

第三方主機匯流排介面卡與 QNAP JBOD 擴充裝置相容。如需詳細資訊，請瀏覽：<https://www.qnap.com/en/compatibility/>。



**TL-R1220Sep-RP**



**TL-R1620Sep-RP**

- c. 連接額外 JBOD 擴充裝置至伺服器。
- 4. 開啟 JBOD 擴充裝置。
- 5. 開啟伺服器。

6. 確認伺服器已辨識 JBOD 擴充裝置。
  - a. 前往伺服器的硬碟管理工具程式，或開啟 Windows 或 Linux 中的 QNAP External RAID Manager。

**注意**

若要下載 QNAP JBOD Manager，請前往 <https://download.qnap.com>。

- b. 確認畫面列出 JBOD 擴充裝置。

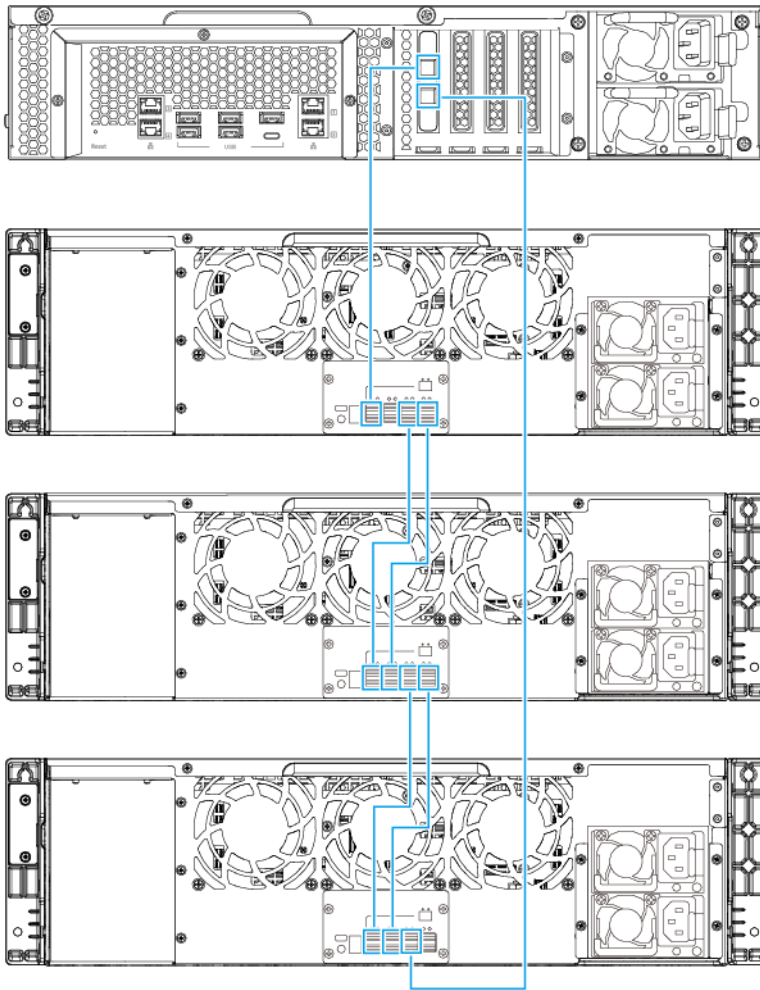
## 網路設置

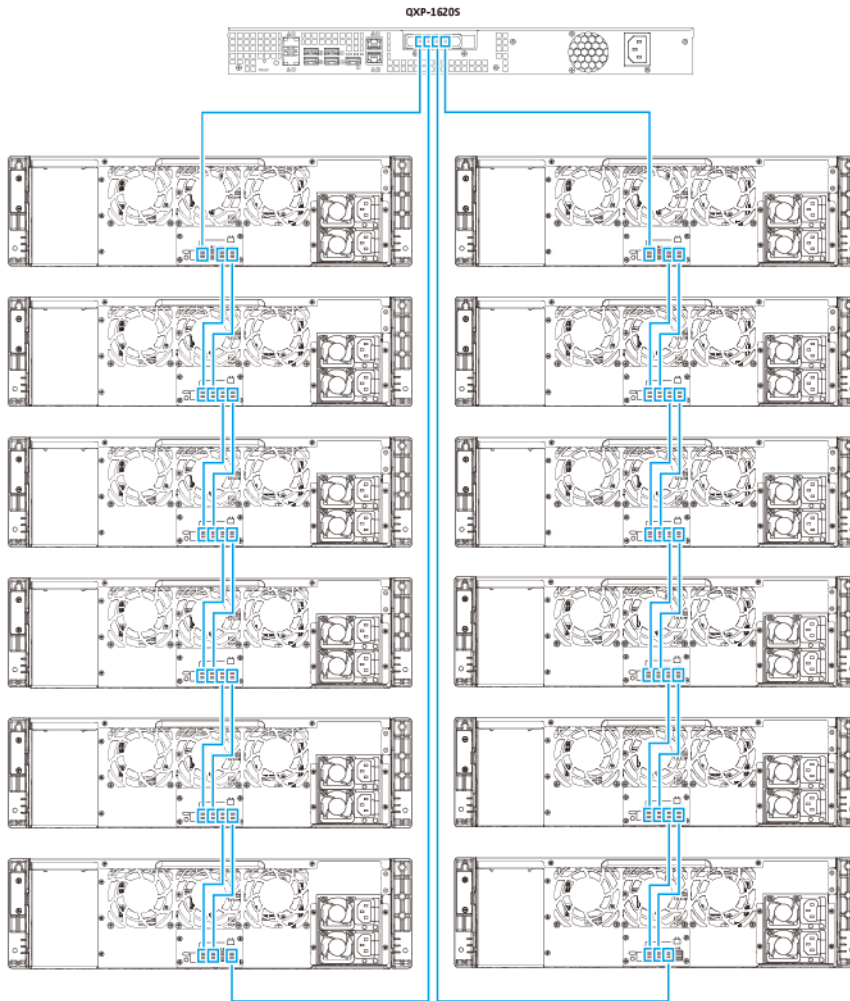
本章節針對 QNAP JBOD 擴充裝置的多種網路設置提供相關資訊。

### 多路徑 I/O 的網路設置

多路徑 I/O (MPIO) 是一種容錯技術，可在伺服器與儲存裝置 (如 NAS) 之間建立多條實體網路路徑。若有任一條網路路徑因交換器、連接線或網卡故障而中斷，伺服器可以透過其他網路路徑傳輸 I/O 流量，以免儲存裝置停機。部署多路徑 I/O 可達到更高的可用性。

以下圖例說明多路徑 I/O 的實作方式：

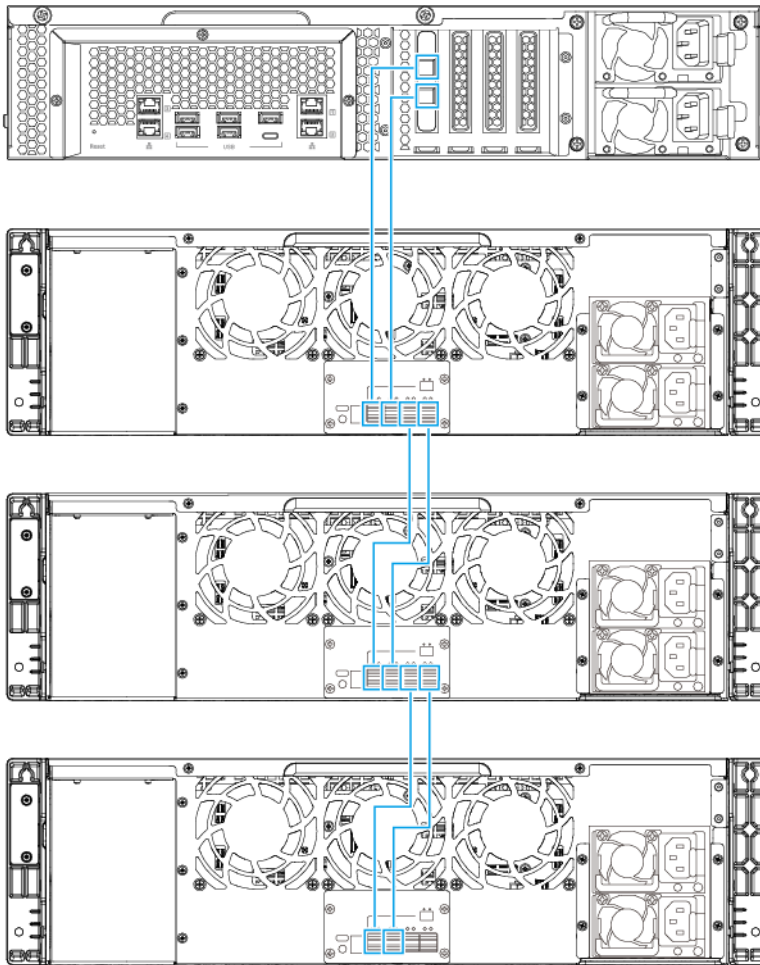


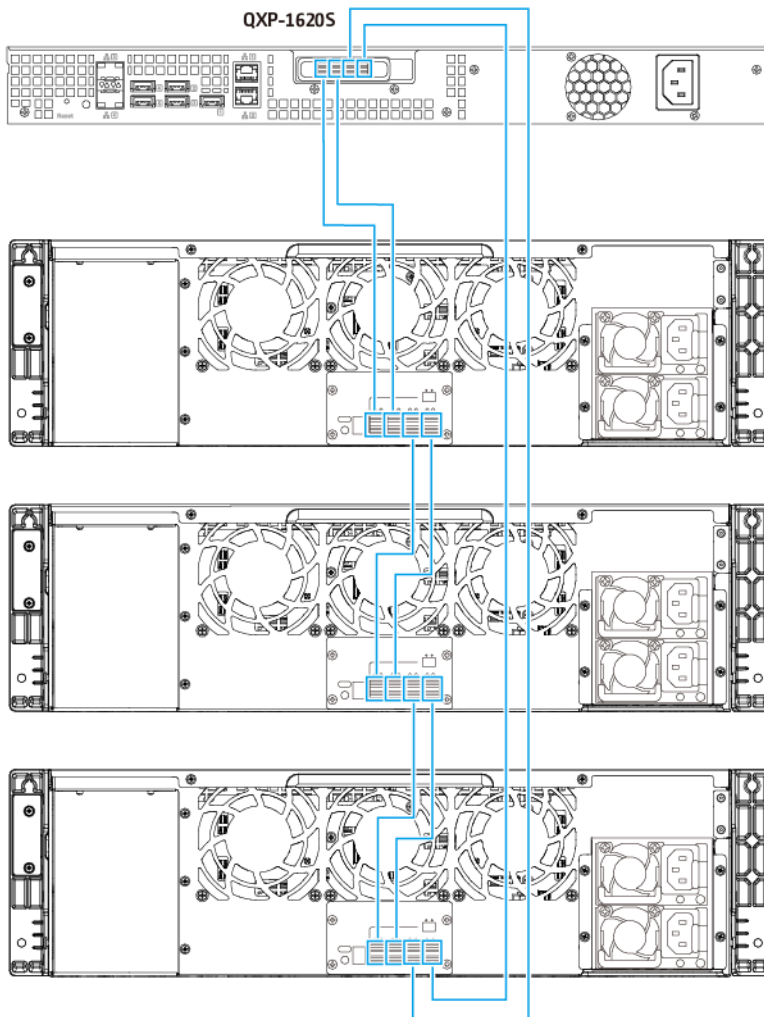


### 連結彙總控制通訊協定的網路設置

連結彙總控制通訊協定 (LACP) 是一種容錯技術，結合多個實體連接埠形成單一通道。如果一個連接埠故障，使用連結彙總可提供快速且透明的復原，所有 I/O 流量會持續運作，直到所有實體連接埠故障。部署連結彙總可達到更好的網路效能。

以下圖例說明多路徑 I/O 的實作方式：



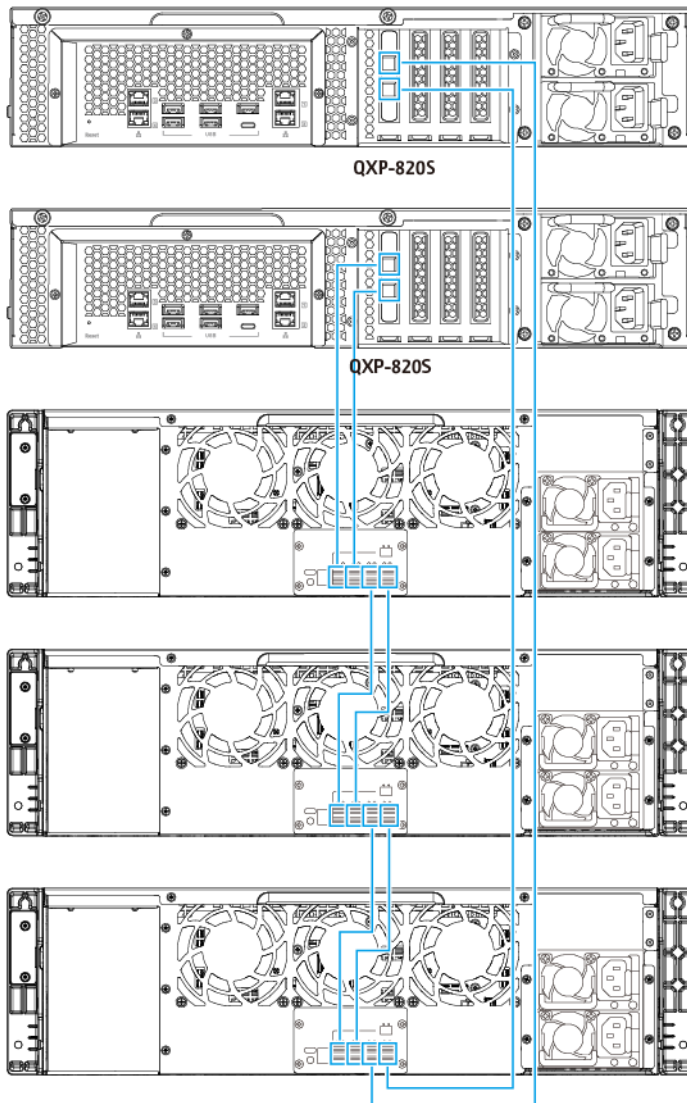


### 多路徑 I/O 及連結彙總控制通訊協定的網路設置

多路徑 I/O 及連結彙總是兩種互補的不同技術，這些技術可以一起部署，來達到網路可用性和網路效能的雙重優勢。

以下圖例說明多路徑 I/O 及連結彙總的實作方式：





## 熱抽換備援電源供應器

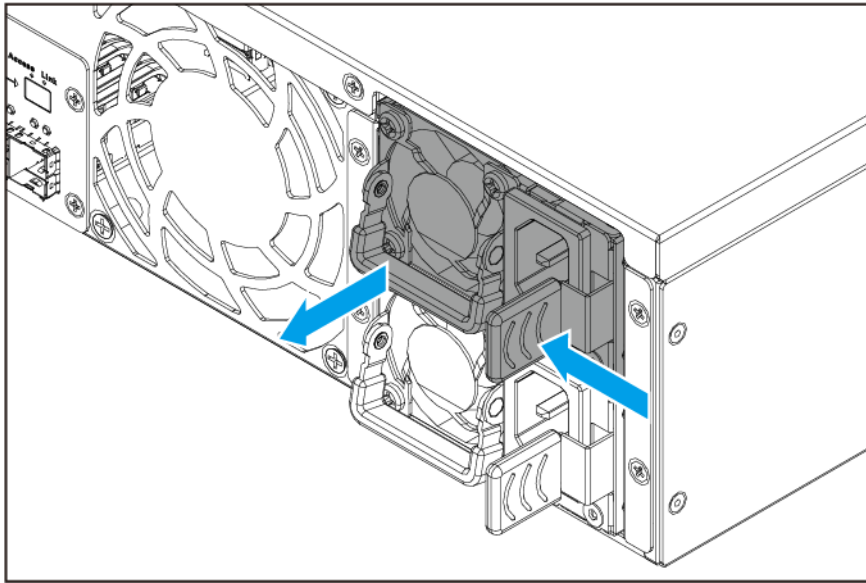


### 警告

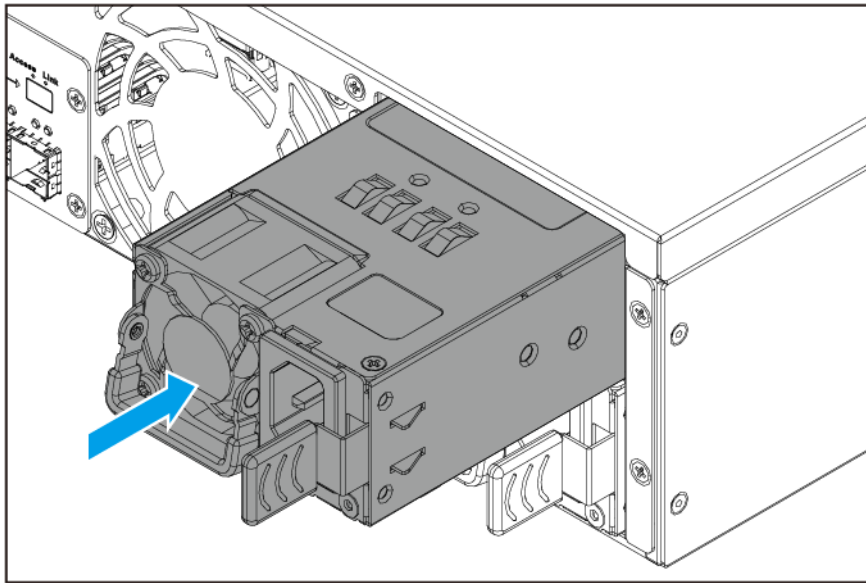


NAS 至少配備一條電源供應器 (PSU) 的電源線。為防止嚴重傷害事故發生，在安裝或替換系統元件前，應由受過訓練的技術人員拔下所有 PSU 電源線。

1. 關閉 JBOD。
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 JBOD。

7. 啟用電源供應器故障警訊。

- a. 請以管理員身分登入 QTS。
- 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 [ 套用 ]。

## 機架滑軌

裝置不含機架滑軌，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>。


型號	相容機架滑軌
TL-R1220Sep-RP	RAIL-B02
TL-R1620Sep-RP	

您可以在機架滑軌的包裝中找到安裝資訊。

## 4. 基本操作

本章說明 JBOD 擴充裝置的基本操作。

### 電源按鈕

操作	使用者動作	結果
開啟電源	按一下按鈕。	裝置開機。
關閉電源	按住按鈕 1.5 秒。	裝置關機。
強制關機	按住按鈕 5 秒。	裝置關機。  <b>重要</b> 請在裝置沒有回應時才使用此方法。

## LED 燈號

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"> <li>• 硬碟正在格式化。</li> <li>• JBOD 正在初始化。</li> <li>• 作業系統正在更新。</li> <li>• RAID 重建作業正在進行。</li> <li>• 線上 RAID 容量擴充正在進行。</li> <li>• 線上 RAID 組態遷移正在進行。</li> </ul>
	紅燈	<ul style="list-style-type: none"> <li>• 硬碟無效。</li> <li>• 磁碟區容量已滿。</li> <li>• 磁碟區容量將滿。</li> <li>• 系統風扇異常。</li> <li>• 資料存取 ( 讀寫 ) 錯誤。</li> <li>• 硬碟壞軌。</li> <li>• 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 ) 。</li> <li>• 硬體自我檢查發生錯誤。</li> <li>• 系統溫度超過 65°C 。</li> <li>• 一個或多個電源供應器異常。</li> </ul>
	紅燈每 2 秒閃爍	JBOD 處於降階模式 ( RAID 1、RAID 5 或 RAID 6 有一個硬碟故障。 )
	紅燈閃爍一次	JBOD 收到遙控器的指令。
	綠燈每 2 秒閃爍	<ul style="list-style-type: none"> <li>• JBOD 未設置。</li> <li>• 硬碟未格式化。</li> </ul>
	綠燈	JBOD 已就緒。
	關閉	<ul style="list-style-type: none"> <li>• 所有硬碟處於待命模式。</li> <li>• JBOD 已關閉。</li> </ul>
硬碟	綠燈	<ul style="list-style-type: none"> <li>• JBOD 擴充裝置電源已開啟。</li> <li>• 硬碟可供存取。</li> </ul>
	綠燈閃爍	正在存取硬碟。
	紅燈	硬碟讀寫錯誤。
	紅燈每秒閃爍五次	作業系統正在尋找硬碟。
	關閉	偵測不到硬碟。
連結	綠燈	連接的連接埠已確實連接。
	關閉	沒有連接的纜線。

LED	狀態	說明
SAS 連接器連結	綠燈	裝置已確實連結。
	橙燈	裝置未確實連結。
	關閉	<ul style="list-style-type: none"> <li>裝置未連結。</li> <li>裝置沒有連接纜線。</li> </ul>
SAS 連接器存取	藍燈	正在存取資料。
	熄滅	<ul style="list-style-type: none"> <li>資料未被存取。</li> <li>沒有連結的硬碟。</li> </ul>
風扇發生錯誤	紅燈	系統風扇異常。
	關閉	系統風扇正常運作中。

## 警示音

持續期間	頻率	說明
短嗶 (0.5 秒)	1	<ul style="list-style-type: none"> <li>JBOD 磁碟托盤連結已連線。</li> <li>JBOD 磁碟托盤連結已中斷連線。</li> </ul>
長嗶 (2 秒)	3 聲 (每 5 分鐘)	<ul style="list-style-type: none"> <li>系統風扇異常。</li> <li>系統溫度超過臨界值。</li> </ul> <div style="border-left: 2px solid #0070C0; padding-left: 10px; margin-top: 10px;"> <p><b>注意</b> 預設溫度警示臨界點為 65°C。您可以使用 QNAP JBOD Manager 將臨界溫度設定為 55°C 和 69°C 之間。</p> </div>

## 5. 疑難排解

本章介紹基本的疑難排解資訊。

### 強制「儲存與快照總管」或 QNAP JBOD Manager 辨識 JBOD 擴充裝置

如果「儲存與快照總管」或 QNAP JBOD Manager 於運作中無法找到 JBOD 擴充裝置，表示硬碟或資料可能損壞。

1. 關閉 JBOD 擴充裝置。
2. 移除所有硬碟。
3. 開啟 JBOD 擴充裝置。
4. 使用「儲存與快照總管」或 QNAP JBOD Manager 來尋找 JBOD。
5. 將硬碟重新插入。
6. 繼續操作。

### 熱抽換故障硬碟

在連接 QTS 或 QuTS hero NAS 時，JBOD 擴充裝置可在下列情況下支援熱抽換硬碟：

RAID 類型	情況
RAID 1	一個硬碟故障。
RAID 5	一個硬碟故障。
RAID 6	一或兩個硬碟故障。
RAID 10	在兩個不同組的硬碟中有一或兩個硬碟故障。
RAID 50	每個子群組有一個硬碟故障。
RAID 60	每個子群組有兩個硬碟故障。

1. 登入 QTS。
2. 前往 [ 主選單 ] > [ 儲存與快照總管 ] > [ 儲存空間 ] > [ 外接儲存裝置 ]。
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. 將故障硬碟從 JBOD 擴充裝置取下。
6. 等待 30 秒或等到 JBOD 擴充裝置發出兩次嗶聲。
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。  
JBOD 擴充裝置發出兩次嗶聲。
10. 等待 30 秒或等到 JBOD 擴充裝置發出兩次嗶聲。
11. 前往 [ 主選單 ] > [ 儲存與快照總管 ] > [ 儲存空間 ] > [ 儲存空間/快照 ]。

12. 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	<a href="https://download.qnap.com">https://download.qnap.com</a>
相容性列表	<a href="https://www.qnap.com/compatibility">https://www.qnap.com/compatibility</a>
NAS 遷移相容性	<a href="https://www.qnap.com/en/nas-migration">https://www.qnap.com/en/nas-migration</a>
擴充設備相容性	<a href="http://www.qnap.com/go/compatibility-expansion">http://www.qnap.com/go/compatibility-expansion</a>
服務入口網站	<a href="https://service.qnap.com">https://service.qnap.com</a>
產品支援狀態	<a href="https://www.qnap.com/product/eol.php">https://www.qnap.com/product/eol.php</a>
下載	<a href="https://download.qnap.com">https://download.qnap.com</a>
社群論壇	<a href="https://forum.qnap.com">https://forum.qnap.com</a>
QNAP 配件商店	<a href="https://shop.qnap.com">https://shop.qnap.com</a>



## 6. 詞彙

### **QNAP JBOD Manager**

讓您檢視及設置 QNAP JBOD 擴充裝置的 Windows、Linux 和 macOS 軟體工具

### **QTS**

QNAP NAS 作業系統

### **QuTS hero**

QNAP NAS 作業系統配備 ZFS 檔案系統

### **儲存與快照總管**

QTS 應用工具可讓您檢視並設置與 QNAP NAS 相連的 QNAP JBOD 擴充裝置

## 7. 聲明

本章介紹擔保、免責聲明、授權以及聯邦法規的相關資訊。

### 有限保固

QNAP 提供有限的產品保固服務。您購買的 QNAP 品牌硬體產品在材料和製造品質上受到瑕疵擔保，擔保期限為發票上所印日期起一 (1) 年或以上。( "保固期" )。請前往 [www.qnap.com/warranty](http://www.qnap.com/warranty) 深入瞭解您的法定權利，然 QNAP 得自行酌情隨時予以修改。

### 免責聲明

本文件所含資訊的適用對象為 QNAP Systems, Inc. ( 下稱 "QNAP" ) 之產品。本文件並未以明示、默示、禁反言或其他方式授予任何智慧財產權。除 QNAP 產品銷售條款與條件另有規定外，QNAP 不承擔任何責任，且 QNAP 免除任何與 QNAP 產品銷售及 / 或使用有關的明示或默示之保固，包括符合特定用途、商業適售性的責任與保固，以及侵害任何專利、版權或其他智慧財產權之行為。

QNAP 產品不適用於醫療、救生、生命維持、重要管制點或安全系統，也不適用於核能設施應用。

在任何情況下，QNAP 對於因使用產品、其隨附軟體或其文件所造成的直接、間接、特殊、附帶或衍生損壞，應負擔的賠償責任不超過本產品的售價。QNAP 對其產品或本文件之內容或應用以及所有隨附軟體，不做任何明示、默示或法定之保證或表述，亦特別聲明，不保證其品質、效能、適售性或適用於任何特定用途。QNAP 保留修訂或更新其產品、軟體或文件的權利，如有變更，恕不另行通知。

建議定期備份系統資料，以避免發生任何資料遺失意外。QNAP 不負責任何資料遺失或復原。

如要把 NAS ( 網路儲存裝置 ) 等 QNAP 產品包裝內的任何元件退回，並要求退款或維修，請確定貨品已妥善包裝以利運送。若貨品運送期間因不妥善包裝造成任何損壞，QNAP 一概不予負責。

本公司保留變更產品功能與規格的權利，如有變更，恕不另行通知。本文資訊如有變更，恕不另行通知。

另外，本文省略 ® 或 ™ 符號。

### GNU Public License

Version 3, 29 June 2007

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copy left license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## Terms and Conditions

### 1. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations. To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

### 2. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it.

“Object code” means any non-source form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A

“Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work’s System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

### 3. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below.

Sublicensing is not allowed; section 10 makes it unnecessary.

### 4. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work’s users, your or third parties’ legal rights to forbid circumvention of technological measures.

### 5. Conveying Verbatim Copies.

You may convey verbatim copies of the Program’s source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 6. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a. The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b. The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to “keep intact all notices” .
- c. You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d. If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.  
A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an “aggregate” if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 7. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c. Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d. Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

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

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

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 8. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission. Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a. Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b. Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c. Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d. Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e. Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f. Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors. All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying. If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms. Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 9. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 10. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 11. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in

a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 12. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version" .

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 13. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

## 14. Use with the GNU Affero General Public License.



Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

**15. Revised Versions of this License.**

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

**16. Disclaimer of Warranty.**

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

**17. Limitation of Liability.**

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

**18. Interpretation of Sections 16 and 17.**

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

## CE 聲明



此 QNAP NAS 符合 CE 規範等級 A。

## FCC 聲明

### FCC A 級聲明



本產品符合 FCC 規則第 15 部分。產品操作須遵守以下兩個條件：

1. 本產品不得造成有害干擾。
2. 本產品必須承受任何收到的干擾，包含可能造成額外操作的干擾。



#### 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。



#### 重要

任何未經過威聯通科技股份有限公司同意而對此產品進行修改，可能會讓使用者根據 FCC 規範操作本設備的權力失效。

## VCCI 聲明



この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

## 經濟部標準檢驗局聲明



D33B77  
RoHS

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## 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	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

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。