



Lyve Mobile Rackmount Receiver Podręcznik użytkownika



Kliknij tutaj, aby uzyskać dostęp do aktualnej wersji online tego dokumentu. Znajdziesz również najnowsze treści, a także rozwijane ilustracje, łatwiejszą nawigację oraz możliwości wyszukiwania.

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Zapraszamy

Seagate® Lyve™ Mobile Rackmount Receiver usprawnia szybkie pobieranie treści z dysków shuttle bezpośrednio do centrum sieciowego.

Zawartość pudełka

- Lyve Mobile Rackmount Receiver
- przewód zasilania o długości 1,8 m (× 4: US, UK, EU, AU/NZ)
- Zestaw szyn do szafy serwerowej
- Zestaw przednich zatrzasków do szafy serwerowej
- Zamek/zamknięcie przewodu zasilania (× 2)
- Skrócona instrukcja obsługi

Parametry

Wymiary

Bok	Wymiary (cale/mm)
Długość	19" / 482,6 mm
Szerokość	4,638" / 117,8 mm
Głębokość	24,598" / 624,78 mm

Waga

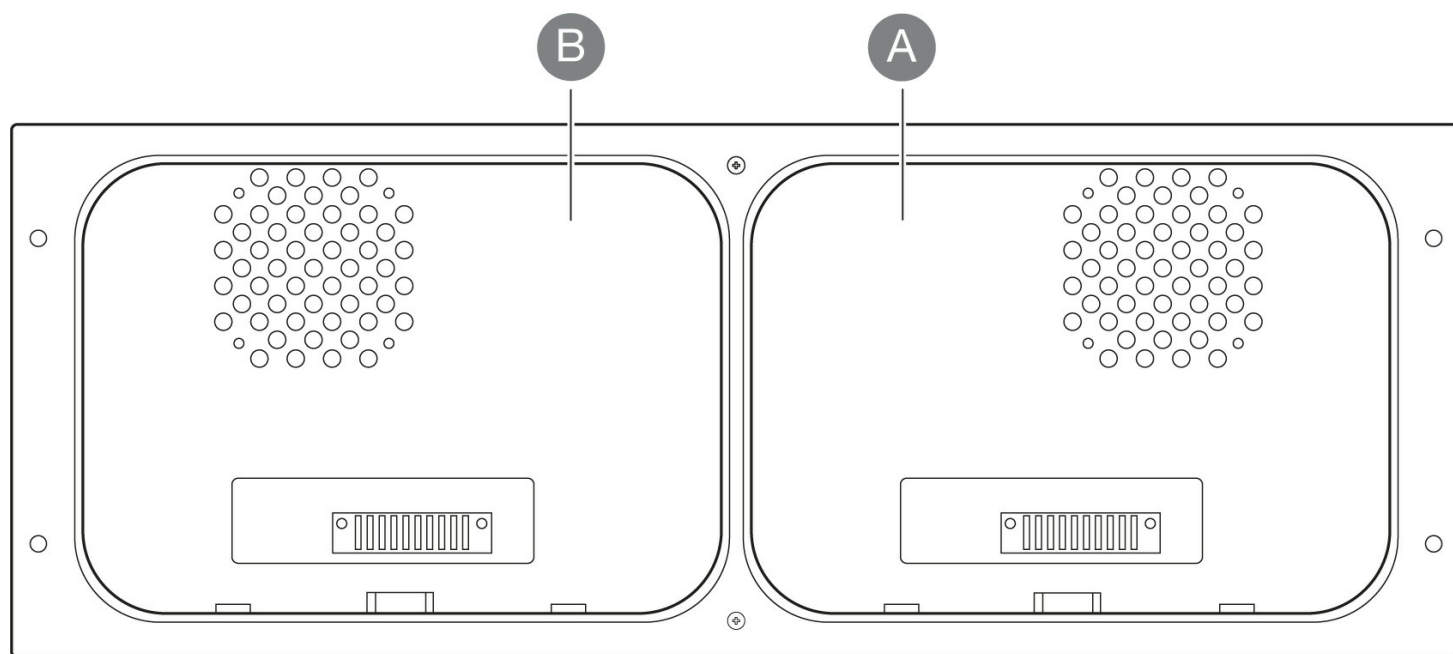
Część	Waga (funty/kg)
Mobile Rackmount Receiver	47,52 funta / 21,6 kg

Zasilanie elektryczne

Zasilacz, podstawa AC / DC w: 100~240 V / 9,4 A, wyjście: 12 V / 65 A

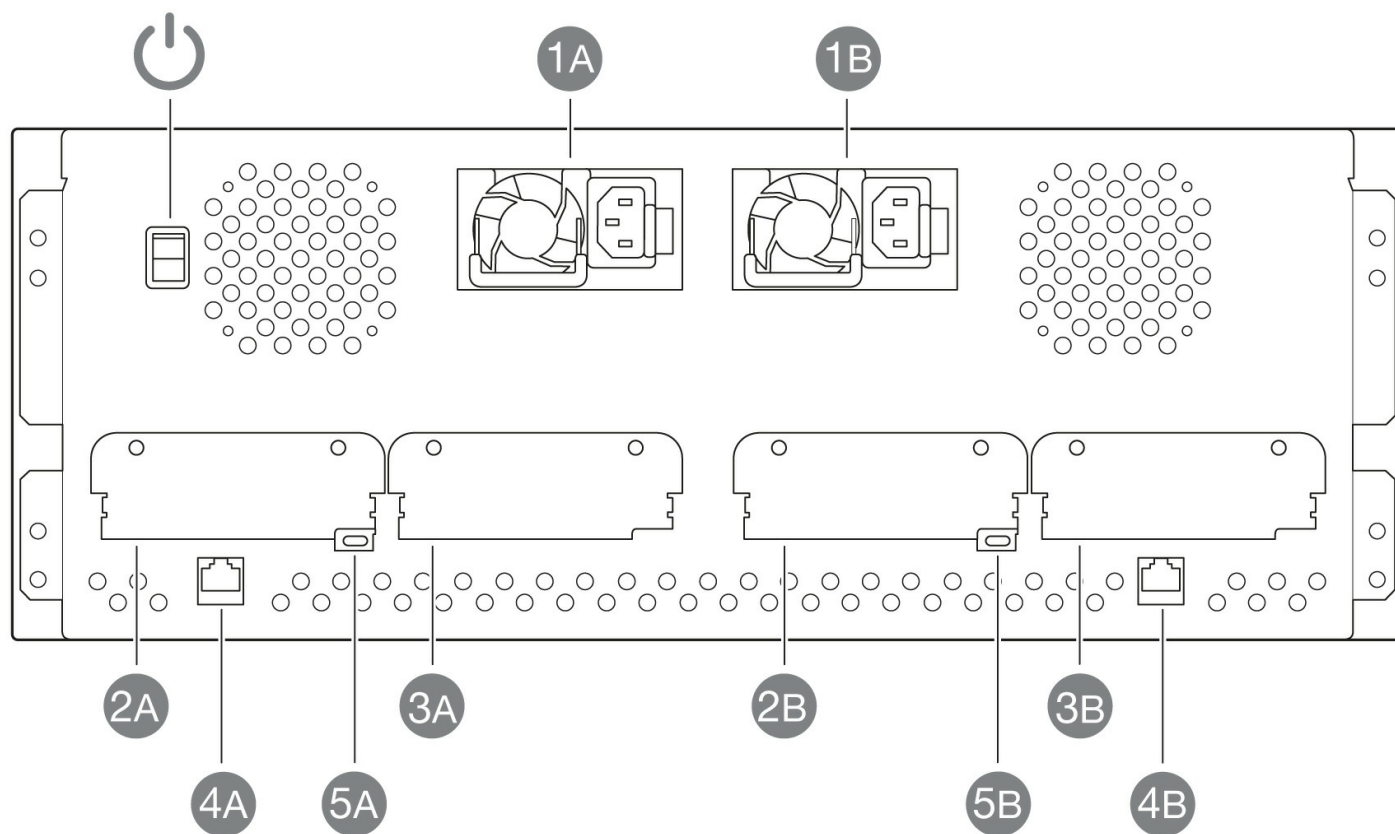
Zdjęcia poglądowe

Przód



Klucz	I/O	Opis
A	Gniazdo A	Gniazdo do kompatybilnych urządzeń.
B	Gniazdo B	Gniazdo do kompatybilnych urządzeń.

(widok z tyłu)



Klucz	I/O	Opis
	Przełącznik zasilania	Włączanie/wyłączanie zasilania
1A 1B	Wejście zasilania - A Wejście zasilania - B	Nadmiarowe jednostki zasilania. Każda jednostka jest samodzielnie zdolna do zasilania Lyve Mobile Rackmount Receiver i zainstalowanych urządzeń. Sprawdź część Połączenia zasilania .
2A	Gniazdo A / po lewej	Połączenie danych dla urządzenia w gnieździe A. Patrz część Połączenia danych .
3A	Gniazdo A / po prawej	Interfejs hosta do przyszłych rozszerzeń. Opcja nie jest dostępna we wszystkich modelach.
4A	Port zarządzania siecią Ethernet - A	Połączenie Ethernet dla urządzenia w gnieździe A. Nie do użycia w zakresie transferu danych.
5A	Port zarządzania CLI - A	Port interfejsu linii komend dla urządzenia w gnieździe A. Tylko do obsługi. Nie do użycia w zakresie transferu danych.
2B	Gniazdo B / po lewej	Interfejs hosta do przyszłych rozszerzeń. Opcja nie jest dostępna we wszystkich modelach.
3B	Gniazdo B / po prawej	Połączenie danych dla urządzenia w gnieździe B. Patrz część Połączenia danych .

4B	Port zarządzania siecią Ethernet - B	Połączenie Ethernet dla urządzenia w gnieździe B. Nie do użycia w zakresie transferu danych.
5B	Port zarządzania CLI - B	Port interfejsu linii komend dla urządzenia w gnieździe B. Tylko do obsługi. Nie do użycia w zakresie transferu danych.

Wymagania w zakresie konfiguracji

Urządzenia Lyve Mobile są odblokowane i dostępne za pośrednictwem aplikacji Lyve Client. Upewnij się, że Lyve Client został zainstalowany na komputerze hosta i że posiada prawidłowe dane uwierzytelniające portalu Lyve Management. Zapoznaj się z poniższymi instrukcjami.

Dane uwierzytelniające portalu Lyve Management

Nazwa użytkownika i hasło do portalu Lyve Management są wymagane do upoważnienia komputerów do dostępu do urządzeń umieszczonych w Lyve Rackmount Receiver.

Menedżer konta – utworzyłeś(-aś) dane uwierzytelniające do portalu Lyve Management podczas konfiguracji konta Lyve na stronie lyve.seagate.com.

Administrator lub użytkownik produktu – zostałeś(-aś) zidentyfikowany jako użytkownik produktu w odniesieniu do projektu utworzonego na portalu Lyve Management. Została do Ciebie wysłana wiadomość e-mail od zespołu Lyve, która zawiera łącze do resetowania hasła.

Jeśli nie pamiętasz swoich danych uwierzytelniających lub nie możesz znaleźć zaproszenia e-mail, odwiedź stronę lyve.seagate.com. Kliknij **Sign in (Zaloguj się)**, a następnie kliknij **Don't remember your password? (Nie pamiętasz hasła?). Łącze**. Jeśli Twój e-mail nie zostanie rozpoznany, skontaktuj się z menedżerem konta. Aby otrzymać dodatkową pomoc, skontaktuj się z działem obsługi klienta za pomocą wirtualnego czatu Lyve Virtual Assist Chat.

Aby odblokować i uzyskać dostęp do urządzeń Lyve podłączonych do komputera, należy wprowadzić nazwę dane uwierzytelniające w aplikacji Lyve Client. Zainstaluj aplikację Lyve Client na dowolnym komputerze przeznaczonym do łączenia urządzeń umieszczonych w Lyve Rackmount Receiver. Szczegółowe informacje znajdują się poniżej.

Pobierz Lyve Client

Aplikacja Lyve Client jest wymagana do upoważnienia komputera hosta do dostępu do Lyve Mobile Array i kompatybilnych urządzeń. Może być ona również używana do zarządzania projektami Lyve i przeprowadzania operacji na danych. Pobierz instalator aplikacji Lyve Client do systemu Windows lub macOS ze strony www.seagate.com/support/lyve-client.

Autoryzacja komputerów hostujących

Podczas autoryzacji komputera hostującego wymagane jest połączenie internetowe.

1. Otwórz klienta Lyve Client na komputerze, który ma hostować urządzenie Lyve Mobile Array.
2. Po otrzymaniu powiadomienia wprowadź nazwę użytkownika i hasło do portalu Lyve Management.

Lyve Client automatycznie upoważnia komputer hostujący do odblokowania dostępu do urządzeń Lyve i zarządzania projektami w portalu Lyve Management.

Komputer hostujący będzie miał autoryzację przez 30 dni, w trakcie których możesz odblokować i uzyskać dostęp do połączonych urządzeń, nawet bez połączenia internetowego. Po 30 dniach konieczne będzie otwarcie klienta Lyve Client na komputerze i ponowne wprowadzenie danych poświadczających.














Urządzenia Lyve są blokowane po wyłączeniu zasilania, wysunięciu lub odłączeniu od komputera hostującego lub jeśli komputer przejdzie w tryb uśpienia. Lyve Client jest wymagany do odblokowania urządzenia Lyve, jeśli rozwiązanie jest podłączone do hosta lub host został wybudzony ze stanu uśpienia. Lyve Client może odblokować urządzenie wyłącznie w sytuacji, gdy komputer hosta uzyskuje autoryzację za pomocą danych uwierzytelniających portalu Lyve Management.

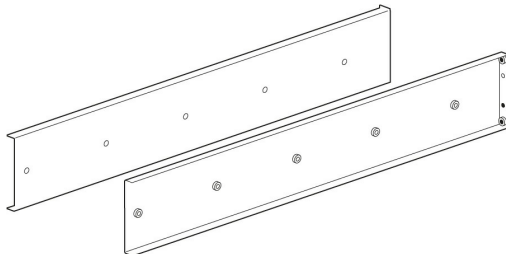
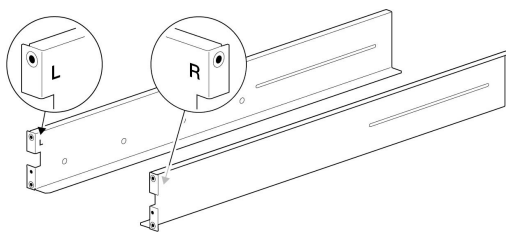





Konfiguracja Windows Server

Szczegóły w zakresie konfiguracji SAS, fibre channel i łączności sieci danych iSCSI można znaleźć w części [Konfiguracja Windows Server](#).

Zestaw szafy rack

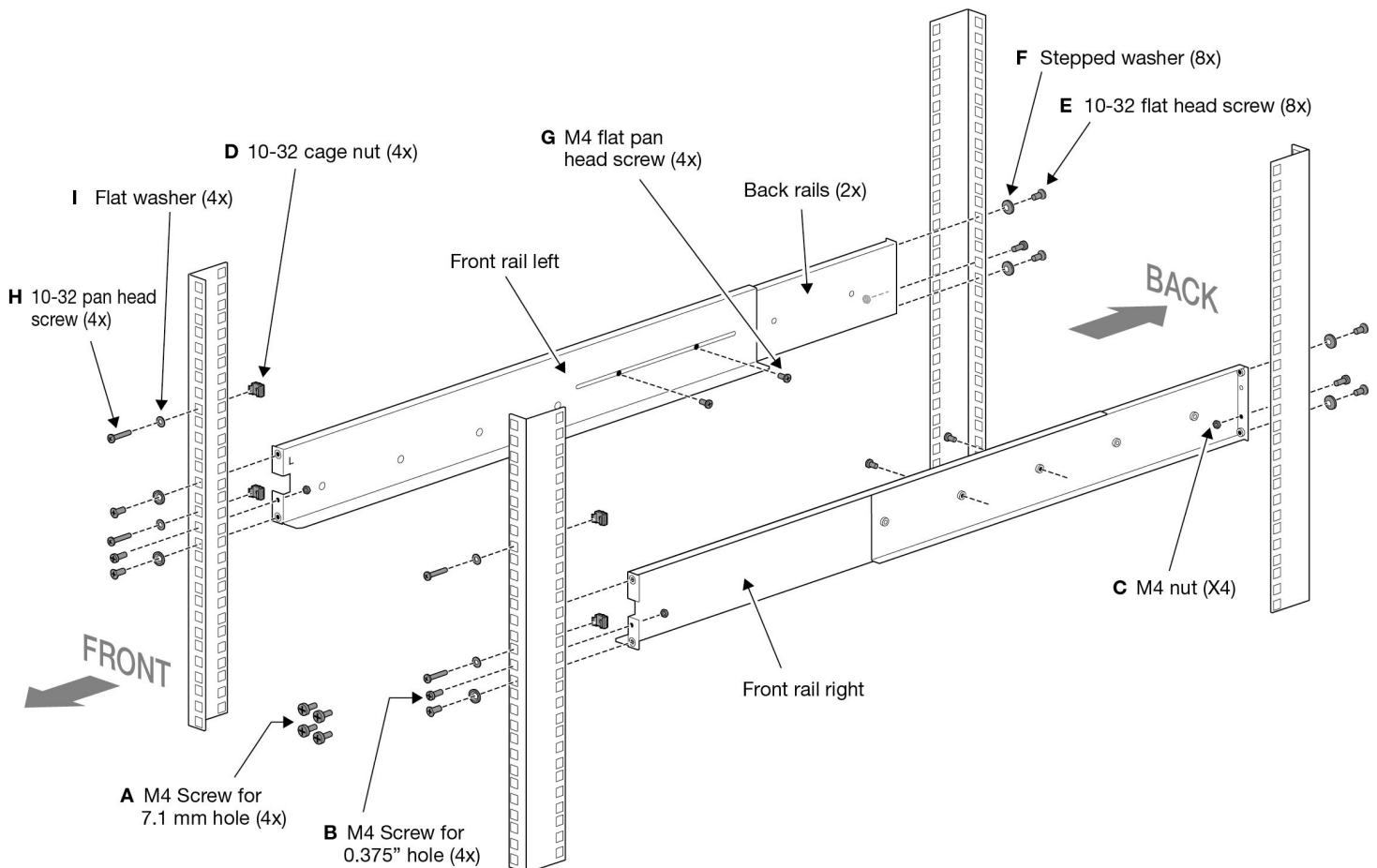
Lista części

A	B	C	D	E	F	G	H	I	J	K
										

Opakowanie	Obraz	Nazwa	Ilość	Uwagi
		Tylne szyny	2	
		Przednie szyny (lewa i prawa)	1 po lewej 1 po prawej	
A		Pin M4 do otworu 7,1 mm	4	M4 × L10 (6,8,2,5) śruba krzyżakowa
B		Pin M4 do otworu ,375"	4	M4 × L10 (9,1,2,5) śruba krzyżakowa
C		Nakrętka M4	4	
D		10-32 nakrętka klatkowa	4	
E		10-32 płaska śruba	8	10-32 × L12.7 śruba krzyżakowa

F		Podkładka	8	
G		Śruba M4 z główką stożkową	4	M4 × L8 śruba krzyżakowa
H		10-32 śruba z główką stożkową	4	10-32 × L25.4 śruba krzyżakowa
I		Podkładka	4	
J		Zatrask	2	
K		10-32 nakrętka i podkładka	2 (każda)	
		Zamki	2	

Diagram części



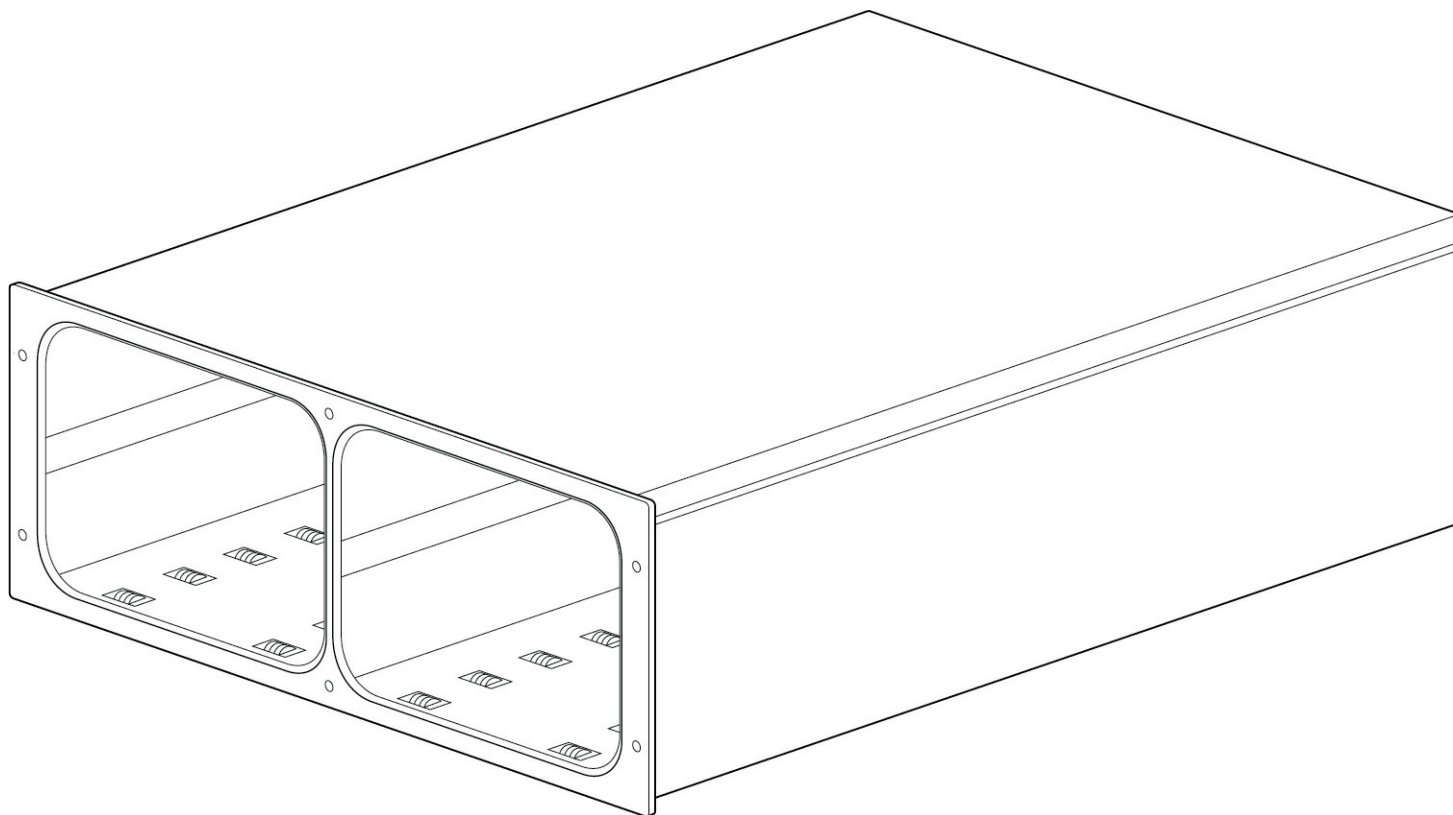
Lyve Mobile Rackmount Receiver



Wyjęcie Lyve Mobile Rackmount Receiver i jego przenoszenie musi być wykonywane przynajmniej przez dwie osoby.

Waga (pustego urządzenia): 47,52 funta / 21,6 kg

Nie należy podnosić lub montować Lyve Mobile Rackmount Receiver z umieszczonymi kompatybilnymi urządzeniami.



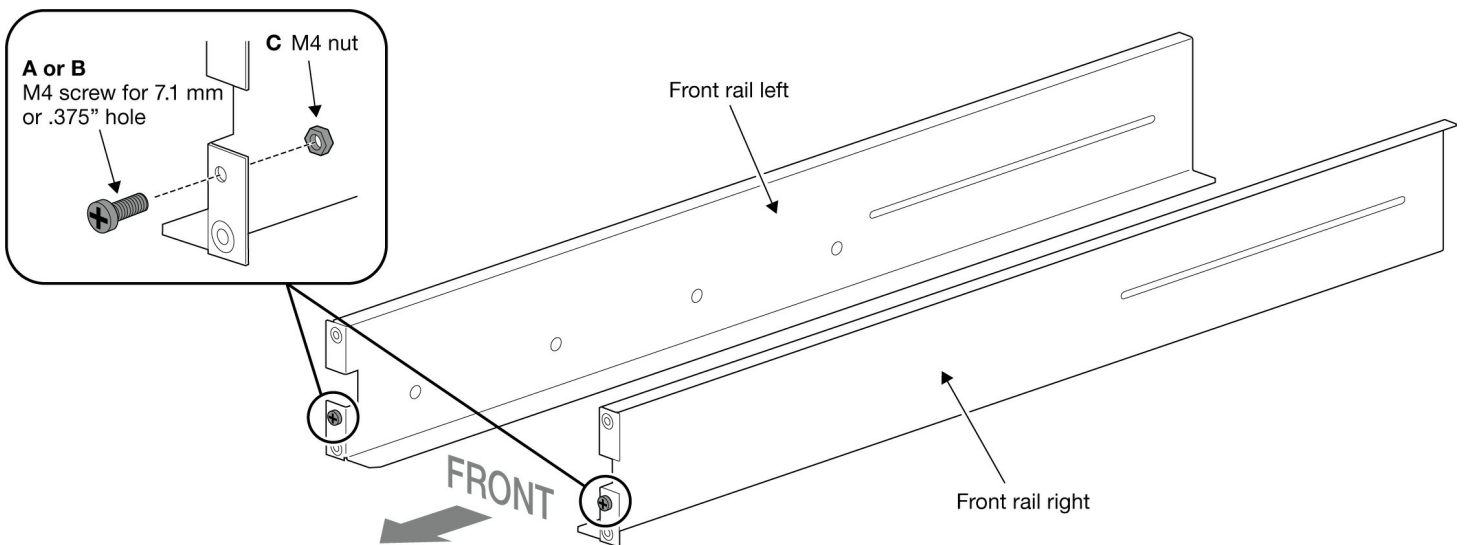
Montaż szafy rack

Krok 1 – dołącz śruby M4 rack do przednich szyn

Twoja szafa rack może mieć standardowe otwory 7,1 mm lub ,375". Śruby M4 są dołączone dla obu wymiarów otworów.

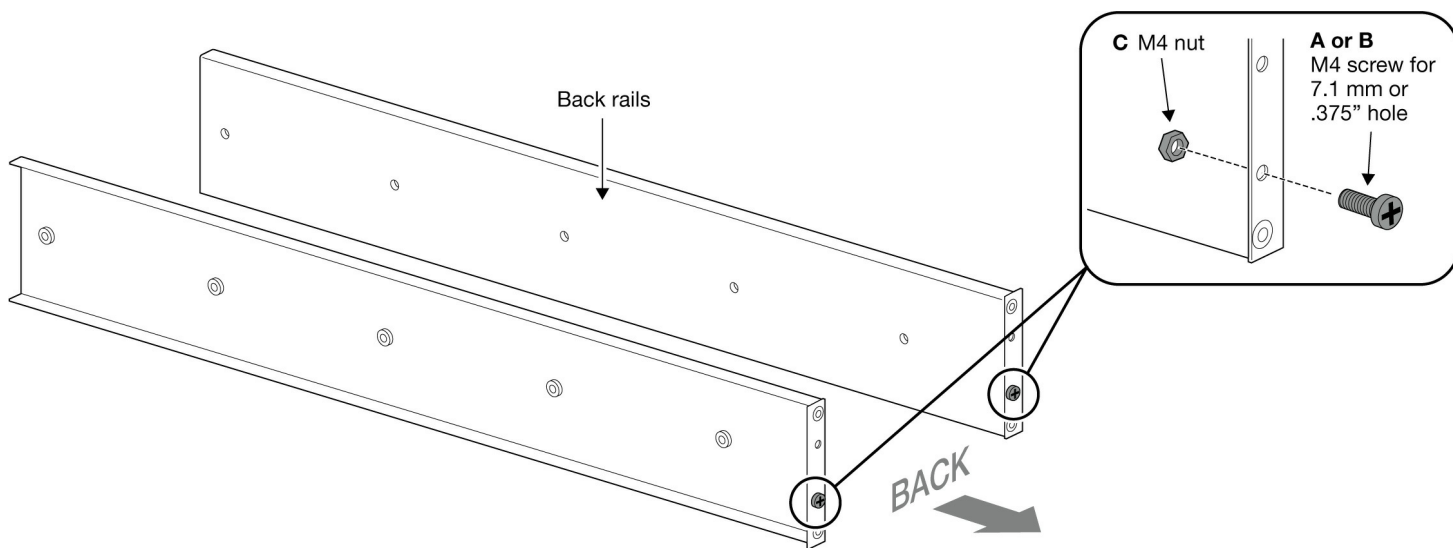
Umieść śrubę M4 do 7,1 mm lub ,375" we wskazanym otworze na lewej przedniej szynie i dokręć ją przy użyciu nakrętki M4.

Powtórz proces dla prawej przedniej szyny.



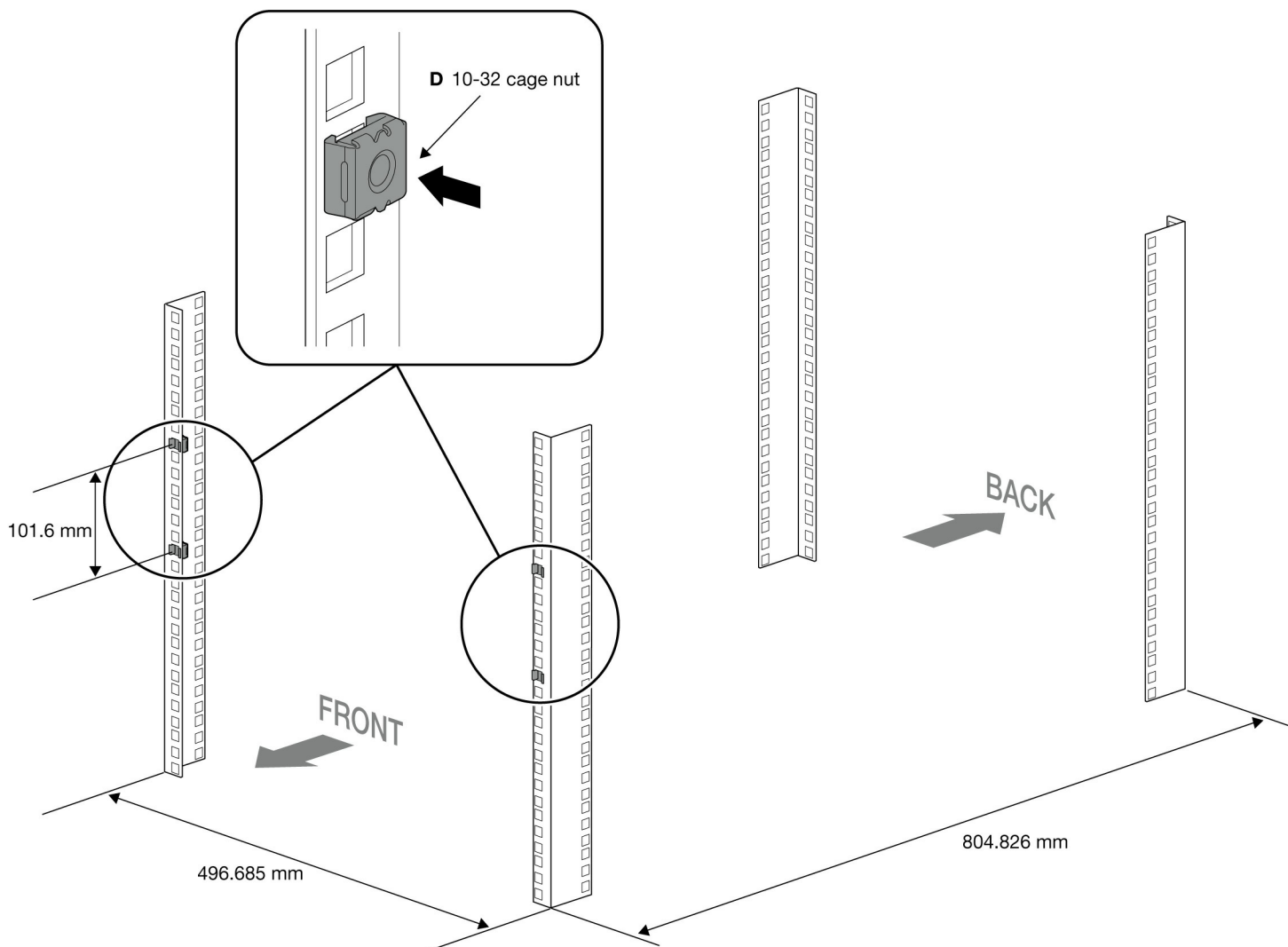
Krok 2 – dołącz śruby M4 rack do tylnych szyn

Umieść śruby M4 we wskazanych otworach na tylnych szynach i dokręć je za pomocą nakrętek M4.



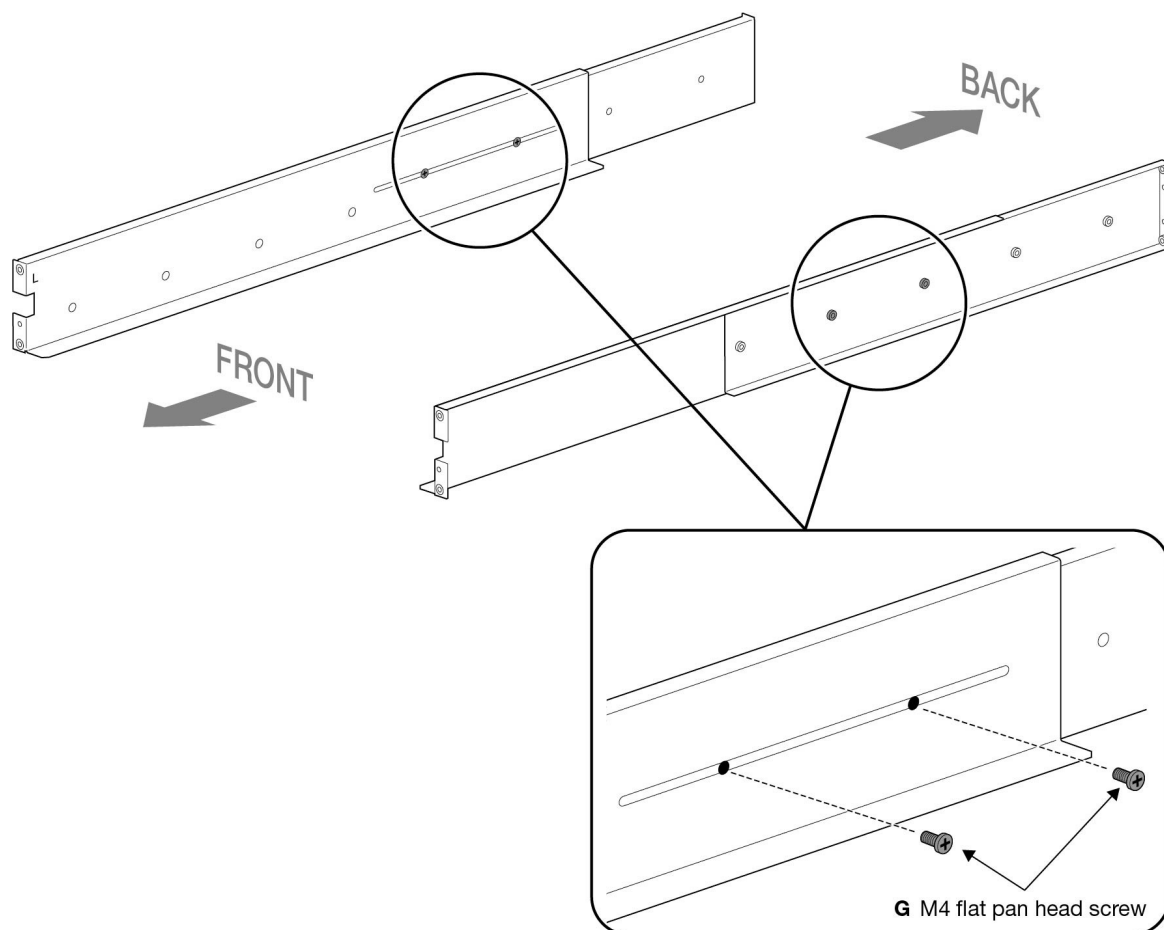
Krok 3 – dołącz nakrętki klatkowe do szafy rack

Dołącz dwie nakrętki klatkowe 10-32 do każdego przedniego słupka rack. Pozostaw 101,6 mm pomiędzy dwiema nakrętkami na każdym słupku.



Krok 4 – dołącz przednie szyny do tylnych szyn

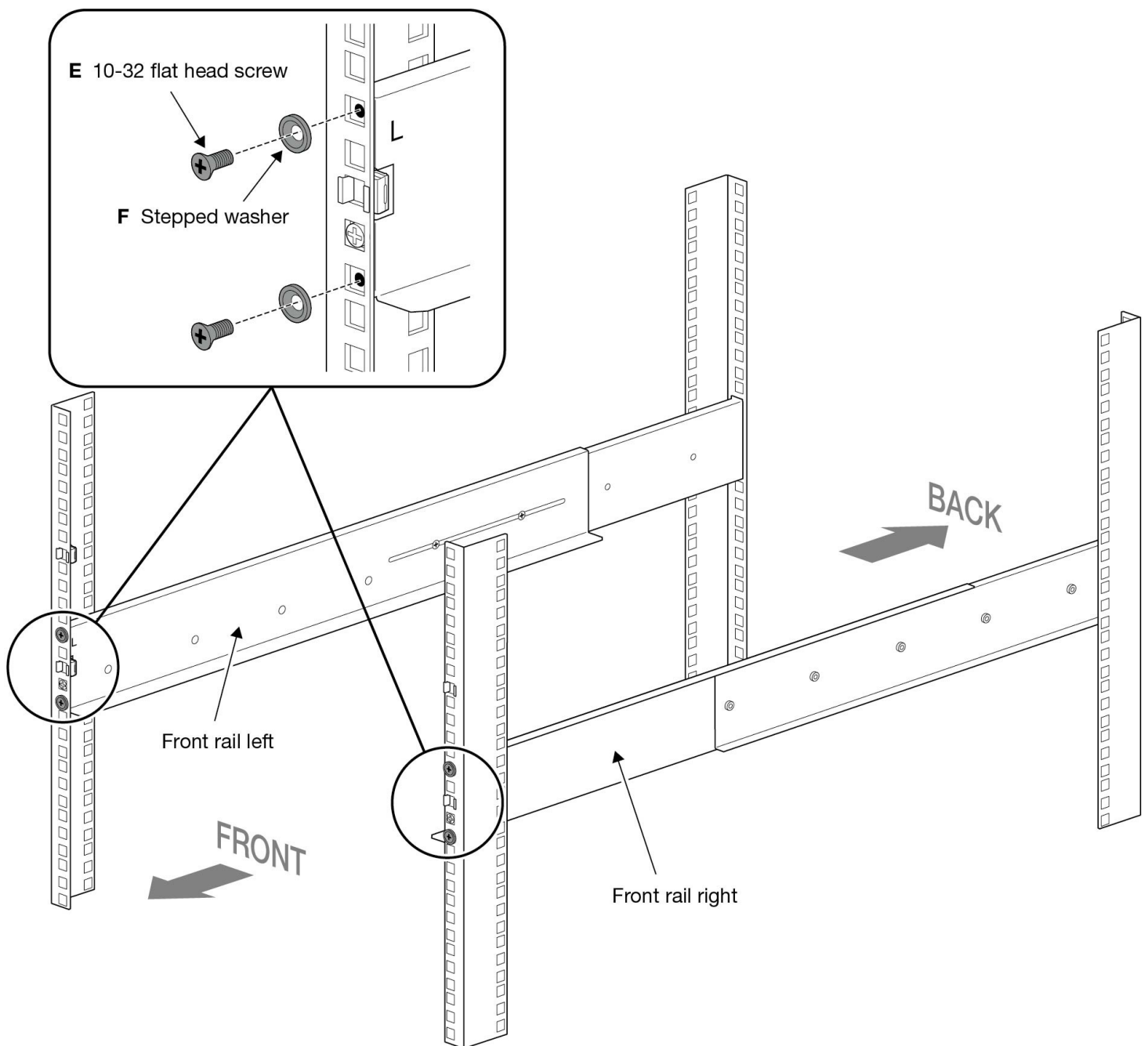
Użyj śrub M4 z główką stożkową do luźnego przymocowania przednich szyn do tylnych szyn.



Krok 5 – dołącz szyny z przodu szafy rack

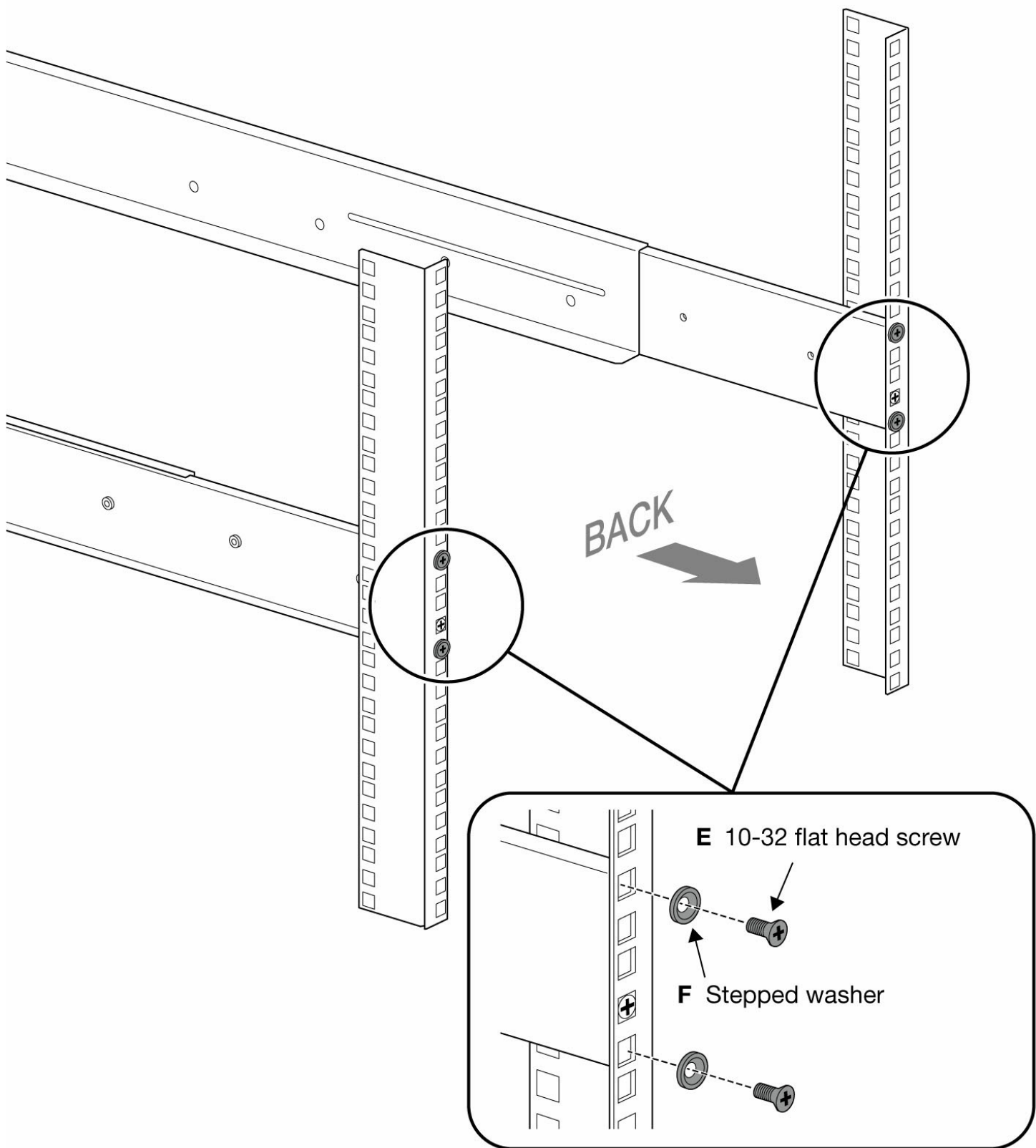
Umieść lewą przednią szynę na nakrętce klatkowej na lewym przednim słupku rack. Umieść dwie płaskie śruby 10-32 na dwóch podkładkach. Użyj śrub/podkładek do zamocowania lewej przedniej szyny na lewym przednim słupku rack.

Powtórz cały proces dla prawej przedniej szyny i prawego przedniego słupka rack.



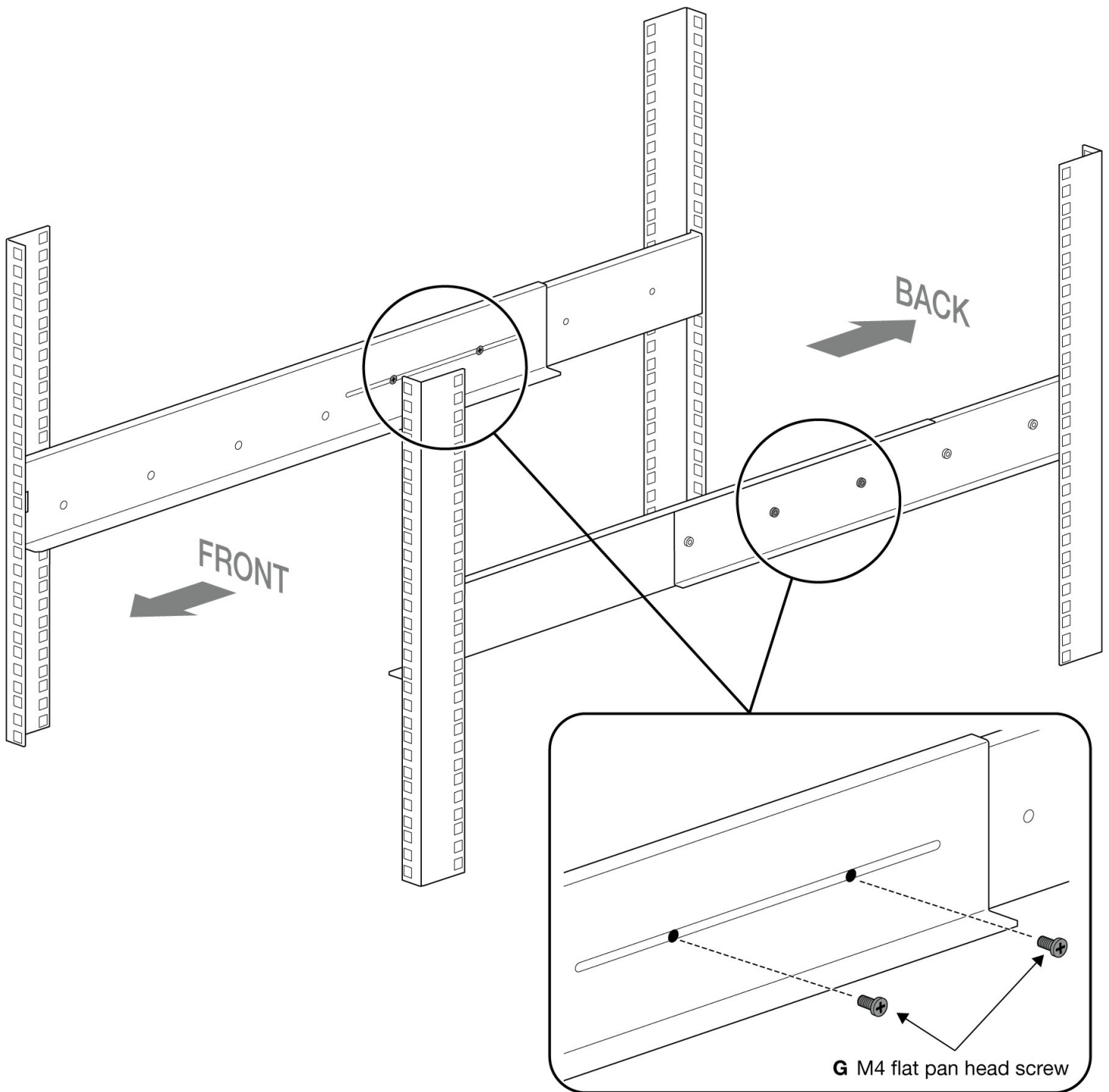
Krok 6 – dołącz tylne szyny z tyłu szafy rack

Umieść tylne szyny na odpowiedniej wysokości na tylnym słupku rack. Umieść dwie płaskie śruby 10-32 na dwóch podkładkach. Użyj śrub/podkładek do zamocowania tylnych szyn do tylnych słupków rack.



Krok 7 – dociśnij połączenia szyn

Dokręć śruby M4 z główką stożkową do przednich i tylnych szyn.



Krok 8 – zainstaluj Lyve Mobile Rackmount Receiver



Wyjęcie Lyve Mobile Rackmount Receiver i jego przenoszenie musi być wykonywane przynajmniej przez dwie osoby.

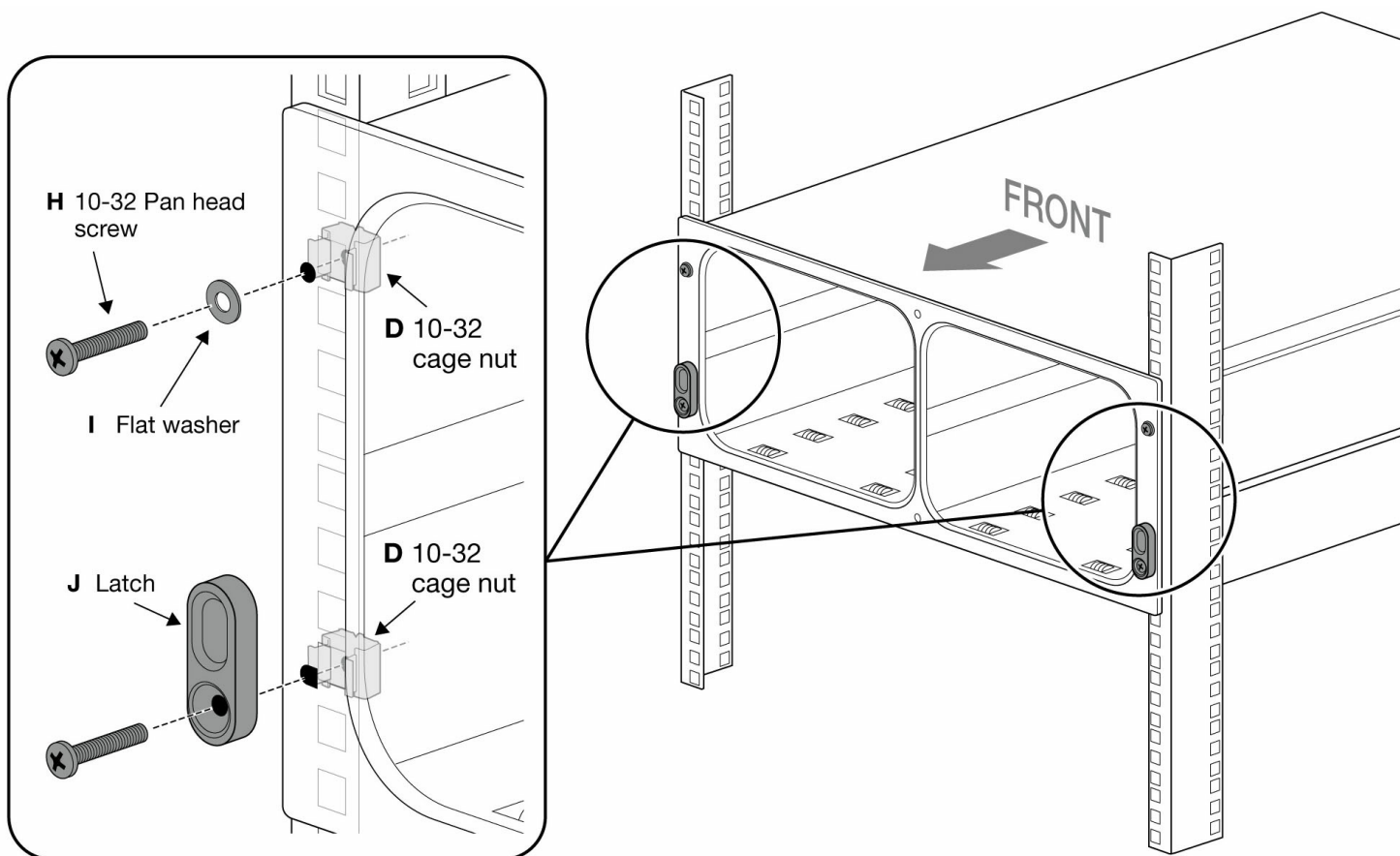
Waga (pustego urządzenia): 47,52 funta / 21,6 kg

Nie należy podnosić lub montować Lyve Mobile Rackmount Receiver z umieszczonymi kompatybilnymi

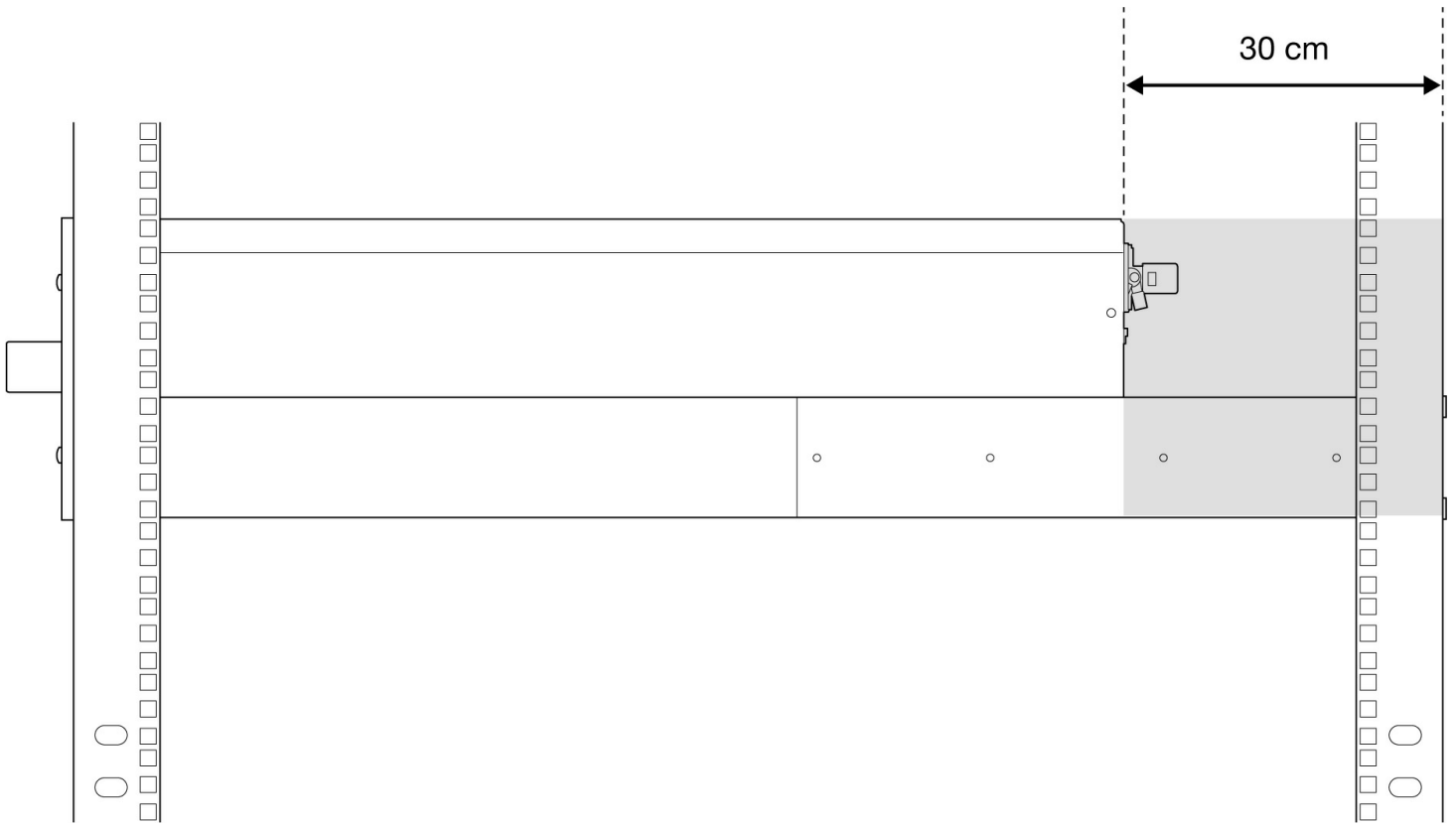
urządzeniami.

Umieść przód Lyve Mobile Rackmount Receiver nad nakrętkami klatkowymi dołączonym do lewego i prawego przedniego słupka. Umieść dwie śruby 10-32 z główką stożkową na dwóch podkładkach. Użyj śrub/podkładek do przymocowania Lyve Mobile Rackmount Receiver do nakrętek klatkowych dołączonych do lewego i prawego przedniego słupka.

Umieść dwie śruby 10-32 w dwóch zatrzaskach. Użyj śrub/zatrząsków do przymocowania Lyve Mobile Rackmount Receiver do nakrętek klatkowych dołączonych do lewego i prawego przedniego słupka.



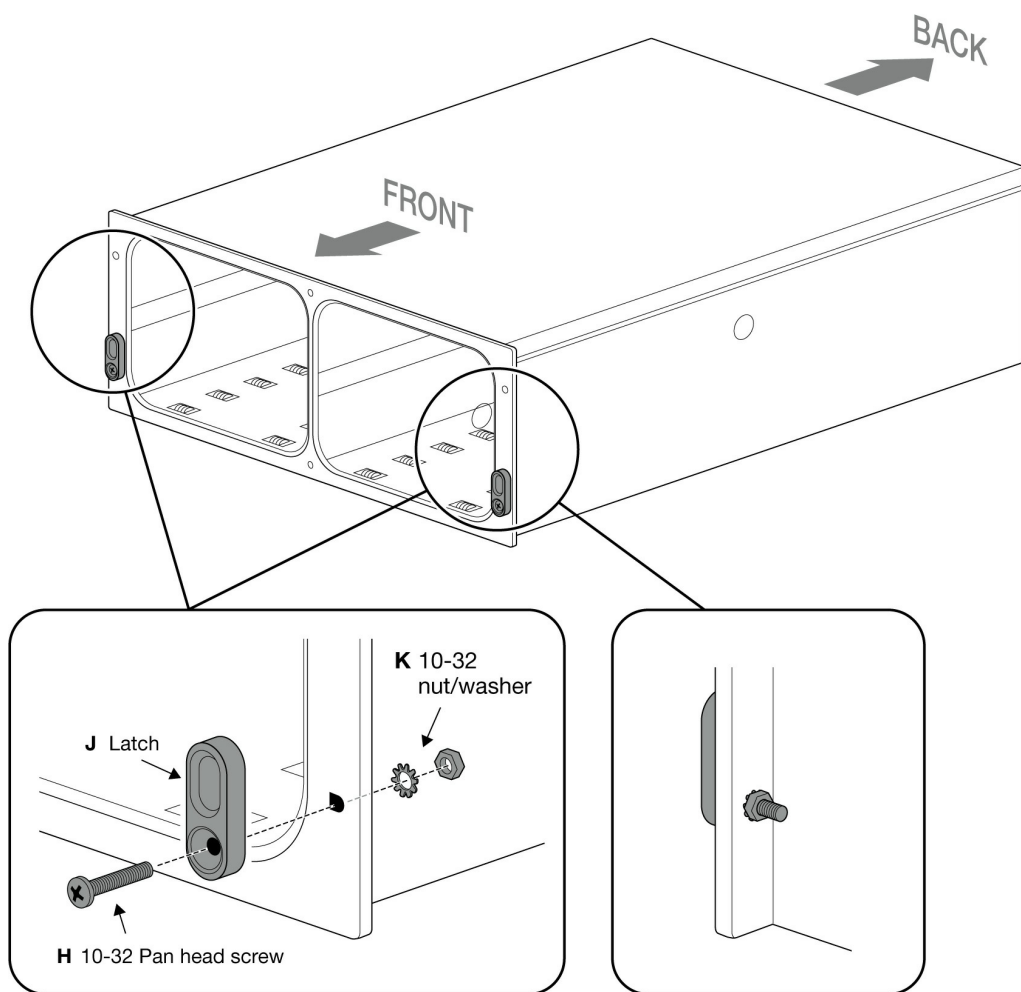
Zalecane odstępy



Dołączanie oddzielnych zatrzasków

Dołączanie zatrzasku

Jeśli Lyve Mobile Rackmount Receiver nie jest dołączony do szafy rack, użyj dodatkowej podkładki i sześciokątnych nakrętek 10-32 do dołączenia każdego zatrzasku do obudowy.



Połączenia danych

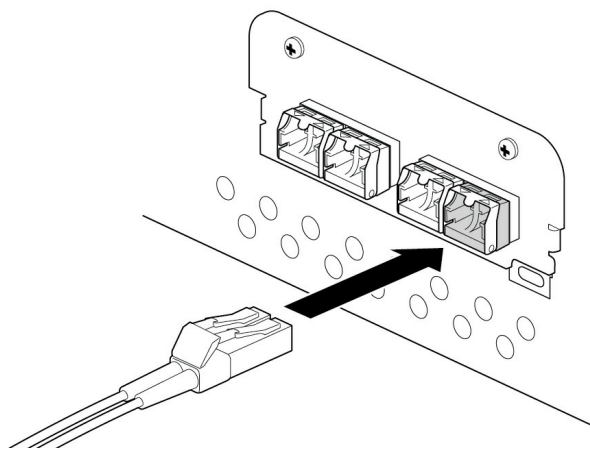
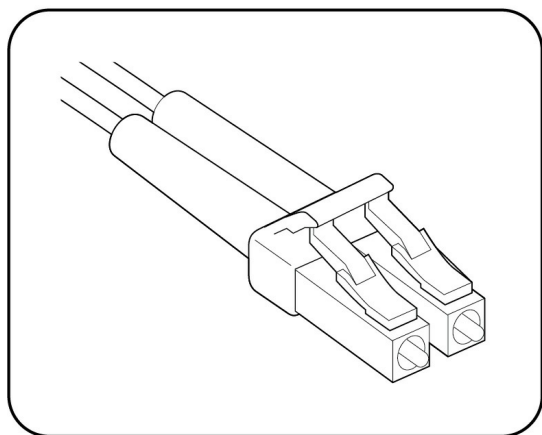
Seagate Lyve Mobile Rackmount Receiver jest wstępnie skonfigurowany pod kątem obsługi jednego lub większej liczby interfejsów hosta.

Podłącz do interfejsów hosta

Podłącz odpowiednie kable fiber channel, Ethernet lub SAS do dostępnych portów na tylnym panelu Lyve Mobile Rackmount Receiver.

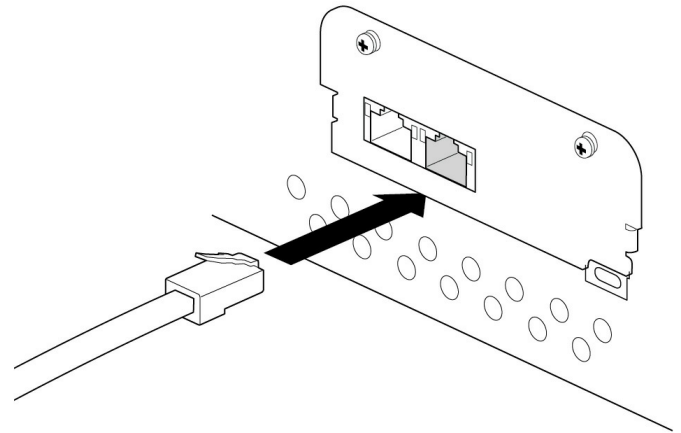
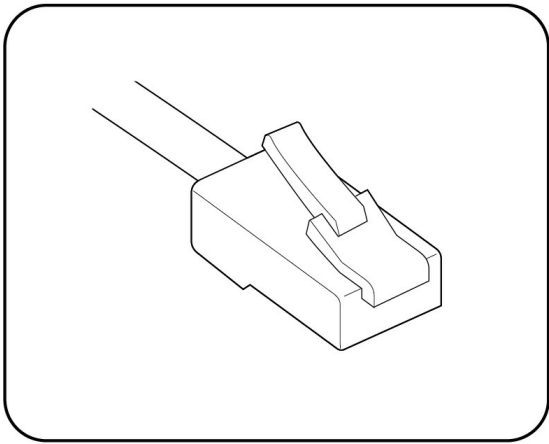
Kabel Fiber optic

- FC 32 Gb, 2-portowy SFP+
- FC 16 Gb, 2-portowy SFP+
- iSCSI 25 Gb, 4-portowy 10 Gb SFP+



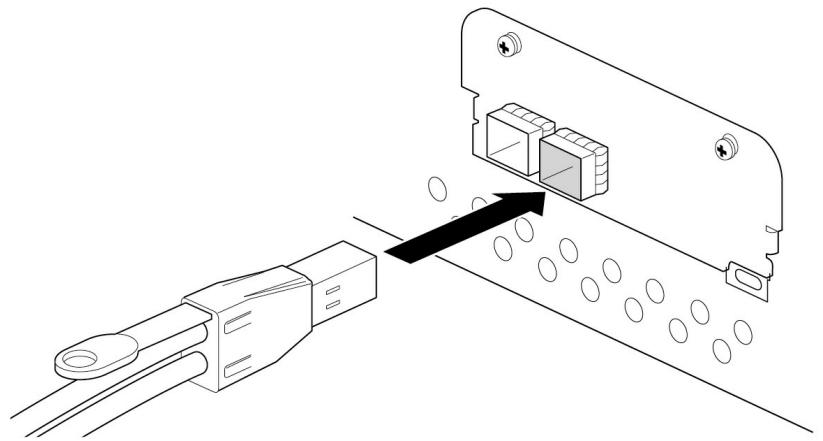
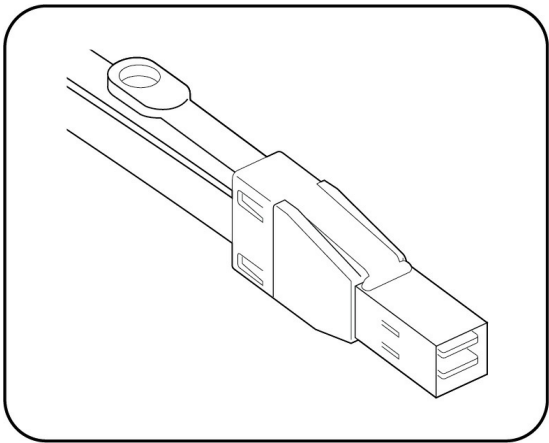
Kabel Ethernet

- iSCSI 10GbaseT, 2-portowy RJ45



Kabel SAS

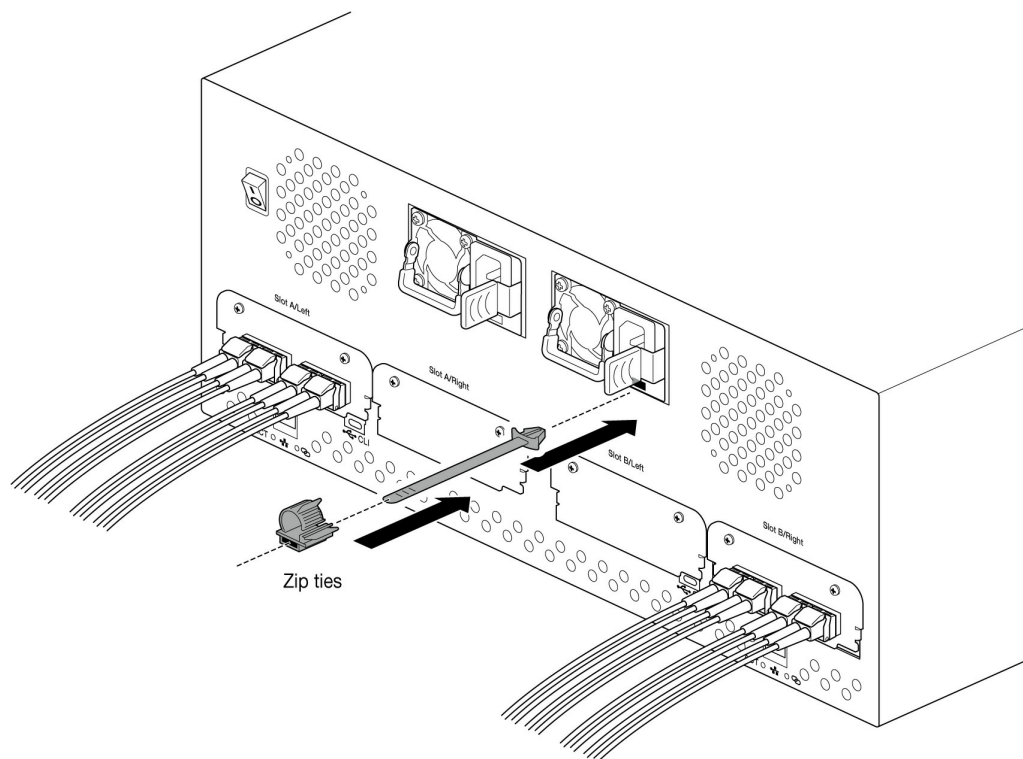
- SAS 12 Gb, 2-portowy SFF-8644

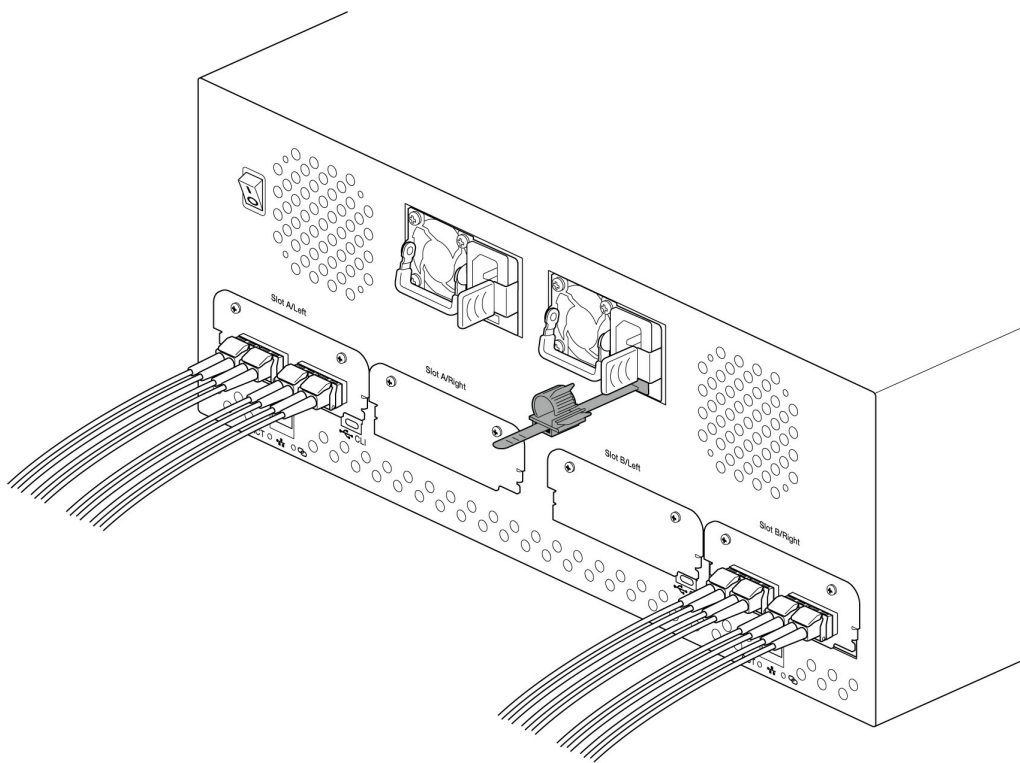


Przyłącza zasilania

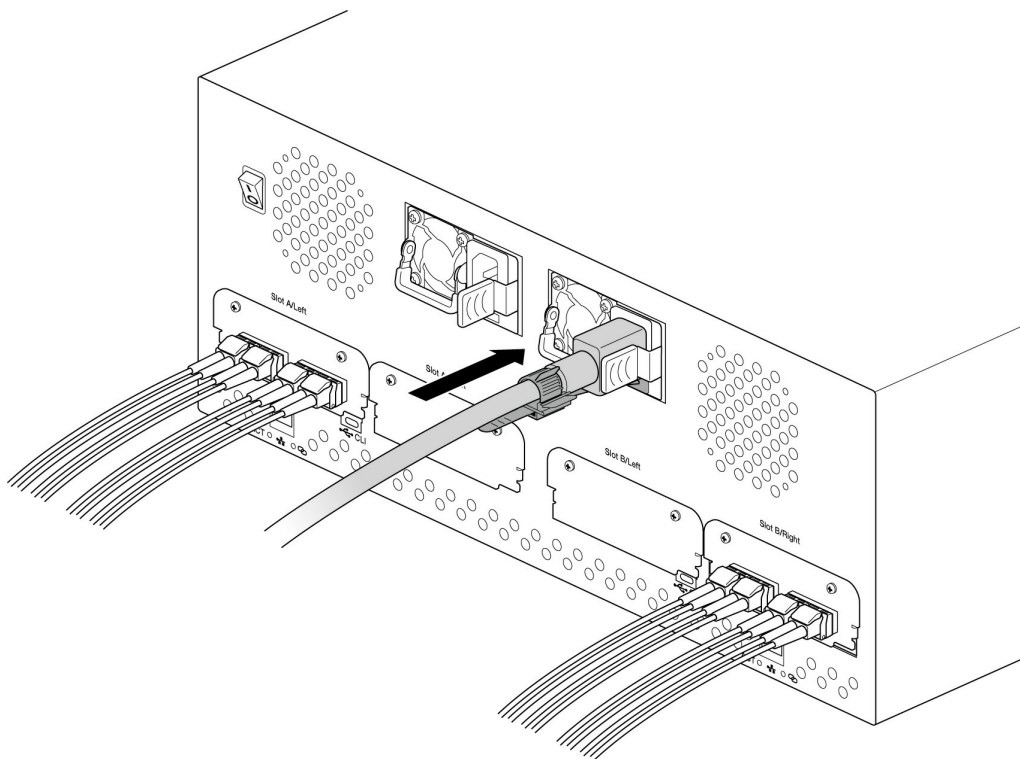
Zabezpiecz przewód zasilający

Włóż opaskę zaciskową w szczelinę poniżej gniazda.





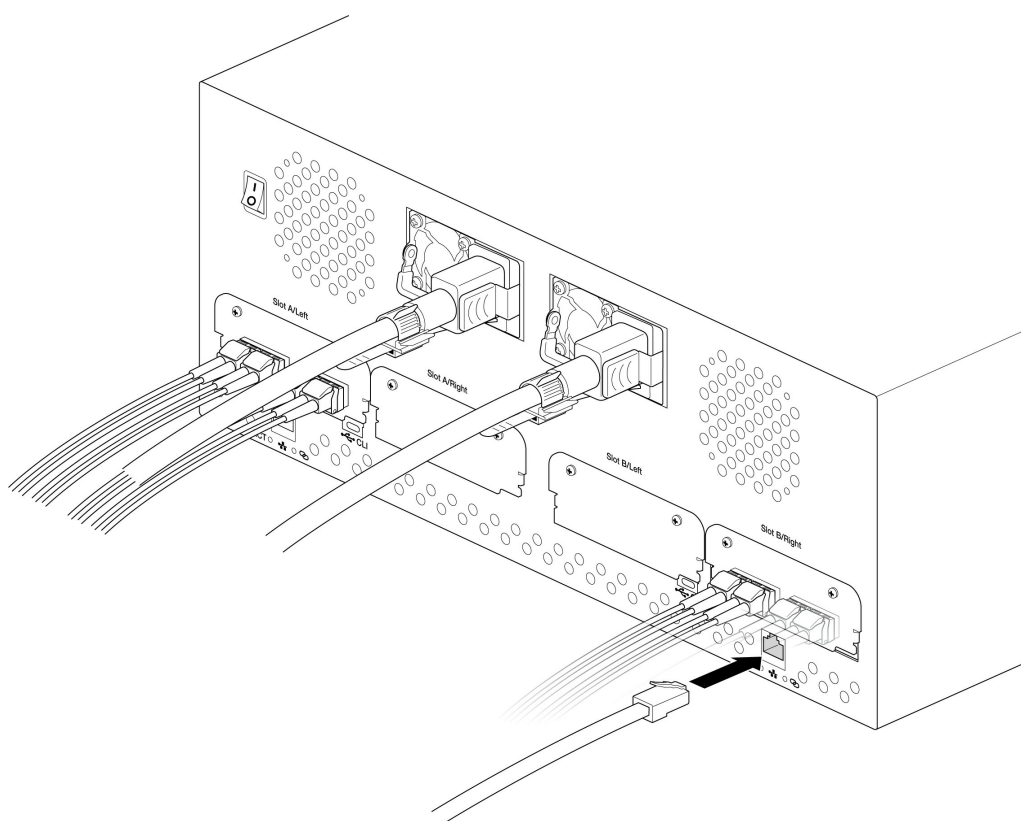
Włóż przewód zasilający do gniazda i zabezpiecz opaską zaciskową.



Połączenia urządzenia

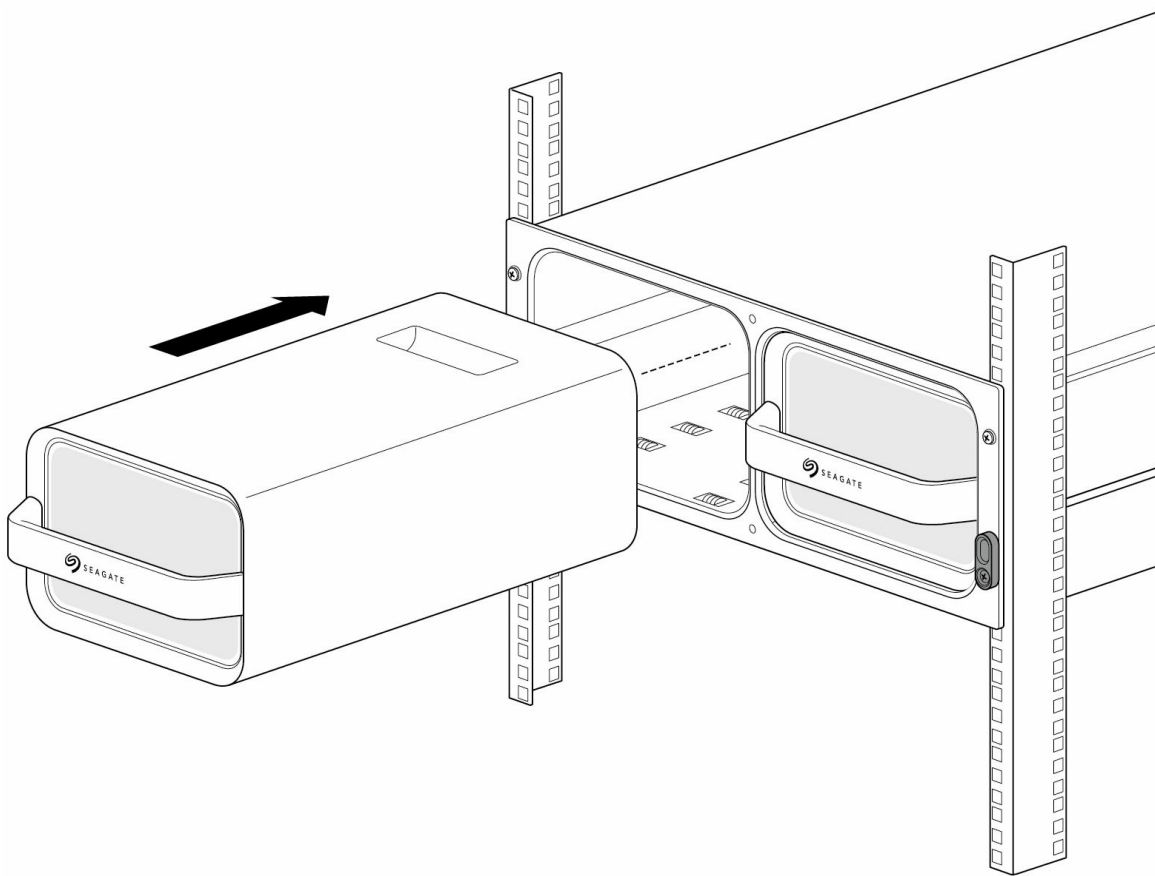
Podłącz port Ethernet

Lyve Client komunikuje się z urządzeniami umieszczonymi w odbiorniku Lyve Rackmount Receiver poprzez porty zarządzania Ethernet. Upewnij się, że porty zarządzania Ethernet zostały podłączone do tej samej sieci, co urządzenia hostujące obsługujące klienta Lyve Client. Jeśli w gnieździe nie umieszczono żadnego urządzenia, nie ma potrzeby podłączania odpowiadających mu portów zarządzania Ethernet do sieci.

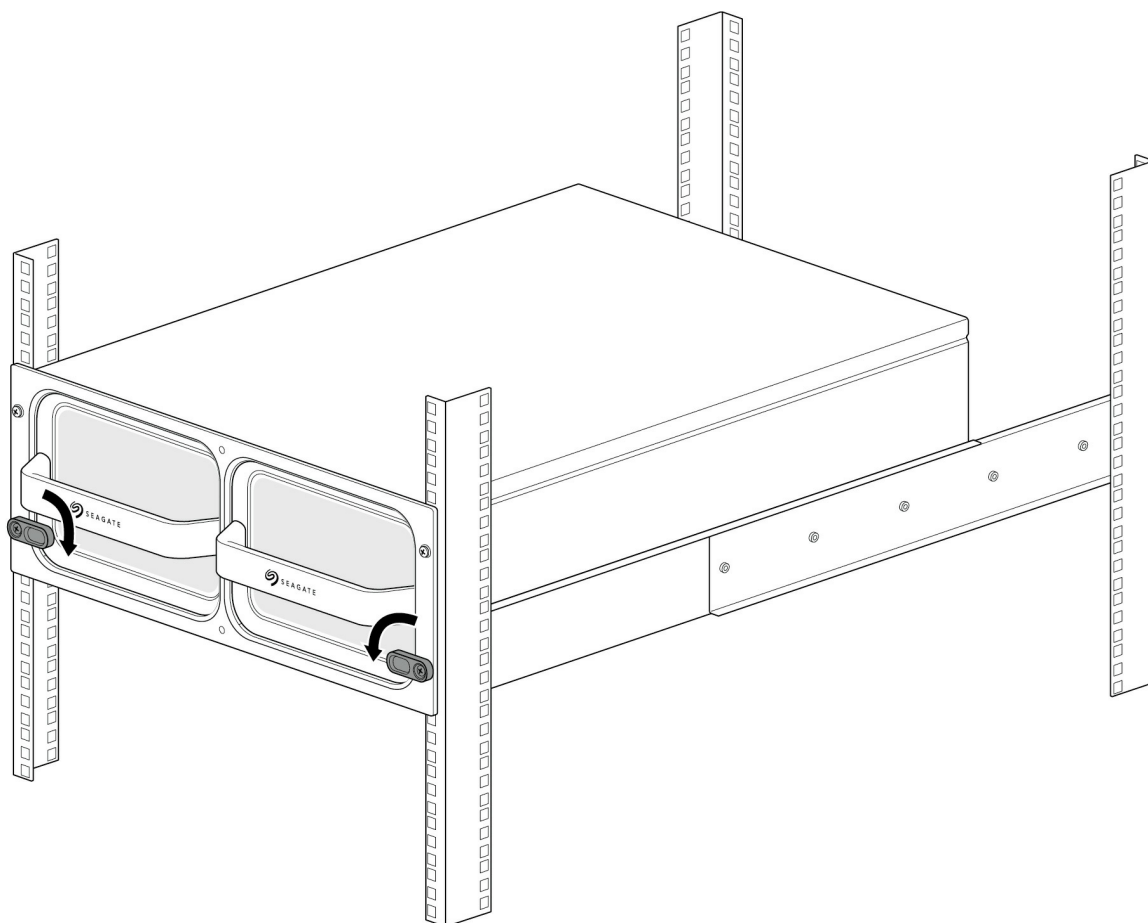


Podłączanie Seagate Lyve Mobile Array

Umieść Lyve Mobile Array do gniazda A lub B w urządzeniu Lyve Mobile Rackmount Receiver.

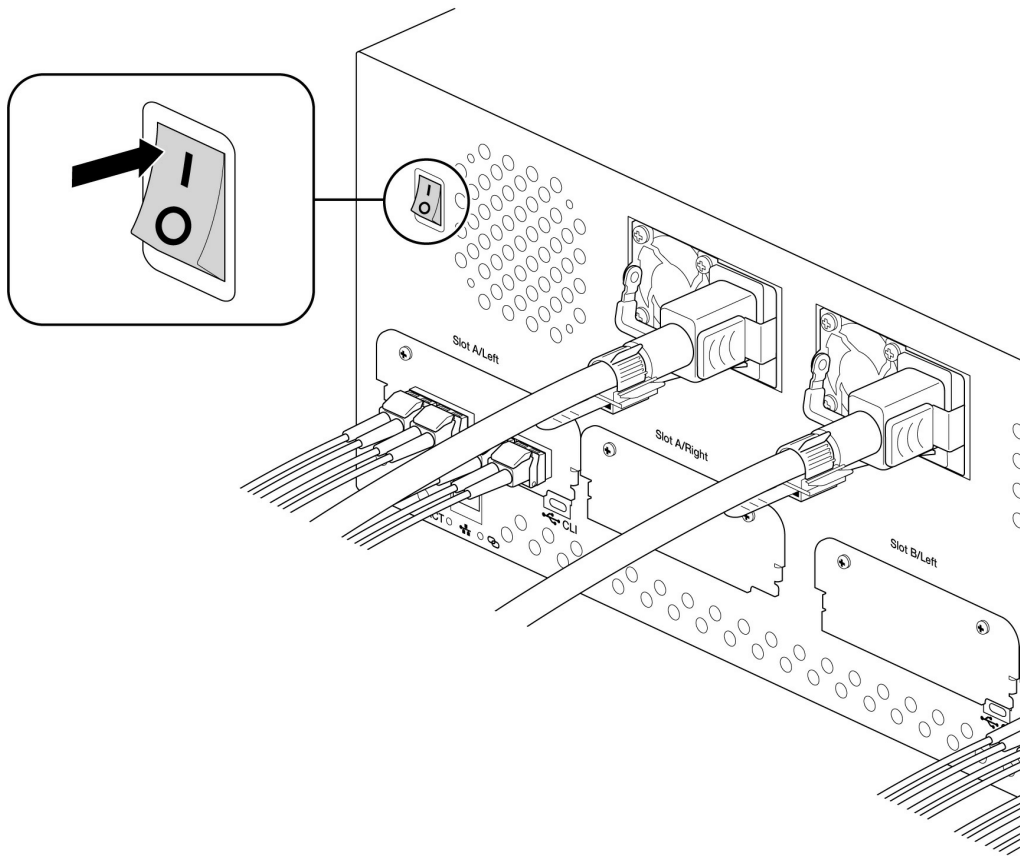


Wsuń urządzenie, aż zostanie mocno osadzone na miejscu i podłączone do Lyve Mobile Rackmount Receiver. Zamknij zatrzaski.



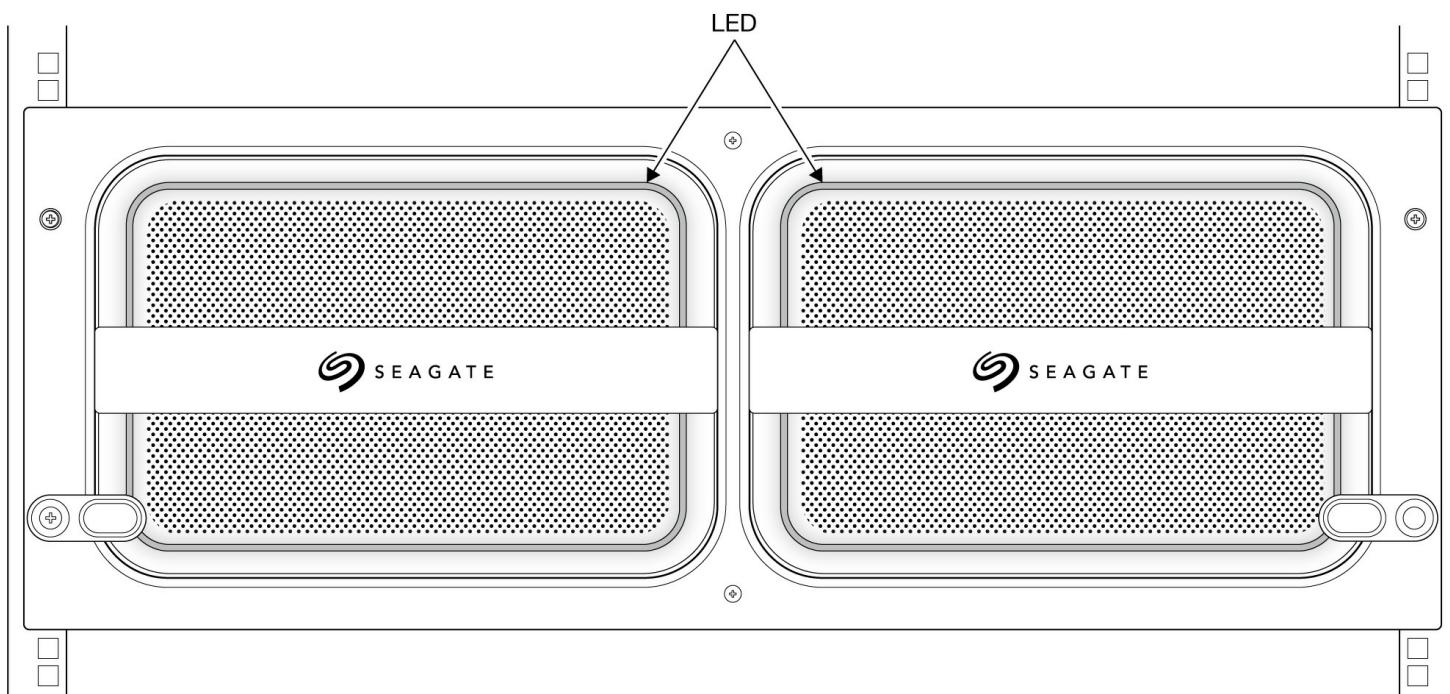
Włącz zasilanie

Ustaw przełącznik zasilania na Lyve Mobile Rackmount Receiver w pozycji ON.



Odblokuj urządzenie

Lampa LED na urządzeniu umieszczonym w Lyve Mobile Rackmount Receiver miga na biało podczas procesu uruchamiania i zmienia się na stały kolor pomarańczowy. Stały, pomarańczowy kolor LED wskazuje, że urządzenie jest gotowe do odblokowania.



Upewnij się, że aplikacja Lyve Client działa na komputerze hostującym. Komputer hostujący automatycznie odblokuje urządzenie, jeśli zostało podłączone do niego w przeszłości i nadal ma upoważnienie w zakresie zabezpieczeń. Jeśli komputer hostujący nigdy nie odblokował urządzenia, konieczne będzie wprowadzenia nazwy użytkownika i hasła portalu Lyve Management w aplikacji Lyve Client. Sprawdź Wymagania konfiguracji. Sprawdź [Wymagania konfiguracji](#).

Po zatwierdzeniu upoważnień ze strony Lyve Client dla urządzenia podłączonego do komputera światło LED na urządzeniu zacznie świecić stale na zielono. Urządzenie jest odblokowane i gotowe do użycia.

Bezpiecznie usuń urządzenie

Twój komputer musi przeprowadzić operacje zapisujące i administracyjne na urządzeniu Lyve, zanim będzie mogło być fizycznie usunięte z Lyve Mobile Rackmount Receiver. Aby uniknąć uszkodzenia plików, zawsze usuwaj woluminy urządzenia z komputera za pomocą aplikacji Lyve Client lub systemu operacyjnego komputera przed fizycznym odłączeniem urządzenia.

Aby uniknąć możliwej kontuzji, należy użyć prawidłowej techniki podnoszenia przy usuwaniu urządzenia z Lyve Rackmount Receiver.

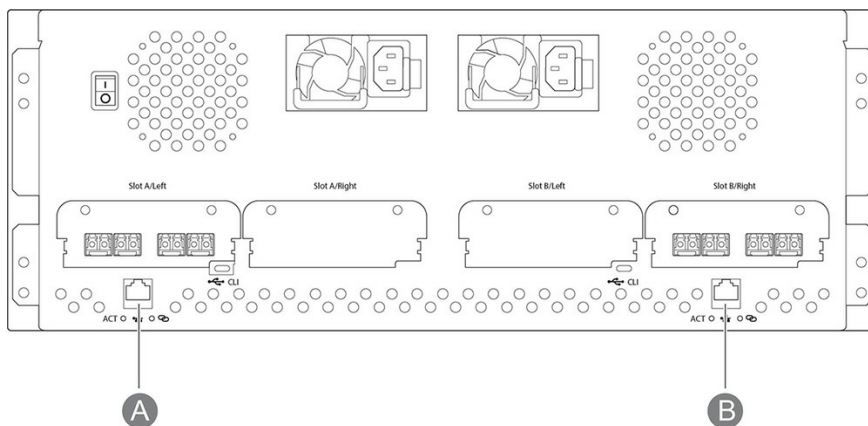
FC Network Setup for Windows

Requirements

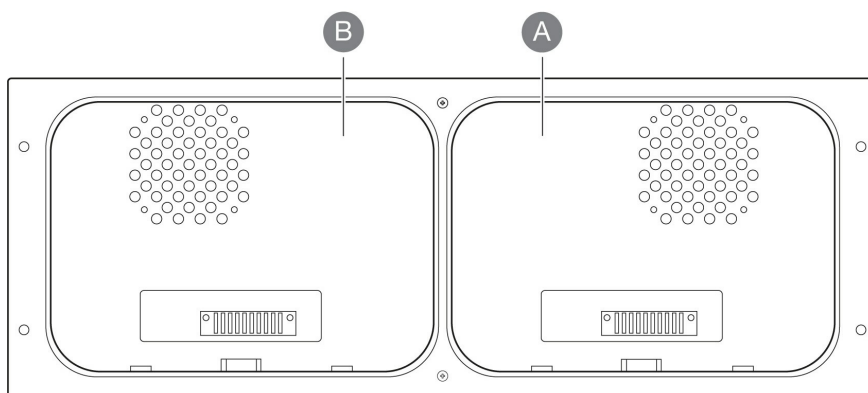
The Lyve Client app is required to authorize a host computer to access Lyve Mobile Array and compatible devices. Download the Lyve Client installer for Windows and macOS at www.seagate.com/support/lyve-client and install it on the server. For more information, see the [Lyve Client Software user manual](#).

FC initial setup on the host side

1. Connect an Ethernet cable to Ethernet management port A or B on Lyve Mobile Rackmount Receiver.



2. Connect FC cables to the server. Connect the other ends to FC ports connected to slot A or B on Lyve Mobile Rackmount Receiver.
3. Insert Lyve Mobile Array into slot A or B on Lyve Mobile Rackmount Receiver. Be sure to select the correct slot for the FC connections behind Rackmount Receiver.



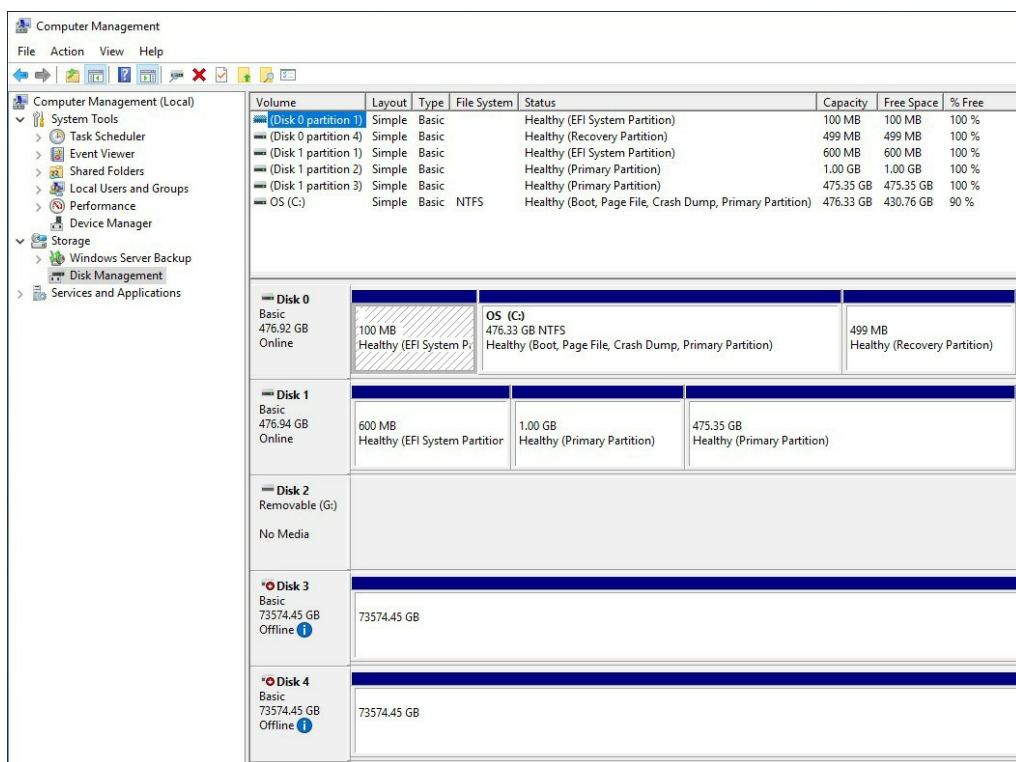
4. Open Lyve Client. You may be prompted to unlock Lyve Mobile Array if this is the first connection to the host.
5. Click the **Devices** tab.
6. Click on the Mobile Array card with the **Rackmount Receiver » FC** connection.

Lyve Client automatically completes your FC connection configuration.

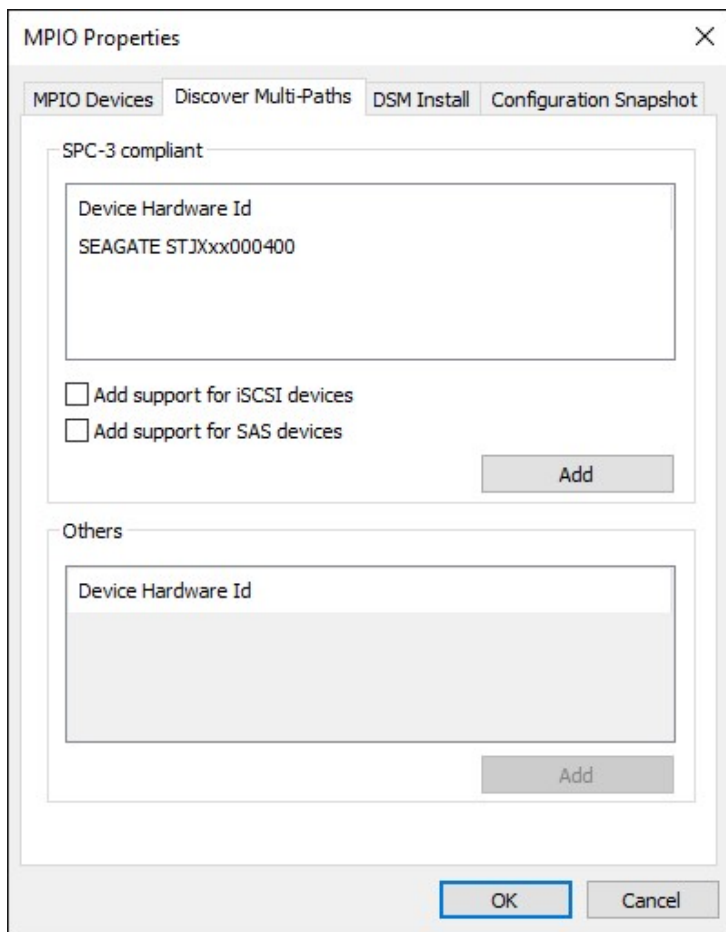
Manual FC Setup

Typically, Lyve Client will configure FC connections for Mobile Array devices in Mobile Rackmount Receivers. If an FC connection must be manually configured, refer to the following instructions.

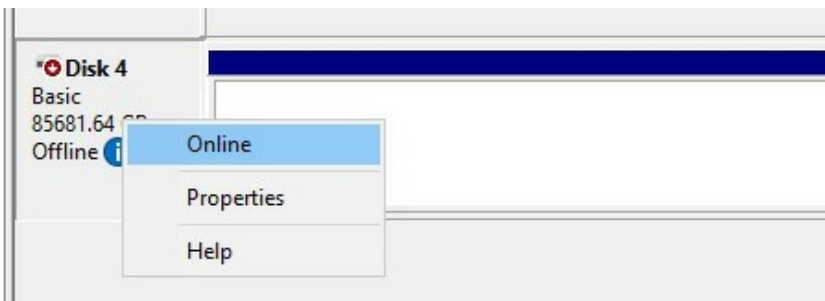
1. Open Server Manager.
2. Open Computer Management.
3. Open **Disk Management**.
4. If more than one **Offline** drive exists, continue steps 5-9. If there's only a single **Offline** drive, go to step 10.



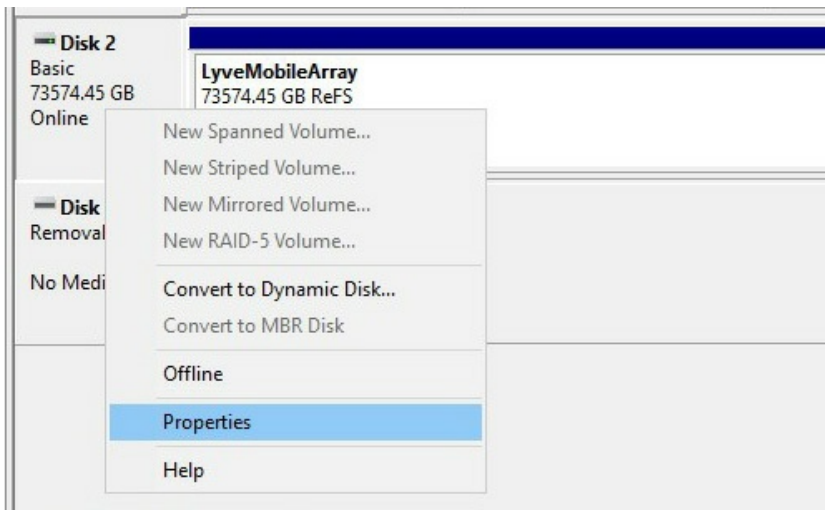
5. Open the Server Manager and install **Multipath I/O (MPIO)**.
6. Open MPIO.
7. Click on the **Discover Multi-Paths** tab.
8. Click on the Seagate device to highlight it and click **Add**.



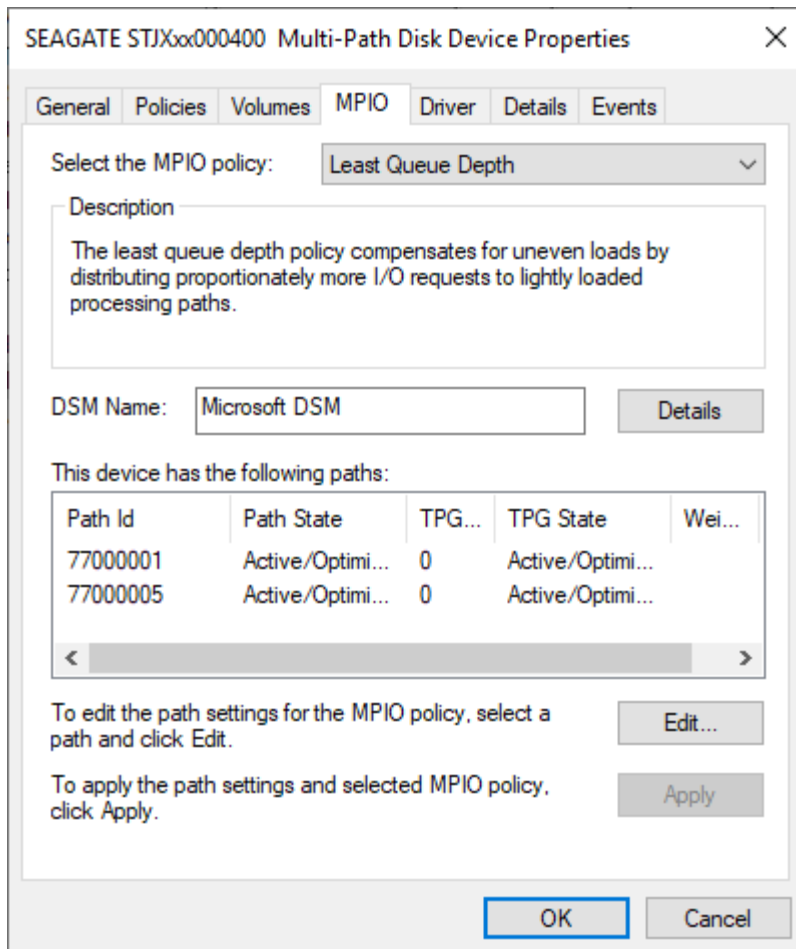
9. Reboot the server.
10. Open Disk Management.
11. Right-click the Lyve Mobile Array disk marked **Offline** and select **Online**.



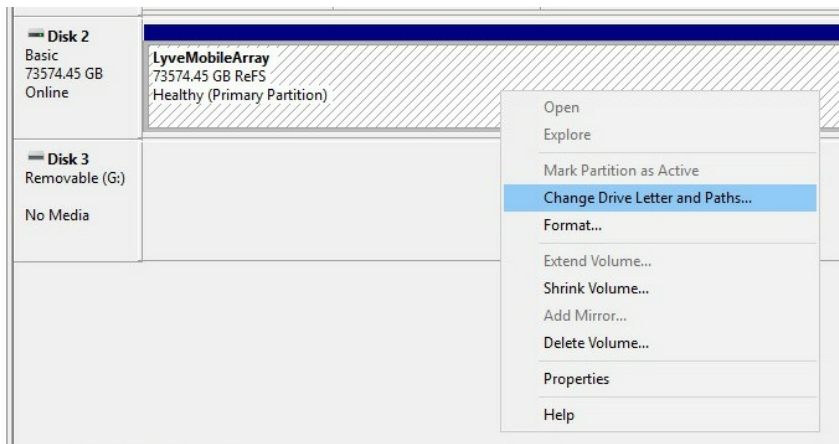
12. If MPIO is enabled, right-click the Lyve Mobile Array disk and select **Properties**. If it is not enabled, go to step 15.



13. Click on the **MPIO** tab.
14. Select your preferred MPIO policy.



15. Right-click on the Lyve Mobile Array volume and select **Change Drive Letters and Paths...**



16. Click **Add** and select your preferred letter.

iSCSI Network Setup for Windows

Small Computer System Interface (SCSI) is a widely used protocol for controlling direct attached storage devices. Internet SCSI (iSCSI) uses the SCSI protocol on network volumes. iSCSI works on top of the Transport Control Protocol (TCP) and allows SCSI commands to be sent through a local area network (LAN), wide area network (WAN), or the internet.

Your iSCSI network requires four components:

Data network—iSCSI requires an IP-based network for data transport between systems with initiators (servers) and targets (storage volumes or arrays).

Management network—A computer connected to the appropriate Ethernet management port on the back of Rackmount Receiver. Use the Ethernet port that matches the slot with the Lyve Mobile Array in order to manage the storage. A computer with Lyve Client software must be connected to the same management network to configure the applicable iSCSI ports.

iSCSI target—The target is a storage volume or array connected to the network. In the following instructions, the iSCSI target is a volume in a Lyve Mobile Array inserted in a Lyve Mobile Rackmount Receiver.

iSCSI initiator—The initiator is the software component residing on a server that is configured to connect to an iSCSI target. By using an iSCSI initiator, target volumes can be mounted on a server as if they were local volumes.

Requirements

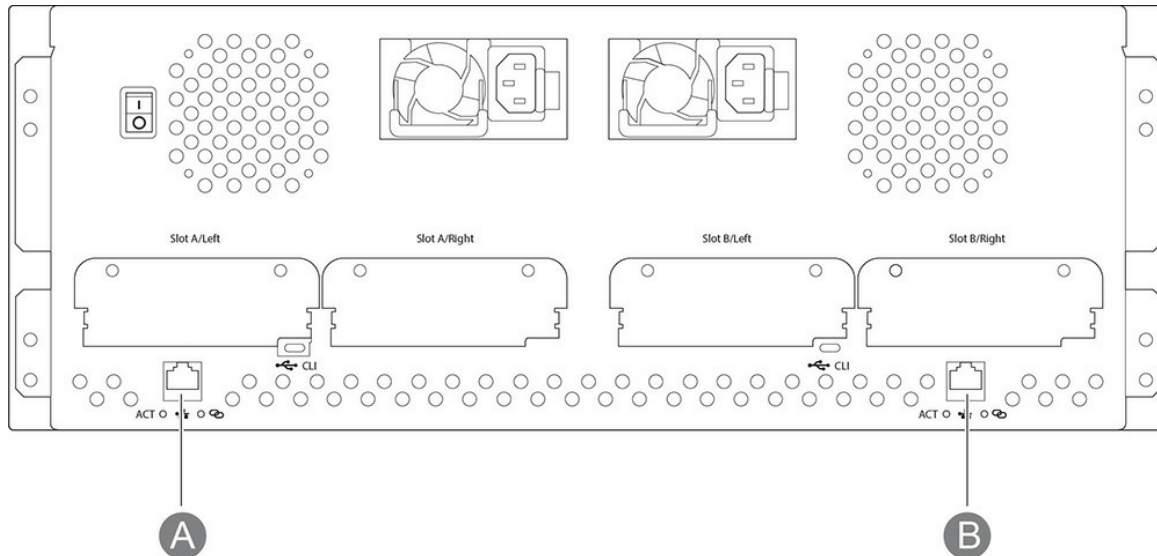
Hardware

Host connection

- Windows PC host computer with Windows 10 Pro, Windows 11 Pro, Windows Server 2019 or higher.
- iSCSI host connection with assigned addresses and on the same data network/subnet as the target iSCSI ports on Lyve Mobile Rackmount Receiver. If the host and target connections are not on the same network/subnet, your network infrastructure must be capable of routing and managing traffic between subnets. Note that for optimal performance, the host connection should have a transfer rate that matches the target connection ports.
- Ethernet (copper cat5e and above)/SFP+ (optical) cables supporting the host and target data connection ports. Use the correct cables for your environment.

Target connection

- Rackmount Receiver with iSCSI 25Gb 4-port 10Gb (SFP+) or iSCSI 10GbaseT 2-Port (RJ45) ports connected to the data network.
- Ethernet cable connecting the management network to the appropriate Ethernet management port (Slot A or B) on the back of Rackmount Receiver.



Software

- The Lyve Client Software app installed on a computer connected to the management network.

Network protocols

Service Location Protocol (SLP)

The Lyve Client app relies on the Service Location Protocol (SLP) to discover Lyve Mobile devices on the network.

For automatic detection, the following is required:

- SLP broadcast messages using UDP port 427 must be allowed in the network environment.
- IP assignments to all computers and devices are performed by a DHCP server on the network.
- The computer running Lyve Client and Lyve Mobile Rackmount Receiver's Ethernet management port must be connected to the same subnet.

If your company's IT policies prevent SLP network broadcasting, you can use other methods for detecting the device in Lyve Client. See **Alternative methods for device detection** below.

Setup overview

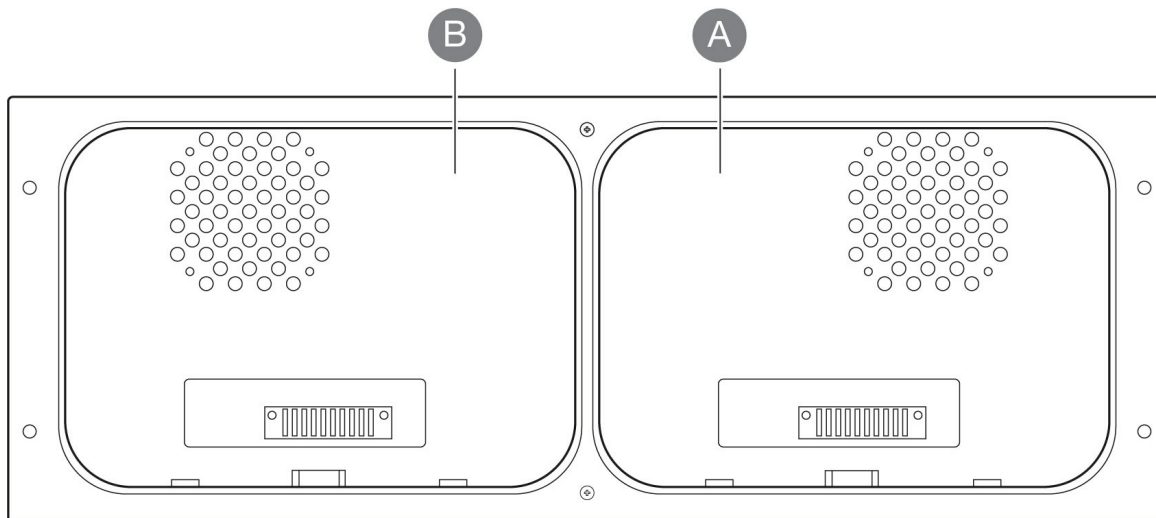
Setting up the connection between Lyve Mobile Rackmount Receiver's ports and the host computer requires three steps:

1. Set up the IP addresses for Lyve Mobile Rackmount Receiver's iSCSI ports.
2. Set up the iSCSI initiator/target(s).
3. Map the iSCSI initiator to iSCSI target(s).

Pre-setup

Before beginning the configuration, make sure the Lyve Client app is installed on a computer connected to the management network. See the [Lyve Client Software User Manual](#) for installation details.

1. Insert Lyve Mobile Array into slot A or B on Lyve Mobile Rackmount Receiver. Be sure to select the correct slot for the iSCSI connections behind Rackmount Receiver.



2. On the host computer, open the Lyve Client app.

The LED on the device inserted in Lyve Mobile Rackmount Receiver blinks white during the boot process and turns solid orange. The solid orange LED color indicates the device is ready to be unlocked.

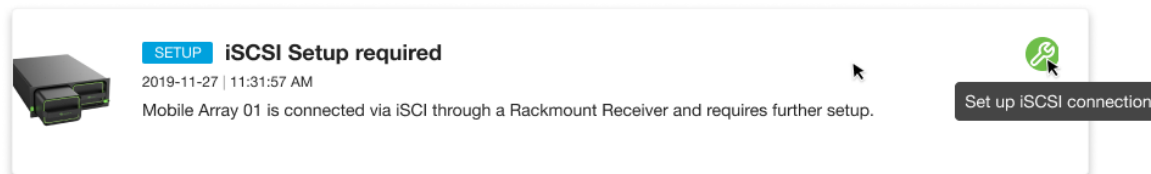
The host computer will automatically unlock the device if it was connected to Lyve Mobile Array in the past and is still authorized for security. If the host computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve Client app. See Setup Requirements in the Lyve Mobile Rackmount Receiver User Manual.

Once Lyve Client has validated permissions for the device connected to the computer, the LED on the device turns solid green. The device is unlocked and ready for use.

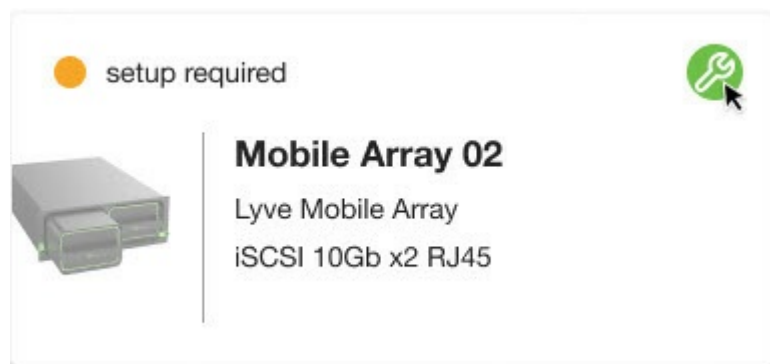
Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports

The iSCSI setup sequence can be initiated from the Activity or Devices screen.

Activity—An iSCSI Setup notification informs you that a setup is required.



Devices—The status indicator on the Device card informs you that a setup is required.



1. On the computer connected to the management network, open the Lyve Client app.



Important—The status indicator for detecting devices may run for a few minutes while Lyve Client discovers and sets up the Lyve Mobile Array.

2. Click on the **Activity** or **Devices** tab.
3. Locate the card indicating the Lyve Mobile Array connected to the Rackmount Receiver's iSCSI ports. Click on the Setup icon.



If you need to update an iSCSI connection that was set up previously, go to the **Devices** tab and click on the Setup icon for 'Data Connections'.

4. The port indices listed in the dialog match the port labels on the iSCSI FRAM on the back of Rackmount

Receiver. Enter the IP address, subnet mask, and default gateway for each port.

Configure iSCSI connections ✕

Each iSCSI port requires a valid IP address, subnet mask and default gateway. Enter this information for each of the ports in use. Advanced settings apply to all ports on this device.

Mobile Array 01 Lyve Mobile Array Switch to IPv6

Port	IPv4 Address	Subnet mask	Default gateway
0	<input type="text" value="Enter address"/>	<input type="text" value="Enter address"/>	<input type="text" value="Enter address"/>
1	<input type="text" value="Enter address"/>	<input type="text" value="Enter address"/>	<input type="text" value="Enter address"/>

Advanced Settings ⓘ

- Enable Jumbo Frames
- Enable CHAP (Challenge Handshake Authentication Protocol)
- Enable iSNS (Internet Storage Name Service)



Lyve Client will only accept numerals and decimals in accordance with IP addressing conventions and will remove invalid characters (alphabetical characters, spaces, and symbols). **Lyve Client will report invalid IP addresses if an octet value entry:**

- Exceeds a permitted range (for example, entering a value greater than 256).
- Results in IP address/default gateway addressing inconsistencies not permitted by the defined subnet mask.
- Results in ports with identical IP addresses.

5. (Optional) Select checkboxes under **Advanced Settings** to enable any of the following:

- **Jumbo Frames**—Allows for improved network speed for networks configured to support Jumbo Frames.
- **CHAP (Challenge Handshake Authentication Protocol)**—Enables users of network-mounted volumes to identify themselves to an authenticating system without exposing their password. See [Managing CHAP records](#) below.
- **iSNS (Internet Storage Name Service)**—Allows automated discovery, management and configuration of iSCSI devices by networks using iSNS management services. See [Designating iSNS servers](#) below.

6. Click **Apply**.

Managing CHAP records in Lyve Client

To create a new CHAP record:

1. In the 'Configure iSCSI connection' dialog, check the **Enable CHAP (Challenge Handshake Authentication Protocol)** checkbox.
2. Select **Create a new record** from the dropdown menu.
3. In the **Name** field, you'll see a default iSCSI Qualified Name similar to: `iqn.1995-03.com.dothill:01.array.00c0ffff3920c`. Leave as is.
4. In the **Secret** field, enter a password (must be 12-16 alphanumeric characters).
5. Click **Save**.

Only the name is copied to the user's local database. The name and secret are stored on the device itself, so that the secret is not revealed to the host system.

To edit a CHAP record:

1. Select an existing CHAP record from the dropdown menu.
2. Edit the **Name** and **Secret** for the record.
3. Click **Save**.

To delete a CHAP record:

1. Select an existing CHAP record from the dropdown menu.
2. Click **Delete**.
3. Confirm that you want to delete the record.

Designating iSNS servers in Lyve Client

The Internet Storage Name Service (iSNS) manages multiple iSCSI targets on a network. Certain iterations of Windows Server include the iSNS feature. Using an iSNS can save time for each iSCSI initiator. For example, rather than searching the network for an iSCSI target, the initiator can look for a connection in a single location, the iSNS server. The iSNS server keeps tabs on all the iSCSI targets on the network, thus allowing the initiator to connect to one that is available.

Configure iSNS on your network server and then review the instructions below to add your iSCSI target in Lyve Client.

To designate iSNS servers:

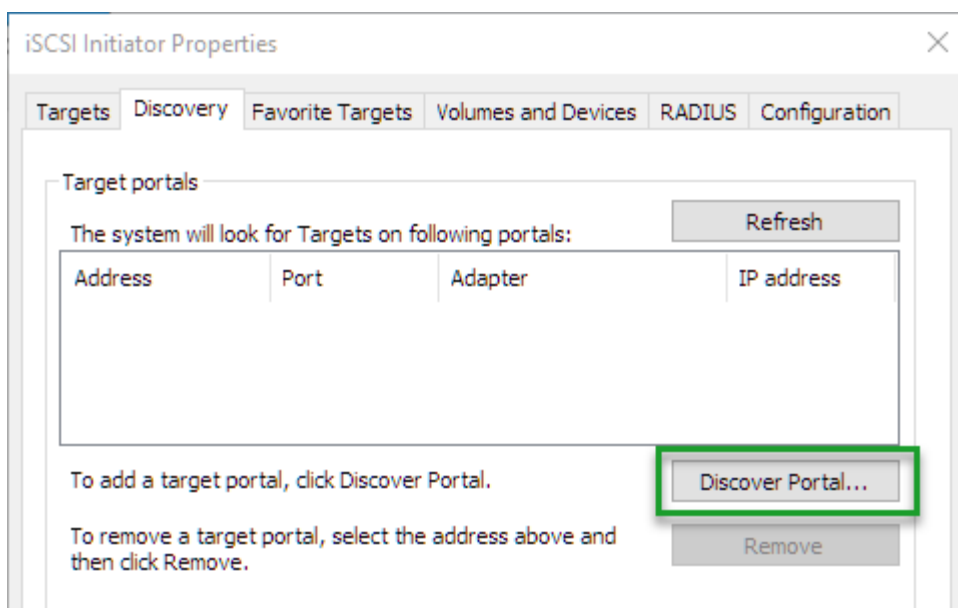
1. In the 'Configure iSCSI connection' dialog, check the **iSNS (Internet Storage Name Service)** checkbox.
2. Enter the **iSNS IP Address** of the primary server.
3. (Optional) Enter the **iSNS Alternate IP Address** of a secondary server.

Set up the iSCSI initiator/target(s)

A data path must be established connecting the network server's iSCSI ports to the target iSCSI ports on Lyve Mobile Rackmount Receiver.

Specify iSCSI initiator

1. On a workstation used to manage the network server, open the Server Manager app.
2. Open the **Tools** menu and select **iSCSI Initiator**.
3. In the 'Microsoft iSCSI' dialog, click **Yes** to run the iSCSI service.
4. The 'iSCSI Initiator Properties' window opens. Click on the **Discovery** tab, and then click on the **Discover Portal...** button.



5. Enter one of the IP addresses for the iSCSI ports on Rackmount Receiver.
6. Click on the **Advanced...** button.
7. On the Advanced Settings screen:
 - For the **Local adapter**, select **Microsoft iSCSI Initiator**.
 - For the **Initiator IP**, enter one of the IP addresses for the host connection.
 - (Optional) If you set up Challenge Handshake Authentication Protocol (CHAP) for the target device (see [Managing CHAP records in Lyve Client](#) above), click the **Enable CHAP log on** checkbox. Enter the **Target secret** (the 12-16-character password created in Lyve Client) for the target device.
 - Click **OK** to close dialogs.

Specify iSCSI target(s)

1. Click on the **Targets** tab.
2. Select a target from the list of discovered targets and click **Connect**. (If you do not see the target you are looking for, click **Refresh**.)
3. In the 'Connect To Target' dialog, the target name is pre-populated. Proceed with the following:
 - A. Ensure that **Add this connection to the list of Favorite Targets** is checked.

- B. (Optional) If multiple adapters are plugged into the same network or multiple routes exist to the target, check **Enable multi-path**.



Important—If you are uncertain whether your host supports multi-path, check your product documentation. Enabling multi-path for a single path device could lead to data corruption.

- C. Click the **Advanced...** button.
- D. For the **Local adapter**, select **Microsoft iSCSI Initiator**.
- E. For the **Initiator IP**, select an IP address for the host connection.
- F. For the **Target portal IP**, select an IP address for the target connection.
- G. (Optional) If you set up Challenge Handshake Authentication Protocol (CHAP) for the target device (see [Managing CHAP records in Lyve Client](#) above), click the **Enable CHAP log on** checkbox. Enter the **Target secret** (the 12–16-character password created in Lyve Client) for the target device.
- H. Click **OK** to close the dialog.

4. Confirm that the status of the target in the 'Discovered targets' list is 'Connected'.
5. Repeat steps 2-4 for each additional target IP address.

Map the iSCSI initiator to the iSCSI target

To complete the mapping of the initiator to the Lyve Mobile Array volume, the Lyve Client app must be refreshed.

1. On the workstation used to manage Lyve Mobile devices, open the Lyve Client.
2. Click on the **Devices** tab.
3. In the Data Connections section, click **Rescan Network**.

Port	Status	Actual Speed	Max Speed	IPv4 Address
0	●	22.3 Gbps	25 Gbps	192.168.1.200
1	●	22.3 Gbps	25 Gbps	192.168.1.201
2	●	22.4 Gbps	25 Gbps	192.168.1.200
3	●	No connection detected		



Important—Lyve Client maps the initiator to the volume after it is relaunched. There may be a few minutes of delay while the mapping is completed.

Alternative methods for device detection

The Lyve Client app relies on the Service Location Protocol (SLP) to discover Lyve Mobile devices on the network. If your company's IT policies prevent SLP network broadcasting, you can use other methods for detecting the device in Lyve Client.

Method 1: Direct connection

Lyve Client can auto-detect the Lyve Mobile Array if the computer is connected directly to Lyve Mobile Rackmount Receiver.

1. Connect the computer directly to the appropriate Ethernet management port on the back of Rackmount Receiver. Use the Ethernet port that matches the slot with the Lyve Mobile Array.
2. On the host computer, open the Lyve Client app.
3. Click on the **Devices** tab to see the detected device.

Method 2: Add device manually

To manually add the device in Lyve Client, you'll need to do the following:

1. Obtain the device connection details using a network scanning tool. See one of the following below:
 - Obtain device connection details with OpenSLP
 - Obtain device connection details with arp
2. Manually add the device.
 - See Add the device in Lyve Client below.

Obtain device connection details with OpenSLP

Note: Installing and running OpenSLP requires administrative rights for the host computer.

1. Install OpenSLP from <http://www.openslp.org/> (Mac or Windows). The `slptool` command is only available with a custom install and selecting the "test tools" option. (Alternatively, you can download the source code and build the tools.)
2. Run the following command:

```
slptool findattr service:ui:ssh
```

If a Lyve Mobile Array is detected, attributes similar to the following will be listed:

```
C:\Program Files\OpenSLP>slptool.exe findattr service:ui:ssh
```

```
(x-system-name=Lyve Mobile Array),(x-system-location=Uninitialized Location),(x-system-
```

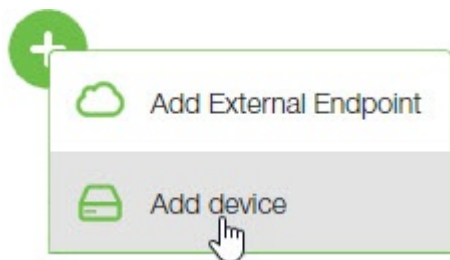
contact=Uninitialized Contact),(x-system-information=Uninitialized Info),(x-scsi-vendor-id=SEAGATE),(x-scsi-product-id=3035),(x-vendor-name=""),(x-product-id=3035),(x-product-brand=""),(x-ip-addresses=169.254.100.123),(x-midplane-serial-number=00C0FFF3907C),(x-product-serial-number=00000000),(x-bundle-version=M100R001),(x-build-date=2021-11-22T22:38:12Z),(x-platform-type=HARDWARE_PLATFORM_TYPE_INDIUM),(x-wwnn=208000c0ff3907c),(x-mac-address=00:C0:FF:F3:90:7C),(x-top-level-assembly-part-number=Not Present),(x-top-level-assembly-serial-number=Not Present)

Obtain device detection details with arp

1. Enter `Command Prompt` in your Windows search bar and select the `Command Prompt` app.
2. Enter `arp -a` and press **Enter**.
3. Filter the list to find a MAC address starting with `00:C0:FF:F3:9`.

Add the device in Lyve Client

1. Obtain device connection details using a network scanning tool (see above).
2. Click on the **Devices** tab.
3. Click on Plus icon and select **Add Device**.



4. If DHCP is available, enter the IP address automatically assigned to the device. If DHCP is not available, enter a static IP address or the default/fallback address.
5. Enter the serial number for the Lyve Mobile Array in the Lyve Mobile Rackmount Receiver slot. If you don't know the serial number, you can find it by scanning the QR code on the left side of the Lyve Mobile Array handle.



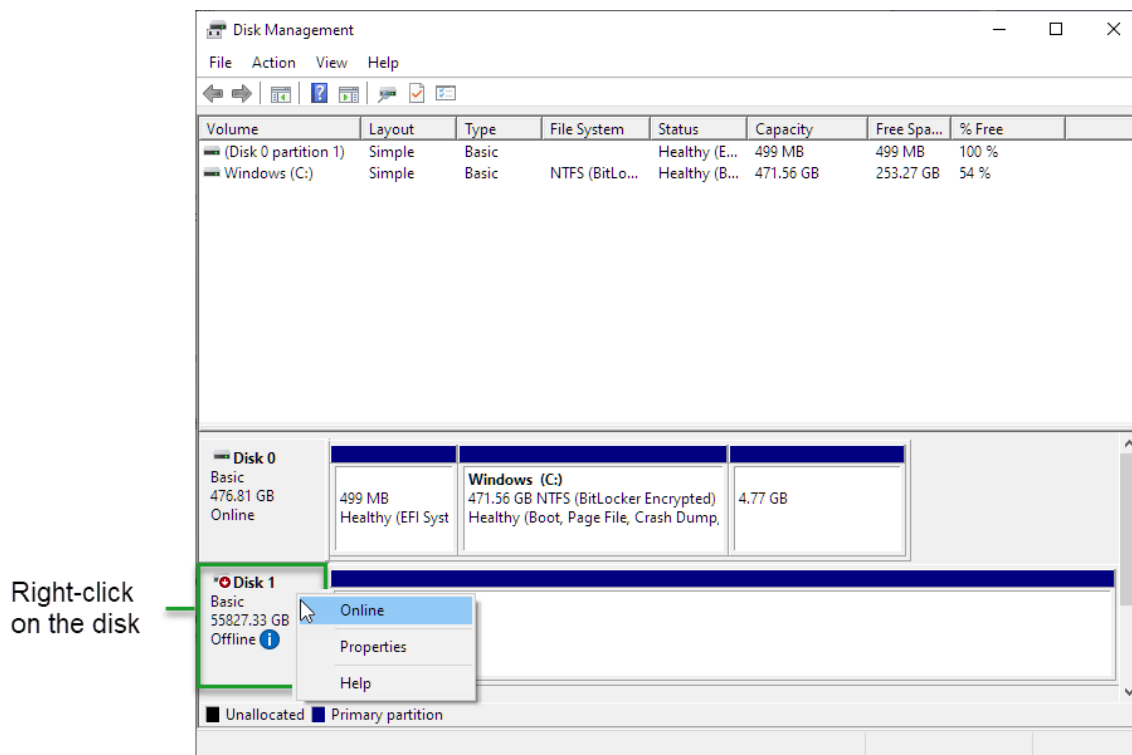
6. Click **Connect**.

(Optional) Manual disk management instructions

Setting the volume to 'online'

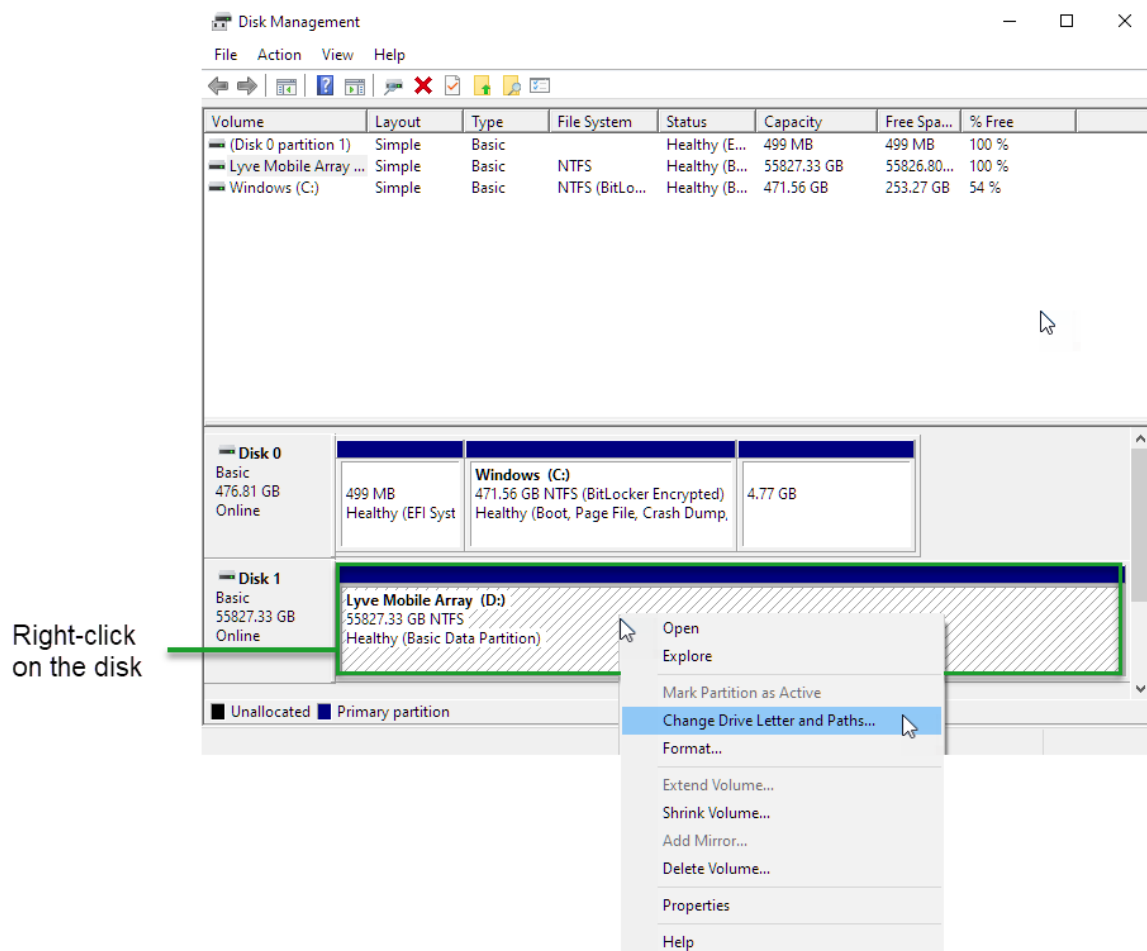
If you need to set the volume to online:

1. On a workstation used to manage the network server, open Computer Management.
2. In the sidebar, click on **Device Manager**.
3. Click on **Disk drives** and confirm that the Seagate drive is connected. If you do not see the Seagate drive, right-click on **Disk drives** and select **Scan for hardware changes** to refresh the list.
4. In the sidebar, click on **Disk Management**.
5. Confirm that the disk is listed. Right-click on the disk on the left side of the screen and select **Online**.



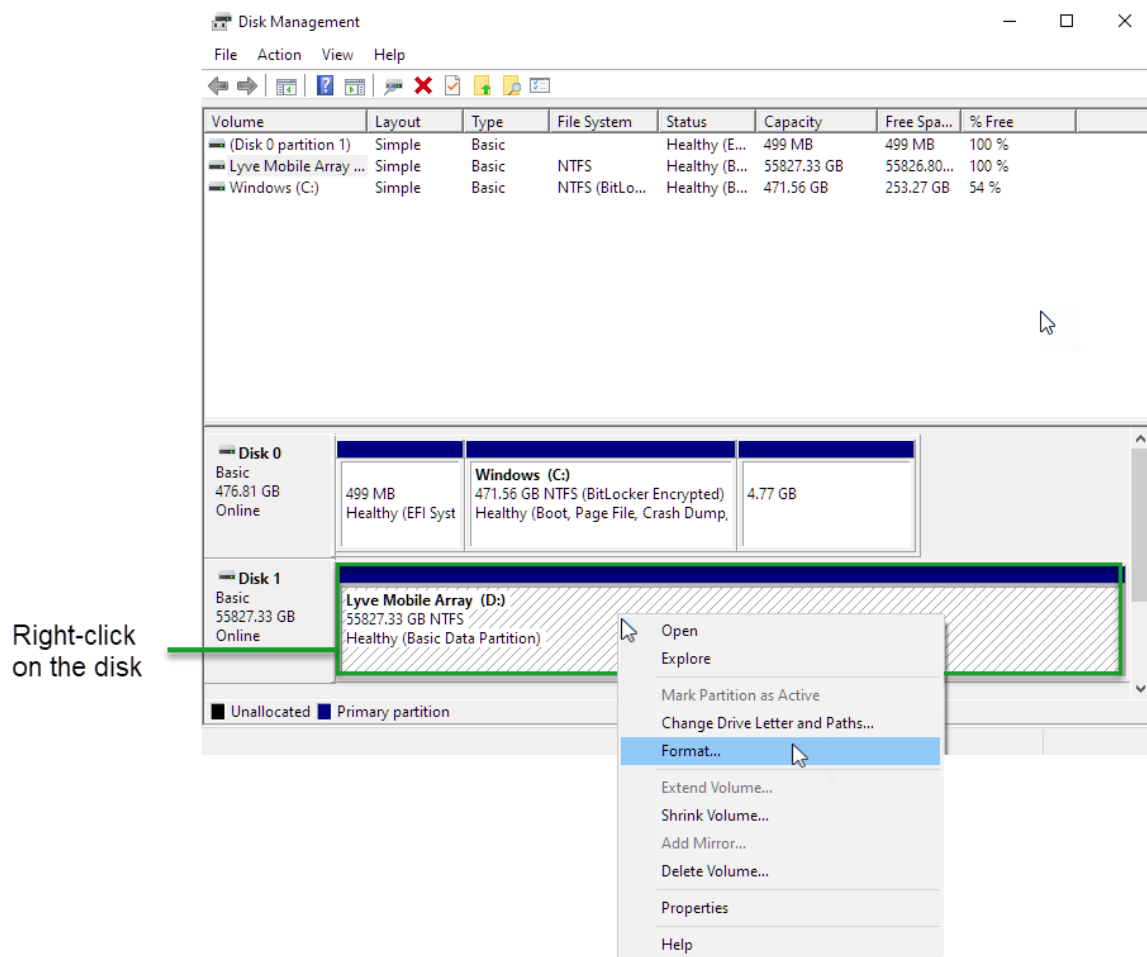
Reassigning drive letter

If you need to reassign the drive letter associated with the disk, right-click on the disk details and select **Change Drive Letter and Path**.



Formatting the drive

1. If you need to change the drive format, right-click on the disk details and select **Format**.



3. Select the desired file system format.
4. Click **OK**.

iSCSI Network Setup for Linux (RHEL/CentOS 8)

Small Computer System Interface (SCSI) is a widely used protocol for controlling direct-attached storage devices. Internet SCSI (iSCSI) uses the SCSI protocol on network volumes. iSCSI works on top of the Transport Control Protocol (TCP) and allows SCSI commands to be sent through a local area network (LAN), wide area network (WAN), or the internet.

Requirements



The Lyve Client Software app (available for Windows and macOS operating systems) is required to unlock Lyve Mobile Array devices. A Windows PC or Mac must have access to the management network connected to Lyve Mobile Rackmount Receiver's Ethernet management port.

Network Components

Your iSCSI network requires four components:

Data network—iSCSI requires an IP-based network for data transport between systems with initiators (servers) and targets (storage volumes or arrays).

Management network—To configure the applicable iSCSI ports, a Windows or Mac computer installed with the Lyve Client Software app must be able to access the same management network connected to an Ethernet management port on the back of Rackmount Receiver. Make sure to use the Ethernet management port for the slot in which the Lyve Mobile Array device is inserted.

iSCSI target—The target is a storage volume or array connected to the network. In the following instructions, the iSCSI target is a volume in a Lyve Mobile Array inserted in a Lyve Mobile Rackmount Receiver.

iSCSI initiator—The initiator is the software component residing on a server that is configured to connect to an iSCSI target. By using an iSCSI initiator, target volumes can be mounted on a server as if they were local volumes.

IP addresses

Assign or obtain the following:

- IP addresses for the Linux station's Ethernet data ports.
- IP address for the Linux station's Ethernet management port.
- IP address for the Windows/Mac computer's Ethernet management port.

<image>

Hardware

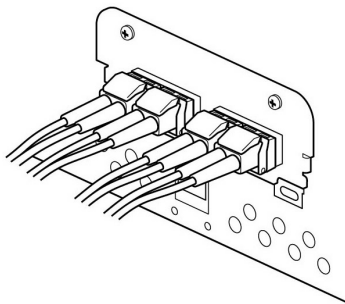
Host connection

- Linux server.
- If the host and target connections are not on the same network/subnet, your network infrastructure must be capable of routing and managing traffic between subnets. Note that for optimal performance, the host connection should have a transfer rate that matches the target connection ports.
- Ethernet (copper Cat6a and above)/SFP+ (optical) cables supporting the host and target data connection ports. Use the correct cables for your environment.

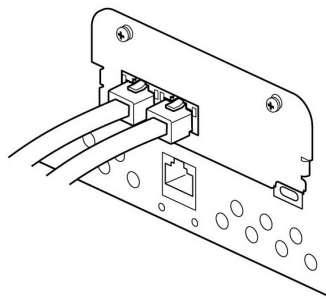
Target connection

- Rackmount Receiver with iSCSI 25/10Gb 4-port (SFP+/SFP28) or iSCSI 10GBaseT 2-Port (RJ45) ports connected to the data network.

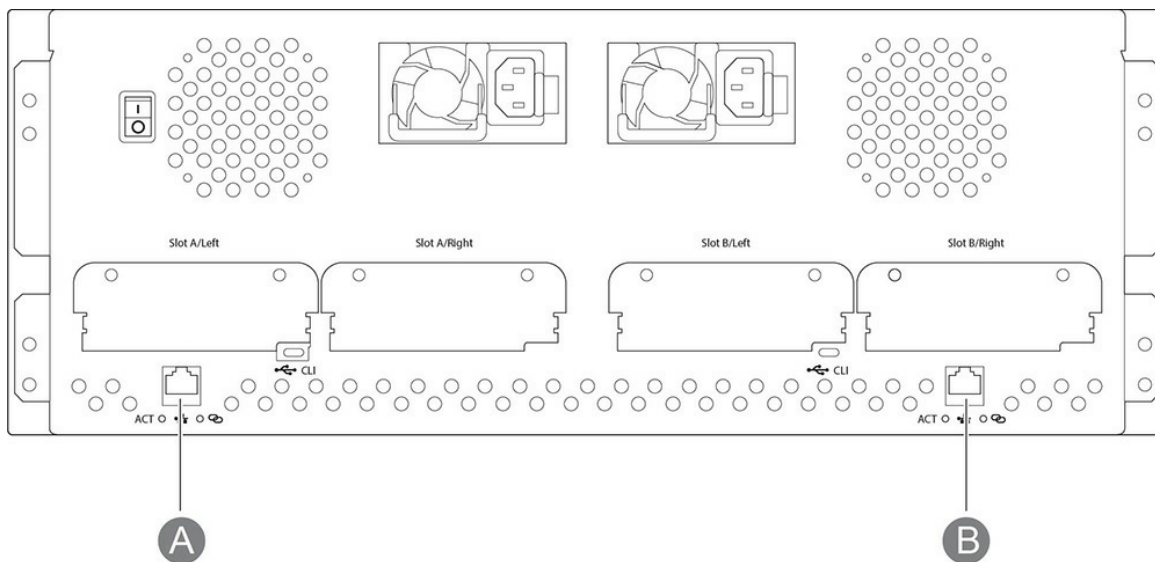
iSCSI 25/10Gb 4-port
(SFP+/SFP28)



iSCSI 10GBaseT 2-Port
(RJ45)



- Ethernet cable connecting the management network to the appropriate Ethernet management port (Slot A or B) on the back of Rackmount Receiver.



Software

- The Lyve Client app (available for Windows and macOS operating systems) is required to unlock Lyve Mobile Array devices. The app must be installed on a Windows or Mac computer connected to the management network.

Network protocols

Service Location Protocol (SLP)

The Lyve Client app relies on the Service Location Protocol (SLP) to discover Lyve Mobile devices on the network. For automatic detection, the following is required:

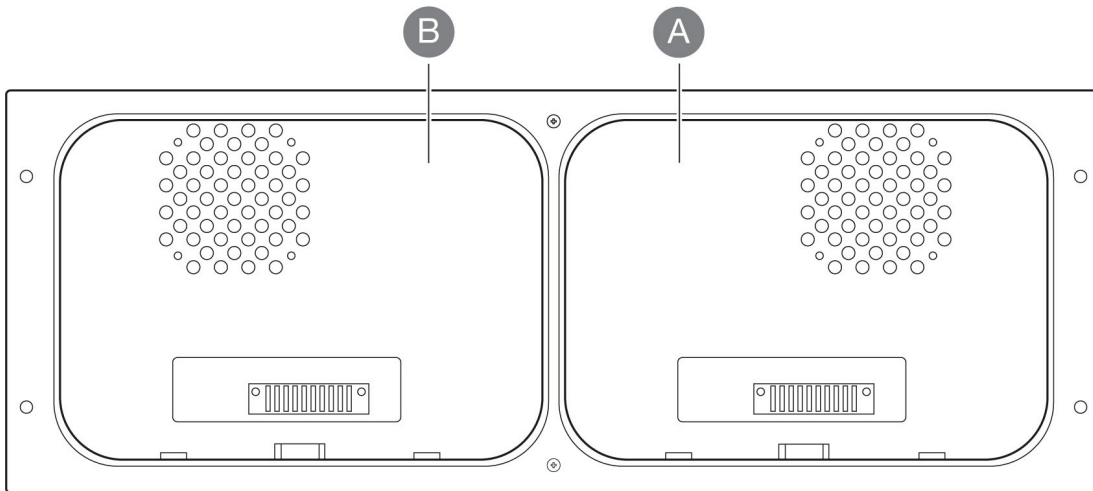
- SLP broadcast messages using UDP port 427 must be allowed in the network environment.
- IP assignments to all computers and devices are performed by a DHCP server on the network.
- The computer running Lyve Client and Lyve Mobile Rackmount Receiver's Ethernet management port must be connected to the same subnet.

If your company's IT policies prevent SLP network broadcasting, you can use other methods for detecting the device in Lyve Client. See Alternative methods for device detection below.

Pre-Setup

Before beginning the configuration, make sure a Windows or Mac computer that will run the Lyve Client Software app can access the same management network connected to the Ethernet management port on the back of Rackmount Receiver.

1. Insert Lyve Mobile Array into slot A or B on Lyve Mobile Rackmount Receiver. Be sure to select the correct slot for the iSCSI connections behind Rackmount Receiver.



2. Set the power switch on Lyve Mobile Rackmount Receiver to ON.

The LED on the device inserted in Lyve Mobile Rackmount Receiver blinks white during the boot process and will turn one of two colors, depending on your device's security settings:

Solid orange—Indicates the device is ready to be unlocked and is awaiting security credentials.

Solid green—Device is unlocked and ready for use.

Multipath Input/Output setup on the host side

If your network environment supports a Multipath I/O (MPIO) framework, ensure that MPIO is installed before configuring iSCSI.



For reference, see the following [RHEL documentation](#).

To enable MPIO:

1. On the Linux station, open a terminal session.
2. Enter the following command:

```
sudo mpathconf --enable --with_multipathd y
```

3. Reboot the Linux station.

Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports

Install Lyve Client Software app

Install the Lyve Client app on a Windows or Mac computer connected to the management network. Links to the installer can be found on Lyve Management Portal:

1. Log in to lyve.seagate.com.
2. On the Home page, click **Downloads**.
3. At the prompt, click **Download** for either Windows® or macOS®.
4. Go to the folder where you receive downloads and open the installer.
5. Follow the onscreen instructions to complete the setup and open Lyve Client.

You can also download Lyve Client installers from the support page at www.seagate.com/support/lyve-client.

Unlock the device

Open the Lyve Client app.



Important—The status indicator for detecting devices may run for a few minutes while Lyve Client discovers Lyve Mobile Array.

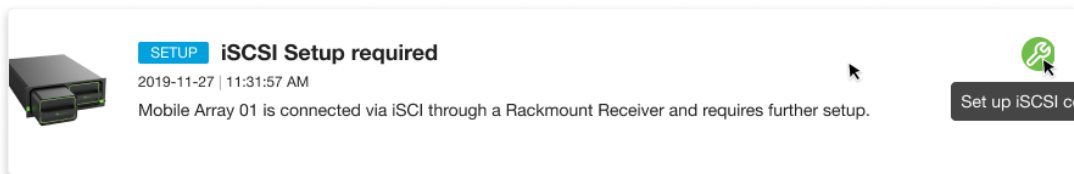
Lyve Client will automatically unlock the device if the management computer was connected to Lyve Mobile Array in the past and is still authorized for security. If the management computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve Client app.

Once Lyve Client has validated permissions for the device connected to the computer, the LED on the device turns solid green. The device is unlocked and ready for use.

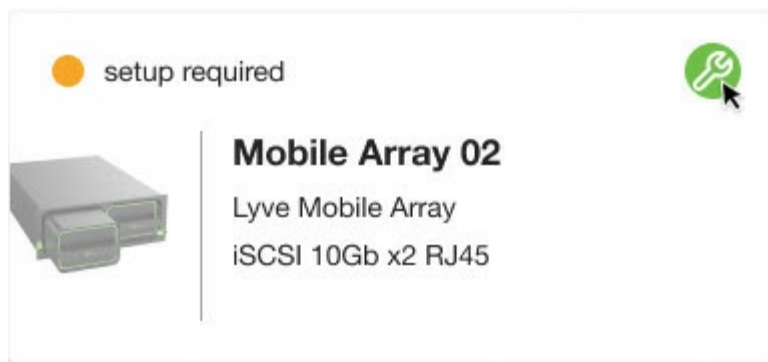
Set up iSCSI

1. The iSCSI setup sequence can be initiated from the Activity or Devices screen. In the Lyve Client app, click on the **Activity** or **Devices** tab.

Activity—An iSCSI Setup notification informs you that a setup is required.



Devices—The status indicator on the Device card informs you that a setup is required.



2. Locate the card indicating the Lyve Mobile Array connected to the Rackmount Receiver's iSCSI ports. Click on the Setup icon.



If you need to update an iSCSI connection that was set up previously, go to the **Devices** tab and click on the Setup icon for 'Data Connections'.

4. The port indices listed in the dialog match the port labels on the iSCSI FRAM on the back of Rackmount Receiver. Enter the IP address, subnet mask, and default gateway for each port.

Configure iSCSI connections ✕

Each iSCSI port requires a valid IP address, subnet mask and default gateway. Enter this information for each of the ports in use. Advanced settings apply to all ports on this device.

Mobile Array 01 Lyve Mobile Array

Switch to IPv6

Port	IPv4 Address	Subnet mask	Default gateway
0	<input style="width: 100%;" type="text" value="Enter address"/>	<input style="width: 100%;" type="text" value="Enter address"/>	<input style="width: 100%;" type="text" value="Enter address"/>
1	<input style="width: 100%;" type="text" value="Enter address"/>	<input style="width: 100%;" type="text" value="Enter address"/>	<input style="width: 100%;" type="text" value="Enter address"/>

Advanced Settings ⓘ

Enable Jumbo Frames

Enable CHAP (Challenge Handshake Authentication Protocol)

Enable iSNS (Internet Storage Name Service)

Lyve Client will only accept numerals and decimals in accordance with IP addressing conventions and will remove invalid characters (alphabetical characters, spaces, and symbols). **Lyve Client will report invalid IP addresses if an octet value entry:**

- Exceeds a permitted range (for example, entering a value greater than 256).
- Results in IP address/default gateway addressing inconsistencies not permitted by the defined subnet mask.
- Results in ports with identical IP addresses.

5. Click **Apply**.

Configure iSCSI Initiator/target(s) on the host side

For reference, see the following [RHEL documentation](#).

Map the initiator to the target

1. On the Linux station, open a terminal session.
2. To discover the iSCSI data port on Rackmount Receiver, enter the following:

```
yum install iscsi-initiator-utils
iscsiadm -m discovery -t st -p IP address
```

where `IP address` is the Rackmount Receiver iSCSI port IP address, for example:

```
iscsiadm -m discovery -t st -p 192.168.99.100
```

Example output

```
192.168.99.100:3260,1 iqn.1995-03.com.dothill:01.array.000000000000-00000000.a
192.168.99.101:3260,2 iqn.1995-03.com.dothill:01.array.000000000000-00000000.a
```

3. To discover the iSCSI target, enter the following:

```
iscsiadm -m node -T IQN -l
```

where `IQN` is an iSCSI qualified name, for example:

```
sudo iscsiadm -m node -T iqn.1995-03.com.dothill:01.array.000000000000-00000000.a -l
```

The IQN can be found in the output from the previous discovery command.

Example output

```
Logging in to [iface: default, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.100,3260]
Logging in to [iface: default, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.101,3260]
Login to [iface: default, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.100,3260] successful.
Login to [iface: default, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.101,3260] successful.
```

4. On the Windows or Mac computer connected to the management network, quit and restart the Lyve Client app.



Important—Lyve Client maps the initiator to the volume after it is relaunched. There may be a few minutes of delay while the mapping is completed.

5. Reboot the Linux station.

Format and mount the disk

- If no GUI has been enabled for your Linux system, see [Manual formatting](#).
- If a GUI is enabled for your Linux station, see [Formatting using a GUI](#).

Manual formatting

Obtain device details

1. Using the terminal, create a subfolder by entering the following:

```
sudo mkdir /mnt/SEAGATE
```

2. List block device details by entering the following:

```
sudo blkid
```

Example output

```
/dev/nvme0n1p1: UUID="40AA-21FC" TYPE="vfat" PARTUUID="e97d9f0d-c95d-4afd-a790-8abc41474070"

/dev/nvme0n1p2: UUID="769fcf3e-1886-4cbb-b1f3-23745d390c96" TYPE="ext4"
PARTUUID="8f8edcee-3f56-411a-a227-2bba1463bc25"

/dev/nvme0n1p3: UUID="Z5wnnv-zSCu-cGD0-9ffc-37n1-1cKE-4usCIb" TYPE="LVM2_member"
PARTUUID="b8f4bd59-c296-4e4d-9ad0-fc4cbb98a69f"

/dev/mapper/ubuntu--vg-ubuntu--lv: UUID="882c9573-ea5e-4b8f-bb54-1aec9b1e8dea"
TYPE="ext4"

/dev/loop0: TYPE="squashfs"

/dev/loop1: TYPE="squashfs"

/dev/loop2: TYPE="squashfs"

/dev/sdc2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sdb2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/mapper/mpatha-part2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic
data partition" PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sde2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sdd2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sdc1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/sdb1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/mapper/mpatha-part1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/mapper/mpatha: PTUUID="25a51dc7-9ffc-4000-b1dd-e7b9bd81a375" PTTYPE="gpt"

/dev/sde1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/sdd1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"
```


Format the disk for Linux

1. Format the disk for Linux by entering the following:

```
sudo mkfs.ext4 -L LYVE /dev/disk/by-uuid/unique ID
```

where **unique ID** is the UUID for the Lyve disk listed in the blkid output, for example:

```
sudo mkfs.ext4 -L LYVE /dev/disk/by-uuid/22A6-E95E
```

Example output

```
Creating filesystem with 23413075456 4k blocks and 1463318528 inodes
```

```
Filesystem UUID: b2fc70de-a95e-43ef-9008-c8ec4a5a12c6
```

```
Superblock backups stored on blocks:
```

```
32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208, 4096000,  
7962624, 11239424, 20480000, 23887872, 71663616, 78675968, 102400000, 214990848,  
512000000, 550731776, 644972544, 1934917632, 2560000000, 3855122432, 5804752896,  
12800000000, 17414258688
```

```
Allocating group tables: 0/714511 658404/714511 done
```

```
Writing inode tables: 0/714511 done
```

```
Creating journal (262144 blocks): done
```

```
Writing superblocks and filesystem accounting information: 0/714511 28/714511 done
```

2. Be sure to note the file system UUID, for example, b2fc70de-a95e-43ef-9008-c8ec4a5a12c6.

Edit the file system table

1. Edit `/etc/fstab`, for example:

```
sudo vi /etc/fstab
```

2. Add a comment to identify the disk, for example:

```
# SEAGATE iSCSI device
```

3. Add a line for the new disk UUID by entering the following:

```
/dev/disk/by-uuid/unique ID /mnt/SEAGATE ext4 _netdev 0 1
```

where **unique ID** is the UUID for the Lyve disk listed in the blkid output, for example:

```
/dev/disk/by-uuid/b2fc70de-a95e-43ef-9008-c8ec4a5a12c6 /mnt/SEAGATE  
ext4 _netdev 0 1
```

Mount the drive

Mount the drive by entering the following:

```
sudo mount -a
```

Formatting using a GUI

1. On the Linux station, open the Disks application.
2. Select the Lyve disk and format it.
3. Mount the Lyve disk.
4. (Optional) The disk is available to the current user only. If you want to enable the disk for all users, edit mount options and disable User Session Defaults.
5. Set user permissions as needed.

Change mode of access

Assign access permissions by entering the following:

```
sudo chmod permission /mnt/SEAGATE
```

where **permission** is the desired chmod setting in absolute or symbolic mode, for example:

```
sudo chmod 777 /mnt/SEAGATE
```

Troubleshooting

If your console hangs on the network configuration, you may need to add the following command to each interface in the IP configuration file:

```
(00-installer-config.yaml) optional: true
```


iSCSI Network Setup for Linux (Ubuntu/Debian)

Small Computer System Interface (SCSI) is a widely used protocol for controlling direct-attached storage devices. Internet SCSI (iSCSI) uses the SCSI protocol on network volumes. iSCSI works on top of the Transport Control Protocol (TCP) and allows SCSI commands to be sent through a local area network (LAN), wide area network (WAN), or the internet.

Requirements



The Lyve Client Software app (available for Windows and macOS operating systems) is required to unlock Lyve Mobile Array devices. A Windows PC or Mac must have access to the management network connected to Lyve Mobile Rackmount Receiver's Ethernet management port.

Network Components

Your iSCSI network requires four components:

Data network—iSCSI requires an IP-based network for data transport between systems with initiators (servers) and targets (storage volumes or arrays).

Management network—To configure the applicable iSCSI ports, a Windows or Mac computer installed with the Lyve Client Software app must be able to access the same management network connected to an Ethernet management port on the back of Rackmount Receiver. Make sure to use the Ethernet management port for the slot in which the Lyve Mobile Array device is inserted.

iSCSI target—The target is a storage volume or array connected to the network. In the following instructions, the iSCSI target is a volume in a Lyve Mobile Array inserted in a Lyve Mobile Rackmount Receiver.

iSCSI initiator—The initiator is the software component residing on a server that is configured to connect to an iSCSI target. By using an iSCSI initiator, target volumes can be mounted on a server as if they were local volumes.

IP addresses

Assign or obtain the following:

- IP addresses for the Linux station's Ethernet data ports.

- IP address for the Linux station's Ethernet management port.
- IP address for the Windows/Mac computer's Ethernet management port.

<image>

Hardware

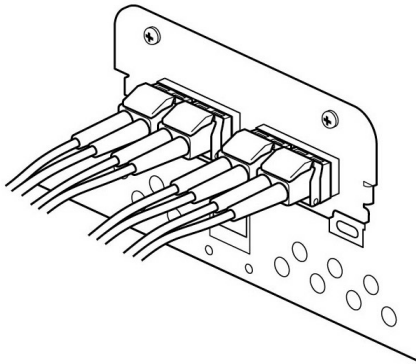
Host connection

- Linux server.
- If the host and target connections are not on the same network/subnet, your network infrastructure must be capable of routing and managing traffic between subnets. Note that for optimal performance, the host connection should have a transfer rate that matches the target connection ports.
- Ethernet (copper Cat6a and above)/SFP+ (optical) cables supporting the host and target data connection ports. Use the correct cables for your environment.

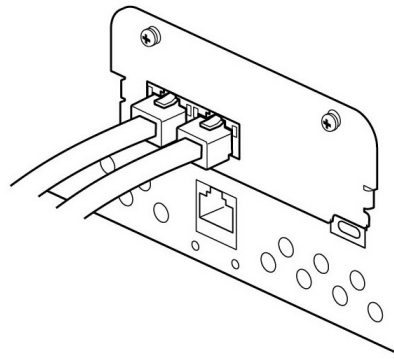
Target connection

- Rackmount Receiver with iSCSI 25/10Gb 4-port (SFP+/SFP28) or iSCSI 10GBaseT 2-Port (RJ45) ports connected to the data network.

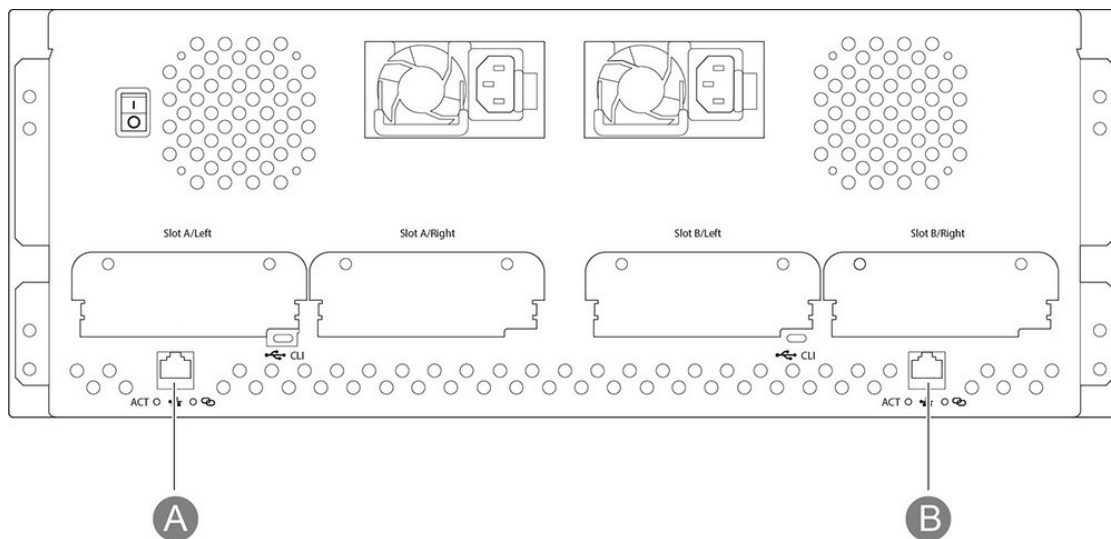
iSCSI 25/10Gb 4-port
(SFP+/SFP28)



iSCSI 10GBaseT 2-Port
(RJ45)



- Ethernet cable connecting the management network to the appropriate Ethernet management port (Slot A or B) on the back of Rackmount Receiver.



Software

- The Lyve Client app (available for Windows and macOS operating systems) is required to unlock Lyve Mobile Array devices. The app must be installed on a Windows or Mac computer connected to the management network.

Network protocols

Service Location Protocol (SLP)

The Lyve Client app relies on the Service Location Protocol (SLP) to discover Lyve Mobile devices on the network. For automatic detection, the following is required:

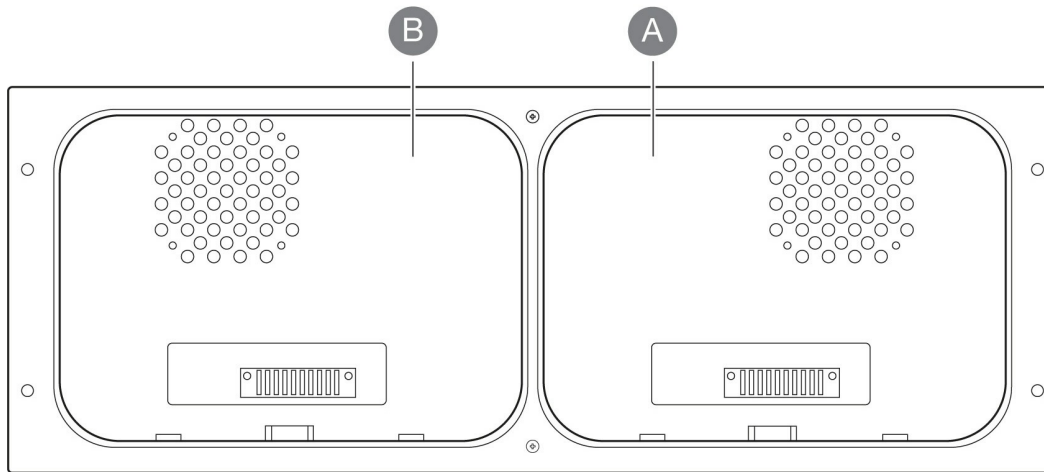
- SLP broadcast messages using UDP port 427 must be allowed in the network environment.
- IP assignments to all computers and devices are performed by a DHCP server on the network.
- The computer running Lyve Client and Lyve Mobile Rackmount Receiver's Ethernet management port must be connected to the same subnet.

If your company's IT policies prevent SLP network broadcasting, you can use other methods for detecting the device in Lyve Client. See *Alternative methods for device detection* below.

Pre-Setup

Before beginning the configuration, make sure a Windows or Mac computer that will run the Lyve Client Software app can access the same management network connected to the Ethernet management port on the back of Rackmount Receiver.

1. Insert Lyve Mobile Array into slot A or B on Lyve Mobile Rackmount Receiver. Be sure to select the correct slot for the iSCSI connections behind Rackmount Receiver.



2. Set the power switch on Lyve Mobile Rackmount Receiver to ON.

The LED on the device inserted in Lyve Mobile Rackmount Receiver blinks white during the boot process and will turn one of two colors, depending on your device's security settings:

Solid orange—Indicates the device is ready to be unlocked and is awaiting security credentials.

Solid green—Device is unlocked and ready for use.

Multipath Input/Output on the host side

If your network environment supports a Multipath I/O (MPIO) framework, ensure that MPIO is installed before configuring iSCSI.



For reference, see the following [RHEL documentation](#).

To enable MPIO:

1. On the Linux station, open a terminal session.
2. Enter the following command:

```
sudo apt-get install -y multipath-tools
```



Note—For Debian, it may be necessary to create a `multipath.conf` file in the `/etc` directory.

3. Enter the following command:

```
sudo systemctl restart multipathd
```

Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports

Install Lyve Client Software app

Install the Lyve Client app on a Windows or Mac computer connected to the management network. Links to the installer can be found on Lyve Management Portal:

1. Log in to lyve.seagate.com.
2. On the Home page, click **Downloads**.
3. At the prompt, click **Download** for either Windows® or macOS®.
4. Go to the folder where you receive downloads and open the installer.
5. Follow the onscreen instructions to complete the setup and open Lyve Client.

You can also download Lyve Client installers from the support page at www.seagate.com/support/lyve-client.

Unlock the device

Open the Lyve Client app.



Important—The status indicator for detecting devices may run for a few minutes while Lyve Client discovers Lyve Mobile Array.

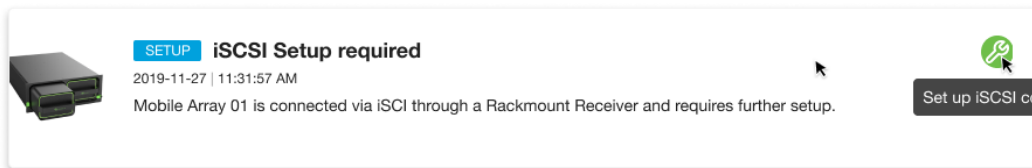
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Once Lyve Client has validated permissions for the device connected to the computer, the LED on the device turns solid green. The device is unlocked and ready for use.

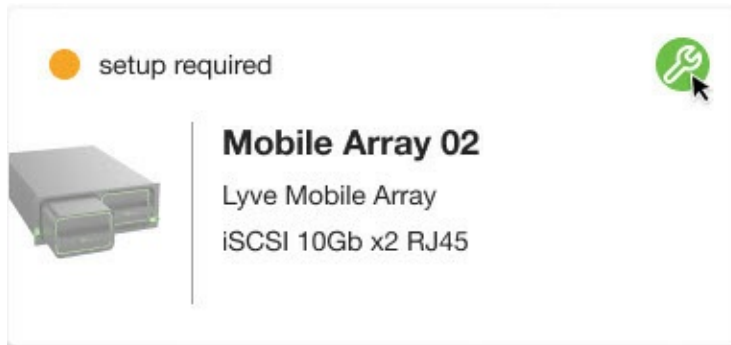
Set up iSCSI

1. The iSCSI setup sequence can be initiated from the Activity or Devices screen. In the Lyve Client app, click on the **Activity** or **Devices** tab.

Activity—An iSCSI Setup notification informs you that a setup is required.



Devices—The status indicator on the Device card informs you that a setup is required.



2. Locate the card indicating the Lyve Mobile Array connected to the Rackmount Receiver's iSCSI ports. Click on the Setup icon.



If you need to update an iSCSI connection that was set up previously, go to the **Devices** tab and click on the Setup icon for 'Data Connections'.

4. The port indices listed in the dialog match the port labels on the iSCSI FRAM on the back of Rackmount Receiver. Enter the IP address, subnet mask, and default gateway for each port.

Configure iSCSI connections ✕

Each iSCSI port requires a valid IP address, subnet mask and default gateway. Enter this information for each of the ports in use. Advanced settings apply to all ports on this device.

Mobile Array 01 Lyve Mobile Array Switch to IPv6

Port	IPv4 Address	Subnet mask	Default gateway
0	<input style="width: 90%;" type="text" value="Enter address"/>	<input style="width: 90%;" type="text" value="Enter address"/>	<input style="width: 90%;" type="text" value="Enter address"/>
1	<input style="width: 90%;" type="text" value="Enter address"/>	<input style="width: 90%;" type="text" value="Enter address"/>	<input style="width: 90%;" type="text" value="Enter address"/>

Advanced Settings ⓘ

Enable Jumbo Frames

Enable CHAP (Challenge Handshake Authentication Protocol)

Enable iSNS (Internet Storage Name Service)



Lyve Client will only accept numerals and decimals in accordance with IP addressing conventions and will remove invalid characters (alphabetical characters, spaces, and symbols). **Lyve Client will report invalid IP addresses if an octet value entry:**

- Exceeds a permitted range (for example, entering a value greater than 256).
- Results in IP address/default gateway addressing inconsistencies not permitted by the defined subnet mask.
- Results in ports with identical IP addresses.

5. Click **Apply**.

Configure iSCSI initiator/target(s) on the host side



For reference, see the following:

- [Ubuntu documentation](#)
- [Debian documentation](#)

Enable iSCSI upon startup

1. On the Linux station, open a terminal session.
2. To enable iSCSI, enter the following:

```
sudo apt install open-iscsi
```

```
sudo systemctl enable open-iscsi
sudo systemctl enable iscsid
```

3. To edit the file `/etc/iscsi/iscsid.conf`, enter the following:

```
sudo vi /etc/iscsi/iscsid.conf
```

4. Make `node.startup` automatic with the following edits:

- Delete the `#` character before `node.startup=automatic`
- Insert a `#` character before `node.startup=manual`

5. Save and close `/etc/iscsi/iscsid.conf`.

Discover and map the initiator to the target

1. To discover the iSCSI data port on Rackmount Receiver, enter the following:

```
sudo iscsiadm -m discovery -t st -p IP address
```

where `IP address` is one of the IP addresses on the Rackmount Receiver iSCSI data network, for example:

```
sudo iscsiadm -m discovery -t st -p 192.168.99.100
```

Example output

```
192.168.99.100:3260,1 iqn.1995-03.com.dothill:01.array.000000000000-00000000.a
192.168.99.101:3260,2 iqn.1995-03.com.dothill:01.array.000000000000-00000000.a
```

2. To specify the target, enter the following:

```
sudo iscsiadm -m node -T IQN -p IP address:port -l
```

where `IQN` is an iSCSI qualified name, `IP address` is a specific Rackmount Receiver data port IP address, and `port` is 3260. For example:

```
sudo iscsiadm -m node -T iqn.1995-
03.com.dothill:01.array.000000000000-00000000.a -p
192.168.99.100:3260 -l
```

Both IQN and port can be found in the output from the previous discovery command.

The default port value must be 3260.

Example output

```
Logging in to [iface: default, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.100,3260] (multiple)
```

```
Login to [iface: default, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.100,3260] successful.
```

3. On the Windows or Mac computer connected to the management network, quit and restart the Lyve Client app.



Important—Lyve Client maps the initiator to the volume after it is relaunched. There may be a few minutes of delay while the mapping is completed.

Configure the iSCSI initiator

1. On the Linux station, configure the iSCSI Initiator by entering the following:

```
sudo iscsiadm --mode node --target IQN --portal IP address:port -n discovery.sendtargets.use_discoveryd -v Yes
```

```
sudo iscsiadm --mode node --target IQN --portal IP address:port -n discovery.sendtargets.discoveryd_poll_inval -v 30
```

where **IQN** is an iSCSI qualified name, **IP address** is a specific Rackmount Receiver data port IP address, and **port** is 3260. For example:

```
sudo iscsiadm --mode node --target iqn.1995-03.com.dothill:01.array.000000000000-00000000.a --portal 192.168.99.100:3260 -n discovery.sendtargets.use_discoveryd -v Yes
```

```
sudo iscsiadm --mode node --target iqn.1995-03.com.dothill:01.array.000000000000-00000000.a --portal 192.168.99.100:3260 -n discovery.sendtargets.discoveryd_poll_inval -v 30
```

2. Log out of the session by entering the following:

```
sudo iscsiadm -m node -T IQN -p IP address:port -u
```

where **IQN** is an iSCSI qualified name, **IP address** is a specific Rackmount Receiver data port

IP address, and `port` is 3260. For example:

```
sudo iscsiadm -m node -T iqn.1995-03.com.dothill:01.array.000000000000-00000000.a -p 192.168.99.100:3260 -u
```

Example output

```
Logging out of session [sid: 1, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.100,3260]
```

```
Logout of [sid: 1, target: iqn.1995-03.com.dothill:01.array.000000000000-00000000.a, portal: 192.168.99.100,3260] successful.
```

3. Log in to each Rackmount Receiver target by entering the following:

```
sudo iscsiadm -m node -T IQN -p IP address:port -l
```

where `IQN` is an iSCSI qualified name, `IP address` is a specific Rackmount Receiver data port IP address, and `port` is 3260. For example:

```
sudo iscsiadm -m node -T iqn.1995-03.com.dothill:01.array.000000000000-00000000.a -p 192.168.99.100:3260 -l
```

Format and mount the disk

- If no GUI has been enabled for your Linux system, see [Manual formatting](#).
- If a GUI is enabled for your Linux station, see [Formatting using a GUI](#).

Manual formatting

Obtain device details

1. Using the terminal, create a subfolder by entering the following:

```
sudo mkdir /mnt/SEAGATE
```

2. List block device details by entering the following:

```
sudo blkid
```

Example output

```
/dev/nvme0n1p1: UUID="40AA-21FC" TYPE="vfat" PARTUUID="e97d9f0d-c95d-4afd-a790-8abc41474070"

/dev/nvme0n1p2: UUID="769fcf3e-1886-4cbb-b1f3-23745d390c96" TYPE="ext4"
PARTUUID="8f8edcee-3f56-411a-a227-2bba1463bc25"

/dev/nvme0n1p3: UUID="Z5wnnv-zSCu-cGD0-9ffc-37n1-1cKE-4usCIb" TYPE="LVM2_member"
PARTUUID="b8f4bd59-c296-4e4d-9ad0-fc4cbb98a69f"

/dev/mapper/ubuntu--vg-ubuntu--lv: UUID="882c9573-ea5e-4b8f-bb54-1aec9b1e8dea"
TYPE="ext4"

/dev/loop0: TYPE="squashfs"

/dev/loop1: TYPE="squashfs"

/dev/loop2: TYPE="squashfs"

/dev/sdc2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sdb2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/mapper/mpatha-part2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic
data partition" PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sde2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sdd2: LABEL="LYVE" UUID="22A6-E95E" TYPE="exfat" PARTLABEL="Basic data partition"
PARTUUID="522a0547-f77f-4679-ae8a-2ded5b651f65"

/dev/sdc1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/sdb1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/mapper/mpatha-part1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/mapper/mpatha: PTUUID="25a51dc7-9ffc-4000-b1dd-e7b9bd81a375" PTTYPER="gpt"

/dev/sde1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"

/dev/sdd1: PARTLABEL="Microsoft reserved partition" PARTUUID="78b2177e-c5a1-4b1f-8db3-6350ae11f05a"
```

Format the disk for Linux

1. Format the disk for Linux by entering the following:

```
sudo mkfs.ext4 -L LYVE /dev/disk/by-uuid/unique ID
```

where **unique ID** is the UUID for the Lyve disk listed in the blkid output, for example:

```
sudo mkfs.ext4 -L LYVE /dev/disk/by-uuid/22A6-E95E
```

Example output

```
Creating filesystem with 23413075456 4k blocks and 1463318528 inodes
```

```
Filesystem UUID: b2fc70de-a95e-43ef-9008-c8ec4a5a12c6
```

```
Superblock backups stored on blocks:
```

```
32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208, 4096000,  
7962624, 11239424, 20480000, 23887872, 71663616, 78675968, 102400000, 214990848,  
512000000, 550731776, 644972544, 1934917632, 2560000000, 3855122432, 5804752896,  
12800000000, 17414258688
```

```
Allocating group tables: 0/714511 658404/714511 done
```

```
Writing inode tables: 0/714511 done
```

```
Creating journal (262144 blocks): done
```

```
Writing superblocks and filesystem accounting information: 0/714511 28/714511 done
```

2. Be sure to note the file system UUID, for example, b2fc70de-a95e-43ef-9008-c8ec4a5a12c6.

Edit the file system table

1. Edit `/etc/fstab`, for example:

```
sudo vi /etc/fstab
```

2. Add a comment to identify the disk, for example:

```
# SEAGATE iSCSI device
```

3. Add a line for the new disk UUID by entering the following:

```
/dev/disk/by-uuid/unique ID /mnt/SEAGATE ext4 _netdev 0 1
```

where **unique ID** is the UUID for the Lyve disk listed in the blkid output, for example:

```
/dev/disk/by-uuid/b2fc70de-a95e-43ef-9008-c8ec4a5a12c6 /mnt/SEAGATE  
ext4 _netdev 0 1
```

Mount the drive

Mount the drive by entering the following:

```
sudo mount -a
```

Formatting using a GUI

1. On the Linux station, open the Disks application.
2. Select the Lyve disk and format it.
3. Mount the Lyve disk.
4. (Optional) The disk is available to the current user only. If you want to enable the disk for all users, edit mount options and disable User Session Defaults.
5. Set user permissions as needed.

Change mode of access

Assign access permissions by entering the following:

```
sudo chmod permission /mnt/SEAGATE
```

where `permission` is the desired chmod setting in absolute or symbolic mode, for example:

```
sudo chmod 777 /mnt/SEAGATE
```

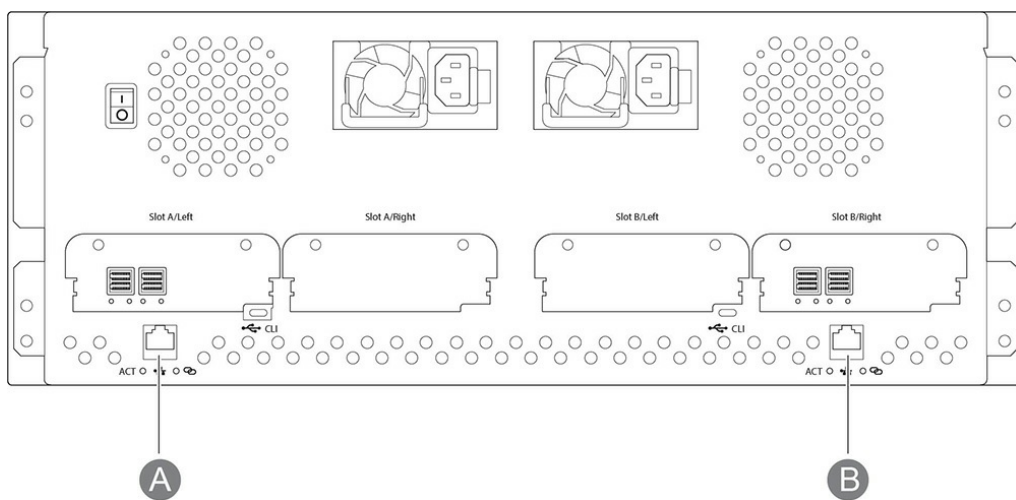

SAS Network Setup for Windows

Requirements

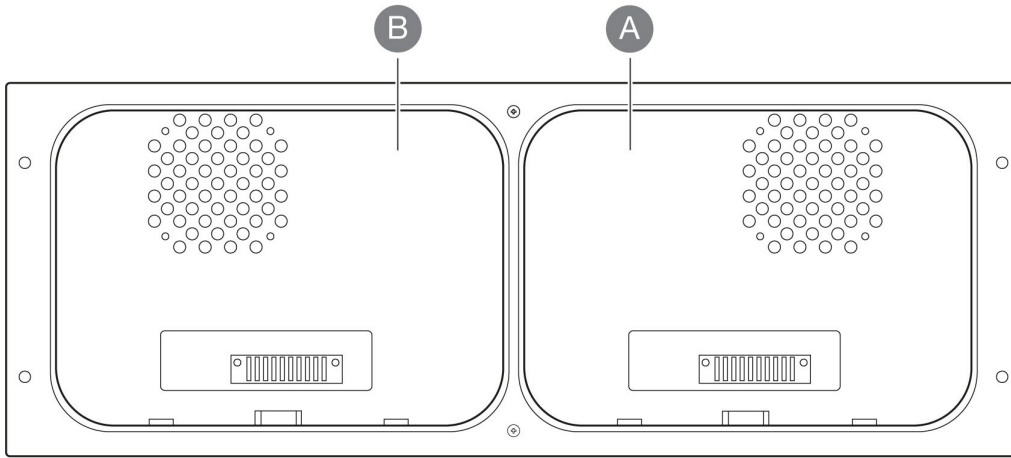
The Lyve Client app is required to authorize a host computer to access Lyve Mobile Array and compatible devices. Download the Lyve Client installer for Windows and macOS at www.seagate.com/support/lyve-client and install it on the server. For more information, see the [Lyve Client Software user manual](#).

SAS initial setup on the host side

1. Connect an Ethernet cable to Ethernet management port A or B on Lyve Mobile Rackmount Receiver.



2. Connect SAS cables to the server. Connect the other ends to SAS ports connected to slot A or B on Lyve Mobile Rackmount Receiver.
3. Insert Lyve Mobile Array into slot A or B on Lyve Mobile Rackmount Receiver. Be sure to select the correct slot for the SAS connections behind Rackmount Receiver.



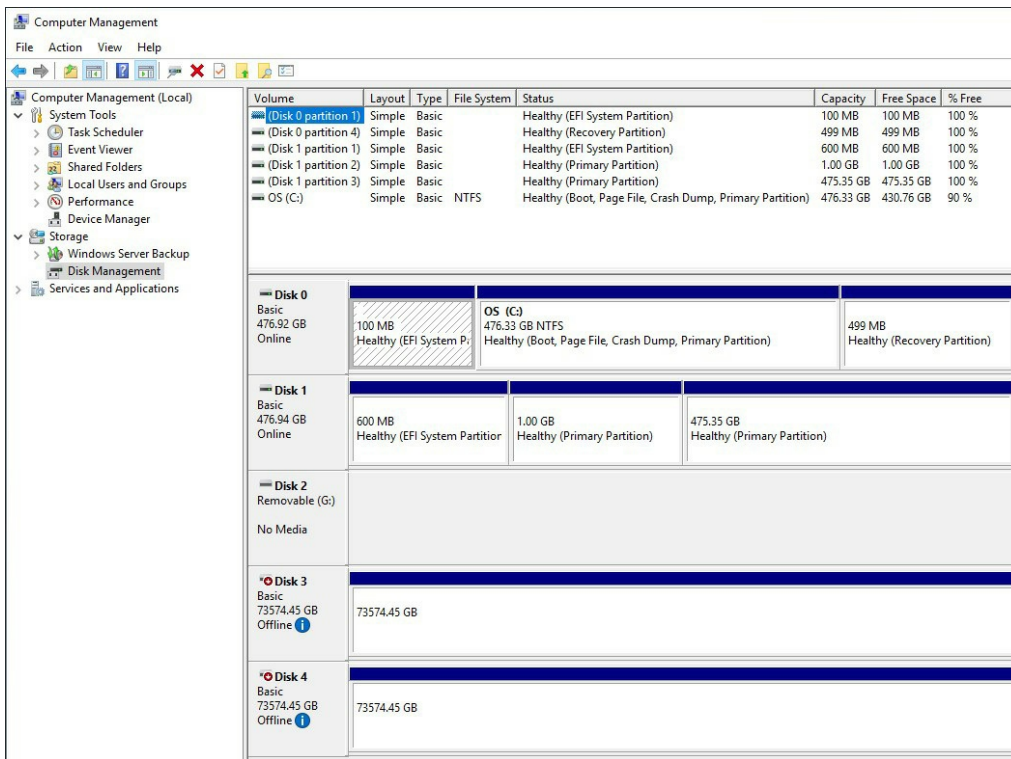
4. Open Lyve Client. You may be prompted to unlock Lyve Mobile Array if this is the first connection to the host.
5. Click the **Devices** tab.
6. Click on the Mobile Array card with the **Rackmount Receiver » SAS** connection.

Lyve Client automatically completes your SAS connection configuration.

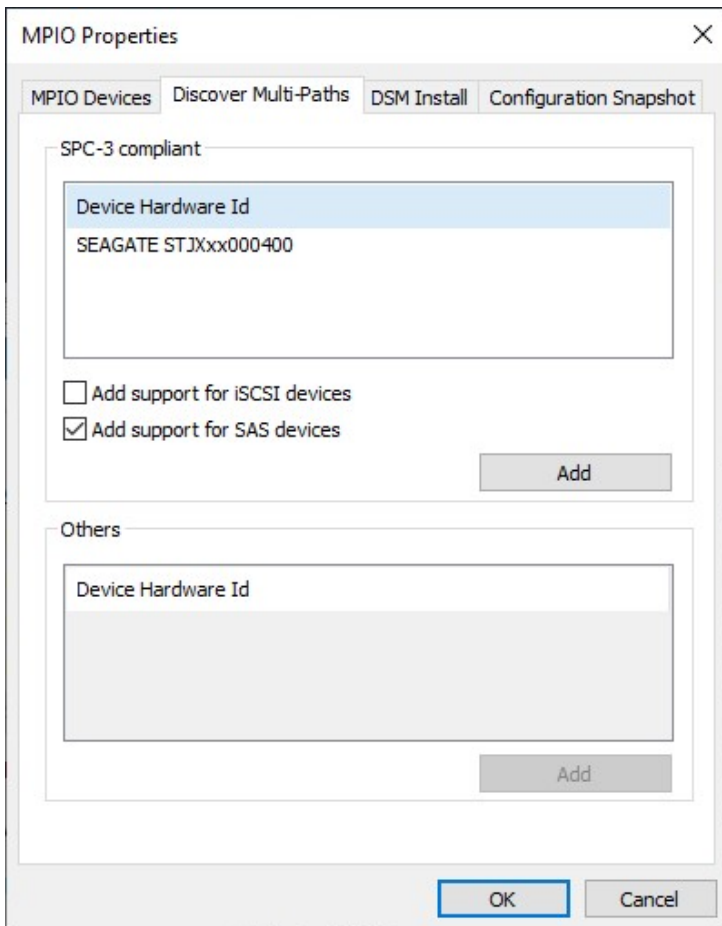
Manual SAS Setup

Typically, Lyve Client will configure SAS connections for Mobile Array devices in Mobile Rackmount Receivers. If an SAS connection must be manually configured, refer to the following instructions.

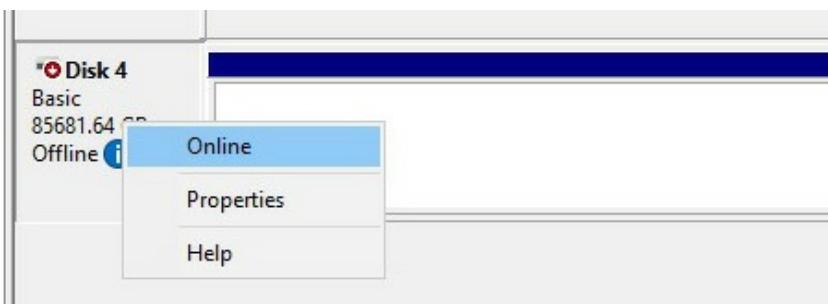
1. Open Server Manager.
2. Open Computer Management.
3. Select **Disk Management**.
4. If more than one **Offline** drive exists, continue steps 5-9. If there's only a single **Offline** drive, go to step 10.



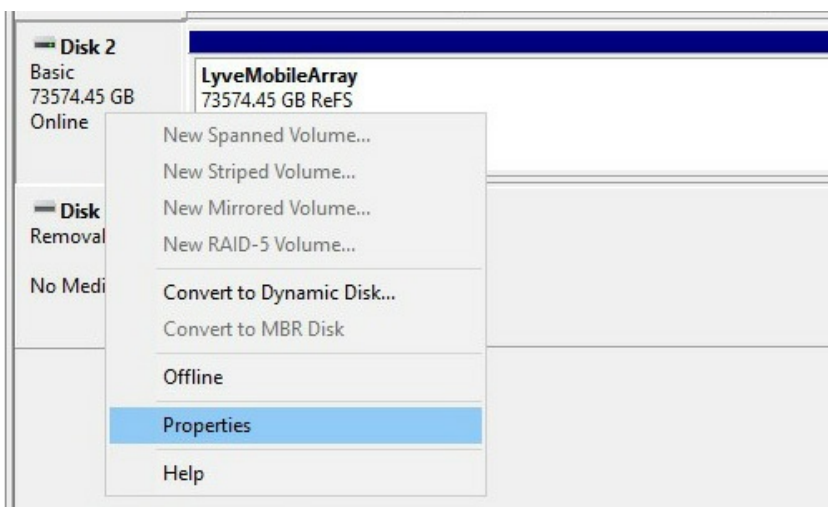
5. Open the Server Manager and install **Multipath I/O (MPIO)**.
6. Open MPIO.
7. Click on the **Discover Multi-Paths** tab.
8. Check **Add support for SAS devices** and click **Add**.



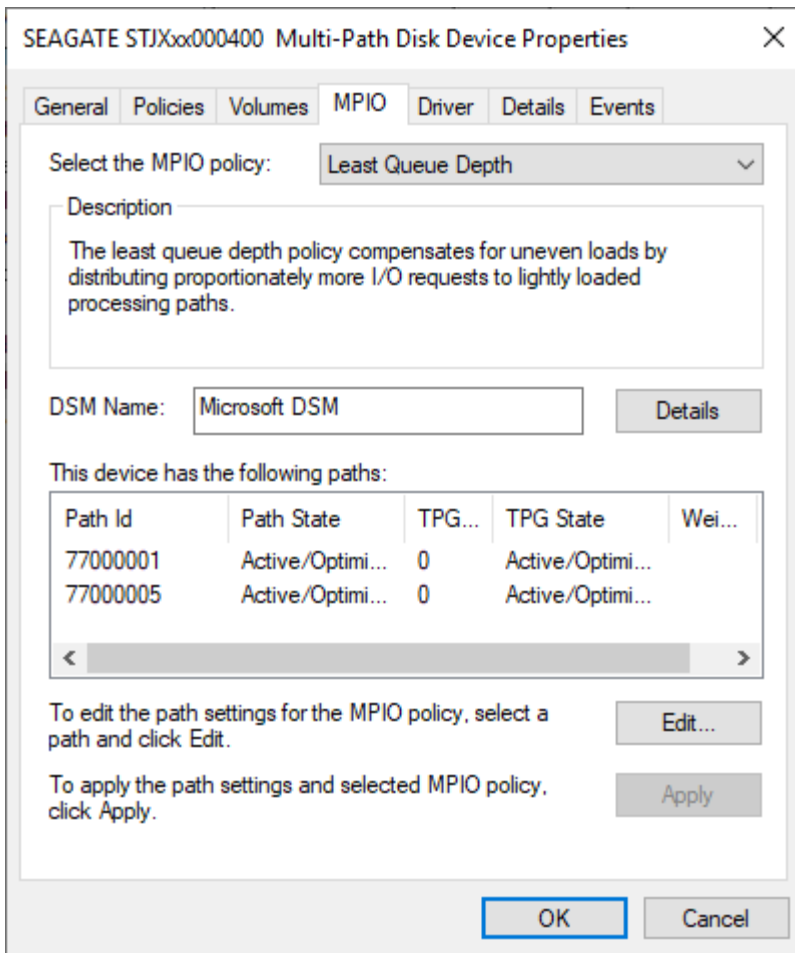
9. Reboot the server.
10. Open Disk Management.
11. Right-click the Lyve Mobile Array disk marked **Offline** and select **Online**.



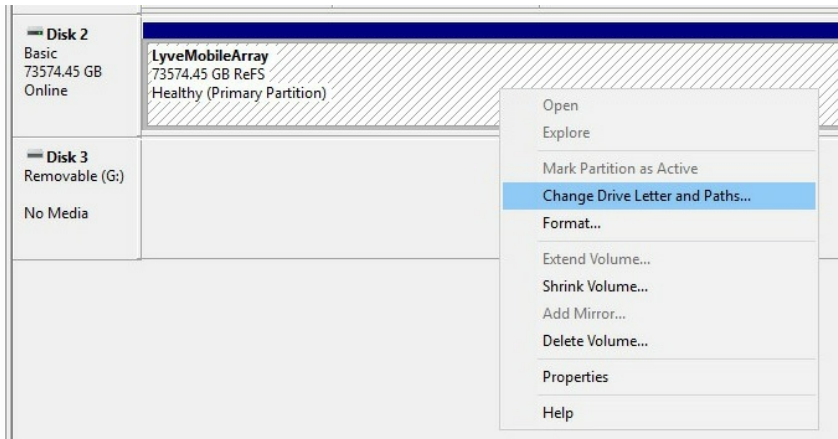
12. If MPIO is enabled, right-click the Lyve Mobile Array disk and select **Properties**. If it is not enabled, go to step 15.



13. Click on the **MPIO** tab.
14. Select your preferred MPIO policy.



15. Right-click on the Lyve Mobile Array volume and select **Change Drive Letters and Paths...**



16. Click **Add** and select your preferred letter.

Regulatory Compliance

Product Name	Seagate Lyve Mobile Rackmount Receiver
Regulatory Model Number	SMAP001

FCC DECLARATION OF CONFORMANCE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CLASS A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

China RoHS



China RoHS 2 refers to the Ministry of Industry and Information Technology Order No. 32, effective July 1, 2016, titled Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products. To comply with China RoHS 2, we determined this product's Environmental Protection Use Period (EPUP) to be 20 years in accordance with the Marking for the Restricted Use of Hazardous Substances in Electronic and Electrical Products, SJT 11364-2014.

中国 RoHS 2 是指 2016 年 7 月 1 日起施行的工业和信息化部令第 32 号“电力电子产品限制使用有害物质管理办法”。为了符合中国 RoHS 2 的要求，我们根据“电子电气产品有害物质限制使用标识”(SJT 11364-2014) 确定本产品的环保使用期 (EPUP) 为 20 年。

部件名称 Part Name	有害物质 Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr ⁺⁶)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
外接硬盘印刷电路板 Bridge PCBA	X	O	O	O	O	O
电源（如果提供） Power Supply (if provided)	X	O	O	O	O	O
接口电缆（如果提供） Interface cable (if provided)	X	O	O	O	O	O
其他外壳组件 Other enclosure components	O	O	O	O	O	O

本表格依据 SJ/T 11364 的规定编制。

This table is prepared in accordance with the provisions of SJ/T 11364-2014

O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T26572.

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

Taiwan RoHS

Taiwan RoHS refers to the Taiwan Bureau of Standards, Metrology and Inspection's (BSMI's) requirements in standard CNS 15663, Guidance to reduction of the restricted chemical substances in electrical and electronic equipment. Beginning on January 1, 2018, Seagate products must comply with the "Marking of presence" requirements in Section 5 of CNS 15663. This product is Taiwan RoHS compliant. The following table meets the Section 5 "Marking of presence" requirements.

台灣RoHS是指台灣標準局計量檢驗局(BSMI)對標準CNS15663要求的減排電子電氣設備限用化學物質指引。從2018年1月1日起，Seagate產品必須符合CNS15663第5節「含有標示」要求。本產品符合台灣RoHS。下表符合第5節「含有標示」要求。

產品名稱:磁盤陣列擴展塢,型號:SMAP001		Product Name: Lyve Mobile Rackmount Receiver, Model: SMAP001				
單元 Unit	限用物質及其化學符號			Restricted Substance and its chemical symbol		
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr ⁶⁺)	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
外接硬盤印刷電路板 Bridge PCBA	—	○	○	○	○	○
電源 (如果提供) Power Supply (if provided)	—	○	○	○	○	○
傳輸線材 (如果提供) Interface cable (if provided)	—	○	○	○	○	○
其他外殼組件 Other enclosure components	○	○	○	○	○	○

備考 1. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。
 Note 1. “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考 2. “—” 係指該項限用物質為排除項目。
 Note 2. “—” indicates that the restricted substance corresponds to the exemption.

額定電壓/額定電流: 100-240VDC/9.4-4.72A (x2) 操作溫度: 5-40 °C

