SEAGATE

Lyve Mobile Rackmount Receiver User Manual

按一下此處存取該文件
最新線上版本。您也可以找到最新內容，以及可擴展圖像、簡易導覽和搜尋功能。

Contents

Welcome

Seagate® Lyve™ Mobile Rackmount Receiver facilitates quick ingestion of shuttle content directly into a network center.

Box content

- Lyve Mobile Rackmount Receiver
- 1.8 m power cord (x4: US, UK, EU, AU/NZ)
- Rail kit accessory box
- Front latch kit accessory box
- Power cord zip tie/lock (x2)
- Quick Start Guide

Specifications

Dimensions

Side	Dimensions (in/mm)
Length	19 in/482.6 mm
Width	4.638 in/117.8 mm
Depth	24.598 in/624.78 mm

Weight

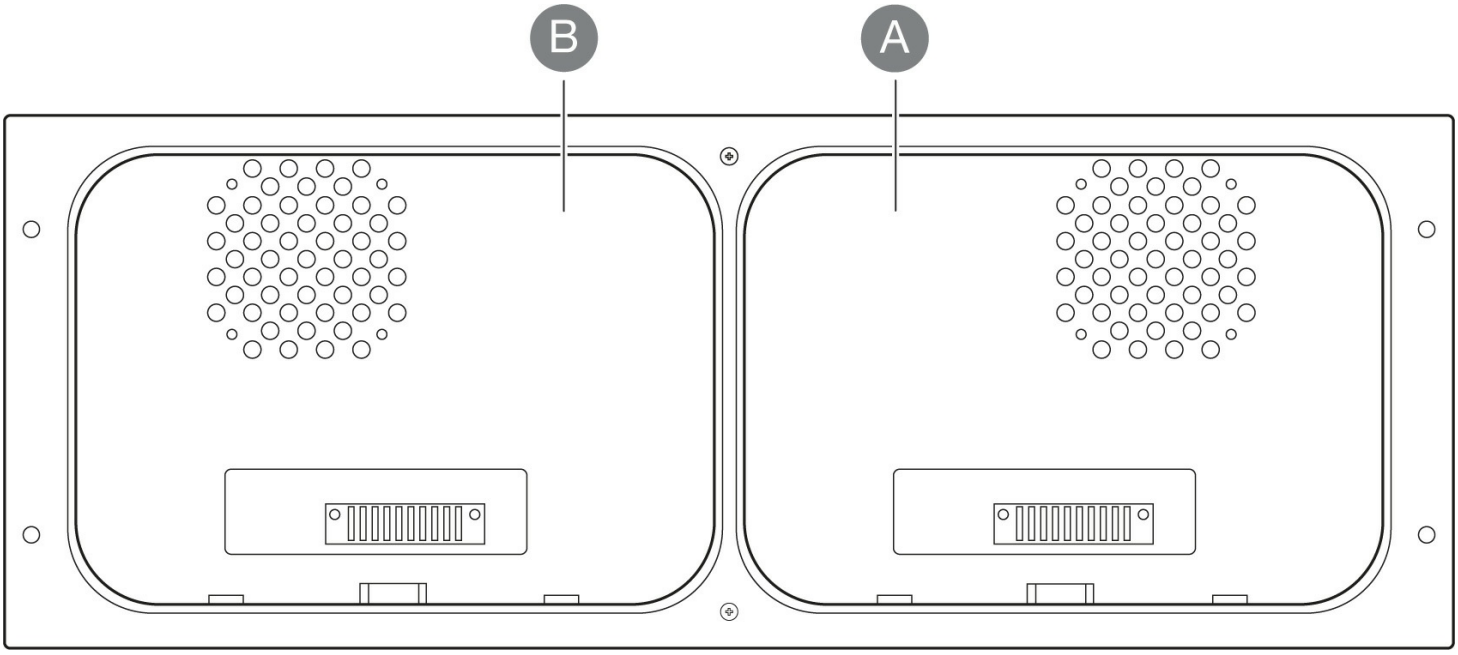
Part	Weight (lb/kg)
Mobile Rackmount Receiver	47.52 lb/21.6 kg

Electrical

Power adapter, AC/DC base in:100~240V/9.4A, out:12V/65A

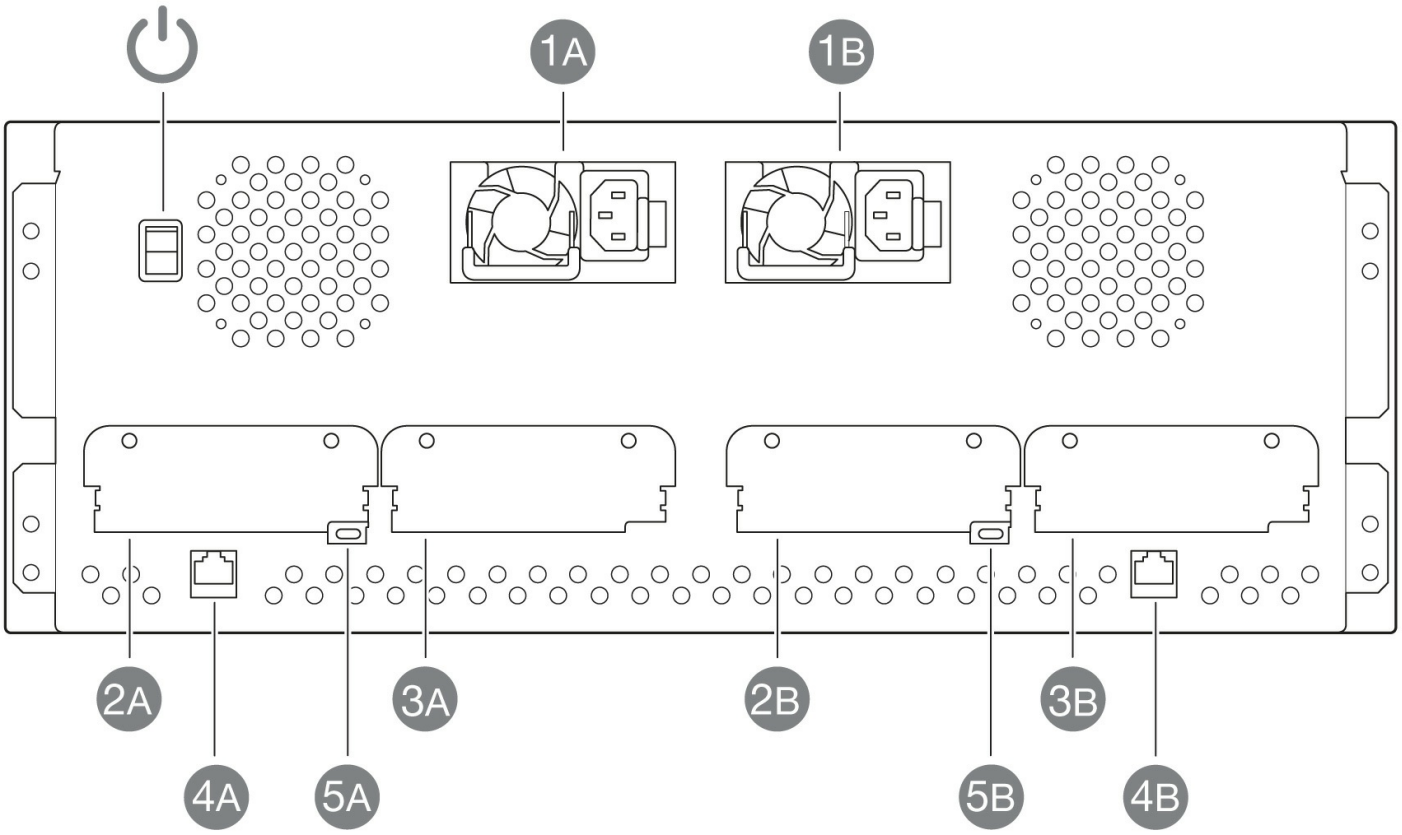
Views

Front view



Key	I/O	Description
A	**Slot A**	Slot for compatible device.
B	**Slot B**	Slot for compatible device.

Back view



Key	I/O	Description
⏻	**Power switch**	Turn power on/off.
1A **1B**	**Power input - A** **Power input - B**	Redundant power supply units. Each unit on its own is capable of delivering power to Lyve Mobile Rackmount Receiver and installed devices. See Power Connections.
2A	**Slot A / Left**	Data connection for device in slot A. See Data Connections.
3A	**Slot A / Right**	Host interface for future expansion. Not available with all models.
4A	**Ethernet management port - A**	Ethernet connection for device in slot A. Not to be used for data transfers.
5A	**CLI management port - A**	Command-line interface port for device in slot A. For service only. Not to be used for data transfers.
2B	**Slot B / Left**	Host interface for future expansion. Not available with all models.
3B	**Slot B / Right**	Data connection for device in slot B. See Data Connections.

4B	**Ethernet management port - B**	Ethernet connection for device in slot B. Not to be used for data transfers.
5B	**CLI management port - B**	Command-line interface port for device in slot B. For service only. Not to be used for data transfers.

Setup Requirements

Lyve Mobile devices are unlocked and accessed using the Lyve Client app. Ensure that Lyve Client has been installed on the host computer and that you have valid Lyve Management Portal credentials. See the following instructions.

Lyve Management Portal credentials

A Lyve Management Portal username and password are required to authorize computers to access devices inserted in Lyve Rackmount Receiver.

Account manager—You created Lyve Management Portal credentials when you set up your Lyve account at lyve.seagate.com.

Product admin or product user—You were identified as a product user for a project created in the Lyve Management Portal. An email was sent to you from the Lyve team that included a link for resetting your password.

If you can't remember your credentials or you lost your email invitation, visit lyve.seagate.com. Click **Sign in** and then click the **Don't remember your password?** link. If your email isn't recognized, contact your account manager. For further help, you can contact customer support using the Lyve Virtual Assist Chat.

To unlock and access Lyve devices connected to your computer, you must enter your credentials in the Lyve Client app. Install Lyve Client on any computer intended to connect to devices inserted in Lyve Rackmount Receiver. See below for details.

Download Lyve Client

The Lyve Client app is required to authorize a host computer to access Lyve Mobile Array and compatible devices. You can also use it to manage Lyve projects and data operations. Download the Lyve Client installer for Windows and macOS at www.seagate.com/support/lyve-client.

Authorize host computers

An internet connection is required when authorizing a host computer.

1. Open Lyve Client on a computer intended to host Lyve Mobile Array.
2. When prompted, enter your Lyve Management Portal username and password.

Lyve Client authorizes the host computer to unlock and access Lyve devices and manage projects on the Lyve Management Portal.

The host computer remains authorized for up to 30 days, during which you can unlock and access connected devices even without an internet connection. After 30 days, you'll need to open Lyve Client on the computer and re-enter your credentials.

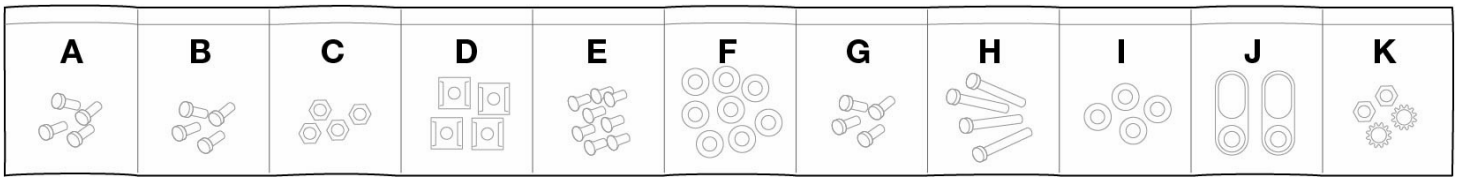
Lyve devices lock when powered off, ejected or unplugged from the host computer, or if the host computer goes to sleep. Lyve Client is required to unlock a Lyve device when it is reconnected to the host or the host has awakened from sleep. Lyve Client can only unlock a device when the host computer is authorized using Lyve Management Portal credentials.

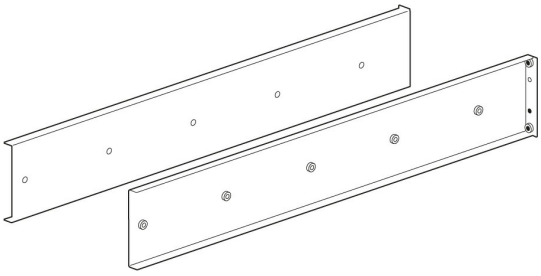
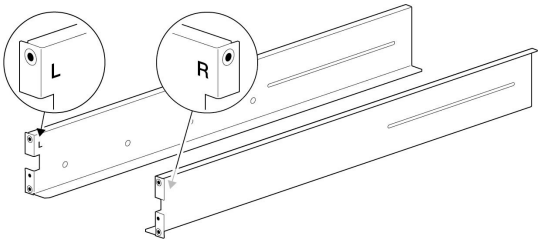
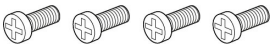
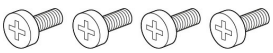
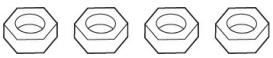
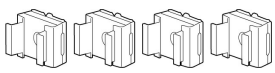
Windows server setup

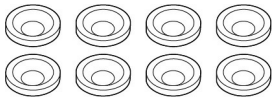
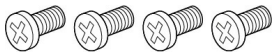
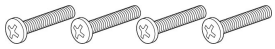
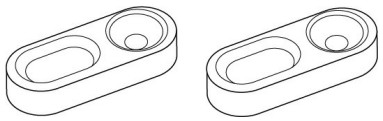
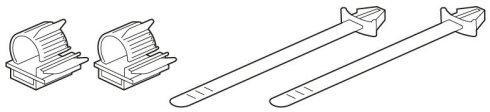
For details on configuring SAS, fibre channel, and iSCSI data network connectivity, see Windows Server Setup.

Rackmount Kit

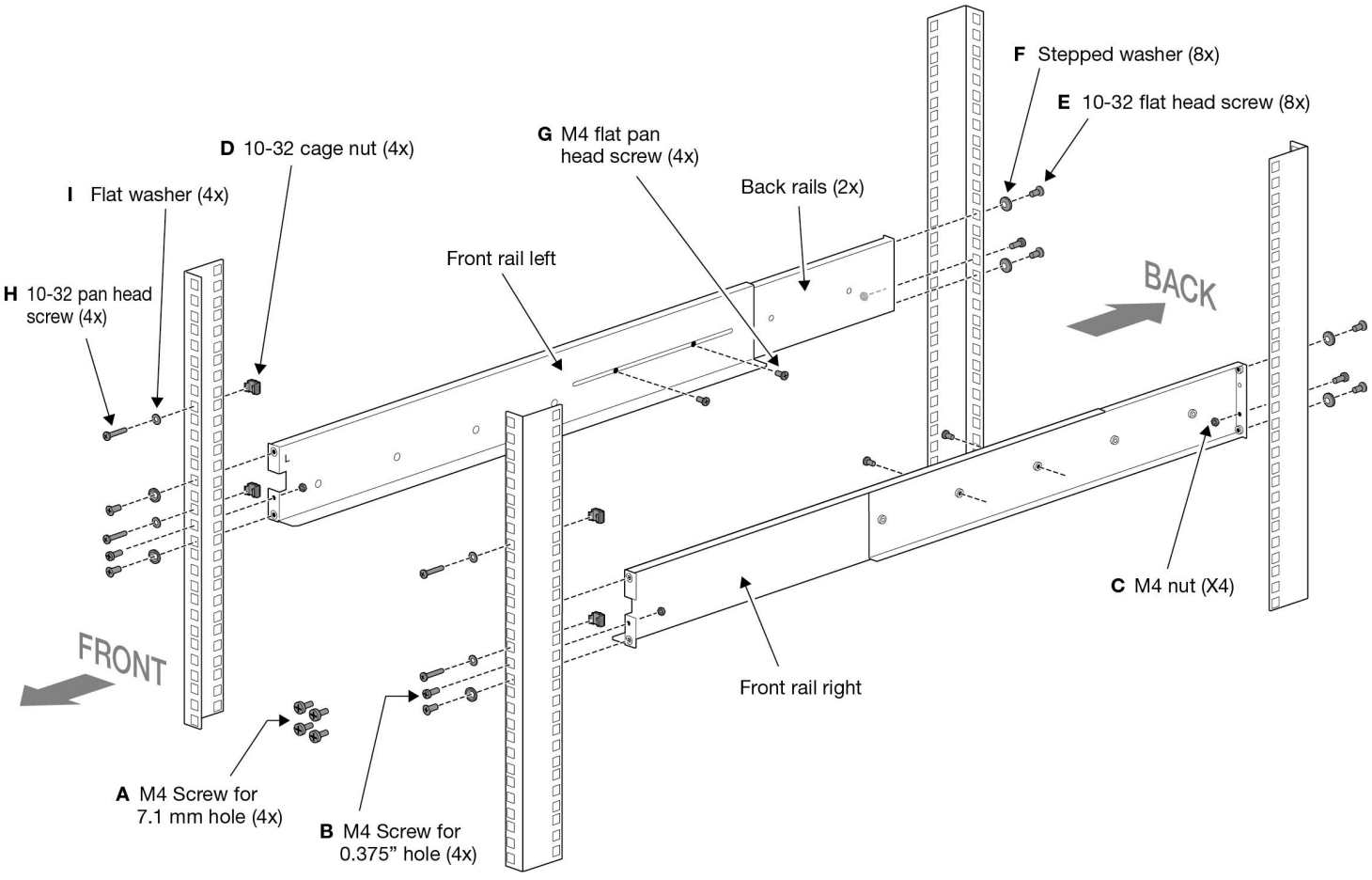
Parts list



Package	Image	Name	Quantity	Notes
		Back rails	2	
		Front rails (left and right)	1 left 1 right	
A		M4 pin for 7.1mm hole" hole	4	M4 x L10 (6.8,2.5) Phillips screw
B		M4 pin for .375" hole	4	M4 x L10 (9.1,2.5) Phillips screw
C		M4 nut	4	
D		10-32 cage nut	4	
E		10-32 flat head screw	8	10-32 x L12.7 Phillips screw

F		Stepped washer	8	
G		M4 pan head screw	4	M4 x L8 Phillips screw
H		10-32 pan head screw	4	10-32 x L25.4 Phillips screw
I		Flat washer	4	
J		Latch	2	
K		10-32 nut and washer	2 (each)	
		Zip ties	2	

Parts diagram

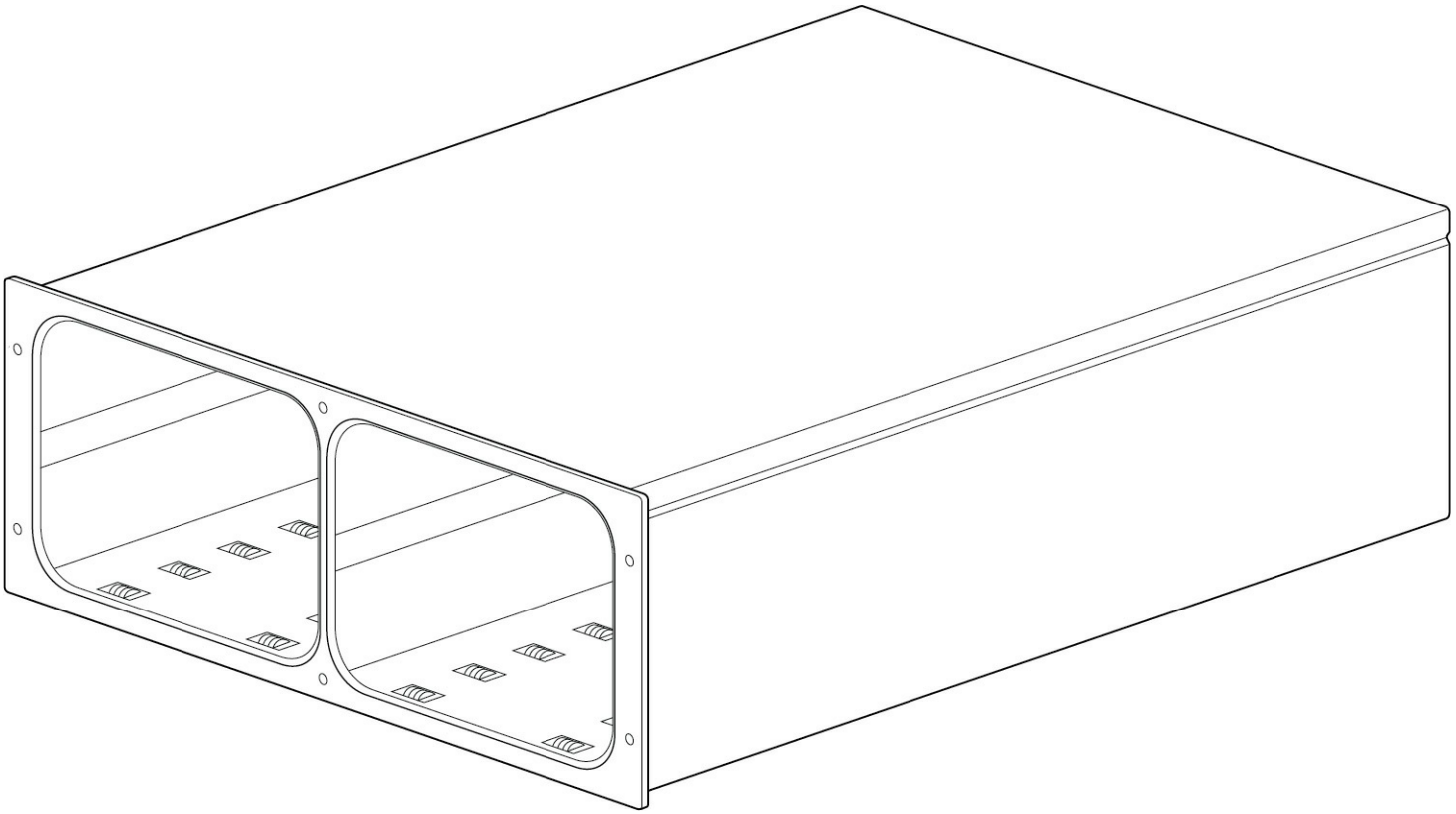


Lyve Mobile Rackmount Receiver

Removing Lyve Mobile Rackmount Receiver from its packaging and carrying the unit must be performed by at least two people.

Receiver weight (empty): 47.52 lb/21.6 kg

Do not attempt to lift or assemble Lyve Mobile Rackmount Receiver with compatible devices inserted.



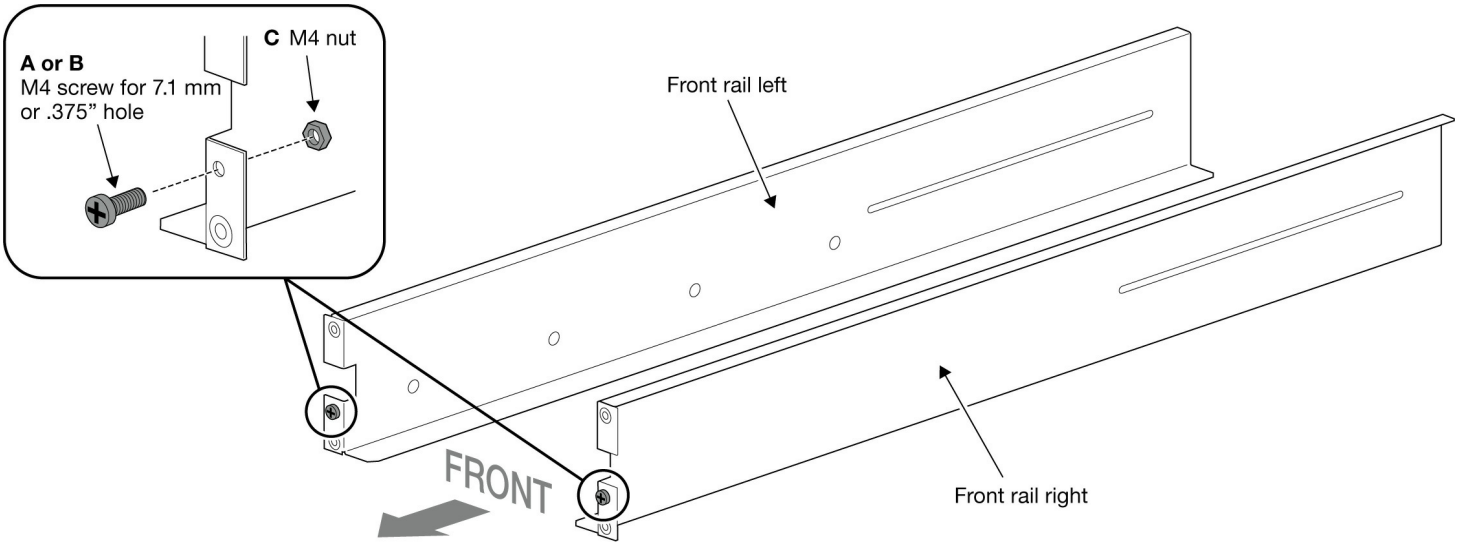
Rack Assembly

Step 1 - Attach M4 rack screws to the front rails

Your rack may have standard 7.1mm or .375" openings. M4 screws are provided for both hole dimensions.

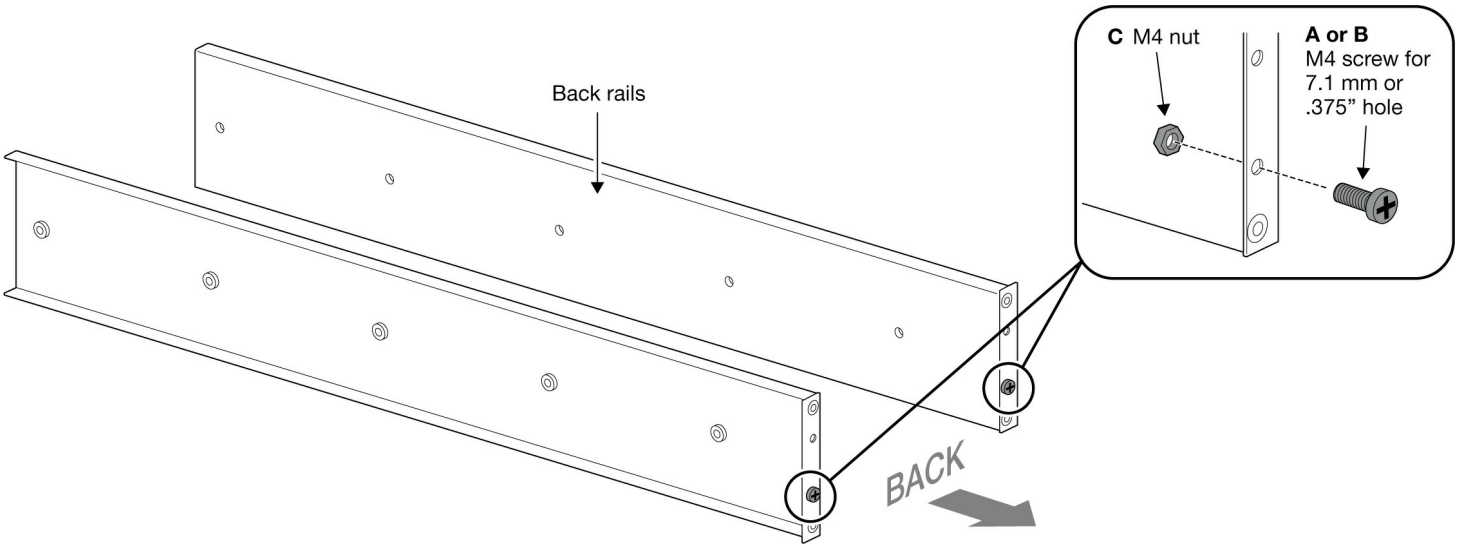
Insert an M4 screw for 7.1mm or .375" in the indicated hole on the left front rail and fasten it with an M4 nut.

Repeat the process for the right front rail.



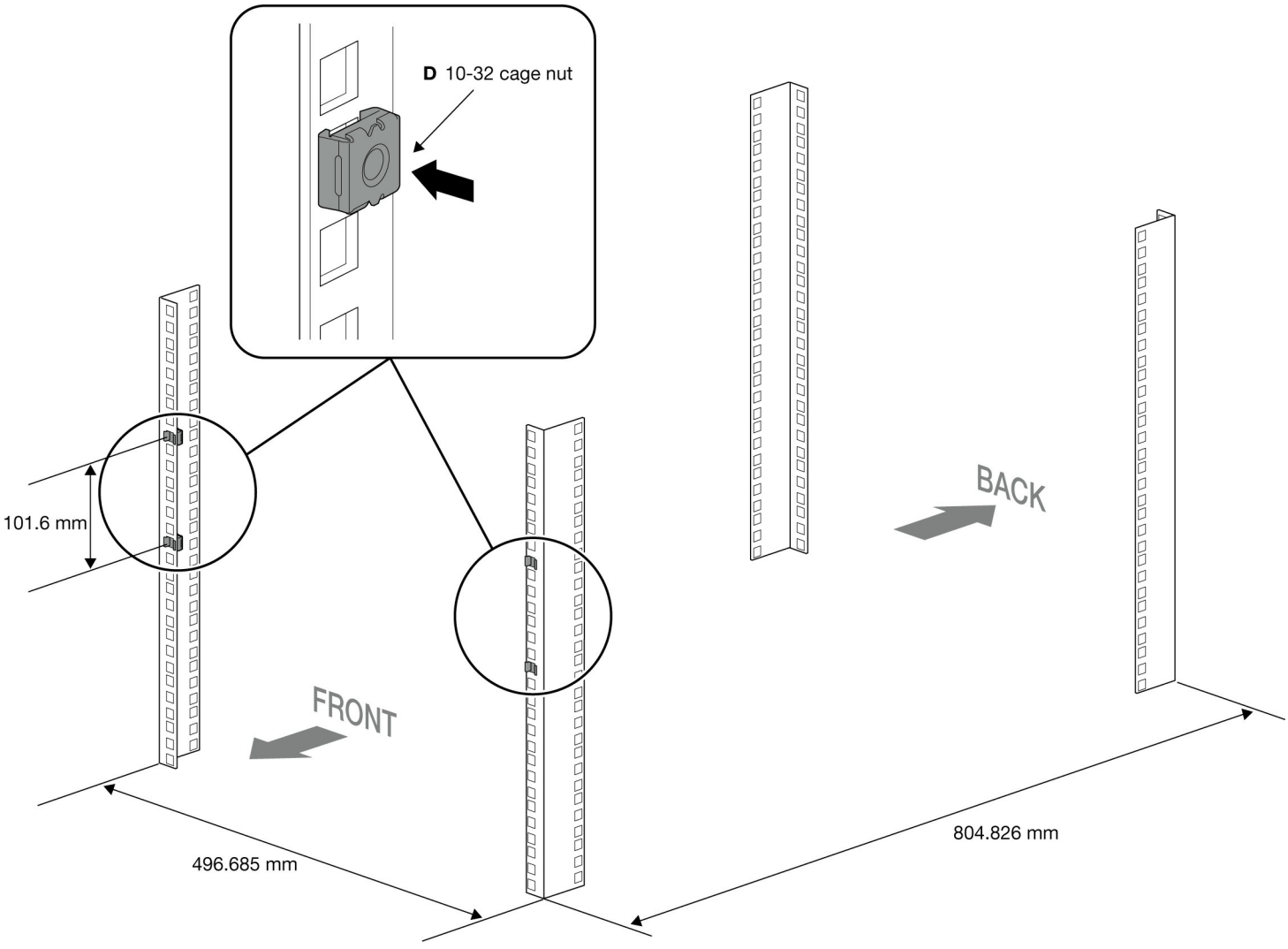
Step 2 - Attach M4 rack screws to the back rails

Insert M4 screws in the indicated holes on the back rails and fasten them with M4 nuts.



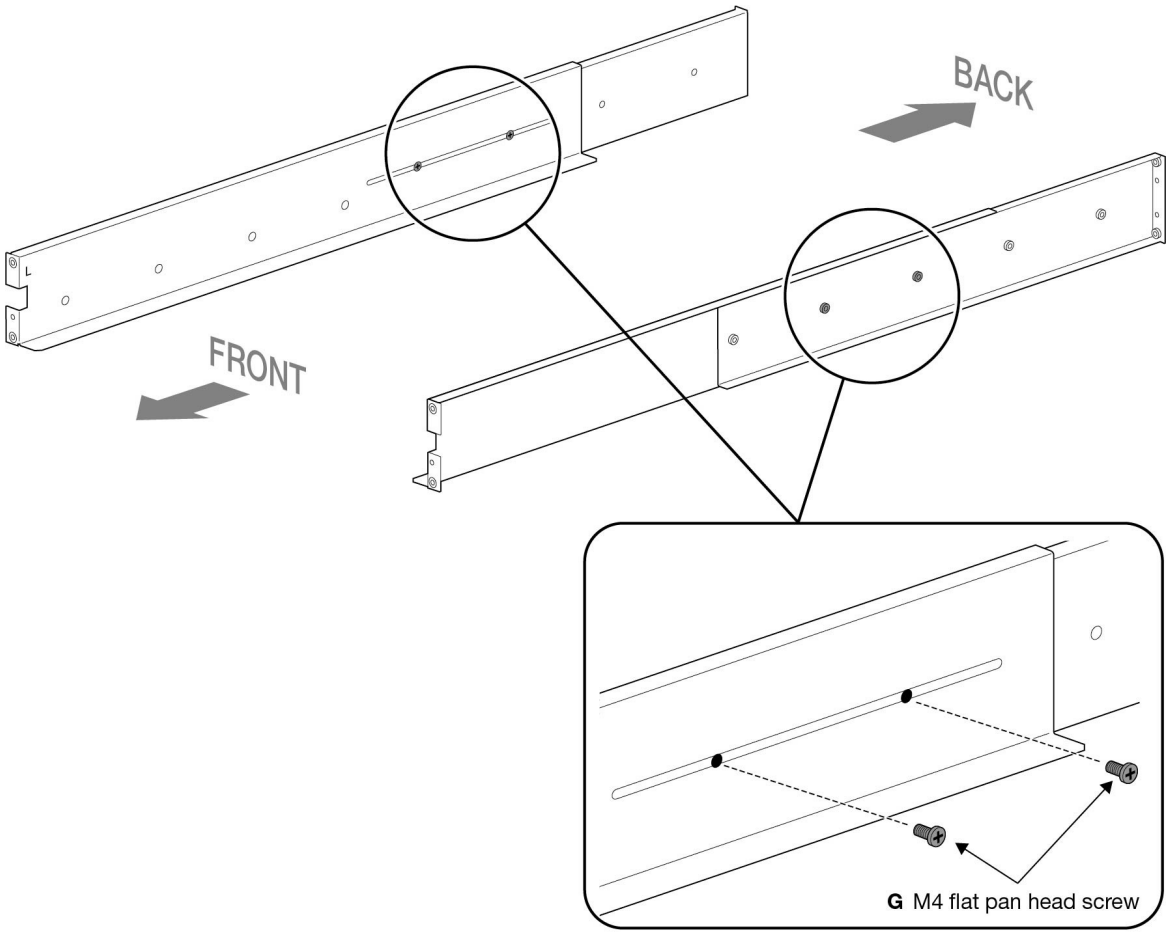
Step 3 - Attach cage nuts to rack

Attach two 10-32 cage nuts to each front rack post. Leave 101.6mm space between the two nuts on each post.



Step 4 - Attach the front rails to the back rails

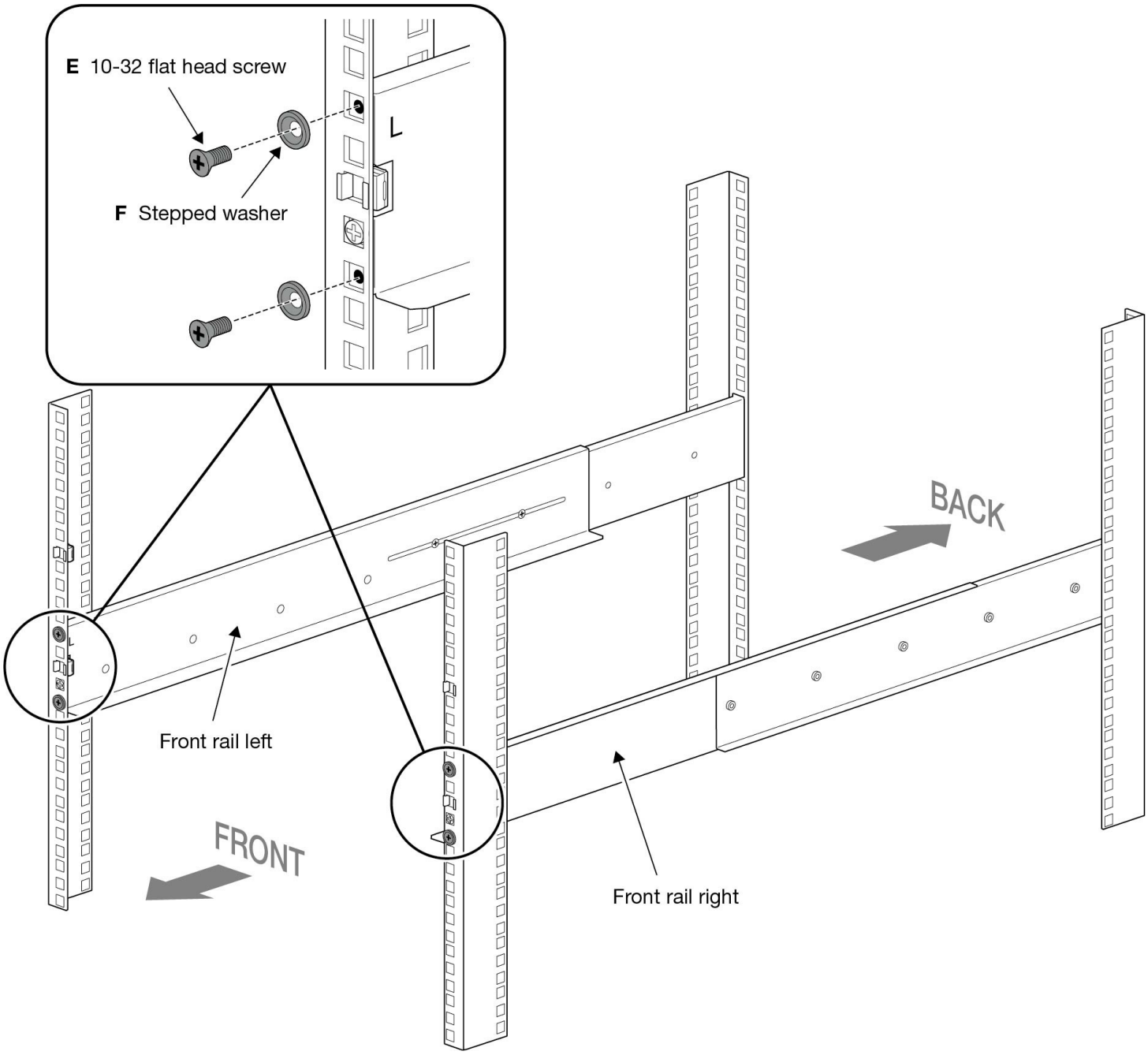
Use M4 flat pan head screws to loosely attach the front rails to the back rails.



Step 5 - Attach the rails to the front of the rack

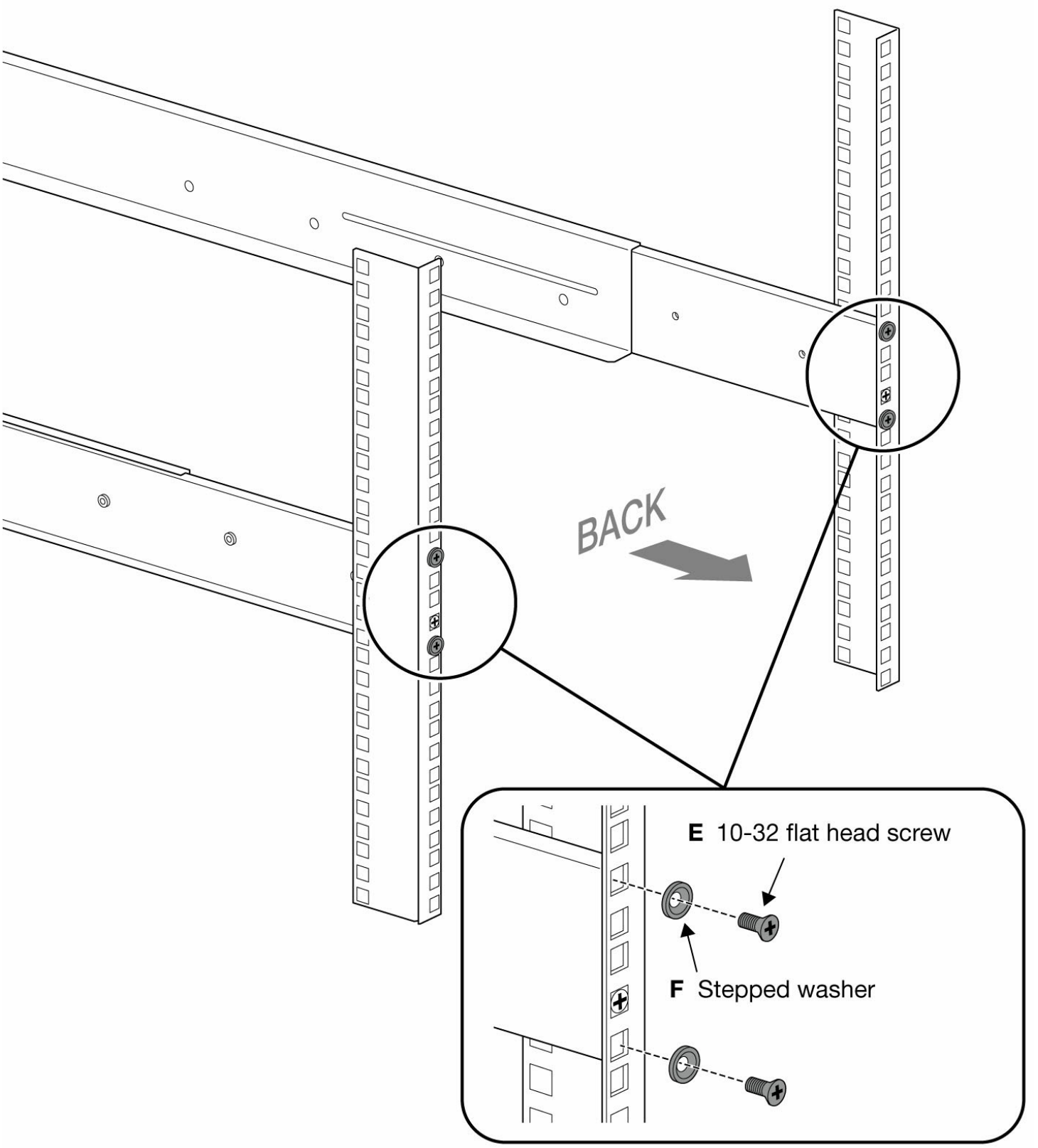
Position the left front rail on the cage nut on the left front rack post. Insert two 10-32 flat head screws into two stepped washers. Use the screw/washer assemblies to fasten the left front rail to the left front rack post.

Repeat the process for the right front rail and right front rack post.



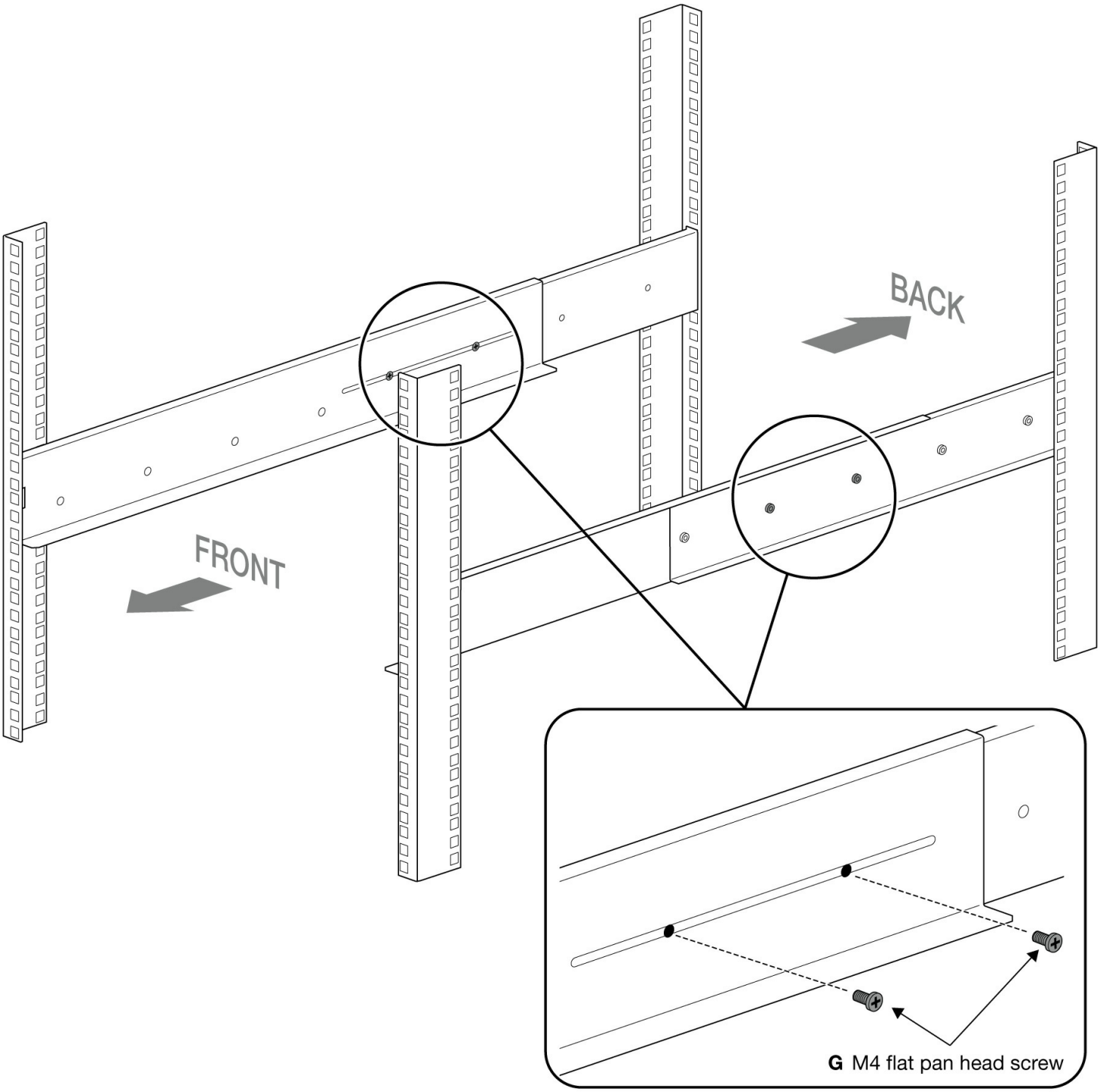
Step 6 - Attach the back rails to the back of the rack

Position the back rails at the correct height on the rear rack posts. Insert two 10-32 flat head screws into two stepped washers. Use the screw/washer assemblies to fasten the back rails to the rear rack posts.



Step 7 - Tighten rail attachments

Tighten the M4 flat pan head screws attaching the front and back rails.



Step 8 - Install Lyve Mobile Rackmount Receiver

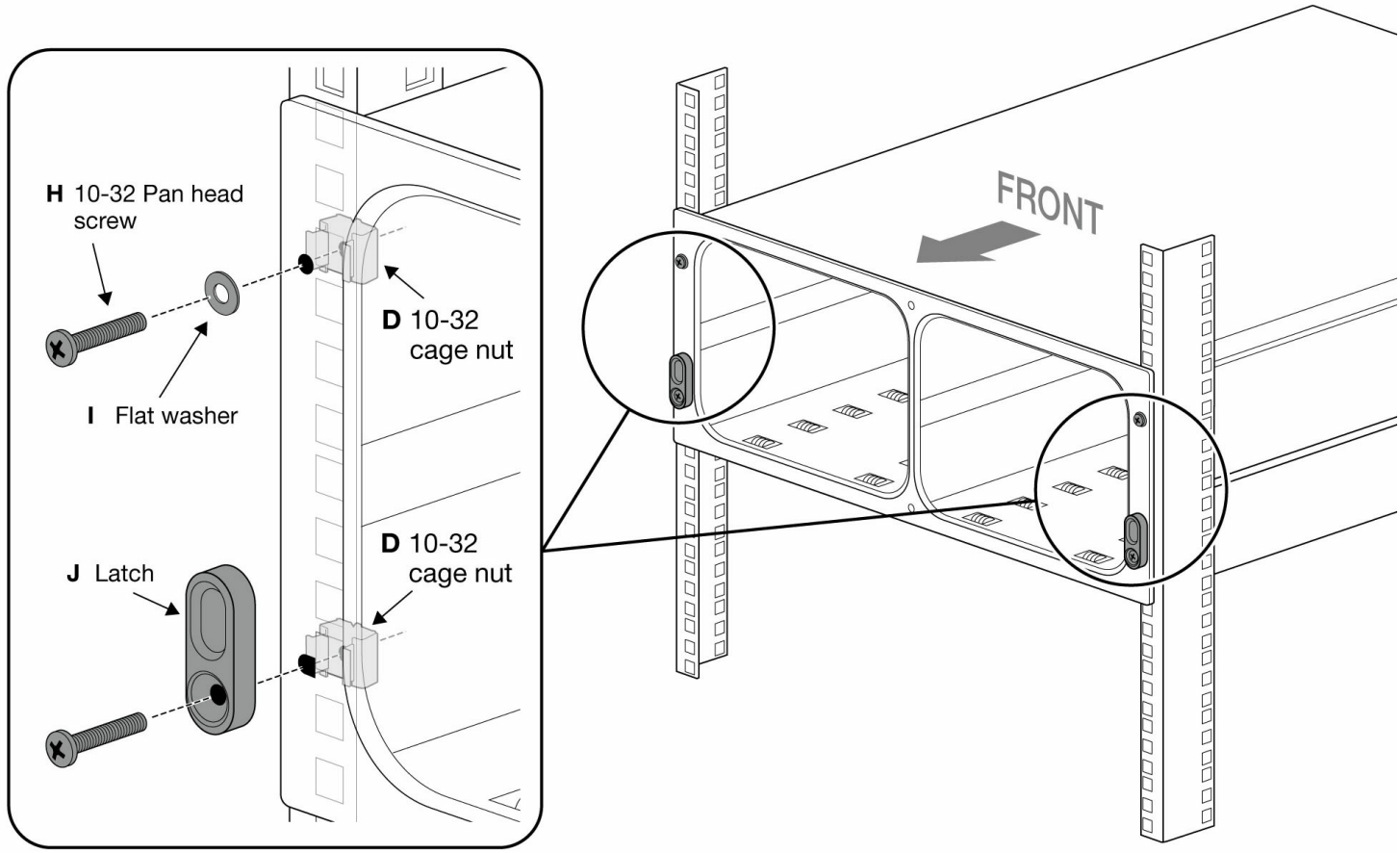
Removing Lyve Mobile Rackmount Receiver from its packaging and carrying the unit must be performed by at least two people.

Receiver weight (empty): 47.52 lb/21.6 kg

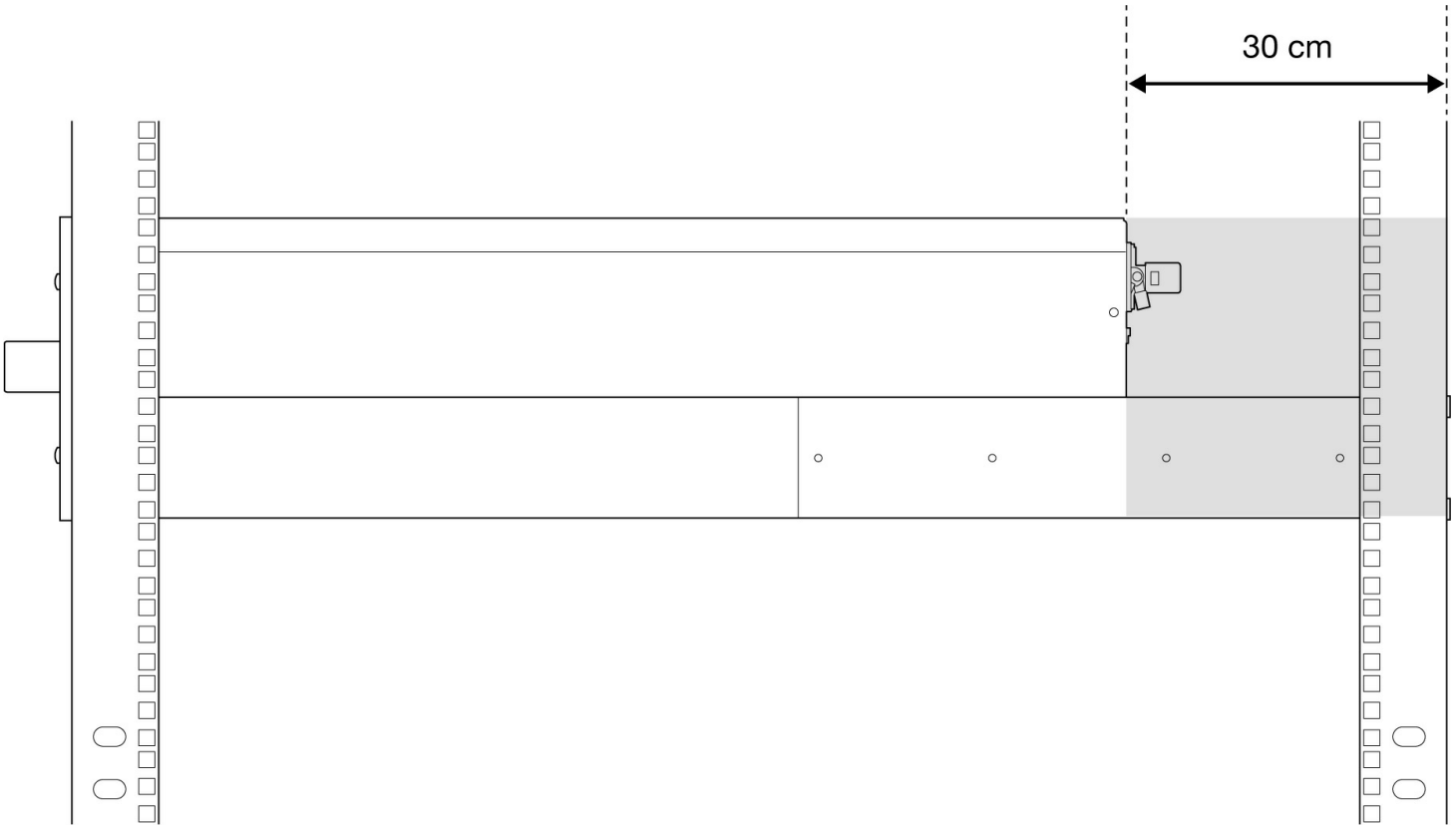
Do not attempt to lift or assemble Lyve Mobile Rackmount Receiver with compatible devices inserted.

Position the front face of Lyve Mobile Rackmount Receiver over the cage nuts attached to the left and right front posts. Insert two 10-32 pan head screws into two flat washers. Use the screw/washer assemblies to attach Lyve Mobile Rackmount Receiver to the top cage nuts attached to the left and right front posts.

Insert two 10-32 screws into the two latches. Use the screw/latch assemblies to attach Lyve Mobile Rackmount Receiver to the bottom cage nuts attached to the left and right front posts.



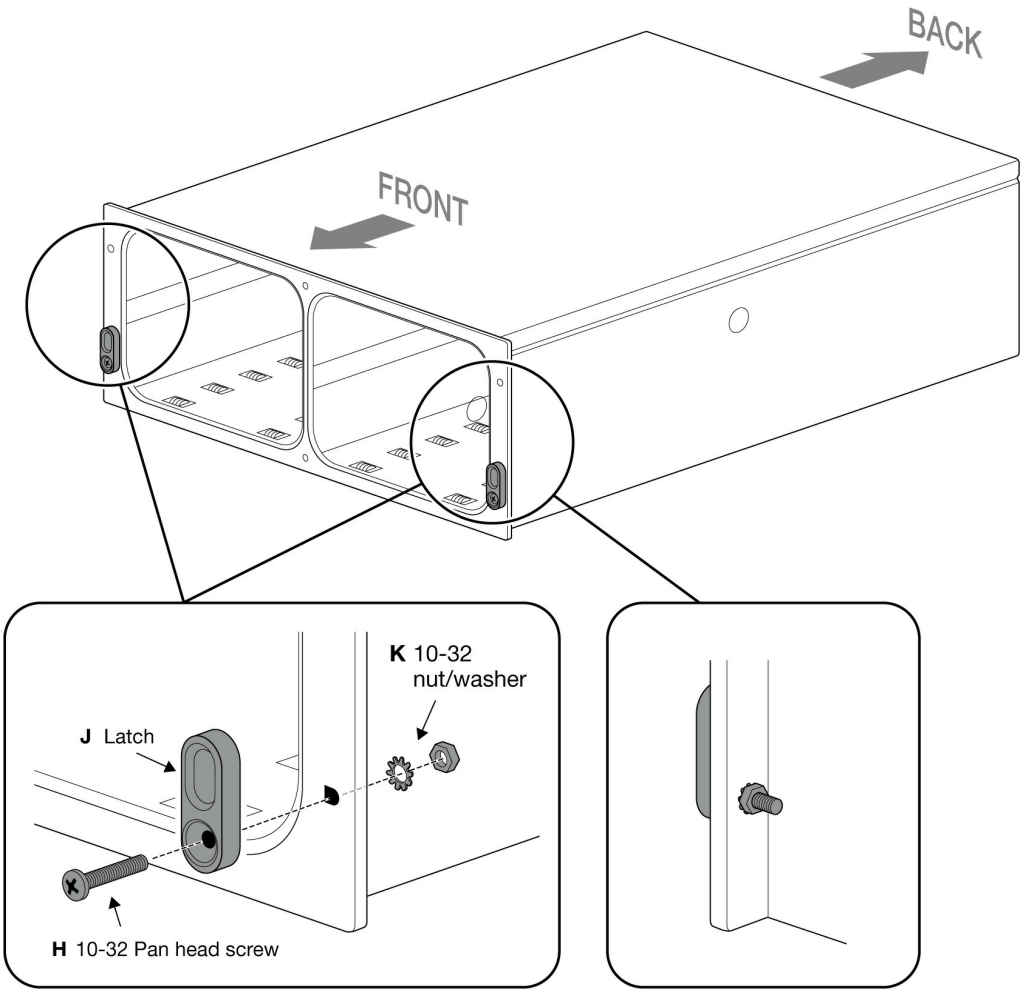
Recommended clearance


30 cm

Freestanding Latch Assembly

Latch attachment

If Lyve Mobile Rackmount Receiver is not assembled on a rack, use the additional lock washer and 10-32 hexagonal nut to attach each latch to the enclosure.



Data Connections

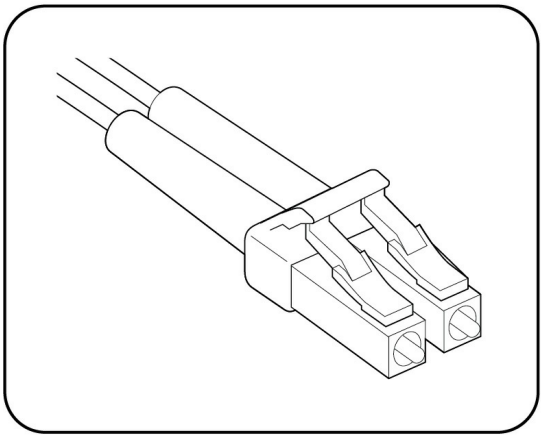
Seagate Lyve Mobile Rackmount Receiver is pre-configured to support one or more host interfaces.

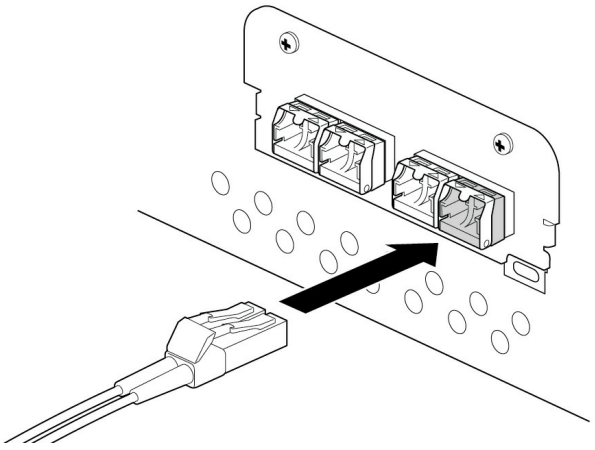
Connect to host interfaces

Connect the appropriate fiber channel, Ethernet, or SAS cables to available ports on Lyve Mobile Rackmount Receiver's back panel.

Fiber optic cable

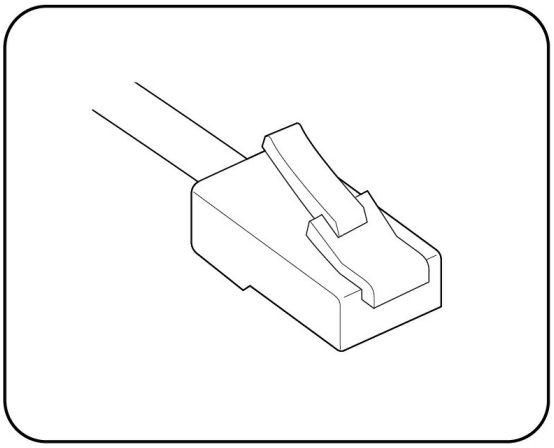
- FC 32Gb, 2-Port SFP+
- FC 16Gb, 2-port SFP+
- iSCSI 25Gb, 4-port 10Gb SFP+

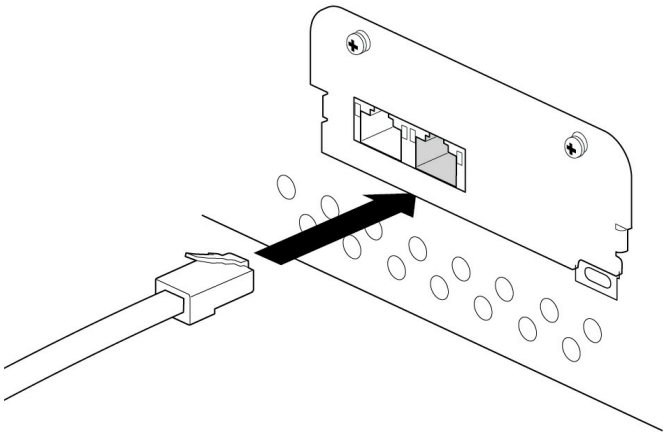




Ethernet cable

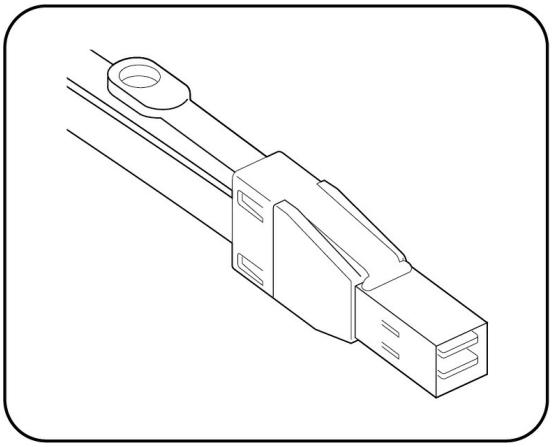
- iSCSI 10GbaseT, 2-Port RJ45

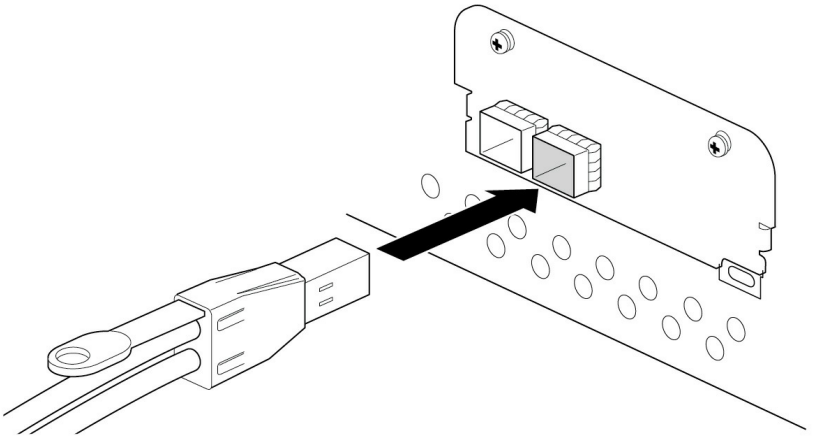




SAS cable

- SAS 12Gb, 2-Port SFF-8644

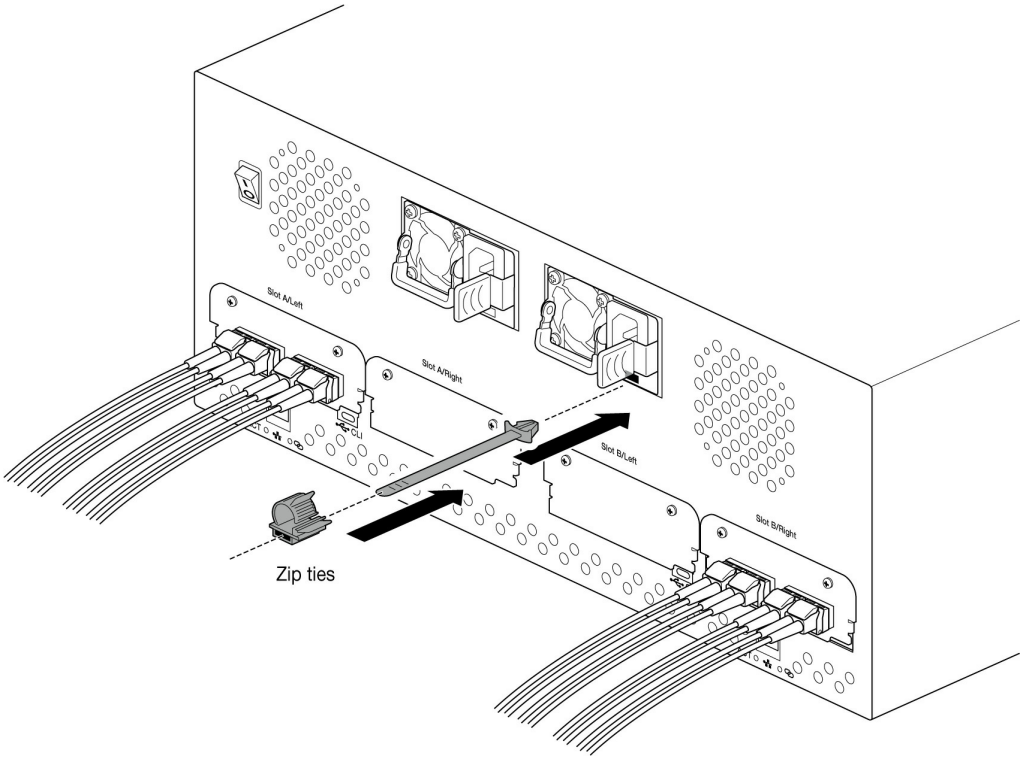


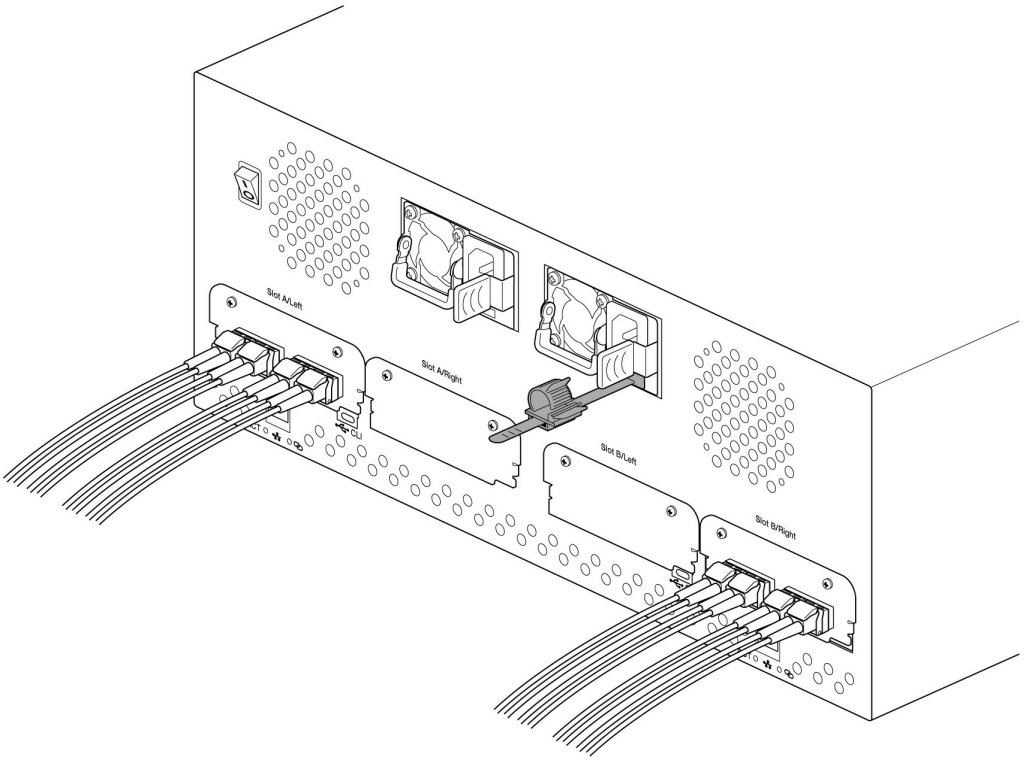


Power Connections

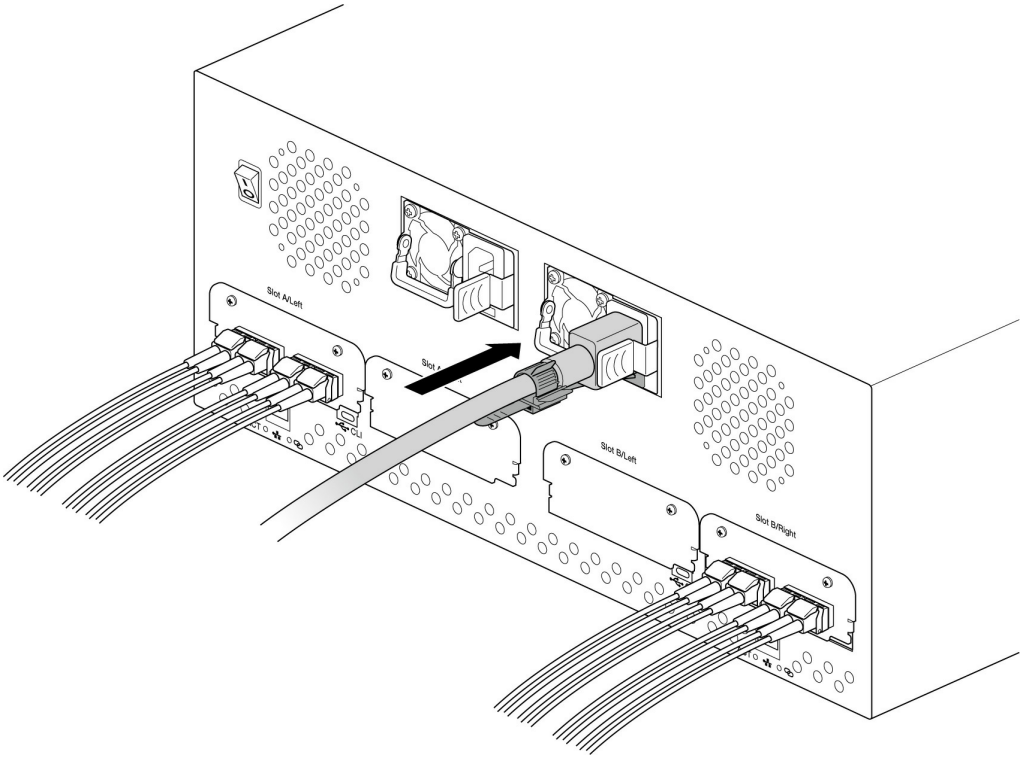
Secure power cord

Insert the zip tie into the slot below the socket.





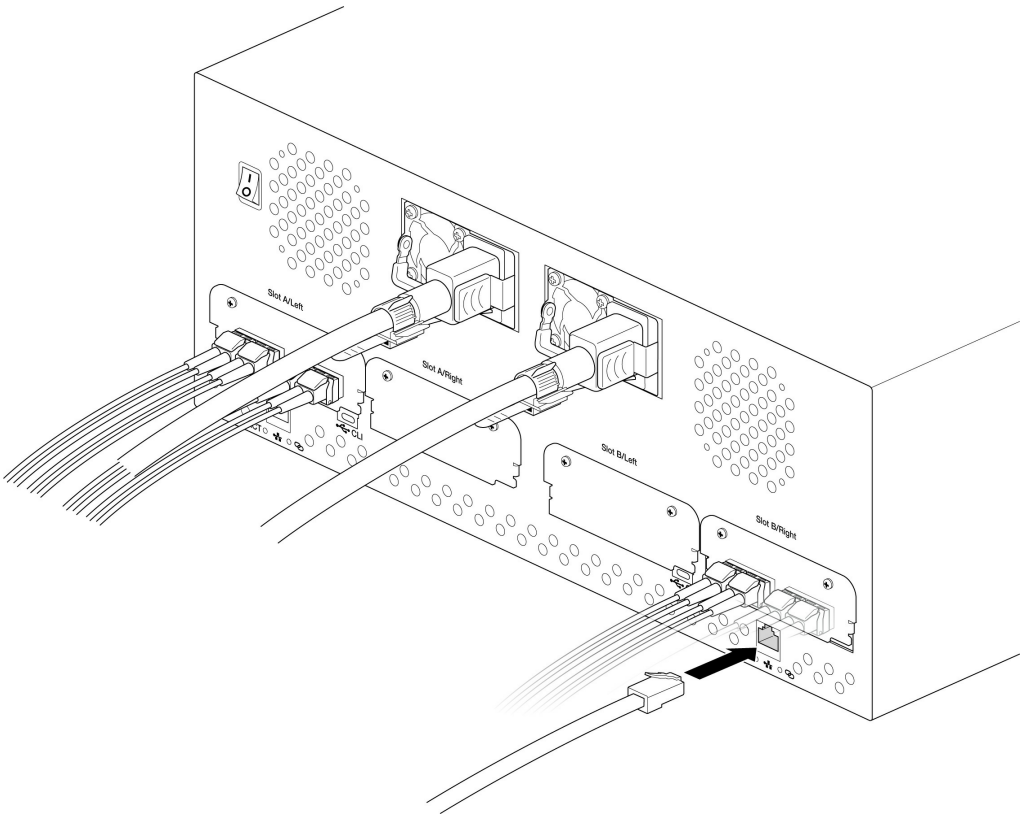
Insert the power cord into the socket and secure with the zip tie.



Device Connections

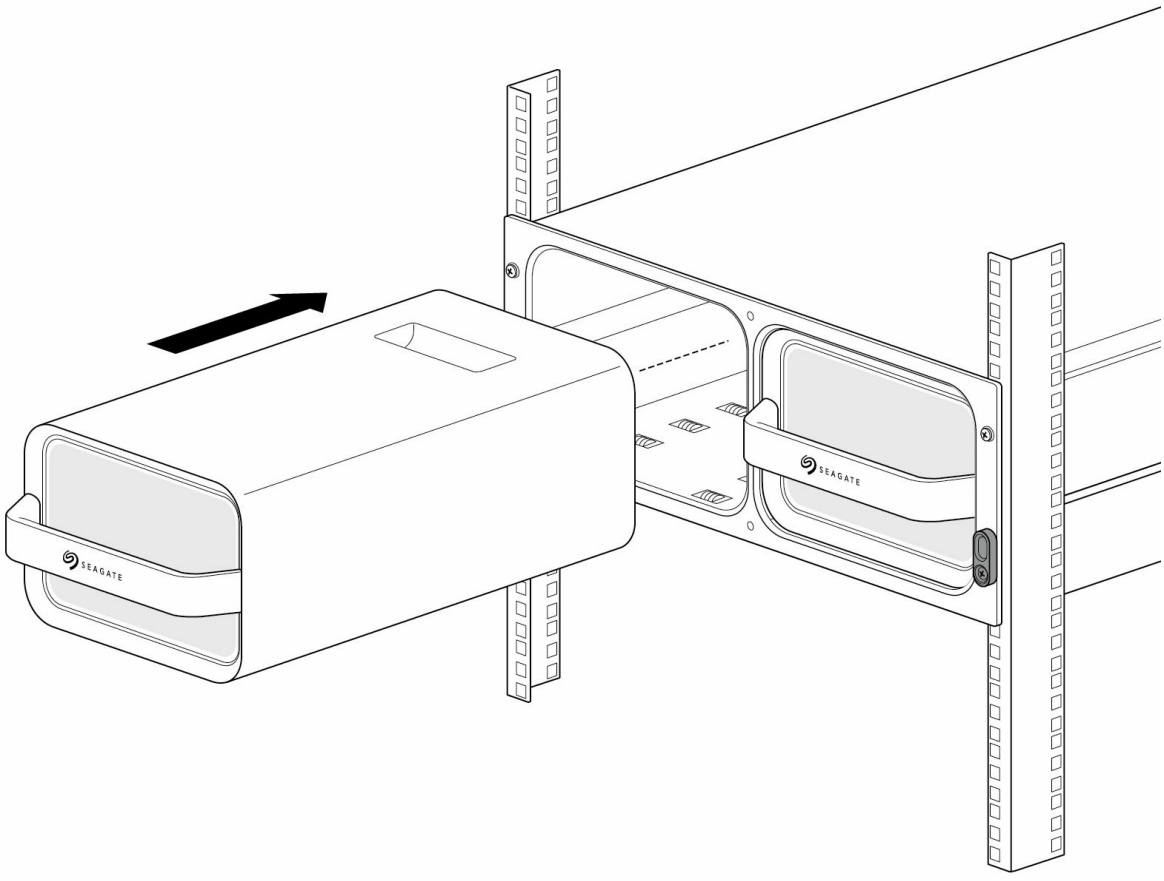
Connect Ethernet port

Lyve Client communicates with devices inserted in Lyve Rackmount Receiver via the Ethernet management ports. Ensure that the Ethernet management ports are connected to the same network as the host devices running Lyve Client. If no device is inserted in a slot, there's no need to connect its corresponding Ethernet management port to the network.

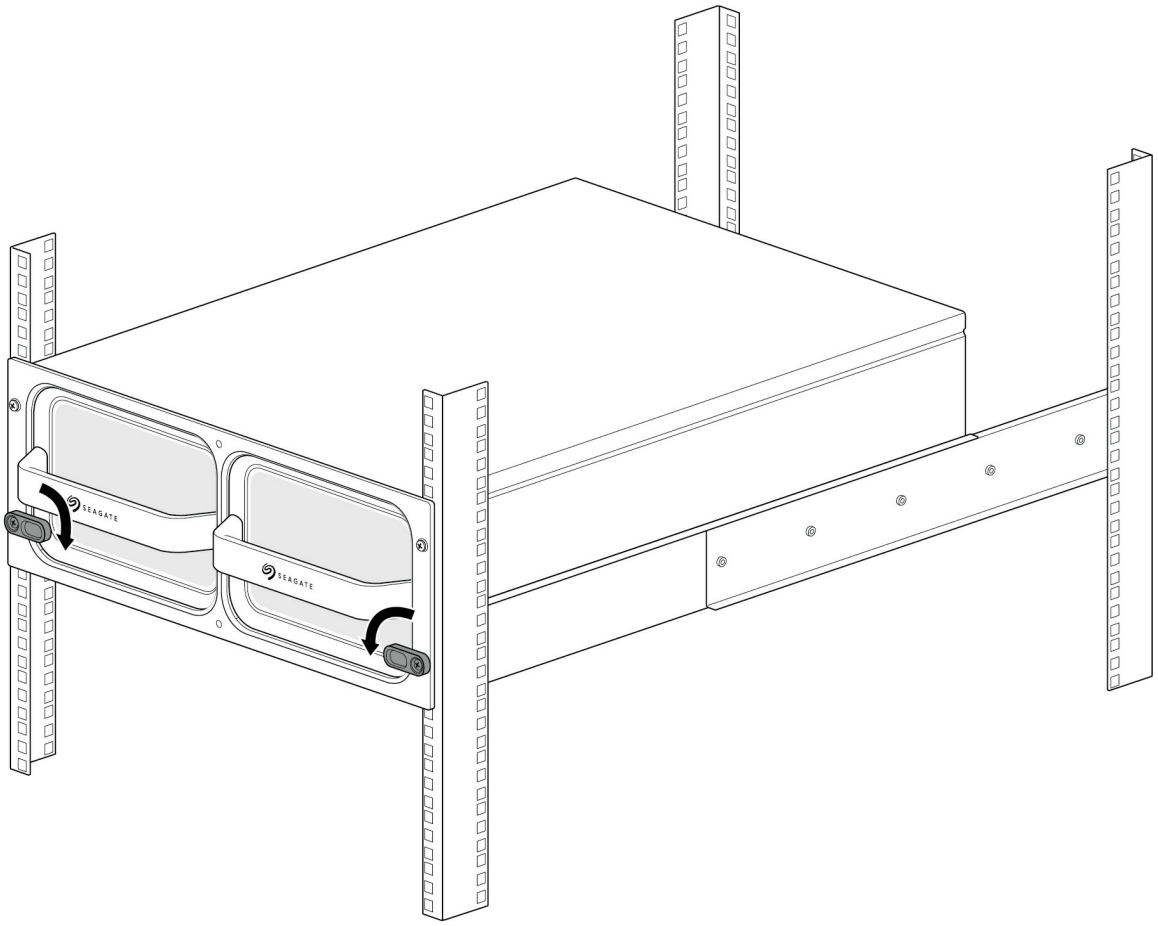


Connect Seagate Lyve Mobile Array

Insert Lyve Mobile Array into slot A or B on Lyve Mobile Rackmount Receiver.

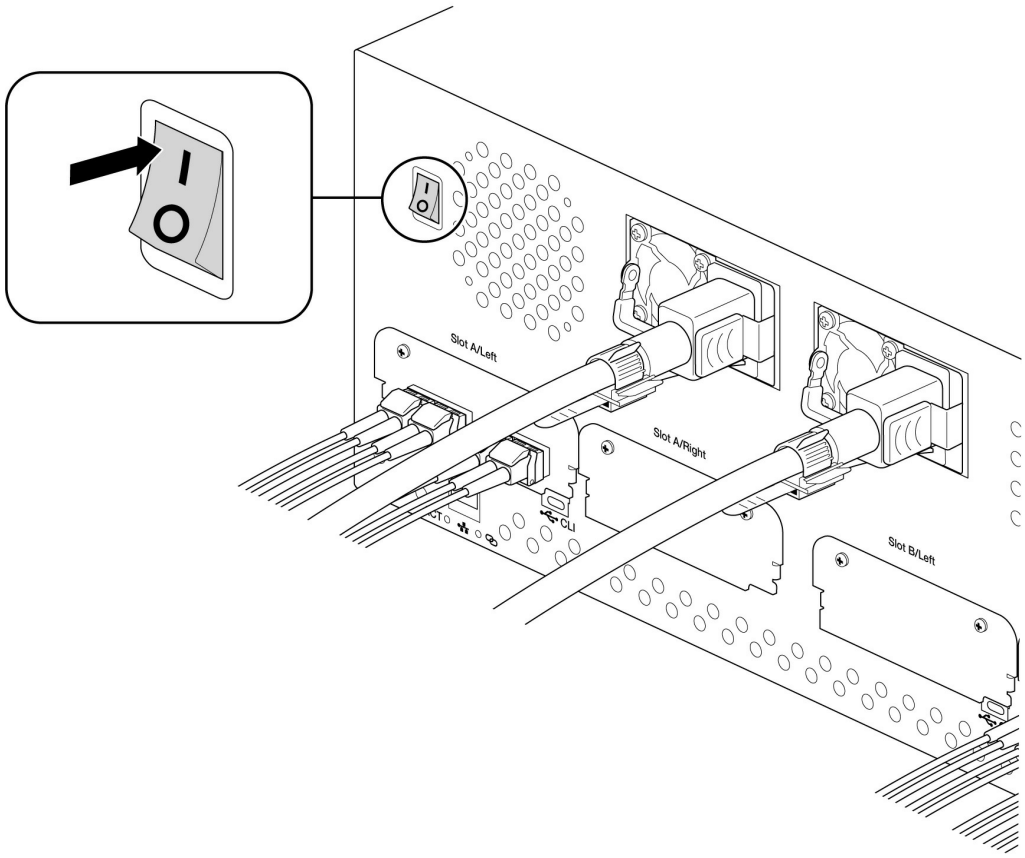


Slide device in until it snaps in place and is firmly connected to Lyve Mobile Rackmount Receiver's data and power. Close latches.



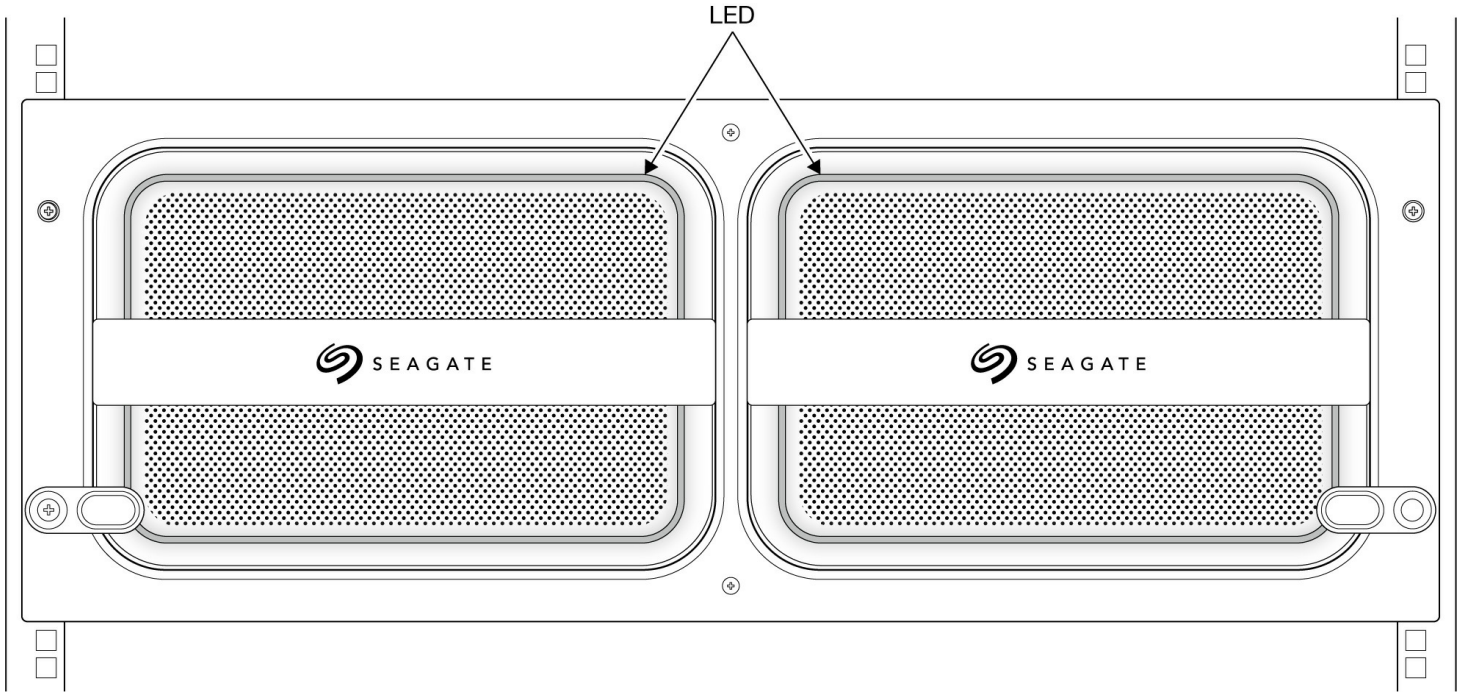
Turn on power

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



Unlock the device

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.



Make sure the Lyve Client app is running on the host computer. The host computer will automatically unlock the device if it connected to it 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. See Setup Requirements.

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.

Safely removing a device

Your computer must perform filing and housekeeping operations on your Lyve device before it is physically removed from Lyve Mobile Rackmount Receiver. To avoid corrupting or damaging files, always eject the device's volumes from your computer using the Lyve Client app or your computer operating system before physically removing the device.

To avoid muscle strain or back injury, use proper lifting techniques when removing devices from Lyve Rackmount Receiver.

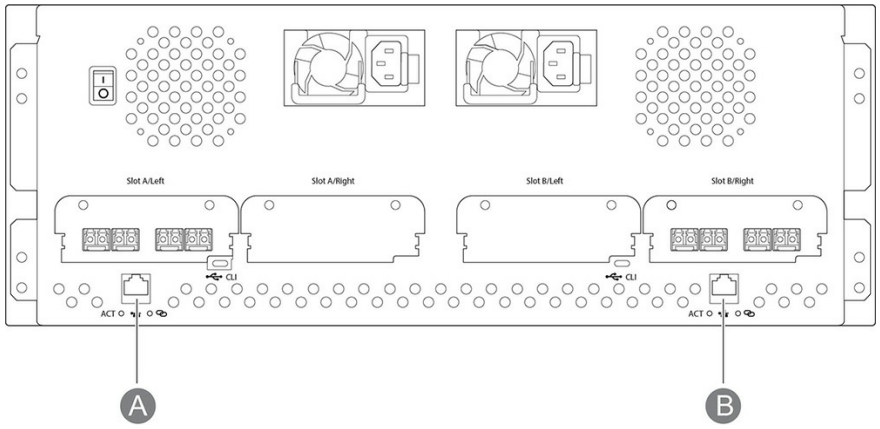
FC Network Setup for Windows

Requirements

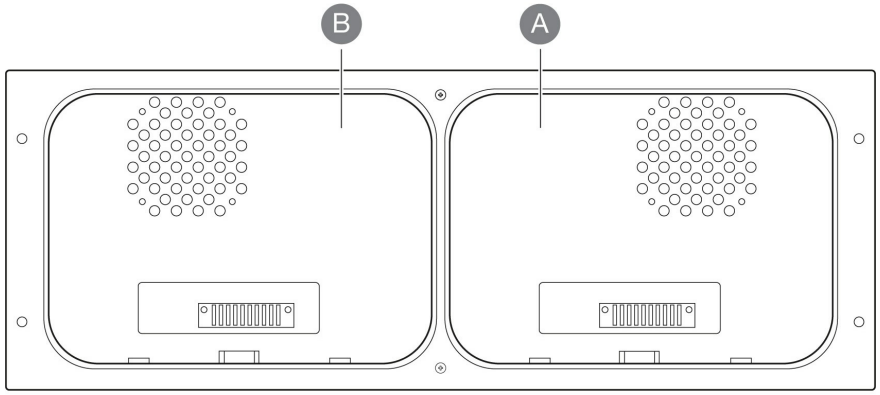
The Lyve Client app is required to authorize a host computer to access Lyve Mobile Array and compatible devices. Download the Lyve Client installer for Windows and macOS at www.seagate.com/support/lyve-client and install it on the server. For more information, see the Lyve Client Software user manual.

FC initial setup on the host side

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



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



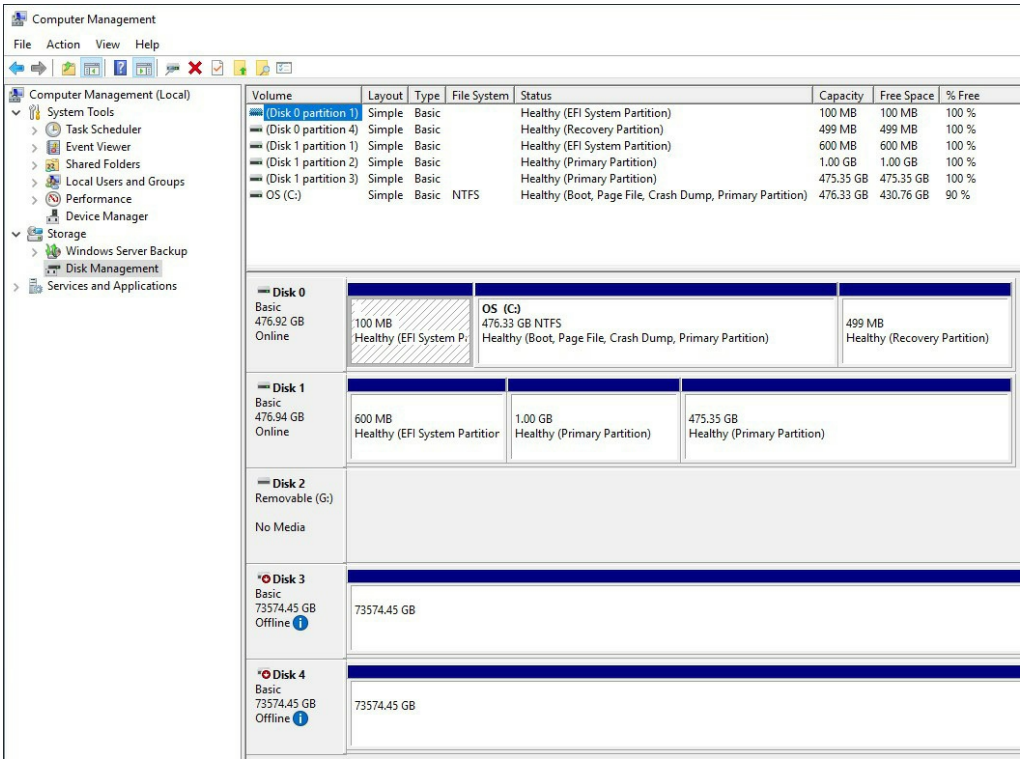
4. Open Lyve Client. You may be prompted to unlock Lyve Mobile Array if this is the first connection to the host.
5. Click the **Devices** tab.
6. Click on the Mobile Array card with the **Rackmount Receiver » FC** connection.

Lyve Client automatically completes your FC connection configuration.

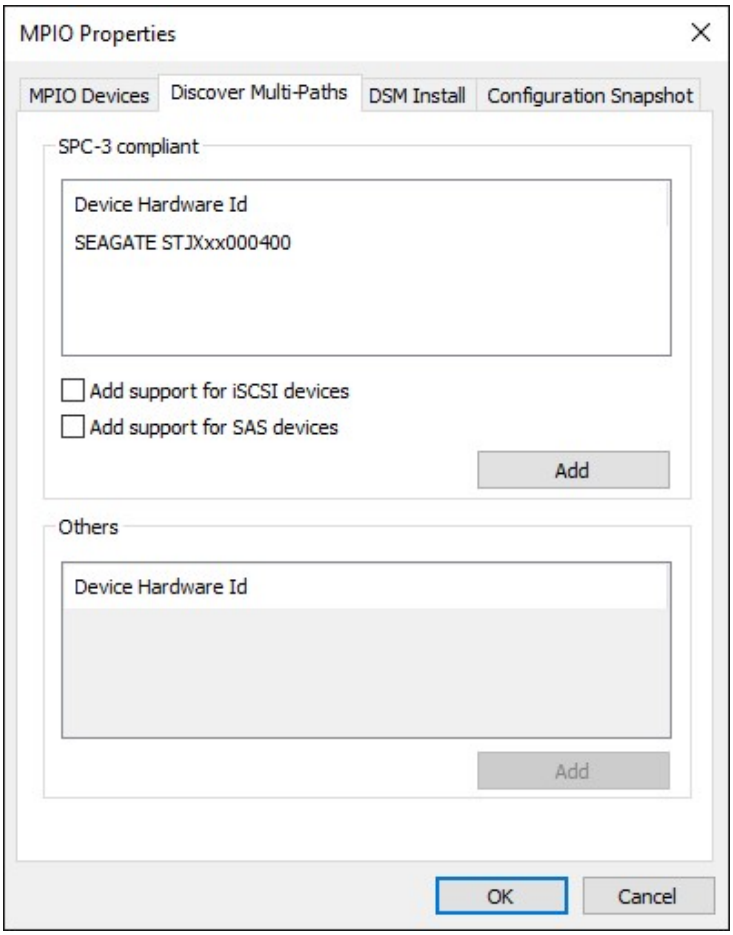
Manual FC Setup

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

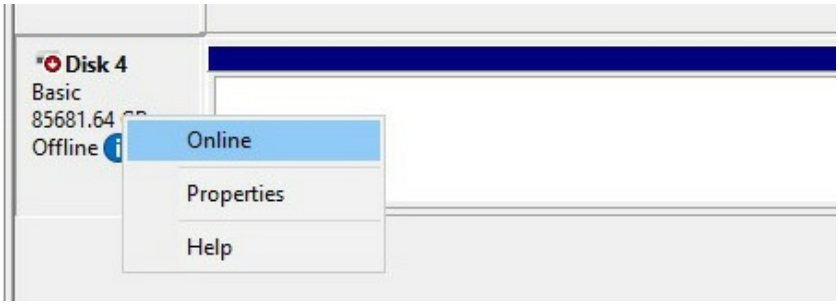
1. Open Server Manager.
2. Open Computer Management.
3. Open **Disk Management**.
4. If more than one **Offline** drive exists, continue steps 5-9. If there's only a single **Offline** drive, go to step 10.



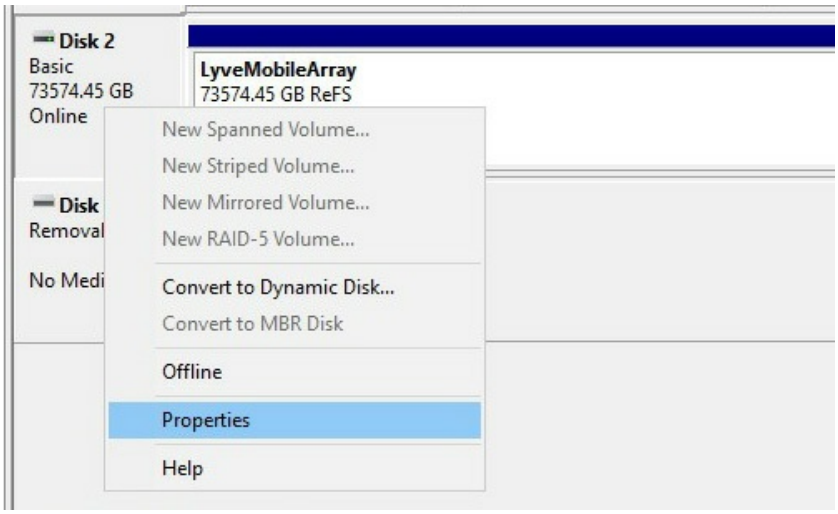
5. Open the Server Manager and install **Multipath I/O (MPIO)**.
6. Open MPIO.
7. Click on the **Discover Multi-Paths** tab.
8. Click on the Seagate device to highlight it and click **Add**.



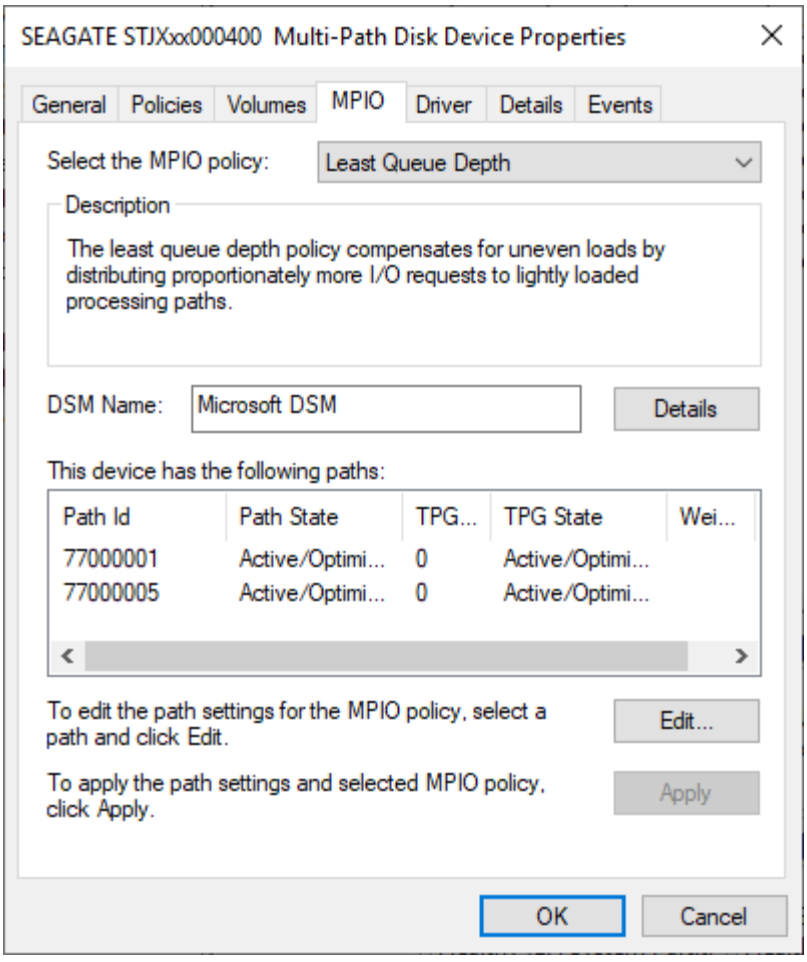
9. Reboot the server.
10. Open Disk Management.
11. Right-click the Lyve Mobile Array disk marked **Offline** and select **Online**.



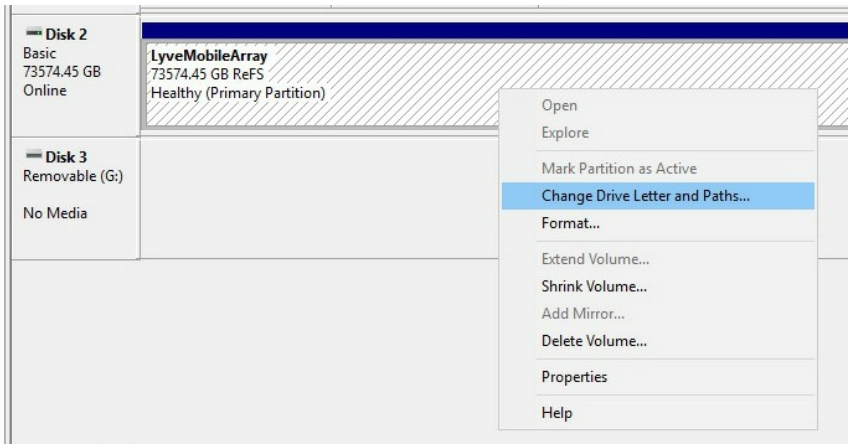
12. If MPIO is enabled, right-click the Lyve Mobile Array disk and select **Properties**. If it is not enabled, go to step 15.



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



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



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

iSCSI Network Setup for Windows

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

Your iSCSI network requires four components:

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

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

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

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

Requirements

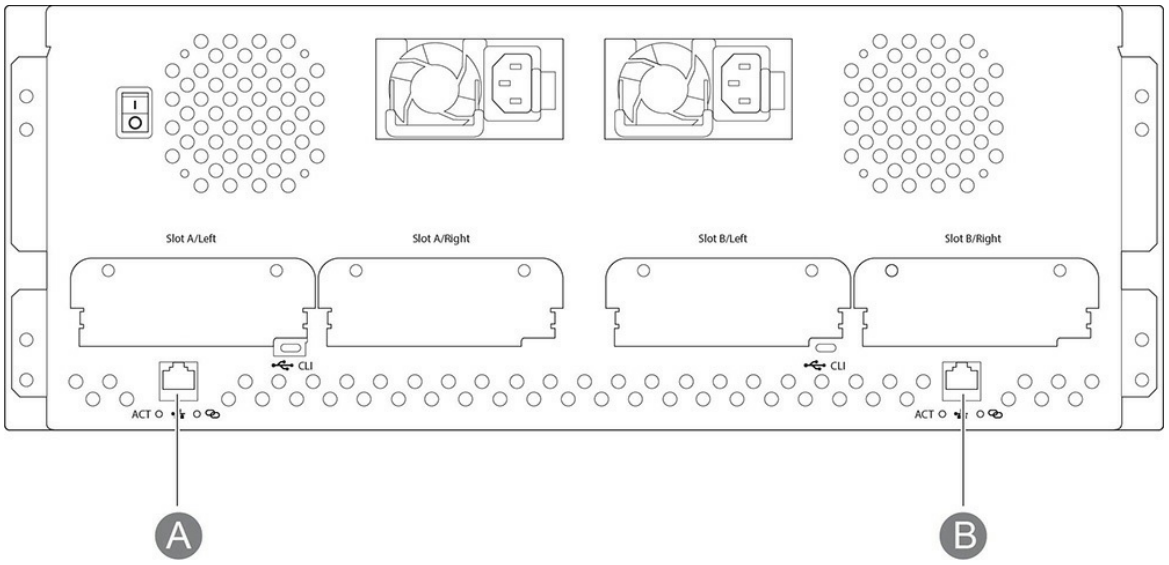
Hardware

Host connection

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

Target connection

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



Software

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

Network protocols

Service Location Protocol (SLP)

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

For automatic detection, the following is required:

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

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

Setup overview

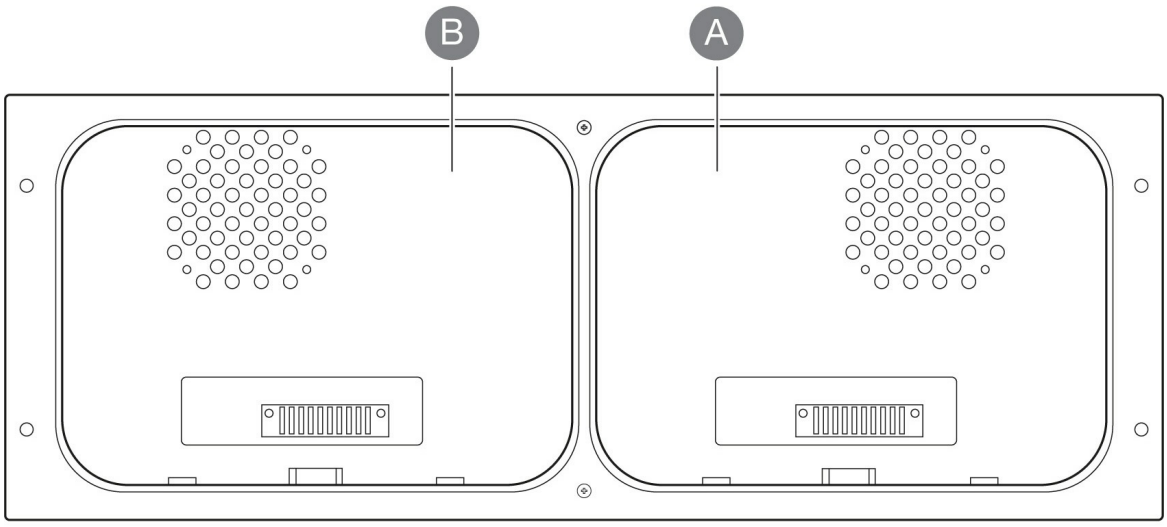
Setting up the connection between Lyve Mobile Rackmount Receiver's ports and the host computer requires three steps:

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

Pre-setup

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

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



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

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

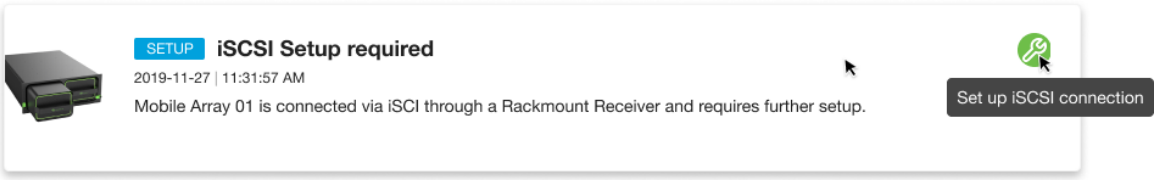
The host computer will automatically unlock the device if it was connected to Lyve Mobile Array in the past and is still authorized for security. If the host computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve Client app. See Setup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

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

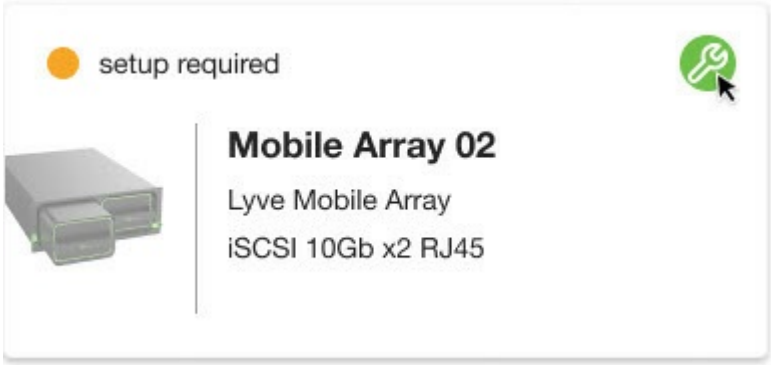
Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports

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

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



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



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

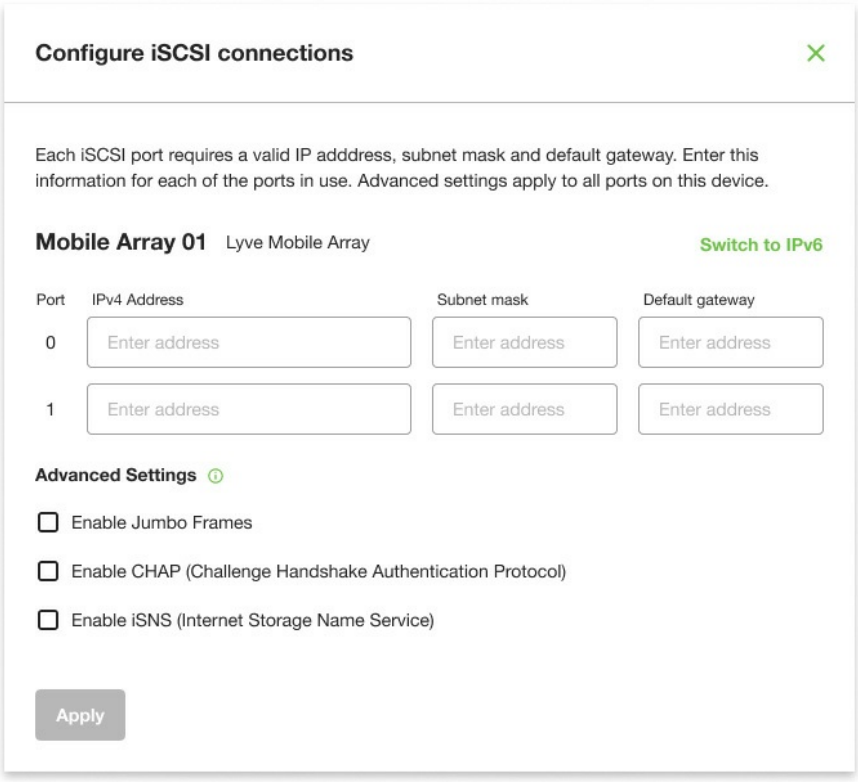
> **Important**—The status indicator for detecting devices may run for a few minutes while Lyve Client discovers and sets up the Lyve Mobile Array.

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

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

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

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



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.00c0fff3920c`. 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:

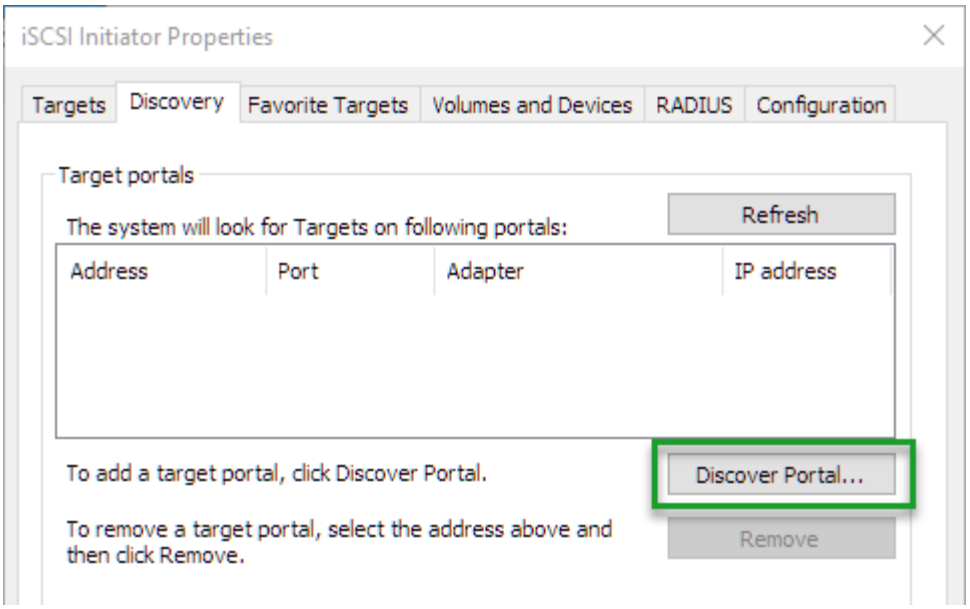
1. In the 'Configure iSCSI connection' dialog, check the **iSNS (Internet Storage Name Service)** checkbox.
2. Enter the **iSNS IP Address** of the primary server.
3. (Optional) Enter the **iSNS Alternate IP Address** of a secondary server.

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.

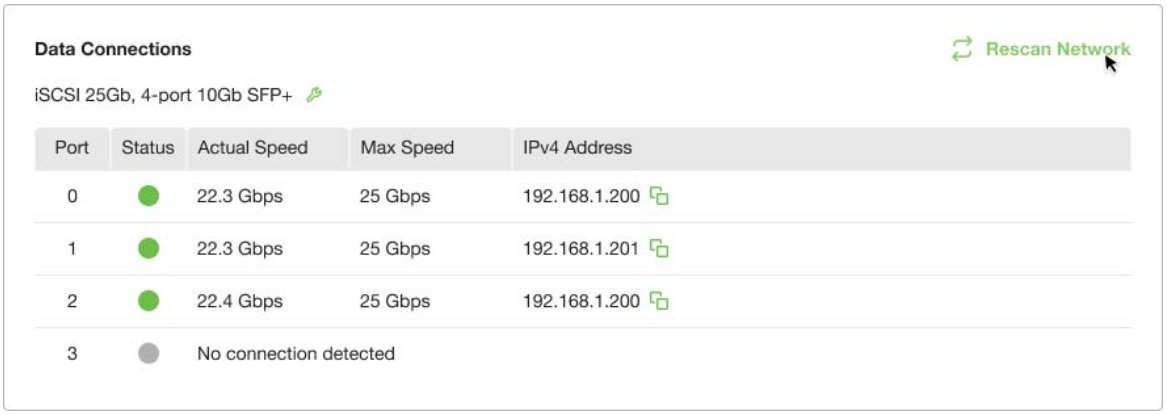
C. Click the **Advanced...** button.
D. For the **Local adapter**, select **Microsoft iSCSI Initiator**.
E. For the **Initiator IP**, select an IP address for the host connection.
F. For the **Target portal IP**, select an IP address for the target connection.
G. (Optional) If you set up Challenge Handshake 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**.



> **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 findattrs service:ui:ssh
```

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

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

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

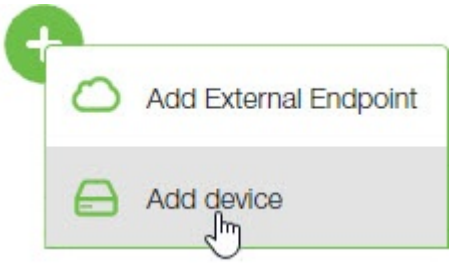
contact=Uninitialized Contact),(x-system-information=Uninitialized Info),(x-scsi-vendor-id=SEAGATE),(x-scsi-product-id=3035),(x-vendor-name=""),(x-product-id=3035),(x-product-brand=""),(x-ip-addresses=169.254.100.123),(x-midplane-serial-number=00C0FFF3907C),(x-product-serial-number=00000000),(x-bundle-version=M100R001),(x-build-date=2021-11-22T22:38:12Z),(x-platform-type=HARDWARE_PLATFORM_TYPE_INDIUM),(x-wwnn=208000c0fff3907c),(x-mac-address=00:C0:FF:F3:90:7C),(x-top-level-assembly-part-number=Not Present),(x-top-level-assembly-serial-number=Not Present)

Obtain device detection details with arp

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

Add the device in Lyve Client

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



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

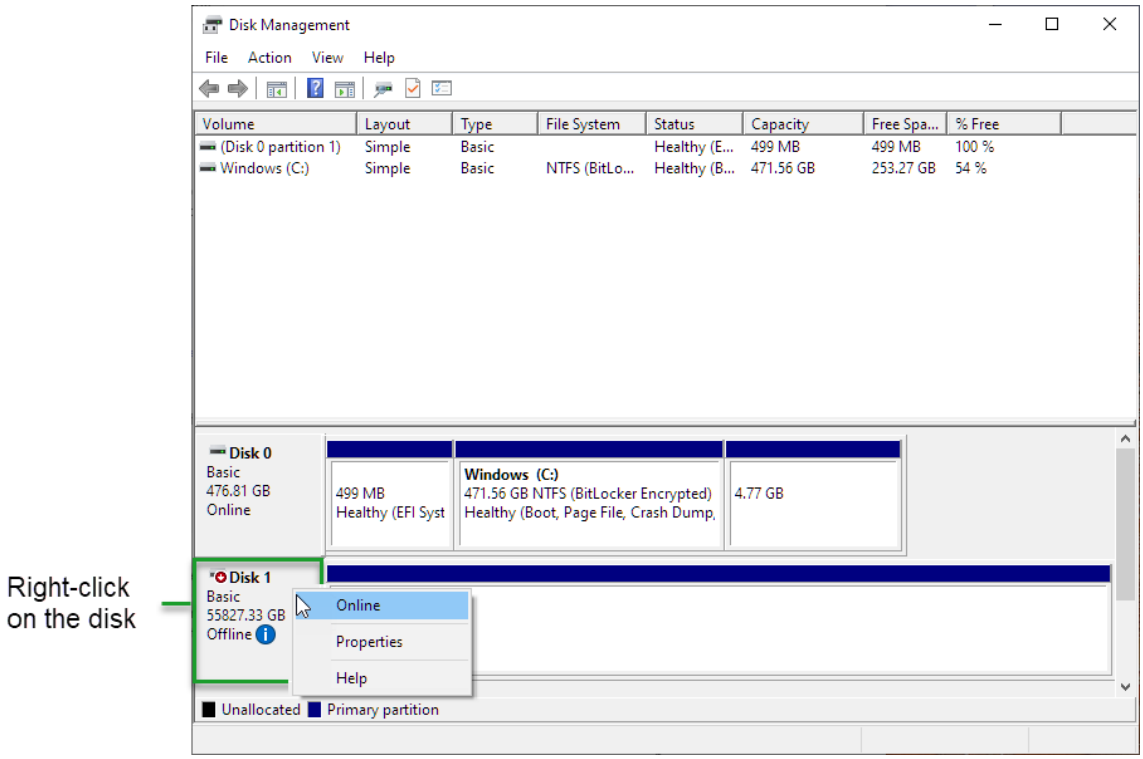
6. Click **Connect**.

(Optional) Manual disk management instructions

Setting the volume to 'online'

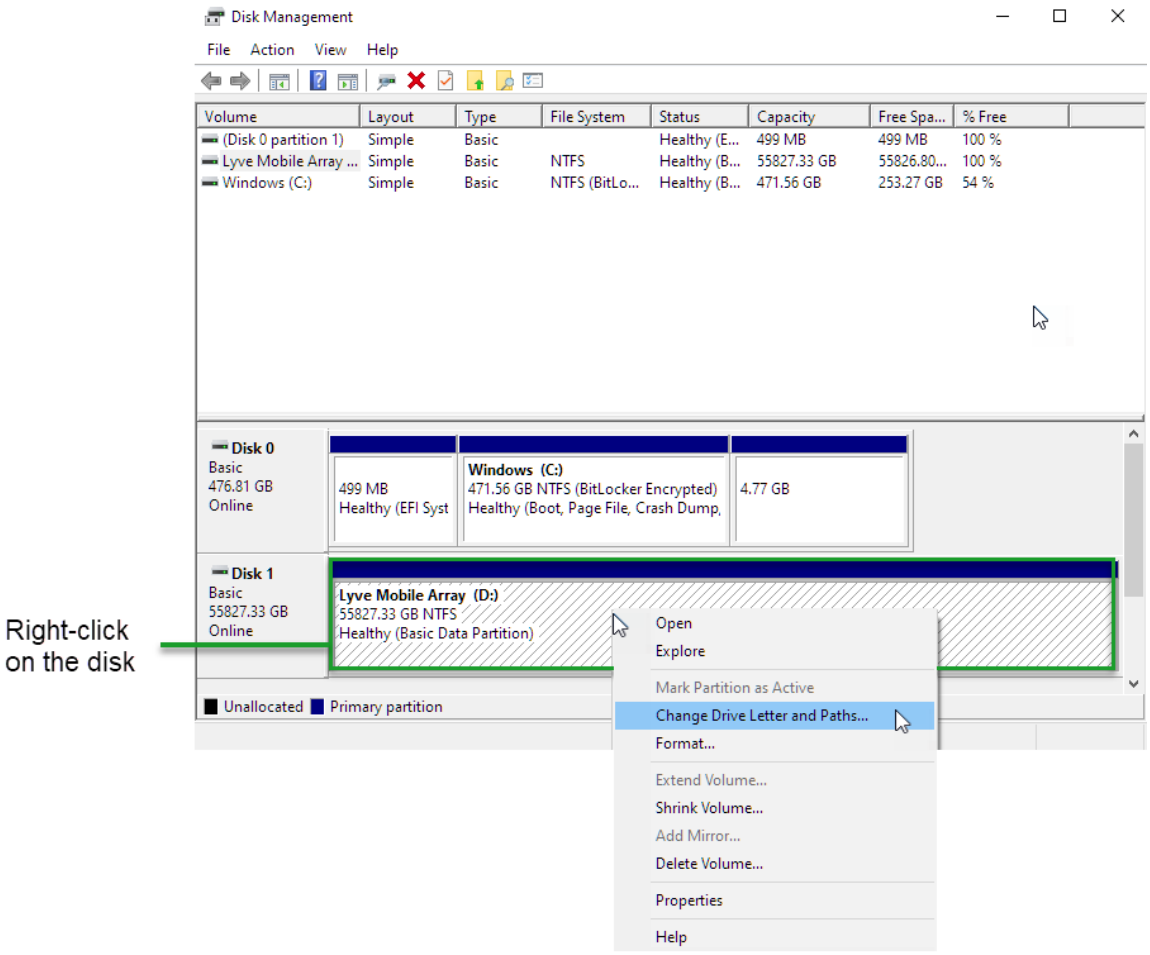
If you need to set the volume to online:

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



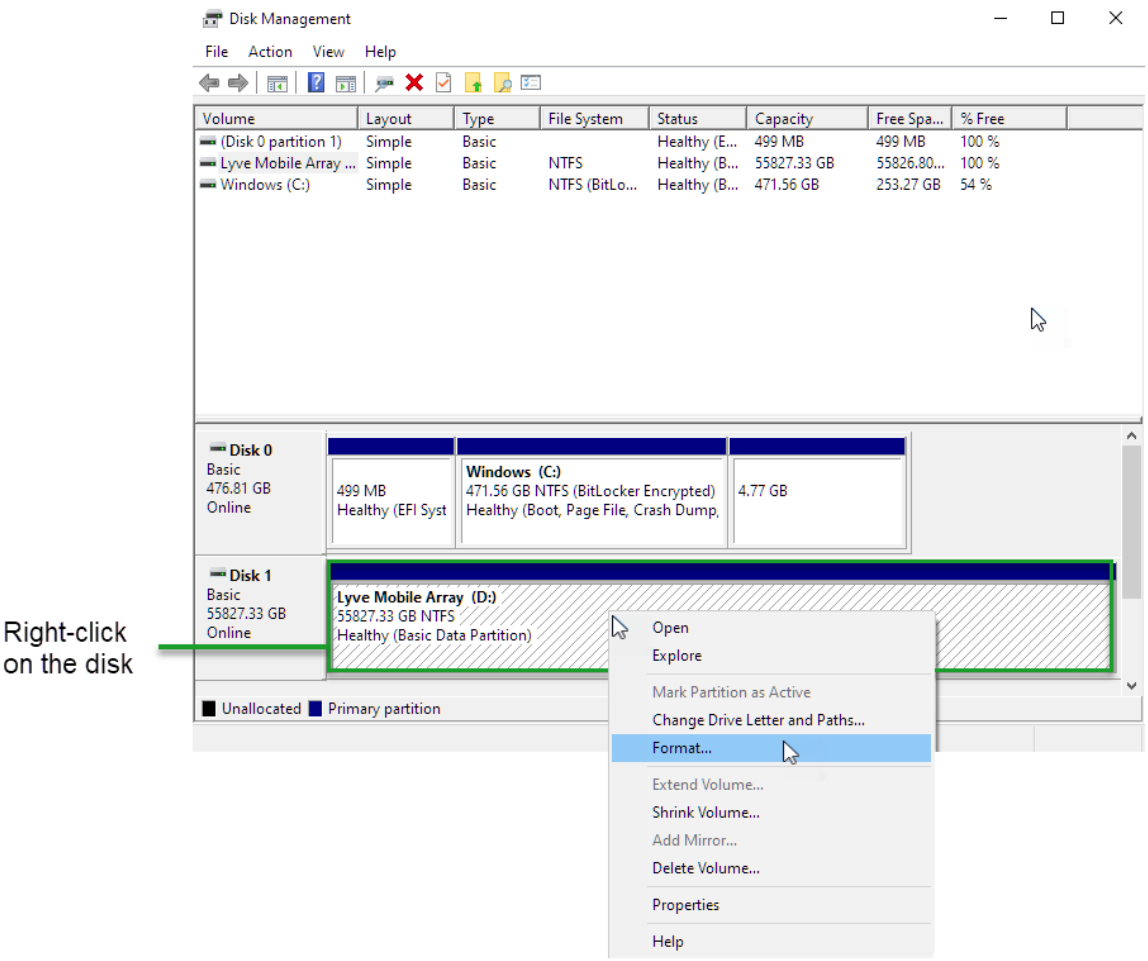
Reassigning drive letter

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



Formatting the drive

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



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

iSCSI Network Setup for Linux (RHEL/CentOS 8)

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

Requirements

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

Network Components

Your iSCSI network requires four components:

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

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

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

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

IP addresses

Assign or obtain the following:

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

<image>

Hardware

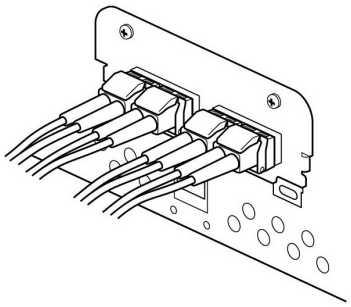
Host connection

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

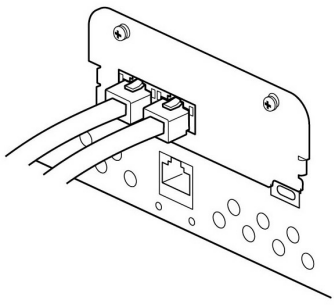
Target connection

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

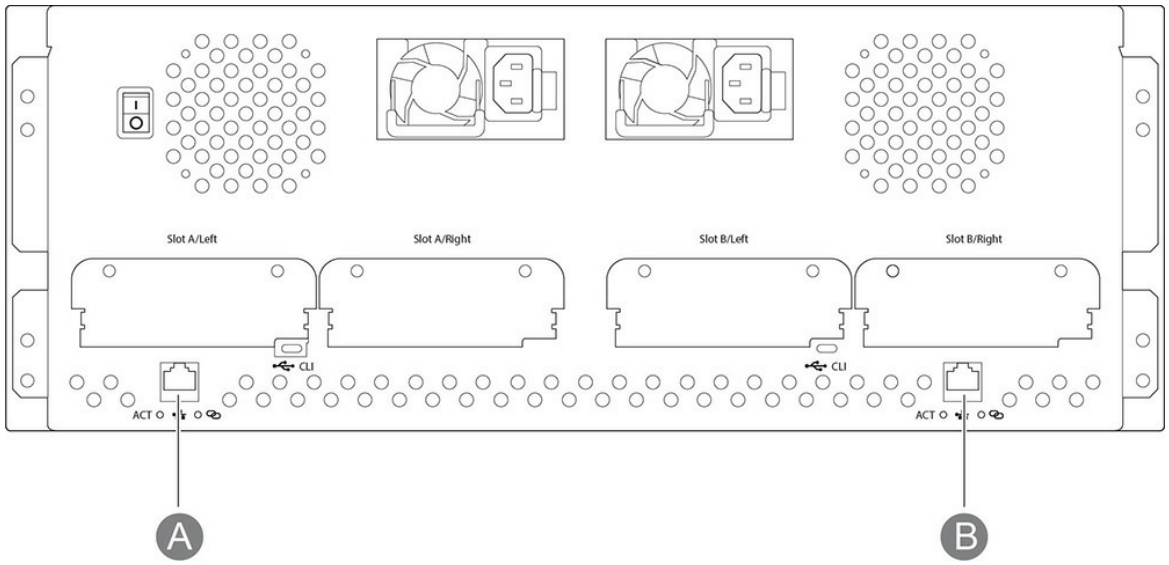
iSCSI 25/10Gb 4-port (SFP+/SFP28)



iSCSI 10GBaseT 2-Port (RJ45)



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



Software

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

Network protocols

Service Location Protocol (SLP)

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

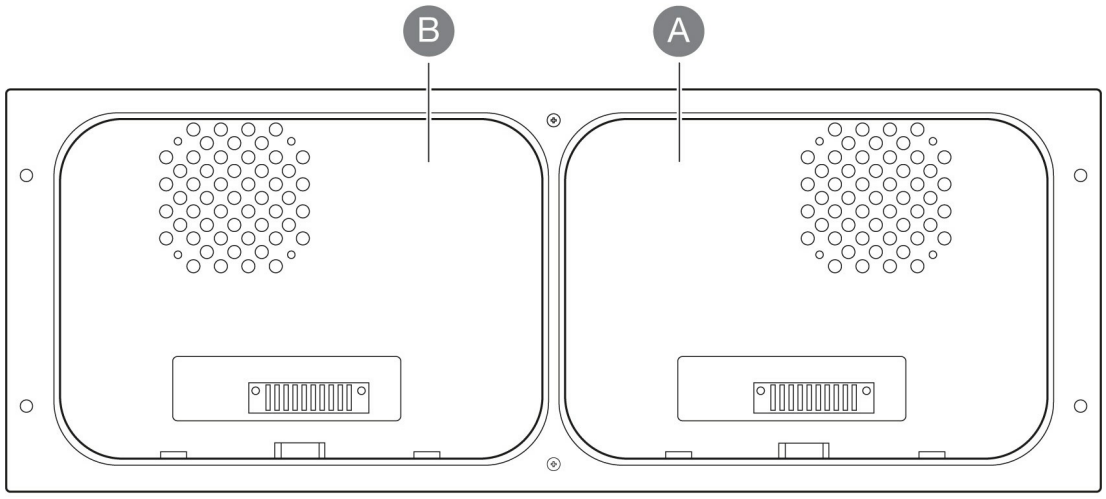
- SLP broadcast messages using UDP port 427 must be allowed in the network environment.
- IP assignments to all computers and devices are performed by a DHCP server on the network.
- The computer running Lyve Client and Lyve Mobile Rackmount Receiver's Ethernet management port must be connected to the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

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

Pre-Setup

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

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



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

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

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

Solid green—Device is unlocked and ready for use.

Multipath Input/Output setup on the host side

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

For reference, see the following RHEL documentation.

To enable MPIO:

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

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

3. Reboot the Linux station.

Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports

Install Lyve Client Software app

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

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

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

Unlock the device

Open the Lyve Client app.

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

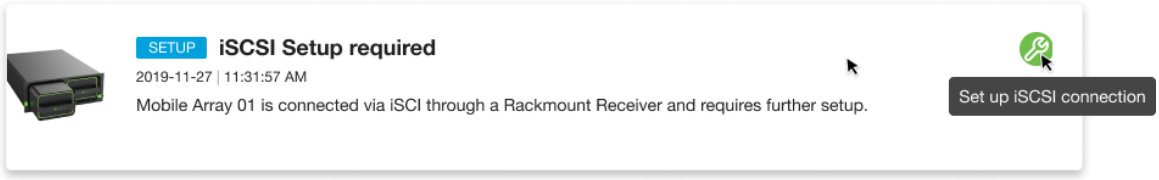
Lyve Client will automatically unlock the device if the management computer was connected to Lyve Mobile Array in the past and is still authorized for security. If the management computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve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

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

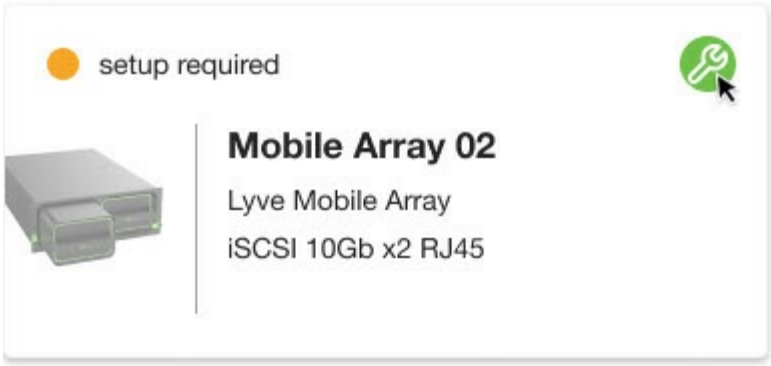
Set up iSCSI

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

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



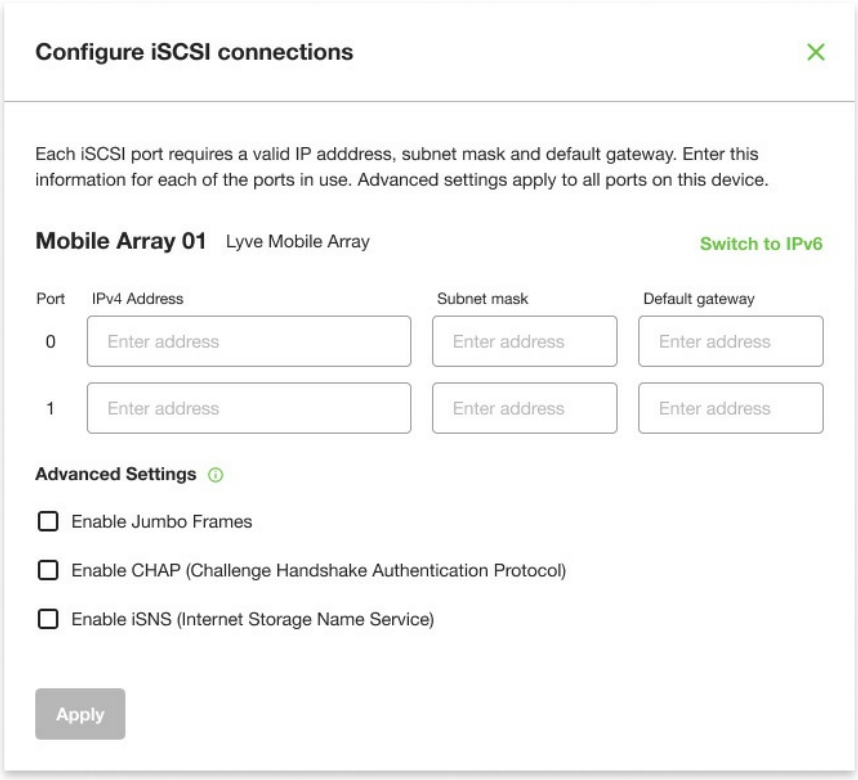
Devices—The status indicator on the Device card informs you that a setup is required.



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

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

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



> Lyve Client will only accept numerals and decimals in accordance with IP addressing conventions and will remove invalid characters (alphabetical characters, spaces, and symbols). **Lyve Client will report invalid IP addresses if an octet value entry:**
>
> - Exceeds a permitted range (for example, entering a value greater than 256).
> - Results in IP address/default gateway addressing inconsistencies not permitted by the defined subnet mask.
> - Results in ports with identical IP addresses.

5. Click **Apply**.

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

> For reference, see the following RHEL documentation.

Map the initiator to the target

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

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

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

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

Example output

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

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

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

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

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

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

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

Example output

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

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

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

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

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

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

5. Reboot the Linux station.

Format and mount the disk

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

Manual formatting

Obtain device details

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

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

2. List block device details by entering the following:

   ```
   sudo blkid
   ```

   Example output

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

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

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

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

/dev/loop0: TYPE="squashfs"

/dev/loop1: TYPE="squashfs"

/dev/loop2: TYPE="squashfs"

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

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

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

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

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

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

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

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

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

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

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

Format the disk for Linux

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

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

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

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

   Example output

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

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

   Superblock backups stored on blocks:

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

   Allocating group tables: 0/714511 658404/714511 done

   Writing inode tables: 0/714511 done

   Creating journal (262144 blocks): done

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

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

Edit the file system table

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

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

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

   ```
   # SEAGATE iSCSI device
   ```

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

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

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

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

Mount the drive

Mount the drive by entering the following:

```
sudo mount -a
```

Formatting using a GUI

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

Change mode of access

Assign access permissions by entering the following:

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

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

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

Troubleshooting

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

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

iSCSI Network Setup for Linux (Ubuntu/Debian)

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

Requirements

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

Network Components

Your iSCSI network requires four components:

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

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

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

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

IP addresses

Assign or obtain the following:

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

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

<image>

Hardware

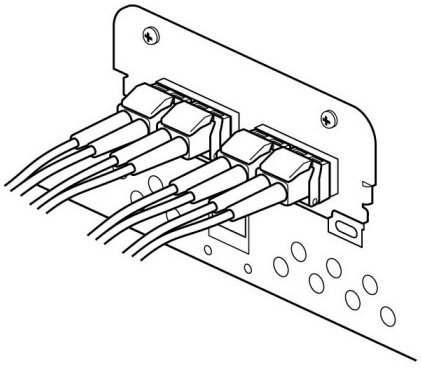
Host connection

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

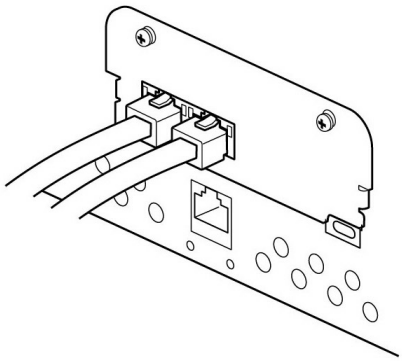
Target connection

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

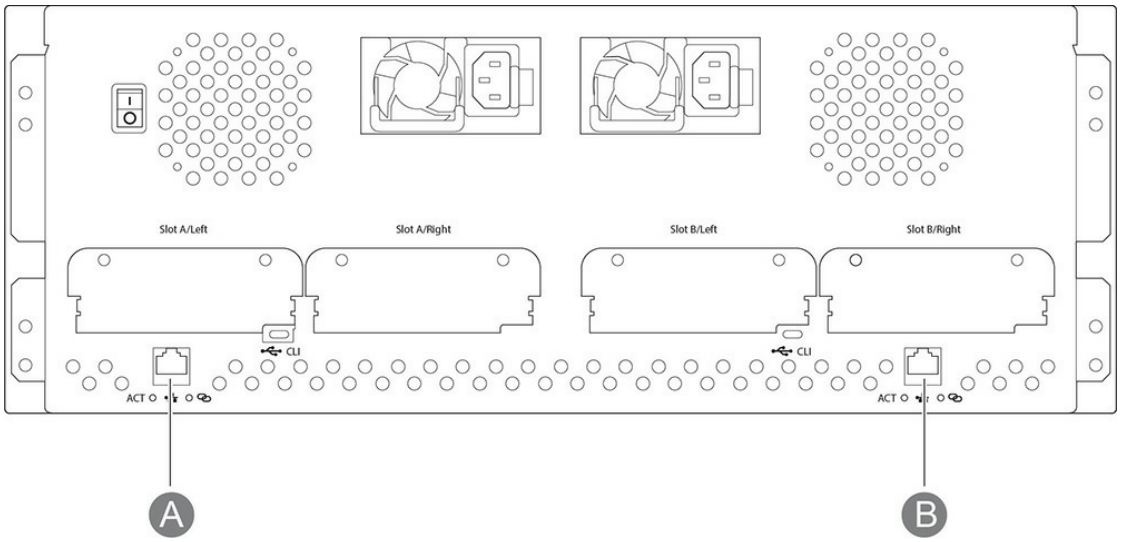
iSCSI 25/10Gb 4-port (SFP+/SFP28)



iSCSI 10GBaseT 2-Port (RJ45)



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



Software

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

Network protocols

Service Location Protocol (SLP)

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

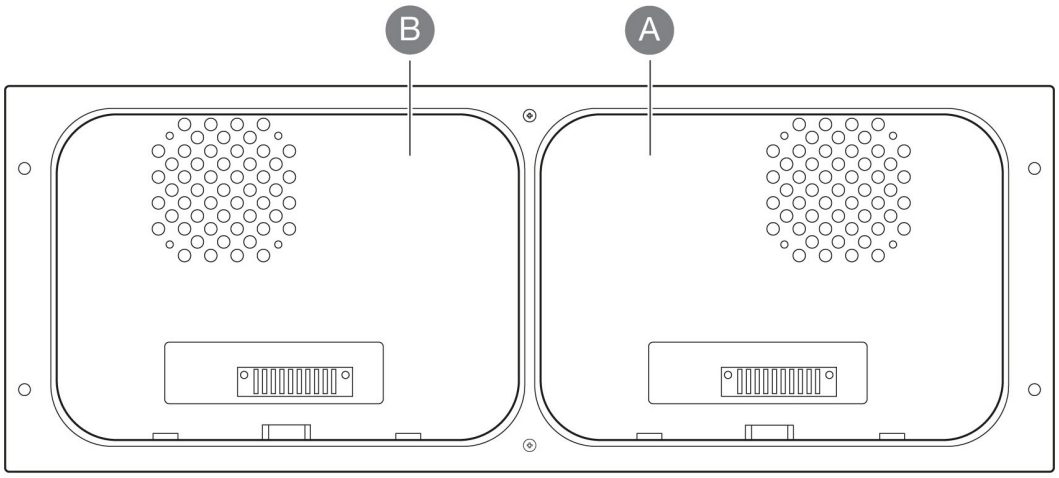
- SLP broadcast messages using UDP port 427 must be allowed in the network environment.
- IP assignments to all computers and devices are performed by a DHCP server on the network.
- The computer running Lyve Client and Lyve Mobile Rackmount Receiver's Ethernet management port must be connected to the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

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

Pre-Setup

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

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



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

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

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

Solid green—Device is unlocked and ready for use.

Multipath Input/Output on the host side

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

For reference, see the following RHEL documentation.

To enable MPIO:

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

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

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

3. Enter the following command:

```
sudo systemctl restart multipathd
```

Set up IP addresses for Lyve Mobile Rackmount Receiver iSCSI ports

Install Lyve Client Software app

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

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

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

Unlock the device

Open the Lyve Client app.

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

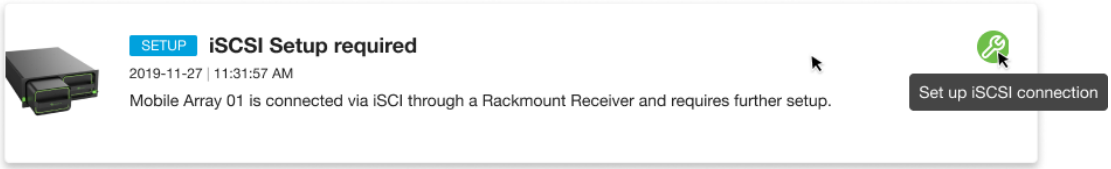
Lyve Client will automatically unlock the device if the management computer was connected to Lyve Mobile Array in the past and is still authorized for security. If the management computer has never unlocked the device, you will need to enter your Lyve Management Portal username and password in the Lyve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

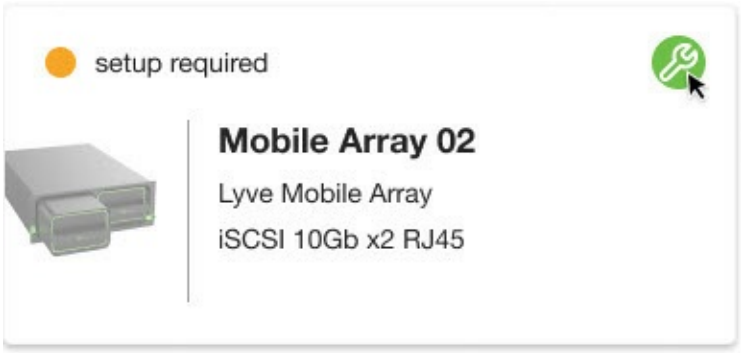
Set up iSCSI

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.



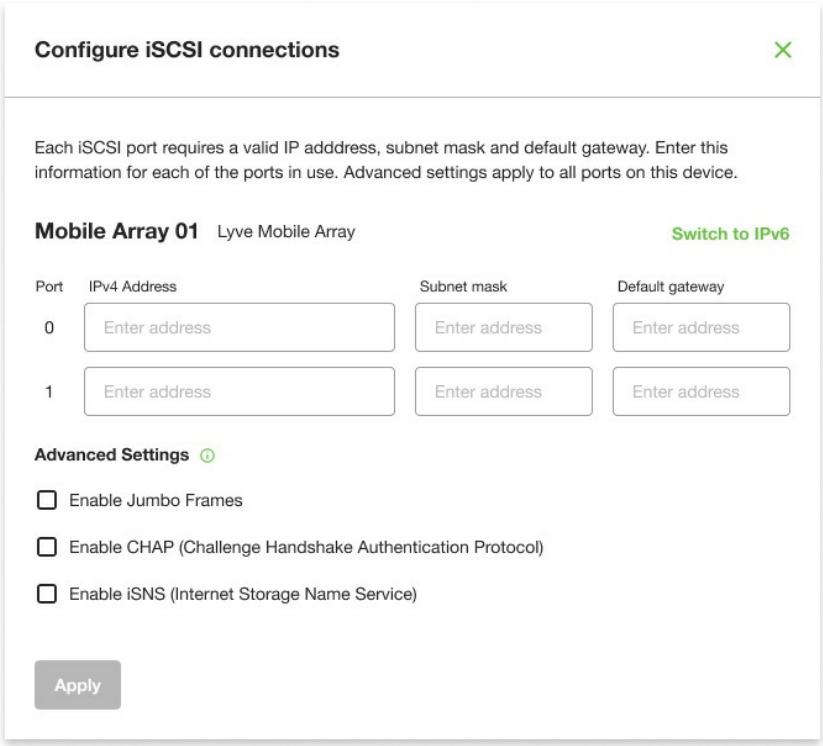
Devices—The status indicator on the Device card informs you that a setup is required.



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.



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" 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
```

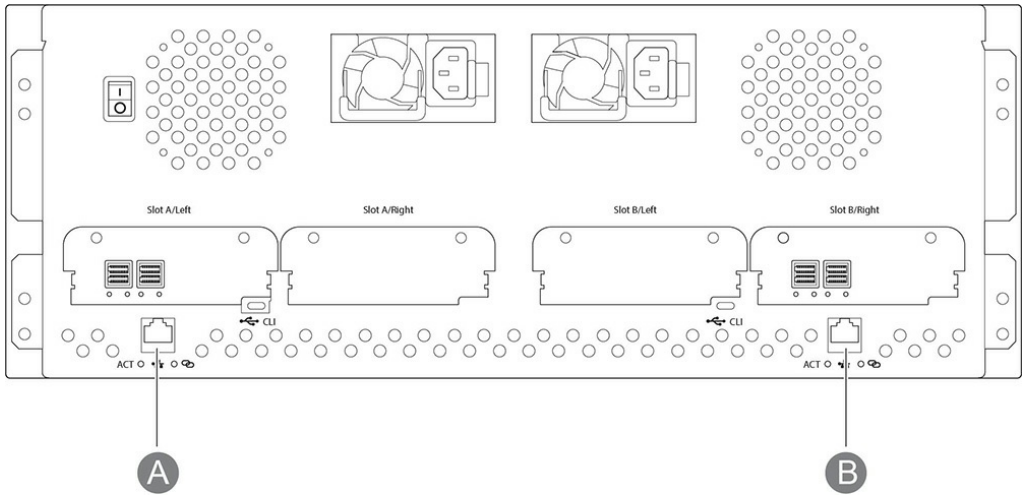
SAS Network Setup for Windows

Requirements

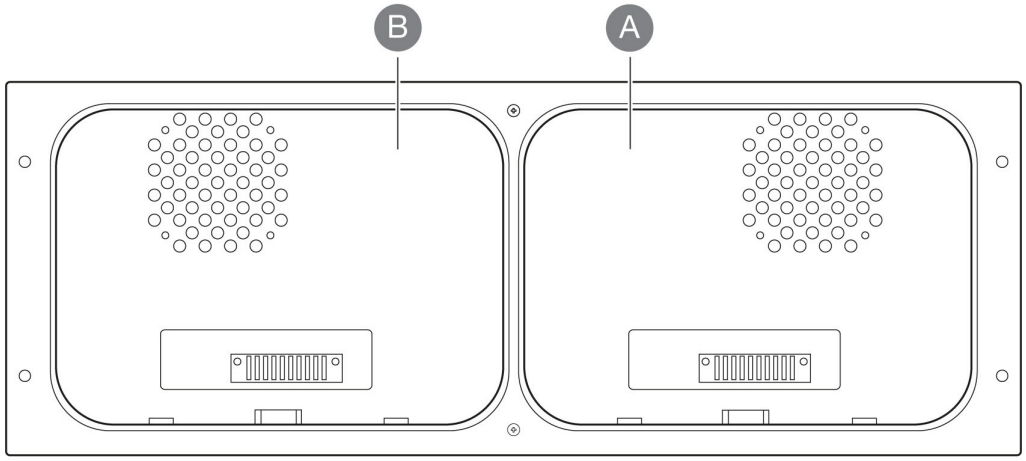
The Lyve Client app is required to authorize a host computer to access Lyve Mobile Array and compatible devices. Download the Lyve Client installer for Windows and macOS at www.seagate.com/support/lyve-client and install it on the server. For more information, see the Lyve Client Software user manual.

SAS initial setup on the host side

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



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



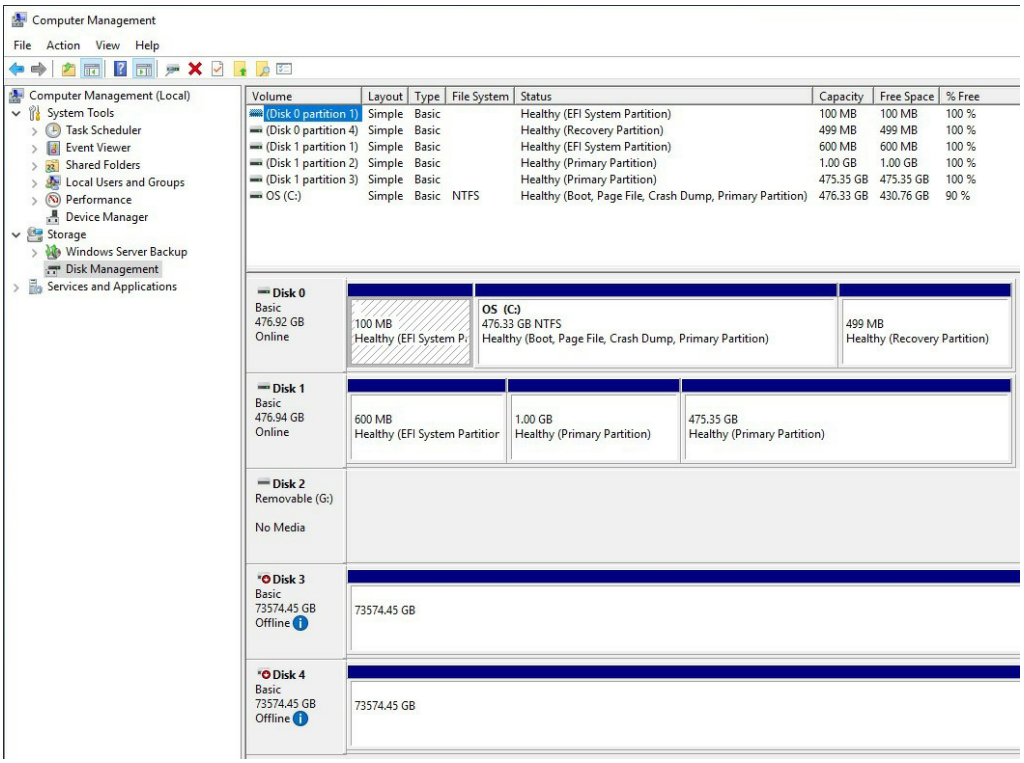
4. Open Lyve Client. You may be prompted to unlock Lyve Mobile Array if this is the first connection to the host.
5. Click the **Devices** tab.
6. Click on the Mobile Array card with the **Rackmount Receiver » SAS** connection.

Lyve Client automatically completes your SAS connection configuration.

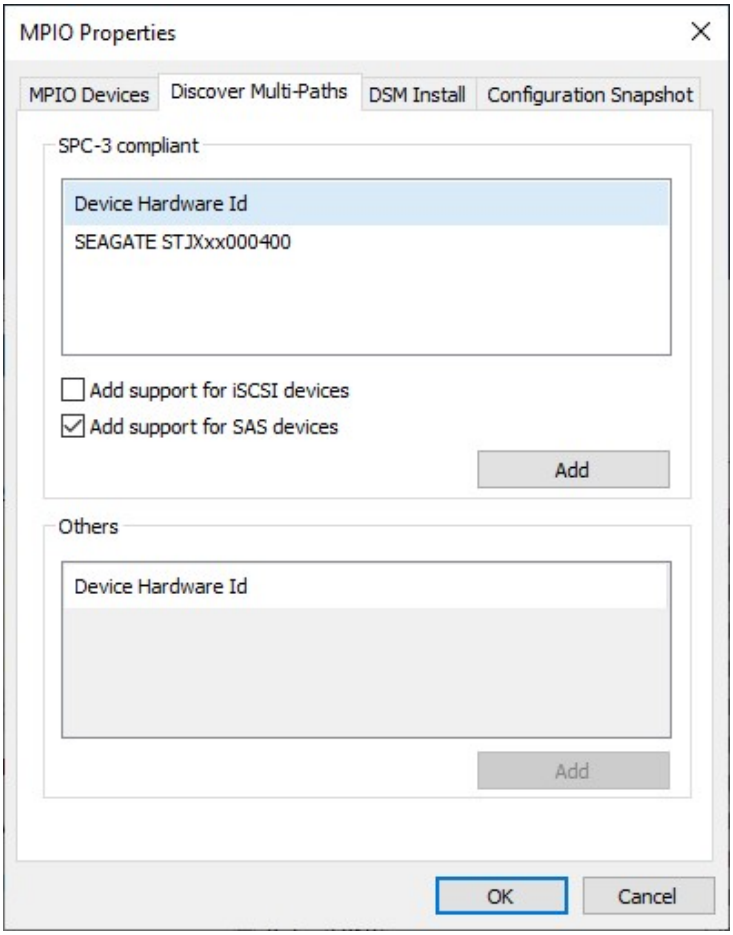
Manual SAS Setup

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

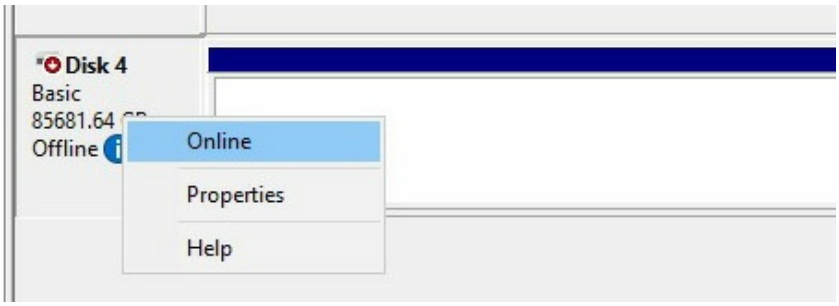
1. Open Server Manager.
2. Open Computer Management.
3. Select **Disk Management**.
4. If more than one **Offline** drive exists, continue steps 5-9. If there's only a single **Offline** drive, go to step 10.



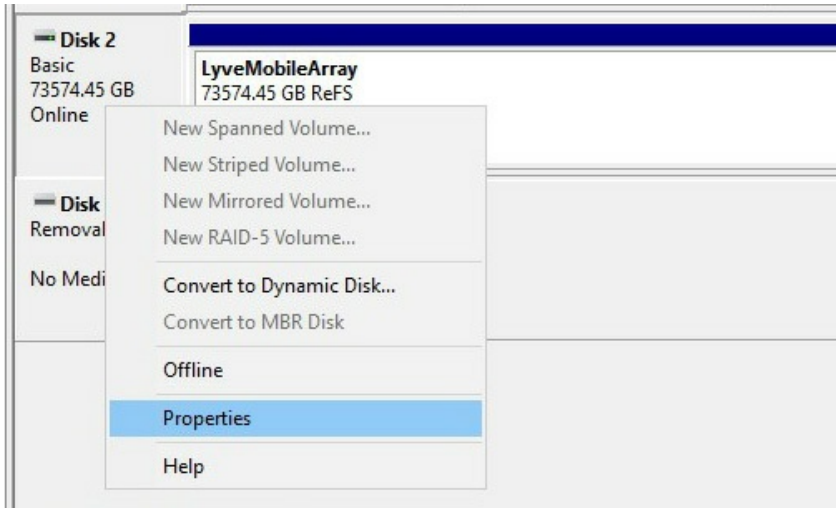
5. Open the Server Manager and install **Multipath I/O (MPIO)**.
6. Open MPIO.
7. Click on the **Discover Multi-Paths** tab.
8. Check **Add support for SAS devices** and click **Add**.



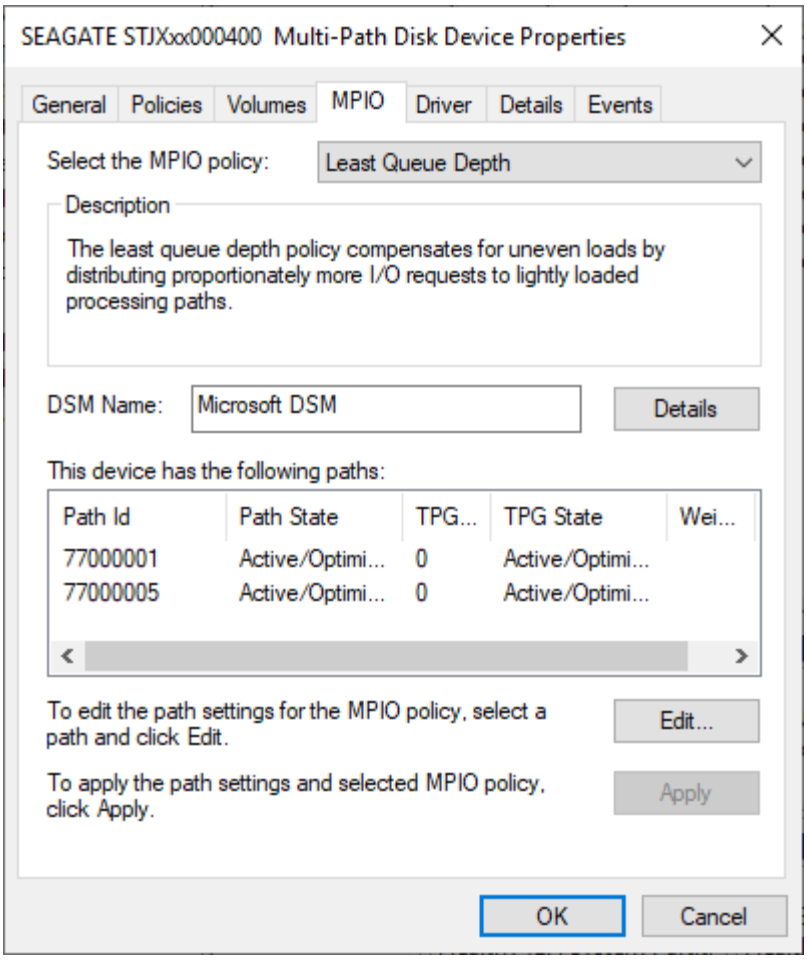
9. Reboot the server.
10. Open Disk Management.
11. Right-click the Lyve Mobile Array disk marked **Offline** and select **Online**.



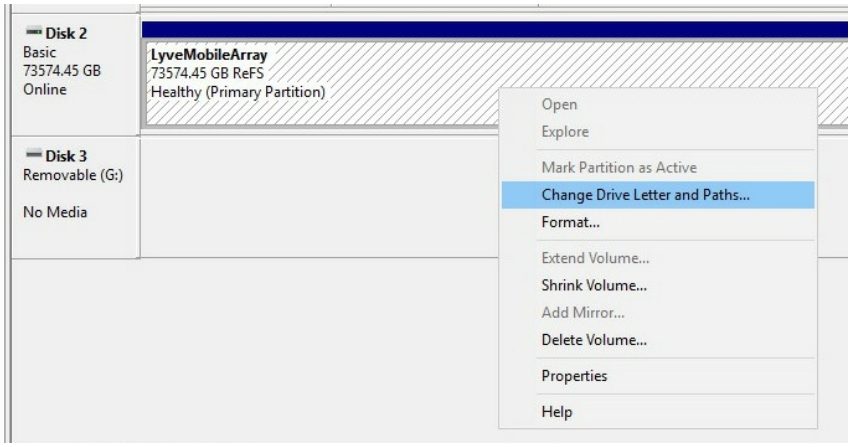
12. If MPIO is enabled, right-click the Lyve Mobile Array disk and select **Properties**. If it is not enabled, go to step 15.



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



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



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

Regulatory Compliance

Product Name	Seagate Lyve Mobile Rackmount Receiver
Regulatory Model Number	SMAP001

FCC DECLARATION OF CONFORMANCE

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

CLASS A

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

China RoHS

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

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

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

本表格依据 SJ/T 11364 的规定编制。
This table is prepared in accordance with the provisions of SJ/T 11364-2014
O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。
O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T26572.
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。
X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

Taiwan RoHS

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

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

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

備考 1. "O" 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. "O" 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