

FlashBlade//S DC Quick Installation Guide

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Chapter 1

Conventions and Guidelines

The following convention symbols and guidelines appear in Pure Storage documentation.

Document Conventions

Symbol	Meaning
	Potential for injury, physical damage, or loss of data or system configuration information
	Best practice
	Supplementary instruction
	For your information
	Indicates a need for login access to a FlashBlade or involvement from Pure Storage Technical Services.

Safety and Handling Guidelines

-  If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment might be impaired.
-  Avoid contact with back-plane components and connectors.
-  Disconnect power cords before moving chassis and shelves.
-  Verify all rack electrical distribution systems meet all safety requirements of UL 62368-1, IEC 62368-1, or EN 62368-1. For AC installation provide adequate 200-240V 50-60Hz AC power, and use over-current protection devices connected to a UL certified (or equivalent 20A) circuit breaker for each PSU. For DC installation, provide adequate -48-60V DC power, and use over-current

protection devices connected to a UL certified 50A (or equivalent 50A) circuit breaker for each PSU.

-  Verify that all electrical connections are grounded before powering on the system.
-  Do not open chassis or other components unless you are a qualified service representative performing a procedure approved by Pure Storage.
-  Do not use component handles to lift the chassis. Use the chassis lift handles to lift a chassis.
-  When servicing rack-mounted equipment, remove only one chassis at a time.
-  Do not insert anything into any FlashBlade connectors except as specified in installation or repair instructions.
-  Install replacement components within two minutes of removing a faulty component to ensure the maximum blade temperatures do not exceed temperature limits.
-  Use a mechanical lift or 4 or more people to lift the FlashBlade chassis.
-  Equipment is intended for installation in a restricted access area.
-  Rack mounting:

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature specified by the Technical Specifications.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of the air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment electrical ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained.

Particular attention should be given to supply connections other than direct connections to the branch circuit.

-  Ensure all components, including power supply modules (PSM), power supply units (PSU), and blank panels are installed before powering on or operating a FlashBlade.
-  Do not remove faulty components until replacements are available.

Chapter 2

Before You Begin

Contact Pure Storage Technical Services for assistance. Available 24 hours a day, 7 days a week.

- Online and international technical support: <https://support.purestorage.com>
- Email: support@purestorage.com
- Telephone: (800) 379-7873

Preparing for Installation

Installation Time: Approximately 3 to 4 hours.

- Verify the front and rear of the rack mounting posts are between 61.0 cm (24 in.) and 91.5 cm (36 in.) with 5 RU (22.3 cm/8.75 in.) of contiguous vertical space available for the chassis.
 - The recommended clearance for the front (cold aisle) is 91.5 cm (36 in.). The minimum is 81.5 cm (32 in.).
 - The recommended clearance for the rear (hot aisle) is 91.5 cm (36 in.). The minimum is 81.5 cm (32 in.).
 - No special clearance is required on top, bottom, or sides of the rack.
 - Recommended front-to-rear clearance for rack posts is 74 cm (29 in. - default on most racks). Minimum is 61 cm (24 in.), Maximum is 81.25 cm (32 in.).
-  Install the equipment in a restricted access location.
-  Set up a local console (serial-port monitor and USB keyboard or a computer with terminal emulation) for configuring or troubleshooting the software installation.
-  To reduce weight, install any additional blades, DFMs, and DFM blanks after mounting the chassis. The FlashBlade//S equipped with 7 blades and 3 blanks without DFMs weighs 80kg (176 lb). Use a mechanical lift or 4 or more people to lift the chassis.

-  Make sure the rack can support the weight of all installed equipment, including cables, bezel, and rails—approximately 100 kg (220 lb.) for each FlashBlade//S chassis— and the weight is within the floor loading limit.
-  Prior to unpacking, inspect packages for shipping damage. If there is damage, photograph it and contact Pure Storage Technical Services before proceeding.
-  Verify all cables are included in the packaging.
-  Ensure all components, including PSMs and PSUs, are installed correctly before turning on power or operating the system.
-  Leave failed components in place until replacements are available.
-  Mount the chassis to the rack within 3m (9.85ft.) of the network connection switches or patch panels.
-  Verify the installation environment:
 - Operating temperature range is within 5°C-35°C.
 - Airflow ducts are not aimed directly at any chassis.
-  The installation shall require all of the following:
 - The building installation shall provide a means for connecting to protective earth, and
 - The equipment is to be connected to that means, and
 - A service person shall check the socket-outlets providing power to the equipment, provide a connection to the building protective earth. If not, the service person shall arrange the installation of a protective earthing conductor from a separate protective earthing terminal to the protective earth wire in the building.
-  Use the cable connection instructions to ensure the system meets compliance requirements.
-  Save all provided tools, cartons, and packing material in case return shipment to Pure Storage is necessary.

Chapter 3

Unpacking the Chassis

FlashBlade//S systems are available with DC power supply units.

Remove all protective packaging and covers from the components. Verify the package contains all the listed items in the shipping invoice and photograph any damages incurred during transit. If there are missing items or damages, contact Pure Storage Technical Services for assistance with findings.

Components and Accessory Kit (DC System)

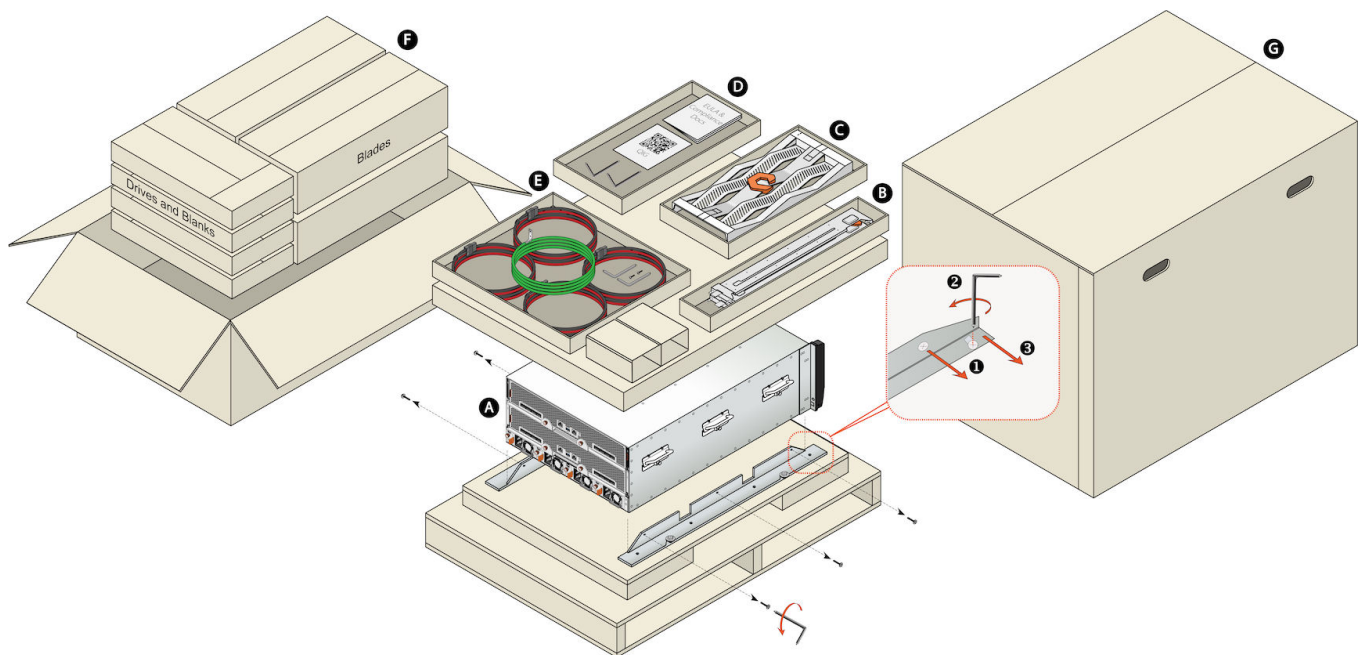


Table 3.1 Packaged Contents

Callout	Description
A	FlashBlade//S chassis and components: • 2 x Fabric I/O Modules • 4 x DC PSUs • 7 x blades • 3 x blade blanks  Note: The chassis is attached to the pallet brackets. To remove the chassis: 1 Remove the 3 screws from each bracket. 2 Loosen the 4 screws on the slotted base of each pallet bracket. 3 Slide the pallet brackets away from the sides of the chassis.
B	Rail kit box: • 2 x slide-rails • 5 x screws and 3 x cage nuts
C	Bezel
D	Accessory kit box: • Torx 10 and Phillips #2 drivers • FlashBlade//S QIG QR code sheet, EULA, Safety and Compliance
E	2000W DC PSU accessory kit box: • 1 x 3-meter grounding cable (includes 2 x M5 screws and grounding lug) • 4 x DC PSU 3-meter power cords

Table 3.1 Packaged Contents (continued)

Callout	Description
F	DirectFlash Module (DFM) pack boxes (each box contains DFM for each blade).
G	Overpack cover

Chapter 4

Installing the Chassis Rails

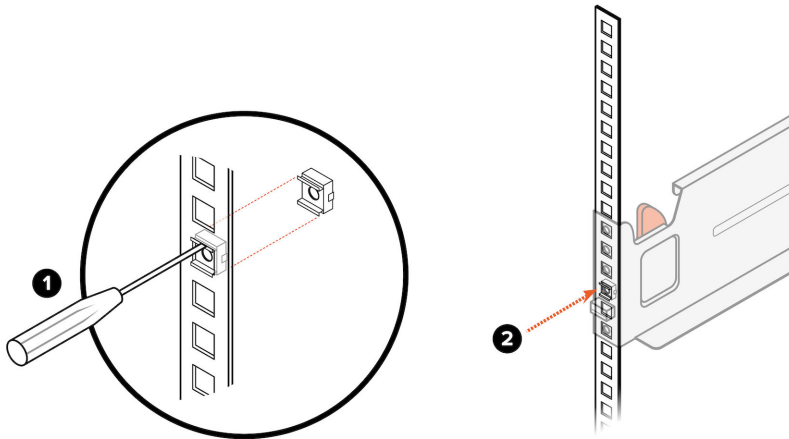
The FlashBladeFlashBlade//S chassis packaging includes a pair of chassis rails which are labeled **Right** and **Left**. The rails have locating pins (for square- and round-hole racks) or positioning studs (visible if you unscrew and remove the locating pins for threaded-hole racks) for aligning with the holes in the rack.

- 1 (Square-hole racks only) Install the #10-32 cage nuts (included with the rail kit) onto the back side of the front rack post. Cage insertion tool is not provided.



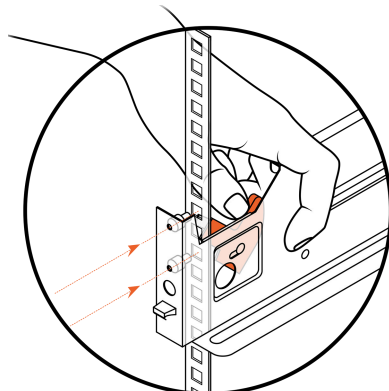
For round-hole racks, use clip nuts (not provided) instead of cage nuts.

Figure 4.1 Installing Cage Nuts



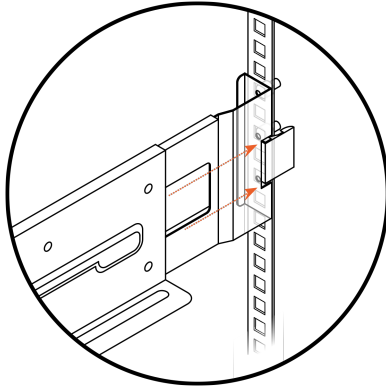
- 2 Install one of the two rails (the installation order does not matter) by pulling the spring-loaded lever back and inserting the locating pins or positioning studs in the front mounting post at the desired height. Release the lever once the rail is in place.

Figure 4.2 Installing a Rail (Front Post)



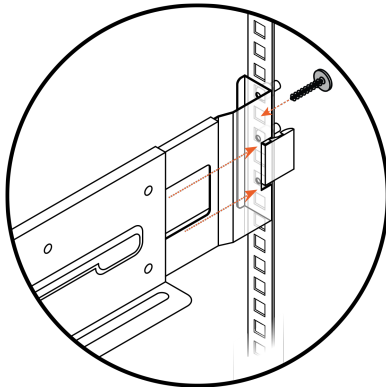
- 3 Extend the rear of the rail until the locating pins or positioning studs reach the rear mounting post, and press the rail into the rear post until the latch engages. The left rail is shown in this example.

Figure 4.3 Installing a Rail (Rear Post)



- 4 (All rack types) Secure the rear of each rail to the rack with the screws provided in the Rail Kit. One screw is provided for the rear of each rail. Use the second or fifth hole up from the bottom of each rail (shown going into the fifth hole).

Figure 4.4 Installing a Rail (Rear Post)



- 5 Repeat the steps to install the second rail.

! Make sure to install the rear of each rail into the post holes that are at the same height as the holes being used on the front post. Otherwise, the chassis might slide off the rails causing personal injury and damage to the chassis.

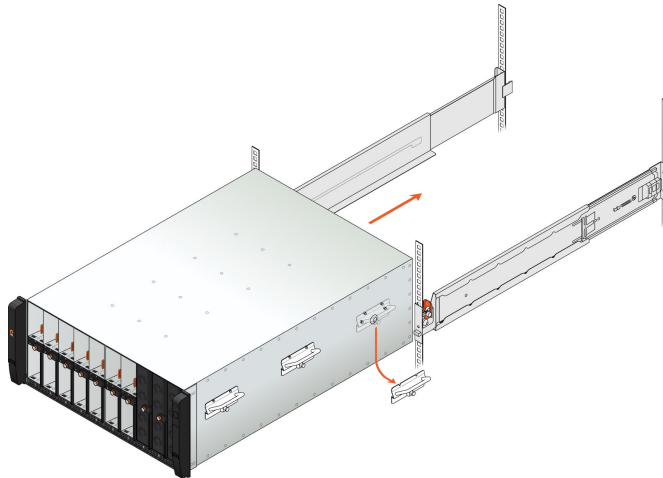
Mount the Chassis into the Rack

! To avoid injury or damage to the system, do not insert hands or fingers into the empty drive bays.

- 1 Use a mechanical lift to raise the chassis to the desired height in the rack.
- 2 Set the rear of the chassis onto the rails and remove the rear handles while using the mechanical lift to support the front of the chassis.

To remove the handle, pull the plunger and slide it in a downward motion.

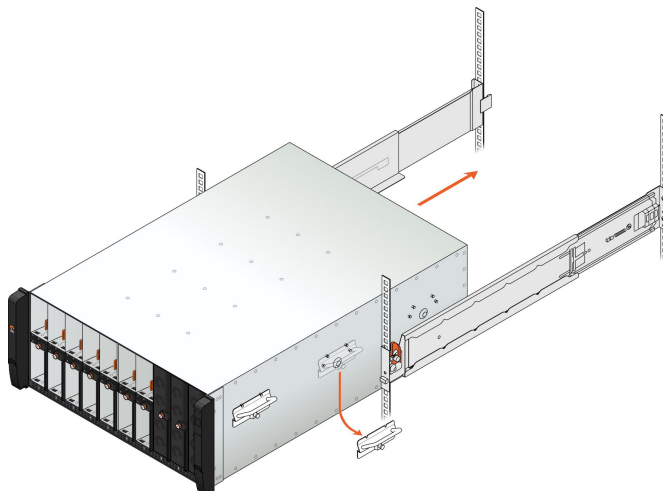
Figure 4.5 Mounting Chassis on Rack, Part 1



- 3 Continue to slide the chassis into the rack until you have a two-inch gap between the middle handles and the rack.

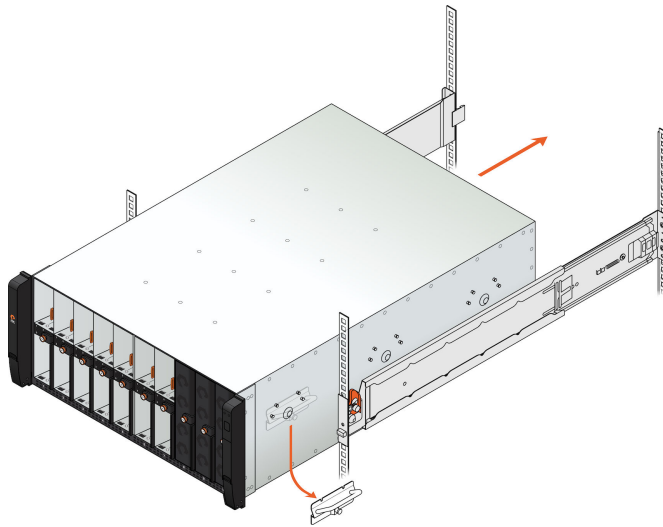
Remove the middle handles while using the mechanical lift to support the front of the chassis.

Figure 4.6 Mounting on Rack, Part 2



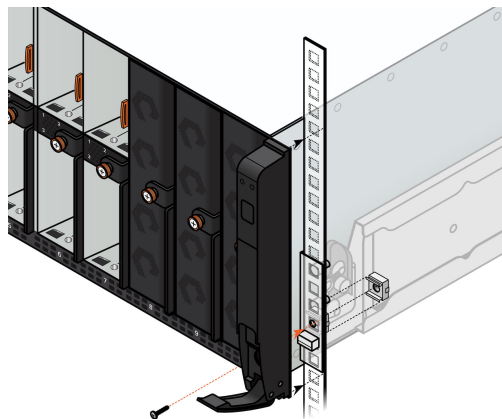
- 4 Continue to slide the chassis into the rack until there is a two-inch gap between the front handles and the rack.

Remove the front handles while using the mechanical lift to support the front of the chassis.

Figure 4.7 Mounting on Rack, Part 3

- 5 Slide the chassis completely into the rack. Ensure the chassis ears are flush with the front of the rack.
- 6 Secure the chassis ears to the front of the rack post with the two screws provided in the rail kit.

Open the slam latches on the chassis front panel and thread the screw through each slam-latch hole that lines up with the cage nuts previously installed in the rack posts. Use the supplied Phillips screw driver to tighten the screws.

Figure 4.8 Mounting on Rack, Part 3

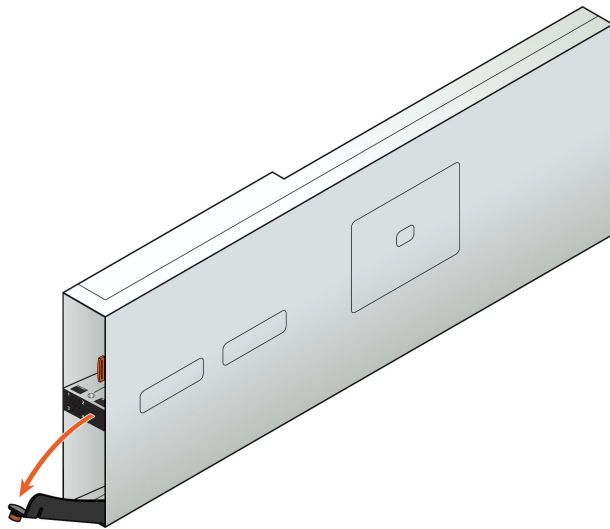
- 7 Close the slam-latches.

Chapter 5

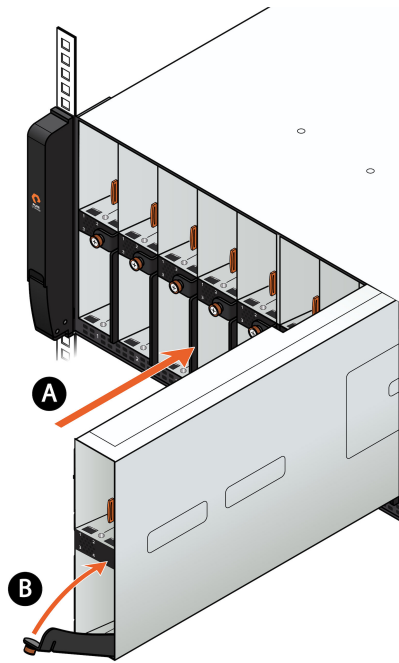
Installing Additional Blades

- ✓ A minimum of 7 blades must remain installed in the chassis.
 - ✓ Save all removable blade blanks.
 - 🔧 Locate the boxes with blades and prepare for installation.
 - 🔧 The blades must be installed in sequential order from left to right.
- 1 Remove all the blade blanks from the chassis.
 - 2 Loosen the thumb screw, fully open the ejector handle, and pull to remove the blade blank from the slot.
 - 3 Prepare the additional blade by loosening the thumb screw on the ejector handle of the additional blade.
 - 4 Pull the ejector handle fully open before inserting the blade into the chassis.

Figure 5.1 Disengage the Ejector Handle



- 5 Align the blade with the appropriate chassis slot key. (A) Insert the blade into the chassis and then (B) push the ejector handle upwards to fully engage the blade into the chassis.

Figure 5.2 Inserting the Blade

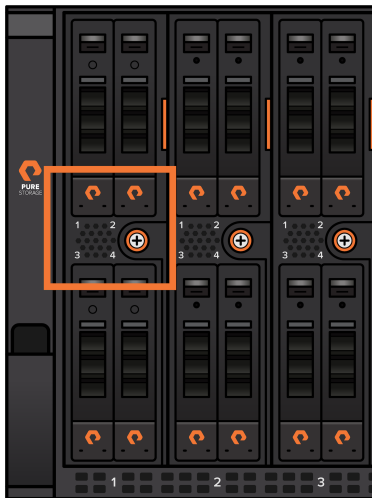
- 6** Tighten the thumb screw to secure the handle.
- 7** Repeat the previous steps for additional blades.
- 8** Use the Phillips screw driver to lock each blade into its chassis slot.
- 9** If applicable, re-install blade blanks into any remaining empty slots.

Chapter 6

Installing DirectFlash Modules

✓ DirectFlash Modules (DFM) must be installed into the slot in sequential order (1-2-3-4). Each blade must have the same number of DFMs installed.

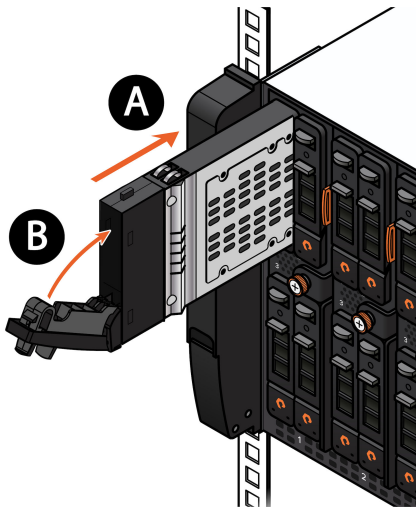
Figure 6.1 DFM Slot Numbers



🔧 Locate the boxes with DirectFlash Modules and prepare them for installation.

Working with one DFM box at a time:

- 1 Prepare the DFM for insertion by opening the front latch fully.
- 2 (A) Slide the DFM into the slot and then (B) close the latch to seat the module.

Figure 6.2 Inserting the DFM Carrier

- 3** Continue populating the remaining slots with the DFMs in the box, 4 per blade.
 - 4** Make sure the drive module front panels are flush with the chassis front panel. Check the latch on each module is engaged by pulling gently on it until you feel resistance.
 - 5** Repeat the previous steps for the remaining boxes of DFMs.
 - 6** (Optional) Use the Torx T10 screw driver (included in the Accessory Kit box) to lock each DFM into its blade slot.
-  Make sure all unused slots are filled with blanks.

Chapter 7

Powering on Chassis Equipped with DC PSUs

Connect the Grounding Wire

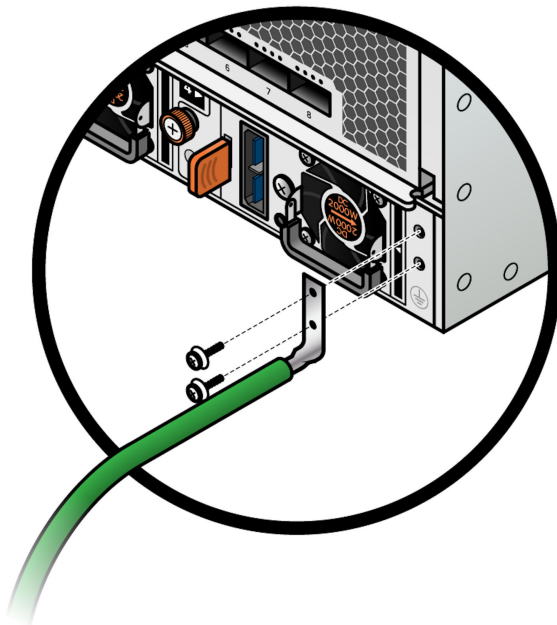
⚠ A qualified electrician must perform all connections to facility DC power and safety grounds. The system must be safety grounded at the cabinet frame. All electrical wiring must comply with applicable local or national codes and practices.

⚠ An electrical conducting path must exist between the product chassis and the metal surface of the rack in which it is mounted, or to a grounding conductor.

🔧 The grounding wire with lug is required for the 2000W DC PSU. The wire is unterminated on the end, opposite to the lug (6 AWG wire).

- 1 Obtain the grounding cable and screws from the kit.
- 2 On the rear panel, align the grounding lug, insert the M5 screws through the grounding lug and into the screw holes, and then tighten the screws.

Figure 7.1 Attaching the Grounding Lug



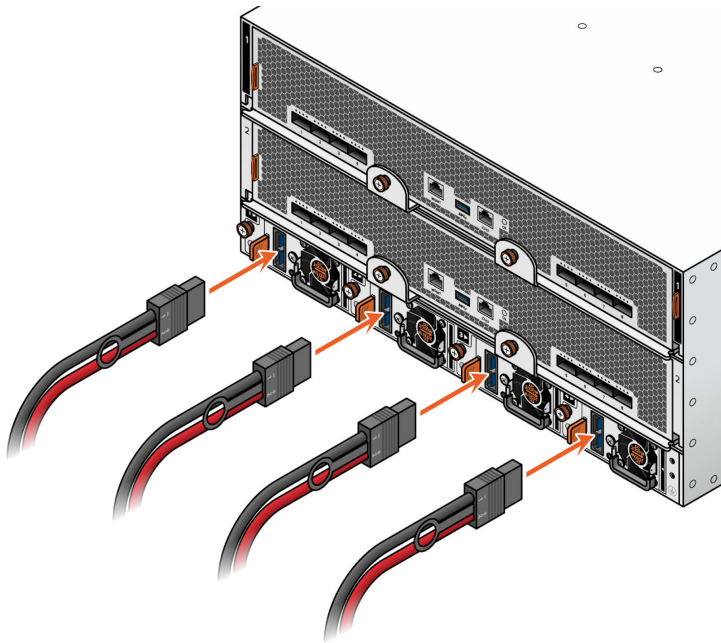
- 3 Request for a qualified electrician to connect the unterminated end of the grounding cable to the rack ground stud.
- 4 Attach the grounding wire to the metal surface of the rack or a grounding conductor.

Connect the DC Power Cords

 A qualified electrician must perform all connections to facility DC power and safety grounds. The system must be safety grounded at the cabinet frame. All electrical wiring must comply with applicable local or national codes and practices.

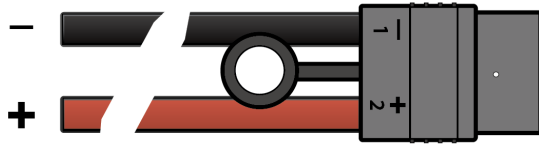
- 1 Connect power cords to the chassis power supply units (PSU) starting with PSU1 and proceed through PSU4.

Figure 7.2 Connecting Power Cords



-  To disconnect the DC power cord, pull the plastic loop for the connector to release.
-  Note the polarity of the 2 wires: black is DC- (negative) and red is DC+ (positive) for the 2000W DC PSU. The wires are shipped as unterminated wires (6 AWG wire).

Figure 7.3 2000W DC Power Cord Polarity

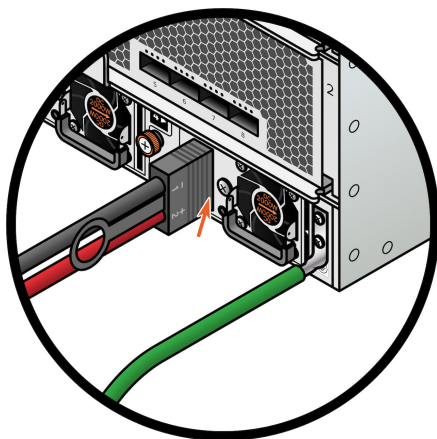


 The 2000W DC power cord wires are unterminated. The customer must supply wire terminals that fit their installation. Use a crimping tool to install terminals to the two wires in the cord.

2 Insert the plug fully into the socket until it latches.

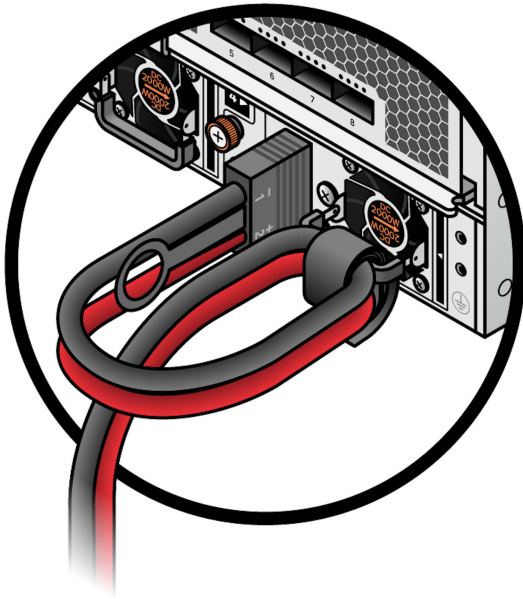
 Pull gently on the cord to make sure it is latched.

Figure 7.4 Checking the Power Cord Connection



Lift the power supply handle, make a loop in the power cord nearest to the plug, wrap the captive strap around the loop, and secure the cord to the handle.

Figure 7.5 Securing the Power Cord



- 3** Connect the PSU1 and PSU2 power cords to an DC power distribution unit. After connecting the power, the Fabric I/O Module (FIOM) LEDs illuminate and the fans begin to spin up.
- 4** Connect the PSU3 and PSU4 power cords to a separate DC power distribution unit for redundancy.
- 5** Check the PSU LED status after connecting all the power cords.

Check PSU LEDs Status

Check the all PSU LEDs status and verify they are all green.

Figure 7.6 PSU Status LED

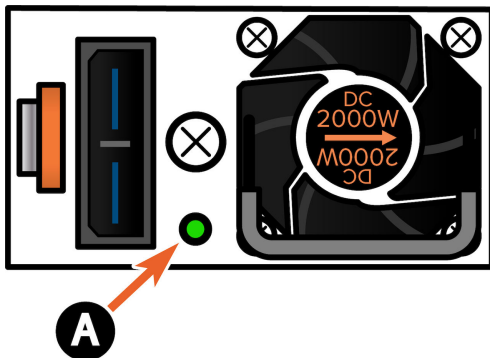


Table 7.1 Power Supply Unit Status LED

Callout	LED Status	Description
A	PSU LED status (on each PSU)	Green if OK. Amber if PSU faulty, or if it has no input power while the other PSU is powered. Off if power disconnected from entire chassis.

 The fans may spin at higher speeds during the initial power-on process but will eventually reduce to normal operational speeds.

Chapter 8

Connecting Console and Management Cables

 Contact Pure Storage Technical Services for additional setup instructions. Do not proceed until directed.

- 1 Connect a USB-to-Serial cable to **FIOM 1 CONSOLE (IOIOI)** port to start the initial setup process.

Figure 8.1 FIOM Ports

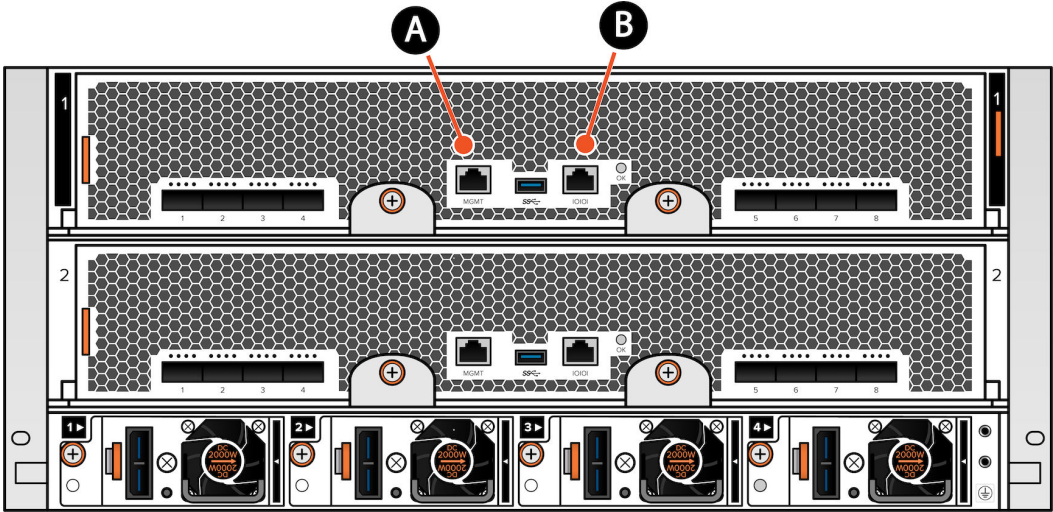


Table 8.1 FIOM Port Information

Callout	Description
A	Management (MGMT)
B	Console (IOIOI)

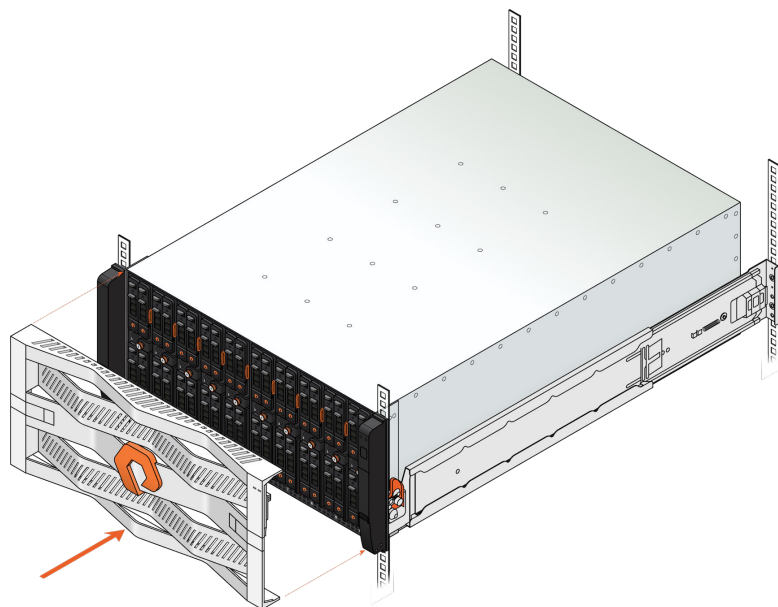
- 2 Connect an Ethernet cable from **FIOM 1 MANAGEMENT (MGMT)** port to the customer's administrative network.
- 3 Proceed with system setup under the guidance of Pure Technical Services.
- 4 Secure all cables after completing setup.

Chapter 9

Installing the Bezel

- 1 Remove the bezel from the protective package.
- 2 Remove the protective film from the front surface of the bezel.
- 3 Align the bezel with the associated features on the chassis ears and press into place.

Figure 9.1 Installing the Bezel



Chapter 10

Product Note

For more information about the Pure Storage products, scan the QR code or follow the link (https://support.purestorage.com/category/m_flashblade).

Figure 10.1 Support QR Code





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