



Spectra BlackPearl Converged Storage System Rack Mounting Instructions



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Part Number

90990098 Revision F

Revision History

Revision	Date	Description
A	October 2014	Initial release.
B	January 2015	Second release.
C	May 2015	Third release. Updated process to include 2U chassis.
D	February 2016	Fourth release.
E	June 2016	Minor correction.
F	May 2019	Updated to reflect new process.

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To Obtain Documentation

Spectra Logic Website: support.spectralogic.com/documentation

RACK MOUNTING INSTRUCTIONS

This document describes installing a Spectra® BlackPearl® Converged Storage System in a rack.

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Install the BlackPearl system in a standard 4-post, 19-inch rack. The BlackPearl chassis occupies either 2 units (2U) or 4 units (4U) of rack space, depending on which model was ordered.

Note: These instructions do not apply to the ArcticBlue™ expansion node for the BlackPearl system. ArcticBlue expansion nodes are installed by Spectra Logic Professional Services.



WARNING

If you are not installing any other equipment in the rack, install the BlackPearl system near the bottom of the rack to prevent the rack from being top-heavy.








WARNUNG Wenn Sie nicht die Installation eines anderen Geräts im Rack, installieren Sie die BlackPearl in der Nähe der Unterseite des Racks zu verhindern, dass die Stange nicht kopflastig.

BEFORE YOU BEGIN

Before you install the BlackPearl system in a rack:

- Have on hand:
 - #2 Phillips screwdriver, magnetic if available
 - Level (recommended)
- Identify the location where you will install the system.

- Unpack the rack-mount kit and identify the components listed in the following table.

Component	# Required	Use
 <p>Inner rack rails</p>	2	Attach to the sides of the BlackPearl chassis.
 <p>Outer rack rails</p>	2	Attach to the posts of the 19-inch rack. The chassis-mounted inner rack rails will slide into the outer rack rails.
 <p>Inner rail screws</p>	4	Secure the inner rack rail to the chassis (4).
 <p>Outer rail screws</p>	8	Attach the rail assemblies to the rack (8).
 <p>Washers</p>	8	Used with the outer rail screws to attach the rail assemblies to the rack (8).
 <p>Chassis screws</p>	2	Secure the chassis to the rack (2).
 <p>Circular cutout rack adaptors</p>	4 (optional)	Attach to the ends of the outer rack rails, allowing installation of the rack kit in a rack with circular mounting cutouts.

PREPARE YOUR SITE

Ensure that an appropriate rack is assembled and placed near the AC power outlets, network, and data connections.



Caution

The rack must be located on a level, hard-surfaced floor, such as cement or tile. Do not place the rack on a carpeted floor or anywhere else that poses risk for static discharge that could damage your system or its drives.

The BlackPearl 4U system is 7 inches (17.8 cm) tall and occupies 4U of rack space. The BlackPearl 2U system is 3.5 inches (8.9 cm) tall and occupies 2U of rack space. Both are designed to fit in a standard 19-inch, 4-post rack. Keep the following in mind when selecting a rack:

- Make sure that the distance between the mounting surfaces on the front and rear posts is between 27 inches (68.6 cm) and 36 inches (91 cm).

Note: If you are using the adaptors to install the rack-mount kit in a rack with circular mounting cutouts, the distance between the front and rear posts must be at least 28.5 inches (72.4 cm), and not more than 37.5 inches (95.25 cm).

- Allow approximately 3 inches (8 cm) of additional depth at the back of the rack for cable clearance.
- If the rack has a door, allow at least 2 inches (5 cm) clearance between the front door frame and the front mounting posts of the rack to allow the door to close over the BlackPearl front bezel.
- Check your rack's specifications to make sure it will accommodate the weight and depth of the BlackPearl chassis.

- Notes:**
- The use of a two-post rack is not supported.
 - An enclosed 19-inch, four-post rack is available for purchase from Spectra Logic. The rack has two doors and removable side panels. Contact Spectra Logic Sales for more information (see [Contacting Spectra Logic on page 3](#)).
 - In earthquake prone areas, provide restraints as necessary.

PREPARE THE RACK

If you are using an enclosed rack with a front door, identify the front of the rack and make sure that there is at least 2 inches (5 cm) of clearance between the front door frame and the front mounting posts, as shown in [Figure 1](#). This clearance is needed to allow the front door to close over the front bezel. If necessary, move the front mounting posts toward the back of the rack to provide the necessary clearance.

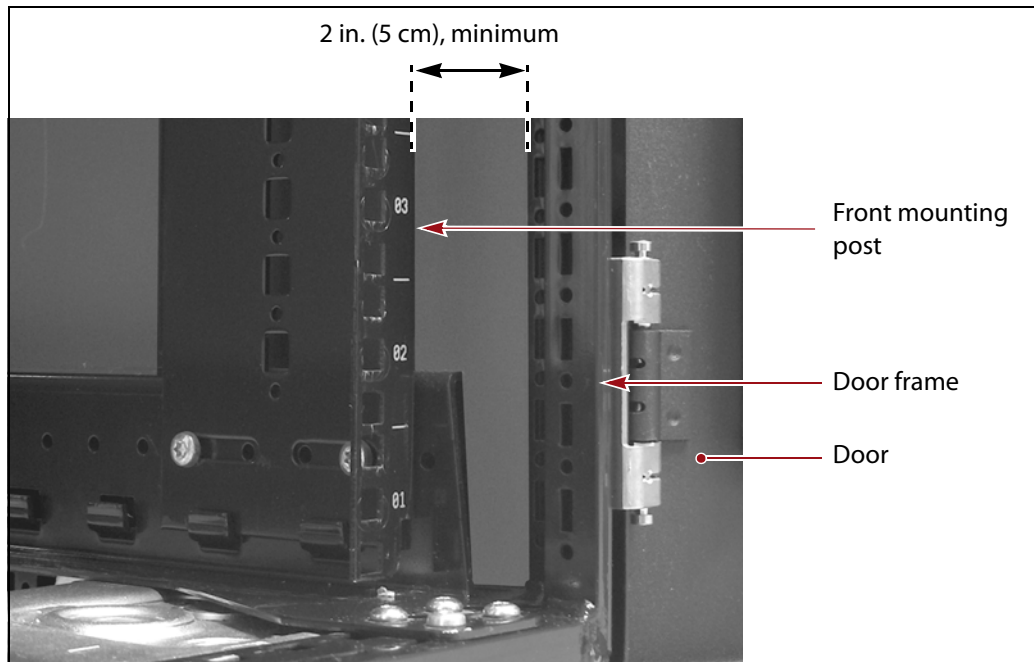


Figure 1 Ensure clearance between the rack's front door and the front posts.

Identify the location in the rack where you want the BlackPearl system installed. If no other devices are installed in the rack, Spectra Logic recommends mounting the system near the bottom of the rack.

SEPARATE THE RAILS

If necessary, remove the inner rack rail section from the outer rack rail.

1. Orient the rack rail with the open end to the left and the inner rail facing you (see [Figure 2](#)).

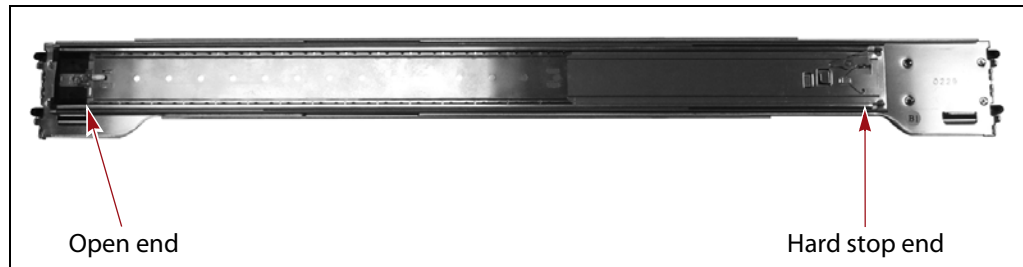


Figure 2 Location of the hard stop and open ends of the outer rack rail.

2. Push the end of the inner rail near the hard stop towards the open end of the outer rail until the self-locking latch engages. The latch must be released to continue to remove the inner rail section.

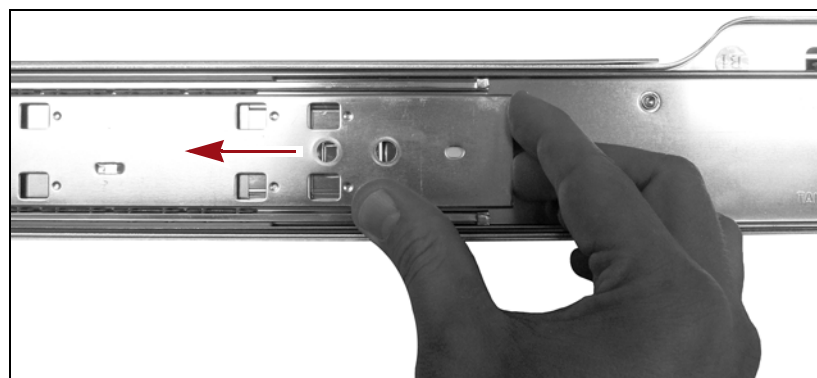


Figure 3 Extend the inner rail beyond the outer rail.

3. Flip the rail assembly over so the outer rail is on top and the self-locking latch is facing you (see [Figure 4](#)).
4. Press the self-locking latch toward the closest edge of the inner rail and then fully extract the inner rail from the outer rail.

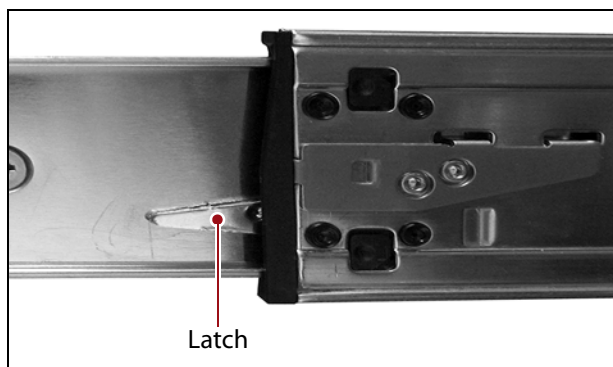


Figure 4 Self-locking latch.

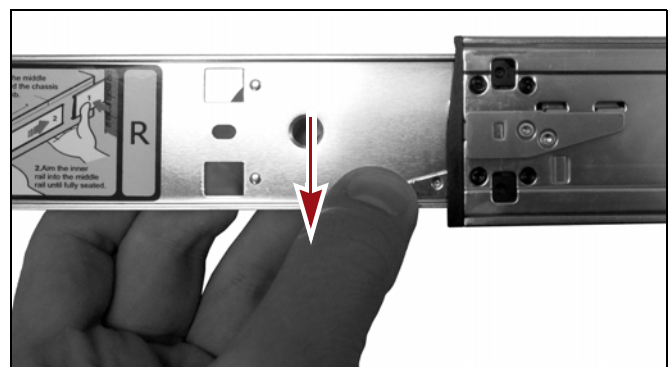


Figure 5 Press the latch toward the closest outer edge.

INSTALL THE OUTER RAIL

If you are installing the rack kit in a circular cutout rack, skip to [Install the Outer Rail Using Adaptors on page 11](#).

1. Determine the position of the rack mount kit in the rack. [Figure 6](#) and [Figure 7](#) show the relationship of the rack kit position in the rack and the resulting position of the chassis.

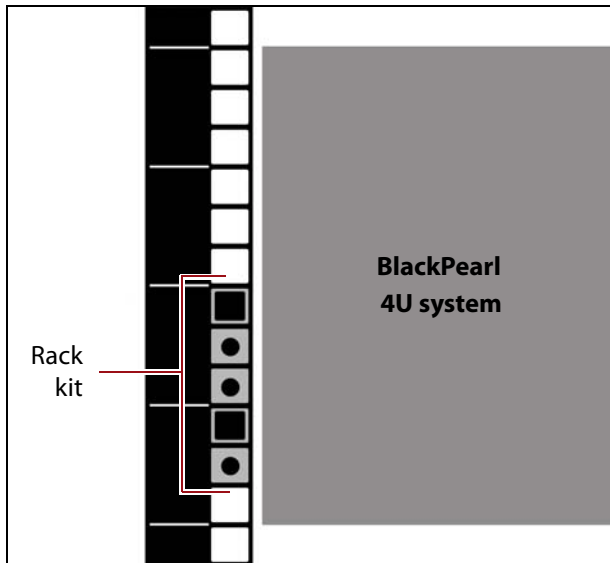


Figure 6 Relationship between the rack kit position and the BlackPearl 4U chassis.

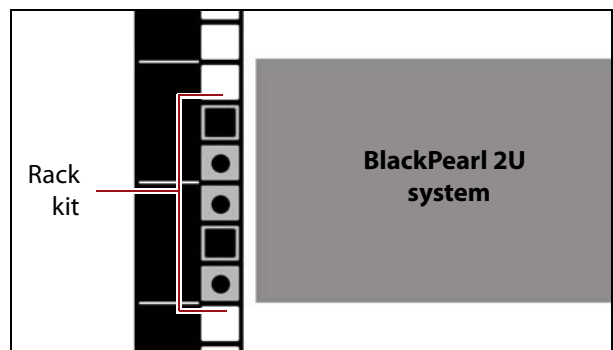


Figure 7 Relationship between the rack kit position and the BlackPearl 2U chassis.

2. Position the outer rack rail at the desired height in the rack with the open end facing the front of the rack. Make sure the mounting hooks are behind the cut-outs in the posts and face down.
3. Insert the mounting hooks on the open end of the rail into the cut-outs in the front of the rack. This action also depresses the black tabs used to lock the rail in the rack.

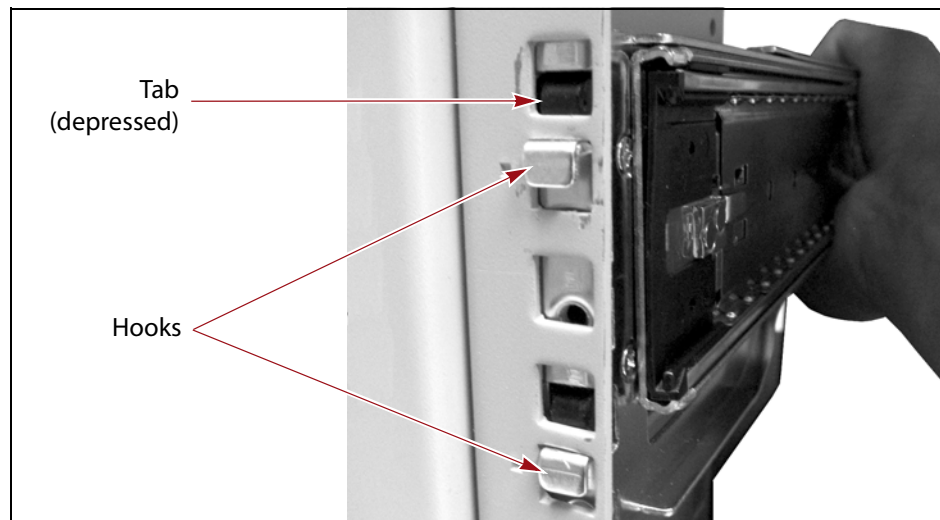


Figure 8 Insert the mounting hooks through the cut-outs in the rack.

4. Press the outer rail down to lock the mounting hooks to the rack. The black tabs will pop through the holes in the front of the rack and lock in place with an audible click.

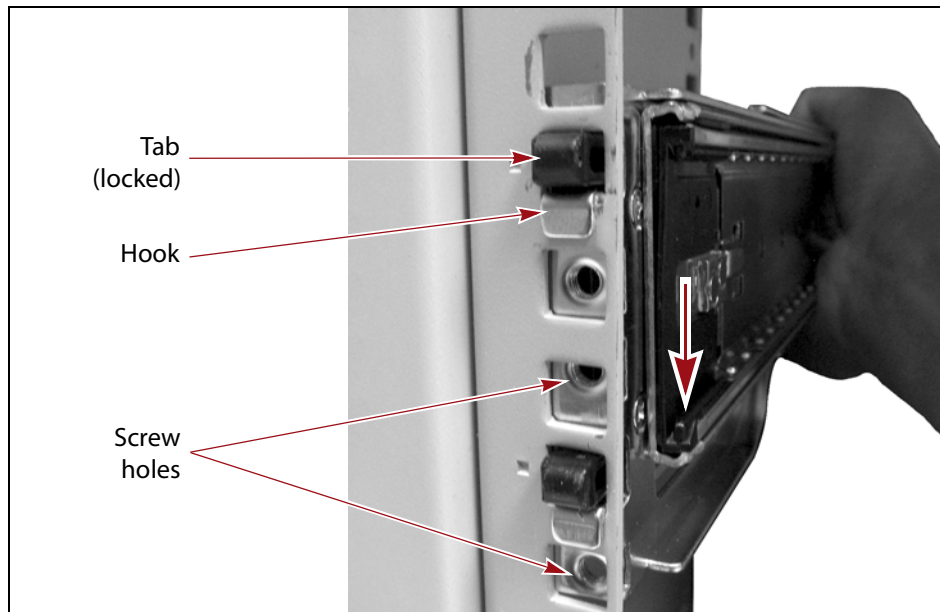


Figure 9 Press the rail down to lock it into place.

5. Repeat [Step 2 on page 9](#) through [Step 4](#) to attach the rear mounting hooks of the outer rack rail to the rear post of the rack.
6. Use a level to make sure that the outer rack rail is level.
7. Using a #2 Phillips screwdriver, secure the outer rail to the rack.
 - a. Install two outer rail screws and washers in the holes above and below the bottom mounting hook in the front mounting bracket to secure the rail to the front post (see [Figure 9](#)).
 - b. Install two outer rail screws and washers in the upper and lower holes to secure the back of the outer rail to the rear post.
8. Repeat [Step 2 on page 9](#) through [Step 7](#) to attach the second outer rail to the other side of the rack.
9. Use a level to make sure the installed rails are level in relation to each other.
10. Continue to [Install the Inner Rails on page 14](#).

INSTALL THE OUTER RAIL USING ADAPTORS

If you are installing the rack kit in a circular cutout rack, you will need to install the four included adaptors on the ends of both outer rails.

1. Position the outer rail so that the inner side is facing upward.
2. The adaptors used on the front of the outer rail are different from the ones used on the back of the rail. Use adaptors labeled “A” for the front of the outer rails, and adaptors labeled “B” for the back of the rails.

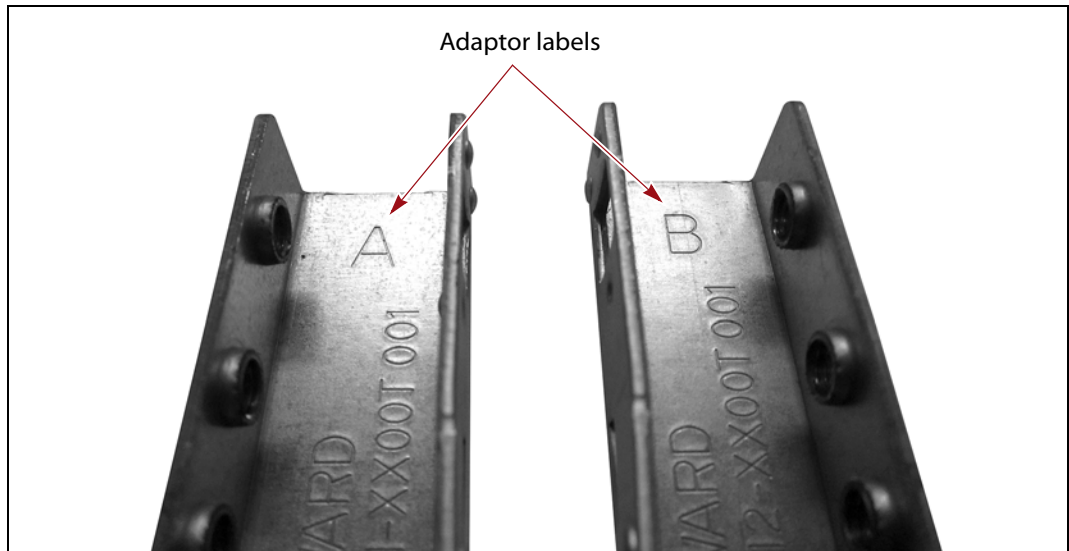


Figure 10 Location of the adaptor labels.

3. With the inside of the outer rail facing upwards, position the adaptor with the label side facing upward, and the square gaps in the side of the adaptor facing toward the end of the outer rail.

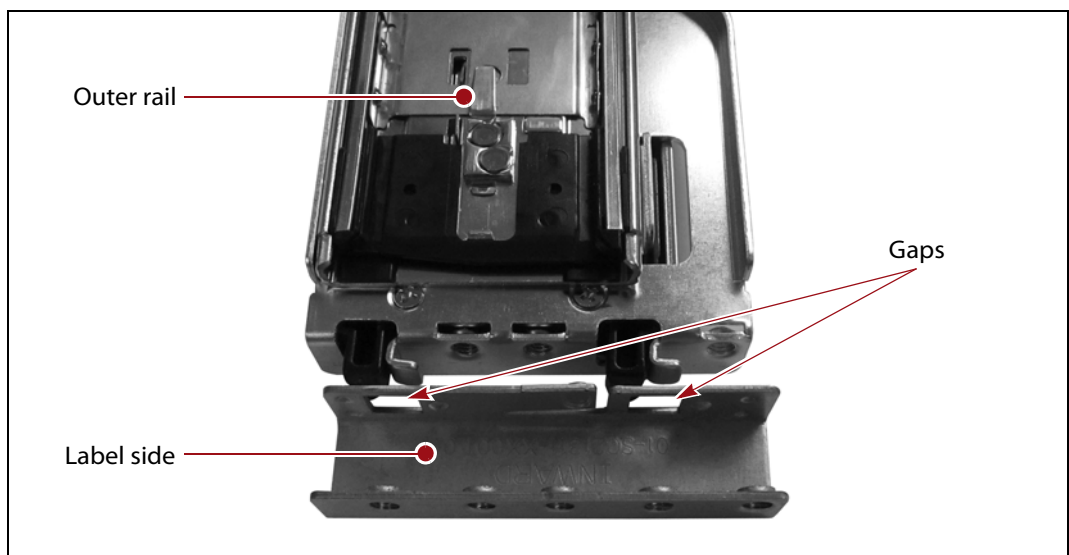


Figure 11 Position the adaptor with the label side facing up and the gaps facing the outer rail.

4. Press the adaptor in toward the outer rail, which depresses the black plastic tabs on the outer rail, then slide the adaptor towards the top of the rail to lock it in place.

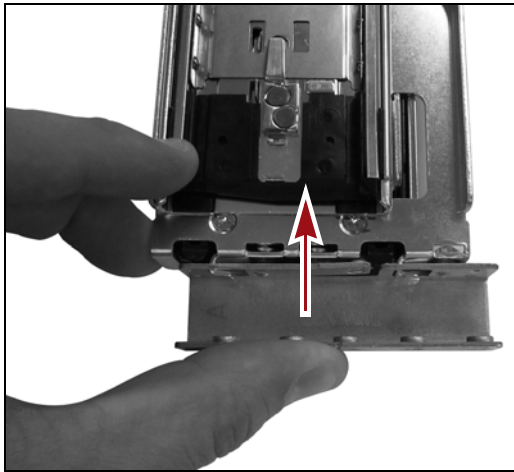


Figure 12 Press the adaptor in toward the outer rail.

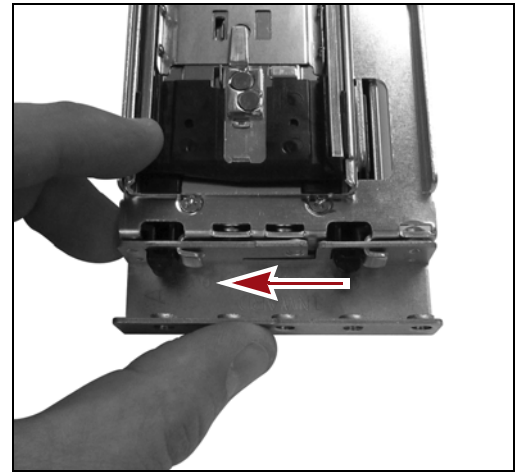


Figure 13 Slide the adaptor to the left to lock it in place.

5. Repeat [Step 3](#) through [Step 4](#) as needed to install the remaining adaptors.
6. Determine the position of the rack mount kit in the rack. [Figure 14](#) and [Figure 15](#) show the relationship of the rack kit position in the rack and the resulting position of the chassis.

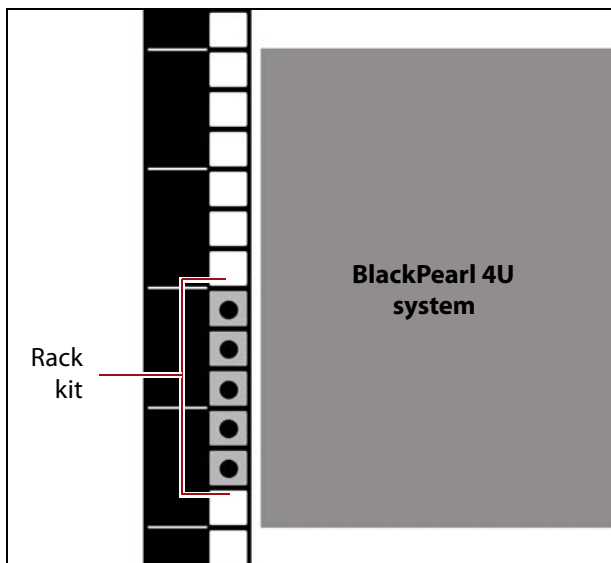


Figure 14 Relationship between the rack kit position and the position of the BlackPearl 4U chassis.

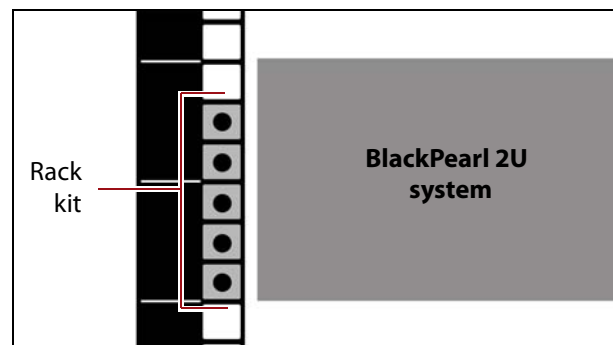


Figure 15 Relationship between the rack kit position and the position of the BlackPearl 2U chassis.

7. Position the outer rack rail at the desired height in the rack with the open end facing the front of the rack. Make sure the inner side of the outer rack rail is facing toward the inside of the rack.

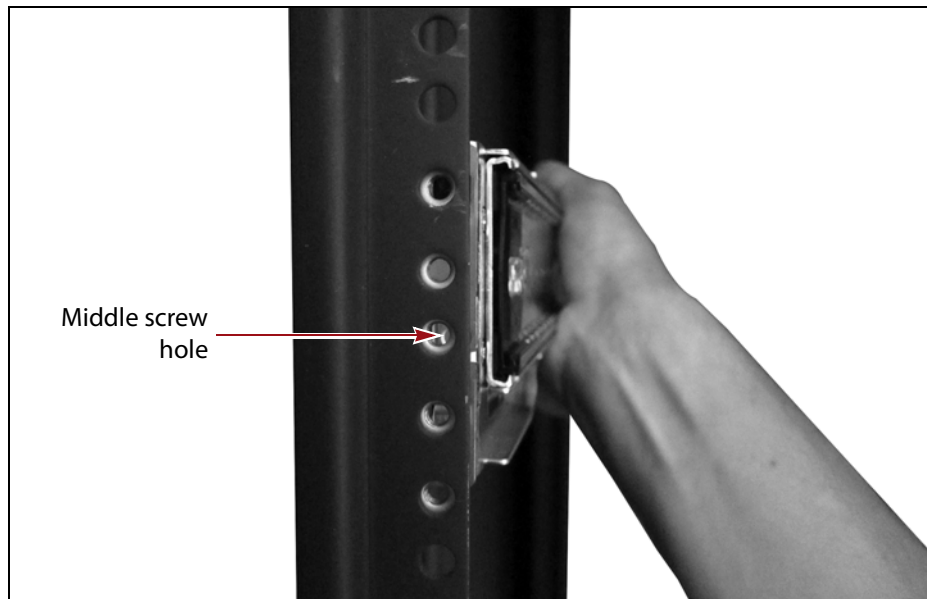


Figure 16 Position the outer rail.

8. Using a #2 Phillips screwdriver, secure the outer rail to the rack.
 - a. Install two outer rail screws and washers in the middle and lowest screw holes in the front mounting bracket to secure the rail to the front post.
 - b. Install two outer rail screws and washers in the upper and lower holes to secure the back of the outer rail to the rear post.
9. Repeat [Step 7](#) through [Step 8](#) to attach the second outer rail to the other side of the rack.
10. Use a level to make sure the installed rails are level in relation to each other.
11. Continue to [Install the Inner Rails on page 14](#).

INSTALL THE INNER RAILS

1. Place the system chassis on a sturdy, flat surface.
2. Orient the inner rail with the self locking latch facing you and the black plastic tab on the end of the rail oriented toward the front of the chassis.
3. Position the inner rack rail over the hooks extending out from the side of the chassis. The rail is keyed to only fit one way.

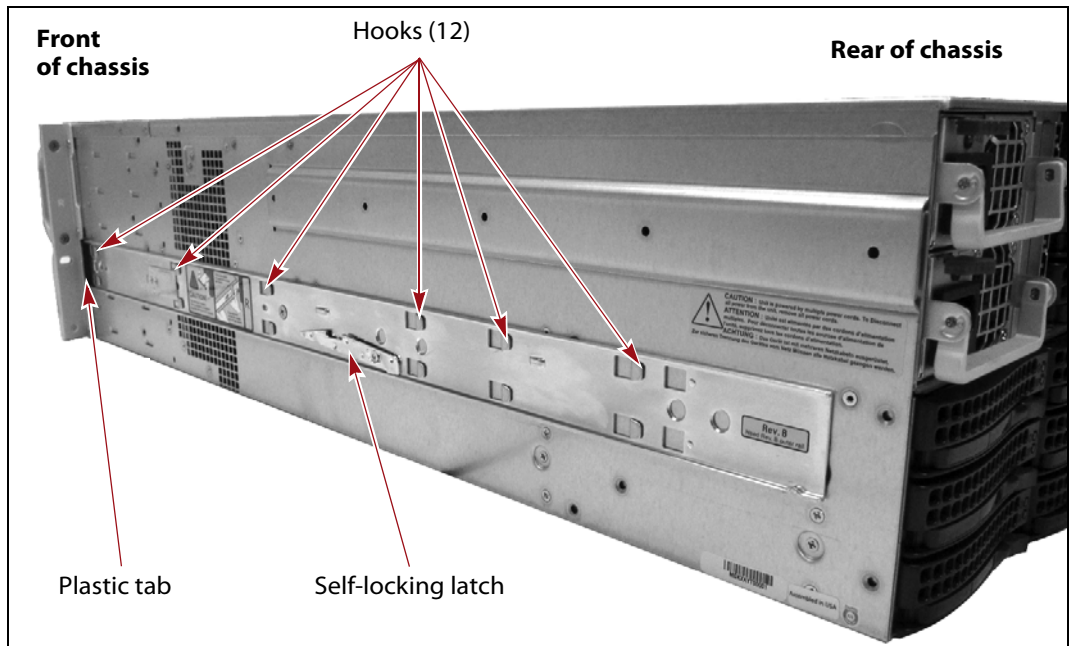


Figure 17 Install the inner rail on the BlackPearl 4U chassis.

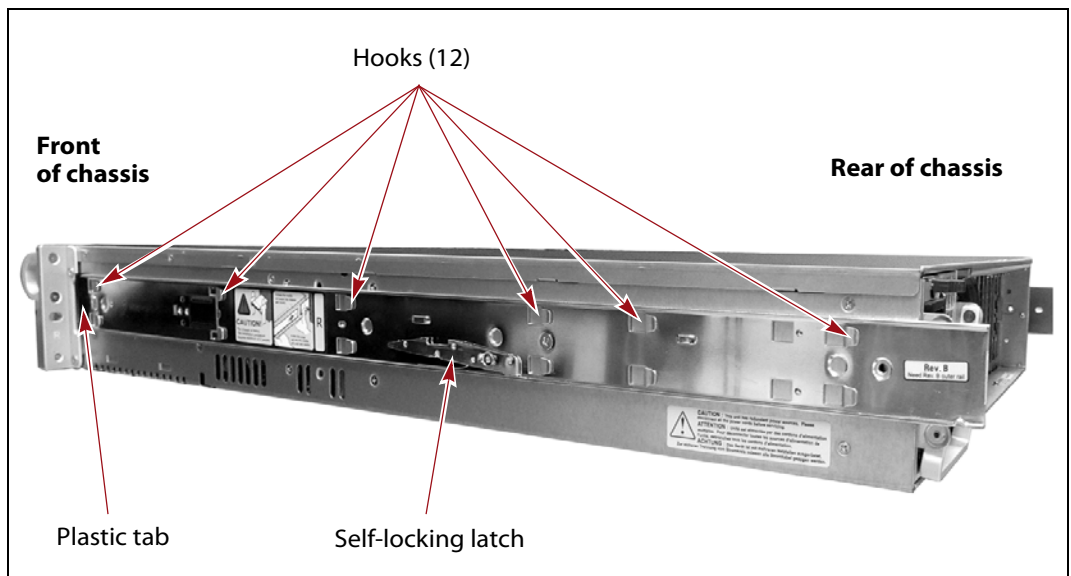


Figure 18 Install the inner rail on the BlackPearl 2U chassis.

4. While pressing the inner rail against the side of the chassis, slide the inner rail towards the front of the chassis to engage the mounting hooks.
5. Using a #2 Phillips screwdriver, secure the rail to the chassis using one screw for the 4U chassis, and two screws for the 2U chassis.

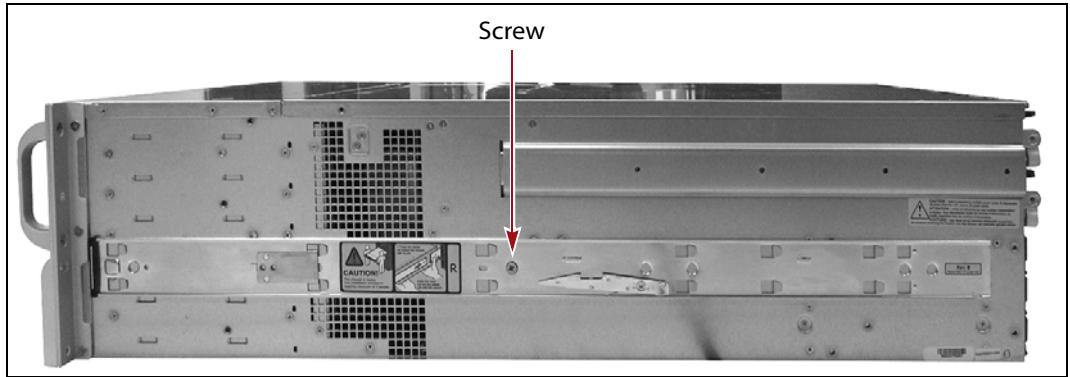


Figure 19 Install the inner rail screw on the BlackPearl 4U chassis.



Figure 20 Install the inner rail screws on the BlackPearl 2U chassis.

6. Repeat [Step 2](#) on page 14 through [Step 5](#) for the other side.

SLIDE THE CHASSIS INTO THE RACK



WARNING

The Spectra BlackPearl 4U system weighs between 66.6 lb (30.2 kg) and 97.8 lb (44.4 kg) depending on how many drives are installed. Spectra Logic requires using two people, or using a lift to support the weight of the system while installing it into, or removing it from a rack.

The Spectra BlackPearl 2U system weighs between 46.7 lb (21.2 kg) and 57.5 lb (26.1 kg). Spectra Logic requires using two people, or using a lift to support the weight of the system while installing it into, or removing it from a rack.

WARNUNG Die Spectra BlackPearl 4U System wiegt zwischen 30,2 kg und 44,4 kg, je nachdem wie viele Laufwerke installiert sind. Spectra Logic erfordert die Verwendung von zwei Menschen, oder mit einem Aufzug, um das Gewicht des Systems zu unterstützen, während sie in der Installation, oder es von einem Rack zu entfernen.

WARNUNG Die Spectra Black Pearl 2U System wiegt zwischen 21,2 kg und 26.1 kg, je nachdem wie viele Laufwerke installiert sind. Spectra Logic erfordert die Verwendung von zwei Menschen, oder mit einem Aufzug, um das Gewicht des Systems zu unterstützen, während sie in der Installation, oder es von einem Rack zu entfernen.

1. Pull the center sections of the outer rails out of the rack until they are fully extended (see [Figure 21](#)).
2. If necessary, remove the front bezel of the BlackPearl system.
3. Position the chassis in front of the rack rails and lift it so that the inner rails are at the same height as the extended sections of the outer rails attached to the rack.

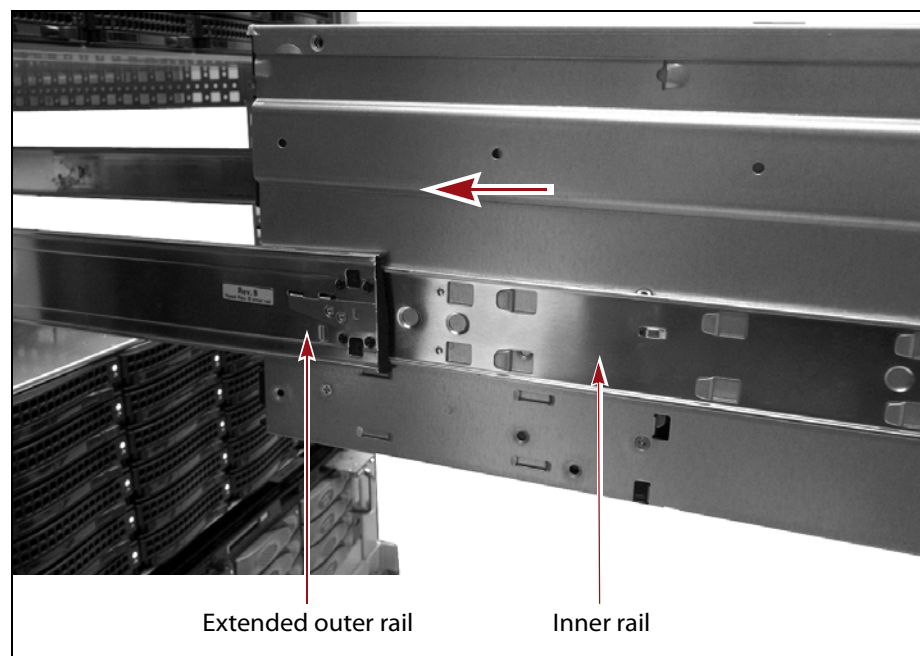


Figure 21 Extend the outer rails and slide the chassis into rack.

4. Slide the chassis into the rack until the self-locking latches engage.
5. While supporting the front of the chassis with one hand or a lift, press the self-locking latches on both inner rails downward. Push the chassis the rest of the way into the rack until the mounting brackets on the front of the chassis are flush with the front posts of the rack.

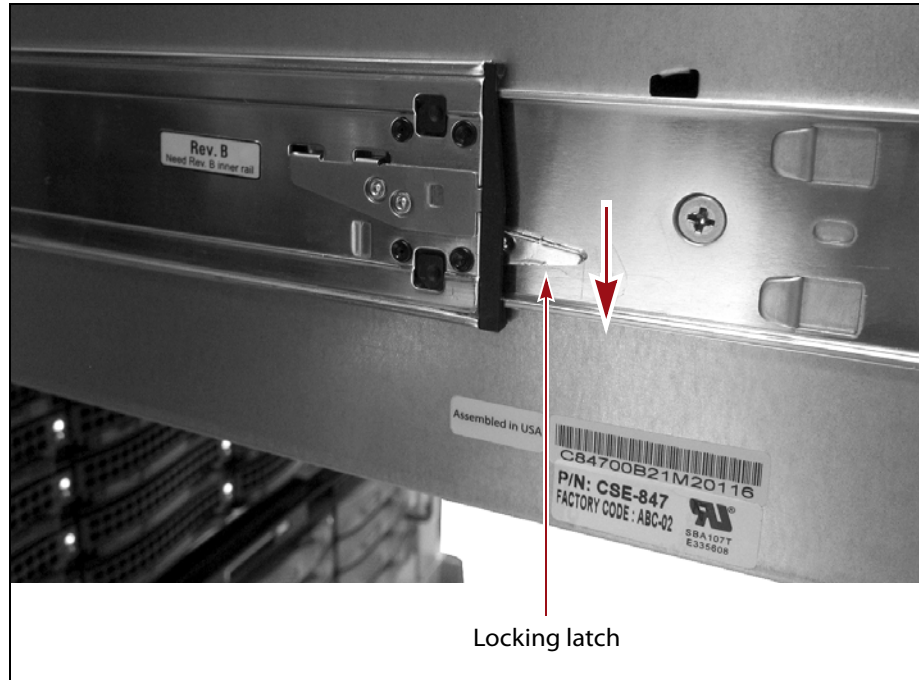


Figure 22 Press the self-locking latch downward.

6. Using a #2 Phillips screwdriver, install one chassis screw into the hole in the mounting bracket on each side of the chassis to secure the chassis to the rack. Do not over-tighten the screw.

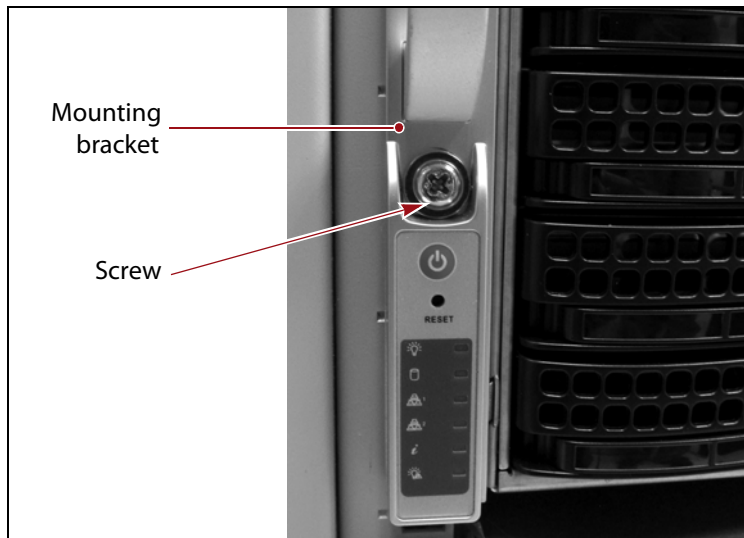


Figure 23 Secure the chassis to the rack.

7. Attach the front bezel if you removed it in Step 2 on page 16.