

Cohesity 5372 Appliance Hardware Installation Guide

Cohesity 5372 Hardware Installation Guide

Last updated: 2026-08-21

Legal Notice

Copyright © 2026 Cohesity All rights reserved.

© 2026 Cohesity All Rights Reserved. Cohesity, the Cohesity Logo and other Cohesity Marks are trademarks of Cohesity in the US and/or internationally. The information supplied herein is the confidential and proprietary information of Cohesity and may only be used (a) by the intended recipients and (b) in conjunction with validly licensed Cohesity software and services. Find the terms of Cohesity licenses at www.cohesity.com/agreements.

THE DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID. COHESITY SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORMANCE, OR USE OF THIS DOCUMENTATION. THE INFORMATION CONTAINED IN THIS DOCUMENTATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

Cohesity Support

Reach Cohesity Support

There are several ways to create a Cohesity support case.

- Go to [Cohesity Support](#), to search in our knowledge base; or contact us by phone - United States and Canada: 1-855-9CO-HESI (926-4374), option 2.
- Log in to the [Cohesity Support Portal](#) to create a new case.
- Click the (?) icon on the Cohesity UI and select Support Portal.

Support/Service Assistance

First, contact the Service Provider that you have contracted for service and support. If you work directly with Cohesity and have a product warranty/entitlement, repair pricing, or technical support-related question, see your options below:

- To find solutions to your product issues or for suggestions or best practices, visit the [Cohesity Knowledge Base](#).
- Log in to the [Cohesity Support Portal](#) to create a new case.
- To monitor your open cases, log in to the portal and click the **Cases** tab on the home page. This page should have all the case statuses and updates. You can also view individual case status.

Cohesity Software Running on Partner Hardware

For Cohesity software running on qualified third-party hardware, the following support workflow applies:

1. The customer may contact Cohesity Support first if the issue cannot be determined as a hardware issue.

Note: Cohesity cannot process hardware replacement requests for partner hardware.

2. Cohesity Support triages the issue. If it is a software issue, Cohesity Support continues to work on it.
3. If it is a hardware/firmware issue or is suspected to be a hardware/firmware issue, Cohesity provides information about the issue to the customer and requests that the customer open a support ticket with the appropriate partner.
4. If needed, Cohesity Support can join a three-way call with the partner and the customer.
5. The customer informs Cohesity Support on the progress of the partner's case.

Documentation

Make sure that you have the current version of the documentation. Each document displays the date of the last update on page 2. The latest documentation is available on the Cohesity website:

<https://sort.veritas.com/netbackup/documents>

Documentation feedback

Your feedback is important to us. Suggest improvements or report errors or omissions to the documentation. Include the document title, document version, chapter title, and section title of the text on which you are reporting. Send feedback to:

NB.docs@veritas.com

You can also see documentation information or ask a question on the Cohesity community site:

<http://www.veritas.com/community/>

Cohesity Services and Operations Readiness Tools (SORT)

Cohesity Services and Operations Readiness Tools (SORT) is a website that provides information and tools to automate and simplify certain time-consuming administrative tasks. Depending on the product, SORT helps you prepare for installations and upgrades, identify risks in your datacenters, and improve operational efficiency. To see what services and tools SORT provides for your product, see the data sheet:

https://sort.veritas.com/netbackup/data/support/SORT_Data_Sheet.pdf

Contents

Chapter 1	Hardware overview	6
	About the appliance and the storage shelves	6
	Compute node drives	8
	About the 5372 compute node control panel	8
	About the System Status LED states	10
	About the Power button LED states	10
	About the integrated BMC beep codes	11
	Compute node rear panel	11
	5U84 storage shelf drawers and disk drives	12
	5U84 storage shelf control panel	15
	5U84 storage shelf rear panel	17
	5U84 storage shelf RAID controller	17
	5U84 storage shelf Expansion module	18
	Cables and connectors	18
	About IPMI configuration	19
 Chapter 2	 Preinstallation requirements	 21
	Customer-provided environment and supplies	21
	Appliance shipping container contents	22
	Storage shelf shipping container contents	23
	Dimensions and determining rack locations	23
	Best practices for rack installation	25
	Storage shelf rack requirements	25
	Heat dissipation	26
	Cable length verification	27
	Prerequisites for IPMI configuration	27
 Chapter 3	 Hardware installation procedures	 29
	Overview	30
	Installing a storage shelf	30
	Installing disk drives into a full-capacity storage shelf	40
	Installing disk drives and blanks into a half-capacity storage shelf	43
	Installing disk drives into a half-capacity storage shelf	49
	Installing the compute node into the rack	55

	Connecting the hardware to one compute node	56
	Connecting the hardware to two compute nodes	63
	Connecting Flex nodes to the network	71
	Connecting the power cords	71
	Turning on the hardware and verifying operation	74
	Configuring the Cohesity Node Explorer from a Flex Appliance	77
	Configuring the Cohesity Node Explorer using laptop	82
	Accessing and using the Cohesity Node Explorer	83
Appendix A	Adding Expansion Storage Shelves to an operating appliance that does not have any Expansion shelves	86
	Overview	86
	Preparing the appliance	87
	Installing the Expansion Storage Kit components	89
	Installation instructions	94
	Connecting one Expansion Shelf to the Primary Shelf	94
	Connecting two Expansion Shelves to the Primary Shelf	97
	Connecting three Expansion Shelves to the Primary Shelf	101
Appendix B	Adding Expansion Storage Shelves to an operating appliance that has at least one operating Expansion shelf	105
	Overview	105
	Installation instructions	106
	Connecting one Expansion Shelf to a system that has one existing Expansion Shelf	106
	Connecting two Expansion Shelves to a system that has one existing Expansion Shelf	110
	Connecting one Expansion Shelf to a system that has two existing Expansion Shelves	114
Appendix C	Configuring the disk space for new Flex Expansion Storage Shelves	118
	Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console	118

Hardware overview

This chapter includes the following topics:

- [About the appliance and the storage shelves](#)
- [Compute node drives](#)
- [About the 5372 compute node control panel](#)
- [Compute node rear panel](#)
- [5U84 storage shelf drawers and disk drives](#)
- [5U84 storage shelf control panel](#)
- [5U84 storage shelf rear panel](#)
- [5U84 storage shelf RAID controller](#)
- [5U84 storage shelf Expansion module](#)
- [Cables and connectors](#)
- [About IPMI configuration](#)

About the appliance and the storage shelves

The Cohesity 5372 Appliance is a hardware and software storage system designed for large workloads. It provides high performance with multiple service offerings and gets deployed in less than 60 minutes and scales up to a total of 1,920 TiB (2,112 TB) of usable backup capacity.

Figure 1-1

5372 Appliance



The Cohesity 5372 appliance is available as a single-node or a two-node appliance.

The Cohesity 5372 appliance and storage shelves provide storage capacity in several configurations. The 5372 compute node does not provide any storage. The 5U84 storage shelves provide storage capacity for the appliance system. You must have a Primary Storage Shelf that connects to the compute node. You can add up to three optional Expansion Storage Shelves for additional storage.

The Cohesity 5372 high availability (HA) configuration includes two compute nodes, one required Primary Storage Shelf, and up to three optional Expansion Storage Shelves.

The Cohesity 5372 Appliance supports the following software:

- Flex Appliance release 7.0 and above

Before you install the hardware, refer to the following section for important details about the dimensions of the hardware.

See [“Dimensions and determining rack locations”](#) on page 23.

The compute node is two rack units (2RU) high.

Each storage shelf is 5RU high and contains 2 drawers with 42 disk drive slots per drawer.

The rear of the Primary Shelf includes two redundant RAID controller I/O modules. The Expansion shelves contain two I/O modules for connectivity to the Primary Shelf and to other Expansion shelves. Half capacity storage shelves are also available for the 5372 appliances.

Support for Self-Encrypting drives

The Flex 5372 appliance model **only** supports Self-encrypting drives (SED) for both the head node and the Storage shelves. This enhances the data security and protection capability of the Flex appliances by keeping data stored on the appliance safe at all times, including at rest. Self-encrypting drives (SEDs) or Full Disk Encryption (FDE) technology encrypts data as it is written to the disk. Each disk has a disk encryption key (DEK) that is to be set at the time of deployment using a passphrase which is compliant to the UTF-8 standard. The disk uses the DEK to encrypt data as it writes, and then to decrypt the data as it is read from disk. The

operation of the disk, and its encryption and decryption, is transparent to the application, host and end user who are reading and writing data.

Compute node and storage shelf power requirements

With the required 5U84 Primary Storage Shelf, the compute node operates at 220 VAC at 3.1 A with C13 and C14 connectors. The Storage shelves operate with C19 and C20 connectors.

Refer to the *Cohesity 5372 Appliance Product Description Guide* at the following site for details about usable storage capacity.

[Appliance documentation](#)

Compute node drives

The front panel of the compute node contains 12 drive slots. The slots are numbered from zero in the top left corner to 11 in the bottom right corner.

Figure 1-2

5372 Front panel



Table 1-1

Slot	RAID configuration	Drive size	Drive role
D0-D1	RAID 1	1.92 TB	OS and log files
D2	RAID 1	1.92 TB	Hot spare for OS and log drives
D3 – D11	N/A	N/A	Empty carrier

About the 5372 compute node control panel

The front control panel provides push button system controls and LED indicators for several system features.

Figure 1-3

5372 Control panel

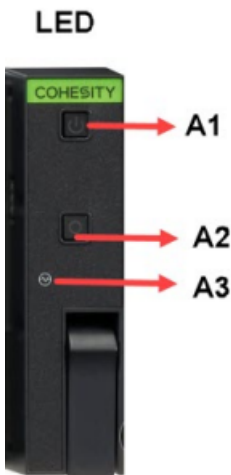


Table 1-2

Control panel system LED descriptions

Item	LED	System information
A1	Power button with integrated LED (Blue)	The Power button toggles the system on and off. This button also functions as a sleep button if enabled by an ACPI compliant operating system. Pressing this button sends a signal to the integrated BMC that either powers on or powers off the system. Holding the power button for 10 seconds or more leads to a hard shutdown. The integrated LED is a single color (blue) and supports different indicator states as defined in the following table.
A2	System ID button with integrated LED (Blue)	■ ON: ■ If the IPMI Chassis Identify command is received. It will automatically turn off after 15 seconds (by default). ■ If the Chassis ID button on the front panel is pressed. Press the button again to turn off the LEDs. ■ Blinking: Unit selected for identification. ■ OFF: No identification request.

Table 1-2 Control panel system LED descriptions (*continued*)

Item	LED	System information
A3	Status LED (Red)	■ ON: ■ Critical failure: Critical fan, voltage, temperature state. ■ Non-critical failure: Non-critical fan, voltage, temperature state, CPU thermal trip, DC off. ■ Detected case intrusion alert. ■ OFF: ■ SEL cleared. ■ Last pending warning or error has been de-asserted.

About the System Status LED states

The following table provides a description of each LED state.

Table 1-3 System Status LED states

Color	State	Criticality	Description
No color	Off - The system is not operating.	Not ready	System power is off (AC and/or DC)
Red	Solid on (SO)	Critical	■ ON: ■ Critical failure: Critical fan, voltage, temperature state. ■ Non-critical failure: Non-critical fan, voltage, temperature state, CPU thermal trip, DC off. ■ Detected case intrusion alert. ■ OFF: ■ SEL cleared. ■ Last pending warning or error has been de-asserted.

About the Power button LED states

The following table provides a description of each power state.

Table 1-4 Power button LED states

State	Power Mode	LED	Description
Power - off	Non-ACPI	Off	The system power is off, and the BIOS has not initialized the chipset.
Power - on	Non-ACPI	On	The system power is on and the blue Power button LED is active.

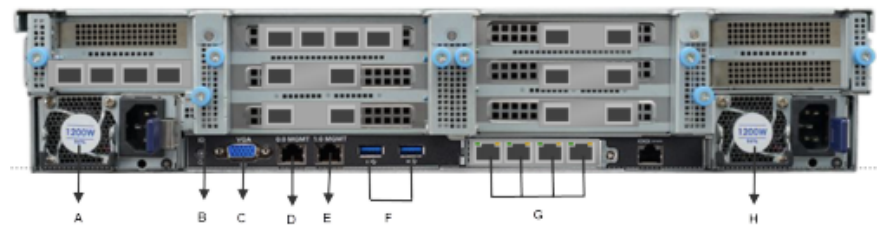
About the integrated BMC beep codes

The integrated BMC does not generate any beep codes upon detection of failure conditions. Any failure conditions are in the System Event (SEL) log.

Compute node rear panel

The rear panel of the compute node contains several components and default ports that are embedded. Three PCIe riser assemblies support various configurations.

The three PCIe riser assemblies are numbered, 1, 2, and 3 from right to left. Slots 1 through 8 are shown in the risers. PCIe riser card assemblies 1 and 2 each support three standard PCIe cards, while PCIe riser card assembly 3 supports two low profile PCIe cards.

Figure 1-4 5372 Rear panel


The following ports and connectors are available on the rear panel:

- **A, H:** Power Supply Units
- **B:** ID Button
- **C:** VGA port
- **D:** IPMI remote management port
- **E:** Unused serial port
- **F:** Two USB 3.2 Gen1 ports

- **G:** OCP 3.0 slot with four copper, RJ45, 10 Gb Ethernet ports, host1, host0, Privnic1, and Privnic0, left to right

Note: The embedded Ethernet ports are copper. PCIe Ethernet ports are optical. You cannot bond the copper ports and the optical ports to each other.

- The riser assembly 2, Slot 1 is reserved for the RAID PCIe card

The appliance does not include grounding studs in case your lab environment has such a requirement.

Refer to the *Cohesity 5372 Appliance Product Description Guide* on [SORT](#) site for optional port configurations.

5U84 storage shelf drawers and disk drives

Each storage shelf includes 2 drawers with 42 disk drive slots each for a total of 84 slots. The following diagrams describe the disk layout for the top drawer and the bottom drawer. The slot numbers start at the front, left of the drawer. Slot numbers end in the last row at the right rear of the drawer.

The following diagrams show all of the slots in each drawer. The photographs show the number of the first slot in each drawer.

The top drawer contains slots 0 through 41.

Figure 1-5 Half-populated storage shelf

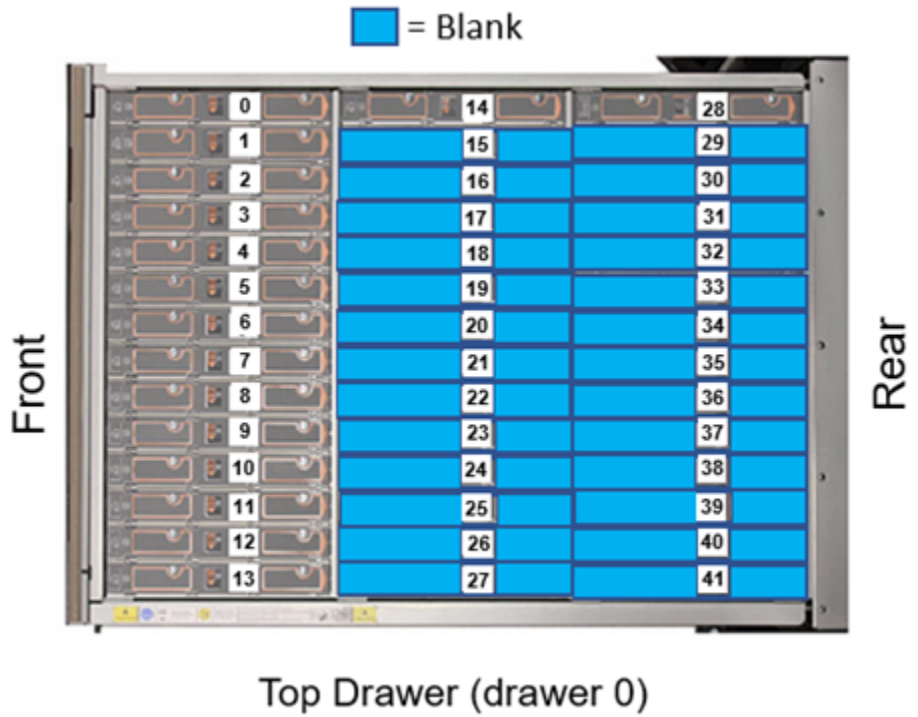
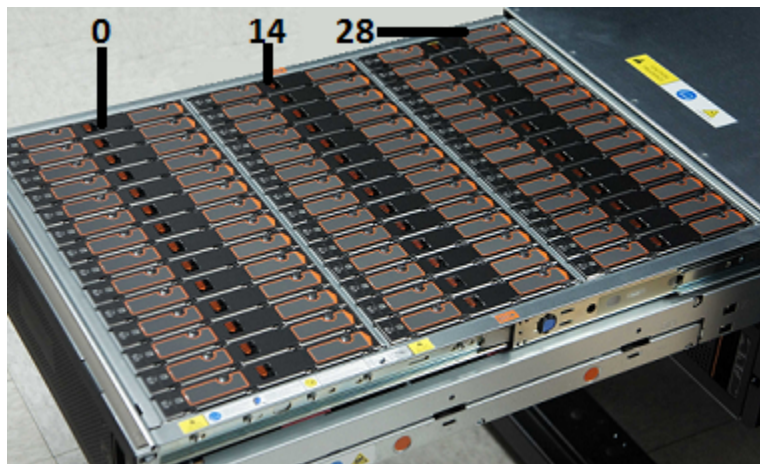


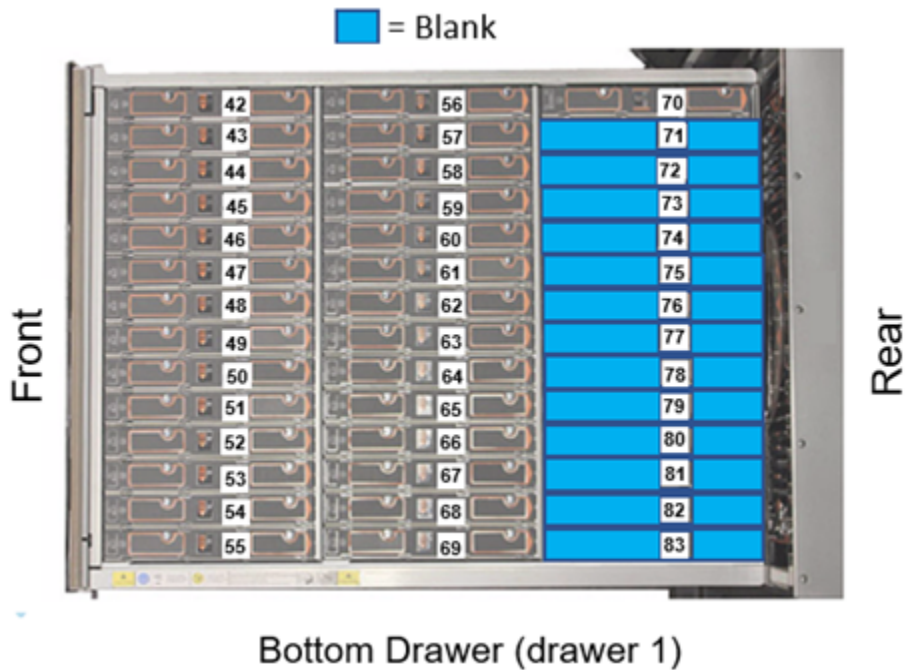
Figure 1-6 Fully-populated storage shelf



The bottom drawer contains slots 42 through 83.

Figure 1-7

Half-populated storage shelf



Disk drives are not preconfigured before they ship from the factory. During the initial installation any drive can be placed into any slot for a full storage shelf. After the compute nodes and storage shelves are configured and operational, you cannot rearrange the drives.

The compute nodes support storage shelves with half of the total usable capacity. This configuration includes 45 disk drives and 39 blank carriers. You receive one

container of 42 disk drives and another container of 3 drives and 39 blanks. Install these disk drives into the storage shelf drawers.

Refer to the following link for the disk drive layout for a half capacity storage shelf.

See [“Installing disk drives and blanks into a half-capacity storage shelf”](#) on page 43.

Each disk drive is encased in a carrier. A label on the top of the carrier identifies the storage capacity of the disk that is inside the carrier.



A blank carrier is very similar to a disk drive carrier. The upper latch assembly is the same. A label identifies the carrier as a blank instead of storage capacity.



5U84 storage shelf control panel

The following table explains the components in the storage shelf control panel.

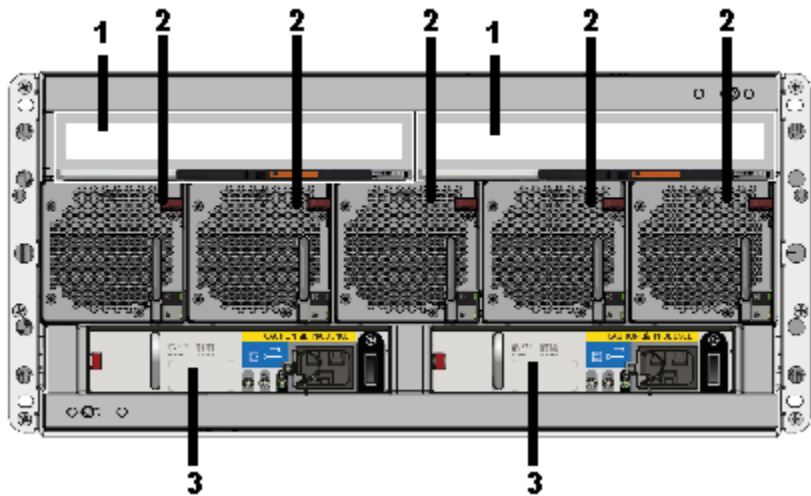


Number	Component	Description
1	Unit identification (ID) display	A numerical enclosure display that helps when setting up and maintaining multiple storage shelves. The Primary shelf has a default value of 00. The first Expansion shelf has a value of 01. Subsequent Expansion shelves have a value of 02 and 03.
2	Input switch	Used to set the unit identification display.
3	Power LED	Amber when the system is in standby mode. Green when the system is on.
4	Module fault LED	Amber when there is a system hardware fault. An LED may be lit on a power supply, drawer, disk carrier, cooling module, or I/O module to identify which component is at fault.
5	Logical status LED	Shows a change of status or a fault. Typically these changes of status or faults are associated with the shelf's disk drives. However, the Logical Status LED can also indicate an issue with an internal RAID controller or external RAID controller, or with a host bus adapter.
6	Drawer 1 fault LED	Indicates a drive, cable, or sideplane fault in Drawer 1, the top drawer.
7	Drawer 2 fault LED	Indicates a drive, cable, or sideplane fault in Drawer 2, the bottom drawer.

5U84 storage shelf rear panel

The rear panel of a 5U84 storage shelf contains the following components:

- Two I/O module slots, which contain either redundant RAID controllers or Expansion modules. (Item 1)
- Five cooling modules (Item 2)
- Two power supply units (PSUs) (Item 3)



Each cooling module contains two fans. Cooling modules can be individually replaced but cannot be taken apart to replace only one fan.

Refer to the following sections for information about the I/O modules.

See [“5U84 storage shelf RAID controller”](#) on page 17.

See [“5U84 storage shelf Expansion module”](#) on page 18.

5U84 storage shelf RAID controller

The Primary Storage Shelf contains two RAID controllers in I/O module slots. The controllers are labeled A and B, from left to right as you look at the rear panel of a shelf. Each controller has two sets of SAS-3 ports. From left to right the SAS-3 ports for each controller are labeled 3, 2, 1, and 0. The single SAS-3 port on the left side of each RAID controller connects to a SAS-3 port on the Expansion shelf.

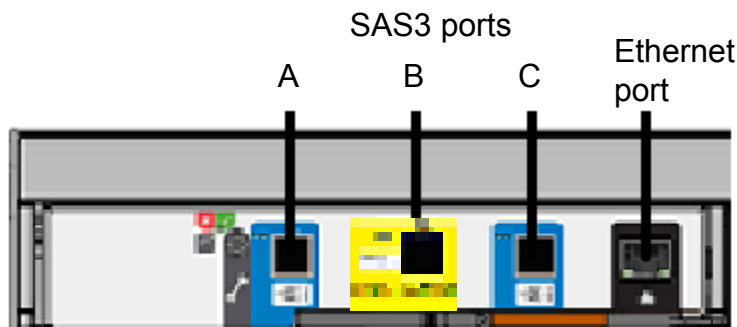


5U84 storage shelf Expansion module

Each Expansion storage shelf contains two I/O modules. The modules are labeled A and B, from left to right as you look at the rear panel of a shelf. Each module has three SAS-3 ports that are labeled A, B, and C from left to right.

A yellow label states that port B is for attachment to a server only. You cannot use this port without permission and assistance from Technical Support.

The SAS-3 ports connect to the SAS port on each RAID controller on the Primary shelf and to other Expansion shelves.



Cables and connectors

Compute nodes connect to each other with 1G Ethernet cables.

The compute nodes connect to the Primary Storage Shelf with SAS-3 cables.

The Primary Storage Shelf connects to Expansion Storage Shelf I/O modules with SAS-3 cables.

Expansion Storage Shelves connect to each other with SAS-3 cables.

The power connector that attaches to a storage shelf has a right-angled form factor.



A security tie assures continued connection between the power cable and the storage shelf.

About IPMI configuration

The Intelligent Platform Management Interface (or IPMI) provides management and monitoring capabilities independently of the host system's CPU, firmware, and operating system. You can configure the IPMI sub-system for your appliances. You can use the remote management port, located on the rear panel of the appliance, to connect to the IPMI sub-system.

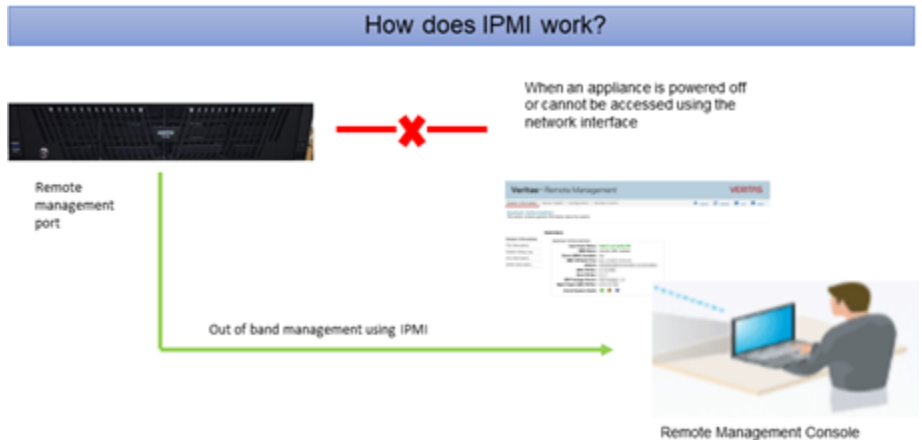
The following figure shows the remote management port (or the IPMI port) on the rear panel of a 5372 Appliance:

Figure 1-8 5372 IPMI port



The IPMI is beneficial after an unexpected power outage shuts down the connected system. In case the appliance is not accessible after the power is restored, you can use a laptop or desktop computer to access the appliance remotely by using a network connection to the hardware rather than to an operating system or login shell. This enables you to control and monitor the appliance even if it is powered down, unresponsive, or without any operating system.

The following diagram illustrates how IPMI works:



The following are some of the main uses of IPMI:

- Manage an appliance that is powered off or unresponsive. Using the IPMI, you can power on, power off, or restart the appliance from a remote location.
- Provide out-of-band management and help manage situations where local physical access to the appliance is not possible or preferred like branch offices and remote data centers.
- Access the Appliance Shell Menu remotely using IPMI if regular network interface is not possible.
- Reimage the appliance from the IPMI interface by using ISO redirection.
- Monitor hardware health of the appliance from a remote location.
- Avoid messy cabling and hardware like keyboard, monitor, and mouse (KVM) solutions to access the appliance.
- Required to elevate to an unrestricted shell for support when in lockdown mode.

Preinstallation requirements

This chapter includes the following topics:

- [Customer-provided environment and supplies](#)
- [Appliance shipping container contents](#)
- [Storage shelf shipping container contents](#)
- [Dimensions and determining rack locations](#)
- [Best practices for rack installation](#)
- [Storage shelf rack requirements](#)
- [Heat dissipation](#)
- [Cable length verification](#)
- [Prerequisites for IPMI configuration](#)

Customer-provided environment and supplies

For best ventilation, the rack cabinet:

- Should be at least 100 cm (4 feet) from walls
- Should have at least 100 cm (4 feet) from other cabinets on the front and back of the appliance and the storage shelves

Data centers with two-foot spaces in the front and in the back of the appliances are acceptable with proper cooling and ventilation.

Refer to the following section for more details.

See [“Heat dissipation”](#) on page 26.

The following describes the necessary personnel and equipment that are needed at the installation site:

- At least three people or a mechanical lift to move the appliance and the storage shelves.
- Cables to connect the appliance to your corporate network.
- A USB-keyboard and a monitor to connect to the appliance.
- A 19-inch rack with dual Power Distribution Units (PDUs) with 120VAC or 220VAC power supplies for the compute node.
- A magnetic Philips-head screw driver to install the storage shelf rails into the rack.
- A screwdriver with a 2mm Hex bit to secure the bezels to the front of each storage shelf drawer.
- A 19-inch rack with dual Power Distribution Units (PDUs) with 220VAC power input for the storage shelves.

See [“Best practices for rack installation”](#) on page 25.

Appliance shipping container contents

The appliance, each storage shelf, and the storage shelf disk drives ship in separate containers. Each container includes other boxes and contents. The appliance disk drives are factory-installed, while the storage shelf disk drives are installed on-site during deployment.

The following items ship within the appliance box.

- Cables to connect the appliance to the Primary external storage.
- Cables to connect the HA compute nodes.
 - Two CAT-6 Ethernet cables for interconnection between HA compute nodes. Included in Accessory Package.
- QR code card that includes links to the following items:
 - [Appliance Getting Started documents](#) such as deployment plans and cabling posters
 - [Appliances Support page](#) that links to the appliance documentation and other resources
- Envelope containing the following:
 - Warranty and license information

- Accessory box containing rack rails
- Two power cables
- Bezel

Storage shelf shipping container contents

The appliance and each storage shelf are shipped in separate containers. Each container includes other boxes and contents.

The following items ship within the storage shelf box.

- Rack rails
- Two SAS-3 cables
- Two power cords

Dimensions and determining rack locations

Physical specifications for the compute node include the following.

- Each node is two rack units (2RU) high.
- Node measurements are listed below.
 - Height: 88mm (3.46") (approximately 2U)
 - Width: 483mm (19")
 - Length/depth: 797mm (31.37")
- The compute node rails are extensible to 813.7mm (32in). The minimum distance or depth allowed between the rack posts is 708.7mm (27.9"). The maximum distance or depth allowed between the rack posts is 1153.2mm (45.4").

Physical specifications for the 5U84 storage shelves include the following.

- Each storage shelf is 5RU high.
- Storage shelf measurements are listed below.
 - Height: 223 mm (8.78") (approximately 5U - shelf, overall)
 - Width: 483 mm (19.0") (across the mounting flange)
 - Length/depth: 933 mm (36.75") (from rear of the front flanges to the rear extremity of the chassis)

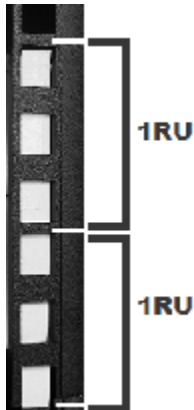
Note: The 5U84 storage shelf is longer than a standard IEC-compliant rack. Be sure that your rack cabinet and Power Distribution Units accommodate the length of the storage shelves.

- The storage shelf rails measure 71.3cm to 88.4cm (28" to 34.8") in length. Be sure that your rack accommodates this distance from the inside of the front post to the inside of the rear post. Plan for additional space to accommodate power strips, power cords, and other cables.

When you plan the installation be sure to allocate enough space for all of the hardware.

A typical installation has the storage shelves on the bottom and the compute node(s) at the top.

To help you identify RU spacing, many rack manufacturers use a system of lines and sequential numbers starting at the bottom of the rack. The front and the rear of the rack are marked the same to ensure that the rails are installed straight and level. One RU has three holes. The holes for one RU are typically marked with a line below the bottom hole and another line at the top hole.



Use the rack templates to determine the mounting locations for all devices.

To determine rack locations for the hardware

- 1 Determine the total number of rack units (RUs) that you need as follows:
- 2 Use the rack templates to determine RU locations.
- 3 Fold the compute node templates at the horizontal yellow lines.
- 4 Use the following graphics to determine where pins and screws for the storage shelves fit into the rack.

- The front of each rail includes four pins that insert into the rear of the front rack post. One screw fits into the middle hole of the middle RU.
 - The rear of each rail includes four pins that insert into the inside of the rear rack post. Two screws insert into the front of the rear rack post. The screws install into the middle hole in the first and the fifth RU.
- 5 Record the rack positions to help you locate them easily when mounting the hardware.

Best practices for rack installation

Prepare for the hardware installation by following these recommendations.

- The appliance requires two RUs of space. Install the appliance in the space that is directly above the storage shelves.
- Two people should install the rails; one person at the back of the rack and one at the front.
- Two people should lift and place the appliance into the mounted rails.
- The storage shelves are heavier than the appliance and should be installed as close to the bottom of the rack as possible.
- Always install the heavier storage shelves at the bottom of the rack. Best practices recommend that you install hardware at the bottom of a rack first. Then work your way up the rack.
- Determine device order and cabling limits.
- Be aware of the depth of the guide rails and the devices. Ensure that the distance between cabinet posts accommodates the rails, devices, cables, and extending ears.
- Physically hold a SAS-3 cable between the intended locations for the appliance and the last storage shelf. Visually confirm that the cable is long enough.

Storage shelf rack requirements

For best ventilation, the rack cabinet:

- Should be at least 100 cm (4 feet) from walls.
- Should have at least 100 cm (4 feet) from other cabinets on the front and back of the appliance and the storage shelves.
- Data centers with two-foot spaces in the front and in the back of the appliances are acceptable with proper cooling and ventilation

- There must be a minimum depth of 76 cm (30 in.) between the front of the rack and the rear of the rack.
- Storage shelves should be installed lower in the rack than the appliance.

The following list describes the necessary personnel and equipment that customers must supply at the installation site:

- At least two people or a mechanical lift to move the appliance and the storage shelves.
- Two people to install the rails; one person at the back of the rack and one at the front
- Two people to lift and place the storage shelf into the mounted rails
- Cables to connect the appliance to your corporate network.
- A USB-keyboard and a monitor to connect to the appliance.
- A 19-inch rack with dual Power Distribution Units (PDUs) with 220VAC power supplies.

Heat dissipation

Air flows from the front of each unit and exits from the rear of each unit. You can install the optional bezel without disruption to the airflow.

For best ventilation, the rack cabinet should:

- Be at least 100 cm (4 feet) from walls.
- Be at least 100 cm (4 feet) from other cabinets on the front and back of the appliance and the storage shelves.

Note: Data centers with two-foot spaces in the front and in the back of the appliances are acceptable with proper cooling and ventilation.

Cohesity provides the following requirements to ensure sufficient cooling.

- Cohesity requires that you install the system in a National Engineering Manufacturer's Association (NEMA)-certified or equivalent rack.
- A minimum of 3 inches (7.6 cm) of space must be between the front of an appliance and the cabinet door or other air block.
- A minimum of 6 inches (15.2 cm) of space must be between the rear of an appliance and the cabinet rear or other air block.

- A minimum of 1 inch (2.5 cm) of space must be between the front of a storage shelf and the cabinet door or other air block.
- A minimum of 2 inches (5.0 cm) of space must be between the rear of a storage shelf and the cabinet rear or other air block.

Refer to the *Cohesity 5372 Appliance Product Description Guide* for specifications about temperature and cooling.

[Appliance documentation](#)

Cable length verification

Before you install and connect the hardware, be sure to verify that you have the correct length of cables for your setup.

Each rack unit (RU) is 44.50 mm (1.752 inches) in height. The compute node is 2RU high.

The 5U84 Storage Shelves are 5RU high.

Two SAS-3 cables ship with each Expansion Storage Shelf. Each SAS-3 cable is 1-meter (3.28 feet) long.

Note: If you must have Expansion shelves in different racks be sure that the SAS-3 cables are long enough. Do not stretch the cables too tightly or try to use adapters or extensions.

Prerequisites for IPMI configuration

Verify the following configuration prerequisites:

- The remote management port auto-negotiates its link speed to 10 Gbps.

Note: If the IPMI port is connected to a managed switch port, it is recommended that you configure the switch port to auto-negotiation

- If a firewall exists between the appliance and the remote devices that manage an appliance (like a laptop computer), open the following ports:

66	SOL SSH
80	HTTP
162	SNMP

443	HTTPS
623	Floppy/USB media
627	Secured Floppy/USB media
5120	CD
5124	Secured CD
5900	KVM
5902	Secured KVM

Note: If you have a private internal network, remember to configure the settings accordingly in your network address translation (NAT).

- The remote management port must be configured as a DHCP or static address.

Hardware installation procedures

This chapter includes the following topics:

- [Overview](#)
- [Installing a storage shelf](#)
- [Installing disk drives into a full-capacity storage shelf](#)
- [Installing disk drives and blanks into a half-capacity storage shelf](#)
- [Installing disk drives into a half-capacity storage shelf](#)
- [Installing the compute node into the rack](#)
- [Connecting the hardware to one compute node](#)
- [Connecting the hardware to two compute nodes](#)
- [Connecting Flex nodes to the network](#)
- [Connecting the power cords](#)
- [Turning on the hardware and verifying operation](#)
- [Configuring the Cohesity Node Explorer from a Flex Appliance](#)
- [Configuring the Cohesity Node Explorer using laptop](#)
- [Accessing and using the Cohesity Node Explorer](#)

Overview

This chapter describes the procedures to install one or two compute nodes, one Primary Storage Shelf, and up to three Expansion Storage Shelves.

Installing a storage shelf

You can use this installation procedure for a Primary Storage Shelf and up to three Expansion Storage Shelves. For the systems that include one or more Expansion Shelves, install those units first followed by the Primary Shelf. Always load hardware into a rack from the bottom to ensure personal safety and proper weight distribution of equipment.

Warning: The hardware must be powered on in the expected order. Else, all the storage may not be seen by the appliance.

From the inside of the front post to the inside of the rear post the rails measure 713mm to 884mm (28in to 34.8in). Be sure that your rack accommodates this distance. Allow extra space to accommodate power strips, power cords, and other cables.

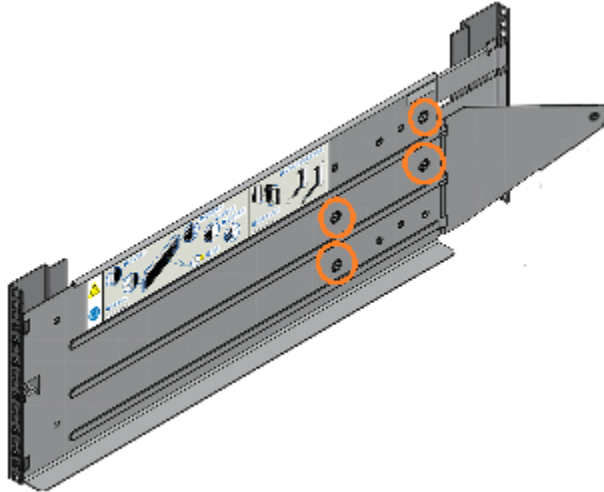
Warning: A storage shelf without disk drives weighs up to 61.65kg (135.72lbs). To avoid potential equipment damage and personal injury, do not install disk drives into the storage shelves before mounting them into the rack. The added weight of the disk drives hinders the ability to safely install the storage shelves. Use the lifting straps that are provided with the shelf to remove the shelf from the shipping container. Use a mechanical lift or have three people raise the shelf into position. The rear of the shelf is heavier than the front of the shelf.

To install the storage shelf rails

Cohesity recommends that two people install the rails. One person works at the back of the rack and one person is at the front of the rack.

A magnetic Philips-head screwdriver is required to install screws into the storage shelf rails.

- 1 The storage shelf rails are extended to full length in the shipping container. It is easier to install the rails when they are at their shortest length.
- 2 Use the four adjuster screws on the inside of the rail to increase or decrease the rail length.



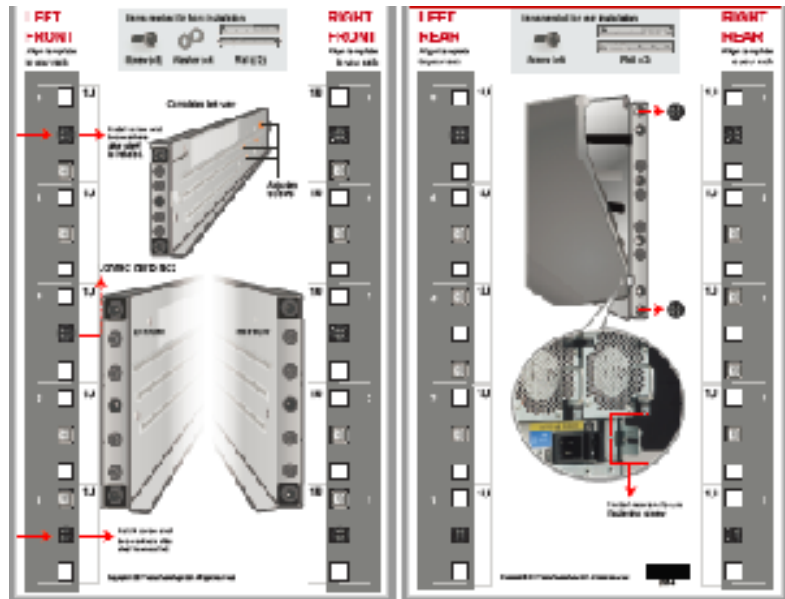
- 3 Identify the left and the right rails which are labeled LH (left-hand) or RH (right-hand) on the front inside of the rail.



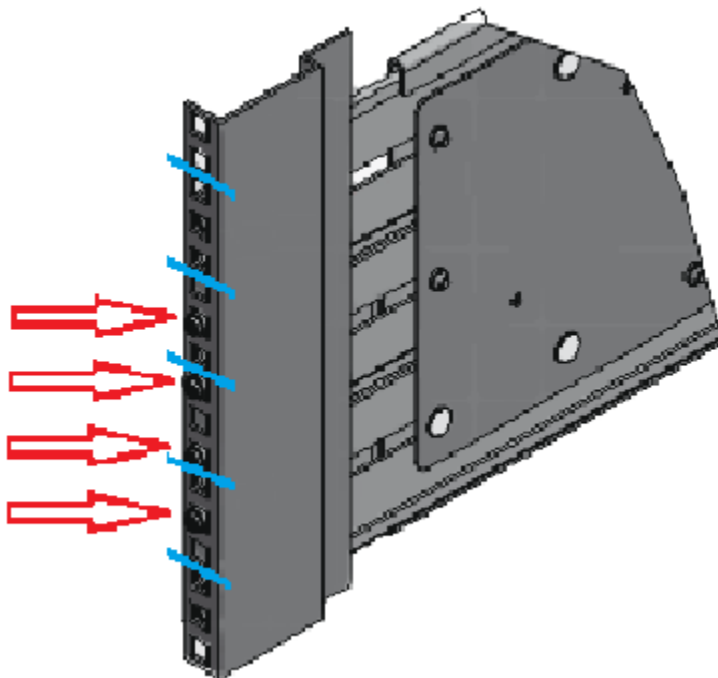
Note the ledge at the bottom of each rail. The storage shelf sits on the ledges which must be positioned on the inside of the rack. The ledges must not be located between the rail and the rack wall.

- 4 Locate the pins on the front and the rear of the rails.

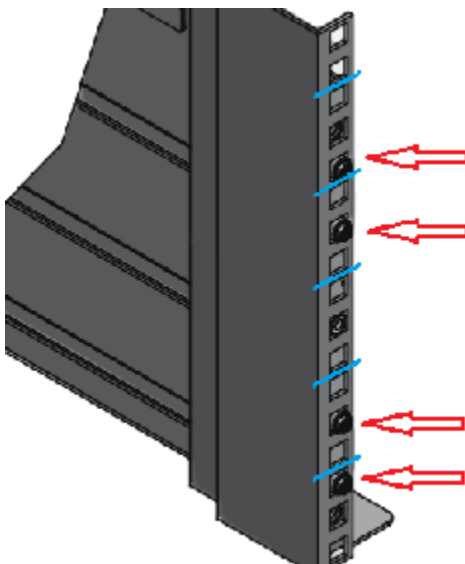
- 5 Use the printed rack templates that are provided with the hardware. One side of the template shows the front of the rail. The other side of the template shows the rear of the rail. The template shows the five rack units (RUs) to scale.



- 6 Start with the left rail. Place the rail pins inside the front of the rack.

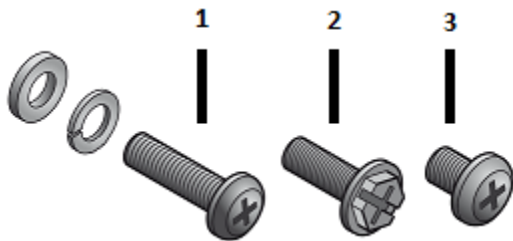


- 7 Extend the rail assembly to enable the rear rail pins to engage.



- 8 Verify that the pins are fully seated in the holes in the rack posts.
- 9 Secure the four adjuster screws as needed. Do not over-torque.
- 10 Repeat the process for the right rail.
- 11 Verify that the left rails and the right rails use the same rack holes and are parallel.

12 Identify the three different types of screws.



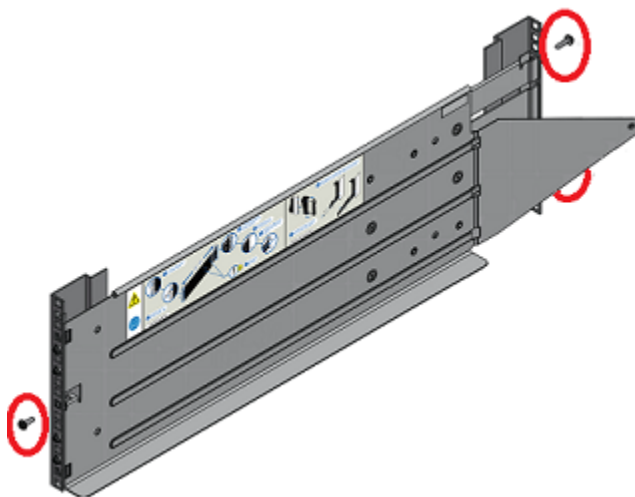
Descriptions of the screws are provided in the following table.

Number	Description	Rack location(s)	Rail location(s)
1	Long fastening screw with two washers - for use after shelf is installed in rails. Install the washer with the gap first.	Front: Center holes in first and fifth rack units (RUs). Rear: N/A	Front: Top and bottom holes. Rear: N/A
2	Medium-sized clamping screw	Front: Center hole of third rack unit (RU). Rear: Center holes in first and fifth rack units (RUs).	Front: Center hole. Rear: Top and bottom holes.
3	Small rear fastening screw	Front: N/A Rear: N/A	Front: N/A Rear: Connects from chassis lock tab to hole in triangular end of rail.

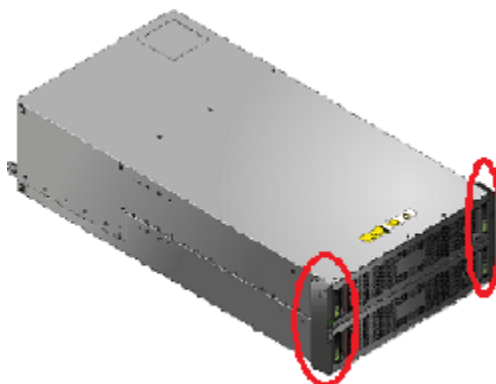
- 13** Install the medium-sized clamping screws from the outside of the rack posts so that they engage the rails and the rack.

The front of the rail requires one clamping screw in the center hole of the center RU.

The rear of the rail requires two clamping screws. Insert these screws in the middle hole in the first and the fifth RU.



- 14** Remove any plastic film from the front and sides of the shelf.
- 15** Remove the caps from both sides of the front of the storage shelf.



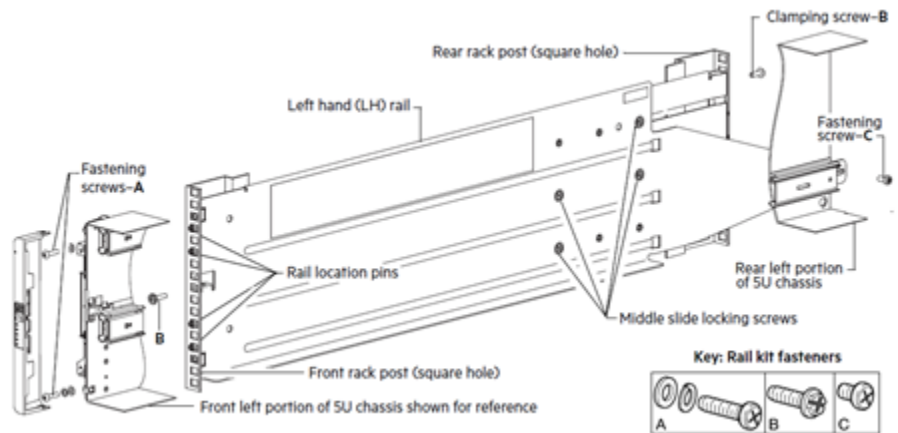
The caps snap off without any tools.

- 16 Warning:** The shelf weighs 61.56kg (135.72lbs) without disk drives. Use a mechanical lift or have at least three people hold the lifting straps. Do not discard the straps in case you need to move the shelf later.

Warning: The back end of the storage shelf is heavier than the front end.

From the front of the rack, carefully lower the storage shelf onto the rail ledges in the rack. You can use the three lifting straps that are shipped with the storage shelf to lift and place the shelf onto the rails.

- 17** Push the shelf into the back of the rack.
- 18** On the front of the rack, use a long screw and two washers in the top and the bottom holes.



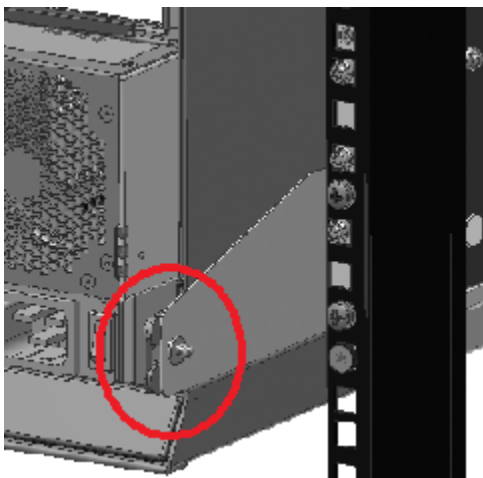
Place the washer with a gap onto the screw first.



- 19** Locate the lock tabs on the left and right rear corners of the storage shelf chassis.



- 20** Insert a small screw through the lock tab into the hole in the triangular end of the rail. Secure the screw.



- 21** On the front of the storage shelf reattach the left and the right caps. The left cap contains the control panel. The right cap contains spaces for two latches which connect to the storage shelf.



Installing disk drives into a full-capacity storage shelf

Note: The 5372 Appliance Expansion Storage Shelves use 4-TB SED or 8-TB SED disk drives. Non SED disks cannot be used.

You can purchase a storage shelf that provides half of the total possible storage capacity.

See [“Installing disk drives and blanks into a half-capacity storage shelf”](#) on page 43.

Note: It is helpful to have two people install the disks. Both people can move the latches to unlock the carriers. One person can remove the disks from the shipping box and hand them to the other person. The first person should orient the disk drives in the direction of installation. The second person installs the disks. Both people can press the carriers down and lock them forward. Less than 5 minutes are required to fill an entire drawer.

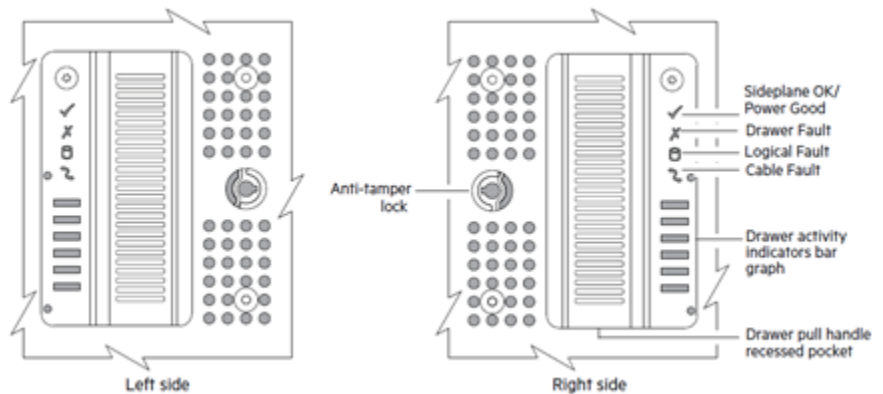
To install the disk drives into the storage shelf slots

- 1 Examine the two anti-tamper locks on the front of each drawer.



The red arrows in the locks point to the center of the drawer if the locks are not engaged.

- 2 If the locks are engaged, use a Torx T20 screwdriver to rotate the locks counterclockwise.



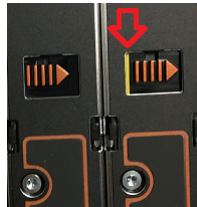
- 3 Pull the bottom drawer forward as far as possible without damaging the hardware. Press the drawer latches (both sides of the drawer) in towards the middle of the drawer in order to open the drawer.
- 4 Locate and open the box or boxes that contain the storage shelf hard disk drives in their Disk Drive In Carrier (DDIC) units.

Note: Each disk drive is preinstalled in a carrier.

- 5 Before removing the disk drives from a shipping box, prepare each disk drive carrier for drawer installation.

Do the following for each carrier:

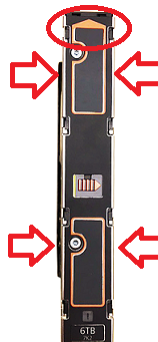
- Identify the release latch in the middle of the top of a carrier.
- Push the release latch to the right in the direction of the arrow. A yellow line appears to the left of the latch when the carrier is unlocked.



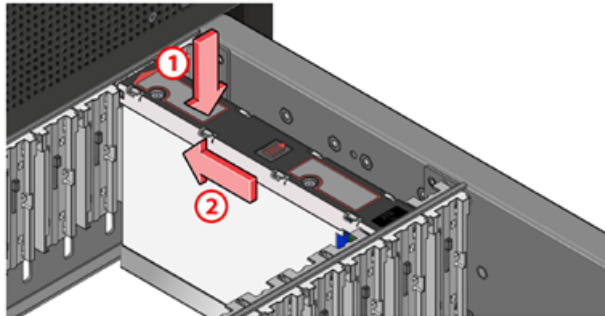
- 6 After unlocking all of the carriers, install each carrier into the bottom drawer.

Do the following for each of the carriers that you want to install:

- Insert the carrier into one slot and push it down until it stops.
- Place one thumb on each of the two pads that are shown by the red arrows.



- Push the carrier forward towards the rear of the slot, towards the back of the drawer.



- The release latch clicks into place.
 - Repeat the process for each carrier in the bottom drawer of the shelf.
- 7 Verify that all disks are properly seated in the slots.
 - 8 Slide the bottom drawer into the storage shelf. Press the two drawer release buttons located (one per side) on the side of the drawer to close the drawer until the latches click.
 - 9 Engage the anti-tamper locks on the top drawer as needed.
 - 10 Pull the top drawer forward as far as possible without damaging the hardware.
 - 11 Install the disk drive carriers into the top storage shelf drawer.
 - 12 Slide the top drawer into the shelf by pressing the two drawer release buttons located (one per side) on the side of the drawer to close the drawer until the latches click.
 - 13 Engage the anti-tamper locks as needed.

Installing disk drives and blanks into a half-capacity storage shelf

Note: The 5372 Appliance Expansion Storage Shelves use 4-TB SED or 8-TB SED disk drives. Non SED disks cannot be used.

This section provides instructions for installing disk drives into a storage shelf that has one half of the total usable storage capacity. Blank carriers are installed into the slots that are not filled with disks.

Detailed maps of the slots are provided for the blanks and the disks.

Fill the bottom drawer with disks and blanks. Then install disks and blanks into the top drawer.

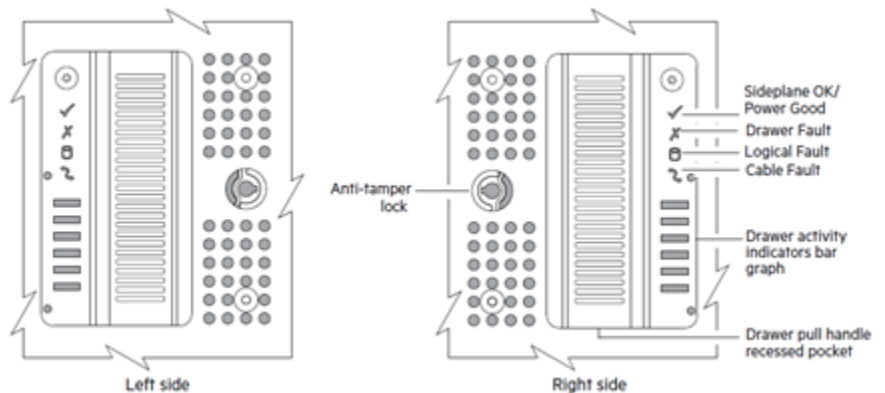
To install disk drives and blanks into the bottom drawer of the storage shelf

- 1 Examine the two anti-tamper locks on the front of each drawer.



The red arrows in the locks point to the center of the drawer if the locks are not engaged.

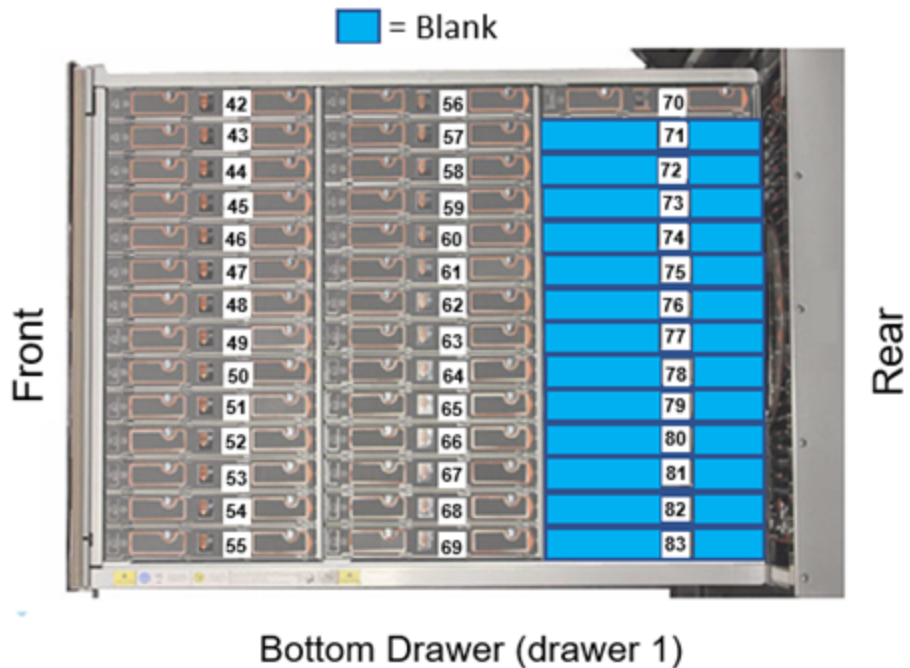
- 2 If the locks are engaged, use a Torx T20 screwdriver to rotate the locks counterclockwise.



- 3 Pull the bottom drawer forward as far as possible without damaging the hardware. Press the drawer latches (both sides of the drawer) in towards the middle of the drawer in order to open the drawer.

Caution: To provide sufficient airflow for storage shelf cooling, install blank carriers in the empty drive slots of a half-populated drawer.

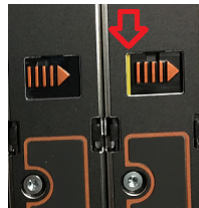
- 4 Note the numbered slots in each of the three rows. Blank disk carriers are shown in blue. Slots with the carriers that include disk drives are shown in gray.



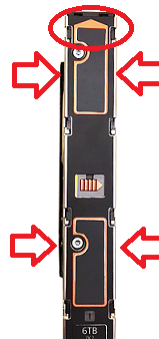
- 5 Identify the release latch in the middle of the top of a blank carrier.



- 6 Push the release latch to the right. A yellow line appears to the left of the latch when the disk is unlocked.



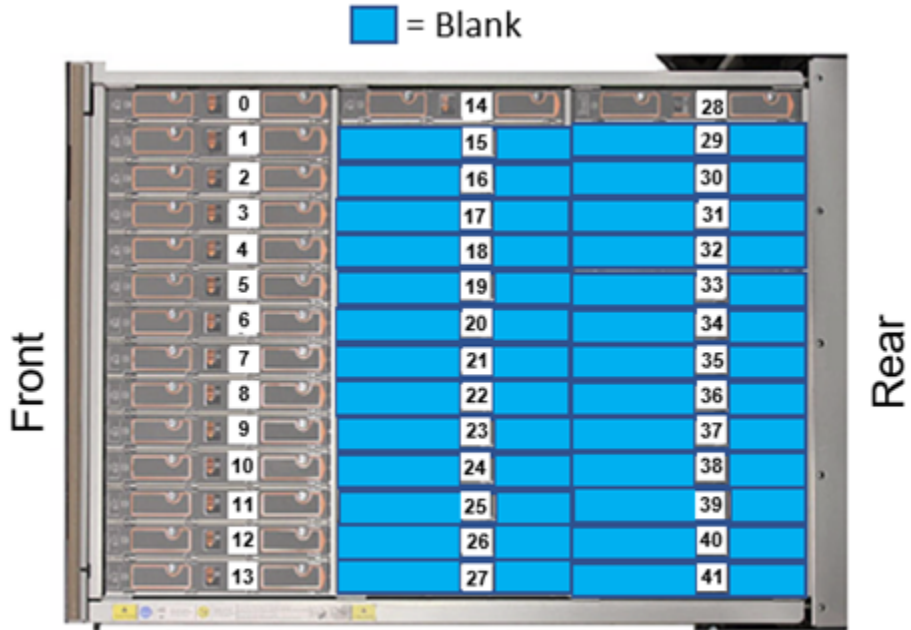
- 7 Start at the front row of the bottom drawer.
8 Locate slot 42 at the front left corner of the drawer.
9 Insert one disk drive into slot 42 and into each slot in the first row.
10 Insert the carrier into the slot and push it down until it stops.
11 Place one thumb on each of the two pads that are shown by the red arrows.



- 12** Push the carrier forward towards the rear of the slot, in the direction of the circled end of the carrier. The latch clicks into place. The yellow line is no longer visible.
- 13** Press all carriers down into the slots and lock them forward.
- 14** Insert one disk drive into slot 56 and into all slots in the second row.
- 15** Press all carriers down into the slots and lock them forward.
- 16** Insert one disk drive into slot 70.
- 17** Insert blank carriers into slots 71 to 83.
- 18** Press all carriers down into the slots and lock them forward.
- 19** Verify that all carriers in the three rows are seated down in the slots. A carrier that is not inserted correctly may hinder securing the drawer.
- 20** If you need to remove a disk drive, slide the release latch to the right. The disk pops up.
- 21** Slide the drawer carefully into the shelf by pressing the two drawer release buttons located (one per side) on the side of the drawer to close the drawer until the latches click.
- 22** Engage the anti-tamper locks as needed.

To install disk drives and blanks into the top drawer of the storage shelf

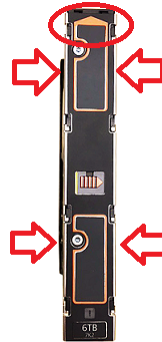
- 1 Pull the top drawer forward as far as possible without damaging the hardware.
- 2 Install disk drive carriers into slots 0 to 13.



Top Drawer (drawer 0)

- 3 Install disk drive carriers into slots 14 and 28.
- 4 Push the release latch to the right. A yellow line appears to the left of the latch when the disk is unlocked.
- 5 Insert the carrier into one slot and push it down until it stops.

- 6 Place one thumb on each of the two pads that are shown by the red arrows.



- 7 Push the carrier forward towards the rear of the slot, in the direction of the circled end of the carrier.
The release latch clicks into place.
- 8 Locate slot 15 on the left side of the second row. Slot 15 is to the right of slot 14. Install blanks into slots 15 through 27.
- 9 Locate slot 29, to the right of slot 28.
- 10 Install blanks into slots 29 to 41.
- 11 If you need to remove a blank, slide the release latch to the right. The blank pops up.
- 12 Verify that all slots are filled.
- 13 Push the drawer into the shelf by pressing the two drawer release buttons located (one per side) on the side of the drawer to close the drawer until the latches click.
- 14 Engage the anti-tamper locks as needed.

Installing disk drives into a half-capacity storage shelf

This section provides instructions for installing disk drives into a storage shelf that has one half of the total usable storage capacity.

The Primary Storage Shelf and the Expansion Storage Shelf use 4-TB or 8-TB disk drives. **You cannot mix the two disk storage capacities in one shelf.**

It is recommended to insert new drives in empty slots with same model number/part number as the populated slots.

Detailed maps of the slots are provided for the blanks.

Fill the bottom drawer with disks. Then install disks into the top drawer.

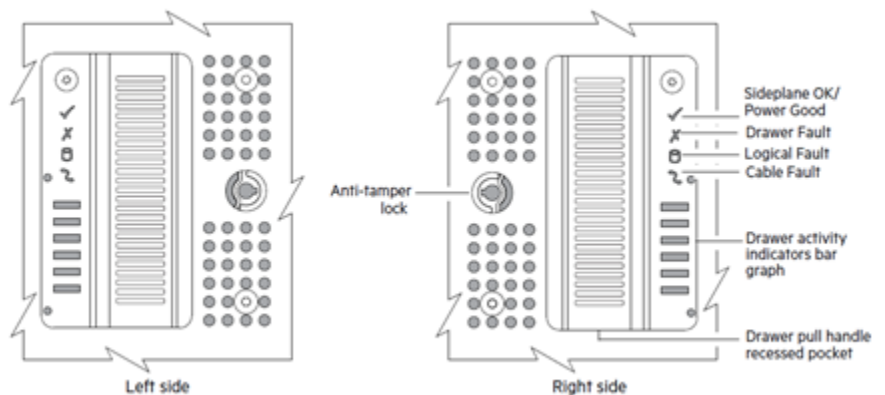
To install disk drives into the bottom drawer of the storage shelf

- 1 Examine the two anti-tamper locks on the front of each drawer.



The red arrows in the locks point to the center of the drawer if the locks are not engaged.

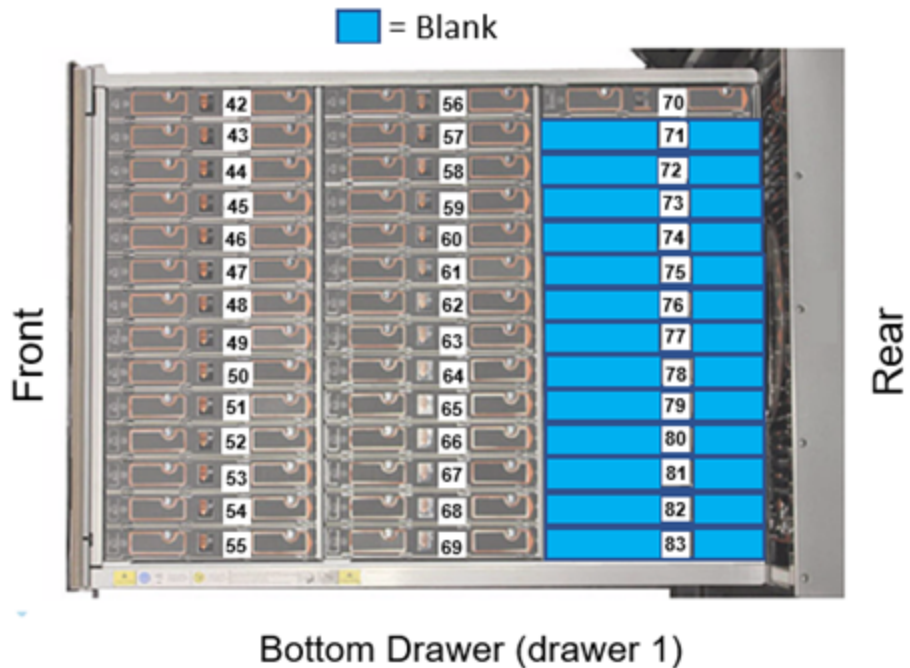
- 2 If the locks are engaged, use a Torx T20 screwdriver to rotate the locks counterclockwise.



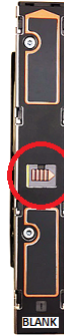
- 3 Pull the bottom drawer forward as far as possible without damaging the hardware. Press the drawer latches (both sides of the drawer) in towards the middle of the drawer in order to open the drawer.

Caution: To provide sufficient airflow for storage shelf cooling, all slots must be populated with either a drive or blank carrier.

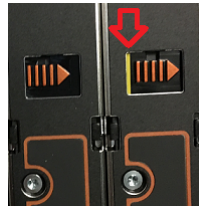
- 4 Note the numbered slots in each of the three rows. Blank disk carriers are shown in blue. Slots with the carriers that include disk drives are shown in gray.



- 5 On a blank disk carrier, identify the release latch in the middle of the top of a blank carrier for removal identified in the picture below by the red circle.

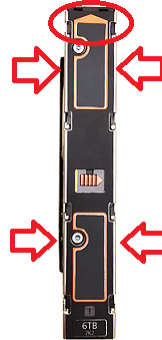


- 6 Push the disk drive carrier slightly down and release latch to the right. A yellow line appears to the left of the latch when the disk is unlocked.



- 7 Start at the back row of the bottom drawer.
- 8 Locate slot 71 near the back left corner of the drawer. Note that the neighboring slot 70 is a disk drive and should not be removed.
- 9 Remove one blank disk carrier from slot 71.
- 10 Select a new disk drive and confirm the latch is open by inspecting for a yellow line. (see picture above).
- 11 Insert a new disk drive into slot 71 and push it down until it stops.

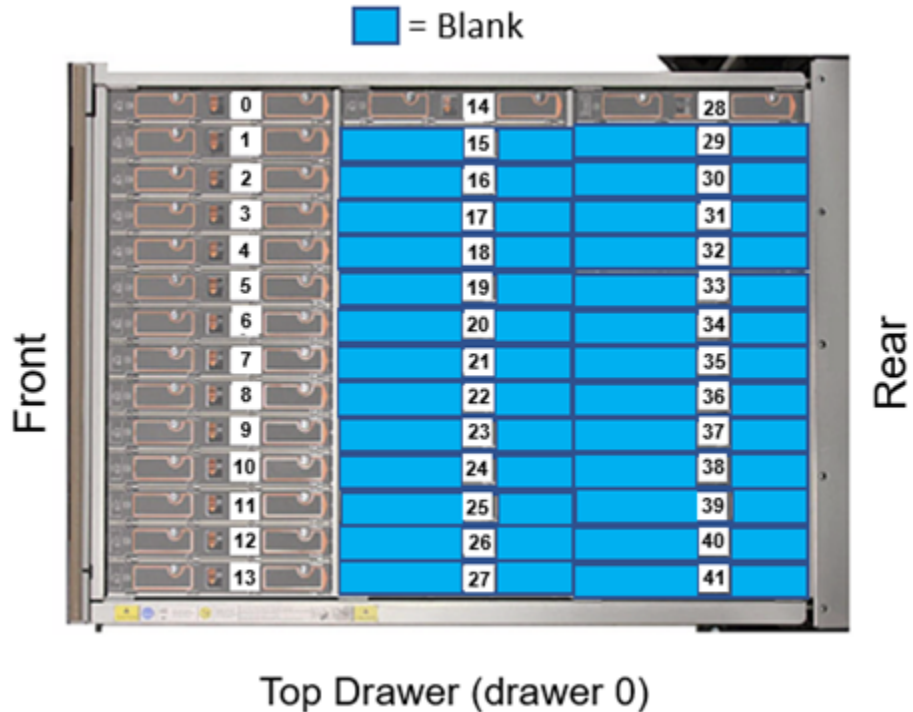
- 12 Hold the disk drive down by placing one thumb on each of the two pads that are shown by the red arrows.



- 13 Push the latch carrier forward towards the rear of the slot, in the direction of the circled end of the disk drive. The latch clicks into place. The yellow line is no longer visible.
- 14 Repeat above steps for new disks in slots 72-83.
- 15 Verify that all carriers in the three rows are seated down in the slots. A carrier that is not inserted correctly may hinder securing the drawer.
- 16 Slide the drawer carefully into the shelf by pressing the two drawer release buttons located (one per side) on the side of the drawer to close the drawer until the latches click.
- 17 Engage the anti-tamper locks as needed.

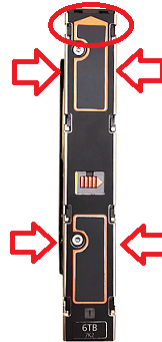
To install disk drives into the top drawer of the storage shelf

- 1 Pull the top drawer forward as far as possible without damaging the hardware.
- 2 Identify the blank disk carriers to remove in the middle row slots 15-27 and rear row slots 29-41. Note that the neighboring slot 14 and slot 28 are disk drives and should not be removed.



- 3 Remove each disk carrier by pushing down on the carrier and the release latch to the right. A yellow line appears to the left of the latch when the disk is unlocked.
- 4 Insert a new disk drive into slot 15 and push it down until it stops.

- 5 Place one thumb on each of the two pads that are shown by the red arrows.



- 6 Push the carrier forward towards the rear of the slot, in the direction of the circled end of the carrier.
The release latch clicks into place.
- 7 Repeat above steps, and install the remaining new disks into the middle row slots 16-27 and rear row slots 29-41.
- 8 Verify that all slots are filled.
- 9 Push the drawer into the shelf by pressing the two drawer release buttons located (one per side) on the side of the drawer to close the drawer until the latches click.
- 10 Engage the anti-tamper locks as needed.

Installing the compute node into the rack

Use the following procedure to install the rack rails and mount the appliance into the racks. Ensure that the best practices for installing the rack rails are followed.

Warning: The left and right rails differ from each other. Do not exchange their inner rails. Keep the ball bearing shuttle locked at the front of the middle rail during installation.

Caution: DO NOT add any weight upon the system when chassis slide rail is installed.

See [“Best practices for rack installation”](#) on page 25.

To install the rack rails

- 1** Release the inner rail from the outer rail.
 - Extend the inner rail until it stops.
 - Press the release lever on the inner rail to remove it.
- 2** Attach the inner rail to the chassis.
 - Press the release rail against the chassis.
 - Lift the clip (A) and slide the inner rail toward the chassis rear (B).
- 3** Attach the outer rail to the rack
 - Lift lever, aim the rack mount pin to the rack post and push forward.
 - Lift lever, aim the rack mount pin to the rack post and push back.
 - Install bolt and U bracket in round /screw rack.

To install the compute node into the rack

- 1** Mount the compute node into the rack.
- 2** Be sure the ball bearing retainer is locked forward.
- 3** Pull the middle rail out of the outer rail until locked.
- 4** Push the compute node into the rack.

To remove the compute node into the rack

- 1** Remove the slide rail.
- 2** Press release button to detach outer rail to detach the outer rails from the rack.
- 3** Pull the rail forward and press the release button to detach rail.
- 4** Lift the compute node out.

Connecting the hardware to one compute node

This section provides cabling information for a Cohesity 5372 Appliance that includes one compute node, one Primary Storage Shelf, and up to three Expansion Storage Shelves.

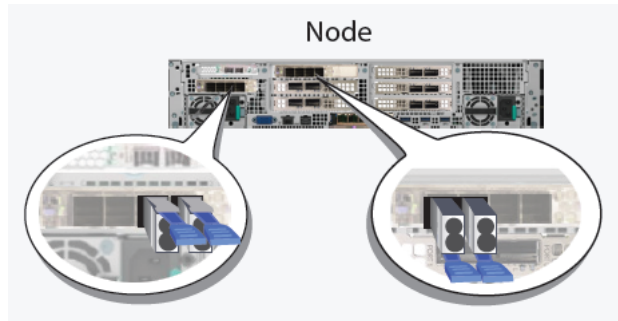
Each compute node is connected to the Primary Storage Shelf with four SAS-3 cables.

The compute nodes connect to each other with two Ethernet cables.

Expansion Storage Shelves connect to the Primary Shelf and to other Expansion shelves with two SAS-3 cables.

The Primary Shelf has a single SAS-3 port on the left side of each RAID controller I/O module. This port connects to SAS-3 port A in the Expansion I/O modules.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



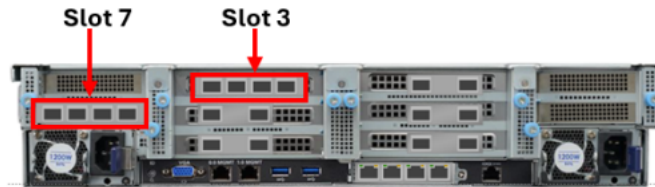
In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



Warning: The hardware must be powered on in the expected order. Else, all the storage may not be seen by the appliance.

To connect a compute node to a Primary Shelf

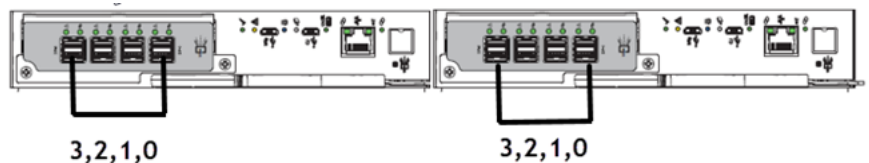
- 1 Obtain four SAS-3 cables for each compute node.
- 2 Identify the SAS-3 ports in slot 3 and slot 7 of the compute node that is closest to the Primary Shelf.



The ports in slot 7 are labeled 3, 2, 1, and 0 from left to right. The ports in slot 3 are labeled 0, 1, 2, and 3 from left to right.



- 3 Identify the four SAS-3 ports in each Primary Shelf controller.

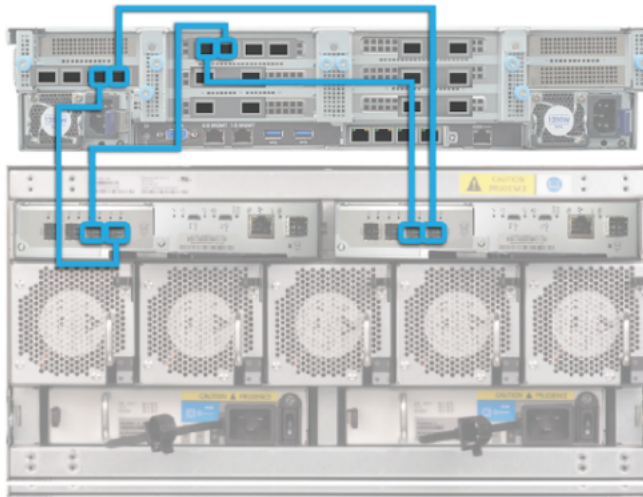


The left-hand controller is labeled A and the right-hand controller is labeled B. The ports in each controller are labeled 3, 2, 1, and 0 from left to right.

Note: The colors of the cables in the following diagrams are for demonstration purposes only.

- 4 Connect the cables as follows:
 - Connect slot 3, Port 0 of the compute node to controller B, Port 1 on the Primary Shelf.

- Connect slot 3, Port 1 of the compute node to controller A, Port 1 on the Primary Shelf.
- Connect slot 7, Port 0 of the compute node to controller B, Port 0 on the Primary Shelf.
- Connect slot 7, Port 1 of the compute node to controller A, Port 0 on the Primary Shelf.



Use the following procedure to connect Expansion Storage Shelves to the Primary Shelf.

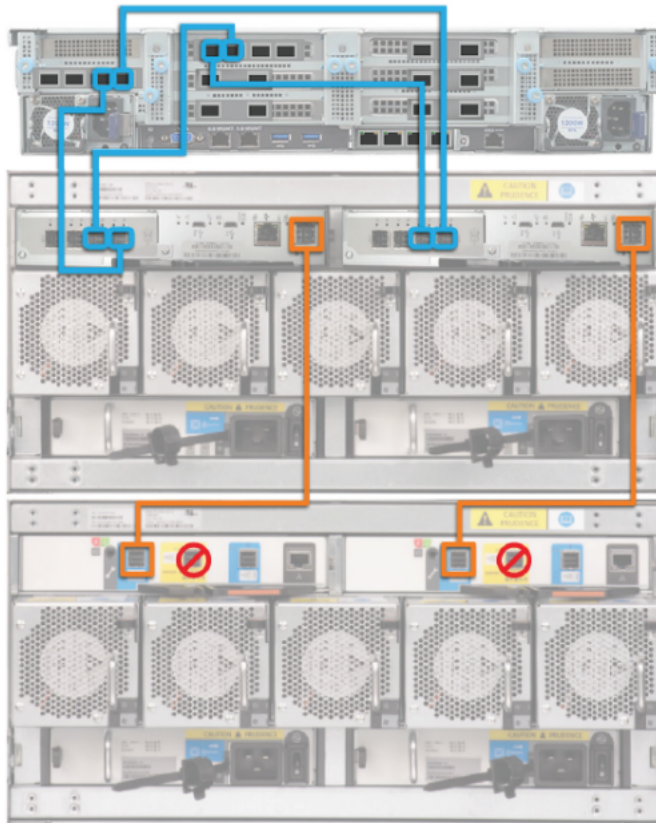
If you do not have any Expansion shelves at this time, proceed to the following section to connect power cords to the hardware.

See [“Connecting the power cords”](#) on page 71.

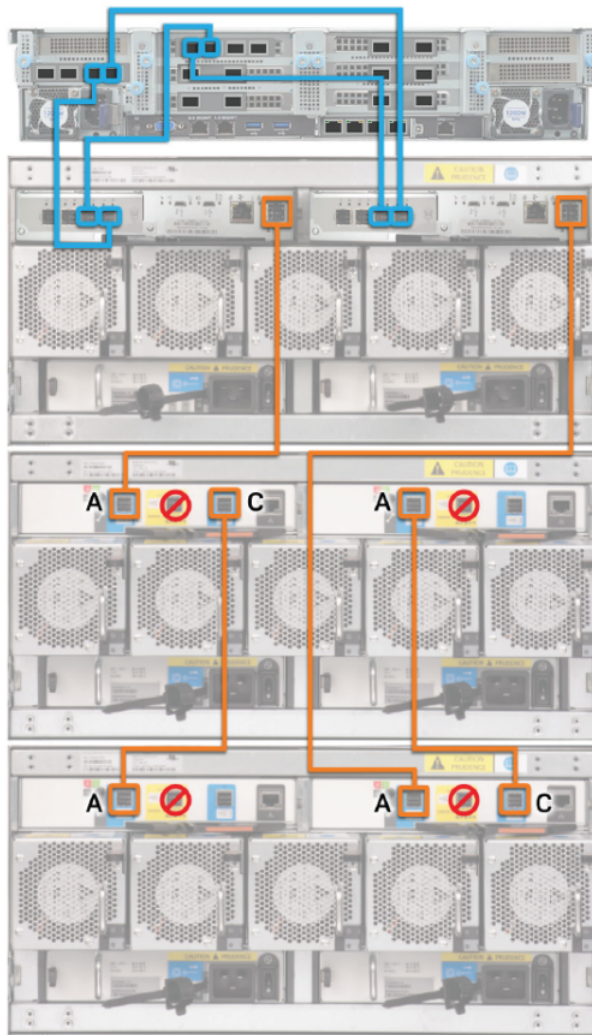
To connect Expansion Storage Shelves to a Primary Shelf

- 1 Do the following if you have one Expansion Shelf.
 - Connect one end of two SAS-3 cables to the SAS-3 port on the left hand side of each RAID controller in the Primary Shelf.
 - Connect the other end of the SAS-3 cables to port A in each of the I/O modules in the Expansion Shelf.

Note: The blue tab on the cable must face down in the Expansion Shelf.

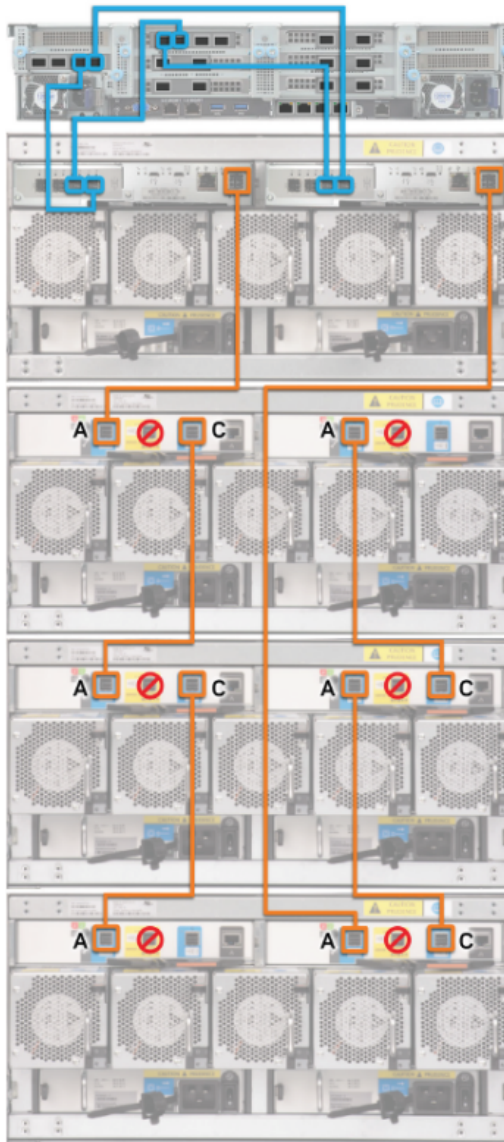


- 2 Do the following if you have two Expansion shelves.
 - Connect one end of the two SAS-3 cables to the SAS-3 port on the left hand side of each RAID controller in the Primary Shelf.
 - Connect the other end of the SAS-3 cable in RAID controller A to port A in the nearest Expansion Shelf I/O module on the left side of the shelf.
 - Connect the other end of the SAS-3 cable in RAID controller B to port A in the right-hand I/O module in the lower Expansion Shelf.
 - Connect port C in I/O module A of the upper Expansion Shelf to port A in I/O module A of the lower Expansion Shelf.
 - Connect port A in I/O module B of the upper Expansion Shelf to port C in I/O module B of the lower Expansion Shelf.



- 3 Do the following if you have three Expansion shelves.
 - Connect one end of the two SAS-3 cables to the SAS-3 port on the left hand side of each RAID controller in the Primary Shelf.
 - Connect the other end of the SAS-3 cable in RAID controller A to port A in the nearest Expansion Shelf I/O module on the left side of the shelf.
 - Connect the other end of the SAS-3 cable in RAID controller B to port A in the right-hand I/O module in the lowest Expansion Shelf.

- Connect port C in I/O module A of the upper Expansion Shelf to port A in I/O module A of the middle Expansion Shelf.
- Connect port A in I/O module B of the upper Expansion Shelf to port C in I/O module B of the middle Expansion Shelf.
- Connect port C in I/O module A of the middle Expansion Shelf to port A in I/O module A of the lowest Expansion Shelf.
- Connect port A in I/O module B of the middle Expansion Shelf to port C in I/O module B of the lowest Expansion Shelf.



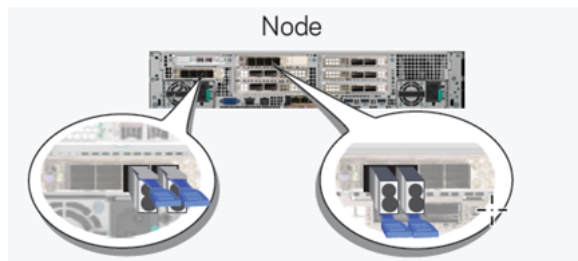
Connecting the hardware to two compute nodes

Installation procedures for a two-node or multi-node system is the same as for a single-node system except for the following:

- The two nodes are connected to each other through the two far-right 1Gb Ethernet ports on the rear of the nodes.
- Both nodes connect to the Primary Storage Shelf.

Note: The colored cables are for demonstration purposes only. There is only one type of SAS-3 cable.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



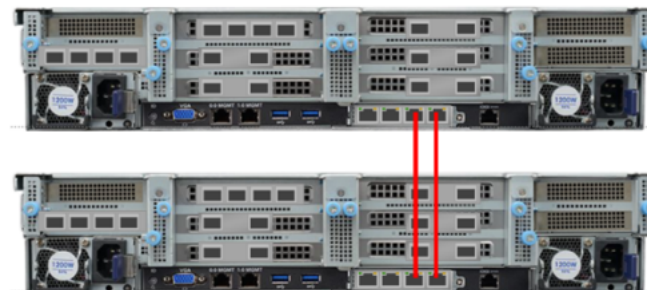
Warning: The hardware must be powered on in the expected order. Else, all the storage may not be seen by the appliance.

To connect a two-node appliance

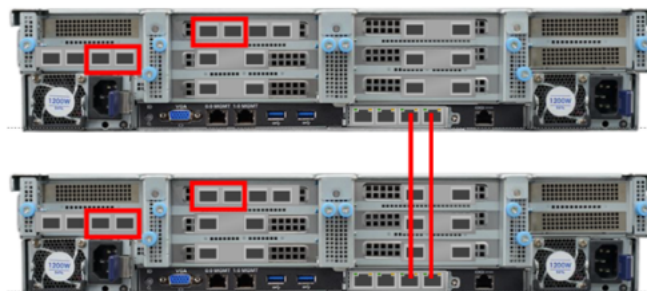
- 1 Identify the two ports on the lower right corner of both nodes.



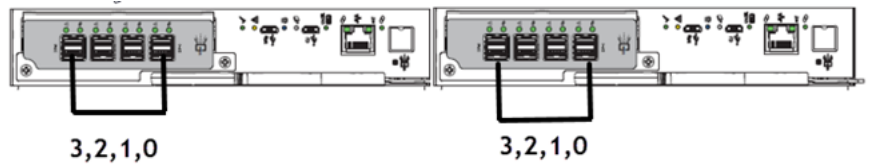
- 2 Connect Ethernet cables between the ports.



- 3 Identify the SAS ports on the compute nodes.

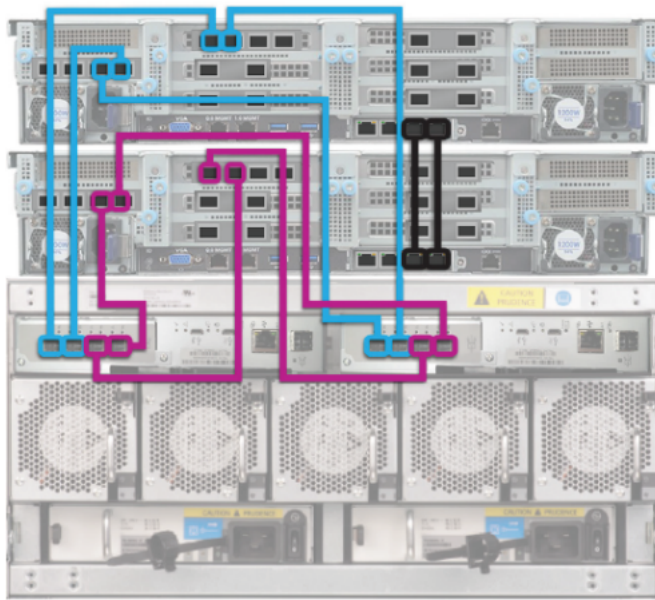


- 4 Identify the SAS ports on the Primary Storage Shelf.



- 5 Connect the cables as follows:

- On the compute node that is located closest to the Primary Storage Shelf, connect two SAS cables.
- On the compute node that is located closest to the Primary Storage Shelf, connect two more SAS cables.
- On the compute node that is located farthest from the Primary Storage Shelf, connect two SAS cables.
- On the compute node that is located farthest from the Primary Storage Shelf connect two more SAS cables .



- 6 If you have Expansion Storage Shelves, proceed to the following instructions.
See [“To connect Expansion Storage Shelves to a Primary shelf”](#) on page 67.
If you do not have Expansion shelves proceed to connect the power cords.
See [“Connecting the power cords”](#) on page 71.

To connect Expansion Storage Shelves to a Primary shelf

- 1 Obtain two SAS-3 cables.
- 2 Locate the SAS-3 ports in the left-hand side of each controller in the Primary shelf.

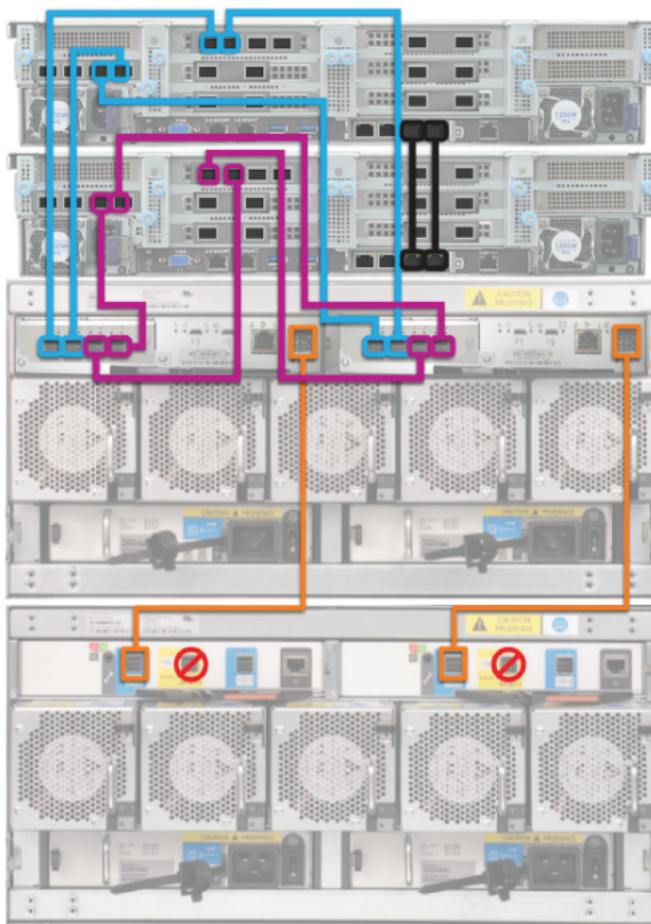


- 3 Locate SAS-3 ports A and C in both I/O modules of the Expansion shelves.

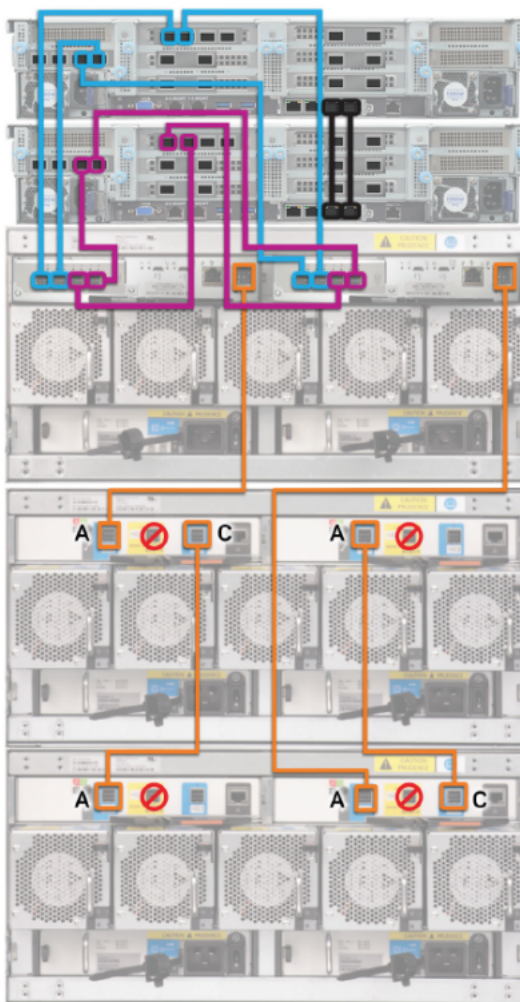


Port B is not used.

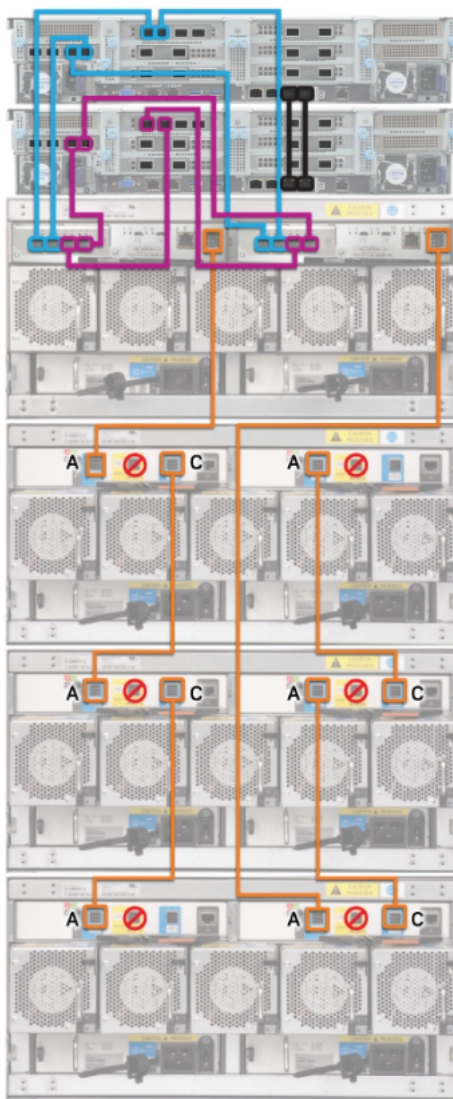
- 4 If you have one Expansion shelf, connect it to the Primary shelf .



- 5 If you have two Expansion shelves, connect them as shown.



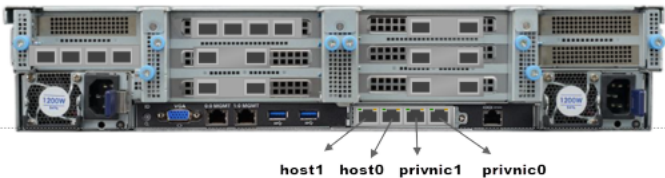
- 6 If you have three Expansion shelves connect them as shown.



- 7 Proceed to the following section to connect power cords to the hardware.
See [“Connecting the power cords”](#) on page 71.

Connecting Flex nodes to the network

Network ports on the rear panel of the compute node are shown in the following diagram.



The following table provides information about connecting the network ports on both Flex nodes.

Port	Function
host1 (mgmt0 bond) - copper/RJ45 connector	Best practices recommend that you use this port and the host0 port to access the Flex Appliance Console to perform the initial configuration. Labeled ETH0 on the node.
host0 (mgmt0 bond) - copper/RJ45 connector	Best practices recommend that you use this port and the host1 port to access the Flex Appliance Console to perform the initial configuration. Labeled ETH1 on the node.
privnic1 (eth2/NIC3) - copper/RJ45 connector	You must use this port <i>and</i> the privnic0 port to connect the nodes to each other. Labeled ETH2 on the node.
privnic0 (eth3/NIC4) - copper/RJ45 connector	You must use this port <i>and</i> the privnic1 port to connect the nodes to each other. Labeled ETH3 on the node.
IPMI port - copper/RJ45 connector	A 1-GbE port that is used to connect to the Cohesity Remote Management Interface.

The 25-10GbE ports come populated with the 10GbE optical modules. For more details, see the *5372 Appliance I/O configuration options* section in the *Cohesity 5372 Appliance Product Description Guide* on SORT.

Connecting the power cords

Note: Do **NOT** connect the compute node to the Power Distribution Unit in the rack. There are no external power switches for the compute node.

Connect all of the storage shelves to the Power Distribution Unit in the rack. Typically a rack has one PDU on each side at the rear of the hardware. Two PDU strips provide redundant power.

Note: Ensure that the position of the power switches is off before the power cables are plugged in.

To connect the power cords

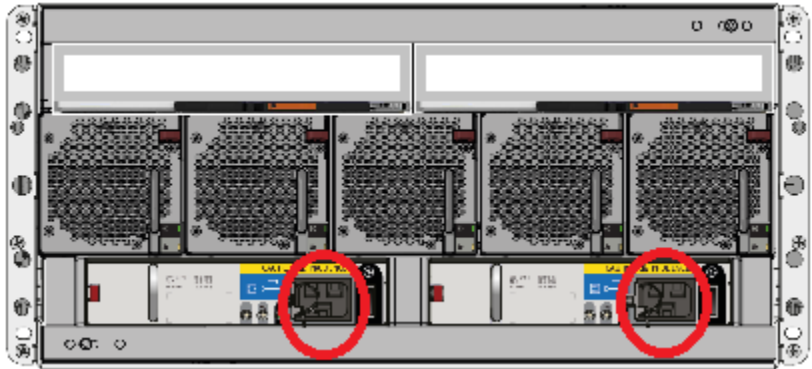
- 1 Obtain two power cords for each unit.
- 2 Note that the storage shelf cords have a right-angled connector on the end that connects to the shelf.



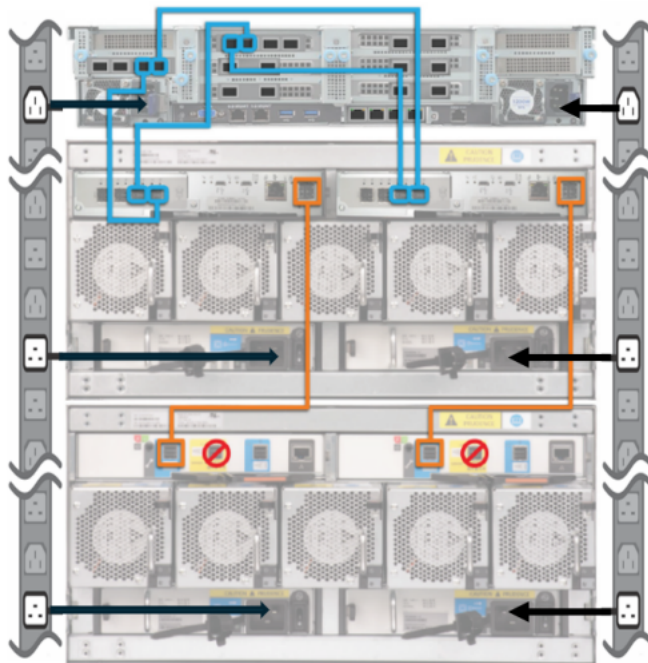
- 3 Connect the right-angled ends to the Expansion shelf. Connect the strain relief bale to each power cord.



- 4 Connect two power cords between the Expansion shelf and the PDU.



- 5 Rewrap the plastic ties to secure each power cord.
- 6 Connect two power cords between the Primary shelf and the PDU.
- 7 Connect two power cords between the compute node and the PDU.
- 8 Verify that the final power cord cabling is consistent with the following diagram.



Turning on the hardware and verifying operation

You must turn on the hardware in the following order:

- Expansion shelf

Note: If there are multiple expansion shelves, you are required to power on the last shelf in the chain first and work back toward the head unit.

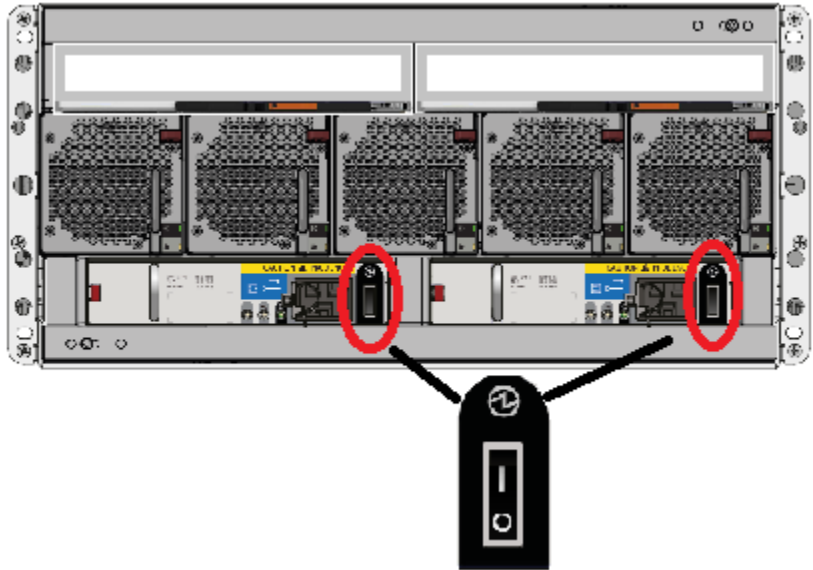
- Primary shelf
- Compute node or nodes

Note: The compute node automatically powers on when its cables are attached.

To turn on the hardware

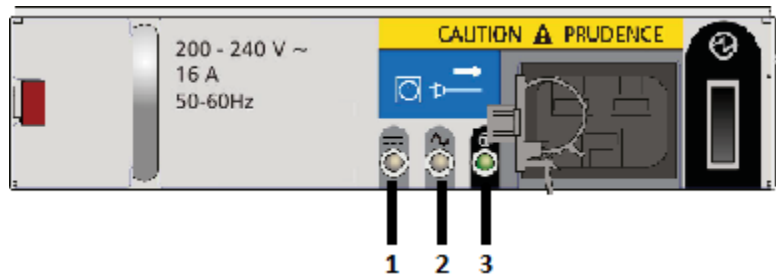
- 1 Verify that the following cables are connected properly and securely:
 - SAS cables between the Primary Shelf and the Expansion Shelf
 - SAS-3 cables between the compute nodes and the Primary Shelf

- Power cords from each component to the appropriate Power Distribution Unit (PDU) sockets in the rack.
- 2 On the rear panel of the Expansion shelf turn on both power supplies.



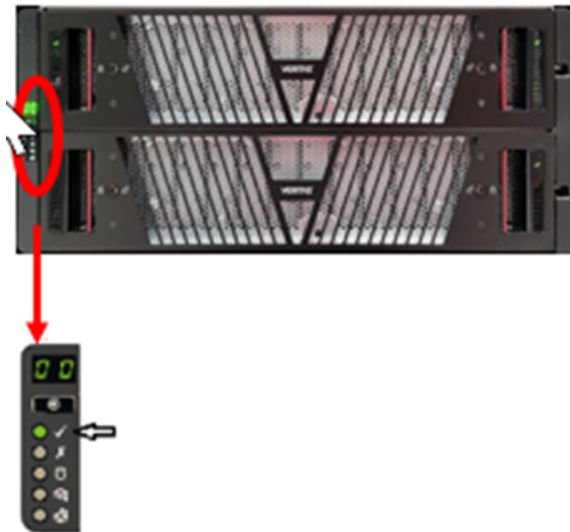
- 3 Wait 2 or 3 minutes for the shelf to initialize. The shelf is more quiet when it has initialized.

- 4 Verify that the Power OK LEDs on both power supplies are green.



Number	Description
1	Power supply failure
2	AC failure
3	Power ok

- 5 Verify that the Power on (standby) LED on the front, left, of the shelf is green.



- 6 Turn on the Primary Storage Shelf.
- Let the shelf initialize for 2 or 3 minutes.
 - Verify that the Power OK LEDs on the power supply modules are green.

- Verify that the Power On LED on the control panel on the front of the shelf is green.
- 7 Connect the compute node to the Power Distribution Unit in the rack. The compute node will automatically turn on when the cables are connected to the PDU.

Note: Follow this sequence to avoid unintended power-on behavior:

- Turn off all switches.
- Plug in all cables except the compute node cables.
- Turn on all switches.
- Plug in the compute node.

High availability (HA) appliance compute node and storage shelf service considerations

Attention: When you turn on the storage shelves and compute nodes after completing the service, turn on the primary compute node first before you turn on the secondary compute node.

Important: Check with the customer to determine which compute node is configured as the primary compute node, and which is configured as the secondary compute node. Do this before turning on the compute nodes and storage shelves.

Configuring the Cohesity Node Explorer from a Flex Appliance

NetBackup Flex Appliance release does not support configuring the IPMI port through the Flex Appliance Shell.

Note: If you have never changed the BIOS password before, the default password is the serial number of the node.

To configure the dedicated Cohesity Node Explorer (IPMI) LAN settings in the BIOS

- 1 Connect a standard video cable between the VGA (Video Graphics Array) port and the computer monitor
- 2 Connect a keyboard to a USB port at the rear of the Flex 5372 appliance.

- 3 Ensure that the power cords are connected.
- 4 Turn on the compute node or nodes with the power button on the control panel on the right front side of the unit or units.

High availability (HA) appliance compute node and storage shelf service considerations

Attention: When you turn on the storage shelves and compute nodes after completing the service, turn on the primary compute node first before you turn on the secondary compute node.

Important: Check to determine which compute node is configured as the primary compute node, and which is configured as the secondary compute node. Do this before turning on the compute nodes and storage shelves.

- 5 Verify that the LED under the button is green.

- 6 The prompt about accessing the BIOS at the beginning of the startup cycle appears. Wait until the Cohesity logo shows up and press **F2** to enter the initial BIOS setup screen. The initial setup dialog box appears and prompts you.

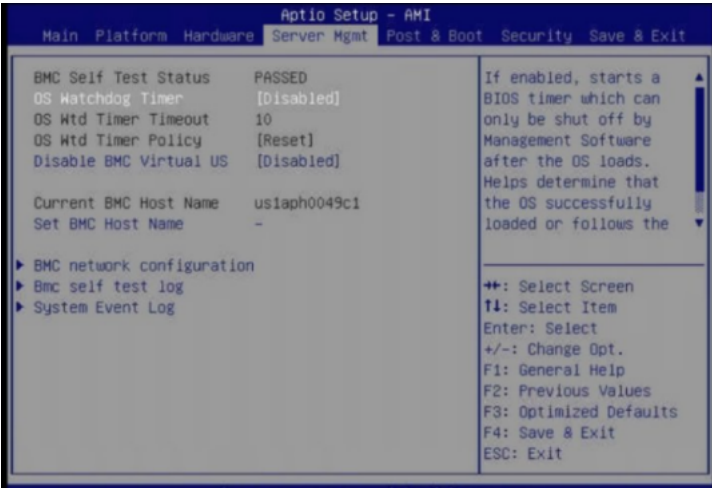


Warning: When you are in the BIOS, do not perform any other steps other than the ones mentioned in this section.

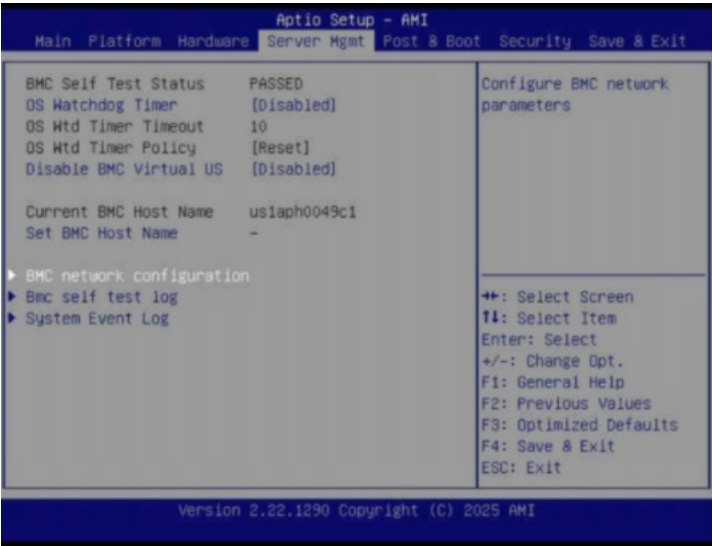
Note: If you miss the initial setup dialog box prompt in step 6, the appliance shell appears. Shut down and restart the appliance and try accessing the BIOS menu again.

The **Setup Menu** page appears and the **Main** menu option should be highlighted.

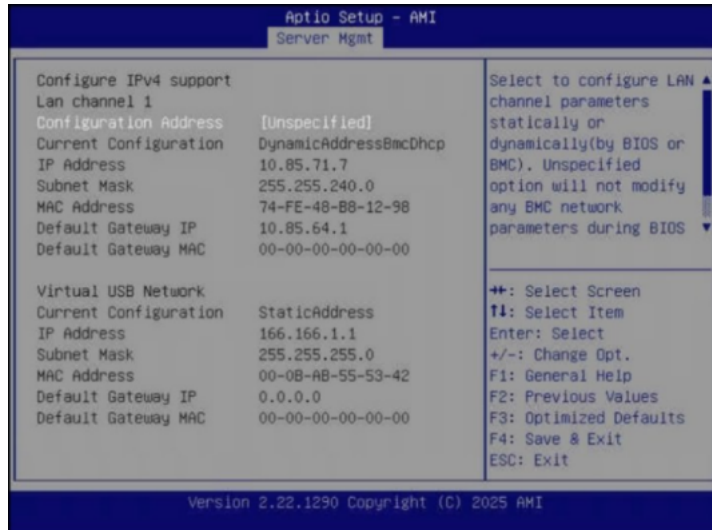
- 7
- Use the right arrow key on the keyboard and navigate to the **Server Management** menu option.



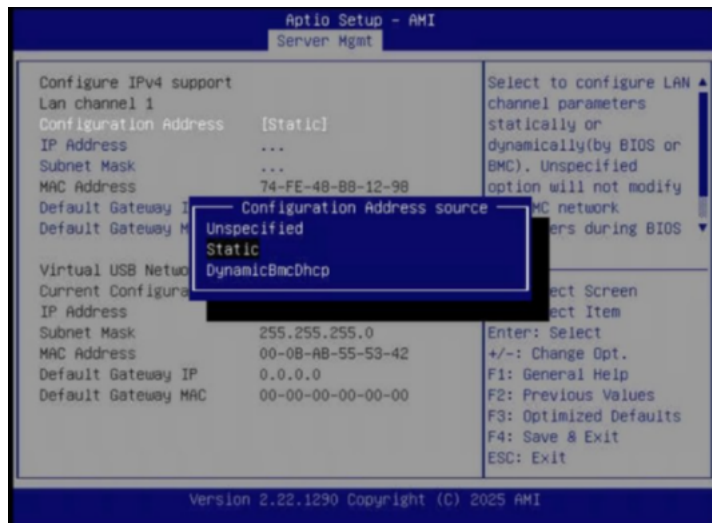
- 8
- Press the down arrow key on the keyboard to navigate to **BMC network configuration**. Press **Enter**.



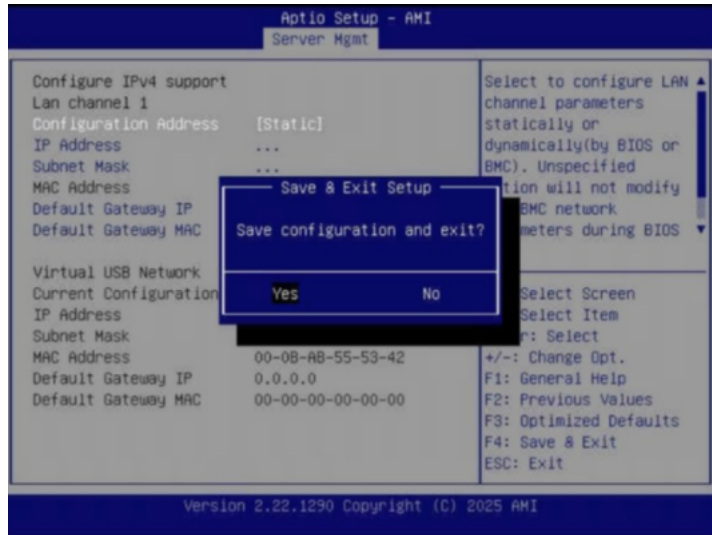
- 9 The **BMC network configuration** options screen appears.



- 10 Press the enter key on the keyboard to select the **LAN channel 1 configuration address**. Select your requirement. Static allows the information supplied by the customer to fill in the following fields: IP address, Subnet mask, Gateway IP.



- 11 To save your BIOS changes, press **F4**.



- 12 Select **Yes** and press **Enter** to save and exit. The appliance restarts itself.

Configuring the Cohesity Node Explorer using laptop

You can configure the dedicated Cohesity Node Explorer (IPMI) LAN settings using a laptop.

To configure the dedicated Cohesity Node Explorer (IPMI) LAN settings using a laptop

- 1 The IPMI interface of the appliance is pre-configured with the IP address 192.168.0.10 and netmask 255.255.255.0 in the factory.
- 2 To gain access to the Cohesity Node Explorer for initial configuration, directly connect a RJ45 ethernet cable between the IPMI port and the ethernet port of a laptop computer.
- 3 Configure the network interface of the laptop computer with a static IP address in the default network segment used by IPMI.

For example, use IP address 192.168.0.1 and netmask 255.255.255.0.

- 4 Ensure that the power cords to the appliance are connected.
- 5 Use the following steps to access the Cohesity Node Explorer:

- Open a supported web browser on a system that has a network connection to the appliance. The following browsers are supported:
 - Google Chrome version 94 or later recommended (minimum version 80 or later)
 - Mozilla Firefox version 93 or later recommended (minimum version 80 or later)
 - Enter the address <https://192.168.0.10> and confirm the certificate warning displayed.
 - Log in to the Cohesity Node Explorer with the following default credentials:
 - Username: sysadmin
 - Password: P@ssw0rd
 - Change the default IPv4 and/or IPv6 configuration as follows:
 - Navigate to **Network > LAN Channels > General Settings**.
 - On **LAN Channel**, select **Channel-1**.
 - In **IPv4 Configuration of Channel-1** area, select your desired IP source as **Static** or **Dynamic**.
 - If you selected **Static**, provide your IP Address, Subnet Mask, and Default Gateway.
 - Click **Save** to apply the new network configuration.
 - In **General Settings** area, provide your DNS primary and secondary name server. Click **Save** to apply the new network configuration.
- 6** Connect the IPMI port of the appliance to the network switch and re-establish access to the Cohesity Node Explorer using the static IP configured or dynamic IP obtained from DHCP.

Accessing and using the Cohesity Node Explorer

The IPMI web interface is known as Cohesity Node Explorer. You can use Cohesity Node Explorer to log on to the appliance shell.

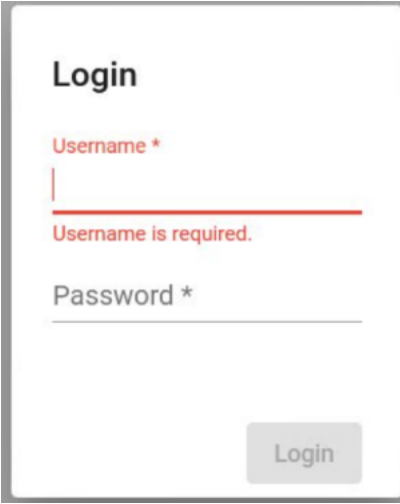
Before you use the Cohesity Node Explorer, the following prerequisites must be met:

- The remote management IPMI port must first be configured.
- At least one power cable must be connected to a functioning power source.
- At least one user must be enabled to use the LAN channel(s).

Note: A default user is configured in the system. The default user name is **sysadmin**. The default password is **P@ssw0rd**, where 0 is the number zero.

To access and use the Cohesity Node Explorer from a remote computer

- 1 Log on to a remote computer in the network and open a supported Windows browser.
- 2 Enter the remote management (IPMI) port IP address (https://) that is assigned to the remote management port. The following page appears:



- 3 Enter your login credentials. The default user name is **sysadmin**. The default password is **P@ssw0rd**, where **0** is the number zero.

Click **Login**.

- 4 The **Remote Control** section located at the left of the page provides selections to remotely monitor and control the server.

To launch the Flex Appliance Shell, click **Launch iKVM** to launch the Appliance shell. A new window opens that enables you to remotely monitor and control the appliance.

Note: Warnings and notices appear the first time the connection is made. Follow the directions to complete the connection. If warnings and notices do not resolve, try clearing cookies and site data to refresh the web information.

- 5 You can now access and log on to the Flex Appliance Shell.

By default, the user name `hostadmin` has the password, `P@ssw0rd` where 0 is the number zero.

Type "?" and then enter the "system" command to actually see the list of available commands.

Adding Expansion Storage Shelves to an operating appliance that does not have any Expansion shelves

This appendix includes the following topics:

- [Overview](#)
- [Preparing the appliance](#)
- [Installing the Expansion Storage Kit components](#)
- [Installation instructions](#)
- [Connecting one Expansion Shelf to the Primary Shelf](#)
- [Connecting two Expansion Shelves to the Primary Shelf](#)
- [Connecting three Expansion Shelves to the Primary Shelf](#)

Overview

This appendix applies to an operating appliance that has one or two compute nodes and a Primary Storage Shelf. It is possible to already have one or more Expansion Storage Shelves, up to three units.

The procedures in this appendix explain the tasks which are required to be performed to add one or more storage shelf.

The 5372 Expansion Storage Kit contains the following required hardware components:

- Eight, 32Gb, Dual in-line memory modules (DIMMs)

The procedures in this appendix explain the tasks which are required to be performed to add one or more storage shelf.

These tasks must be performed in the order that is provided.

- Preparing the appliance
See [“Preparing the appliance”](#) on page 87.
- Removing the appliance cover
- Installing the Expansion Storage Kit components into the appliance
See [“Installing the Expansion Storage Kit components”](#) on page 89.
- Replacing the appliance cover
- Installing the storage shelves
See [“Installing a storage shelf”](#) on page 30.
- Installing the appliance into the rack
See [“Installing the compute node into the rack”](#) on page 55.
- Understanding appliance and storage shelf connections
- Connecting the compute node to the storage shelves
See [“Connecting the hardware to one compute node”](#) on page 56.
- Connecting the Flex nodes to the network
See [“Connecting Flex nodes to the network”](#) on page 71.
- Connecting the power cords
See [“Connecting the power cords”](#) on page 71.
- Turning on the appliance and verifying operation
See [“Turning on the hardware and verifying operation”](#) on page 74.

Preparing the appliance

Best practices recommend removing the appliance from the rack to access the inside of the chassis. Alternatively you can either pull out the appliance on its rails. Be sure that the appliance and rack are stable.

Turn off the appliance properly and disconnect it from AC power sources. A soft shutdown informs the appliance operating system to stop and close all active

processes. After the operating system stops all of the processes, the appliance turns itself off.

Warning: Never turn off the appliance by using the power button on the control panel. Using the power button to turn off the appliance can cause data loss or corruption.

To perform a soft shutdown of the appliance

- 1** Log on to the Flex Appliance Shell Menu.
- 2** Enter `system shutdown`.
- 3** Verify that the appliance is completely turned off. All LEDs are off. Fans are not running.
- 4** Remove the power cords that connect the appliance to the rack Power Distribution Units (PDUs).

The following procedure explains the process of removing the appliance from the rack.

To remove the appliance from the rack

- 1** Verify that the appliance is off and that the power cords have been disconnected from the power sources.
- 2** Remove the front bezel of the appliance.
- 3** Locate and unscrew the two screws behind the flap on the front panel that secure the appliance to the rack.
- 4** Slide the chassis fully forward out of the rack until the rail guides lock.
- 5** With the rails fully extended and locked, locate the blue tabs at the front of the rail assemblies.
- 6** With a person on each side, place a hand underneath the unit.
- 7** Pull the silver tabs back to release the front studs in the chassis rails.
- 8** Lift the front end to release the front studs from the cutouts in the guide rails.
- 9** Place your free hands under the back of the chassis for support.
- 10** Pull the appliance straight out of the rack.
- 11** Lift the appliance and place it on a secure surface.

Installing the Expansion Storage Kit components

This section explains the process of installing the components of the Expansion Storage Kit into the appliance.

The expansion storage kit contains eight, 32Gb, Dual in-line memory modules (DIMMs)

Caution: Cohesity service personnel must perform all tasks that involve the inside of the appliance chassis.

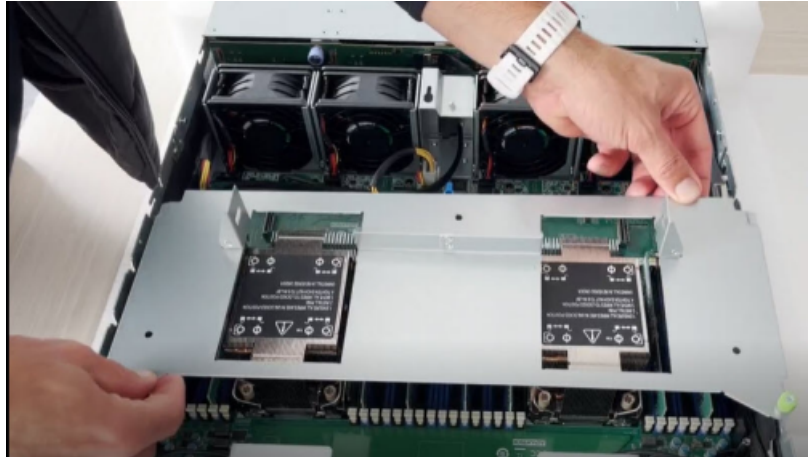
To replace the DIMMs

- 1 Put on a grounded ESD-compliant wrist strap or take other ESD-preventive measures.

Note: The static discharged by human bodies can damage static-sensitive components on the boards. When installing and maintaining the equipment, you must observe appropriate electrostatic safety precautions to prevent personnel injuries or device damage.

- 2 Remove the plastic air duct connecting the fans to the metal air shroud covering the DIMM slots:
 - Disengage the plastic tabs on either side of the plastic air duct.
 - Gently lift the 2 piece plastic air duct straight up and remove it from the system.

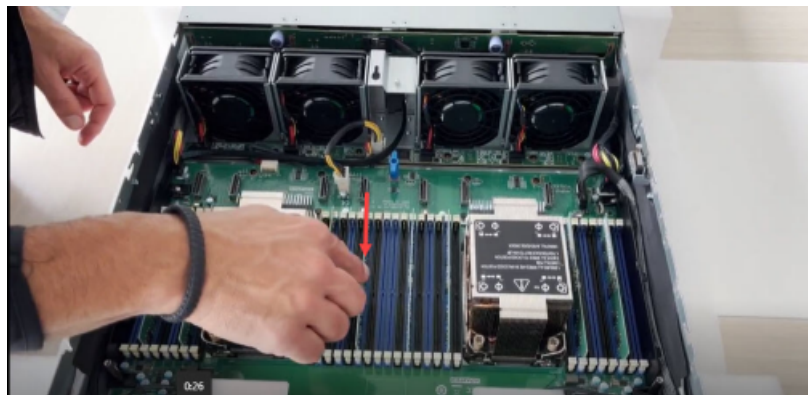
- 3 Remove the metal air shroud covering the DIMM slots by unscrewing the two screws and gently lift it straight up from the system.



- 4
- Locate the DIMM slots next to the CPUs on the server board. The DIMMs on the appliance server board are located near the CPUs.

Each DIMM slot has a silkscreen identifier on the board that consists of a two-digit alphanumeric number. The number indicates the channel and slot for which the DIMM provides support. Slot identifiers have the format A1, A2, B1, B2, C1, C2, etc., where the letter indicates the channel and the number indicates the slot. Look for the identifier on the mainboard near the socket.

The following diagram shows the configuration of the DIMM sockets as viewed from the front of the appliance. The fans are located between the DIMMs and the front of the appliance.

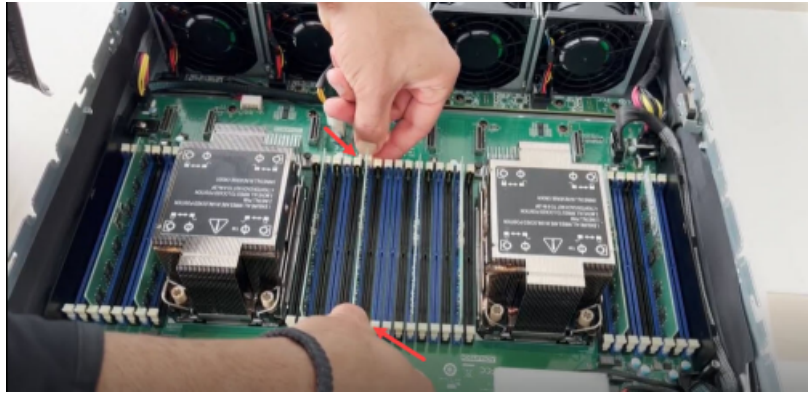


The following table shows the configuration of the DIMMs.

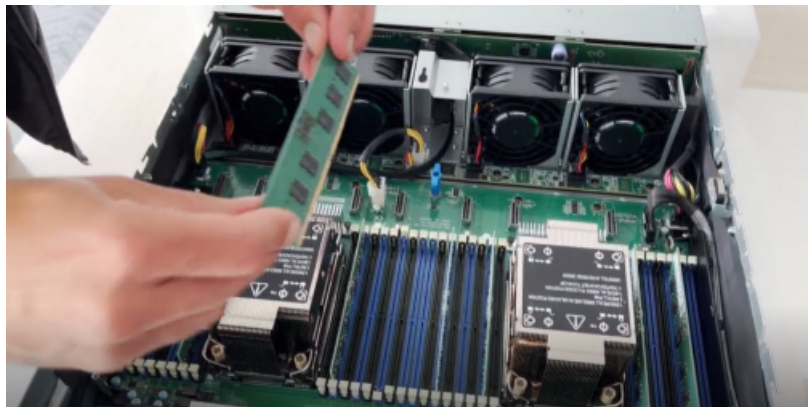
	CPU0												CPU1											
	DIMM Capacity (GB) Per DIMM												DIMM Capacity (GB) Per DIMM											
DIMM slots as viewed from front of appliance	H1	H2	G1	G2	F1	F2	E1	E2	CPU 0				A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2
5372 ± 1000TB	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
5372 ± 1000TB	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
																								Total Memory (GB)
																								1536

- 5
- Locate the DIMM chip or DIMM chips that you want to remove.

- 6 Open the retaining clips at each end of the socket.



- 7 Hold the DIMM by the edges and lift it from the socket.



Caution: Always hold the edges of the DIMM. Do not touch the front or the back of the DIMMs.

- 8 Place the DIMM in an ESD-protective bag.

Caution: If you must place more than one DIMM in an ESD-protective bag, be sure that the edge connectors do not touch.

- 9 Repeat these steps for each DIMM that you need to remove.

10 Install the replacement DIMM as follows:

- Make sure that the retaining clips on the socket in which you want to install the DIMM are open.
- Locate the gap in the connector edge of the DIMM as shown in the image below.
- Locate the key in the DIMM socket, and orient the DIMM over the socket so that the notch in the bottom edge of the card and the key in the socket align.

Caution: Always hold the edges of the DIMM. Do not touch the front or the back of the DIMM chips. Do not touch the front or the back of the DIMM chips.

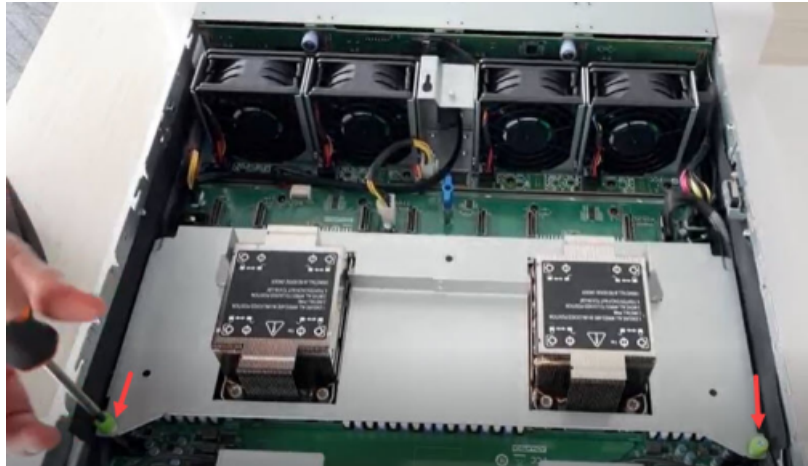
- Align the edges of the DIMM memory module with the grooves in the posts at both ends of the socket.
- Insert the DIMM memory module in the socket grooves and push down evenly and firmly until the retaining clips snap into place. Make sure that the memory module is firmly in place.

11 Repeat step for each DIMM that you need to replace.

12 Check each DIMM to make sure that it is seated in the slot properly.

13 Replace the metal air shroud and plastic air duct as follows:

- Ensure that all cables are clear of the air shroud and air duct keep out area on the base of the chassis.
- Align the two retaining screws on the metal air shroud.
- Lower the air metal air shroud into the chassis and screw in retaining screws.
- Align the plastic air duct.
- Lower the plastic air duct into the chassis ensuring the plastic retaining tabs are re-engaged.



Installation instructions

The procedures for installing an Expansion shelf and inserting the disk drive carriers are the same as for a Primary shelf.

Note: The EBOD that is being added should not have any existing DG configurations. All drives must be in AVAILABLE state.

Refer to the following sections for details.

See [“Dimensions and determining rack locations”](#) on page 23.

See [“Installing a storage shelf”](#) on page 30.

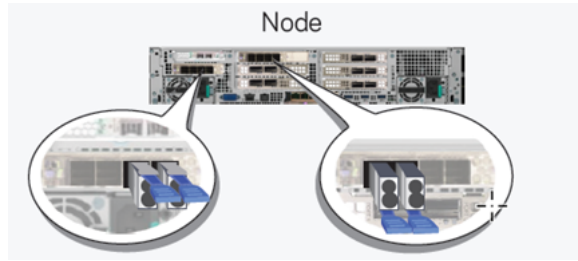
See [“Installing disk drives and blanks into a half-capacity storage shelf”](#) on page 43.

See [“Installing disk drives into a full-capacity storage shelf”](#) on page 40.

Connecting one Expansion Shelf to the Primary Shelf

The Expansion Shelf connects to the Primary Shelf but it does not connect directly to the compute node.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



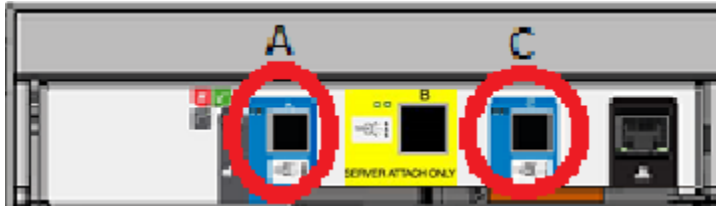
To connect one Expansion Shelf to the Primary Shelf

- 1 **Verify that the nodes and existing RBOD storage shelf are powered on. The nodes and storage shelf must remain powered on throughout the expansion process.**
Do not remove the cables between the compute nodes and the Primary Shelf.
- 2 Connect the newly added EBOD (s) power cords as described in this section.
See [“Connecting the power cords”](#) on page 71.
- 3 Power on the newly added EBOD(s).
See [“Turning on the hardware and verifying operation”](#) on page 74.
- 4 The 5U84 EBOD spins up drives in a staggered manner. Allow a minimum wait time of 5 minutes for all 84 drives to become operational.

- 5 Obtain the two SAS-3 cables that ship with the Expansion Shelf.
- 6 Identify the single SAS-3 port on the right side of each controller module in the Primary Shelf.

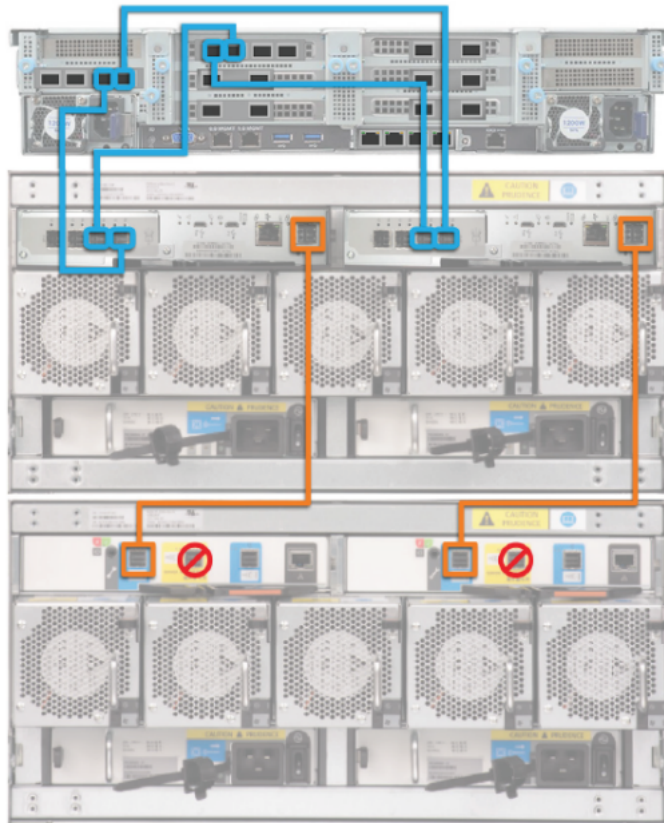


- 7 Identify ports A and C in each I/O module in the Expansion Shelf. Port B is not available for use.



- 8 Connect the cables as follows:
 - Connect one cable to each of the SAS-3 ports on the right of each controller module on the Primary Shelf.
 - Connect the other end of each cable to port A in each I/O module in the Expansion Shelf.

- 9 Verify the final cable configuration.



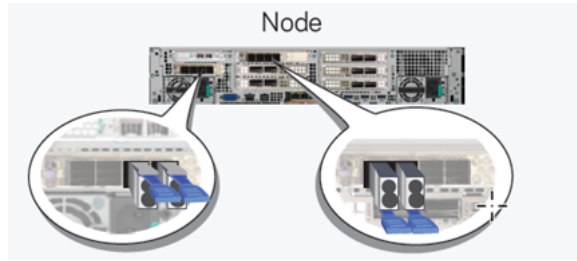
- 10 Add the new disk space with the instructions in one of these sections.

See [“Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console”](#) on page 118.

Connecting two Expansion Shelves to the Primary Shelf

Both Expansion Shelves connect to the Primary Shelf but not directly to the compute node.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



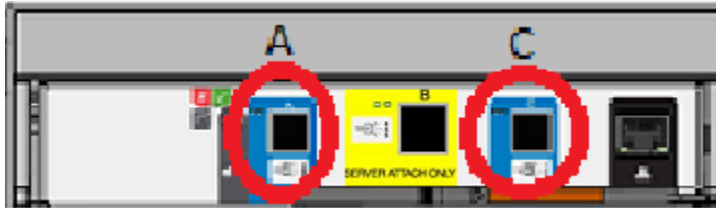
To connect two Expansion Shelves to the Primary Shelf

- 1** Verify that the nodes and existing RBOD storage shelf are powered on. The nodes and storage shelf must remain powered on throughout the expansion process.
 Do not remove the cables between the compute nodes and the Primary Shelf.
- 2** Connect the newly added EBOD (s) power cords as described in this section.
 See [“Connecting the power cords”](#) on page 71.
- 3** Power on the newly added EBOD(s).
 See [“Turning on the hardware and verifying operation”](#) on page 74.
- 4** The 5U84 EBOD spins up drives in a staggered manner. Allow a minimum wait time of 5 minutes for all 84 drives to become operational.

- 5 Obtain the two SAS-3 cables that ship with each Expansion Shelf.
- 6 Identify the single SAS-3 port on the right side of each controller module in the Primary Shelf.

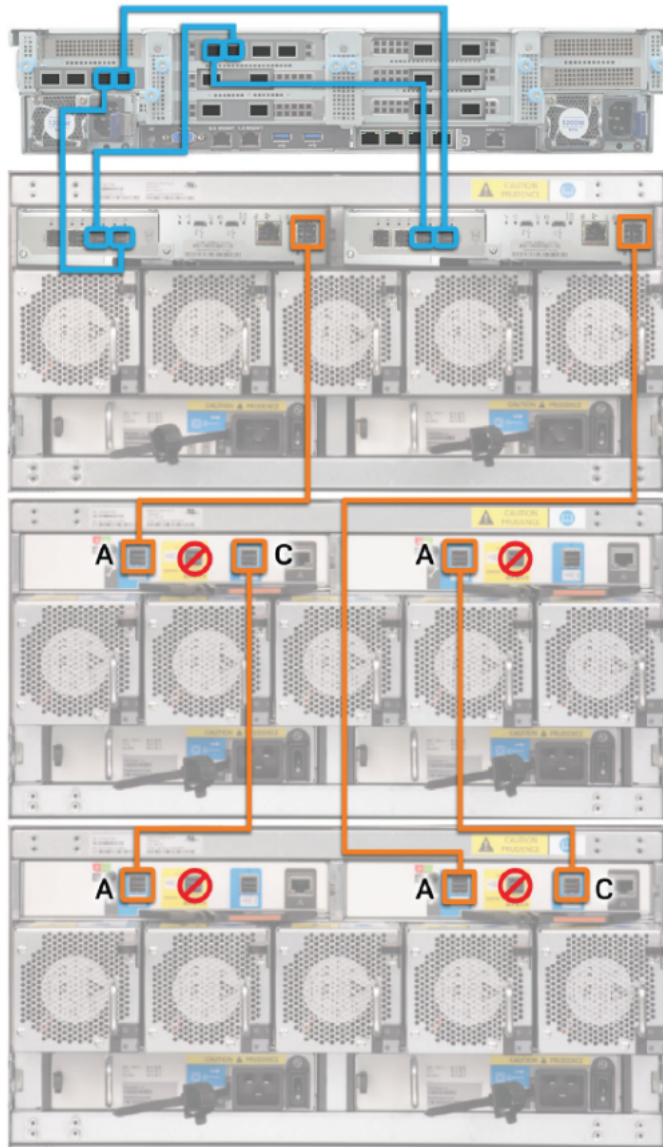


- 7 Identify ports A and C in each I/O module in the Expansion Shelf. Port B is not available for use.



- 8 Connect the cables as follows:
 - Connect one cable to each SAS-3 port on the right side of each controller module on the Primary Shelf (RBOD controller expansion ports).
 - Connect the left cable from the Primary Shelf to port A on the left I/O module of the closest Expansion Shelf (first Expansion Shelf).
 - Connect one end of a new cable to port C on the left I/O module of the first Expansion Shelf.
 - Connect the other end of this cable to port A on the left I/O module of the second Expansion Shelf.
 - Connect the right cable from the Primary Shelf to port A on the right I/O module of the farthest Expansion Shelf.
 - Connect one end of a new cable to port C on the right I/O module of the second Expansion Shelf.
 - Connect the other end of this cable to port A on the right I/O module of the first Expansion Shelf.

- 9 Verify the final cable configuration.

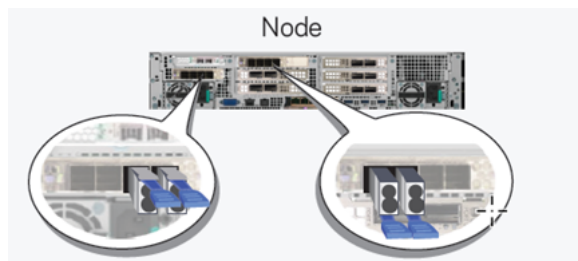


- 10 Add the new disk space with the instructions in one of these sections.
See [“Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console”](#) on page 118.

Connecting three Expansion Shelves to the Primary Shelf

Two of the three Expansion Shelves connect to the Primary Shelf but not directly to the compute node.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



To connect three Expansion Shelves

- 1 Verify that the nodes and existing RBOD storage shelf are powered on. The nodes and storage shelf must remain powered on throughout the expansion process.**

Do not remove the cables between the compute nodes and the Primary Shelf.

- 2** Connect the newly added EBOD (s) power cords as described in this section.
See [“Connecting the power cords”](#) on page 71.

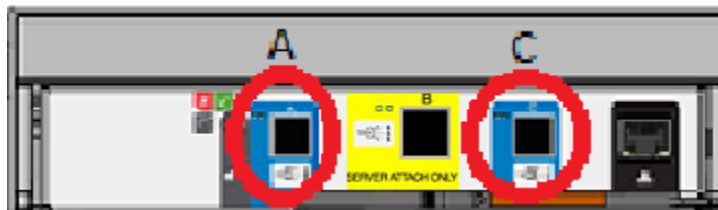
- 3** Power on the newly added EBOD(s).

See [“Turning on the hardware and verifying operation”](#) on page 74.

- 4** The 5U84 EBOD spins up drives in a staggered manner. Allow a minimum wait time of 5 minutes for all 84 drives to become operational.
- 5** Obtain the two SAS-3 cables that ship with each Expansion Shelf.
- 6** Identify the single SAS-3 port on the right side of each controller module in the Primary Shelf.



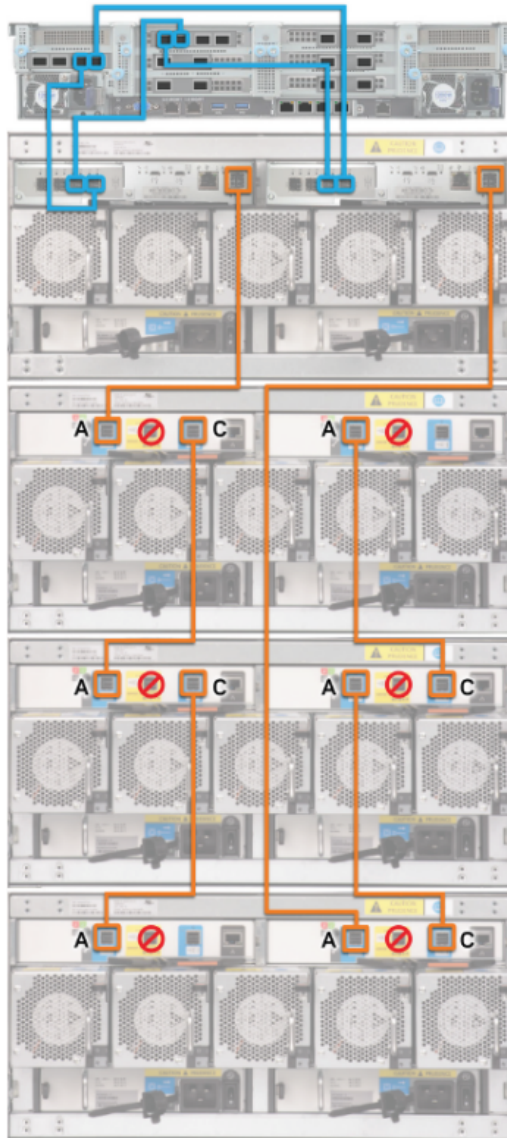
- 7** Identify ports A and C in each I/O module in the Expansion Shelf. Port B is not available for use.



- 8** Connect the cables as follows:
 - Connect one cable to each SAS-3 port on the right side of each controller module on the Primary Shelf (RBOD controller expansion ports).
 - Connect the left cable from the Primary Shelf to port A on the left I/O module of the closest Expansion Shelf (first Expansion Shelf).

- Connect one end of another cable to port C on the left I/O module of the first Expansion Shelf.
- Connect the other end of this cable to port A on the left I/O module of the second Expansion Shelf.
- Connect one end of another cable to port C on the left I/O module of the second Expansion Shelf.
- Connect the other end of this cable to port A on the left I/O module of the third Expansion Shelf.
- Connect the right cable from the Primary Shelf to port A on the right I/O module of the farthest Expansion Shelf (third Expansion Shelf).
- Connect one end of another cable to port C on the right I/O module of the third Expansion Shelf.
- Connect the other end of the cable to port A on the right I/O module of the second Expansion Shelf.
- Connect one end of another cable to port C on the right I/O module of the second Expansion Shelf.
- Connect the other end of this cable to port A on the right I/O module of the first Expansion Shelf.

- 9** Verify the final cable configuration.



- 10** Add the new disk space with the instructions in one of these sections.
See [“Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console”](#) on page 118.

Adding Expansion Storage Shelves to an operating appliance that has at least one operating Expansion shelf

This appendix includes the following topics:

- [Overview](#)
- [Installation instructions](#)
- [Connecting one Expansion Shelf to a system that has one existing Expansion Shelf](#)
- [Connecting two Expansion Shelves to a system that has one existing Expansion Shelf](#)
- [Connecting one Expansion Shelf to a system that has two existing Expansion Shelves](#)

Overview

This appendix applies to an operating appliance that has one or two compute nodes and a Primary Storage Shelf.

It is possible to already have one or more Expansion Storage Shelves, up to three units.

Installation instructions

The procedures for installing an Expansion shelf and inserting the disk drive carriers are the same as for a Primary shelf. Refer to the following sections for details.

Note: The EBOD that is being added should not have any existing DG configurations. All drives must be in AVAILABLE state.

See [“Dimensions and determining rack locations”](#) on page 23.

See [“Installing a storage shelf”](#) on page 30.

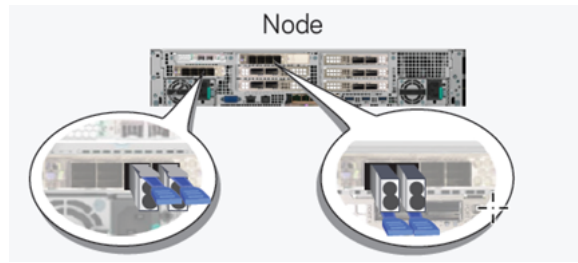
See [“Installing disk drives and blanks into a half-capacity storage shelf”](#) on page 43.

See [“Installing disk drives into a full-capacity storage shelf”](#) on page 40.

Connecting one Expansion Shelf to a system that has one existing Expansion Shelf

Expansion Shelves connect to the Primary Shelf and to other Expansion Shelves but they do not connect directly to the compute node.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



To connect a new Expansion Shelf to a Primary Shelf and an existing Expansion Shelf

- 1 **Verify that the nodes and existing RBOD/EBOD storage shelves are powered on. The nodes and storage shelves must remain powered on throughout the expansion process.**

Do not remove the cables between the compute nodes and the Primary Shelf.

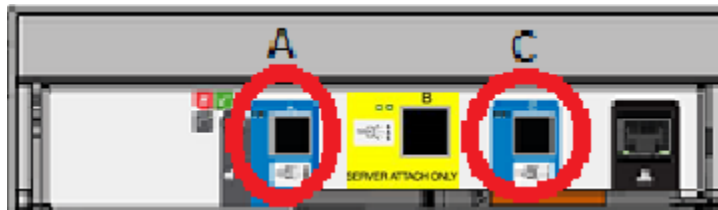
Ensure that you follow the cabling steps exactly in the order presented. It is important that both redundant paths are not disconnected at the same time between the existing shelves.

- 2 **Connect the newly added EBOD (s) power cords as described in this section.**
See [“Connecting the power cords”](#) on page 71.

- 3 Power on the newly added EBOD(s).
See [“Turning on the hardware and verifying operation”](#) on page 74.
- 4 The 5U84 EBOD spins up drives in a staggered manner. Allow a minimum wait time of 5 minutes for all 84 drives to become operational.
- 5 Obtain the two SAS-3 cables that ship with each Expansion Shelf.
- 6 Identify the single SAS-3 port on the right side of each controller module in the Primary Shelf.

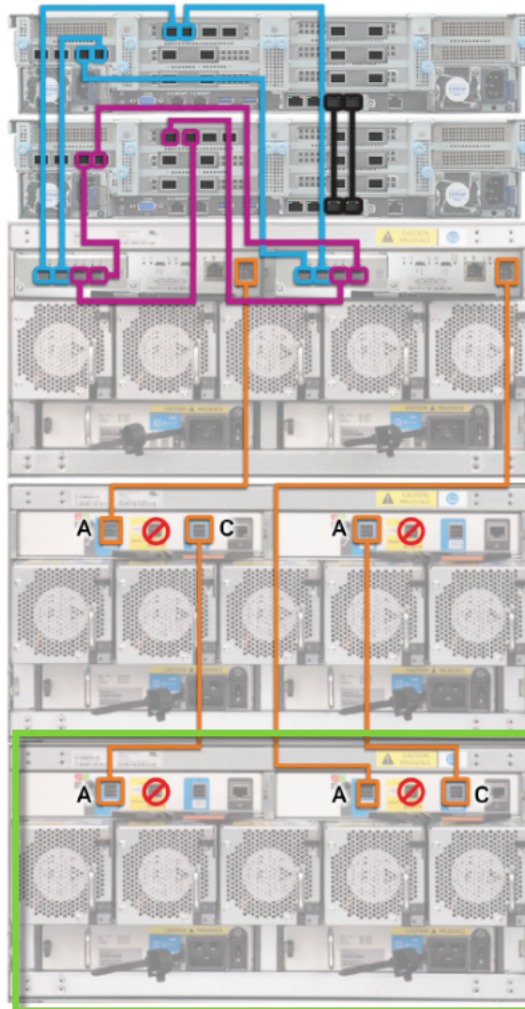


- 7 Identify ports A and C in each I/O module in the Expansion Shelf. Port B is not available for use.



- 8 Connect the cables as follows:
 - Connect one end of a new SAS-3 cable to port C on the left I/O module of the existing shelf (first Expansion Shelf).
 - Connect the other end of this cable to port A on the left I/O module of the new shelf (second Expansion Shelf).
 - On the existing Expansion Shelf, disconnect the SAS-3 cable from port A on the right I/O module.
 - Connect the disconnected SAS-3 cable to port A on the right I/O module of the new shelf (second Expansion Shelf).
 - Connect one end of a new SAS-3 cable to port C on the right I/O module of the new shelf (second Expansion Shelf).
 - Connect the other end of this cable to port A on the right I/O module of the existing shelf (first Expansion Shelf).

- 9 Verify the final cable configuration.

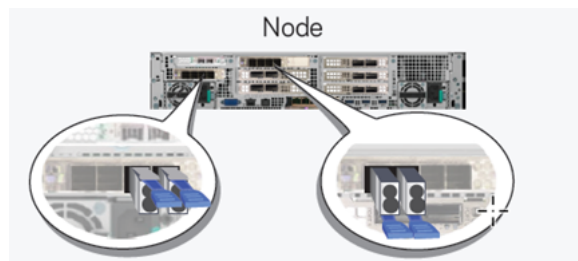


- 10 Add the new disk space with the instructions in one of these sections.
- See [“Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console”](#) on page 118.

Connecting two Expansion Shelves to a system that has one existing Expansion Shelf

Expansion Shelves connect to the Primary Shelf and to other Expansion Shelves but they do not connect directly to the compute node.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



To connect two new Expansion Shelves to a Primary Shelf and an existing Expansion Shelf

- 1 **Verify that the nodes and existing RBOD/EBOD storage shelves are powered on. The nodes and storage shelves must remain powered on throughout the expansion process.**

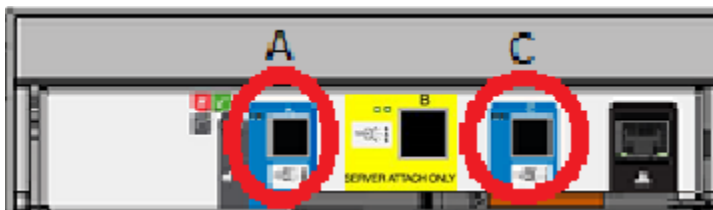
Do not remove the cables between the compute nodes and the Primary Shelf.

Ensure that you follow the cabling steps exactly in the order presented. It is important that both redundant paths are not disconnected at the same time between the existing shelves.

- 2 Connect the newly added EBOD (s) power cords as described in this section.
See [“Connecting the power cords”](#) on page 71.
- 3 Power on the newly added EBOD(s).
See [“Turning on the hardware and verifying operation”](#) on page 74.
- 4 The 5U84 EBOD spins up drives in a staggered manner. Allow a minimum wait time of 5 minutes for all 84 drives to become operational.
- 5 Obtain the two SAS-3 cables that ship with each Expansion Shelf.
- 6 Identify the single SAS-3 port on the right side of each controller module in the Primary Shelf.



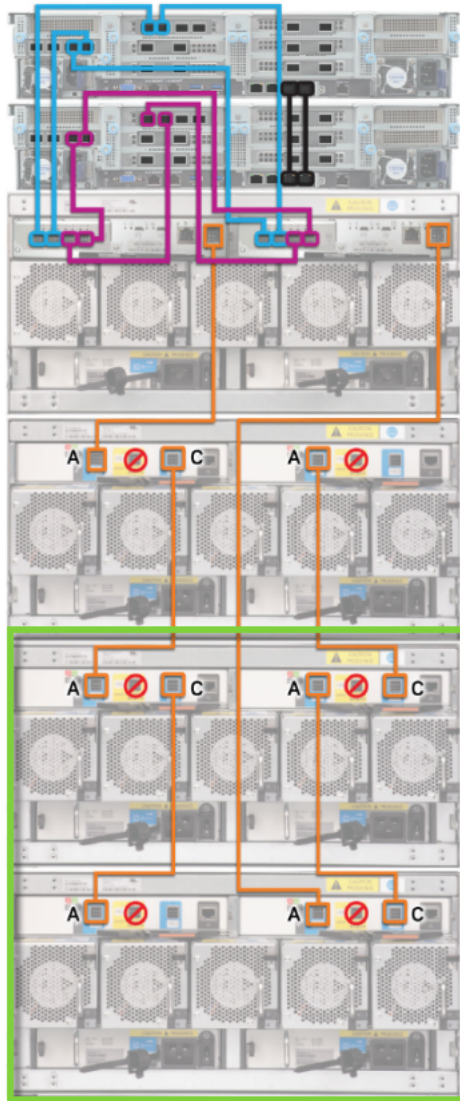
- 7 Identify ports A and C in each I/O module in the Expansion Shelf. Port B is not available for use.



- 8 Connect the cables as follows:

- Connect one end of a new SAS-3 cable to port C on the left I/O module of the existing shelf (first Expansion Shelf).
- Connect the other end of this cable to port A on the left I/O module of the second Expansion Shelf.
- Connect one end of a new SAS-3 cable to port C on the left I/O module of the second Expansion Shelf .
- Connect the other end of the cable to port A on the left I/O module on the third Expansion Shelf.
- On the existing Expansion Shelf, disconnect the SAS-3 cable from port A on the right I/O module.
- Connect this SAS-3 cable to port A on the right I/O module of the third Expansion Shelf.
- Connect one end of a new SAS-3 cable to port C on the right I/O module of the third Expansion Shelf.
- Connect the other end of this cable to port A on the right I/O module of the second Expansion Shelf.
- Connect one end of another SAS-3 cable to port C on the right I/O module of the second Expansion Shelf.
- Connect the other end of this cable to port A on the right I/O module of the first Expansion Shelf.

- 9 Verify the cabling configuration.



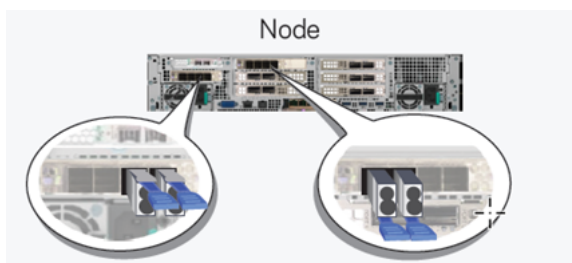
- 10 Add the new disk space with the instructions in one of these sections.

See [“Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console”](#) on page 118.

Connecting one Expansion Shelf to a system that has two existing Expansion Shelves

Expansion Shelves connect to the Primary Shelf and to other Expansion Shelves but they do not connect directly to the compute node.

Note: The orientation of the blue tabs on the ends of the SAS-3 cables is important. In the appliance, the blue tabs on each SAS-3 connector must face as shown in the diagram.



In the storage shelves, the blue tabs in the SAS-3 connectors should point to the 12 Gb/s SAS label near each port.



To connect a new Expansion Shelf to a Primary Shelf and to two existing Expansion Shelves

- 1 Verify that the nodes and existing RBOD/EBOD storage shelves are powered on. The nodes and storage shelves must remain powered on throughout the expansion process.**

Do not remove the cables between the compute nodes and the Primary Shelf.

Ensure that you follow the cabling steps exactly in the order presented. It is important that both redundant paths are not disconnected at the same time between the existing shelves.

- 2 Connect the newly added EBOD (s) power cords as described in this section.**
See [“Connecting the power cords”](#) on page 71.

- 3 Power on the newly added EBOD(s).**
See [“Turning on the hardware and verifying operation”](#) on page 74.

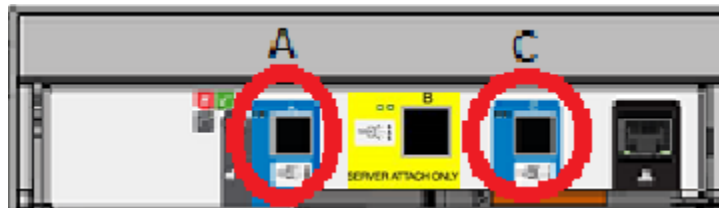
- 4 The 5U84 EBOD spins up drives in a staggered manner. Allow a minimum wait time of 5 minutes for all 84 drives to become operational.**

- 5 Obtain the two SAS-3 cables that ship with each Expansion Shelf.**

- 6 Identify the single SAS-3 port on the right side of each controller module in the Primary Shelf.**



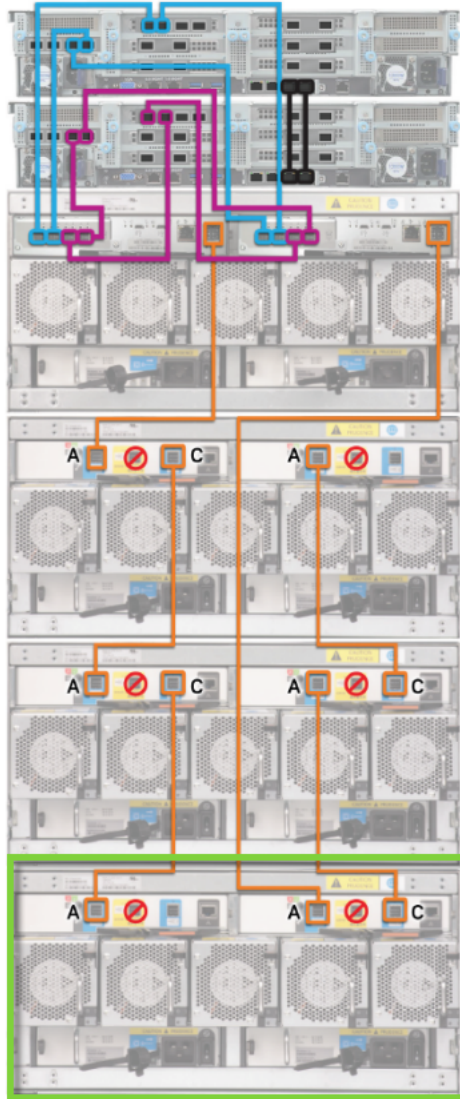
- 7 Identify ports A and C in each I/O module in the Expansion Shelf. Port B is not available for use.**



- 8 Connect the cables as follows:**

- Connect one end of a new SAS-3 cable to port C on the left I/O module of the second Expansion Shelf.
- Connect the other end of this cable to port A on the left I/O module of the third Expansion Shelf.
- On the second Expansion Shelf, disconnect the SAS-3 cable from port A on the right I/O module.
- Connect this SAS-3 cable to port A on the right I/O module of the third Expansion Shelf.
- Connect one end of a new SAS-3 cable to port C on the right I/O module of the third Expansion Shelf.
- Connect the other end of this cable to port A on the right I/O module of the second Expansion Shelf.

- 9 Verify the cabling configuration.



- 10 Add the new disk space with the instructions in one of these sections.

See [“Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console”](#) on page 118.

Configuring the disk space for new Flex Expansion Storage Shelves

This appendix includes the following topics:

- [Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console](#)

Adding the disk space of an Expansion Storage Shelf from the Flex Appliance Console

Follow the steps in this section to add storage disk space to an appliance after physically adding one or more Expansion Shelves.

Note: When you configure additional disk space, any current backup operations are stopped until the process is complete. Cohesity recommends that you do not start any backup operations before starting this procedure.

To configure additional disk space

- 1 Turn on the new shelf or shelves.
- 2 Turn on the appliance node.
See [“Turning on the hardware and verifying operation”](#) on page 74.
- 3 Sign in to the Flex Appliance Console.
- 4 Go to the **System topology** page.

- 5** Click on **Add storage**.
- 6** A confirmation window appears. Click **Yes**.
You can monitor the progress from the Activity Monitor.

Note: In a multi-node appliance, two tasks are shown in the Activity Monitor.

A task to add new storage displays for the first node, and a task to scan new storage displays for the second node. The task for the second node runs after the first node's tasks are complete.

If you want to resize instances, refer to the *Resizing instance storage* section in the *Flex Appliance Getting Started and Administration Guide*.