



## Lyve Mobile Rackmount Receiver Manual de usuario

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Haga clic aquí para acceder a una versión en línea actualizada de este documento. También encontrará el contenido más reciente, así como ilustraciones desplegadas, navegación sencilla y funciones de búsqueda.

# Contents

<b>1</b>	<b>Le damos la bienvenida</b>	<b>6</b>
	Contenido de la caja	6
	Especificaciones	6
	• Dimensiones	6
	• Peso	6
	• Electricidad	6
	Vistas	7
	• Vista frontal	7
	• (Vista posterior)	7
<b>2</b>	<b>Requisitos de configuración</b>	<b>10</b>
	Credenciales del Lyve Management Portal	10
	Descargar Lyve Client	10
	Habilitar los ordenadores host	10
	Configuración del servidor de Windows	11
<b>3</b>	<b>Kit del Rackmount</b>	<b>12</b>
	Lista de las partes	12
	Diagrama de las partes	13
	Lyve Mobile Rackmount Receiver	14
<b>4</b>	<b>Montaje en el bastidor</b>	<b>15</b>
	Paso 1 - Fije los tornillos M4 del bastidor a los raíles frontales	15
	Paso 2 - Fije los tornillos M4 del fijados a los raíles traseros	15
	Paso 3 - Fije las tuercas enjauladas al bastidor	16
	Paso 4 - Fije los raíles frontales a los raíles traseros	17
	Paso 5 - Fije los raíles a la parte frontal del bastidor	17
	Paso 6 - Fije los raíles traseros a la parte trasera del bastidor	18
	Paso 7 - Apriete las conexiones de los raíles	19
	Paso 8 - Instale el Lyve Mobile Rackmount Receiver	20
	Distancia recomendada	21
<b>5</b>	<b>Montaje del cierre independiente</b>	<b>23</b>
	Fijación del cierre	23
<b>6</b>	<b>Conexiones de datos</b>	<b>24</b>
	Conexión a las interfaces host	24
	• Cable óptico de fibra	24

• Cable Ethernet .....	24
• Cable SAS .....	25
<b>7 Conexiones de alimentación .....</b>	<b>26</b>
Fije el cable de alimentación. ....	26
<b>8 Conexiones del dispositivo .....</b>	<b>28</b>
Conecte el puerto Ethernet .....	28
Conectar el Lyve Mobile Array de Seagate .....	28
Enciéndalo .....	30
Desbloquee el dispositivo .....	31
Extraer un dispositivo de forma segura .....	32
<b>9 FC Network Setup for Windows .....</b>	<b>33</b>
Requirements .....	33
FC initial setup on the host side .....	33
• Manual FC Setup .....	34
<b>10 iSCSI Network Setup for Windows .....</b>	<b>38</b>
Requirements .....	38
• Hardware .....	38
• Host connection .....	38
• Target connection .....	39
• Software .....	39
• Network protocols .....	39
• Service Location Protocol (SLP) .....	39
Setup overview .....	39
Pre-setup .....	40
Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports .....	41
• Managing CHAP records in Lyve Client .....	43
• Designating iSNS servers in Lyve Client .....	43
Set up the iSCSI initiator/target(s) .....	44
• Specify iSCSI initiator .....	44
• Specify iSCSI target(s) .....	44
Map the iSCSI initiator to the iSCSI target .....	45
Alternative methods for device detection .....	46
• Method 1: Direct connection .....	46
• Method 2: Add device manually .....	46
• Obtain device connection details with OpenSLP .....	46
• Obtain device detection details with arp .....	47
• Add the device in Lyve Client .....	47
(Optional) Manual disk management instructions .....	48
• Setting the volume to 'online' .....	48
• Reassigning drive letter .....	48

• Formatting the drive .....	49
------------------------------	----

## **11 iSCSI Network Setup for Linux (RHEL/CentOS 8) ..... 51**

<b>Requirements</b> .....	<b>51</b>
• Network Components .....	51
• IP addresses .....	51
• Hardware .....	52
• Host connection .....	52
• Target connection .....	52
• Software .....	53
• Network protocols .....	53
• Service Location Protocol (SLP) .....	53
<b>Pre-Setup</b> .....	<b>53</b>
<b>Multipath Input/Output setup on the host side</b> .....	<b>54</b>
<b>Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports</b> .....	<b>55</b>
• Install Lyve Client Software app .....	55
• Unlock the device .....	55
• Set up iSCSI .....	55
<b>Configure iSCSI Initiator/target(s) on the host side</b> .....	<b>57</b>
• Map the initiator to the target .....	57
<b>Format and mount the disk</b> .....	<b>59</b>
• Manual formatting .....	59
• Obtain device details .....	59
• Format the disk for Linux .....	61
• Edit the file system table .....	61
• Mount the drive .....	62
• Formatting using a GUI .....	62
<b>Change mode of access</b> .....	<b>62</b>
<b>Troubleshooting</b> .....	<b>62</b>

## **12 iSCSI Network Setup for Linux (Ubuntu/Debian) ..... 64**

<b>Requirements</b> .....	<b>64</b>
• Network Components .....	64
• IP addresses .....	64
• Hardware .....	65
• Host connection .....	65
• Target connection .....	65
• Software .....	66
• Network protocols .....	66
• Service Location Protocol (SLP) .....	66
<b>Pre-Setup</b> .....	<b>66</b>
<b>Multipath Input/Output on the host side</b> .....	<b>67</b>
<b>Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports</b> .....	<b>68</b>
• Install Lyve Client Software app .....	68
• Unlock the device .....	68
• Set up iSCSI .....	68
<b>Configure iSCSI initiator/target(s) on the host side</b> .....	<b>70</b>



- Enable iSCSI upon startup ..... 70
- Discover and map the initiator to the target ..... 71
- Configure the iSCSI initiator ..... 72
- Format and mount the disk ..... 73**
- Manual formatting ..... 73
  - Obtain device details ..... 73
  - Format the disk for Linux ..... 74
  - Edit the file system table ..... 75
  - Mount the drive ..... 76
- Formatting using a GUI ..... 76
- Change mode of access ..... 76

### **13 .SAS Network Setup for Windows ..... 77**

- Requirements ..... 77
- SAS initial setup on the host side ..... 77
- Manual SAS Setup ..... 78

### **14 .Regulatory Compliance ..... 82**

- FCC DECLARATION OF CONFORMANCE ..... 82
- CLASS A ..... 82
- China RoHS ..... 82
- Taiwan RoHS ..... 83

# Le damos la bienvenida

Lyve™ Mobile Rackmount Receiver de Seagate® facilita la ingestión rápida de transportar contenido directamente a un centro de red.

## Contenido de la caja

- Lyve Mobile Rackmount Receiver
- Cable de alimentación 1,8 m (4: US, UK, EU, AU/NZ)
- Caja de accesorios del kit de raíles
- Caja de accesorios del kit de seguros frontales
- Cierre de cremallera/seguro del cable de alimentación (x2)
- Guía de inicio rápido

## Especificaciones

### Dimensiones

Lado	Dimensiones (pulg./mm)
Largo	482,6 mm/19 pulg.
Ancho	117,8 mm/4,638 pulg.
Profundidad	624,78 mm/24,598 pulg.

### Peso

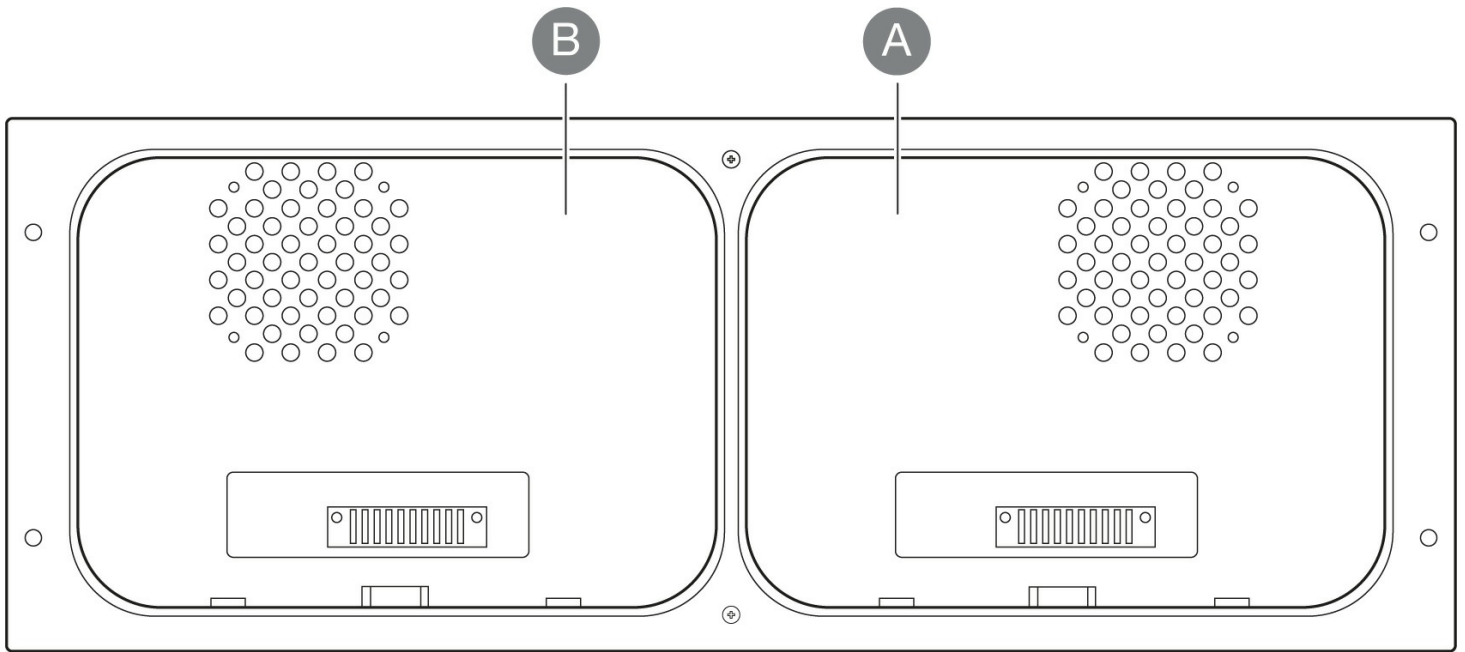
Pieza	Peso (lb/kg)
Mobile Rackmount Receiver	391,076 kg/862,174 lb

### Electricidad

Adaptador de alimentación, Base CA/CC con entrada: 100~240 V/9,4 A, salida: 12 V/65 A

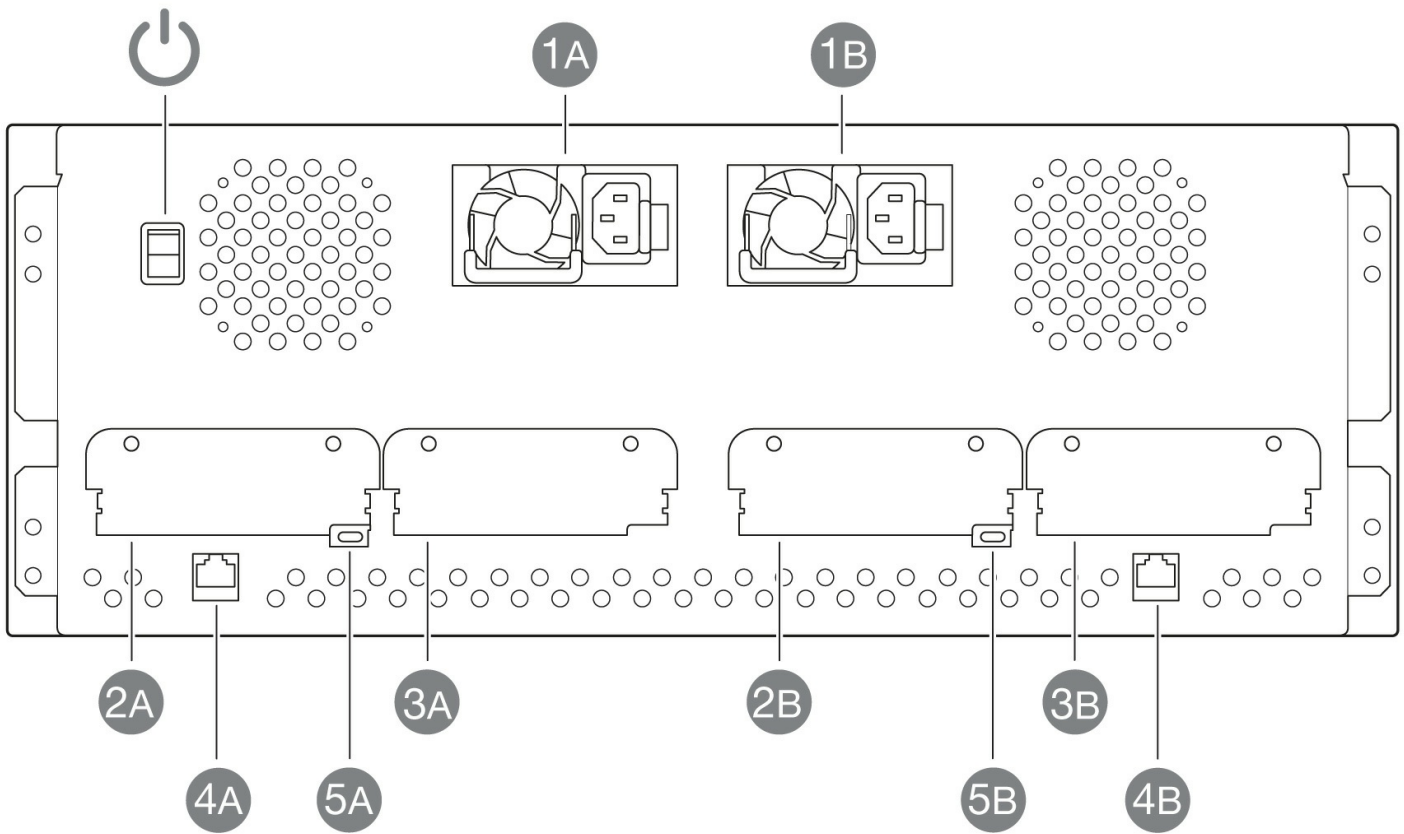
# Vistas


## Vista frontal



Clave	E/S	Descripción
A	Ranura A	Ranura para un dispositivo compatible.
B	Ranura B	Ranura para un dispositivo compatible.

## (Vista posterior)



Clave	E/S	Descripción
	Interrupor de encendido	Programación de encendido y apagado
1A B	Entra de alimentación - A Entrada de alimentación - B	Unidades de fuente de alimentación redundantes. Cada unidad por sí misma es capaz de proporcionar alimentación al Lyve Mobile Rackmount Receiver y a los dispositivos instalados. Consulte <a href="#">Conexiones de alimentación</a> .
2A	Ranura A / Izquierda	Conexión de datos para dispositivos en la ranura A. Consulte <a href="#">Conexiones de datos</a> .
3A	Ranura A / Derecha	Interfaz host para ampliaciones futuras. No disponible en todos los modelos.
A	Puerto de gestión Ethernet - A	Conexión Ethernet para dispositivo en la ranura A. No se debe usar para transferencias de datos.
5A	Puerto de gestión CLI - A	Puerto de la interfaz de línea de comandos para dispositivos en la ranura A. Solo para mantenimiento. No se debe usar para transferencias de datos.
B	Ranura B / Izquierda	Interfaz host para ampliaciones futuras. No disponible en todos los modelos.

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<b>B</b>	<b>Ranura B / Derecha</b>	Conexión de datos para dispositivos en la ranura B. Consulte <a href="#">Conexiones de datos</a> .
<b>B</b>	<b>Puerto de gestión Ethernet - B</b>	Conexión de Ethernet para dispositivo en ranura B. No se debe usar para transferencias de datos.
<b>B</b>	<b>Puerto de gestión CLI - B</b>	Puerto de la interfaz de línea de comandos para dispositivos en la ranura B. Solo para mantenimiento. No se debe usar para transferencias de datos.

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# Requisitos de configuración

Los dispositivos Lyve Mobile se desbloquean y se puede acceder a ellos usando la aplicación Lyve Client. Procure que el Lyve Client se haya instalado en el ordenador host y que haya validado sus credenciales Lyve Management Portal. Consulte las siguientes instrucciones.

## Credenciales del Lyve Management Portal

Se necesita un nombre de usuario y una contraseña del Lyve Management Portal para permitir que los ordenadores accedan a los dispositivos insertados en el PCIe Adapter.

**Administrador de la cuenta:** usted creó unas credenciales en el Lyve Management Portal cuando configuró su cuenta de Lyve en [lyve.seagate.com](https://lyve.seagate.com).

**Administrador del producto o usuario del producto:** usted se identificó como usuario del producto para un proyecto creado en el Lyve Management Portal. Recibió un correo electrónico del equipo de Lyve, el cual contenía un enlace para resetear su contraseña.

Si no recuerda sus credenciales o si perdió la invitación que recibió en el correo electrónico, consulte [lyve.seagate.com](https://lyve.seagate.com). Haga clic en **Sign in** (Iniciar sesión) y después haga clic en la opción "**Don't remember your password?**" (**¿No recuerda su contraseña?**). enlace. Si su correo electrónico no es reconocido, póngase en contacto con su administrador de la cuenta. Para recibir asistencia adicional, póngase en contacto con servicio al cliente a través del chat de asistencia virtual de Lyve.

Para desbloquear y acceder a los dispositivos de Lyve conectados a su ordenador, deberá introducir sus credenciales en la aplicación Lyve Client. Instale Lyve Client en cualquier ordenador destinado a conectarse a los dispositivos insertados en el Lyve Rackmount Receiver. Consulte los detalles a continuación.

## Descargar Lyve Client

La aplicación Lyve Client se necesita para autorizar al ordenador host el acceso a Lyve Mobile Array y los dispositivos compatibles. Usted también podrá utilizarla para administrar los proyectos y las operaciones de datos de Lyve. Descargue el instalador de Lyve Client para Windows o macOS en [www.seagate.com/support/lyve-client](https://www.seagate.com/support/lyve-client).

## Habilitar los ordenadores host

Es necesario que tenga una conexión a Internet cuando vaya a habilitar un ordenador host.

1. Abra Lyve Client en un ordenador destinado a alojar Lyve Mobile Array.
2. Cuando se le indique, introduzca su usuario y contraseña del Lyve Management Portal.

Lyve Client habilita el ordenador host para que desbloquee y acceda a los dispositivos de Lyve y para que administre los proyectos del Lyve Management Portal.

La autorización del ordenador host permanecerá vigente durante 30 días, tiempo en el que podrá desbloquear y acceder a los dispositivos que estén conectados sin necesidad de tener una conexión a Internet. Después de 30 días deberá abrir Lyve Client en el ordenador y volver a ingresar sus credenciales.














Los dispositivos Lyve se bloquean cuando se apagan, se expulsan o se desconectan del ordenador host, o cuando el ordenador host está en modo de suspensión. Se necesita el Lyve Client para desbloquear el Lyve Mobile Array cuando vaya a volver a conectarlo al host o cuando el host haya salido del modo de suspensión. El Lyve Client solo puede desbloquear un dispositivo cuando el ordenador host está autorizado usando las credenciales Lyve Management Portal.

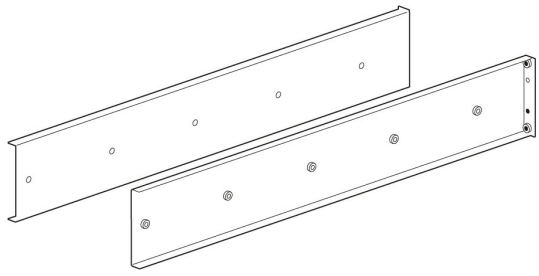
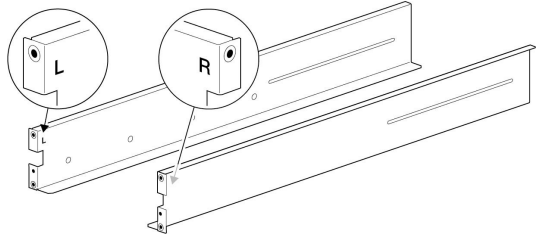
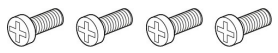
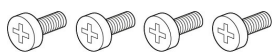
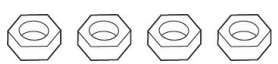

## Configuración del servidor de Windows

Para obtener información relacionada con la configuración de la conectividad a la red de datos mediante SAS, canal de fibra o iSCSI, consulte [Configuración del servidor de Windows](#).

# Kit del Rackmount

## Lista de las partes

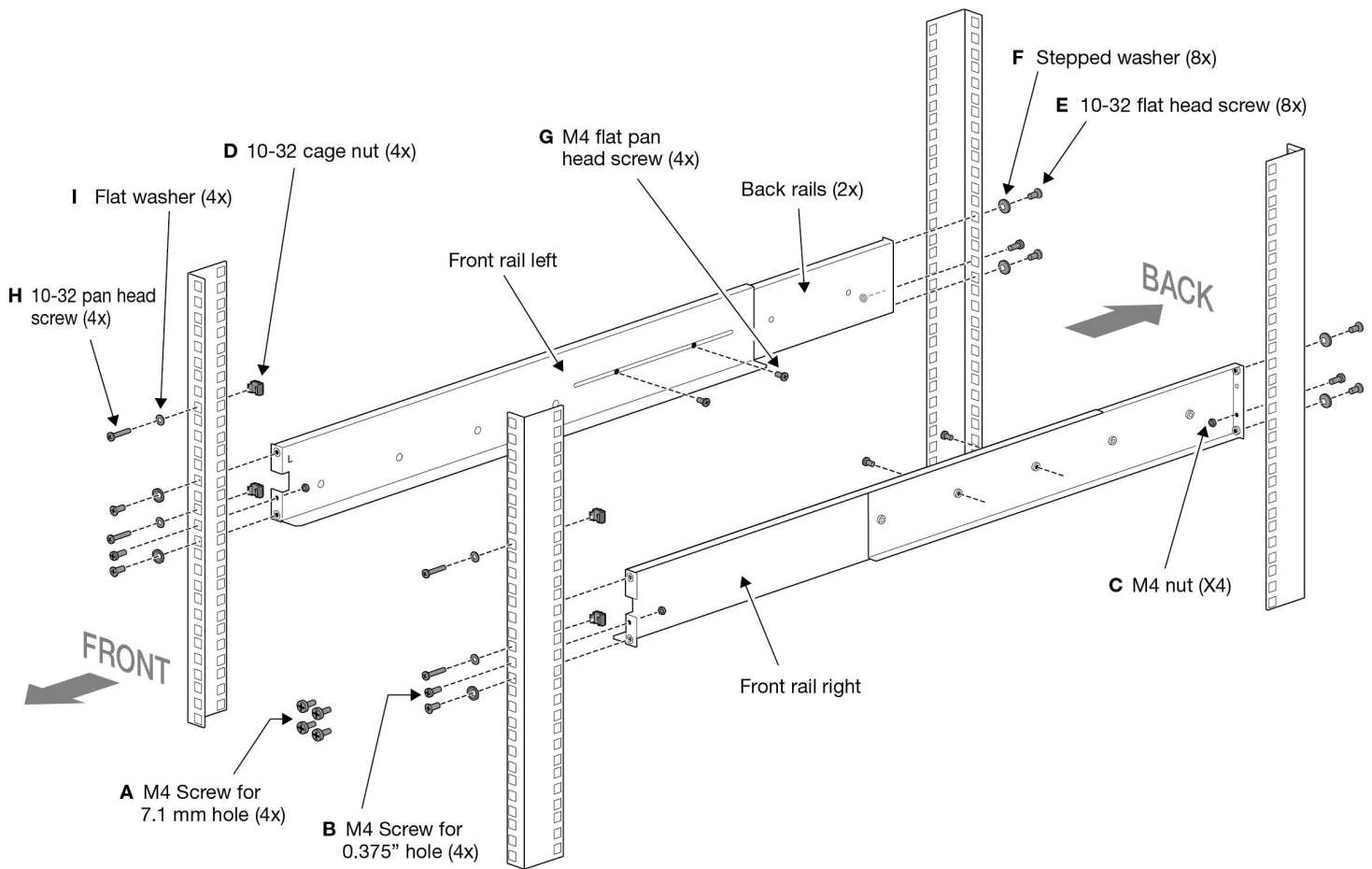
A	B	C	D	E	F	G	H	I	J	K
										

Paquete	Imagen	Nombre	Cantidad	Notas
		Raíles traseros	2	
		Raíles frontales (izquierdo y derecho)	1 izquierdo 1 derecho	
A		Tornillo M4 para agujero de 7,1 mm	4	Tornillo Phillips M4 x L10 (6,8, 2,5)
B		Tornillo M4 para agujero de 0,375"	4	Tornillo Phillips M4 x L10 (9,1, 2,5)
C		Tuerca M4	4	
D		Tuerca enjaulada 10-32	4	



E		Tornillo con cabezal plano 10- 32	8	Tornillo Phillips 10-32 x L12,7
F		Arandela escalonada	8	
G		Tornillo M4 con cabezal alomado y plano	4	Tornillo Phillips M4 x L8
H		Tornillo con cabezal alomado 10-32	4	Tornillo Phillips 10-32 x L25,4
I		Arandela plana	4	
J		Seguro	2	
K		Tuerca y arandela 10-32	2 (cada una)	
		Bridas	2	

## Diagrama de las partes



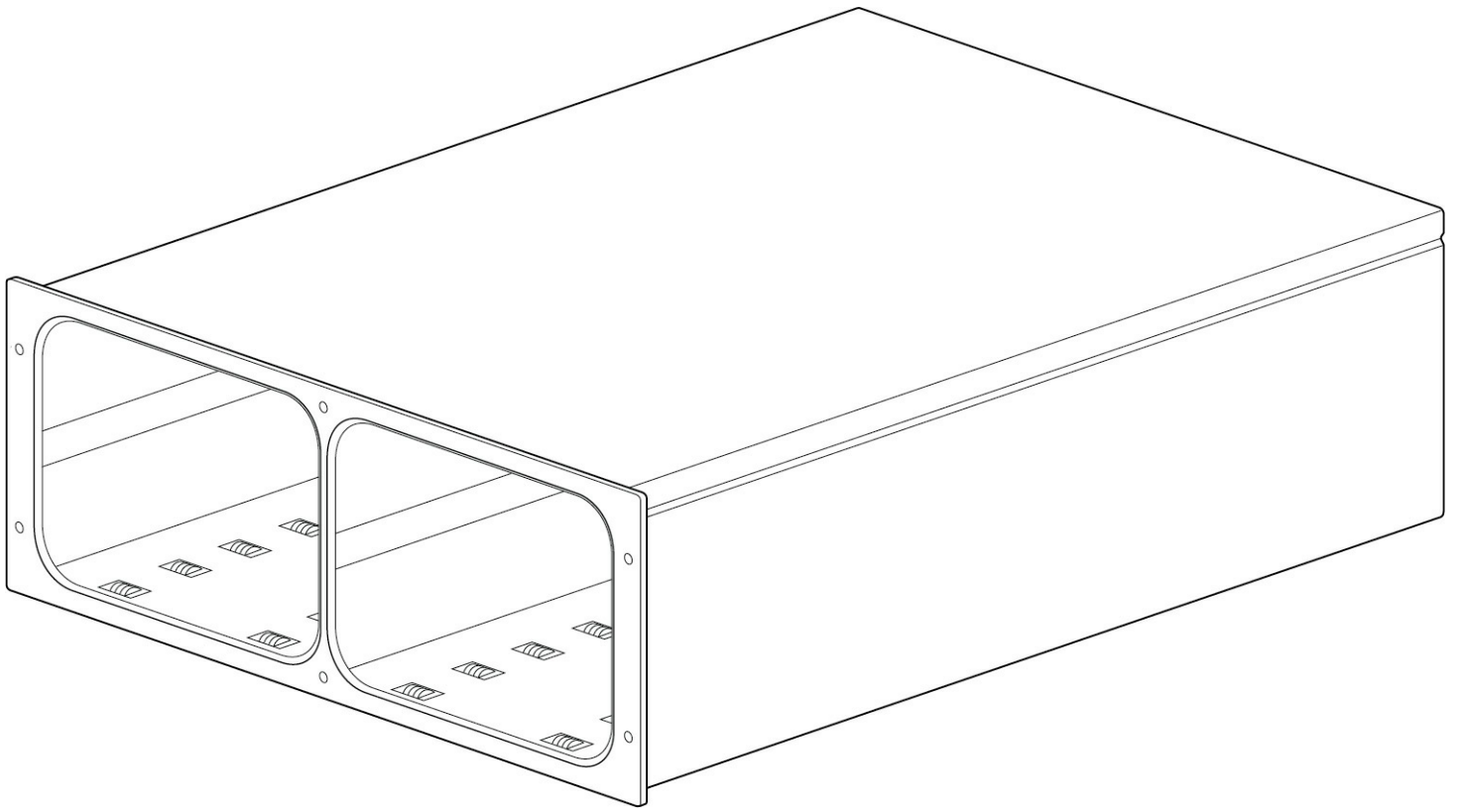
## Lyve Mobile Rackmount Receiver



Son necesarias dos personas para sacar el Lyve Mobile Rackmount Receiver del embalaje y transportarlo.

Peso del receptor (vacío): 47,52 lb/21,6 kg

No intente levantar o montar el Lyve Mobile Rackmount Receiver con dispositivos compatibles insertados.



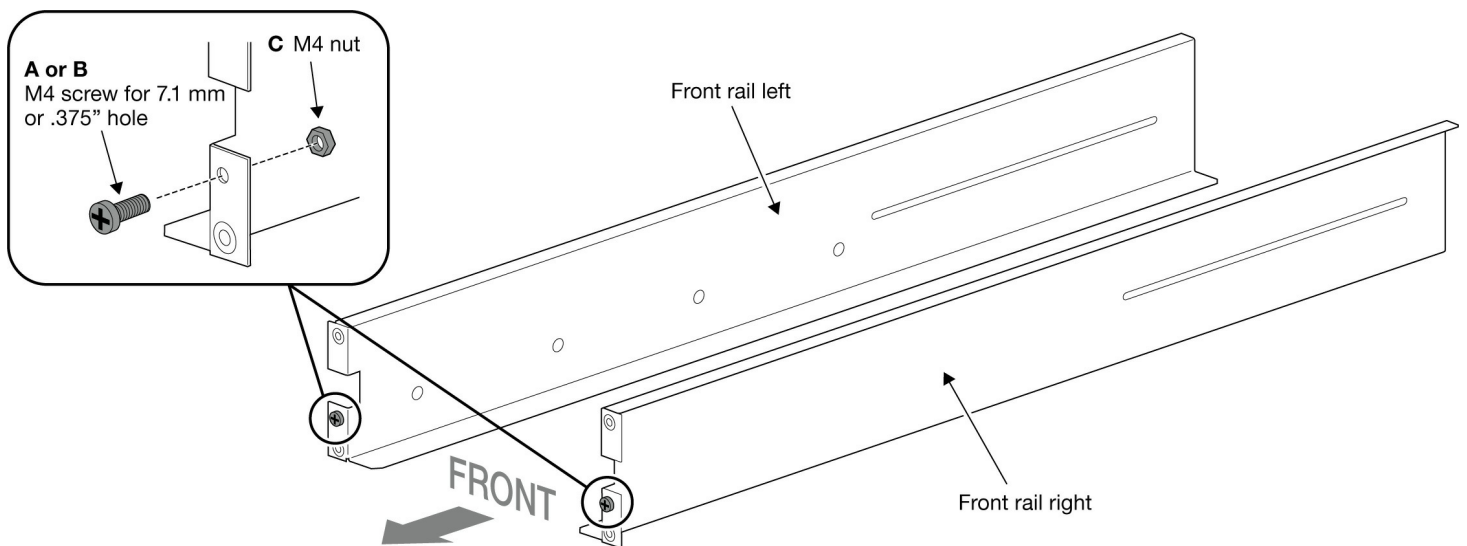
# Montaje en el bastidor

## Paso 1 - Fije los tornillos M4 del bastidor a los raíles frontales

El bastidor puede que tenga aperturas estándar de 7,1 mm o de 0,375 pulgadas. Se proporcionan tornillos M4 para ambas dimensiones.

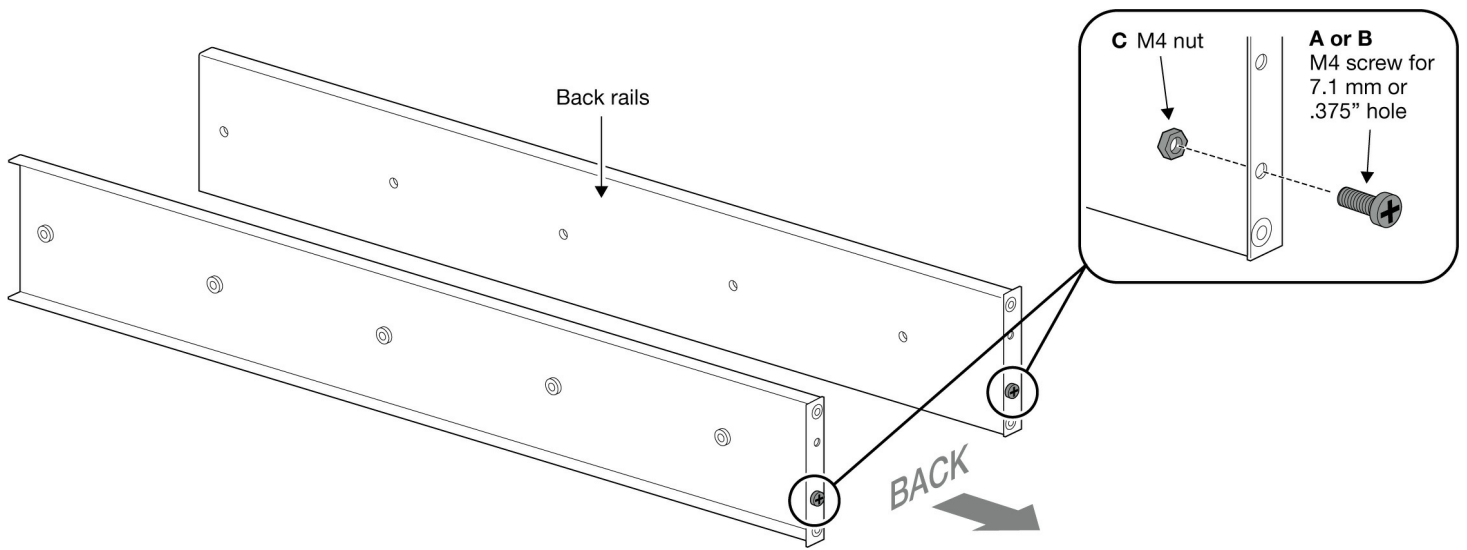
Inserte un tornillo M4 para 7,1 mm o 0,375" en el agujero específico del raíl frontal izquierdo y apriételo con una tuerca M4.

Repita el proceso para el raíl frontal derecho.



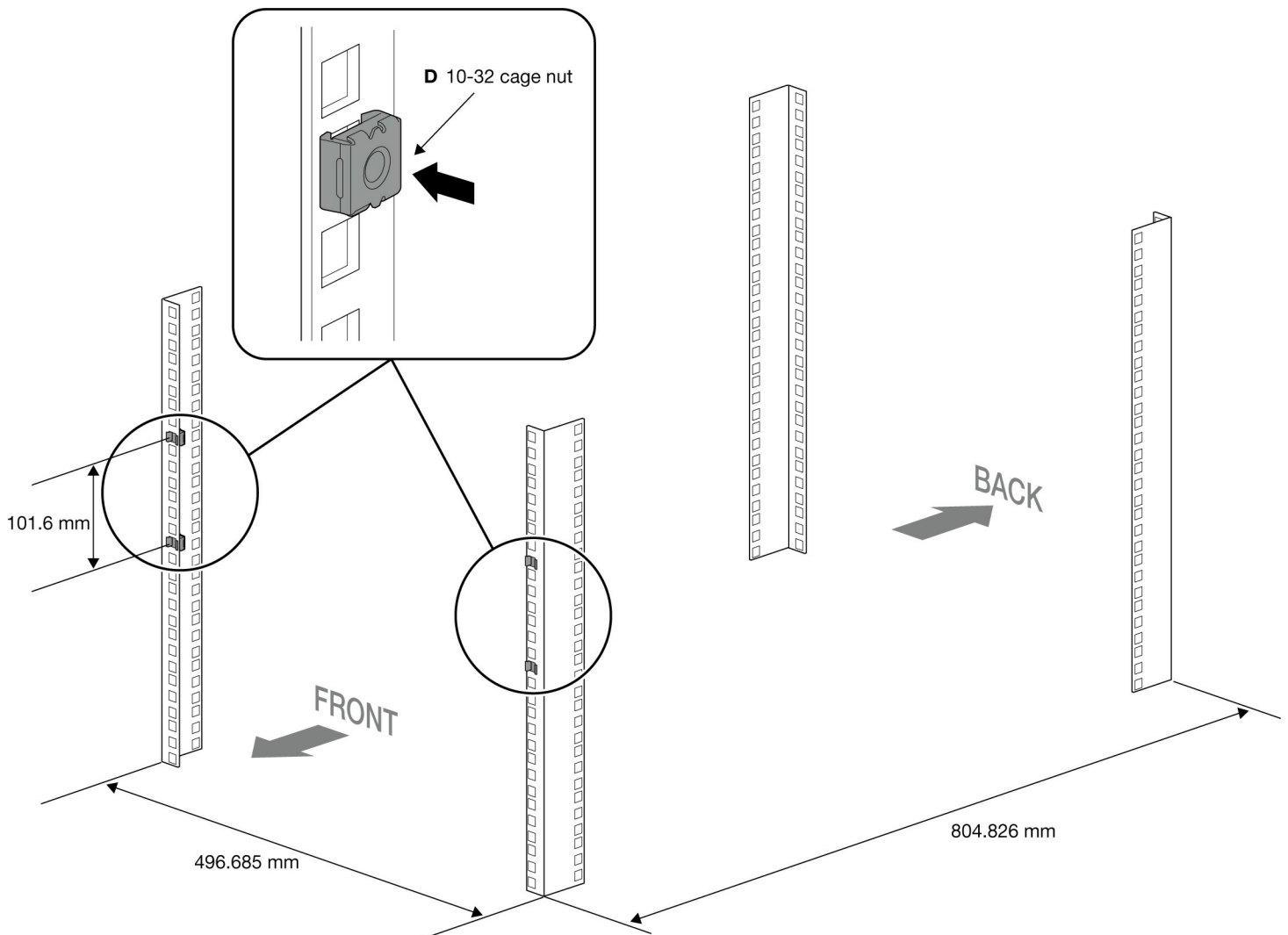
## Paso 2 - Fije los tornillos M4 del fijados a los raíles traseros

Inserte los tornillos M4 en los agujeros específicos de los raíles traseros y apriételos con tuercas M4.



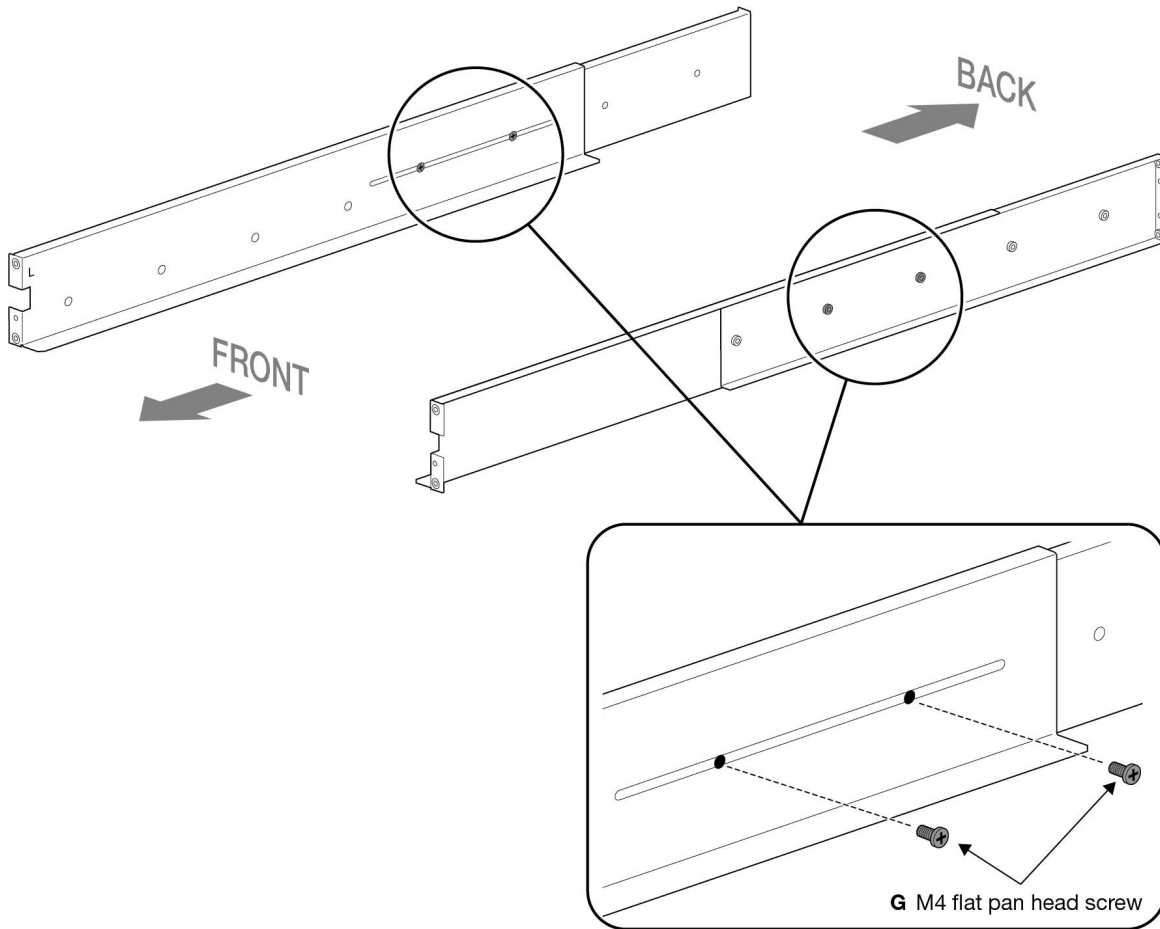
## Paso 3 - Fije las tuercas enjauladas al bastidor

Fije dos tuercas enjauladas 10-32 para cada poste frontal del bastidor. Deje 101,6 mm de espacio entre las dos tuercas en cada poste.



## Paso 4 - Fije los raíles frontales a los raíles traseros

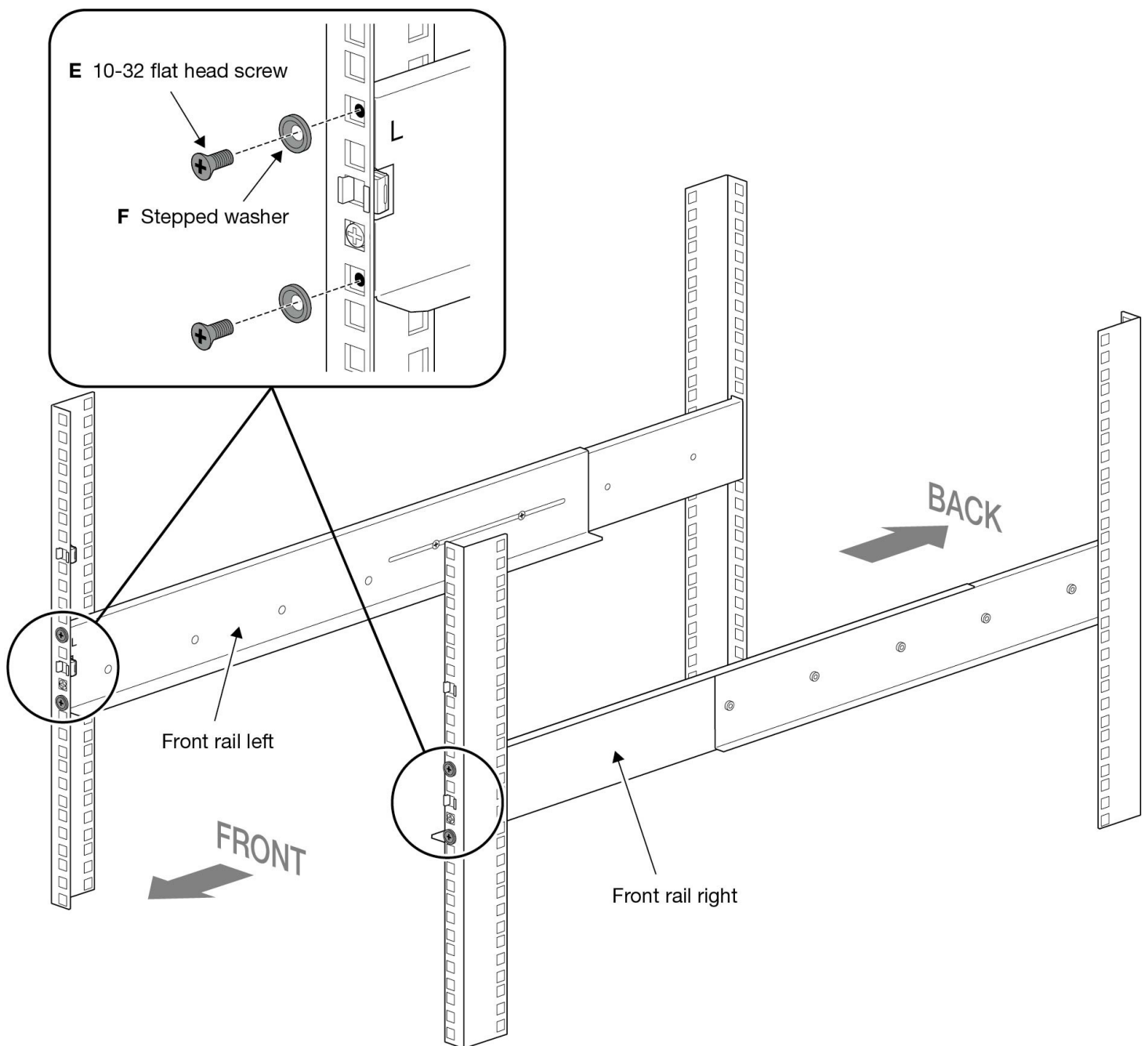
Use los tornillos de cabezal alomado y plano M4 para fijar holgadamente los raíles frontales a los raíles traseros.



## Paso 5 - Fije los raíles a la parte frontal del bastidor

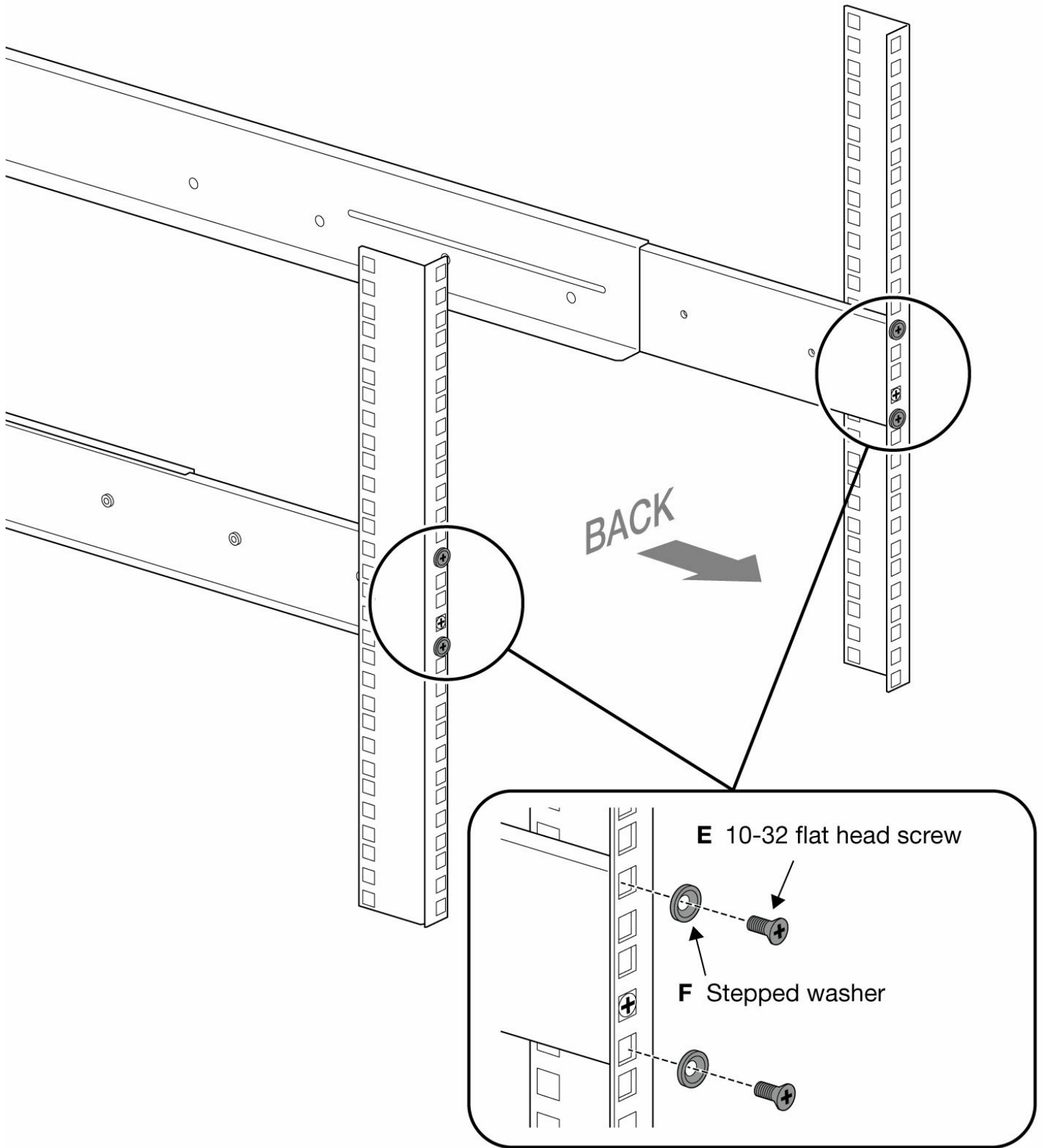
Coloque el raíl frontal izquierdo en la tuerca enjaulada del poste frontal izquierdo del bastidor. Inserte dos tornillos de cabezal plano 10-32 en dos arandelas escalonadas. Utilice los conjuntos de tornillo/arandela para sujetar el raíl frontal izquierdo al poste frontal izquierdo del bastidor.

Repita el proceso para el raíl frontal derecho y el poste frontal derecho del bastidor.



## Paso 6 - Fije los raíles traseros a la parte trasera del bastidor

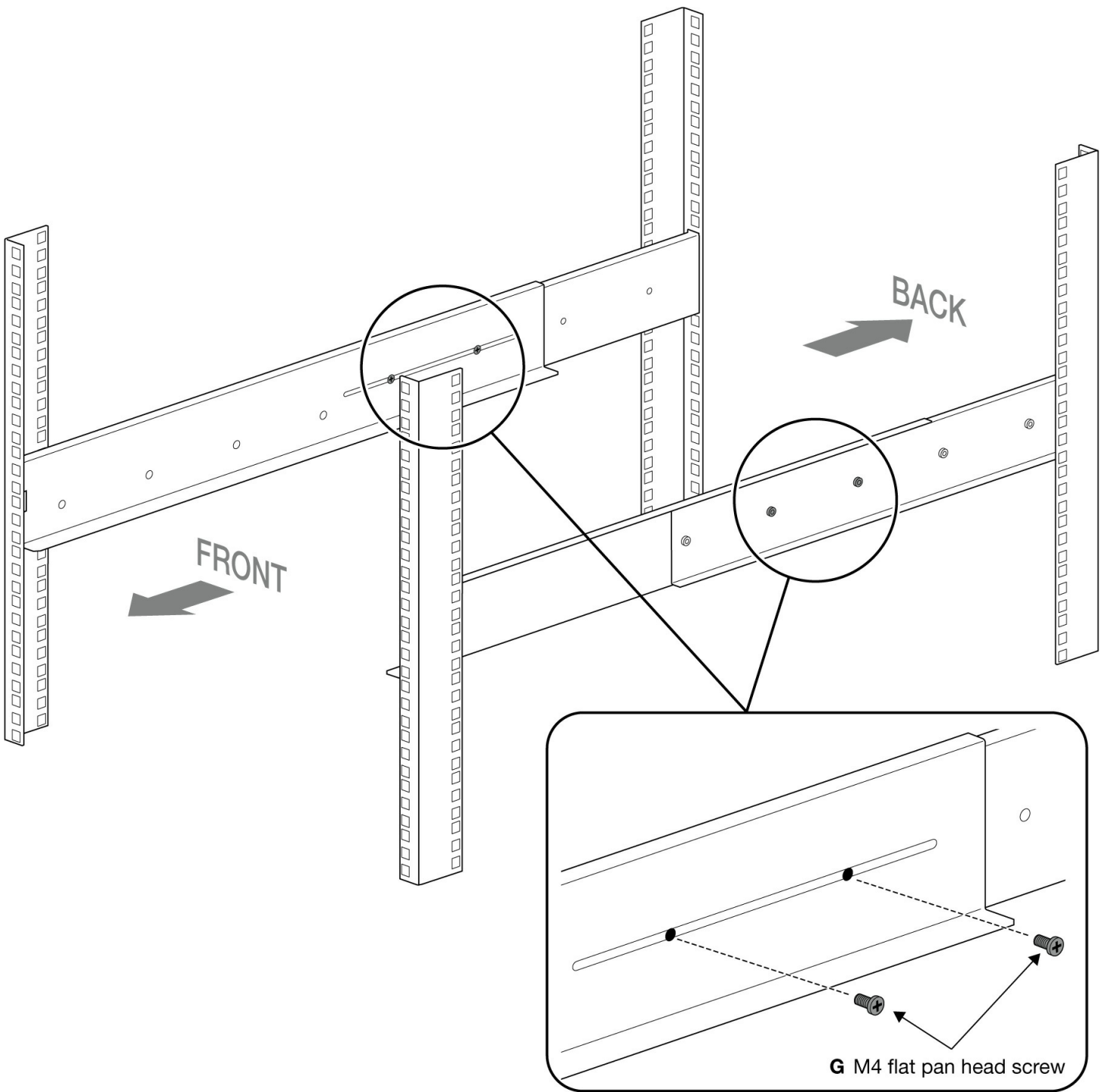
Coloque los raíles traseros a la altura correspondiente en los postes traseros del bastidor. Inserte dos tornillos de cabezal plano 10-32 en dos arandelas escalonadas. Use los conjuntos de tornillo/arandela para apretar los raíles traseros a los postes traseros del bastidor.



## Paso 7 - Apriete las conexiones de los raíles

Apriete los tornillos de cabezal alomado y plano M4 para fijar los raíles frontales y traseros.





## Paso 8 - Instale el Lyve Mobile Rackmount Receiver



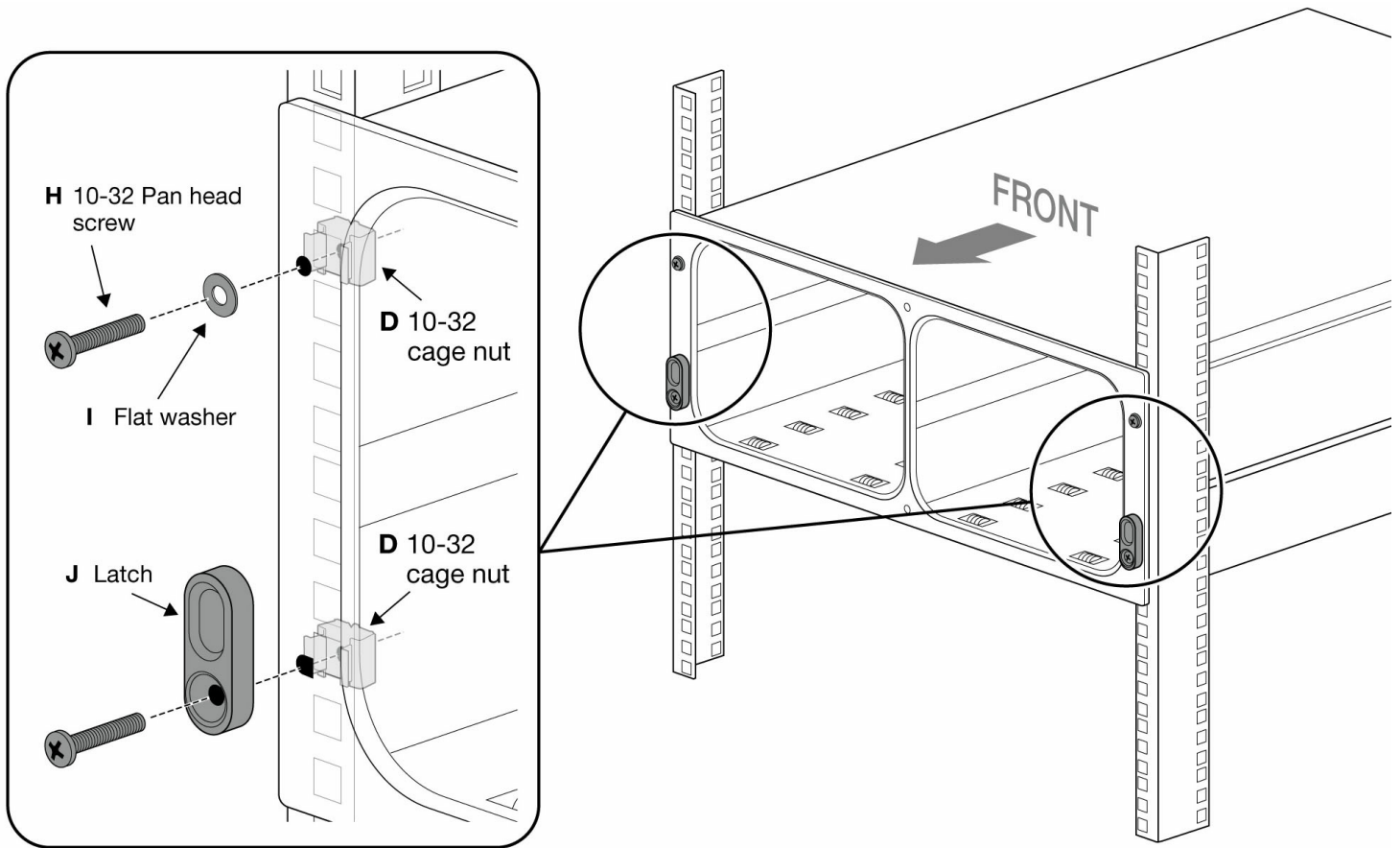
Son necesarias dos personas para sacar el Lyve Mobile Rackmount Receiver de su embalaje y transportarlo.

Peso del receptor (vacío): 47,52 lb/21,6 kg

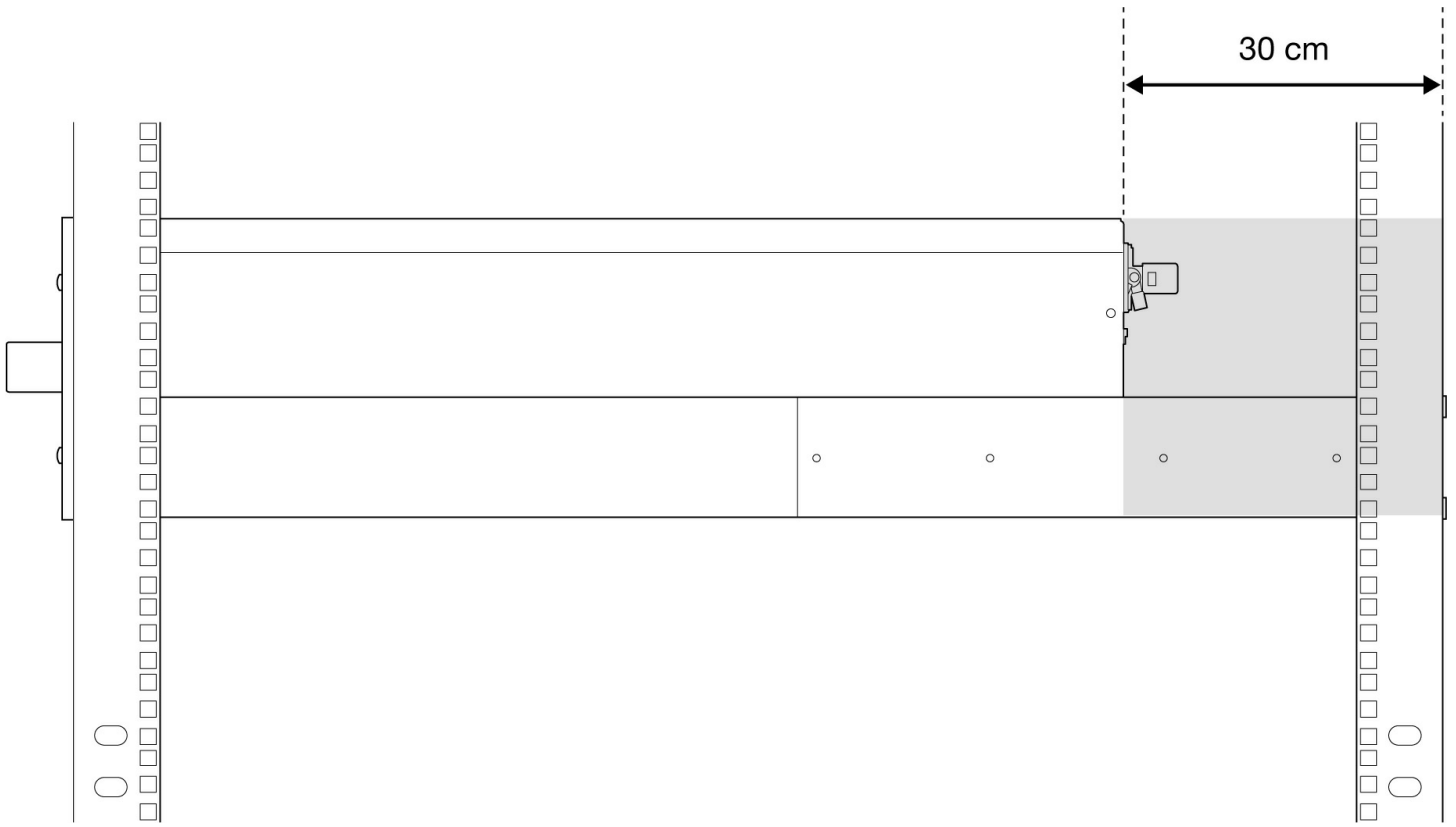
No intente levantar o montar el Lyve Mobile Rackmount Receiver con dispositivos compatibles conectados.

Coloque la parte frontal del Lyve Mobile Rackmount Receiver sobre las tuercas enjauladas fijadas en los postes frontales izquierdo y derecho. Inserte dos tornillos de cabezal alomado 10-32 en dos arandelas planas. Use los conjuntos tornillo/arandela para fijar el Lyve Mobile Rackmount Receiver a las tuercas enjauladas superiores fijadas a los postes frontales derecho e izquierdo.

Inserte dos tornillos 10-32 en los dos seguros. Use los conjuntos tornillo/seguro para fijar el Lyve Mobile Rackmount Receiver a las tuercas enjauladas inferiores fijadas a los postes frontales derecho e izquierdo.



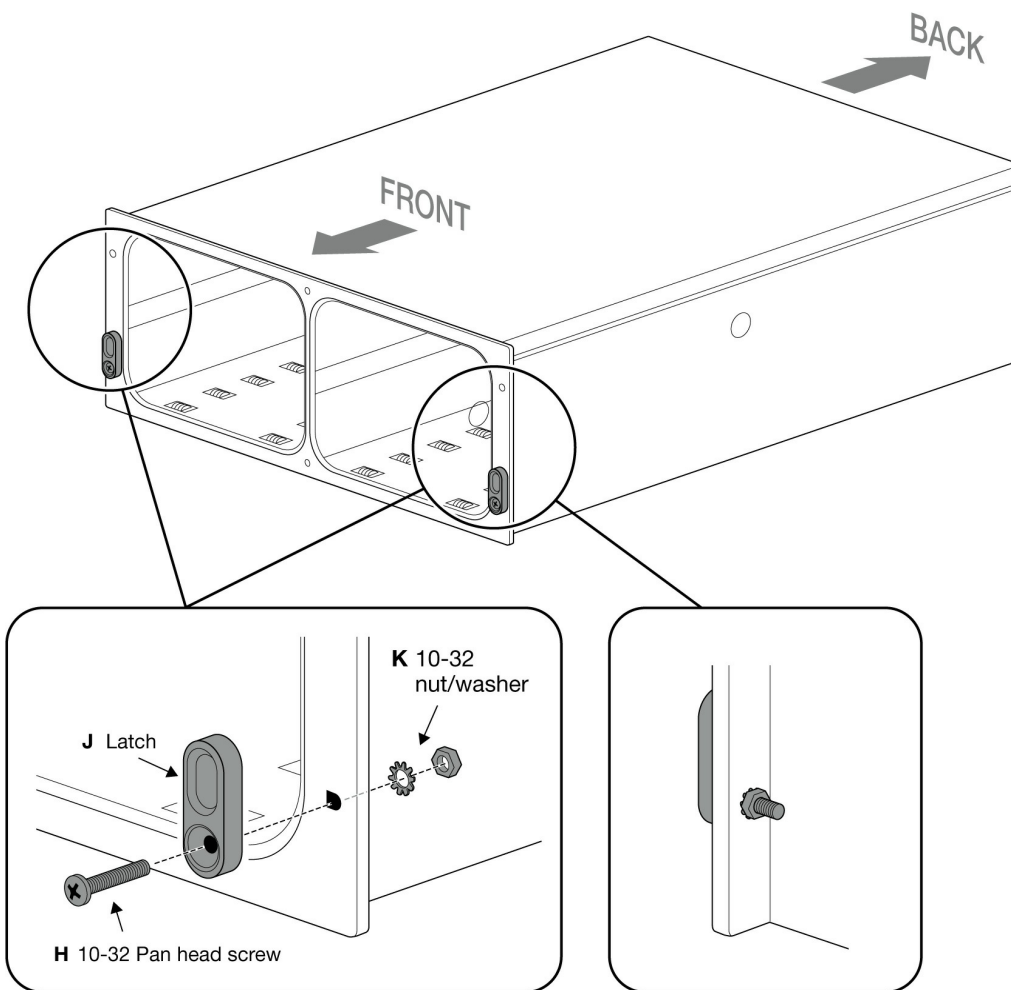
## Distancia recomendada



# Montaje del cierre independiente

## Fijación del cierre

Si el Lyve Mobile Rackmount Receiver no está montado en bastidor, utilice la arandela de seguridad adicional y la tuerca hexagonal 10-32 para sujetar cada cierre a la caja.



# Conexiones de datos

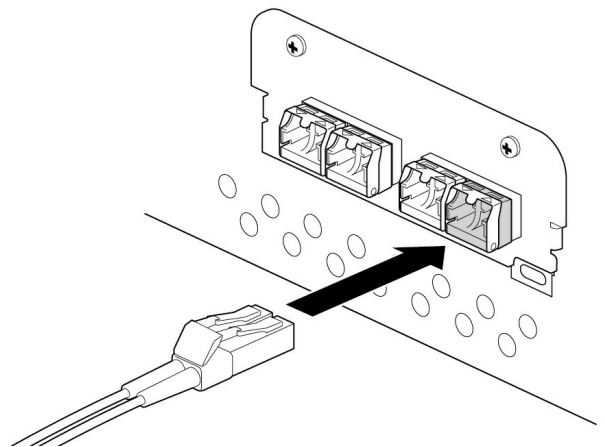
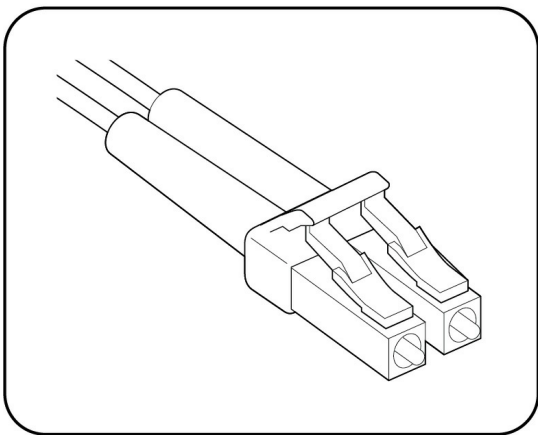
Si el Lyve Mobile Rackmount Receiver de Seagate está preconfigurado para admitir una o más interfaces host.

## Conexión a las interfaces host

Conecte el cable de canal de fibra específico, de Ethernet o de SAS a los puertos disponibles en el panel trasero de Lyve Mobile Rackmount Receiver.

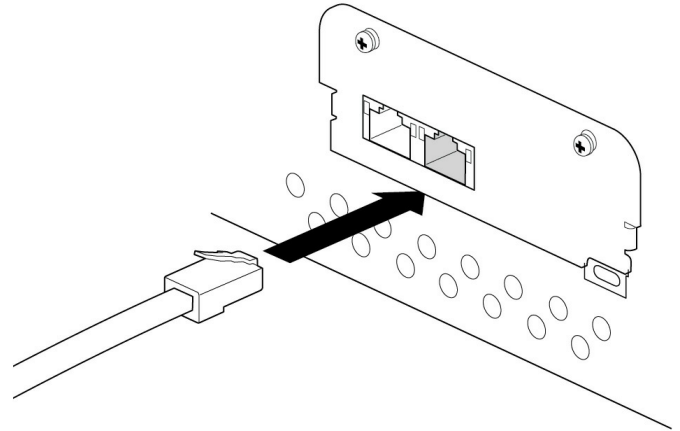
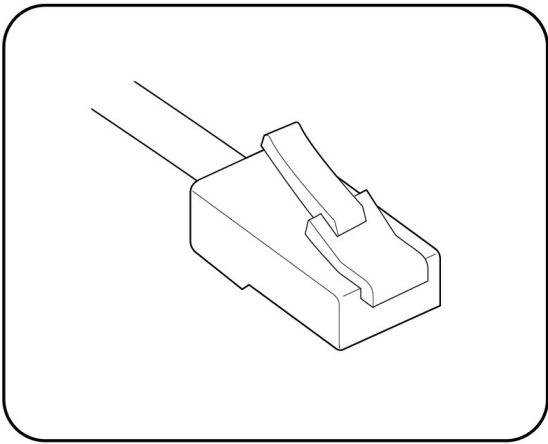
### Cable óptico de fibra

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



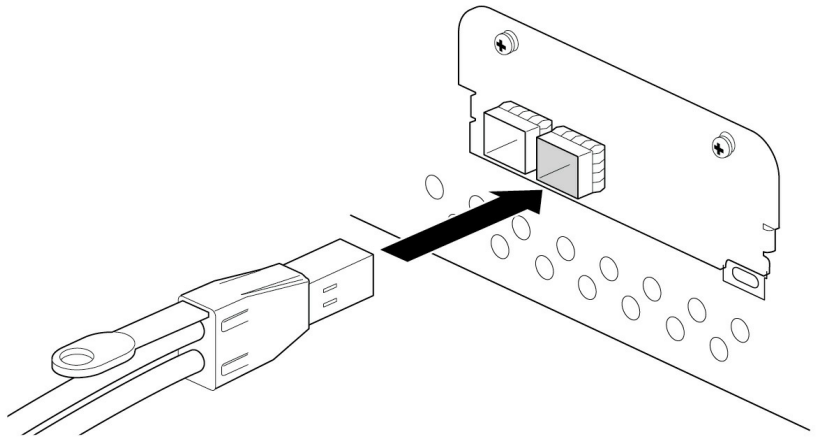
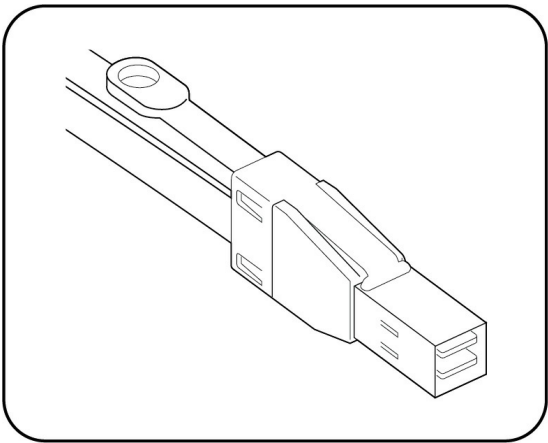
### Cable Ethernet

- 10GbaseT de iSCSI, RJ45 de 2 puertos



## Cable SAS

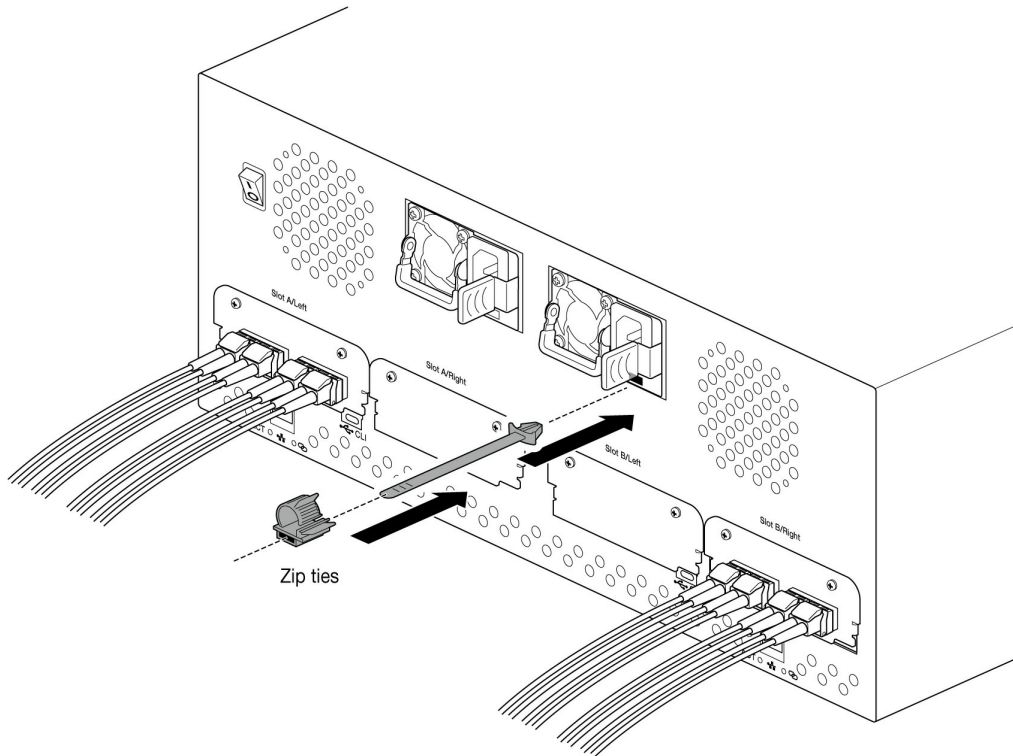
- 12 Gb de SAS, SFF-8644 de 2 puertos

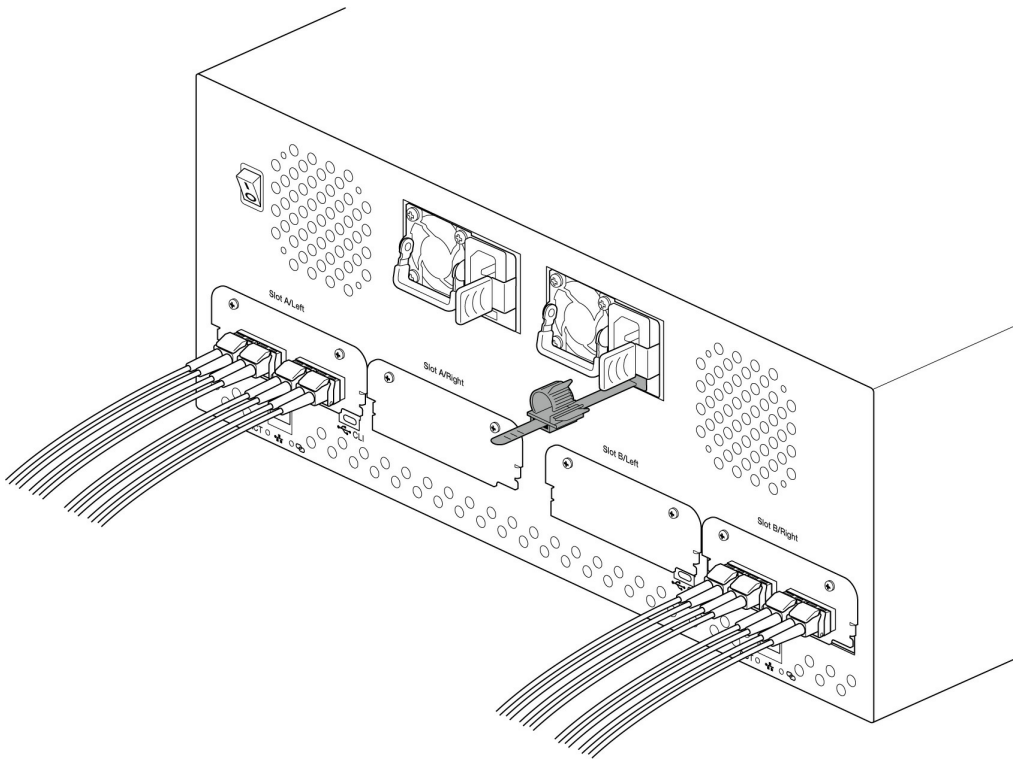


# Conexiones de alimentación

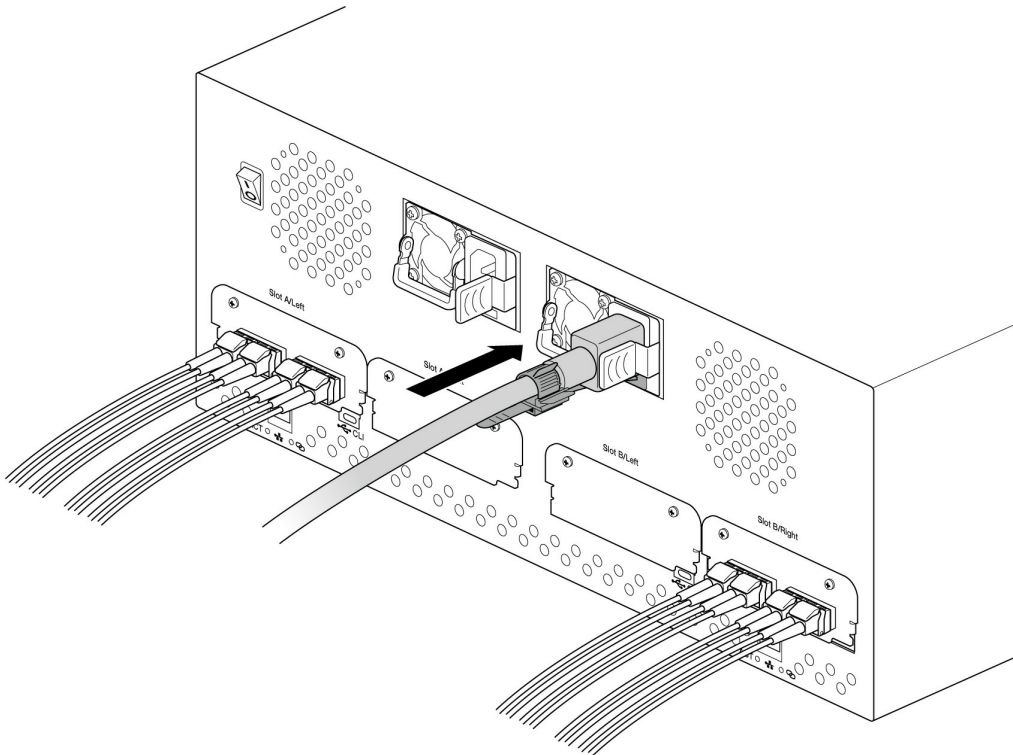
## Fije el cable de alimentación.

Introduzca la brida en la ranura situada debajo de la toma.





Introduzca el cable de alimentación en la toma y sujételo con la brida.

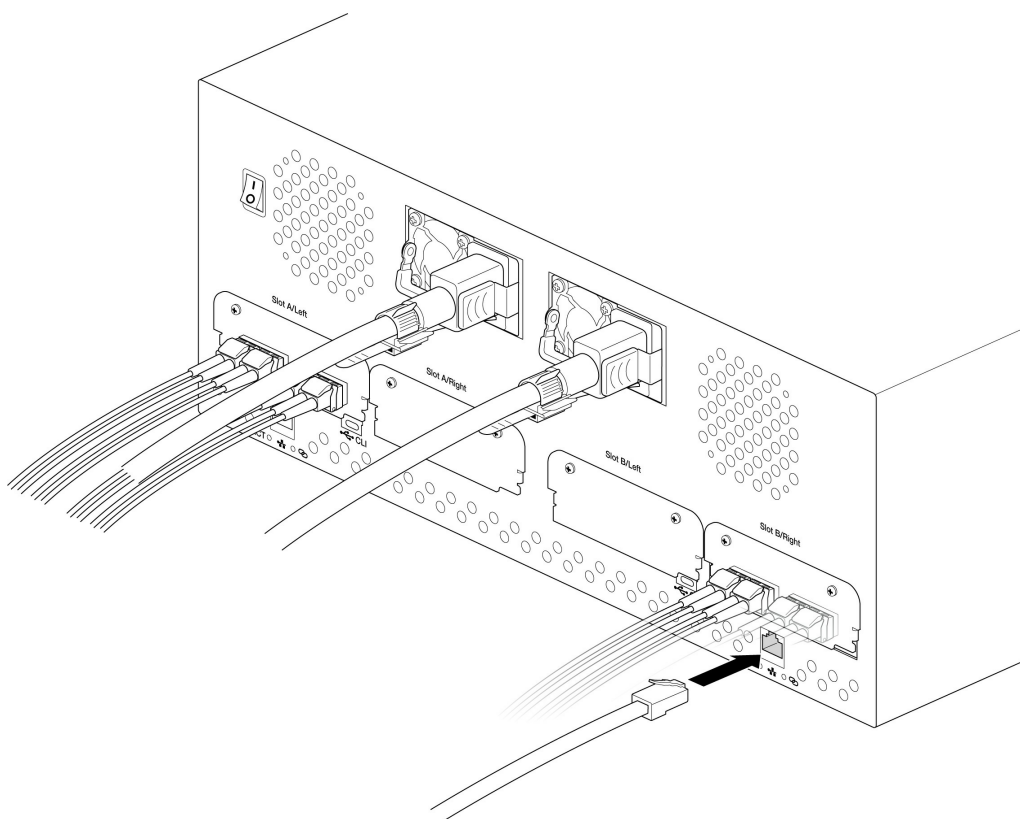




# Conexiones del dispositivo

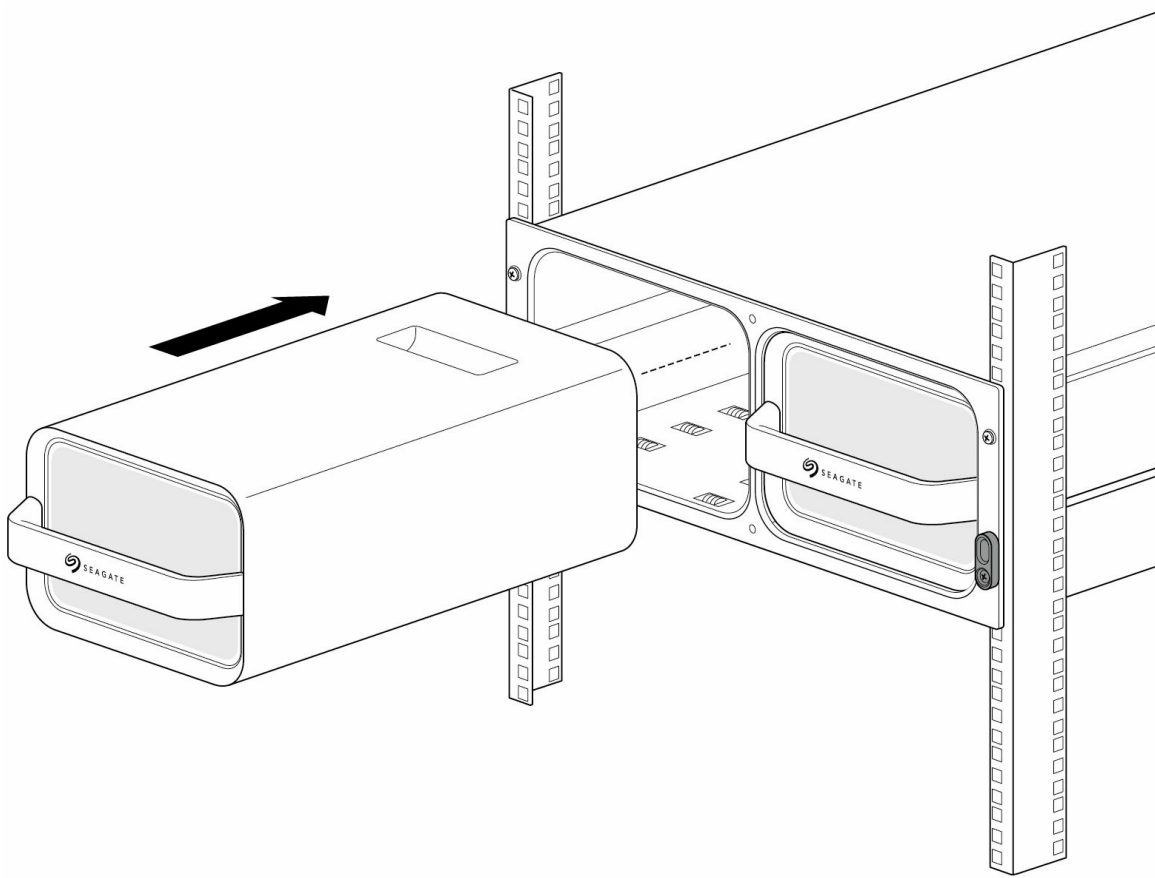
## Conecte el puerto Ethernet

Lyve Client se comunica con los dispositivos insertados en el Lyve Rackmount Receiver a través de los puertos de gestión de Ethernet. Asegúrese de que los puertos de gestión de Ethernet están conectados a la misma red de trabajo que los dispositivos host que ejecuta el Lyve Client. Si no se introduce ningún dispositivo en una ranura, no hay que conectar su puerto de gestión de Ethernet correspondiente a la red.

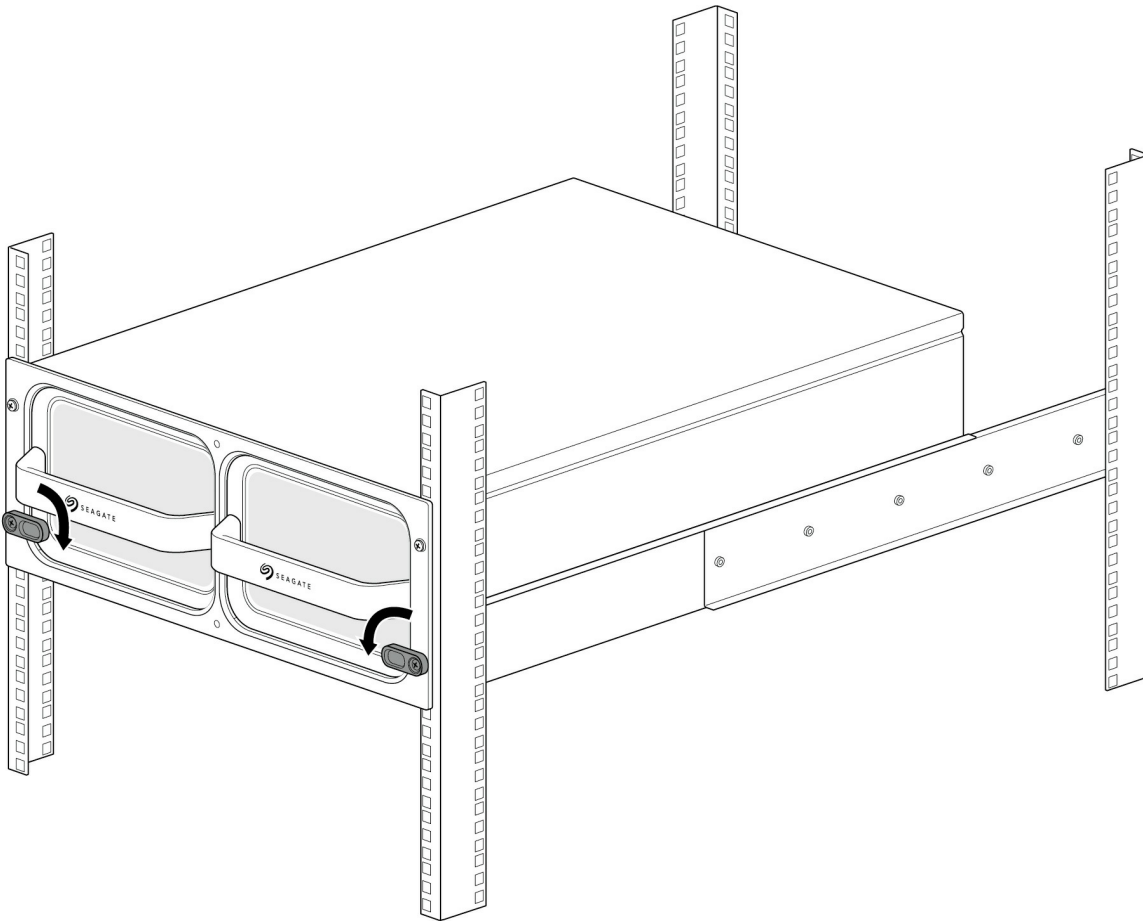


## Conectar el Lyve Mobile Array de Seagate

Inserte el Lyve Mobile Array en la ranura A o B del Lyve Mobile Rackmount Receiver.

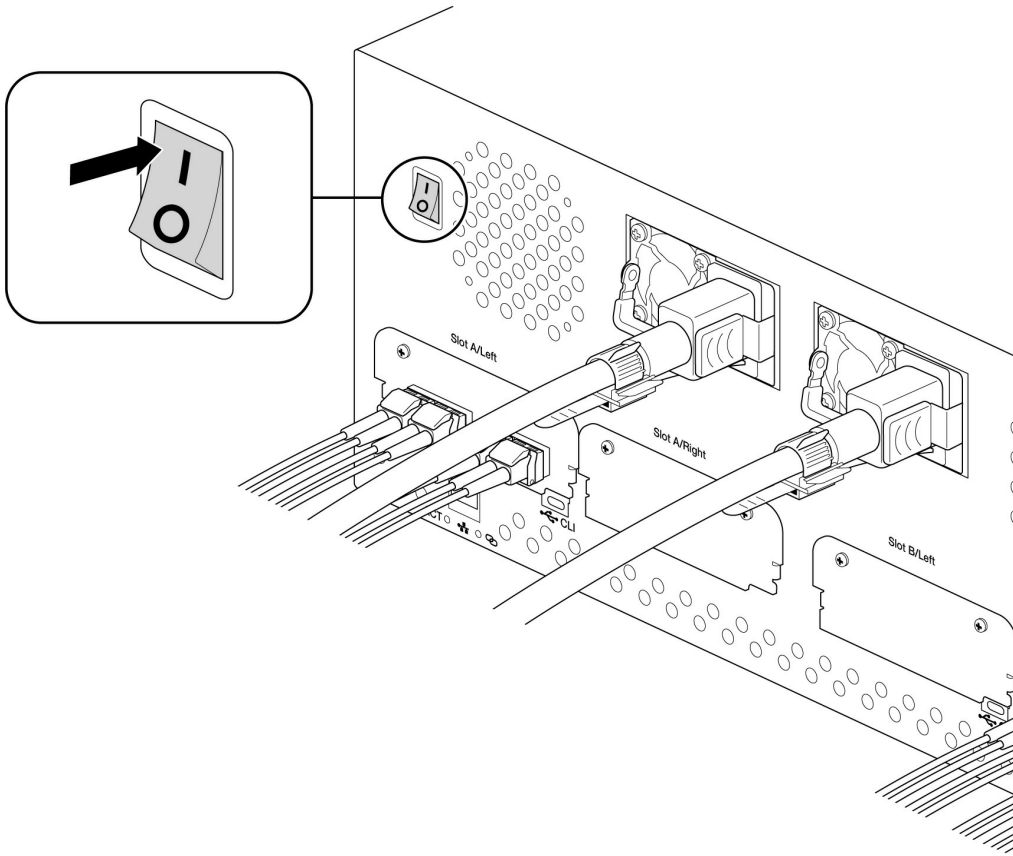


Deslice el dispositivo dentro hasta que encaje en su sitio y está conectado correctamente a los datos y la alimentación del Lyve Mobile Rackmount Receiver. Cierre los seguros.



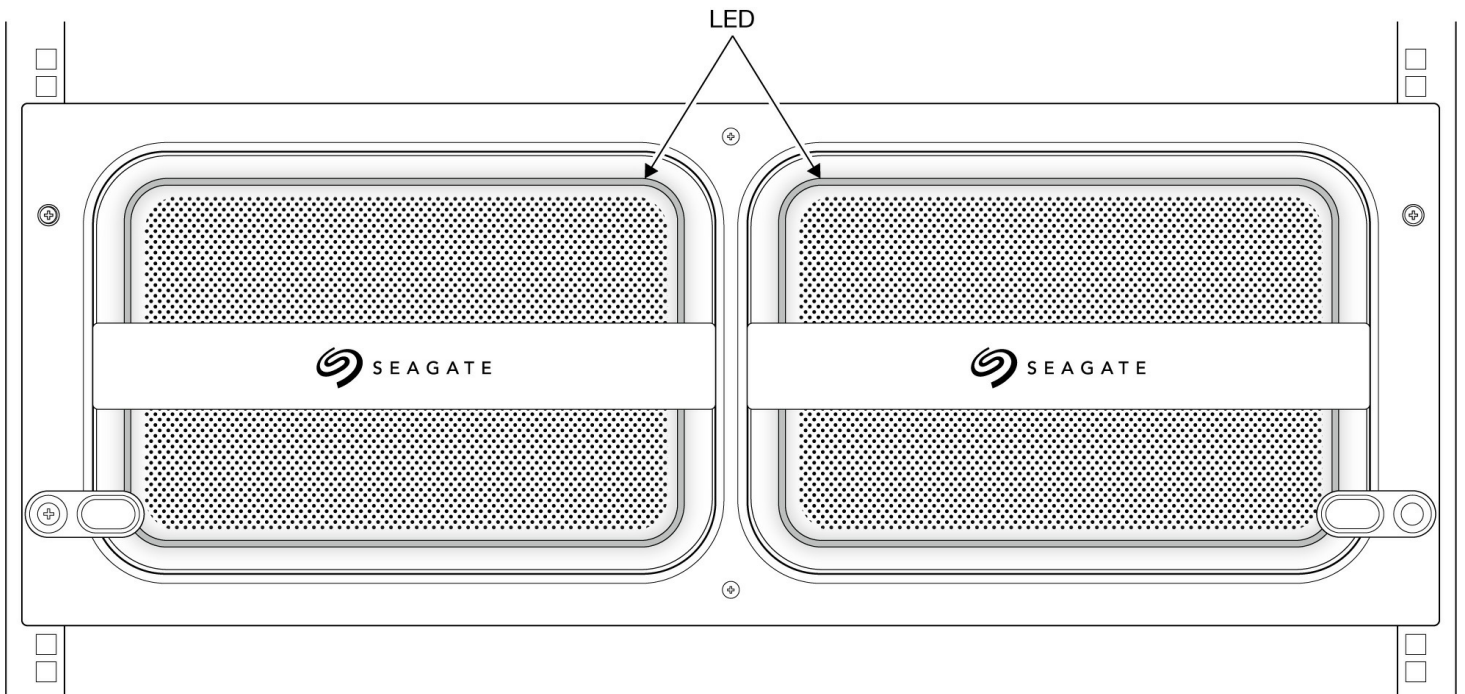
## Enciéndalo

Ponga el interruptor de encendido del Lyve Mobile Rackmount Receiver en ON.



## Desbloquee el dispositivo

La luz LED del dispositivo insertado en el Lyve Mobile Rackmount Receiver titila durante el proceso de arranque y se vuelve de un color naranja fijo. El color naranja fijo de la luz LED indica que el dispositivo está listo para ser desbloqueado.



Asegúrese de que la aplicación Lyve Client se esté ejecutando en el ordenador host. El ordenador host desbloqueará el dispositivo de manera automática si este estuvo conectado antes y si todavía cuenta con autorización de seguridad. Si el ordenador host nunca ha desbloqueado el dispositivo, debe introducir su nombre de usuario y contraseña del Lyve Management Portal en la aplicación Lyve Client. Conozca los requisitos de configuración. Conozca los [requisitos de configuración](#).

Una vez que Lyve Client tenga habilitados los permisos para el dispositivo que está conectado en el ordenador, la luz LED del dispositivo se vuelve fija en color verde. El dispositivo está desbloqueado y listo para ser usado.

## Extraer un dispositivo de forma segura

Su ordenador debe realizar las operaciones de archivo y de administración interna de su dispositivo Lyve antes de extraerlo físicamente del Lyve Mobile Rackmount Receiver. Para evitar que los archivos se dañen, extraiga los volúmenes del dispositivo de su ordenador usando la aplicación Lyve Client o el sistema operativo de su ordenador antes de extraer físicamente el dispositivo.

Para evitar desgarros musculares o lesiones en la espalda, use técnicas apropiadas de levantamiento de cargas cuando extraiga los dispositivos del Lyve Rackmount Receiver.

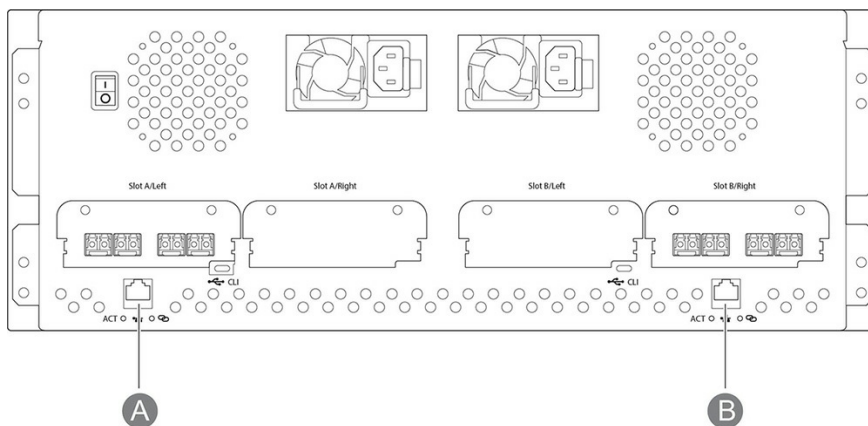
# FC Network Setup for Windows

## Requirements

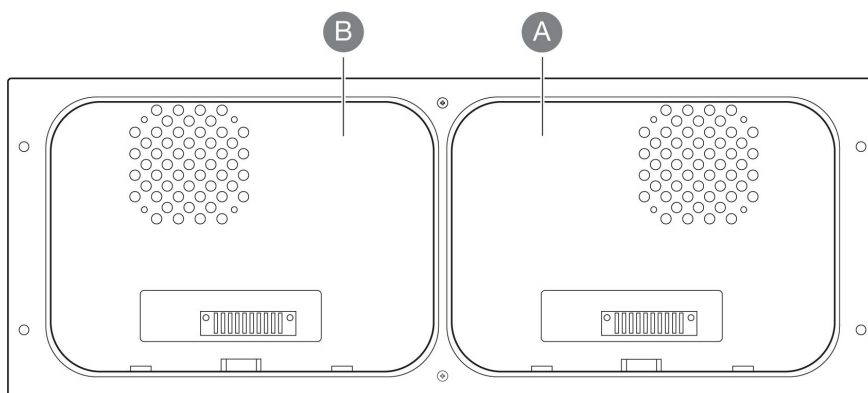
The Lyve Client app is required to authorize a host computer to access Lyve Mobile Array and compatible devices. Download the Lyve Client installer for Windows and macOS at [www.seagate.com/support/lyve-client](http://www.seagate.com/support/lyve-client) and install it on the server. For more information,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



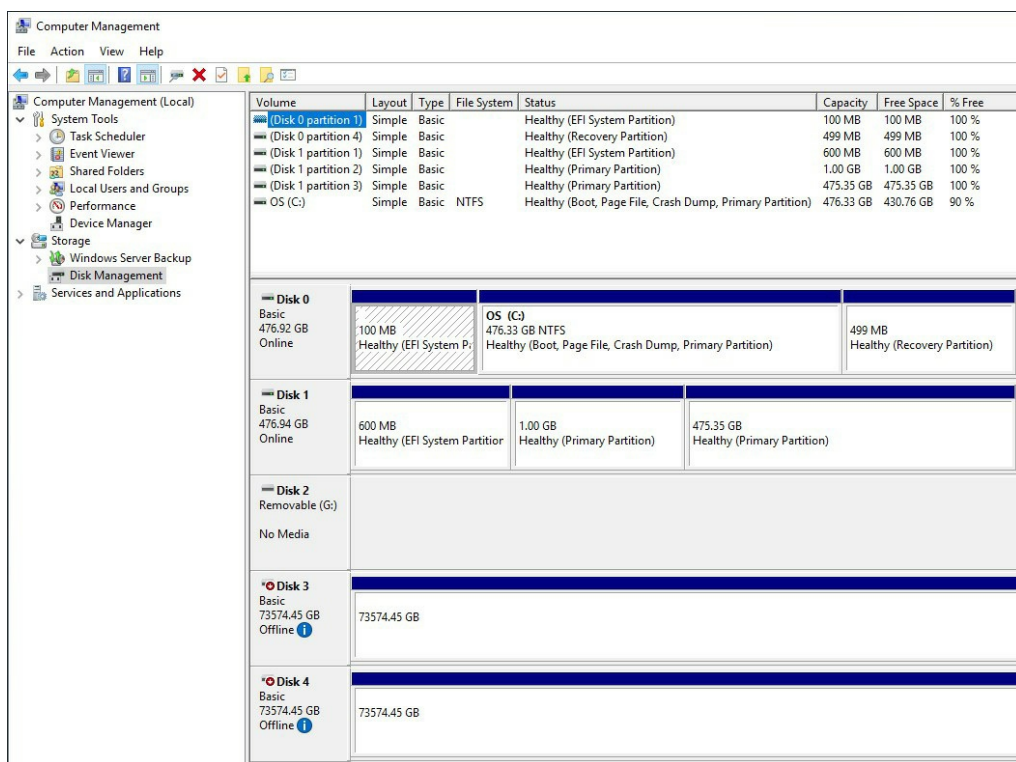
4. Open Lyve Client. You may be prompted to unlock Lyve Mobile Array if this is the first connection to the host.
5. Click the **Devices** tab.
6. Click on the Mobile Array card with the **Rackmount Receiver » FC** connection.

Lyve Client automatically completes your FC connection configuration.

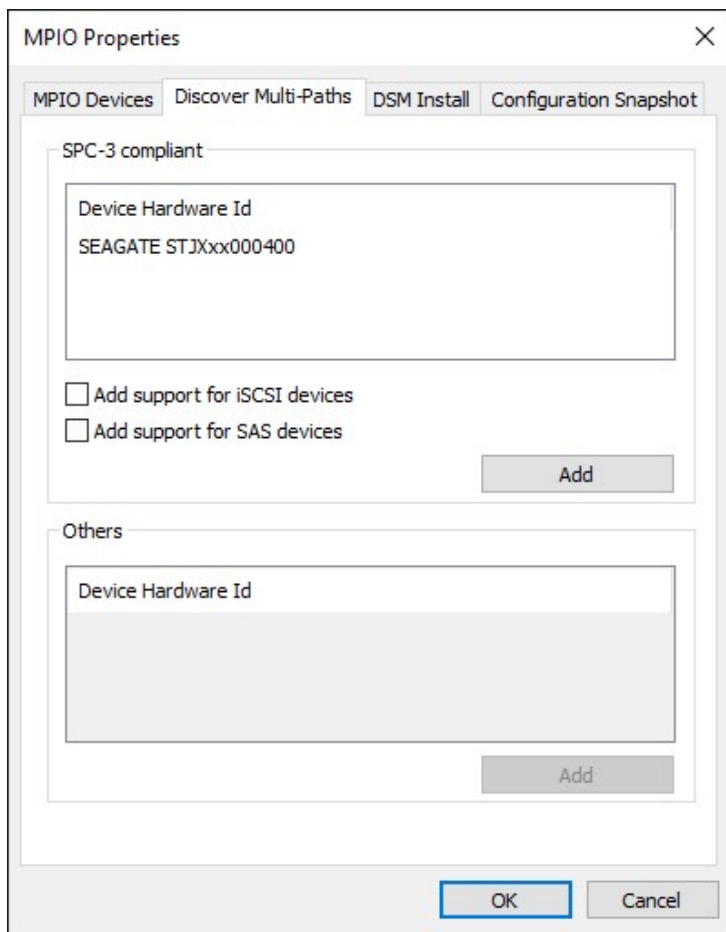
## Manual FC Setup

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.

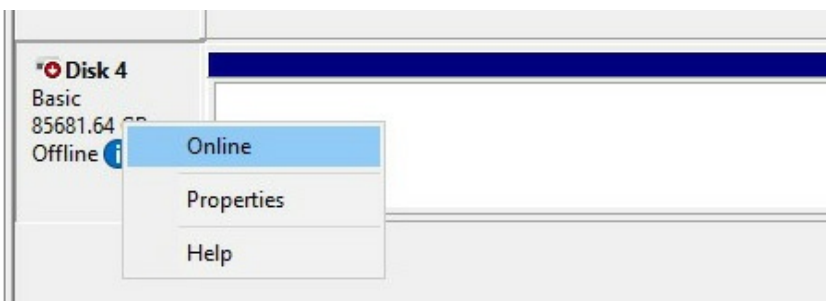
1. Open Server Manager.
2. Open Computer Management.
3. Open **Disk Management**.
4. If more than one **Offline** drive exists, continue steps 5-9. If there's only a single **Offline** drive, go to step 10.



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**.

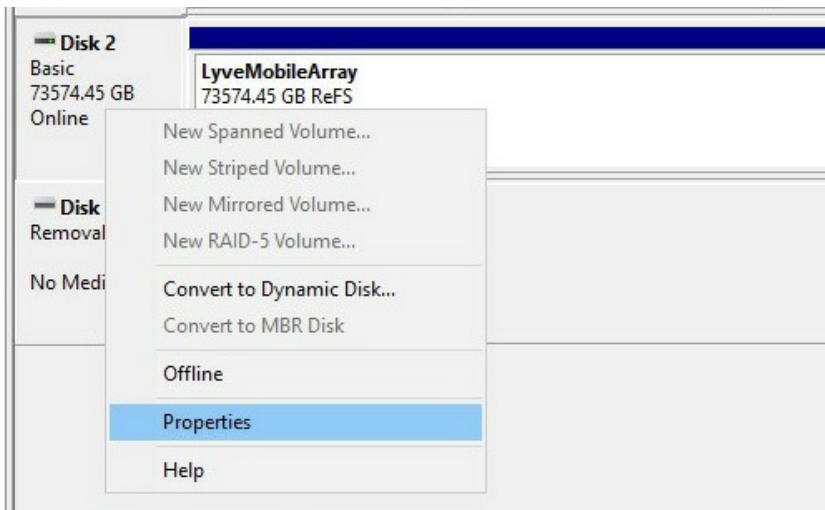


9. Reboot the server.
10. Open Disk Management.
11. Right-click the Lyve Mobile Array disk marked **Offline** and select **Online**.

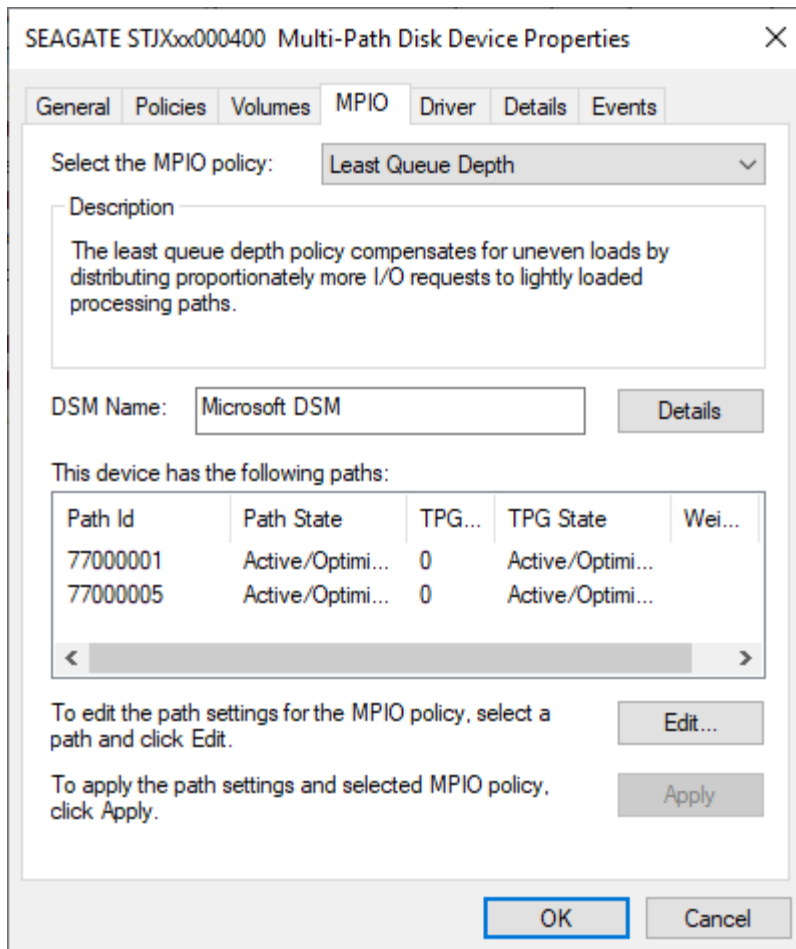


12. If MPIO is enabled, right-click the Lyve Mobile Array disk and select **Properties**. If it is not enabled, go to step 15.

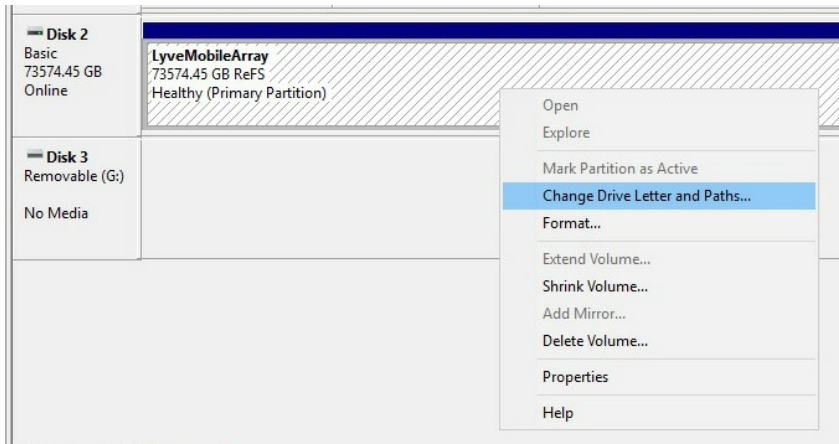




13. Click on the **MPIO** tab.
14. Select your preferred MPIO policy.



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

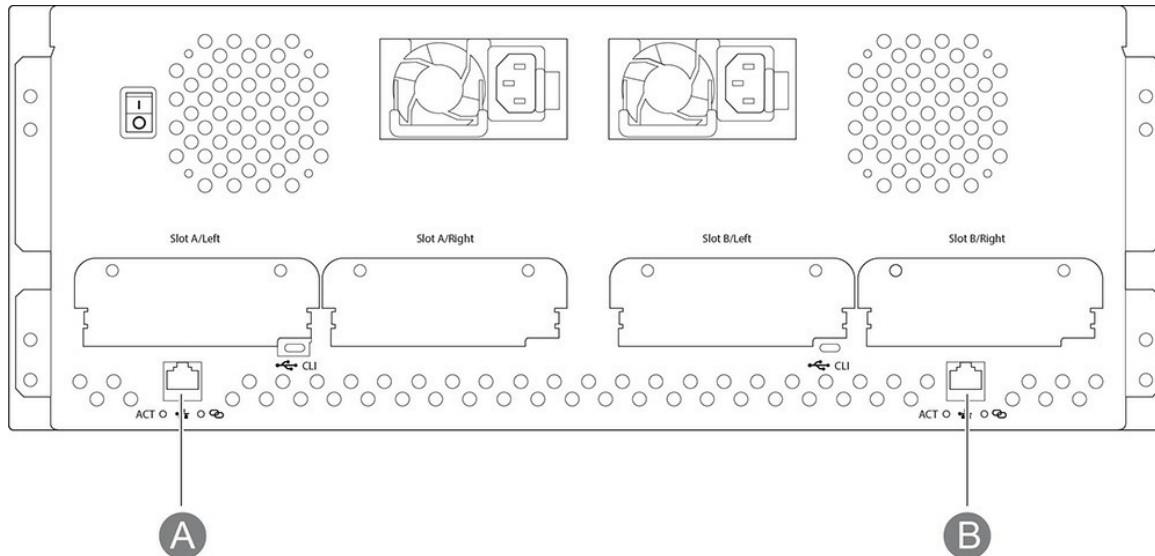
### Hardware

#### 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

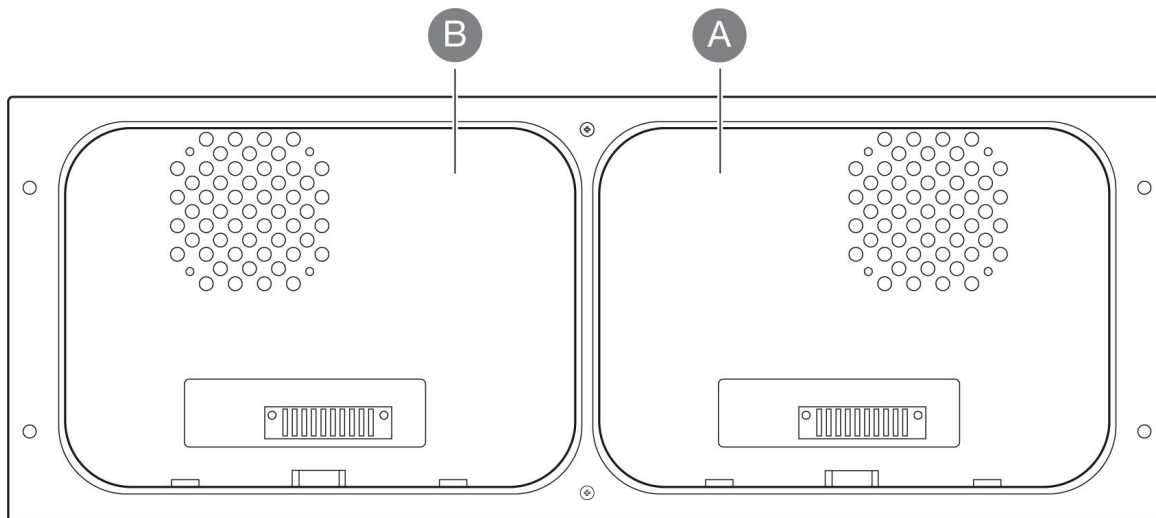
Setting up the connection between Lyve Mobile Rackmount Receiver's ports and the host computer requires three steps:

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.

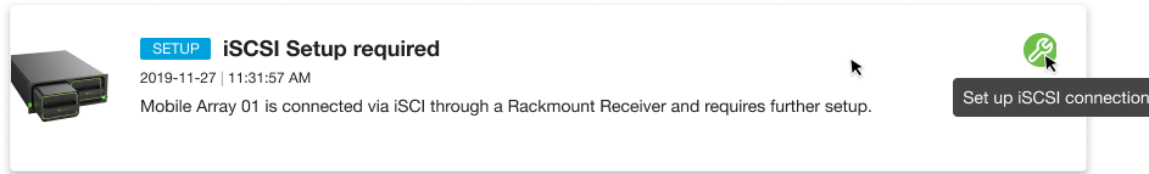
The host computer will automatically unlock the device if it was connected to Lyve Mobile Array in the past and is still authorized for security. If the host computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve Client app. See Setup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

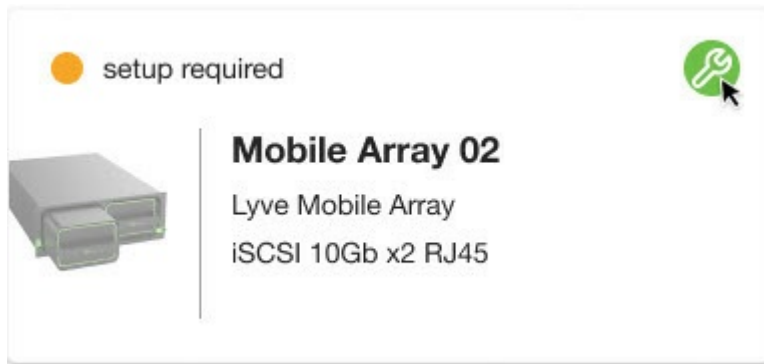
# Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports

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.

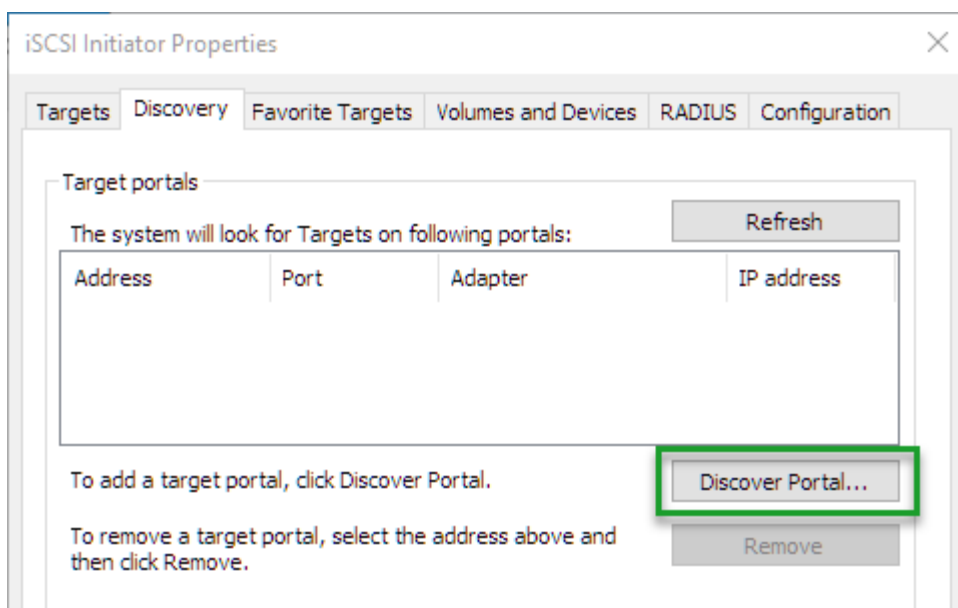


# Set up the iSCSI initiator/target(s)

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-
```

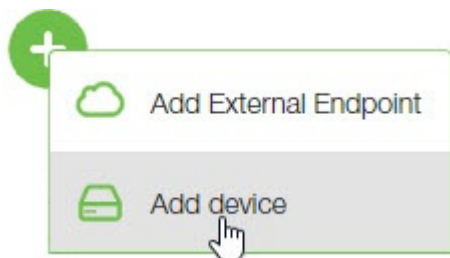
contact=Uninitialized Contact),(x-system-information=Uninitialized Info),(x-scsi-vendor-id=SEAGATE),(x-scsi-product-id=3035),(x-vendor-name=""),(x-product-id=3035),(x-product-brand=""),(x-ip-addresses=169.254.100.123),(x-midplane-serial-number=00C0FFF3907C),(x-product-serial-number=00000000),(x-bundle-version=M100R001),(x-build-date=2021-11-22T22:38:12Z),(x-platform-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.



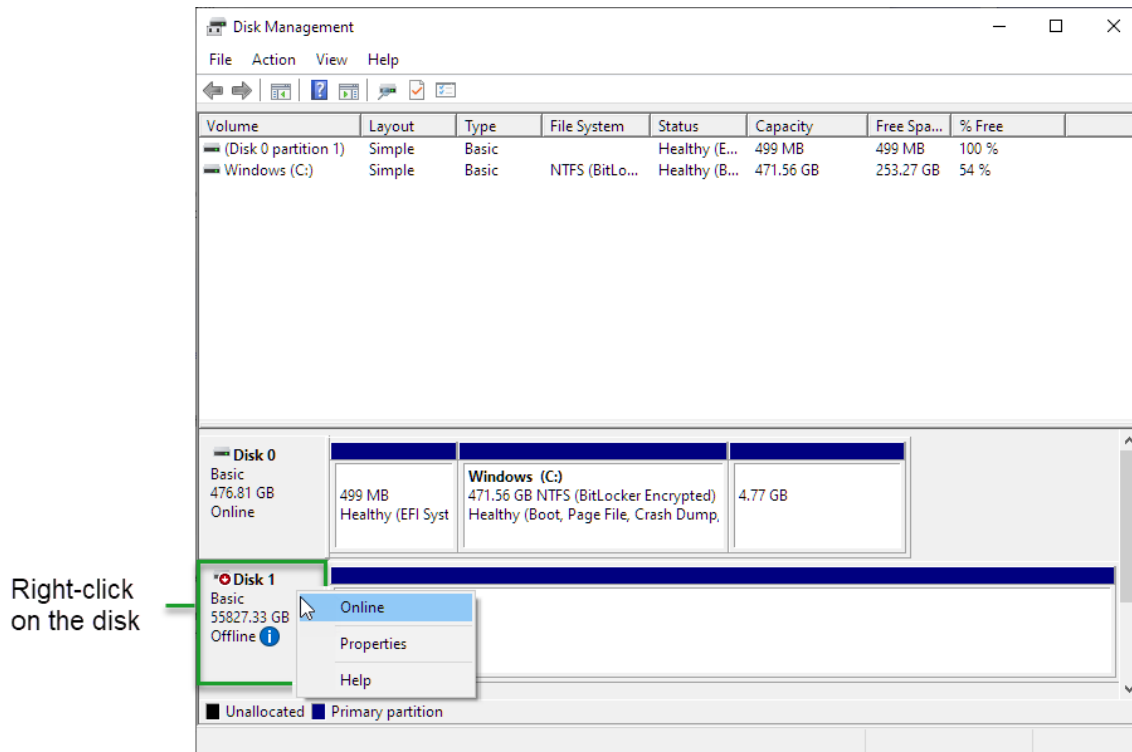
6. Click **Connect**.

# (Optional) Manual disk management instructions

## Setting the volume to 'online'

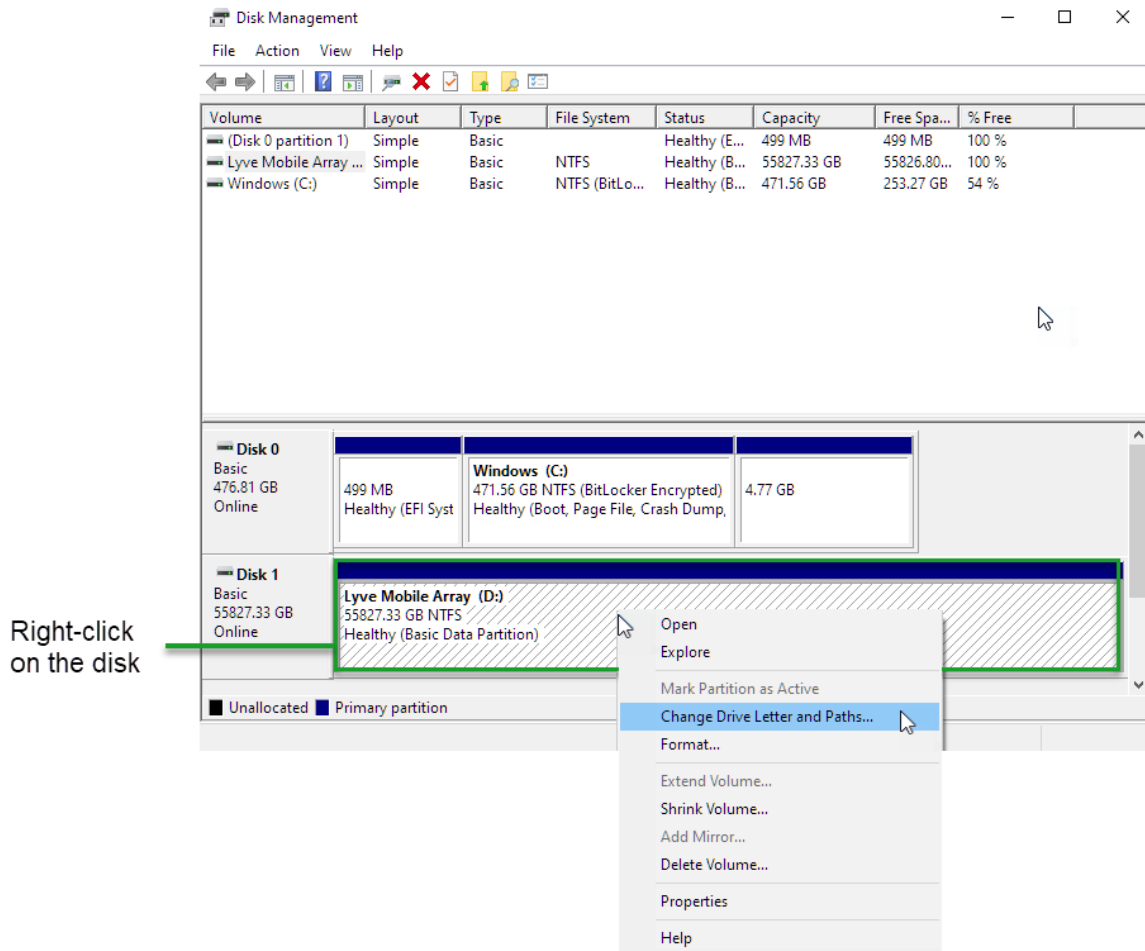
If you need to set the volume to online:

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**.



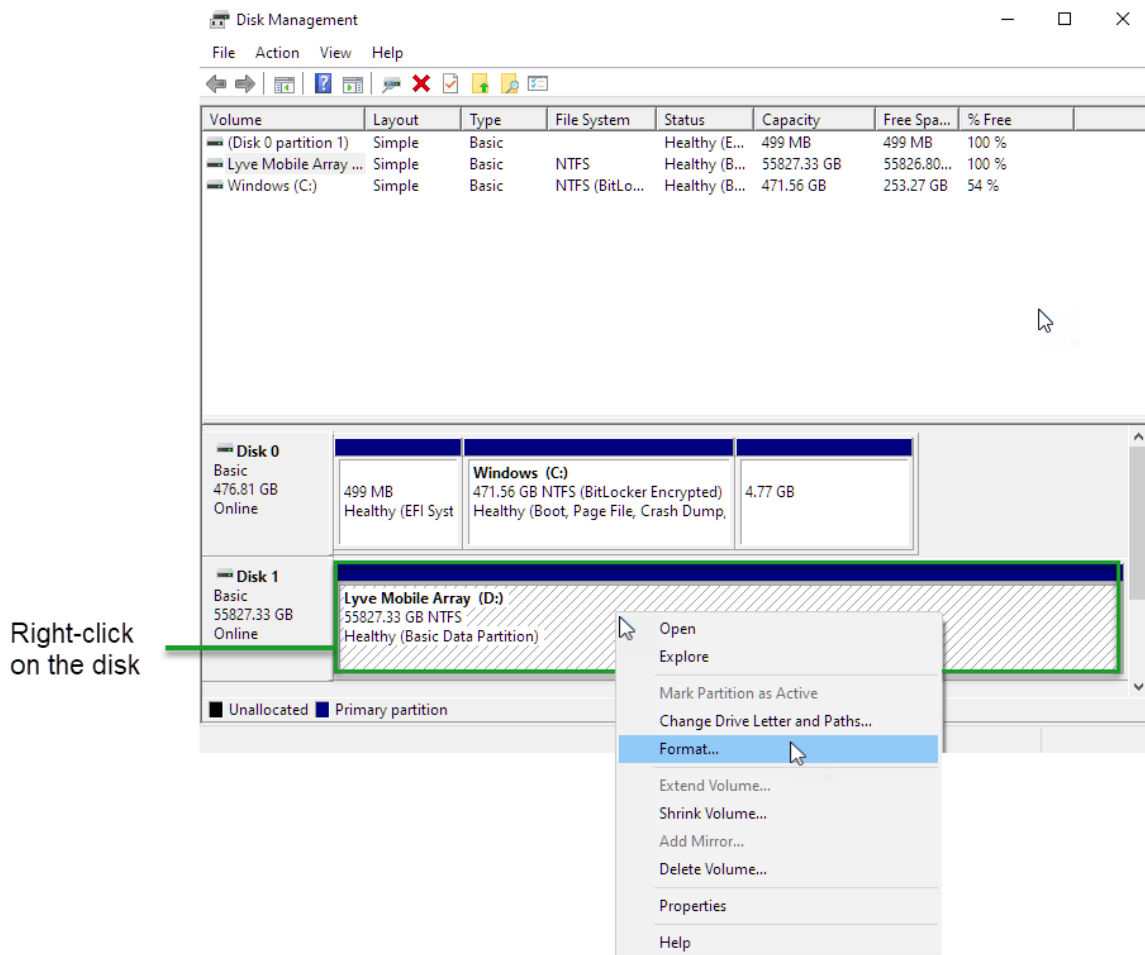
## Reassigning drive letter

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

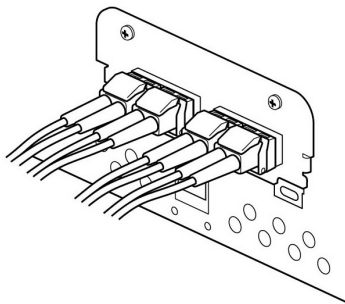
### Host connection

- 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.

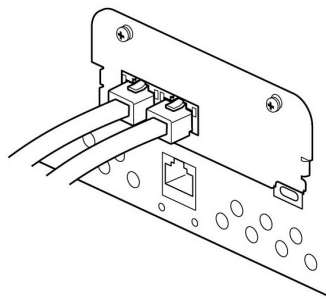
### Target connection

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

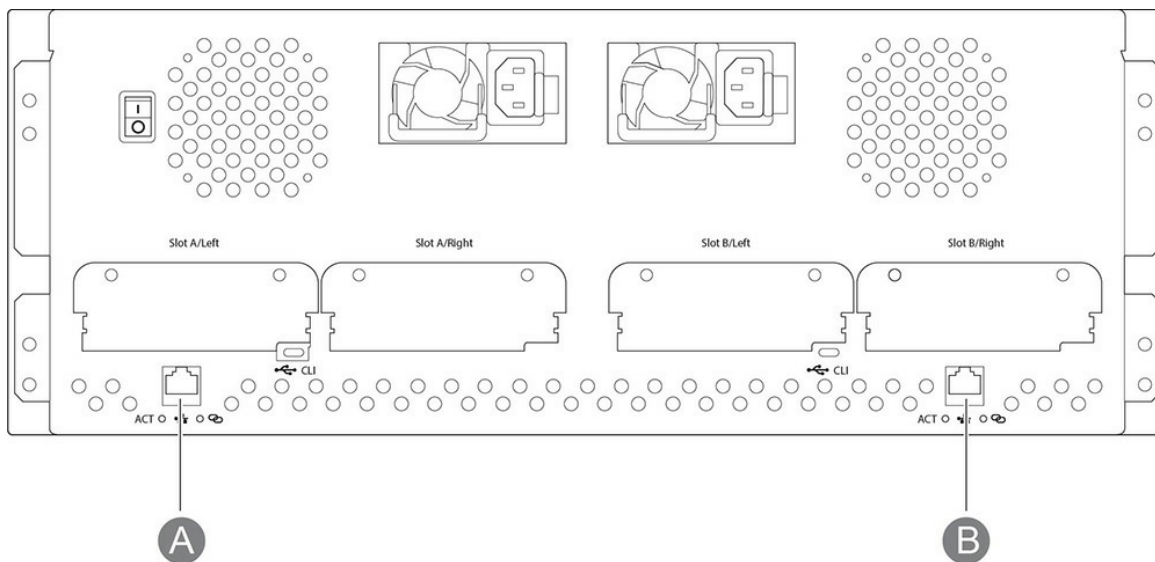
iSCSI 25/10Gb 4-port  
(SFP+/SFP28)



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:

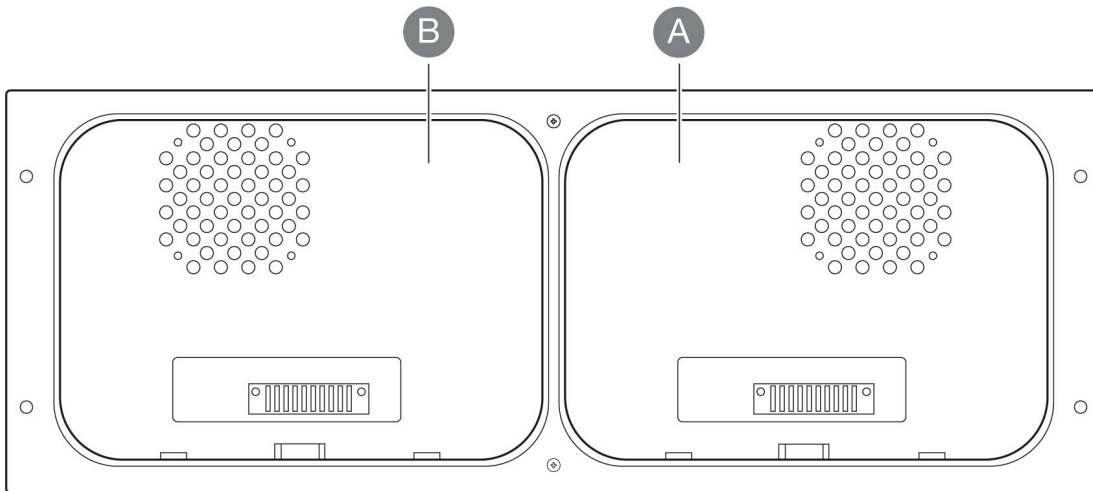
- SLP broadcast messages using UDP port 427 must be allowed in the network environment.
- IP assignments to all computers and devices are performed by a DHCP server on the network.
- The computer running Lyve Client and Lyve Mobile Rackmount Receiver's Ethernet management port must be connected to the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

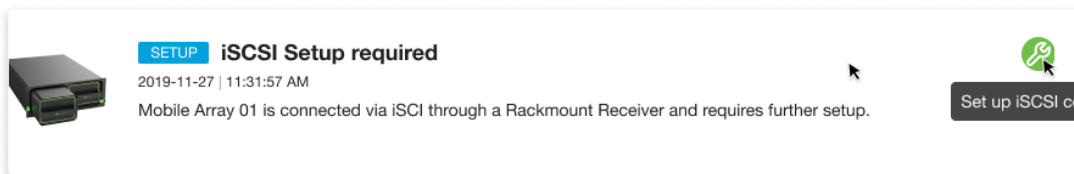
Lyve Client will automatically unlock the device if the management computer was connected to Lyve Mobile Array in the past and is still authorized for security. If the management computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve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

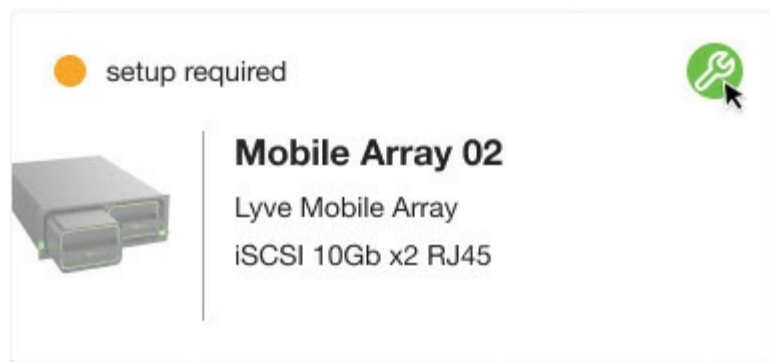
## Set up iSCSI

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: 95%;" type="text" value="Enter address"/>	<input style="width: 95%;" type="text" value="Enter address"/>	<input style="width: 95%;" type="text" value="Enter address"/>
1	<input style="width: 95%;" type="text" value="Enter address"/>	<input style="width: 95%;" type="text" value="Enter address"/>	<input style="width: 95%;" 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

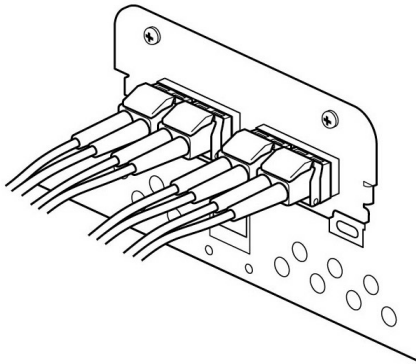
### Host connection

- 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.

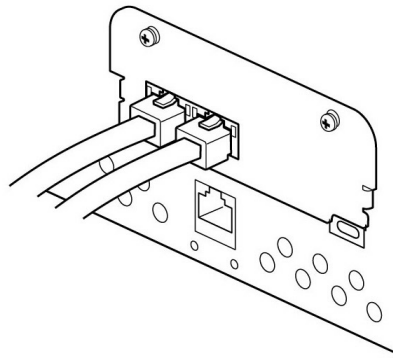
### Target connection

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

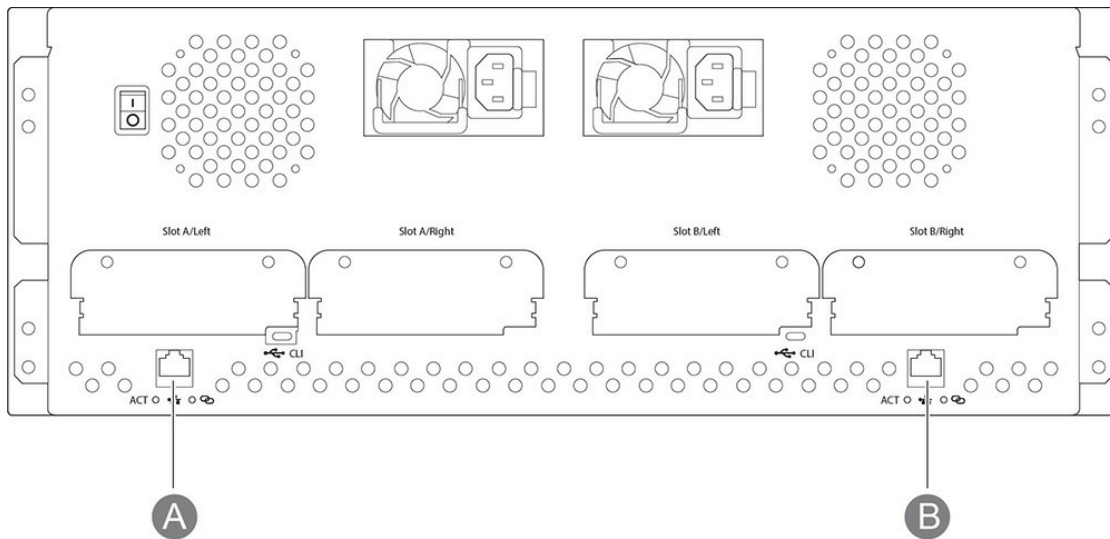
iSCSI 25/10Gb 4-port  
(SFP+/SFP28)



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:

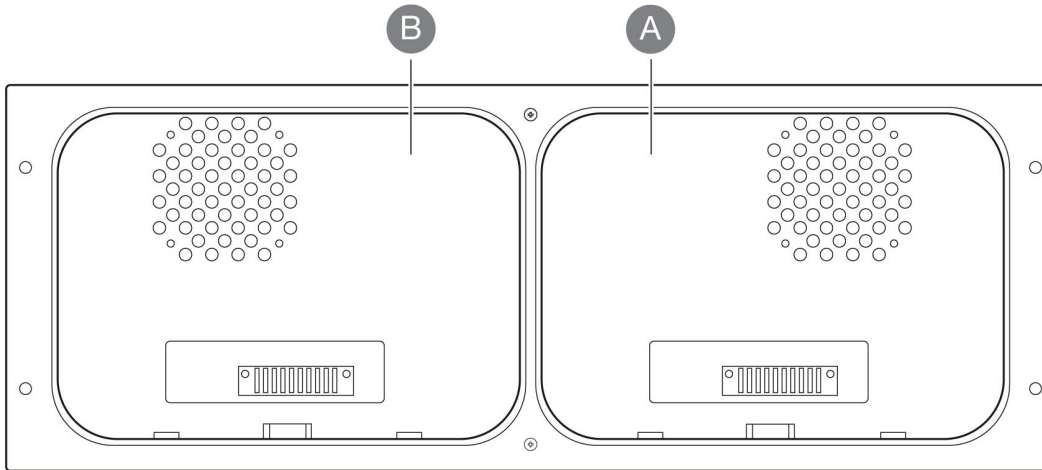
- SLP broadcast messages using UDP port 427 must be allowed in the network environment.
- IP assignments to all computers and devices are performed by a DHCP server on the network.
- The computer running Lyve Client and Lyve Mobile Rackmount Receiver's Ethernet management port must be connected to the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

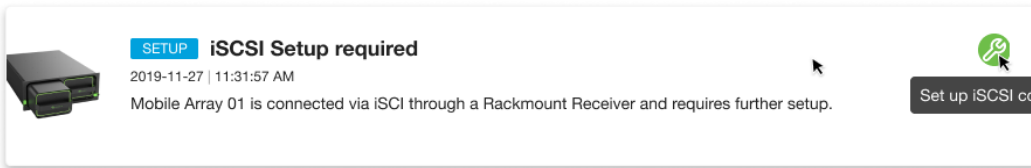
Lyve Client will automatically unlock the device if the management computer was connected to Lyve Mobile Array in the past and is still authorized for security. If the management computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve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

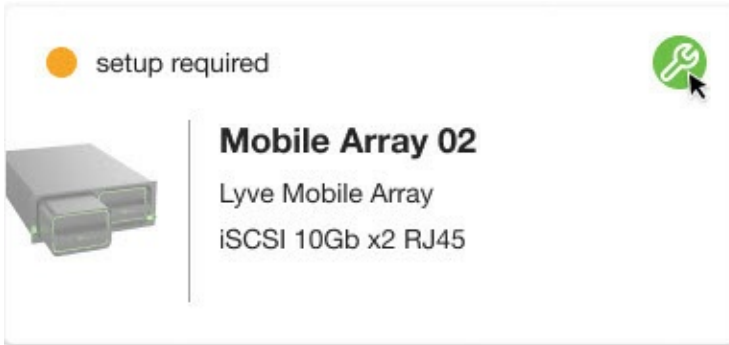
## Set up iSCSI

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 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. 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" PTTYTYPE="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
```

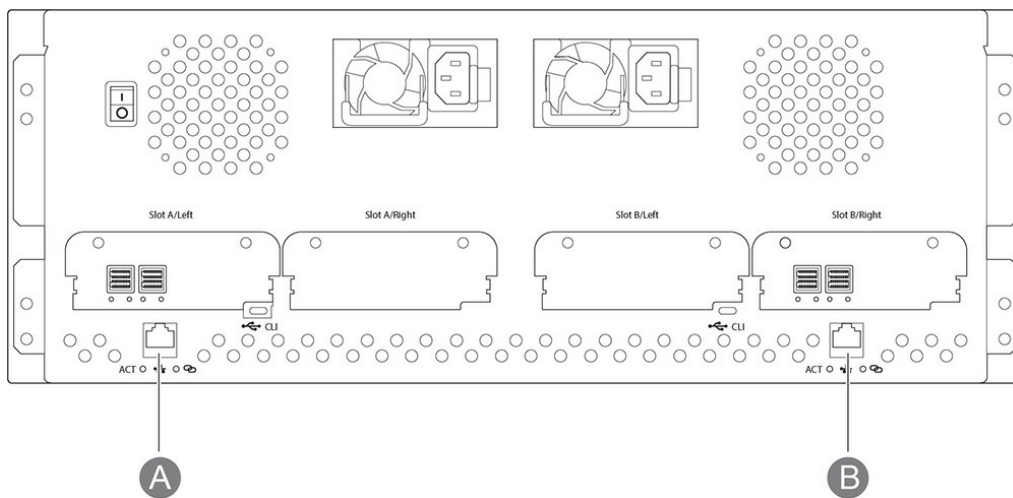
# SAS Network Setup for Windows

## Requirements

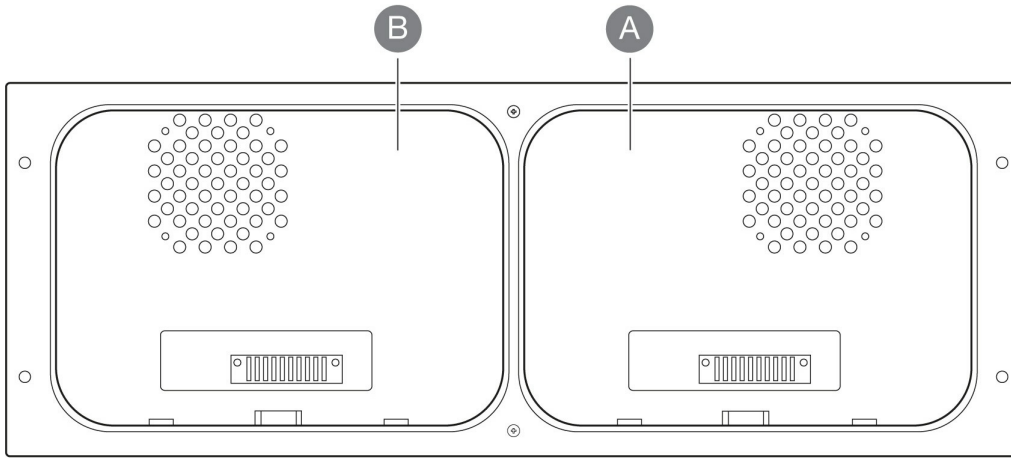
The Lyve Client app is required to authorize a host computer to access Lyve Mobile Array and compatible devices. Download the Lyve Client installer for Windows and macOS at [www.seagate.com/support/lyve-client](http://www.seagate.com/support/lyve-client) and install it on the server. For more information,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



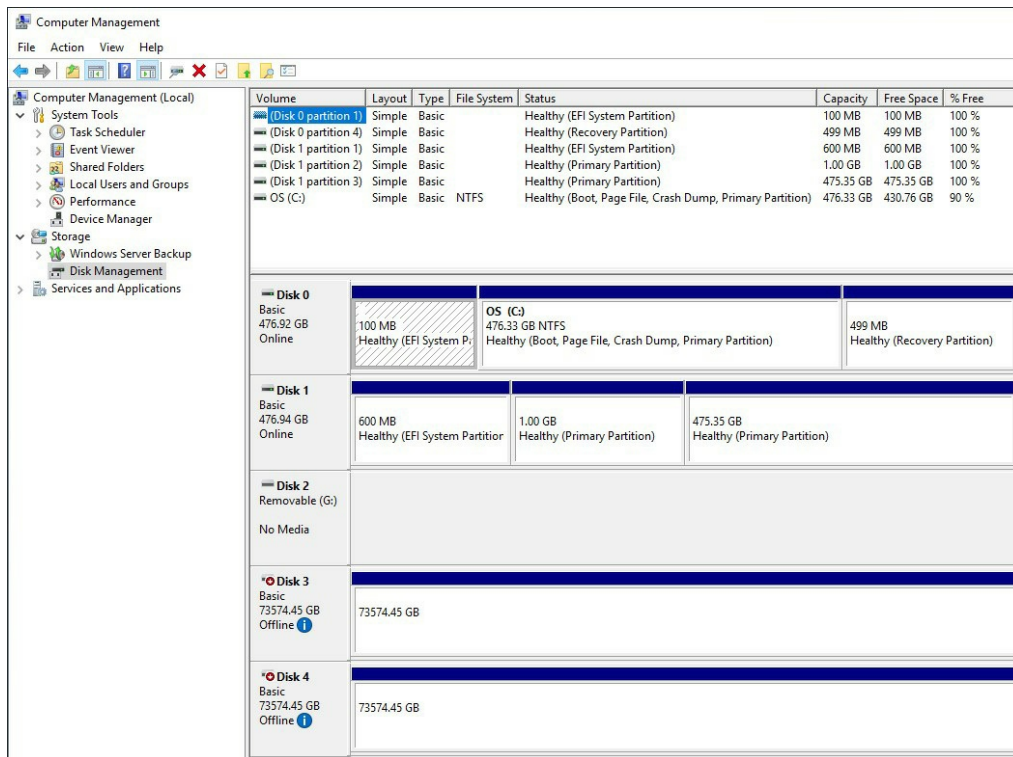
4. Open Lyve Client. You may be prompted to unlock Lyve Mobile Array if this is the first connection to the host.
5. Click the **Devices** tab.
6. Click on the Mobile Array card with the **Rackmount Receiver » SAS** connection.

Lyve Client automatically completes your SAS connection configuration.

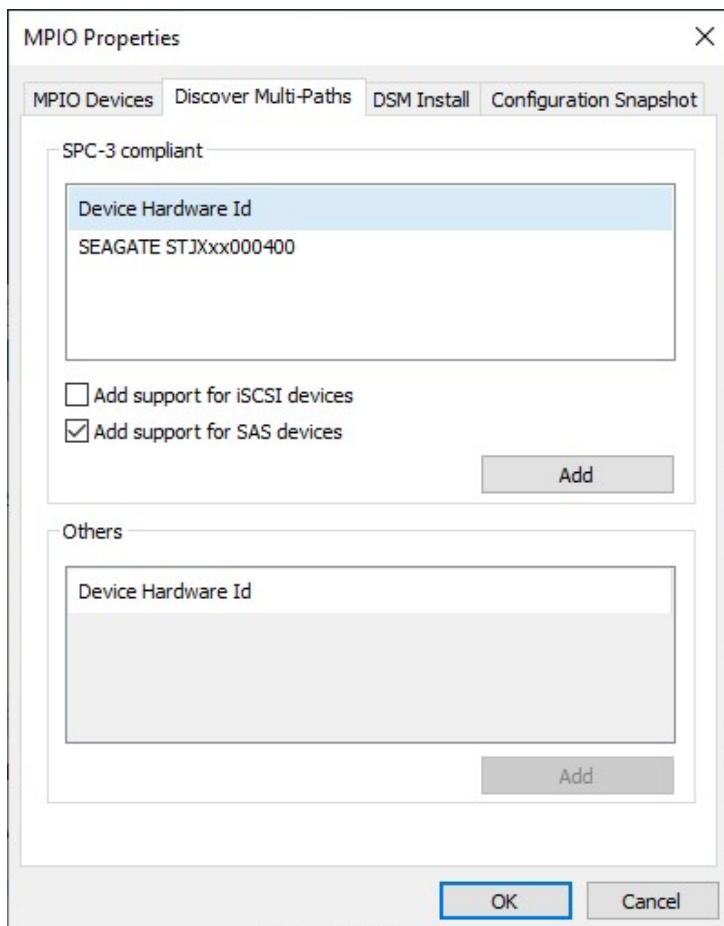
## Manual SAS Setup

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.

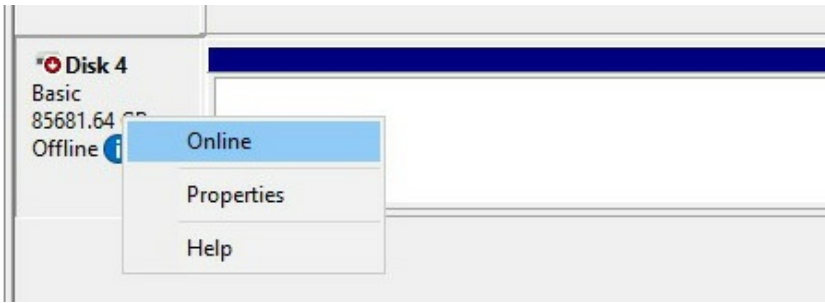
1. Open Server Manager.
2. Open Computer Management.
3. Select **Disk Management**.
4. If more than one **Offline** drive exists, continue steps 5-9. If there's only a single **Offline** drive, go to step 10.



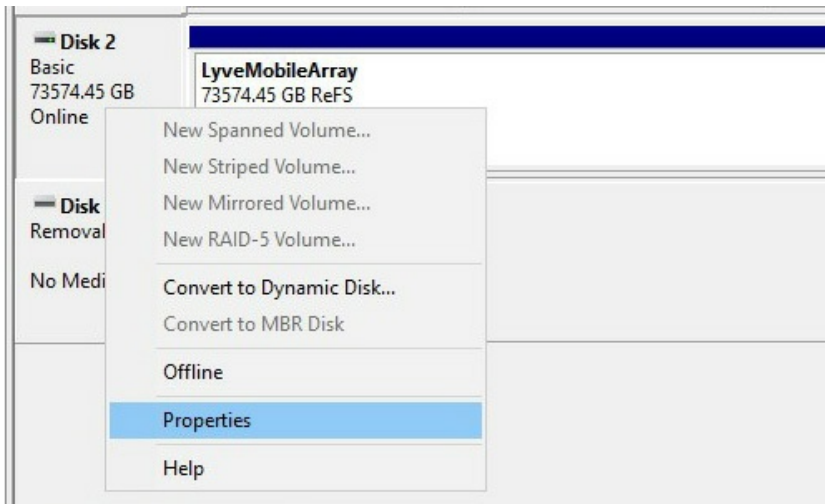
5. Open the Server Manager and install **Multipath I/O (MPIO)**.
6. Open MPIO.
7. Click on the **Discover Multi-Paths** tab.
8. Check **Add support for SAS devices** and click **Add**.



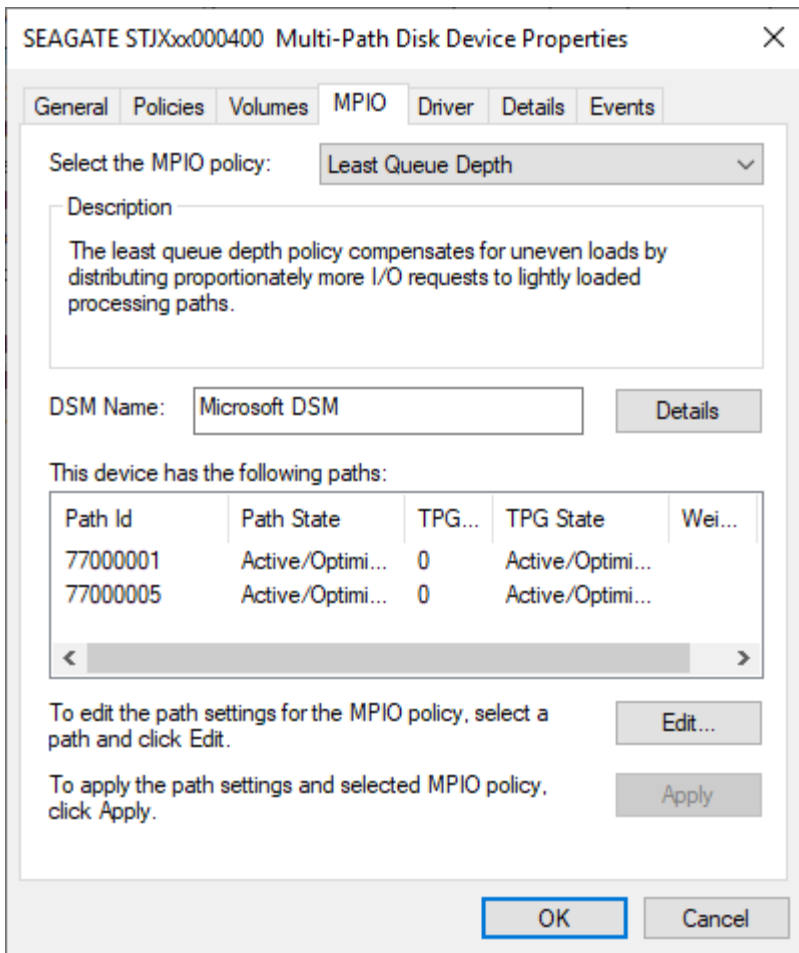
9. Reboot the server.
10. Open Disk Management.
11. Right-click the Lyve Mobile Array disk marked **Offline** and select **Online**.



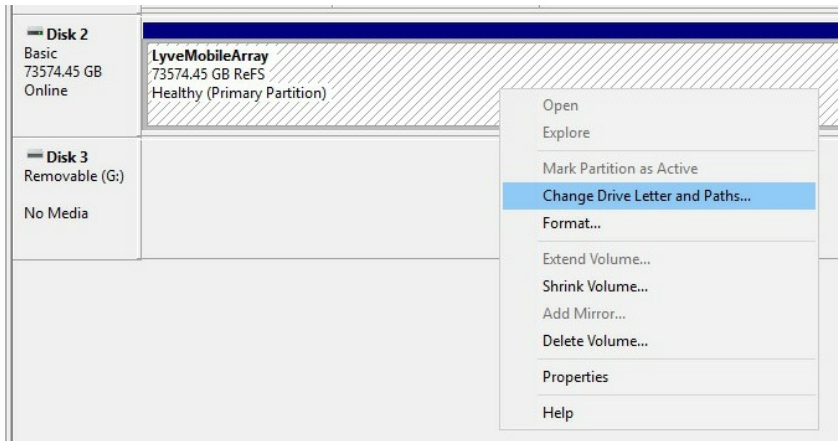
12. If MPIO is enabled, right-click the Lyve Mobile Array disk and select **Properties**. If it is not enabled, go to step 15.



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 <sup>6+</sup> )	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 <sup>6+</sup> )	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

