



FortiDB-1000C[®]

Rack and Hardware Install Guide

Version 4.0 MR1



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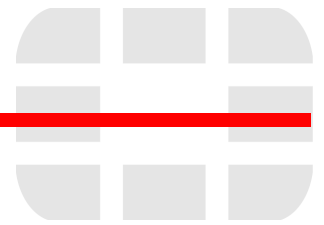
Dynamic Threat Prevention System (DTPS), APSecure, FortiASIC, FortiBIOS, FortiBridge, FortiClient, FortiGate®, FortiGate Unified Threat Management System, FortiGuard®, FortiGuard-Antispam, FortiGuard-Antivirus, FortiGuard-Intrusion, FortiGuard-Web, FortiLog, FortiAnalyzer, FortiManager, Fortinet®, FortiOS, FortiPartner, FortiProtect, FortiReporter, FortiResponse, FortiShield, FortiVoIP, and FortiWiFi are trademarks of Fortinet, Inc. in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

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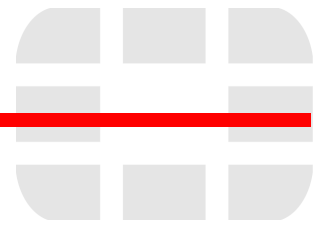


Caution: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions



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Introduction

Welcome and thank you for selecting Fortinet products for your network protection.

Fortinet® ASIC-accelerated multi-threat security systems improve network security, reduce network misuse and abuse, and help you use communications resources more efficiently without compromising the performance of your network. Fortinet systems are ICSA-certified for Antivirus, Firewall, IPSec, SSL-TLS, IPS, Intrusion detection, and AntiSpyware services.

Fortinet systems are dedicated, easily managed security devices that deliver a full suite of capabilities including:

- Application-level services such as virus protection, intrusion protection, spam filtering, web content filtering, IM, P2P, and VoIP filtering
- Network-level services such as firewall, intrusion detection, IPSec and SSL VPN, and traffic shaping
- Management services such as user authentication, logging, reporting with FortiAnalyzer, administration profiles, secure web and CLI administrative access, and SNMP.

The Fortinet security system uses Fortinet's Dynamic Threat Prevention System (DTPS™) technology, which leverages breakthroughs in chip design, networking, security and content analysis. The unique ASIC-accelerated architecture analyzes content and behavior in real-time, enabling key applications to be deployed right at the network edge where they are most effective at protecting your networks.

This chapter contains the following topics:

- [Registering your Fortinet product](#)
- [Customer service and technical support](#)
- [Fortinet documentation](#)
- [Conventions](#)

Registering your Fortinet product

Before you begin, take a moment to register your Fortinet product at the Fortinet Technical Support web site, <https://support.fortinet.com>.

Many Fortinet customer services, such as firmware updates, technical support, and FortiGuard Antivirus and other FortiGuard services, require product registration.

For more information, see the Fortinet Knowledge Center article [Registration Frequently Asked Questions](#).

Customer service and technical support

Fortinet Technical Support provides services designed to make sure that your Fortinet products install quickly, configure easily, and operate reliably in your network.

To learn about the technical support services that Fortinet provides, visit the Fortinet Technical Support web site at <https://support.fortinet.com>.

You can dramatically improve the time that it takes to resolve your technical support ticket by providing your configuration file, a network diagram, and other specific information. For a list of required information, see the Fortinet Knowledge Center article [What does Fortinet Technical Support require in order to best assist the customer?](#)

Fortinet documentation

The Fortinet Technical Documentation web site, <http://docs.fortinet.com>, provides the most up-to-date versions of Fortinet publications, as well as additional technical documentation such as technical notes.

In addition to the Fortinet Technical Documentation web site, you can find Fortinet technical documentation on the Fortinet Tools and Documentation CD, and on the Fortinet Knowledge Center.

Fortinet Tools and Documentation CD

Many Fortinet publications are available on the Fortinet Tools and Documentation CD shipped with your Fortinet product. The documents on this CD are current at shipping time. For current versions of Fortinet documentation, visit the Fortinet Technical Documentation web site, <http://docs.fortinet.com>.

Fortinet Knowledge Center

The Fortinet Knowledge Center provides additional Fortinet technical documentation, such as troubleshooting and how-to-articles, examples, FAQs, technical notes, a glossary, and more. Visit the Fortinet Knowledge Center at <http://kb.fortinet.com>.

Comments on Fortinet technical documentation

Please send information about any errors or omissions in this or any Fortinet technical document to techdoc@fortinet.com.

Conventions

Fortinet technical documentation uses the conventions described below.

IP addresses

To avoid publication of public IP addresses that belong to Fortinet or any other organization, the IP addresses used in Fortinet technical documentation are fictional and follow the documentation guidelines specific to Fortinet. The addresses used are from the private IP address ranges defined in RFC 1918: Address Allocation for Private Internets, available at <http://ietf.org/rfc/rfc1918.txt?number-1918>.

CLI constraints

CLI constraints, such as `<address_ipv4>`, indicate which data types or string patterns are acceptable input for a given parameter or variable value. CLI constraint conventions are described in the CLI Reference document for each product.

Notes, Tips and Cautions

Fortinet technical documentation uses the following guidance and styles for notes, tips and cautions.



Tip: Highlights useful additional information, often tailored to your workplace activity.



Note: Also presents useful information, but usually focused on an alternative, optional method, such as a shortcut, to perform a step.



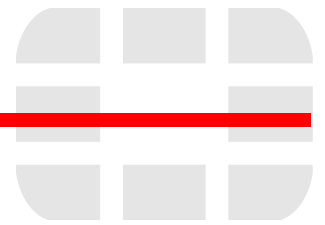
Caution: Warns you about commands or procedures that could have unexpected or undesirable results including loss of data or damage to equipment.

Typographical conventions

Fortinet documentation uses the following typographical conventions:

Table 1: Typographical conventions in Fortinet technical documentation

Convention	Example
Button, menu, text box, field, or check box label	From <i>Minimum log level</i> , select <i>Notification</i> .
CLI input	<pre>config system dns set primary <address_ipv4> end</pre>
CLI output	<pre>FGT-602803030703 # get system settings comments : (null) opmode : nat</pre>
Emphasis	HTTP connections are <i>not</i> secure and can be intercepted by a third party.
File content	<pre><HTML><HEAD><TITLE>Firewall Authentication</TITLE></HEAD> <BODY><H4>You must authenticate to use this service.</H4></pre>
Hyperlink	Visit the Fortinet Technical Support web site, https://support.fortinet.com .
Keyboard entry	Type a name for the remote VPN peer or client, such as <code>Central_Office_1</code> .
Navigation	Go to <code>VPN > IPSEC > Auto Key (IKE)</code> .
Publication	For details, see the FortiGate Administration Guide .



Rack Installation Instructions

The FortiDB-1000C comes with a sliding rail kit. Use the instructions below to install the rails.



Caution: Only trained service technicians are authorized to remove the system cover and access any of the components inside the system. Before you begin, review the safety instructions that came with the system.



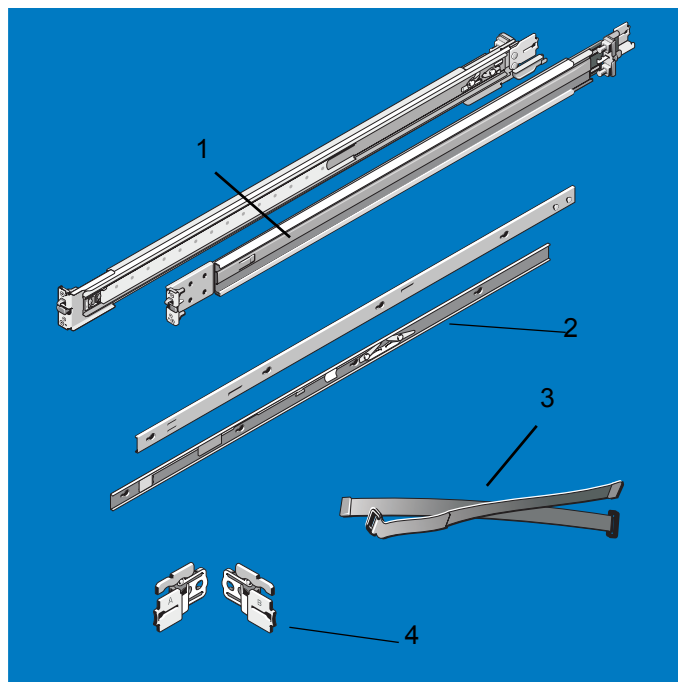
Note: The illustrations in this document are not intended to represent a specific server.

To install the sliding rail kit

1 Locate the components for installing the rail kit assembly:

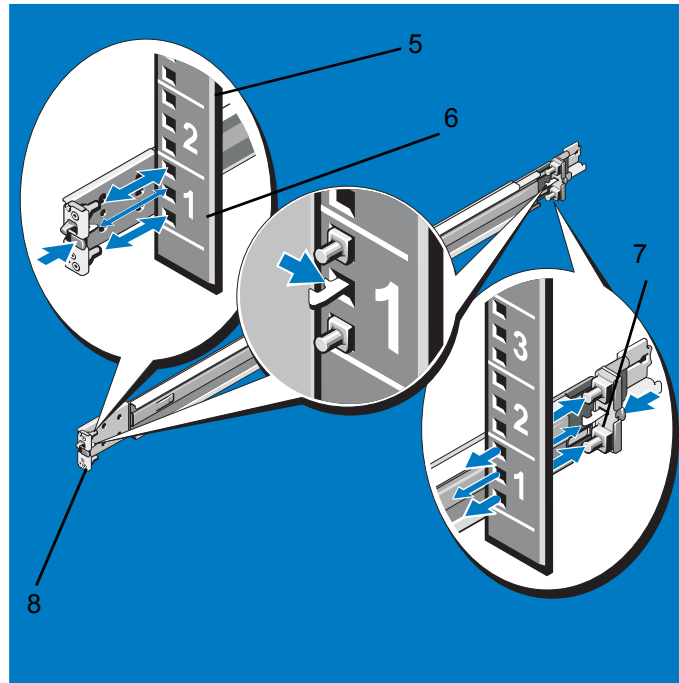
- Two sliding rail assemblies (1)
- Two chassis rail members (2)
- Two Velcro straps (3)
- Two cable management arm (CMA) attachment brackets (4)

Figure 1: Rail kit contents



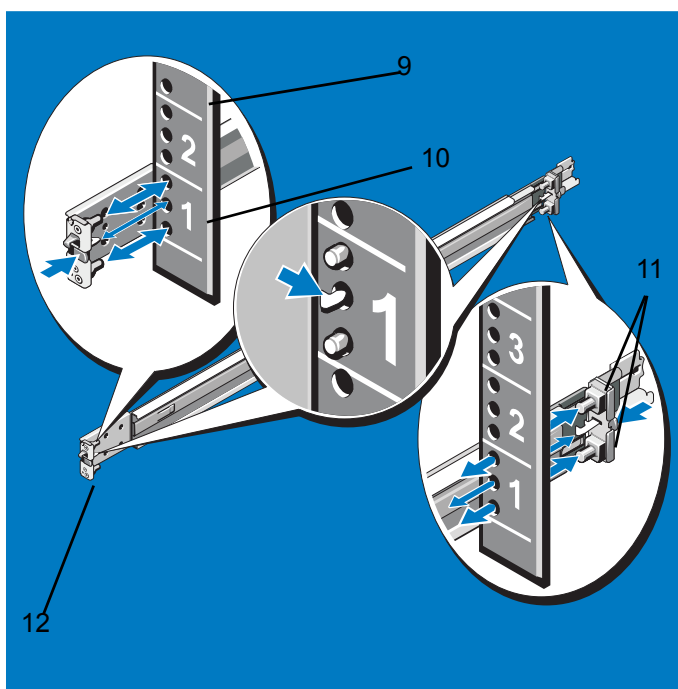
- 2** To install the rails in square-hole racks, do the following:
- Position the left and right rail end pieces of the rail module labeled FRONT facing inward and orient each end piece to seat in the square holes on the front side of the vertical rack flanges (5).

Figure 2: Installing and removing the rails (square-hole racks)

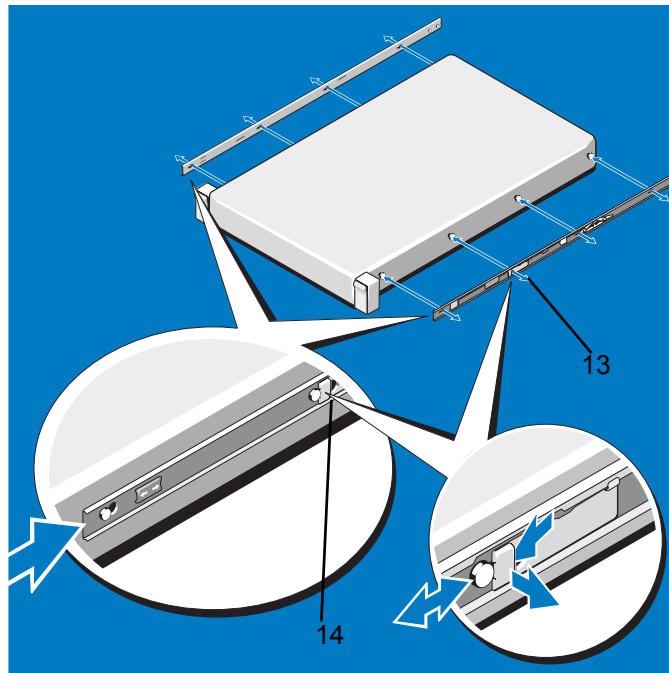


- Align each end piece to seat the pegs in the bottom hole of the first U and the top hole of the first U (6).
 - Engage the back end of the rail until it fully seats on the vertical rack flange and the second “tooth” on the latch locks in place. Repeat these steps to position and seat the front end piece on the vertical flange (7).
 - To remove the rails, pull on the latch release button on the end piece midpoint and unseat each rail (8).
- 3** To install the rails in round-hole racks, do the following:
- Position the left and right rail end pieces of the rail module labeled FRONT facing inward and orient each end piece to seat in the round holes on the front side of the vertical rack flanges (9).

Figure 3: Installing and removing the rails (round-hole racks)

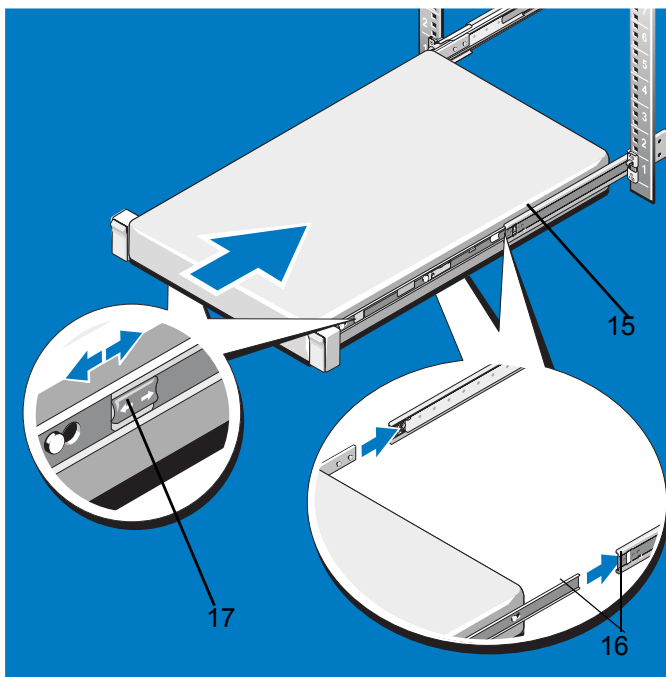


- Align each end piece to seat the pegs in the bottom hole of the first U and the top hole of the first U (10).
 - Engage the back end of the rail until it fully seats on the vertical rack flange and the first “tooth” on the latch locks in place. Repeat these steps to position and seat the front end piece on the vertical flange (11).
 - To remove the rails, pull on the latch release button on the end piece midpoint and unseat each rail (12).
- 4** To install and remove the chassis rail members, do the following:
- Place the system on a level surface and align the four keyhole slots on the chassis rail members with the corresponding pins on the system (13).

Figure 4: Installing the chassis rail members.

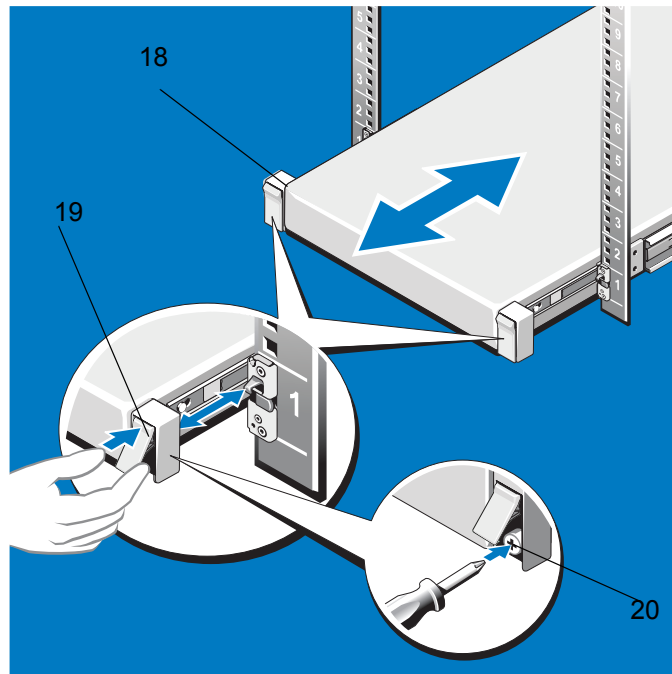
- Slide the chassis rail members towards the back of the system until each one locks into place. To remove the chassis rail members, lift the lock spring until it clears the head of the pin (14).
 - Slide the chassis rail member toward the front of the system until the pins slip through the keyhole slots.
- 5** To install the system in the rack, do the following:
- Ensure that the system is properly supported until the chassis rail members are locked into the slide rails on both sides. Pull the sliding rails out of the rack until they lock into place (15).

Figure 5: Installing the system in the rack.



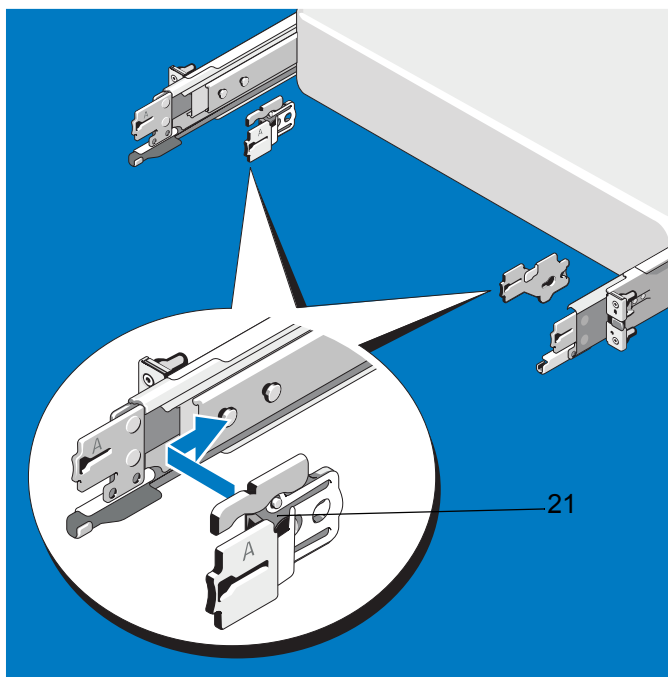
- Align and insert the ends of the chassis rail members into the ends of the rails (16).
 - Push the system inward until the chassis rail members lock into place. Push or pull the blue tab located near the front of the system and slide the system into the rack (17).
- 6** To engage and release the slam latch, do the following:
- Facing the front, locate the slam latch on either side of the system (18).

Figure 6: Engaging and releasing the slam latch



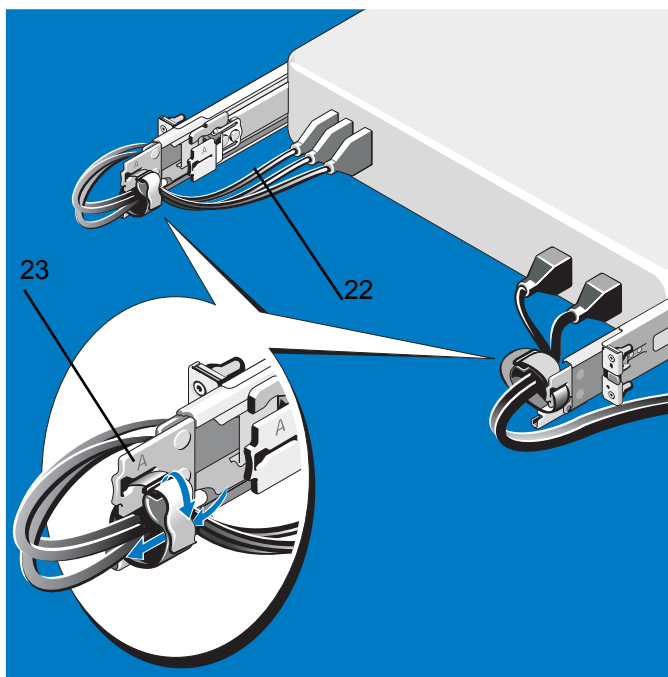
- The latches engage automatically as the system is pushed into the rack and are released by pulling up on the latches (19).
 - To secure the system for shipment in the rack or for other unstable environments, locate the hard-mount screw under each latch and tighten each screw with a #2 Phillips screwdriver (20).
- 7 To install the CMA attachment brackets, do the following:
- Locate the CMA attachment bracket marked A and install it at the back of the slide rail marked with a corresponding A (21).
 - Align the holes on the bracket with the pins on the slide rail and push the bracket forward until it locks into place. Repeat the same process for the CMA attachment bracket marked B.

Figure 7: Installing the CMA attachment brackets.



- 8 To route the cables, do the following:
- Bundle the cables gently, pulling them clear of the system connectors to the left and the right sides (22).

Figure 8: Routing the cables



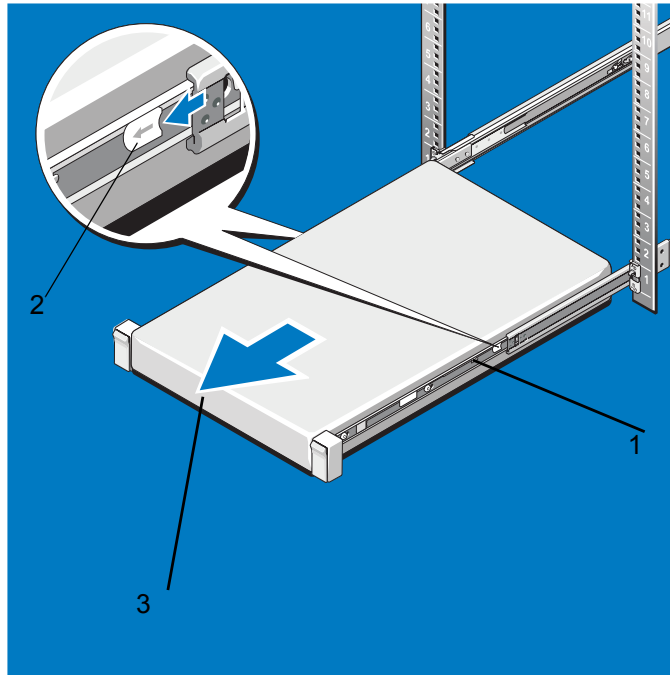
- Thread the Velcro straps through the tooled slots on the outer or inner CMA brackets on each side of the system to secure the cable bundles (23).

Removing the system from the rack

To remove the system from the rack

- 1 Pull the system out of the rack until the sliding rails lock into place (1).

Figure 9: Removing the system from the rack



- 2 Locate the white tabs on the sides of the chassis rail members (2).
- 3 Pull the tabs towards the front of the system to release the chassis rail members from the rails. Continue pulling the system until the chassis rail members are completely clear of the rails and place the system on a level surface (3).

Cable Management Arm Installation

The FortiDB-1000C comes with a Cable Management Arm. Use the instructions below to install the Cable Management Arm.



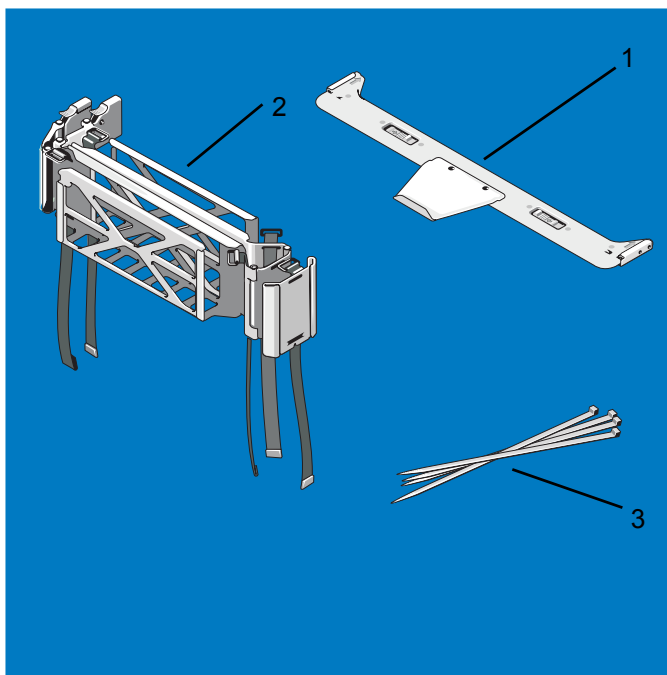
Caution: Only trained service technicians are authorized to remove the system cover and access any of the components inside the system. Before you begin, review the safety instructions that came with the system.



Note: The illustrations in this document are not intended to represent a specific server.

To install the cable management arm

- 1 Locate the components for installing the Cable Management Arm (CMA) assembly:
 - Cable Management Arm tray (1)
 - Cable Management Arm (2)
 - Nylon cable tie wraps (3)

Figure 10: Cable Management Arm kit contents

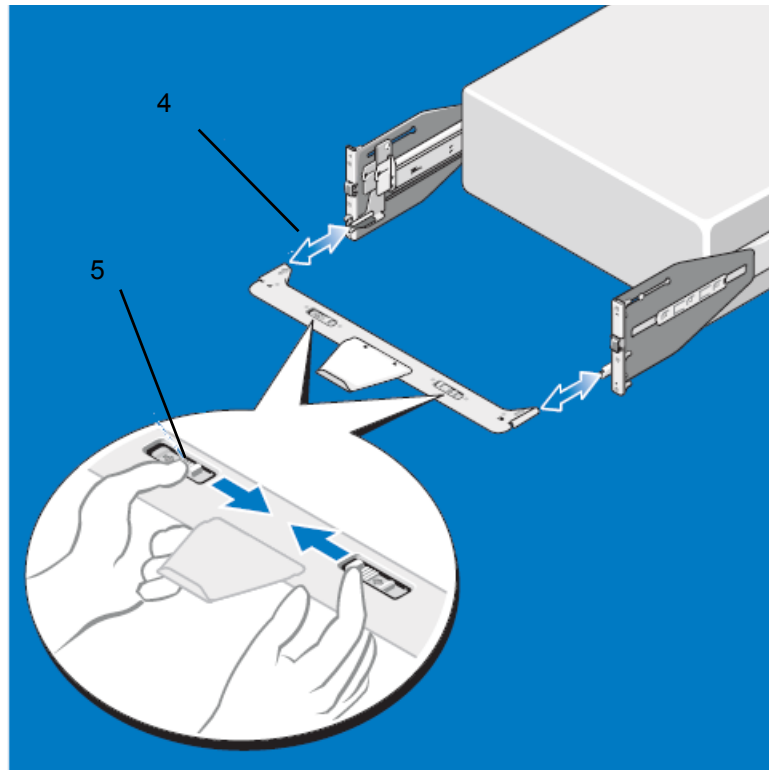
Note: To secure the CMA for shipment in the rack, loop the tie wraps around both baskets and tray and cinch them firmly. For larger CMAs, the tie wraps can be threaded through the inner and outer baskets and around the tray to secure them. Securing the CMA in this manner will also secure your system in unstable environments.

- 2 To install or remove the Cable Management Arm Tray, do the following:



Note: The CMA tray provides support and acts as a retainer for the CMA.

- Align and engage each side of the tray with the receiver brackets on the inner edges of the rails and push forward until the tray clicks into place (4).

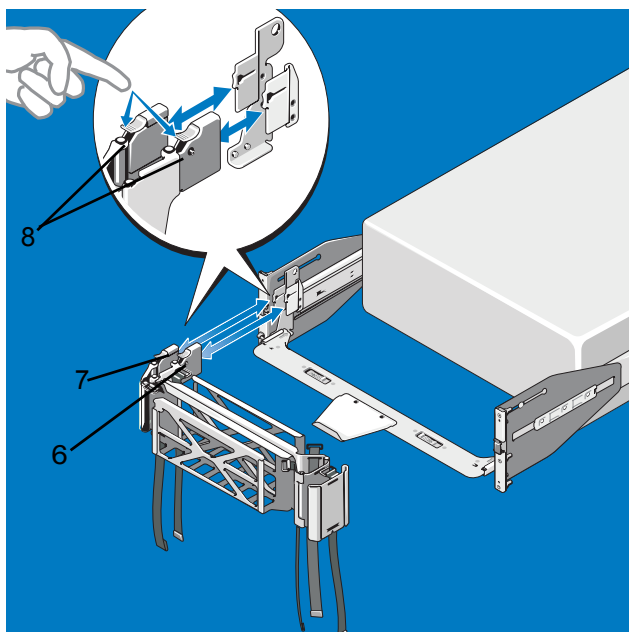
Figure 11: Installing and removing the Cable Management Arm Tray

- To remove the tray, squeeze the latch-release buttons on both sides toward the center and pull the tray out of the receiver brackets (5).

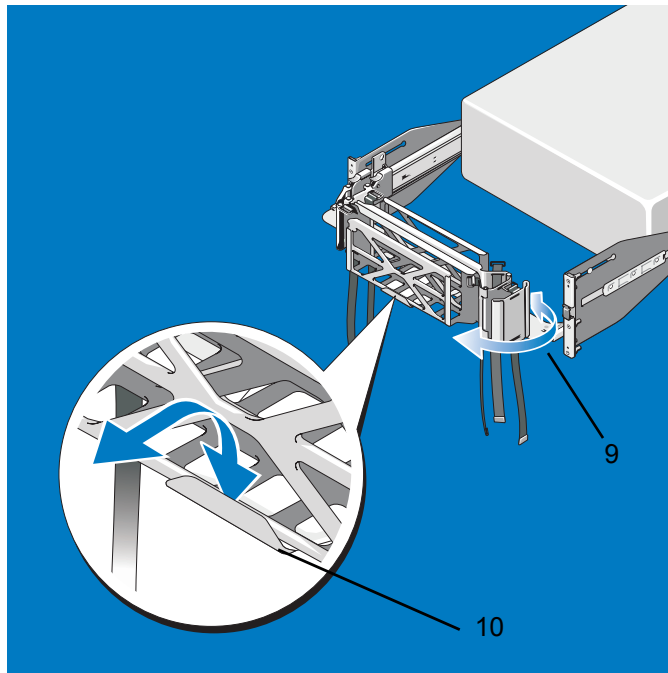
3 To install and remove the CMA, do the following:



- Note:** You can attach the CMA to either the right or left mounting rail, depending on how you intend to route cables from the system. Mounting the CMA on the side opposite of the power supplies is recommended; otherwise, the CMA must be disconnected in order to remove the outer power supply. You **must** remove the tray before removing the power supplies.
- At the back of the system, fit the latch on the front end of the CMA on the innermost bracket of the slide assembly until the latch engages (6).

Figure 12: Installing and removing the Cable Management Arm

- Fit the other latch on the end of the outermost bracket until the latch engages (7).
 - To remove the CMA, disengage both latches by pressing the CMA release buttons at the top of the inner and outer latch housings (8).
- 4** To move the CMA away from the CMA tray, do the following:
- The CMA can be pulled away from the system and extended away from the tray for access and service (9).

Figure 13: Moving the CMA away from the CMA tray

- At the hinged end, lift the CMA up and off of the tray to unseat it from the tray catch. Once it is unseated from the tray, swing the CMA away from the system (10).



Note: You can also extend the CMA into the service position once it is cabled to access the back of the system.

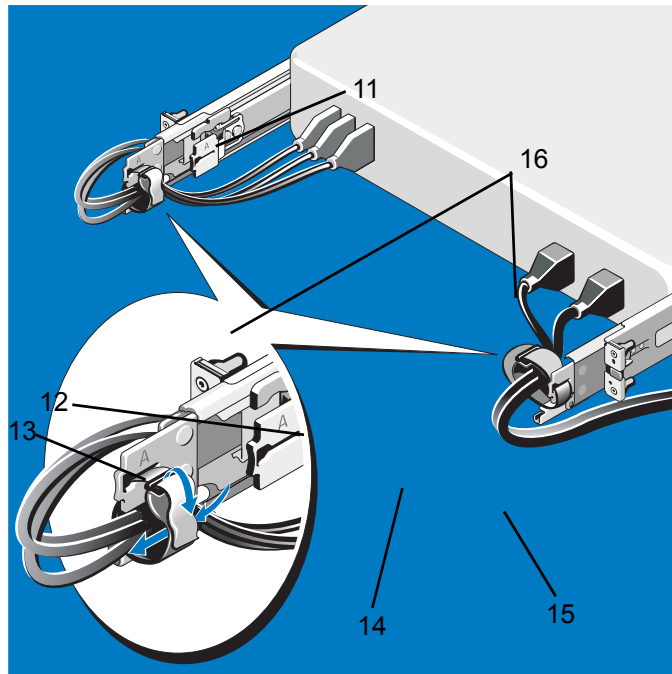
5 To cable the system using the CMA, do the following:



Caution: To avoid potential damage from protruding cables, secure any slack in the status indicator cable before routing this cable through the CMA.

- Using the tie wraps provided, bundle the cables together as they enter and exit the baskets so they do not interfere with adjacent systems (11).

Figure 14: Cabling the system using the CMA



- With the CMA in the service position, route the cable bundle through the inner and outer baskets (12).
- Use the preinstalled Velcro straps on either end of the baskets to secure the cables (13).
- Adjust the cable slack as needed at the hinge position (14).
- Swing the CMA back into place on the tray (15).
- Install the status indicator cable at the back of the system and secure the cable by routing it through the CMA. Attach the other end of this cable to the corner of the outer CMA basket. (16).

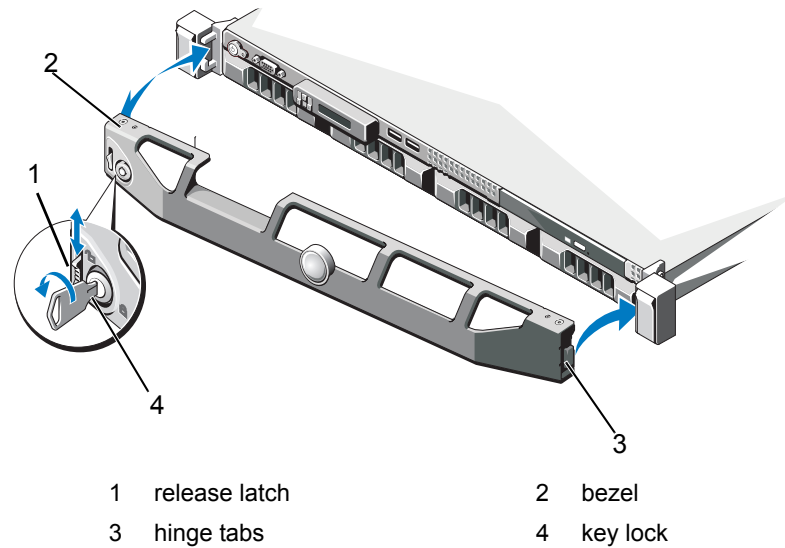
Installing the Bezel

A lock on the bezel restricts access to the power button, optical drive, and hard drive(s). The LCD panel and navigation buttons are accessible through the front bezel.

To remove the Front Bezel

- 1 Using the system key, unlock the bezel.
- 2 Pull up on the release latch next to the key lock.
- 3 Rotate the left end of the bezel away from the system to release the right end of the bezel.
- 4 Pull the bezel away from the system. See [Figure 15](#).

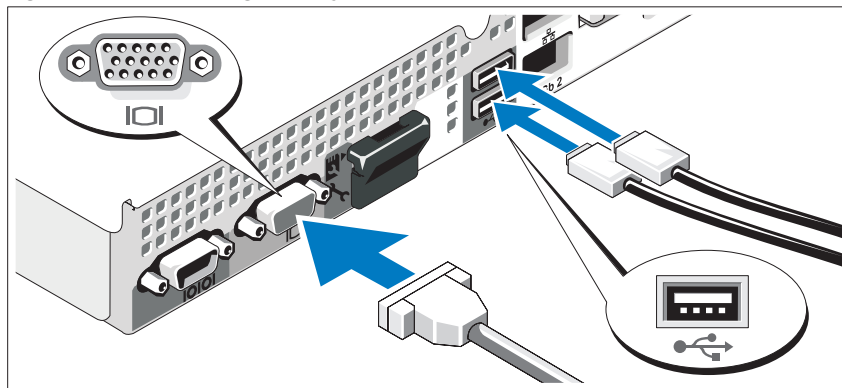
Figure 15: Removing the Front Bezel

**To install the Front Bezel**

- 1 Insert the hinge tab on the right of the bezel into the slot on the right side of the system front panel.
- 2 Rotate the left side of the bezel toward the system.
- 3 Press the bezel to the system to engage the latch.

Connecting the Keyboard, Mouse, and Monitor

Figure 16: Connecting the keyboard, mouse, and monitor

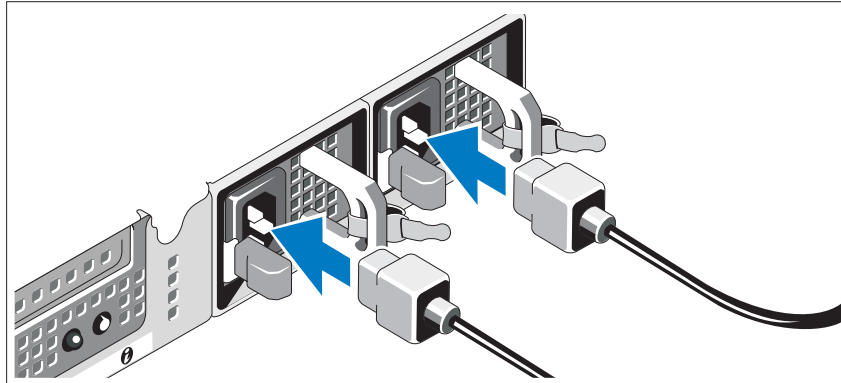


Connect the keyboard, mouse, and monitor (optional).

The connectors on the back of your system have icons indicating which cable to plug into each connector. Be sure to tighten the screws (if any) on the monitor's cable connector.

Connecting the Power Cables

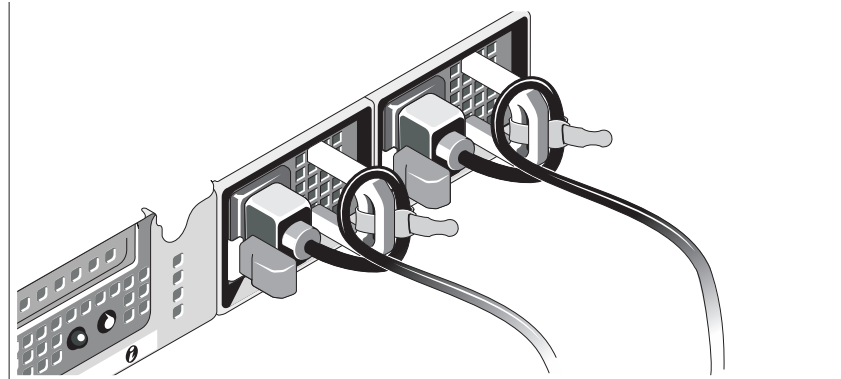
Figure 17: Connecting the power cables.



Connect the system's power cable(s) to the system and, if a monitor is used, connect the monitor's power cable to the monitor.

Installing the Power Cord Retention Bracket

Figure 18: Installing the power cord retention bracket

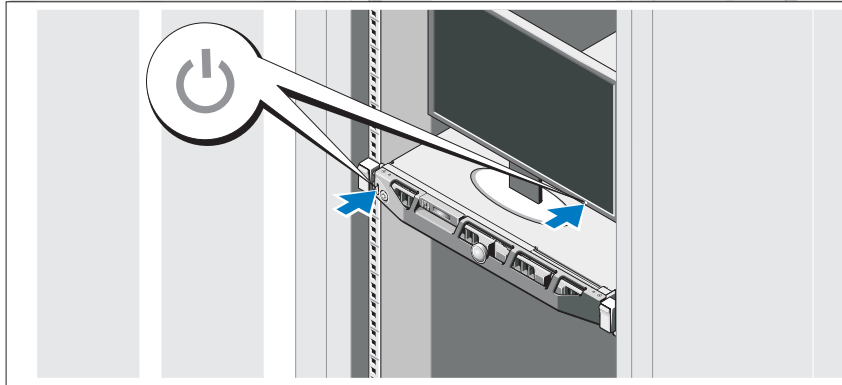


Attach the power cord retention bracket on the right bend of the power supply handle. Bend the system power cable into a loop as shown in the illustration and attach to the bracket's cable clasp.

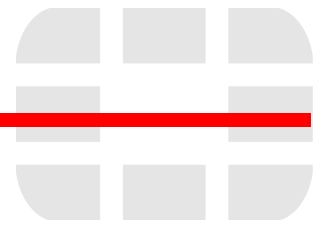
Plug the other end of the power cable(s) into a grounded electrical outlet or a separate power source such as an uninterruptible power supply (UPS) or a power distribution unit (PDU).

Turning on the System

Figure 19: Turning on the system



Press the power button on the system and the monitor. The power indicators should light.



Installing Hard Drives

Hard Drives

Your system supports up to four 3.5-inch SATA hard drives. All drives are installed at the front of the system and connect to the system board through the SAS backplane. Hard drives are supplied in special hot-swappable hard-drive carriers that fit in the hard-drive bays.



Caution: Do not turn off or reboot your system while the drive is being formatted. Doing so can cause a drive failure

When you format a hard drive, allow enough time for the formatting to be completed. Be aware that high-capacity hard drives can take a number of hours to format.

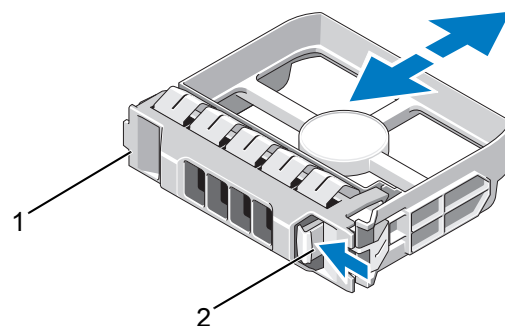
Removing a Hard-Drive Blank



Caution: To maintain proper system cooling, all empty hard-drive bays must have drive blanks installed

- 1 Remove the front bezel. See [“Installing the Bezel” on page 19](#).
- 2 Grasp the front of the hard-drive blank, press the release lever on the right side, and slide the blank out until it is free of the drive bay. See Figure 1.

Figure 1: Removing and Installing a Hard Drive Blank



1 hard drive blank

2 release lever

Installing a Hard-Drive Blank

Align the hard-drive blank with the drive bay and insert the blank into the drive bay until the release lever clicks into place.

Removing a Hot-Swap Hard Drive



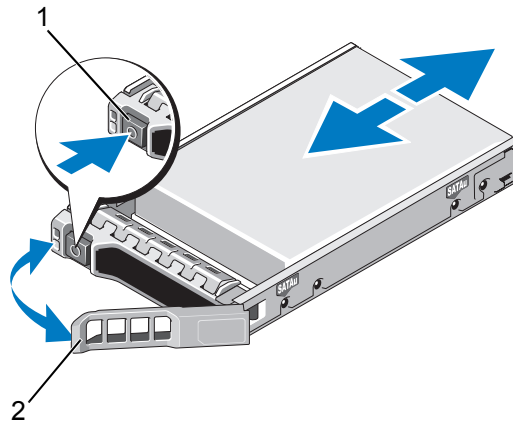
Caution: Ensure that your operating system supports hot-swap drive removal and installation. See the documentation provided with your operating system for more information.

- 1 If present, remove the front bezel. See [“Installing the Bezel” on page 19](#).
- 2 From the RAID management software, prepare the drive for removal. Wait until the hard-drive indicators on the drive carrier signal that the drive can be removed safely. See your storage controller documentation for information about hot-swap drive removal.

If the drive has been online, the green activity/fault indicator will flash as the drive is powered down. When the drive indicators are off, the drive is ready for removal.

- 3 Press the button on the front of the drive carrier and open the drive carrier release handle to release the drive. See [Figure 2](#).

Figure 2: Installing a Hot-Swap Hard Drive



1 release button

2 hard drive carrier handle

- 4 Slide the hard drive out of the drive bay.
- 5 Insert a drive blank in the vacated drive bay. See [“Installing a Hard-Drive Blank”](#).
- 6 If applicable, install the bezel. See [“Installing the Bezel” on page 19](#).

Installing a Hot-Swap Hard Drive



Caution: When installing a hard drive, ensure that the adjacent drives are fully installed. Inserting a hard-drive carrier and attempting to lock its handle next to a partially installed carrier can damage the partially installed carrier's shield spring and make it unusable.

- 1 If present, remove the front bezel. See [“Installing the Bezel” on page 19](#).
- 2 If a drive blank is present in the bay, remove it. See [“Removing a Hard-Drive Blank”](#).

- 3 Install the hot-swap hard drive.
 - Press the button on the front of the drive carrier and open the handle.
 - Insert the hard-drive carrier into the drive bay until the carrier contacts the backplane.
 - Close the handle to lock the drive in place.
- 4 If applicable, install the bezel. See [“Installing the Bezel” on page 19](#).

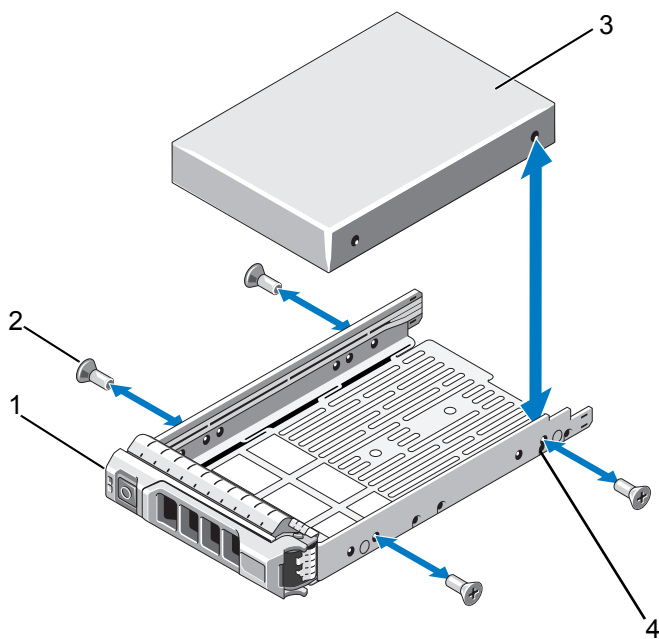
Removing a Hard Drive From a Hard-Drive Carrier

Remove the screws from the slide rails on the hard-drive carrier and separate the hard drive from the carrier. See Figure 3.

Installing a Hard Drive Into a Hard-Drive Carrier

- 1 Insert the hard drive into the hard-drive carrier with the connector end of the drive at the back. See [Figure 3](#).
- 2 Align the screw holes on the hard drive with the back set of holes on the hard drive carrier.
When aligned correctly, the back of the hard drive will be flush with the back of the hard-drive carrier.
- 3 Attach the four screws to secure the hard drive to the hard-drive carrier.

Figure 3: Installing a Hard Drive into a Drive Carrier



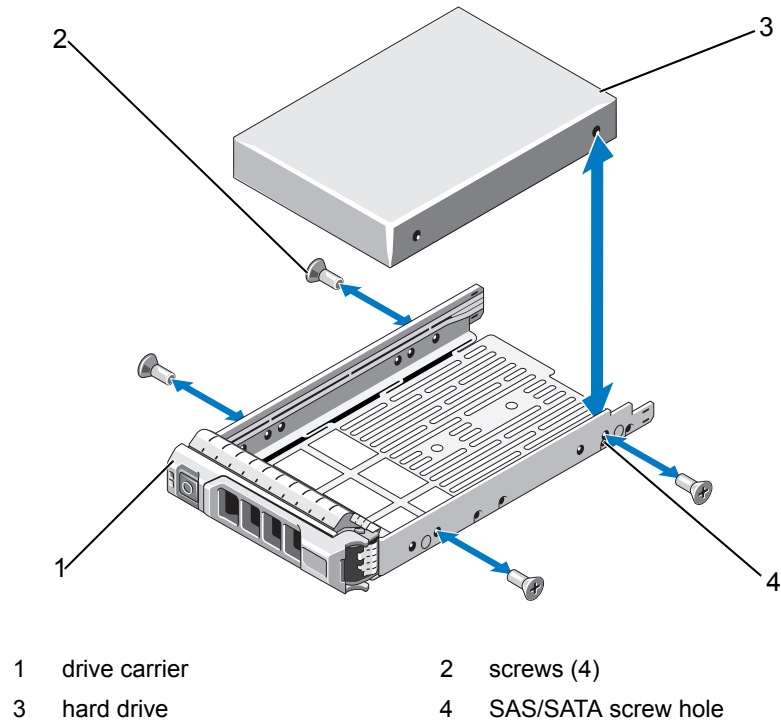
- | | | | |
|---|--------------------|---|----------------|
| 1 | hard-drive carrier | 2 | screws (4) |
| 3 | hard drive | 4 | SAS screw hole |

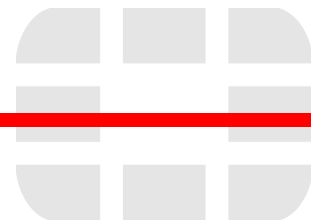
Installing a Hard Drive Into a Hard-Drive Carrier

- 1 Insert the hard drive into the hard-drive carrier with the connector end of the drive at the back. See [Figure 4 on page 26](#).

- 2 Align the holes on the hard drive with the back set of holes on the hard drive carrier.
When aligned correctly, the back of the hard drive will be flush with the back of the hard-drive carrier.
- 3 Attach the four screws to secure the hard drive to the hard-drive carrier.

Figure 4: Installing a Hard Drive Into a Drive Carrier





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