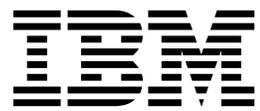


IBM Storwize V3700

Quick Installation Guide



Note

Before using this information and the product it supports, read the following information:

- The general information in “Notices” on page 69
- The information in the “Safety and environmental notices” on page ix
- The information in the *IBM Environmental Notices and User Guide* (provided on a DVD)

This edition applies to IBM Storwize V3700 and is valid until replaced by new editions.

This edition replaces GC27-4219-06.

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Safety and environmental notices

Review the safety notices, environmental notices, and electronic emission notices for IBM® Storwize® V3700 before you install and use the product.

Suitability for telecommunication environment: This product is not intended to connect directly or indirectly by any means whatsoever to interfaces of public telecommunications networks.

Here are examples of a caution and a danger notice:

CAUTION:

A caution notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury. (C001)

DANGER

<p>A danger notice indicates the presence of a hazard that has the potential of causing death or serious personal injury. (D002)</p>

To find the translated text for a caution or danger notice:

1. Look for the identification number at the end of each caution notice or each danger notice. In the preceding examples, the numbers (C001) and (D002) are the identification numbers.
2. Locate the *IBM Systems Safety Notices* with the user publications that were provided with the Storwize V3700 hardware.
3. Find the matching identification number in the *IBM Systems Safety Notices*. Then review the topics concerning the safety notices to ensure that you are in compliance.
4. Optionally, read the multilingual safety instructions on the Storwize V3700 website. Go to www.ibm.com/storage/support/storwize/v3700, search for Storwize V3700, and click the documentation link.

Safety notices and labels

Review the safety notices and safety information labels before using this product.

To view a PDF file, you need Adobe Acrobat Reader. You can download it at no charge from the Adobe website:

www.adobe.com/support/downloads/main.html

IBM Systems Safety Notices

This publication contains the safety notices for the IBM Systems products in English and other languages. Anyone who plans, installs, operates, or services the system must be familiar with and understand the safety notices. Read the related safety notices before you begin work.

Note: The *IBM System Safety Notices* document is organized into two sections. The danger and caution notices without labels are organized alphabetically by language

in the “Danger and caution notices by language” section. The danger and caution notices that are accompanied with a label are organized by label reference number in the “Labels” section.

Note: You can find and download the current *IBM System Safety Notices* by searching for Publication number **G229-9054** in the IBM Publications Center.

The following notices and statements are used in IBM documents. They are listed in order of decreasing severity of potential hazards.

Danger notice definition

A special note that emphasizes a situation that is potentially lethal or extremely hazardous to people.

Caution notice definition

A special note that emphasizes a situation that is potentially hazardous to people because of some existing condition, or to a potentially dangerous situation that might develop because of some unsafe practice.

Note: In addition to these notices, labels might be attached to the product to warn of potential hazards.

Finding translated notices

Each safety notice contains an identification number. You can use this identification number to check the safety notice in each language.

To find the translated text for a caution or danger notice:

1. In the product documentation, look for the identification number at the end of each caution notice or each danger notice. In the following examples, the numbers (D002) and (C001) are the identification numbers.

DANGER

A danger notice indicates the presence of a hazard that has the potential of causing death or serious personal injury. (D002)

CAUTION:

A caution notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury. (C001)

2. After you download the *IBM System Safety Notices* document, open it.
3. Under the language, find the matching identification number. Review the topics about the safety notices to ensure that you are in compliance.

Note: This product was designed, tested, and manufactured to comply with IEC 60950-1, and where required, to relevant national standards that are based on IEC 60950-1.

Caution notices for the Storwize V3700

Ensure that you understand the caution notices for Storwize V3700.

Use the reference numbers in parentheses at the end of each notice, such as (C003) for example, to find the matching translated notice in *IBM Systems Safety Notices*.

CAUTION:

The battery contains lithium. To avoid possible explosion, do not burn or charge the battery.

Do not: Throw or immerse into water, heat to more than 100°C (212°F), repair or disassemble. (C003)

CAUTION:

Removing components from the upper positions in the rack cabinet improves rack stability during a relocation. Follow these general guidelines whenever you relocate a populated rack cabinet within a room or building.

- Reduce the weight of the rack cabinet by removing equipment starting at the top of the rack cabinet. When possible, restore the rack cabinet to the configuration of the rack cabinet as you received it. If this configuration is not known, you must observe the following precautions.
 - Remove all devices in the 32U position and above.
 - Ensure that the heaviest devices are installed in the bottom of the rack cabinet.
 - Ensure that there are no empty U-levels between devices installed in the rack cabinet below the 32U level.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- If the rack cabinet you are relocating was supplied with removable outriggers they must be reinstalled before the cabinet is relocated.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to the documentation that comes with your rack cabinet for the weight of a loaded rack cabinet.
- Verify that all door openings are at least 760 x 230 mm (30 x 80 in.).
- Ensure that all devices, shelves, drawers, doors, and cables are secure.
- Ensure that the four leveling pads are raised to their highest position.
- Ensure that there is no stabilizer bracket installed on the rack cabinet during movement.
- Do not use a ramp inclined at more than 10 degrees.
- When the rack cabinet is in the new location, complete the following steps:
 - Lower the four leveling pads.
 - Install stabilizer brackets on the rack cabinet.
 - If you removed any devices from the rack cabinet, repopulate the rack cabinet from the lowest position to the highest position.
- If a long-distance relocation is required, restore the rack cabinet to the configuration of the rack cabinet as you received it. Pack the rack cabinet in the original packaging material, or equivalent. Also lower the leveling pads to raise the casters off the pallet and bolt the rack cabinet to the pallet.

(R002)

CAUTION:

- Rack is not intended to serve as an enclosure and does not provide any degrees of protection required of enclosures.
- It is intended that equipment installed within this rack will have its own enclosure. (R005).

CAUTION:
Tighten the stabilizer brackets until they are flush against the rack. (R006)

CAUTION:
Use safe practices when lifting. (R007)

CAUTION:
Do not place any object on top of a rack-mounted device unless that rack-mounted device is intended for use as a shelf. (R008)

CAUTION:
If the rack is designed to be coupled to another rack only the same model rack should be coupled together with another same model rack. (R009)

Danger notices for Storwize V3700

Ensure that you are familiar with the danger notices for Storwize V3700.

Use the reference numbers in parentheses at the end of each notice, such as (C003) for example, to find the matching translated notice in *IBM Systems Safety Notices*.

DANGER

When working on or around the system, observe the following precautions:

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:

- If IBM supplied a power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.
- Do not open or service any power supply assembly.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To disconnect:

1. Turn off everything (unless instructed otherwise).
2. Remove the power cords from the outlets.
3. Remove the signal cables from the connectors.
4. Remove all cables from the devices.

To connect:

1. Turn off everything (unless instructed otherwise).
 2. Attach all cables to the devices.
 3. Attach the signal cables to the connectors.
 4. Attach the power cords to the outlets.
 5. Turn on the devices.
- Sharp edges, corners and joints might be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching. (D005)

DANGER

Heavy equipment—personal injury or equipment damage might result if mishandled. (D006)

DANGER

Racks with a total weight of > 227 kg (500 lb.), Use Only Professional Movers! (R003)

DANGER

Do not transport the rack via fork truck unless it is properly packaged, secured on top of the supplied pallet. (R004)

DANGER



Main Protective Earth (Ground):

This symbol is marked on the frame of the rack.

The **PROTECTIVE EARTHING CONDUCTORS** should be terminated at that point. A recognized or certified closed loop connector (ring terminal) should be used and secured to the frame with a lock washer using a bolt or stud. The connector should be properly sized to be suitable for the bolt or stud, the locking washer, the rating for the conducting wire used, and the considered rating of the breaker. The intent is to ensure the frame is electrically bonded to the **PROTECTIVE EARTHING CONDUCTORS**. The hole that the bolt or stud goes into where the terminal conductor and the lock washer contact should be free of any non-conductive material to allow for metal to metal contact. All **PROTECTIVE EARTHING CONDUCTORS** should terminate at this main protective earthing terminal or at points marked with \perp . (R010)

Special caution and safety notices

This information describes special safety notices that apply to the Storwize V3700. These notices are in addition to the standard safety notices supplied and address specific issues relevant to the equipment provided.

General safety

When you service the Storwize V3700, follow general safety guidelines.

Use the following general rules to ensure safety to yourself and others.

- Observe good housekeeping in the area where the devices are kept during and after maintenance.
- Follow the guidelines when lifting any heavy object:
 1. Ensure that you can stand safely without slipping.
 2. Distribute the weight of the object equally between your feet.
 3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
 4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back. *Do not attempt to lift any objects that weigh more than 18 kg (40 lb) or objects that you think are too heavy for you.*
- Do not perform any action that causes a hazard or makes the equipment unsafe.

- Before you start the device, ensure that other personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the unit.
- Keep your tool case away from walk areas so that other people cannot trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a device. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconducting clip, approximately 8 cm (3 in.) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.

Remember: Metal objects are good electrical conductors.

- Wear safety glasses when you are hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly after you have finished servicing the unit.

Handling static-sensitive devices

Ensure that you understand how to handle devices that are sensitive to static electricity.

Attention: Static electricity can damage electronic devices and your system. To avoid damage, keep static-sensitive devices in their static-protective bags until you are ready to install them.

To reduce the possibility of electrostatic discharge, observe the following precautions:

- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or frame.
- Do not touch solder joints, pins, or exposed printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the device is still in its antistatic bag, touch it to an unpainted metal part of the system unit for at least two seconds. (This action removes static electricity from the package and from your body.)
- Remove the device from its package and install it directly into your Storwize V3700, without putting it down. If it is necessary to put the device down, place it onto its static-protective bag. (If your device is an adapter, place it component-side up.) Do not place the device onto the cover of the Storwize V3700 or onto a metal table.
- Take additional care when you handle devices during cold weather. Indoor humidity tends to decrease in cold weather, causing an increase in static electricity.

Power and cabling information for NEBS (Network Equipment-Building System) GR-1089-CORE

The following comments apply to IBM storage devices that have been designated as conforming to NEBS (Network Equipment-Building System) GR-1089-CORE.

The equipment is suitable for installation at:

- Network telecommunications facilities
- Locations where the NEC (National Electrical Code) applies

Note:

- This product is not intended to connect directly or indirectly by any means whatsoever to interfaces of public telecommunications networks.
- The ac-powered system does not require the use of an external surge protection device (SPD).
- The dc-powered system employs an isolated DC return (DC-I) design. The DC battery return terminal *shall not* be connected to the chassis or frame ground.
- The storage device (dc power) is intended to be installed in a Common Bonding Network (or mesh network) as described in GR-1089-CORE, Issue 5 or latest revision.

Environmental notices

This information contains all of the required environmental notices for IBM Systems products in English and other languages.

The *IBM Systems Environmental Notices* (<http://ibm.co/1fBgWFI>) information includes statements on limitations, product information, product recycling and disposal, battery information, flat panel display, refrigeration and water-cooling systems, external power supplies, and safety data sheets.

About this guide

This publication provides information that helps you install and initialize IBM Storwize V3700.

Who should use this guide

This guide is intended for installers of Storwize V3700.

Before configuring your system, ensure that you follow the procedures as listed. Be sure to gather IP addresses that you will need before you begin the installation.

Storwize V3700 library and related publications

Product manuals, other publications, and websites contain information that relates to Storwize V3700.

IBM Knowledge Center for Storwize V3700

The information collection in the IBM Knowledge Center contains all of the information that is required to install, configure, and manage the system. The information collection in the IBM Knowledge Center is updated between product releases to provide the most current documentation. The information collection is available at the following website:

pic.dhe.ibm.com/infocenter/storwize/v3700_ic/index.jsp

Storwize V3700 library

Unless otherwise noted, the publications in the library are available in Adobe portable document format (PDF) from a website.

www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss

Click **Search for publications** to find the online publications you are interested in, and then view or download the publication by clicking the appropriate item.

Table 1 lists websites where you can find help, services, and more information.

Table 1. IBM websites for help, services, and information

Website	Address
Directory of worldwide contacts	http://www.ibm.com/planetwide
Support for Storwize V3700 (2072)	www.ibm.com/storage/support/storwize/v3700
Support for IBM System Storage® and IBM TotalStorage products	www.ibm.com/storage/support/

Each of the PDF publications in the Table 2 on page xviii library is also available in the IBM Knowledge Center by clicking the number in the “Order number” column:

Table 2. Storwize V3700 library

Title	Description	Order number
<i>IBM Storwize V3700 Quick Installation Guide</i>	The guide provides instructions for unpacking your order and installing your system. The first chapter describes verifying your order, becoming familiar with the hardware components, and meeting environmental requirements. The second chapter describes installing the hardware and attaching data cables and power cords. The last chapter describes accessing the management GUI to initially configure your system.	
<i>Storwize V3700 Installation Poster</i>	The installation poster provides an illustrated sequence of steps for installing the enclosure in a rack and beginning the setup process.	
<i>IBM Systems Safety Notices</i>	The guide contains translated caution and danger statements. Each caution and danger statement in the Storwize V3700 documentation has a number that you can use to locate the corresponding statement in your language in the <i>IBM Systems Safety Notices</i> document.	G229-9054
<i>IBM Storwize V3700 Read First Flyer</i>	This document introduces the major components of the Storwize V3700 system and describes how to get started with the <i>IBM Storwize V3700 Quick Installation Guide</i> .	
<i>IBM Statement of Limited Warranty (2072)</i>	This multilingual document provides information about the IBM warranty for machine type 2072.	
<i>IBM License Agreement for Machine Code</i>	This multilingual guide contains the License Agreement for Machine Code for the Storwize V3700 product.	

IBM documentation and related websites

Table 3 on page xix lists websites that provide publications and other information about the Storwize V3700 or related products or technologies. The IBM Redbooks®

publications provide positioning and value guidance, installation and implementation experiences, solution scenarios, and step-by-step procedures for various products.

Table 3. IBM documentation and related websites

Website	Address
IBM Publications Center	www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss
IBM Redbooks publications	www.redbooks.ibm.com/

Related accessibility information

To view a PDF file, you need Adobe Reader, which can be downloaded from the Adobe website:

www.adobe.com/support/downloads/main.html

How to order IBM publications

The IBM Publications Center is a worldwide central repository for IBM product publications and marketing material.

The IBM Publications Center offers customized search functions to help you find the publications that you need. Some publications are available for you to view or download at no charge. You can also order publications. The publications center displays prices in your local currency. You can access the IBM Publications Center through the following website:

www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss

Related websites

The following websites provide information about Storwize V3700 or related products or technologies:

Type of information	Website
Storwize V3700 support	www.ibm.com/storage/support/storwize/v3700
Technical support for IBM storage products	www.ibm.com/storage/support/
IBM Electronic Support registration	www.ibm.com/electronicssupport

Sending your comments

Your feedback is important in helping to provide the most accurate and highest quality information.

To submit any comments about this book or any other Storwize V3700 documentation, send your comments by email to starpubs@us.ibm.com. Include the following information in your email:

- Publication title
- Publication form number
- Page, table, or illustration numbers that you are commenting on

- A detailed description of any information that should be changed

How to get information, help, and technical assistance

If you need help, service, technical assistance, or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you.

Information

IBM maintains pages on the web where you can get information about IBM products and fee services, product implementation and usage assistance, break and fix service support, and the latest technical information. For more information, refer to Table 4.

Table 4. IBM websites for help, services, and information

Website	Address
Directory of worldwide contacts	http://www.ibm.com/planetwide
Support for Storwize V3700 (2072)	www.ibm.com/storage/support/storwize/v3700
Support for IBM System Storage and IBM TotalStorage products	www.ibm.com/storage/support/

Note: Available services, telephone numbers, and web links are subject to change without notice.

Help and service

Before calling for support, be sure to have your IBM Customer Number available. If you are in the US or Canada, you can call 1 (800) IBM SERV for help and service. From other parts of the world, see <http://www.ibm.com/planetwide> for the number that you can call.

When calling from the US or Canada, choose the **storage** option. The agent decides where to route your call, to either storage software or storage hardware, depending on the nature of your problem.

If you call from somewhere other than the US or Canada, you must choose the **hardware** option when calling for assistance. When calling IBM for service regarding the product, follow these guidelines for the **hardware** option:

Software option

Identify the Storwize V3700 product as your product and supply your customer number as proof of purchase. The customer number is a 7-digit number (0000000 to 9999999) assigned by IBM when the product is purchased. Your customer number should be located on the customer information worksheet or on the invoice from your storage purchase. If asked for an operating system, use **Storage**.

Hardware option

Provide the serial number and appropriate 4-digit machine type. For Storwize V3700, the machine type is 2072.

In the US and Canada, hardware service and support can be extended to 24x7 on the same day. The base warranty is 9x5 on the next business day.

Getting help online

You can find information about products, solutions, partners, and support on the IBM website.

To find up-to-date information about products, services, and partners, visit the IBM website at www.ibm.com/storage/support/storwize/v3700.

Before you call

Make sure that you have taken steps to try to solve the problem yourself before you call.

Some suggestions for resolving the problem before calling IBM Support include:

- Check all cables to make sure that they are connected.
- Check all power switches to make sure that the system and optional devices are turned on.
- Use the troubleshooting information in your system documentation. The troubleshooting section of the information center contains procedures to help you diagnose problems.
- Go to the IBM Support website at www.ibm.com/storage/support/storwize/v3700 to check for technical information, hints, tips, and new device drivers or to submit a request for information.

Using the documentation

Information about your IBM storage system is available in the documentation that comes with the product.

That documentation includes printed documents, online documents, readme files, and help files in addition to the information center. See the troubleshooting information for diagnostic instructions. The troubleshooting procedure might require you to download updated device drivers or machine code. IBM maintains pages on the web where you can get the latest technical information and download device drivers and updates. To access these pages, go to www.ibm.com/storage/support/storwize/v3700 and follow the instructions. Also, some documents are available through the IBM Publications Center.

Sign up for the Support Line Offering

If you have questions about how to use and configure the machine, sign up for the IBM Support Line offering to get a professional answer.

The maintenance supplied with the system provides support when there is a problem with a hardware component or a fault in the system machine code. At times, you might need expert advice about using a function provided by the system or about how to configure the system. Purchasing the IBM Support Line offering gives you access to this professional advice while deploying your system, and in the future.

Contact your local IBM sales representative or your support group for availability and purchase information.

Chapter 1. Before you begin the installation

Before you can begin installing your system, you must unpack and verify your order and make other preparations.

The *Quick Installation Guide* contains a set of instructions to help you unpack and install your system. The guide is divided into three chapters.

1. The steps in Chapter 1, “Before you begin the installation” (the chapter you are now reading) involve verifying your order, becoming familiar with the hardware component terminology, and ensuring that you have met the environmental requirements.
2. The steps in Chapter 2, “Installing the hardware,” on page 19 involve installing the hardware and attaching the data cables and power cords.
3. Chapter 3, “Configuring the system,” on page 53 helps you create your configuration file and access the management GUI. The management GUI guides you through the initial configuration process.

Important information:

- This guide presumes that you have read the planning information regarding your physical environment that is available from the Storwize V3700 Knowledge Center.
- Ensure that any cables that you are supplying are available for installation.

Installation scenarios

Depending on your order, this documentation steps you through setting up your system for the following scenarios:

- **Setting up a new system that consists of a control enclosure only.** In this case, you are not installing any expansion enclosures.
- **Setting up a new system that consists of a control enclosure and one or more expansion enclosures.**
- **Adding an expansion enclosure to an existing system.** In this case, you initially installed a control enclosure (and, optionally, one or more expansion enclosures). You want to add an expansion enclosure to your existing system. You do not need to power off the system. You can add an expansion enclosure while the system is operational.

Table 5 lists the steps for each scenario.

Table 5. Steps for different installation scenarios

New system (control enclosure only)	New system (control enclosure and one or more expansion enclosures)	Adding expansion enclosures to an existing system
“Reviewing your packing slip” on page 5	“Reviewing your packing slip” on page 5	“Reviewing your packing slip” on page 5
“Identify the hardware components” on page 6	“Identify the hardware components” on page 6	“Verify environmental requirements” on page 16
“Verify environmental requirements” on page 16	“Verify environmental requirements” on page 16	“Review enclosure location guidelines” on page 16

Table 5. Steps for different installation scenarios (continued)

New system (control enclosure only)	New system (control enclosure and one or more expansion enclosures)	Adding expansion enclosures to an existing system
"Review enclosure location guidelines" on page 16	"Review enclosure location guidelines" on page 16	"Installing the support rails" on page 19 ¹
"Installing the support rails" on page 19	"Installing the support rails" on page 19	"Installing the enclosures" on page 24 ¹
"Installing the enclosures" on page 24	"Installing the enclosures" on page 24	"Connecting SAS cables to expansion enclosures" on page 41 ¹
"Connecting Ethernet cables to node canisters" on page 44	"Connecting SAS cables to expansion enclosures" on page 41	"Powering on the system" on page 50 ¹
"Connecting Fibre Channel cables to Fibre Channel host interface adapter" on page 47	"Connecting Ethernet cables to node canisters" on page 44	"Adding an expansion enclosure to an existing system" on page 62
"Powering on the system" on page 50	"Connecting Fibre Channel cables to Fibre Channel host interface adapter" on page 47	
Chapter 3, "Configuring the system," on page 53	"Powering on the system" on page 50	
	Chapter 3, "Configuring the system," on page 53	
¹ Complete these steps for each expansion enclosure that you add.		

4
4
4
4
4
4

Be familiar with the following information

- See "Caution notices for the Storwize V3700" on page x and "Danger notices for Storwize V3700" on page xii for a summary of the situations that can be potentially hazardous to you. Before installing, read and understand the following caution and danger statements.

- Use safe practices when lifting. The fully populated enclosure weighs about 26 kg (57 lbs). At least two people are required to lift and install the enclosure into the rack or to remove an enclosure from the rack.

CAUTION:

Use safe practices when lifting.

			svc00146
18-32 kg (39.7-70.5 lbs)	32-55 kg (70.5-121.2 lbs)	≥ 55 kg (≥121.2 lbs)	

(27)

Also keep in mind that a rack full of equipment is extremely heavy.

DANGER: Heavy equipment—personal injury or equipment damage might result if mishandled. (D006)

- The following general precautions should be observed, even though the power-on steps differ slightly from the directions that you will follow for this product:

DANGER

When working on or around the system, observe the following precautions:

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:

- If IBM supplied a power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.
- Do not open or service any power supply assembly.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.
To disconnect:
 1. Turn off everything (unless instructed otherwise).
 2. Remove the power cords from the outlets.
 3. Remove the signal cables from the connectors.
 4. Remove all cables from the devices.To connect:
 1. Turn off everything (unless instructed otherwise).
 2. Attach all cables to the devices.
 3. Attach the signal cables to the connectors.
 4. Attach the power cords to the outlets.
 5. Turn on the devices.
- Sharp edges, corners and joints might be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching. (D005)

Tools needed

A flat-blade screwdriver with a 7 mm (1/4 inch) head is the only tool needed for installation.

Reviewing your packing slip

After you open your shipment, you must verify the contents against the packing slip.

In each box, locate the packing slip. Verify that the items listed in the packing slip match what is in the box, and that any optional items that you ordered are included in the list. Your shipment might contain extra items, depending on the order.

Note: If you purchased your equipment through a reseller, some of the options might be preinstalled. Contact your supplier for details.

Use the following checklist to check off the items in your order as you verify that they are included in your shipment.

- ___ • Control enclosure or expansion enclosure (Table 6):

Table 6. Storwize V3700 enclosures.

Machine type/model	Feature code	Part number	Description
2072-12C	ACAN	2072L2C	IBM Storwize V3700 12-slot Dual Control Enclosure for 3.5-inch drives (AC power)
2072-12E	ACAS	2072LEU	IBM Storwize V3700 12-slot Expansion Enclosure for 3.5-inch drives (AC power)
2072-24C	ACBN	2072S2C	IBM Storwize V3700 24-slot Dual Control Enclosure for 2.5-inch drives (AC power)
2072-24E	ACBS	2072SEU	IBM Storwize V3700 24-slot Expansion Enclosure for 2.5-inch drives (AC power)
2072-2DC	ACDJ	2072T2C	IBM Storwize V3700 24-slot Dual Control Enclosure for 2.5-inch drives (DC power)
2072-2DE	ACDS	2072TEU	IBM Storwize V3700 24-slot Expansion Enclosure for 2.5-inch drives (DC power)

Note: Models 2072-2DC and 2072-2DE run in a direct current (DC) power environment rather than the alternating current (AC) environment that is required by the other models in the range. The only differences between these models and the equivalent 24 slot AC power models are the power requirements and the power supply units that are installed in the enclosure. For more information about the DC power supply units, see “Direct current power supply units” on page 10.

- ___ • Rack-mounting hardware kit:
 - ___ – Two rails (right and left assembly)
 - ___ – Two rail springs
 - ___ – Two sets of rail-mount screws and alternative rail-mount pins (large and small) for non-IBM racks
- ___ • Two power cords for connection to rack-mounted power distribution units
- ___ • Drive bay blanking plates (installed in the enclosure)
- ___ • Publications package (includes a USB flash drive that is used to initialize the system)

Options applicable to control enclosures

- ___ • Cache memory upgrade
- ___ • Four-port 8 Gbps Fibre Channel host interface adapter with two small form-factor pluggable (SFP) transceivers installed
- ___ • Two extra Fibre Channel SFP transceivers
- ___ • Fibre Channel cables
- ___ • SAS cables
- ___ • Four-port 1 Gbps iSCSI host interface adapter
- ___ • Two-port 10 Gbps iSCSI / FCoE host interface adapter
- ___ • Drives
- ___ • Power cords for connection to wall sockets

Options applicable to expansion enclosures

- ___ • Expansion enclosure attachment cables
- ___ • Drives
- ___ • Power cords for connection to wall sockets

Identify the hardware components

The following graphics identify the hardware components and port locations for the control enclosure and expansion enclosure on Storwize V3700 systems.

Control enclosure components

Figure 1 shows the rear view of a control enclosure and identifies the location of the power supply units and node canisters.

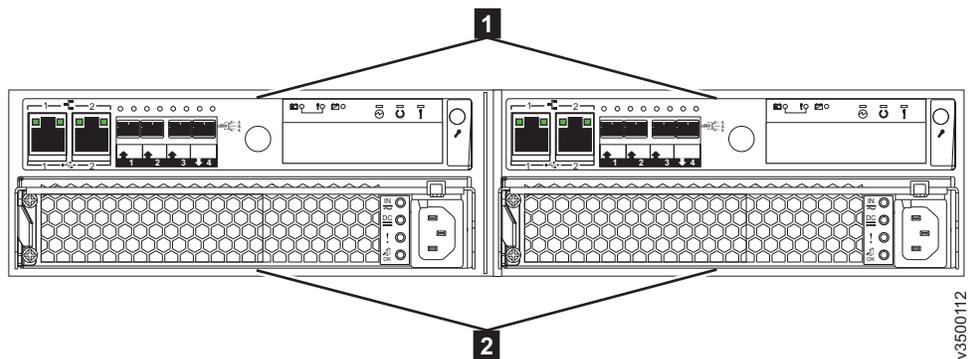


Figure 1. Rear view of a Storwize V3700 control enclosure

Note: Figure 1 and Figure 2 on page 7 show an enclosure that is equipped with alternating current (AC) power supplies. Some enclosure enclosure models have direct current (DC) power supplies instead (see “Reviewing your packing slip” on page 5 for the model numbers). For more information about DC power supply units, see “Direct current power supply units” on page 10.

Note: Figure 1 shows the node canisters in their initial configuration, with no host interface adapter options installed.

Data ports

Figure 2 shows the rear view of a Storwize V3700 control enclosure and identifies the location of the ports.

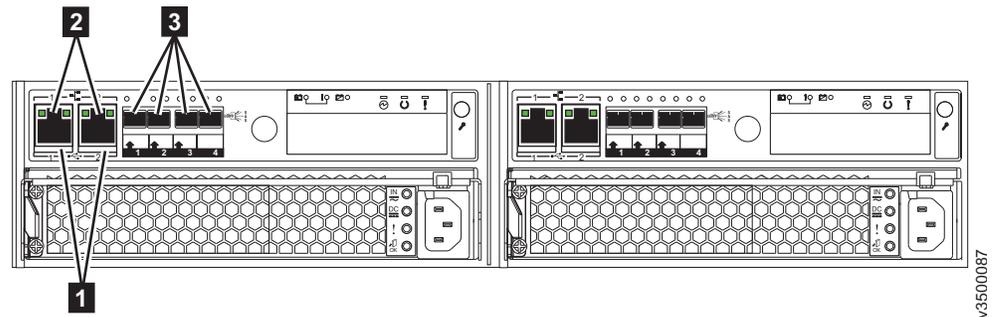


Figure 2. Data ports in the rear of the Storwize V3700 control enclosure

- **1** USB ports. Each canister has two USB ports. One port is used during installation.
- **2** Ethernet ports. Each canister has two 1 Gbps Ethernet ports.
 - **Port 1** Must be connected for system management. Can optionally be used for iSCSI host connectivity.
 - **Port 2** Optional. Can be used for iSCSI host connectivity or to provide an alternative (redundant) management address.
- **3** Serial-attached SCSI (SAS) ports. Each canister has four SAS ports. Ports 1 to 3 are optionally used for connecting to host systems. Port 4 is optionally used for connecting to expansion enclosures.

Control enclosure support rails

The left and right control enclosure support rails (Figure 3 on page 8) are designed specifically for installation of a control enclosure.

- The ledge on the inside of the rails supports the entire length of a control enclosure.
- At the rear end of the control enclosure support rail, the top edge curves over to capture the top edge of an inserted control enclosure. This prevents the installed control enclosure bouncing when the rack is subjected to quake or vibration.
- The control enclosure support rails adjust to fit racks from 685 mm to 765 mm deep, measured between the front and rear rack rails.

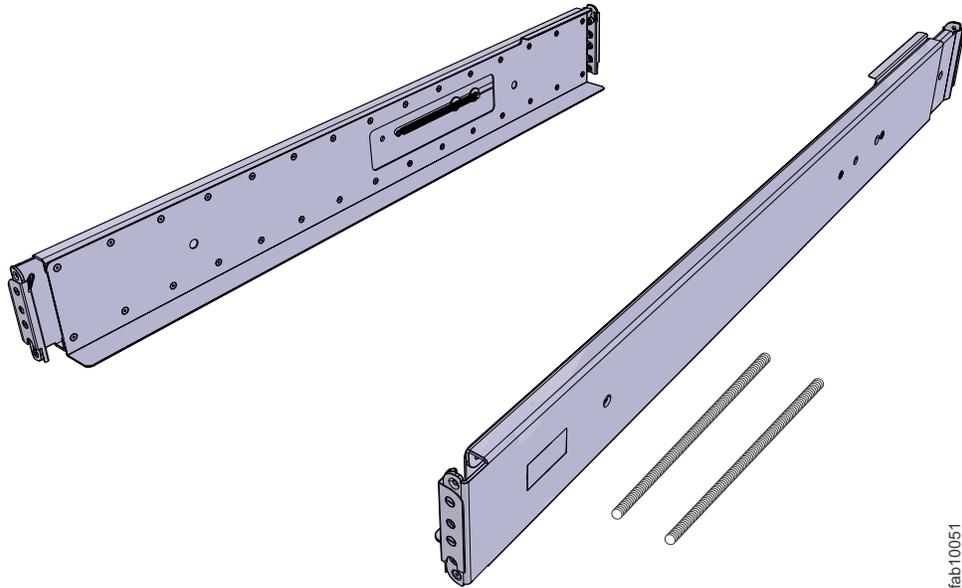


Figure 3. Control enclosure support rails of a Storwize V3700 system

Expansion enclosure components

Figure 4 shows the rear view of an expansion enclosure. The location of the power supply units and expansion canisters are identified, as follows.

- **1** Expansion canisters
- **2** Power supply units

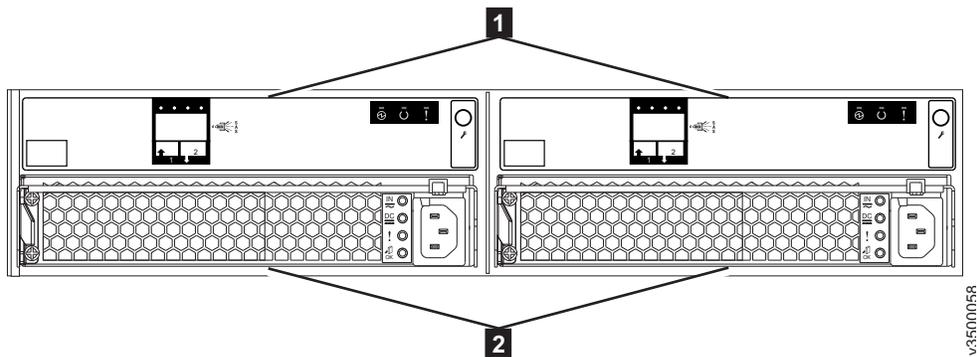


Figure 4. Rear view of a Storwize V3700 expansion enclosure

Note: Figure 4 shows an enclosure that is equipped with alternating current (AC) power supplies. Some enclosure models have direct current (DC) power supplies instead (see “Reviewing your packing slip” on page 5 for the model numbers). For more information about DC power supply units, see “Direct current power supply units” on page 10.

Figure 5 on page 9 shows the rear view of an expansion canister. The LEDs and SAS port locations are also identified.

- **1** LEDs
- **2** SAS ports

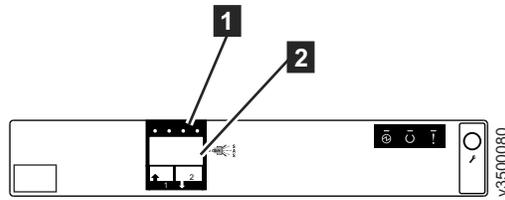


Figure 5. SAS ports and LEDs in rear view of a Storwize V3700 expansion canister

Each canister has two SAS ports that are numbered 1 on the left and 2 on the right. Port 1 is always used. Port 2 is used only if this is not the last enclosure in the chain.

Expansion enclosure support rails

The left and right expansion enclosure support rails (Figure 6) are designed specifically for installation of an expansion enclosure.

- The ledge on the inside of each rail supports the entire length of an expansion enclosure.
- The expansion enclosure support rails capture the left and right rear edges of an inserted expansion enclosure. This prevents the installed control enclosure bouncing when the rack is subjected to quake or vibration.
- The expansion enclosure support rails adjust to fit racks from 595 mm to 755 mm deep, measured between the front and rear rack rails.

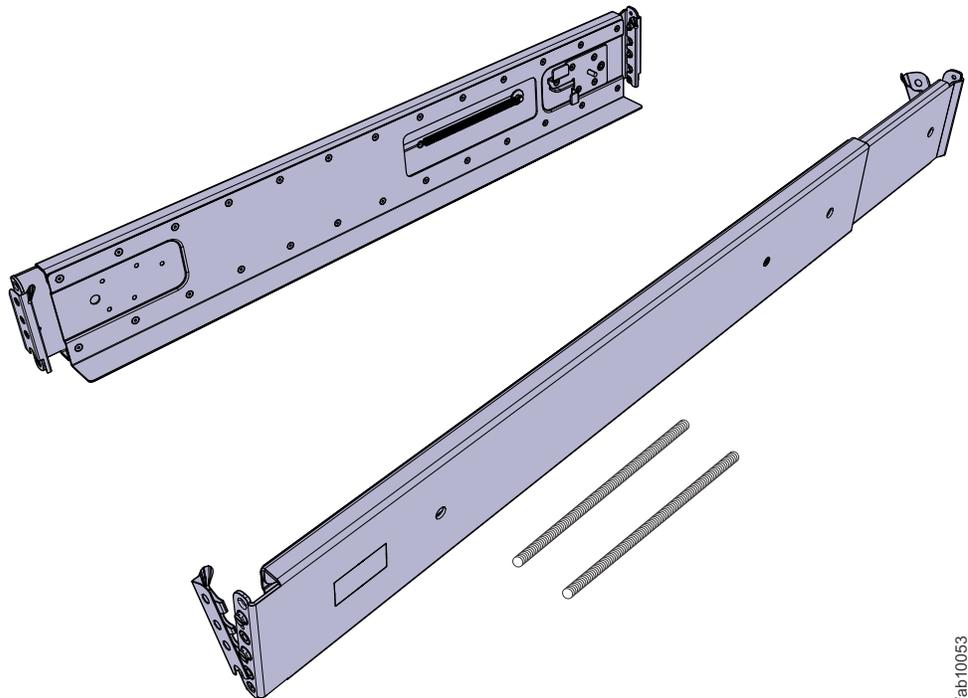


Figure 6. Expansion enclosure support rails on Storwize V3700

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Miscellaneous hardware

The USB flash drive (Figure 7) is packaged with the publications and contains the initialization tool for completing the initial system configuration.



Figure 7. USB flash drive

Direct current power supply units

Some Storwize V3700 enclosure models run in a direct current (DC) power environment rather than the alternating current (AC) environment required by the other models in the range.

This section describes the additional information you need to know when using the DC power models.

DANGER

Two warning symbols on a yellow background. The first is a black circle with a diagonal slash over a screwdriver icon, indicating 'no tools' or 'no opening'. The second is a black triangle with a lightning bolt icon, indicating 'hazardous voltage'.

Hazardous voltage, current, or energy levels are present inside any component that has this label attached. Do not open any cover or barrier that contains this label. (L001)

DANGER

When working on or around the system, observe the following precautions:

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:

- If IBM supplied a power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.
- Do not open or service any power supply assembly.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To disconnect:

1. Turn off everything (unless instructed otherwise).
2. Remove the power cords from the outlets.
3. Remove the signal cables from the connectors.
4. Remove all cables from the devices.

To connect:

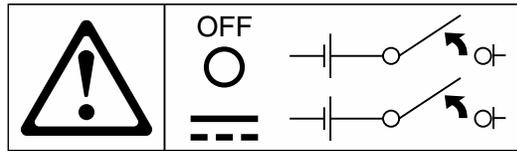
1. Turn off everything (unless instructed otherwise).
 2. Attach all cables to the devices.
 3. Attach the signal cables to the connectors.
 4. Attach the power cords to the outlets.
 5. Turn on the devices.
- Sharp edges, corners and joints may be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching. (D005)

Statement 19:



CAUTION: The power-control button on the device does not turn off the electrical current supplied to the device. The device also might have more than one

connection to DC power. To remove all electrical current from the device, ensure that all connections to dc power are disconnected at the DC power input terminals.



Statement 34:



CAUTION: To reduce the risk of electric shock or energy hazards:

- This equipment must be installed by trained service personnel in a restricted-access location, as defined by the NEC and IEC 60950-1, First Edition, The Standard for Safety of Information Technology Equipment.
- Connect the equipment to a properly grounded safety extra low voltage (SELV) source. A SELV source is a secondary circuit that is designed so that normal and single fault conditions do not cause the voltages to exceed a safe level (60 V direct current).
- Incorporate a readily available approved and rated disconnect device in the field wiring.
- See the specifications in the product documentation for the required circuit-breaker rating for branch circuit overcurrent protection.
- Use copper wire conductors only. See the specifications in the product documentation for the required wire size.
- See the specifications in the product documentation for the required torque values for the wiring-terminal screws.

Note: In Statement 34 above:

- Replace IEC 60950-1, First Edition with IEC 60950-1, Second Edition Amendment 1.
- The required circuit breaker rating is 20 amps.

Direct current power supply unit connectors and indicators

Each Storwize V3700 enclosure contains two DC power supply units. DC power supply units can be ordered as a feature of systems.

The power supply units have the components that are shown in Figure 8 on page 13.

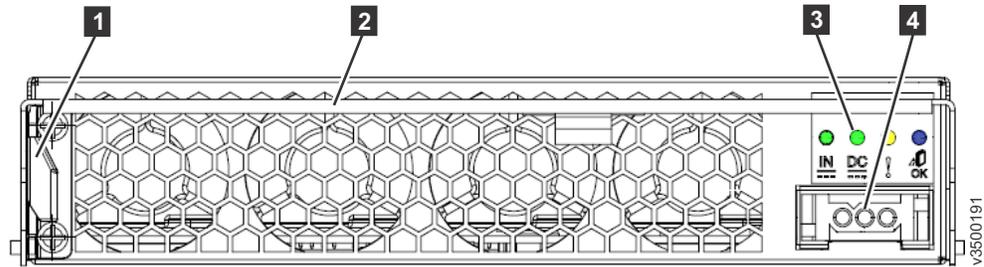


Figure 8. Direct current power supply unit connectors and indicators

- **1** Release tab
- **2** Handle
- **3** Power supply LED indicators
- **4** DC power cable connector

Each power supply unit has four LED indicators (Table 7).

Table 7. Direct current power supply LEDs

Name	Label	Color	Description
Input status		Green	Off No input power detected. On Direct current input power detected.
Output status		Green	Off PSU is not providing DC output power. On PSU is providing DC output power.
Fault		Amber	Off No fault detected. On PSU fault has been detected. BLINK PSU is being identified. A fault may have been detected.
(None)		Blue	Not used.

The LEDs have a comparable meaning to the LEDs on the AC power supply. Problem diagnosis and service procedures are the same. For details, see “Powering on the system” on page 50.

Connecting a DC power supply to a DC power source

A Storwize V3700 enclosure that is DC powered contains two DC power supply units (PSUs). Each unit must be connected to a suitable -48V DC power source. To provide redundancy in a power circuit failure, connect the two PSUs to different DC power sources.

Use the supplied cables to connect the DC PSUs to the power sources. Use only the IBM supplied DC power cable (IBM part number 00AR087) to connect the unit to a DC power source.

Each PSU cable must be protected by a 20A circuit breaker. These instructions assume that the circuit breaker is separate from the DC power distribution unit. Refer to the DC power distribution unit documentation and the circuit breaker

documentation for details. Follow the instructions that are given there for connecting the circuit breaker to the power distribution unit and for connecting the DC power cable to the circuit breaker.

One end of the cable ends in a plug that fits the DC PSU. At the other end of the cable, each individual wire ends with a 6 mm diameter ring terminal that is designed to fit an M6 stud. Provide adequate strain relief after you attach the ring terminals to the power source. Table 8 lists the wire colors.

Table 8. Direct current cable wire color coding

Color	Function
Blue	Return
Green / Yellow	Ground
Brown	-48V

The DC power cable is 4 m long. Connect it to the DC power source before you connect it to the PSU. The PSU does not have a power switch, so its outputs and the enclosure become live as soon as power is connected.

The supplied power must meet the input requirements that are listed in Table 9.

Table 9. Direct current power supply input requirements

Requirement	Min	Max
Voltage (V DC)	-48	-60
Instantaneous (V DC for < 1 second)	-36	-75
Inrush current at initial turn on (-48V DC)	34 A	
Out of spec time before power off is signaled	5 ms	

The connection to the DC power source must be made by trained service personnel. Ensure that the connection is made in accordance with all the requirements of the equipment that is being used.

The DC power cable must be totally contained in a single rack and must not extend outside the rack to another rack.

If it is necessary to replace the ring terminals with a different connector, choose a suitably sized and rated UL-listed connector that is appropriate for the wire gauge and available current. Install the ring terminals according to the instructions provided by the manufacturer.

Direct current power replaceable units

The DC power supply model has two replaceable units.

Table 10. Direct current power replaceable units

Description	FRU part number	Customer replaced
Direct current power supply	00AR231	Y
Direct current power cable	00AR087	Y

The procedure to remove and replace the DC power supply unit is the same as the AC power supply procedure.

When replacing the DC power cable, follow the instructions for disconnecting cables from the DC power distribution unit.

Verify environmental requirements

The environmental and electrical requirements for the physical site must be met to ensure that your system works reliably.

Before installing a Storwize V3700 system, you must verify that adequate space in a suitable rack is available. You must also ensure that the requirements for power and environmental conditions are met.

This guide assumes that you have completed the physical planning for the environment of your system. If you have not done the environmental planning for your system, see the “Storwize V3700 physical installation planning” topic in the Storwize V3700 IBM Knowledge Center for Storwize V3700.

Review enclosure location guidelines

Before installing the enclosures, you must be familiar with these enclosure location guidelines.

Installing a control enclosure only

If you are installing a control enclosure only, follow these guidelines.

- Position the enclosure in the rack so that you can easily view it and access it for servicing.
- Locate the enclosure low enough for the rack to remain stable.
- Ensure that you provide a way for two or more people to install and remove the enclosure.

Installing a control enclosure and one or more expansion enclosures

If you are installing a control enclosure plus one or more expansion enclosures, follow these guidelines.

- Each Storwize V3700 enclosure to be installed requires 2U of rack space.
- Each assembled enclosure weighs more than 18 kg. There must be sufficient space at the front of the rack for two persons to carry the enclosure safely.
- Install all enclosures that constitute one system in contiguous positions in a rack. Place the control enclosure at the top.
- Each control enclosure supports connection to up to nine expansion enclosures. If this system installation has fewer than nine expansion enclosures, reserve space directly below the system to allow future expansion.
- If a rack is to be only partially filled, install the enclosures low enough for the rack to remain stable and enable easy access to the enclosures for servicing.

Adding an expansion enclosure to an existing system

If you are adding an expansion enclosure to an existing system, follow these guidelines.

- You do not need to power off the system. You can add an expansion enclosure while the system is operational.
- Add the first expansion enclosure directly below the control enclosure.
- Add the second expansion enclosure directly above the control enclosure.
- Add the third expansion enclosure directly below the first.

- Add the fourth expansion directly above the second, and so on.

Chapter 2. Installing the hardware

After verifying that you have all of the hardware components that you require, you can install them.

You have completed the initial steps of verifying the shipping contents and becoming familiar with the hardware components. You have verified that the power and environmental requirements are met and have planned the location of the enclosures. You are now ready to begin installing the hardware components and connecting the data cables and power cords.

NEBS compliant earth connection

When installing enclosures into a Network Equipment-Building System (NEBS) compliant installation, each enclosure must have a reliable electrical earth connection that is separate to any earth connections provided by power supply cables.

On Storwize V3700 enclosures, this connection is made via the front enclosure mounting screws that are part of the standard installation described in “Installing the support rails” and “Installing the enclosures” on page 24. To provide a reliable electrical earth connection, the upright mounting rails of the racks into which enclosures are installed must meet the following requirements prior to installing the support rails and enclosures:

- Upright mounting rails must not be painted, oxidized or otherwise insulated from the enclosure flanges and mounting rails. If paint, oxidation or other insulation is present, it must be removed and the metal must be brought to a bright, non-corroding finish.
- Upright mounting rails must have their own NEBS compliant connection to earth, independent of the earth connections provided by any power supply cables.

Note: If the Storwize V3700 system is required to be NEBS compliant, some system configuration settings must be made. For details, see “Configuring a Storwize V3700 system to be NEBS compliant” on page 62.

Installing the support rails

Before installing an enclosure, you must first install support rails.

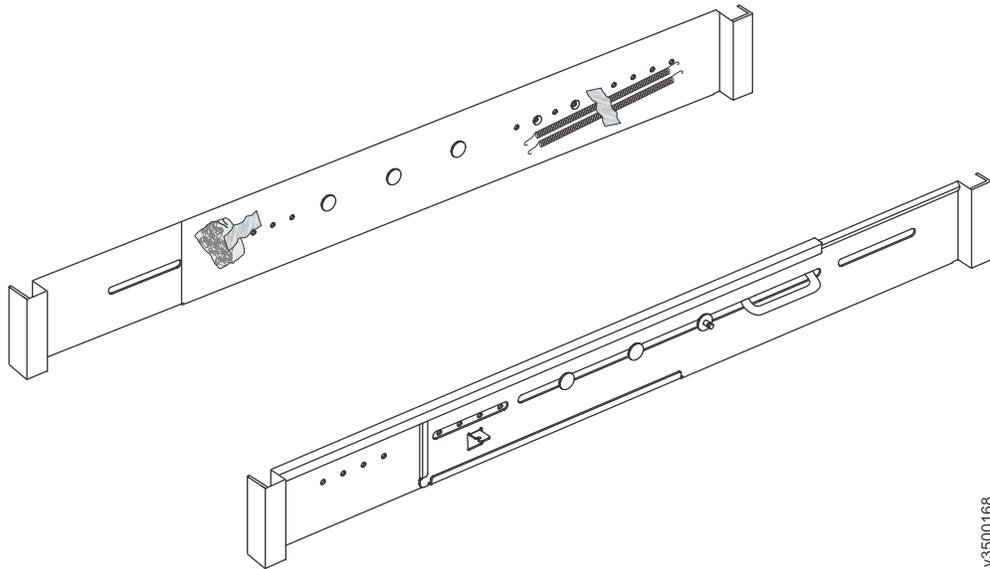
About this task

Note: For NEBS compliant installations, additional requirements are placed on the rack into which the support rails and enclosures are to be installed. Before proceeding, ensure that the rack meets the requirements listed in “NEBS compliant earth connection.”

Procedure

To install the support rails, complete the following steps.

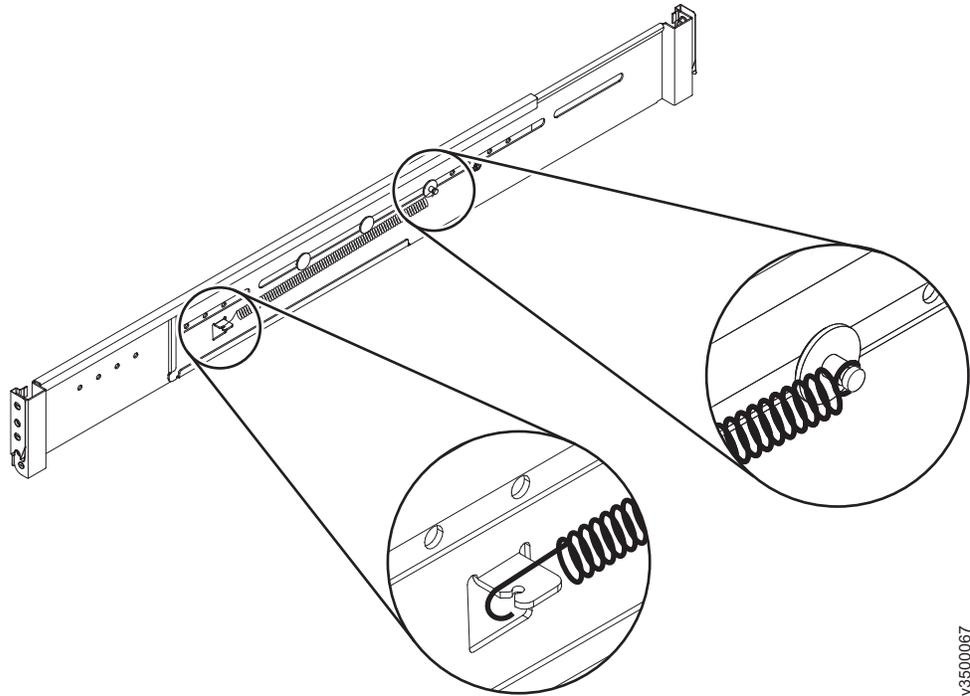
1. Locate the rack mounting rails and screws (Figure 9). The rail assembly consists of two rails that must be installed in the rack cabinet.



v3500168

Figure 9. Rack mounting rails and screws

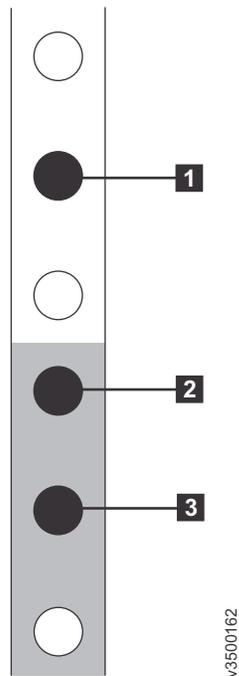
2. Remove the springs that are taped to one of the rails.
3. Attach a spring to the outside of each rail.
 - a. Attach the circle end of the spring around the stud on the rail. (See Figure 10 on page 21.)
 - b. Pulling on the spring, attach the hook end of the spring to the tab on the rail.



v3500067

Figure 10. Installing the rail spring

4. Working at the front of the rack cabinet, identify the two standard rack units (2U) of space in the rack into which you want to install the support rails. Figure 11 shows two rack units with the front mounting holes identified.



v3500162

Figure 11. Hole locations in the front of the rack

- **1** Upper rail mounting bracket pin
- **2** Lower rail mounting bracket pin

- **3** Rack mounting screw hole
5. Ensure that the appropriate bracket pins are installed in the front and rear bracket of each rail. Each rail comes with four medium pins preinstalled (two in the front bracket and two in the rear bracket). Large and small pins are provided separately. Use the pins that are appropriate for the mounting holes in your rack (see Table 11).

Table 11. Selecting bracket pins for your rack

Mounting holes	Bracket pins
Round, unthreaded	Use the preinstalled medium pins.
Round, threaded	Unscrew the medium pins and replace with the smaller pins supplied with the rails.
Square	Unscrew the medium pins and replace with the large pins supplied with the rails.

6. At each end of the rail, grasp the tab **1** and pull *firmly* to open the hinge bracket (see Figure 12).

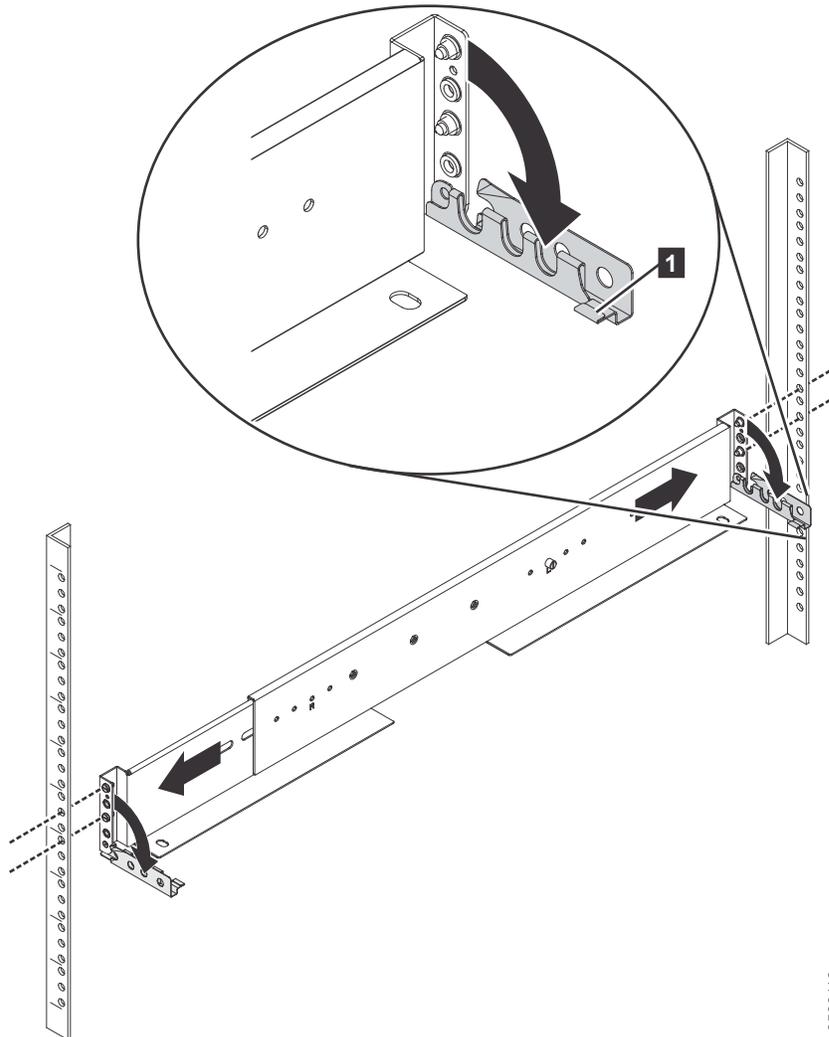


Figure 12. Opening the hinge brackets

v3500116

7. Align the holes in the rail bracket with the holes on the front and rear rack cabinet flanges. Ensure that the rails are aligned on the inside of the rack cabinet.
8. On the rear of the rail, press the two bracket pins into the holes in the rack flanges.
9. Close the rear hinge bracket to secure the rail to the rack cabinet flange. (See Figure 13.)

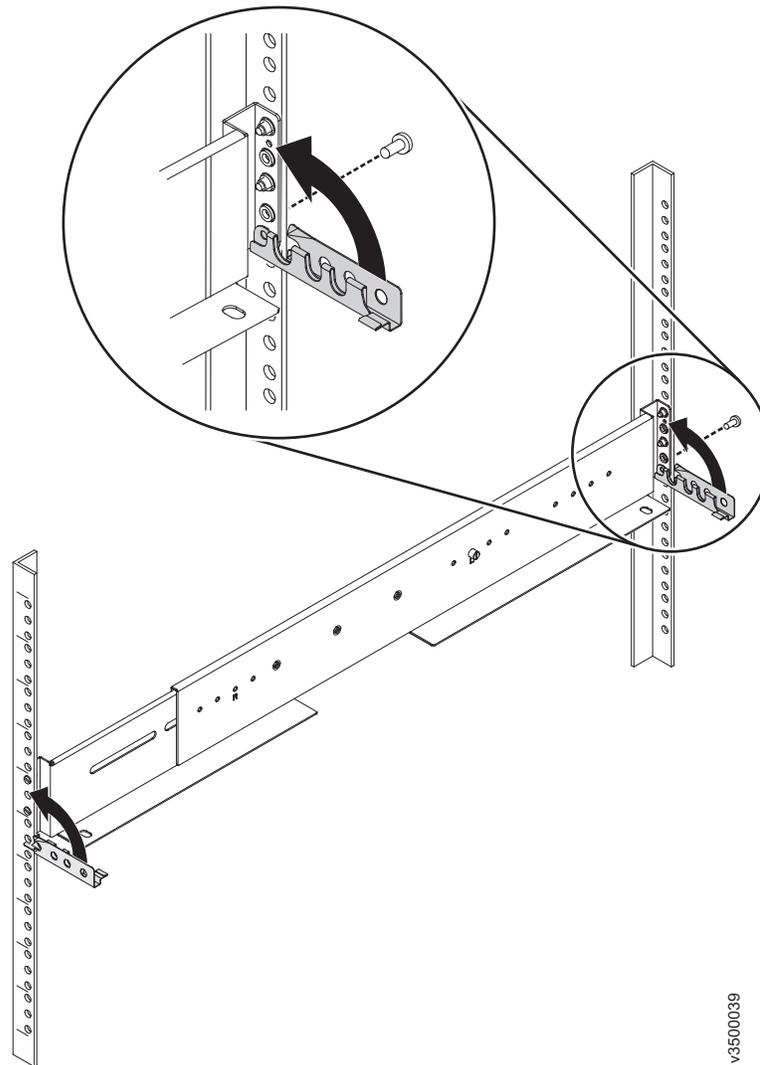


Figure 13. Closing hinge brackets and installing rear screw

10. On the front of the rail, press the two bracket pins into the holes in the rack flanges.
11. Close the front hinge bracket to secure the rail to the rack cabinet flange. (See Figure 13.)
12. Secure the rear of the rail to the rear rack flange with an M5 screw. (See Figure 13.)
13. Repeat the steps to secure the opposite rail to the rack cabinet.
14. Repeat the procedure to install rails for each additional enclosure.

Installing the enclosures

Following your enclosure location plan, install the control enclosure (and optionally, one or more expansion enclosures).

About this task

Note: For NEBS compliant installations, more requirements are placed on the rack into which the support rails and enclosures are to be installed. Before you proceed, ensure that the rack meets the requirements that are listed in “NEBS compliant earth connection” on page 19.

CAUTION:

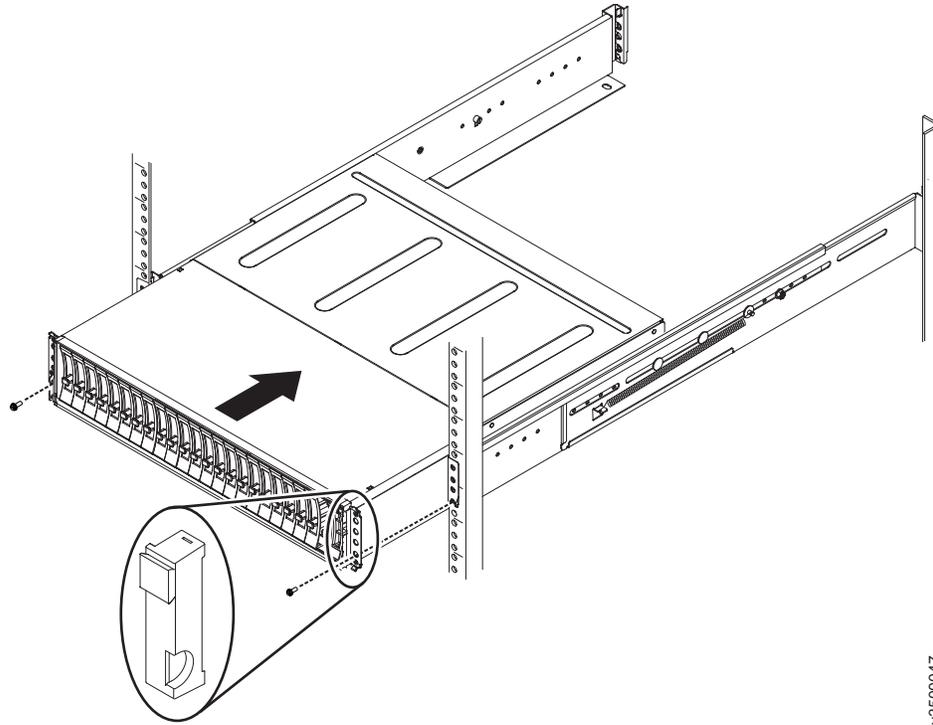
- **To lift and install the enclosure into the rack requires at least two people.**
- **Load the rack from the bottom up to ensure rack stability. Empty the rack from the top down.**

Procedure

To install an enclosure, complete the following steps.

1. On either side of the drive assemblies, remove the enclosure end caps by grasping the handle and pulling the bottom of the end cap free, then clearing the tab on the top of the enclosure.
2. Align the enclosure with the front of the rack cabinet.
3. Carefully slide the enclosure into the rack along the rails until the enclosure is fully inserted (see Figure 14 on page 25).

Note: The rails are not designed to hold an enclosure that is partially inserted. The enclosure must always be in a fully inserted position.



v3500047

Figure 14. Inserting the enclosure

4. Secure the enclosure with a screw in the rack mounting screw hole.
5. Reinstall the left and right end caps. (See Figure 14.) The left end cap has indicator windows that align with the status LEDs (light-emitting diodes) on the edge of the enclosure.
 - a. Ensure that the serial number of the end cap matches the serial number on the rear of the enclosure.
 - b. Fit the slot on the top of the end cap over the tab on the chassis flange.
 - c. Rotate the end cap down until it snaps into place.
 - d. Ensure that the inside surface of the end cap is flush with the chassis.

Installing options in the control enclosure

If you have purchased host interface adapters or cache memory upgrades for your control enclosure and those options were not preinstalled for you, you must open each node canister and install the options.

Note: You must install the same options in all node canisters.

First, open the canister as described in “Opening the node canister.” Then refer to the procedure for the option you are installing.

- “Installing an 8 Gbps Fibre Channel 4-port host interface adapter” on page 28
- “Installing a 10 Gbps iSCSI-FCoE 2-port host interface adapter” on page 30
- “Installing a 1 Gbps iSCSI 4-port host interface adapter” on page 32
- “Installing a SAS 4-port host interface adapter” on page 34
- “Installing an 8 GB cache memory update” on page 35

Finally, close the canister and install it in the control enclosure (see “Closing the node canister” on page 38).

Note: Disk drives can also be installed in the control enclosure, but that procedure does not involve opening any node canisters. See “Installing disk drives” on page 40 for details.

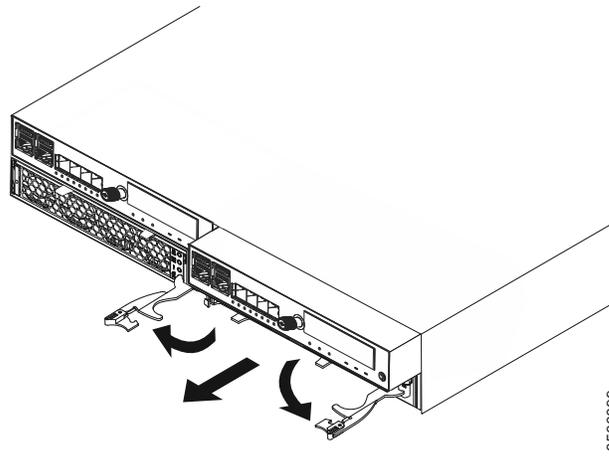
Opening the node canister

Before you can install options in a node canister, you must gain access by opening the canister cover.

Procedure

To open the canister, complete the following steps.

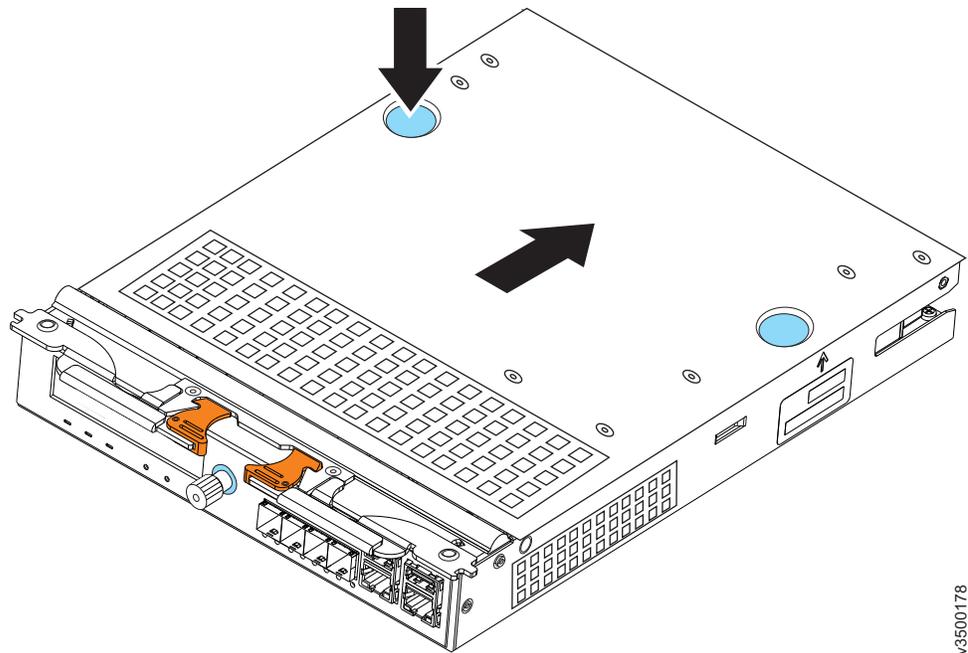
1. If the canister is already installed in the enclosure, remove it as shown in Figure 15 on page 27.
 - a. Unlatch the release levers and pull them open. The canister moves out of the slot approximately 0.6cm (0.25 inch).
 - b. Slide the canister out of the enclosure.



v3500099

Figure 15. Removing a node canister

2. Turn the canister over and open the cover as shown in Figure 16.
 - a. Press the recessed blue touch points on the cover.
 - b. Slide the cover away from the thumbscrew end of the canister.



v3500178

Figure 16. Removing the canister cover

Installing an 8 Gbps Fibre Channel 4-port host interface adapter

If you purchased an FC ACHK 8 Gbps Fibre Channel 4-port host interface adapter that was not preinstalled for you, you must install it in the node canister.

Before you begin

The 8 Gbps Fibre Channel 4-port host interface adapter is installed in the node canisters in the control enclosure. If your control enclosure has two node canisters, you must install the same options in *both* canisters. Do not start installation until you have *two* of the 8 Gbps Fibre Channel 4-port host interface adapter options.

About this task

Note: The host interface adapter has four ports, but only two small form-factor pluggable (SFP) transceivers are installed.

Procedure

To install the host interface adapter, complete the following steps.

1. Remove the SFP transceivers from the host interface adapter (Figure 17). To remove an SFP transceiver, swing the release handle open and use it to pull the transceiver out of the port.

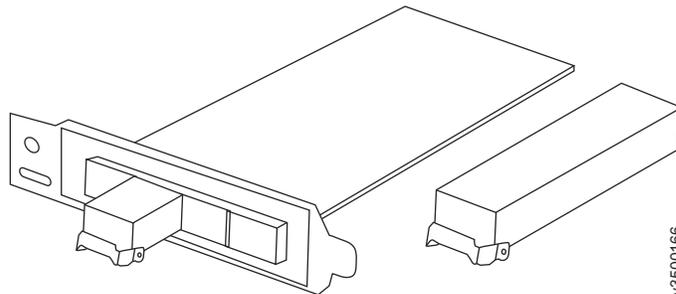
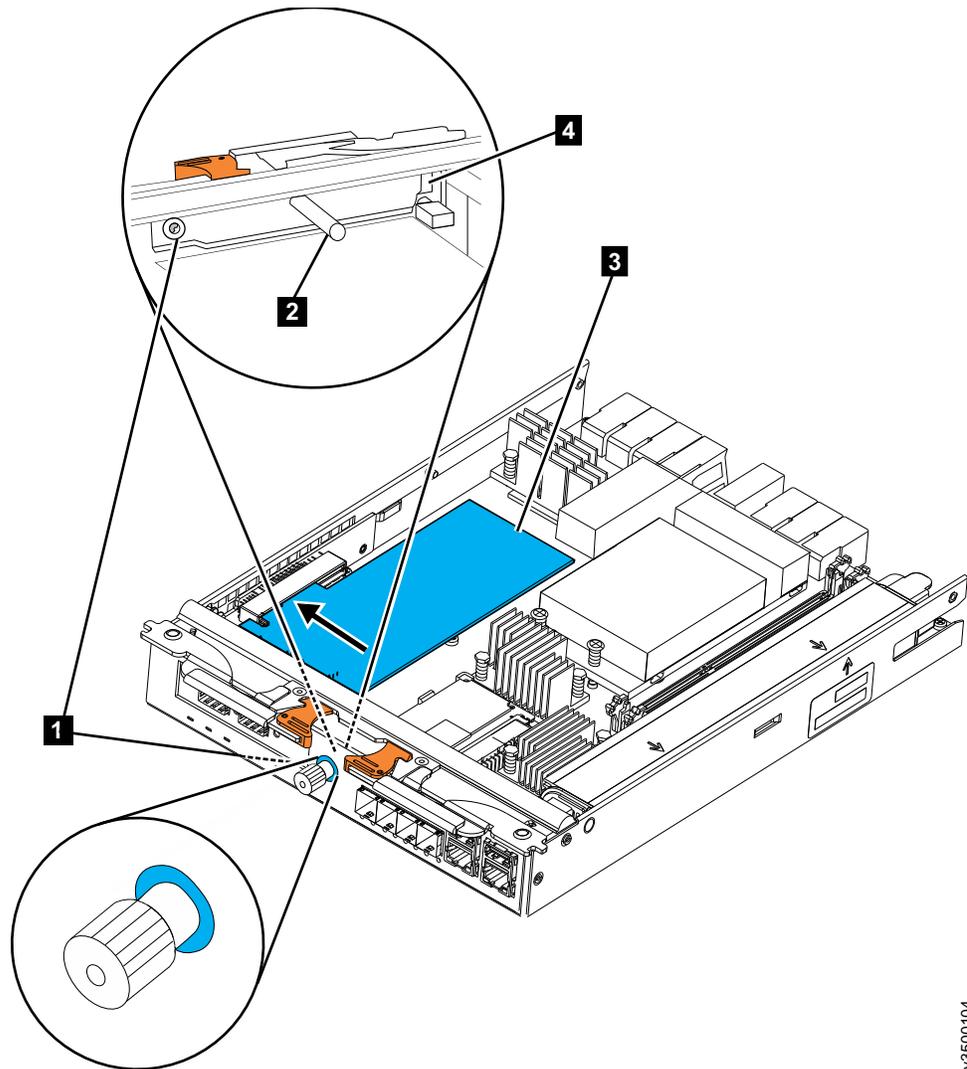


Figure 17. Host interface adapter and SFP transceivers

2. Loosen the retaining thumbscrew **1** as shown in Figure 18.



v3500104

Figure 18. Installing 8 Gbps Fibre Channel 4-port host interface adapter

- **1** Retaining thumbscrew
 - **2** Filler handle
 - **3** Host interface adapter
 - **4** Catch slot
3. From inside the canister, grasp the filler handle **2** and slide the filler plate toward the thumbscrew to disengage the plate from the catch slot **4**.
 4. Remove the filler plate.
 5. Insert the host interface adapter **3** into the canister as shown in Figure 18
 6. Align the mounting bracket of the host interface adapter with the inside of the host interface adapter aperture at the thumbscrew end of the canister, ensuring that the tab at the end of the faceplate is aligned with the catch slot **4**.
 7. Align the connecting edge of the host interface adapter with the slot in the host interface adapter connector inside the canister.

8. Apply pressure to the opposite edge of the host interface adapter to push the adapter into the connector.
9. Check that the host interface adapter is installed squarely in its slot and tighten the retaining thumbscrew **1**.
10. Reinstall the SFP transceivers. To install a transceiver, push it fully into the port and close the release handle.
11. If you purchased the additional 2-transceiver option, install the extra SFP transceivers in the remaining ports.

Installing a 10 Gbps iSCSI-FCoE 2-port host interface adapter

If you purchased an FC ACHM 10 Gbps iSCSI-FCoE 2-port host interface adapter that was not pre-installed for you, you must install it in the node canister.

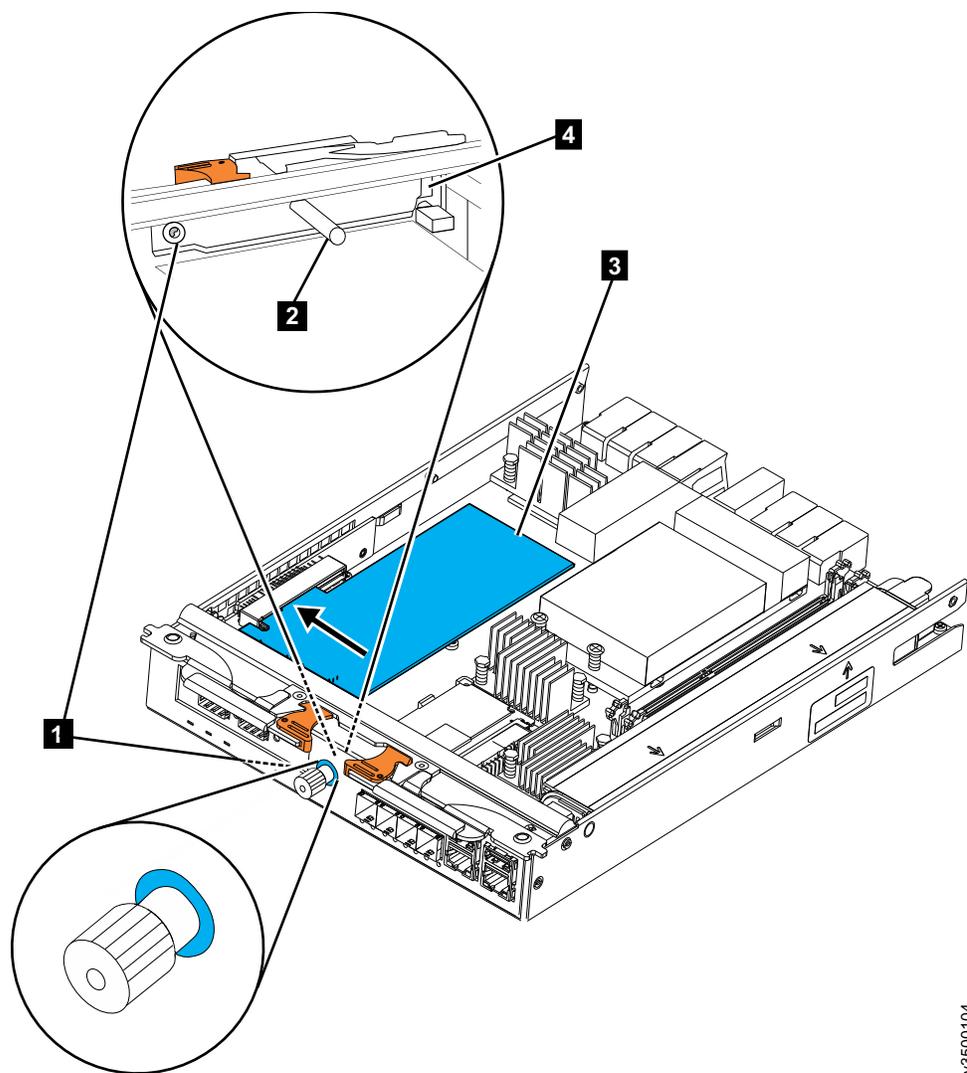
Before you begin

The 10 Gbps iSCSI-FCoE 2-port host interface adapter is installed in the node canisters in the control enclosure. If your control enclosure has two node canisters, you must install the same options in *both* canisters. Do not start installation until you have *two* of the 10 Gbps iSCSI-FCoE 2-port host interface adapter options.

Procedure

To install the host interface adapter, complete the following steps.

1. Remove each SFP transceiver from the host interface adapter. To remove an SFP transceiver, swing the release handle open and use it to pull the transceiver out of the port.
2. Remove the filler plate from the host interface adapter slot.
 - a. Loosen the retaining thumbscrew **1** as shown in Figure 19 on page 31.



v3500104

Figure 19. Installing 10 Gbps iSCSI-FCoE 2 port host interface adapter

- **1** Retaining thumbscrew
 - **2** Filler handle
 - **3** Host interface adapter
 - **4** Catch slot
- b. From inside the canister, grasp the filler handle **2** and slide the filler plate toward the center of the canister to disengage the plate from the catch slot.
 - c. Remove the filler plate.
 3. Insert the 10 Gbps iSCSI-FCoE 2-port host interface adapter **3** into the canister as shown in Figure 19.
 4. Align the mounting bracket of the host interface adapter with the inside of the host interface adapter aperture (adjacent to the thumbscrew), ensuring that the tab at the end of the faceplate is aligned with the catch slot.
 5. Align the connecting edge of the host interface adapter with the slot in the host interface adapter connector inside the canister.
 6. Apply pressure to the opposite edge of the host interface adapter to push the adapter into the connector.

7. Check that the host interface adapter is installed squarely in its slot and tighten the retaining thumbscrew **1**.
8. Reinstall the SFP transceivers that were removed in step 1 on page 30. To install a transceiver, push it fully into the port and close the release handle.

Installing a 1 Gbps iSCSI 4-port host interface adapter

If you purchased an FC ACHL 1 Gbps iSCSI 4-port host interface adapter that was not pre-installed for you, you must install it in the node canister.

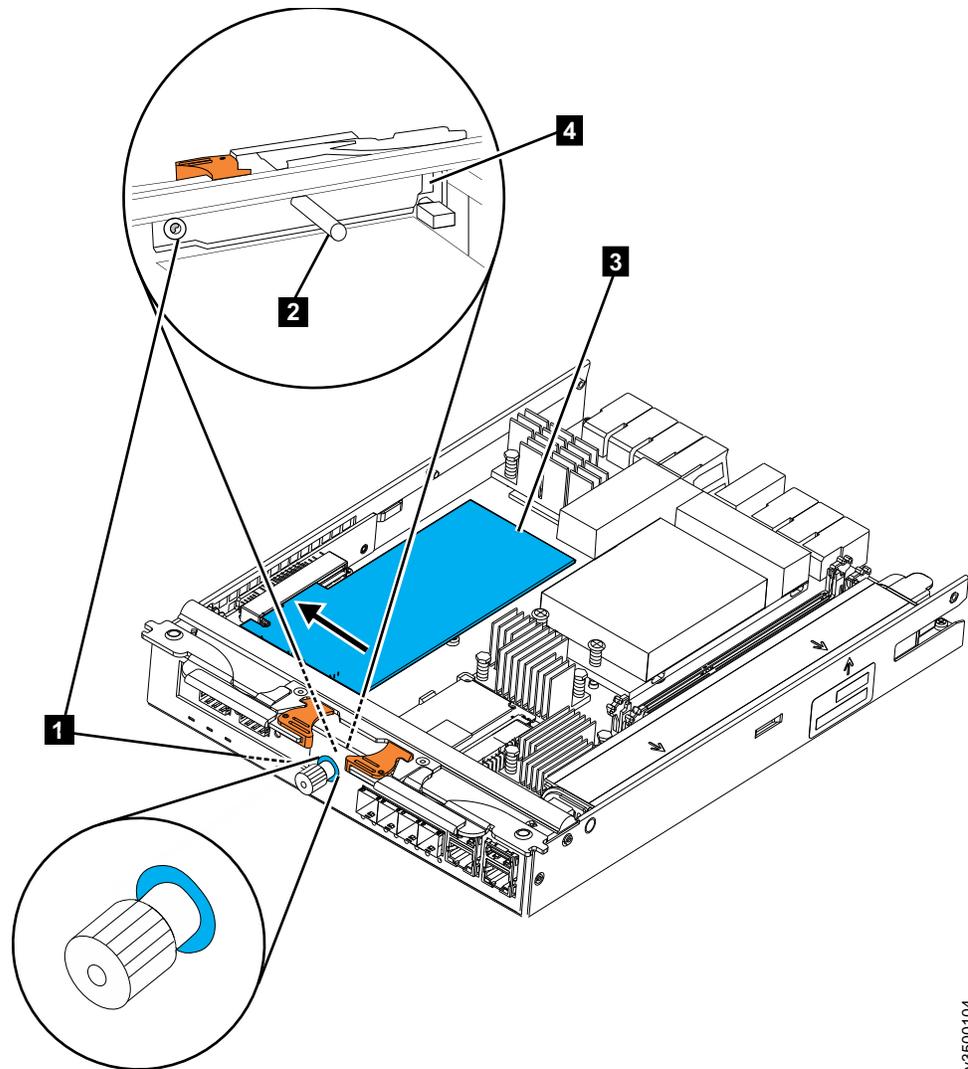
Before you begin

The 1 Gbps iSCSI 4-port host interface adapter is installed in the node canisters in the control enclosure. If your control enclosure has two node canisters, you must install the same options in *both* canisters. Do not start installation until you have *two* of the 1 Gbps iSCSI 4-port host interface adapter options.

Procedure

To install the host interface adapter, complete the following steps.

1. Loosen the retaining thumbscrew **1** as shown in Figure 20 on page 33.



v3500104

Figure 20. Installing 1 Gbps iSCSI 4-port host interface adapter

- **1** Retaining thumbscrew
 - **2** Filler handle
 - **3** Host interface adapter
 - **4** Catch slot
2. From inside the canister, grasp the filler handle **2** and slide the filler plate toward the center of the canister to disengage the plate from the catch slot.
 3. Remove the filler plate.
 4. Insert the host interface adapter **3** into the canister as shown in Figure 20.
 5. Align the mounting bracket of the host interface adapter with the inside of the host interface adapter aperture at the rear of the canister, ensuring that the tab at the end of the faceplate is aligned with the catch slot.
 6. Align the connecting edge of the host interface adapter with the slot in the host interface adapter connector inside the canister.
 7. Apply pressure to the opposite edge of the host interface adapter to push the adapter into the connector.
 8. Check that the host interface adapter is installed squarely in its slot and tighten the retaining thumbscrew **1**.

Installing a SAS 4-port host interface adapter

If you purchased an FC ACHJ SAS 4-port host interface adapter that was not pre-installed for you, you must install it in the node canister.

Before you begin

The SAS 4-port host interface adapter is installed in the node canisters in the control enclosure. If your control enclosure has two node canisters, you must install the same options in *both* canisters. Do not start installation until you have *two* of the SAS 4-port host interface adapter options.

Procedure

To install the host interface adapter, complete the following steps.

1. Loosen the retaining thumbscrew **1** as shown in Figure 21.

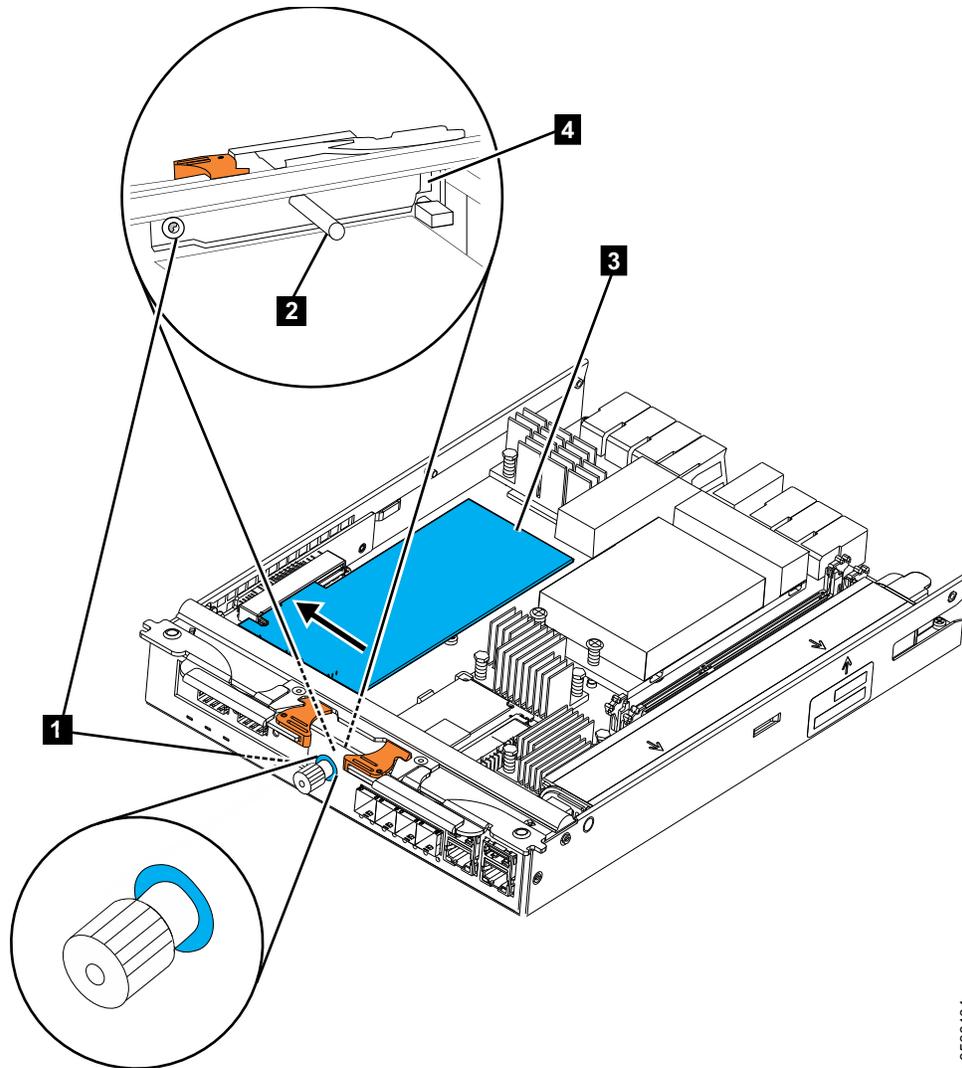


Figure 21. Installing SAS 4-port host interface adapter

- **1** Retaining thumbscrew
- **2** Filler handle

v3500104

- **3** Host interface adapter
 - **4** Catch slot
2. From inside the canister, grasp the filler handle **2** and slide the filler plate toward the center of the canister to disengage the plate from the catch slot.
 3. Remove the filler plate.
 4. Insert the host interface adapter **3** into the canister as shown in Figure 21 on page 34.
 5. Align the mounting bracket of the host interface adapter with the inside of the host interface adapter aperture at the rear of the canister, ensuring that the tab at the end of the faceplate is aligned with the catch slot.
 6. Align the connecting edge of the host interface adapter with the slot in the host interface adapter connector inside the canister.
 7. Apply pressure to the opposite edge of the host interface adapter to push the adapter into the connector.
 8. Check that the host interface adapter is installed squarely in its slot and tighten the retaining thumbscrew **1**.

Installing an 8 GB cache memory update

If you purchased an FC ACHB 8 GB Cache Update option that was not pre-installed for you, you must install it.

Before you begin

The 8 GB Cache Update option is installed in the node canisters in the control enclosure. If your control enclosure has two node canisters, you must install the same options in *both* canisters. Do not start installation until you have *two* of the Cache Update options.

About this task

The Cache Update option consists of a 4 GB memory module. When added to a node canister, it increases the total memory in the canister to 8 GB.

The memory module is inserted into memory slot 2, located between the existing memory module and the battery (Figure 22 on page 36).

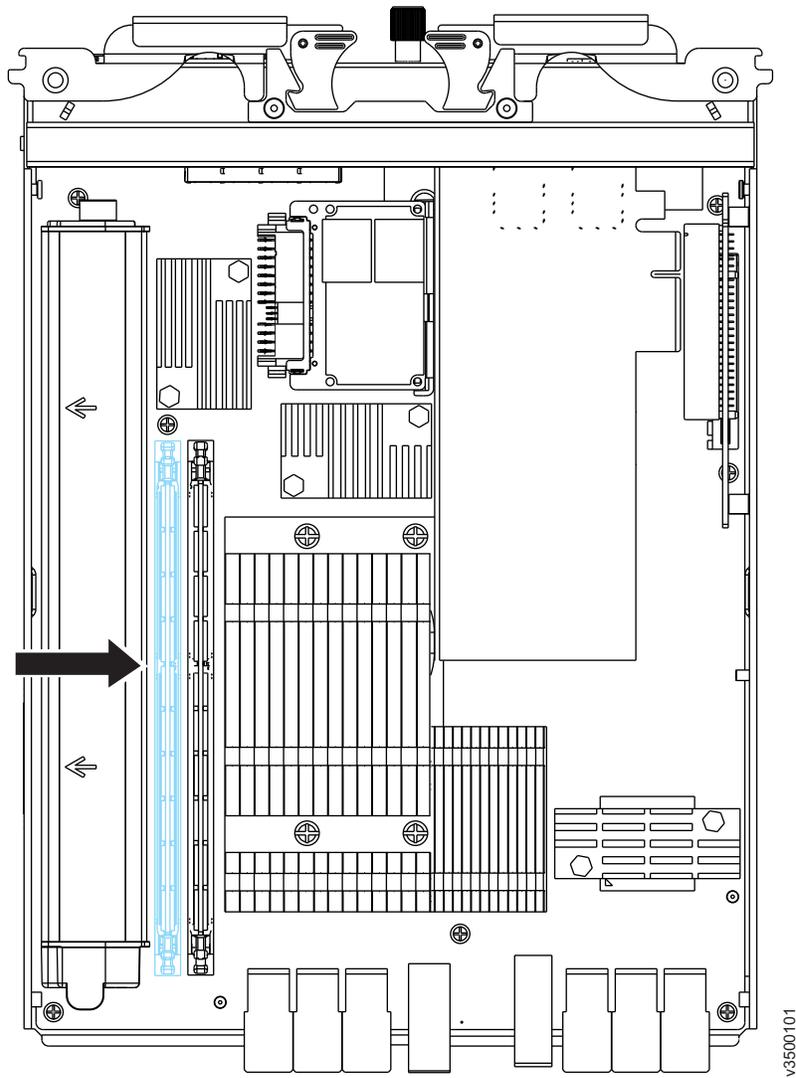


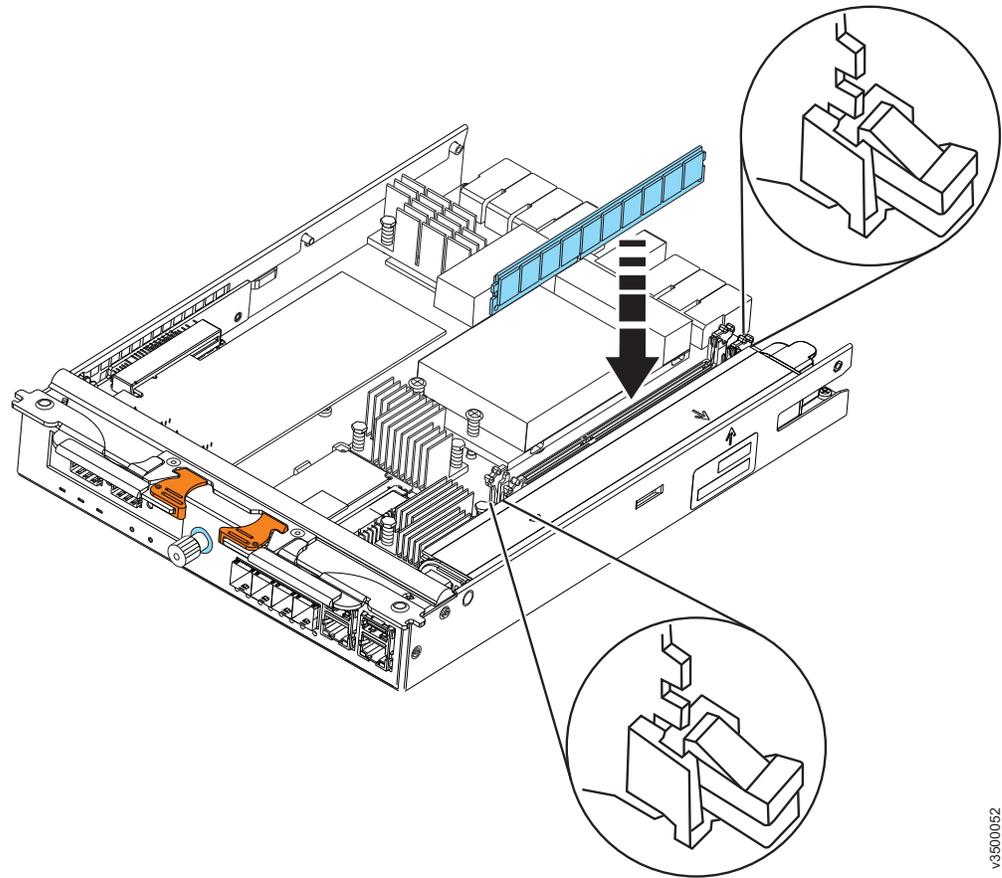
Figure 22. Where to install the cache memory update

Procedure

To install the memory module option, complete the following steps.

1. Open the retaining clip on each end of the memory module connector as shown in Figure 23 on page 37.

Attention: To avoid breaking the retaining clips or damaging the memory module connectors, open and close the clips gently.



v3500052

Figure 23. Installing memory module option

2. Touch the static-protective package that contains the memory module to any unpainted metal surface on the outside of the canister.
3. Remove the memory module from the package.
4. Turn the memory module so that the keys align correctly with the connector.
5. Insert the memory module into the connector by aligning the edges of the module with the slots at the ends of the connector (see Figure 23).
6. Firmly press the memory module straight down into the connector by applying pressure on both ends of the module simultaneously. The retaining clips snap into the locked position when the module is firmly seated in the connector.

Note: If you can see a gap between the module and the retaining clips, the module has not been correctly inserted. Open the retaining clips, remove the module, and then reinsert it.

Closing the node canister

After installing options in a node canister, you must close the canister cover and install the canister in the control enclosure.

Procedure

To close the canister, complete the following steps.

1. Reinstall the cover as shown in Figure 24.
 - a. Align the four hook slots on the cover with the pins on the canister.
 - b. Slide the cover toward the latch and release levers until it locks into place.

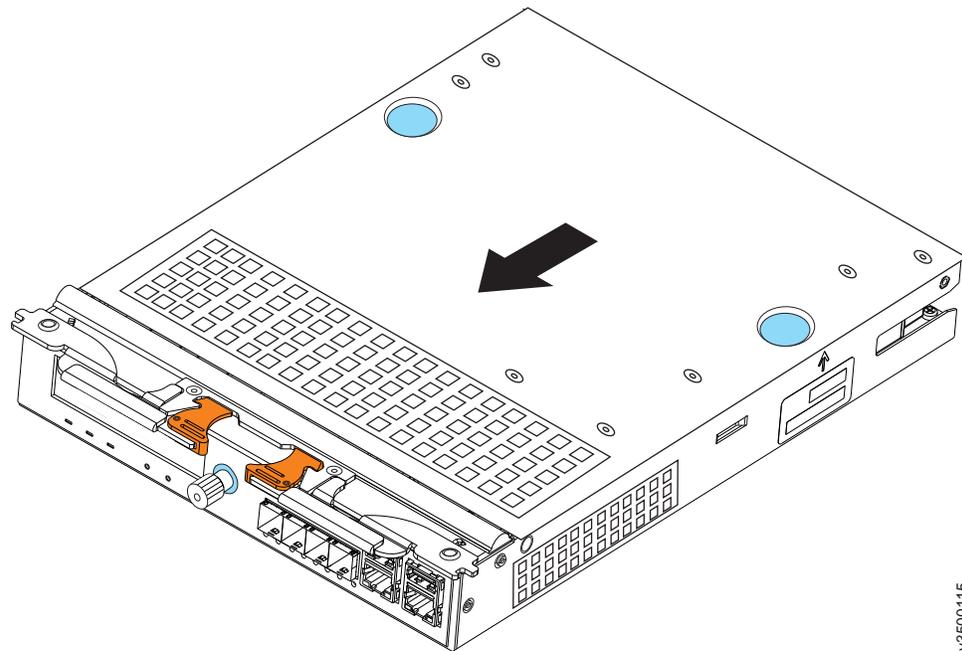


Figure 24. Reinstalling the canister cover

v3500115

2. Turn the canister over and install it in the control enclosure as shown in Figure 25.
 - a. With the latch and release levers fully extended, slide the canister into the enclosure until the levers begin to move inwards.
 - b. Simultaneously close both latch and release levers.

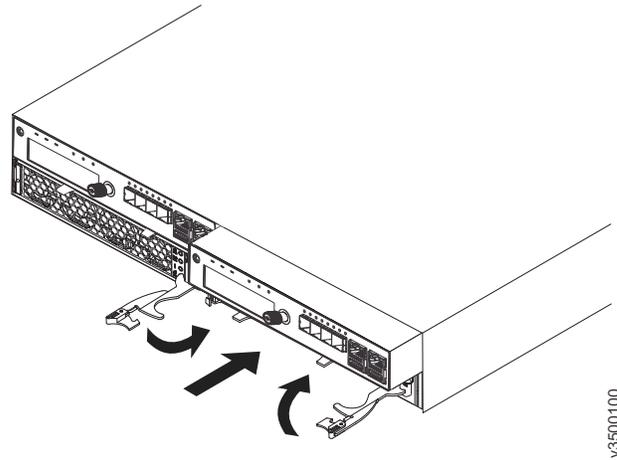


Figure 25. Installing a node canister

v3500100

Installing disk drives

If you purchased disk drives that were not preinstalled for you, you must install them.

About this task

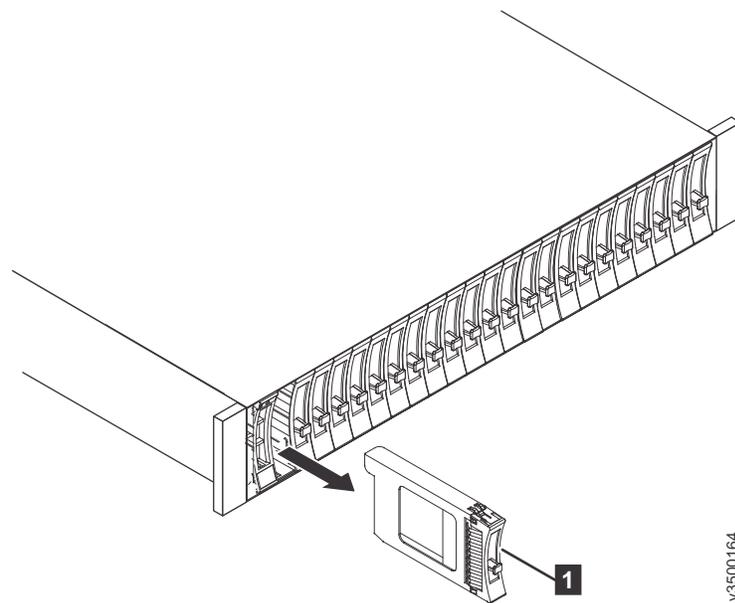
Drives can be installed in the control enclosure or any of the expansion enclosures. The installation procedure is the same for either enclosure type.

Install all the drives you require before configuring the system. This allows the best provisioning of drives into arrays.

Procedure

To install a drive, complete the following steps.

1. Remove the filler panel from the slot into which you want to install the drive (as shown in Figure 26).
 - a. Grip the front of the filler panel **1** and pull firmly to remove it from the drive slot.
 - b. Save the filler panel for future use.

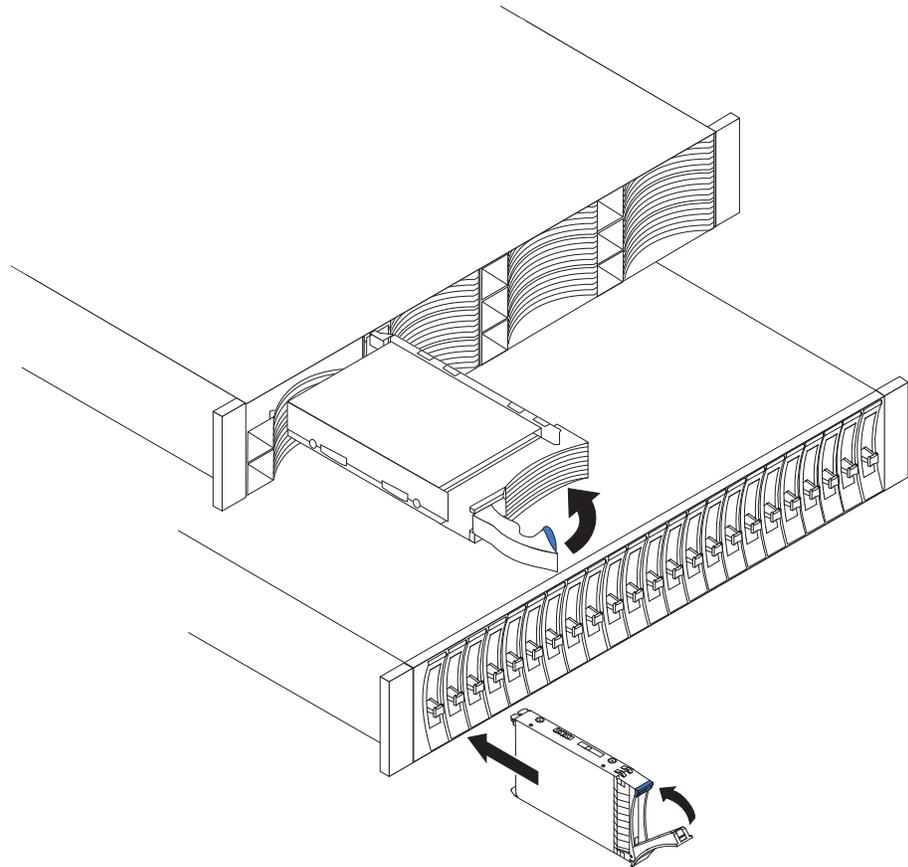


v3500164

Figure 26. Removing a filler panel

- **1** Filler panel
2. Touch the static-protective package that contains the drive to any unpainted surface on the outside of the enclosure.
 3. Remove the drive from the package.

4. Install the drive in the empty slot as shown in Figure 27.
 - a. Ensure that the drive-tray handle is in the open (unlocked) position.
 - b. Align the drive assembly with the guide rails in the slot.
 - c. Gently push the drive assembly into the slot until the drive stops.
 - d. Rotate the drive handle to the closed (locked) position.



v3500043

Figure 27. Installing a drive

Connecting SAS cables to expansion enclosures

If you have installed expansion enclosures, you must connect them to a control enclosure.

Before you begin

If you purchased disk drives that were not preinstalled for you, you must install all of the drives **before** connecting the SAS cables to the expansion enclosures.

About this task

This task applies if you are installing one or more expansion enclosures. You can attach up nine expansion enclosures to the control enclosure.

Note: When connecting SAS cables between enclosures, you must follow a list of guidelines to ensure that your configuration is valid. Do not begin connecting the cables until you have read the “SAS cabling guidelines” topic.

Procedure

To install the cables, complete the following steps.

1. Using the supplied SAS cables, connect the control enclosure to the first expansion enclosure as shown in Figure 28.
 - a. Connect SAS port 4 of the left node canister in the control enclosure to SAS port 1 of the left expansion canisters in the first expansion enclosure.
 - b. Connect SAS port 4 of the right node canister in the control enclosure to SAS port 1 of the right expansion canisters in the first expansion enclosure.

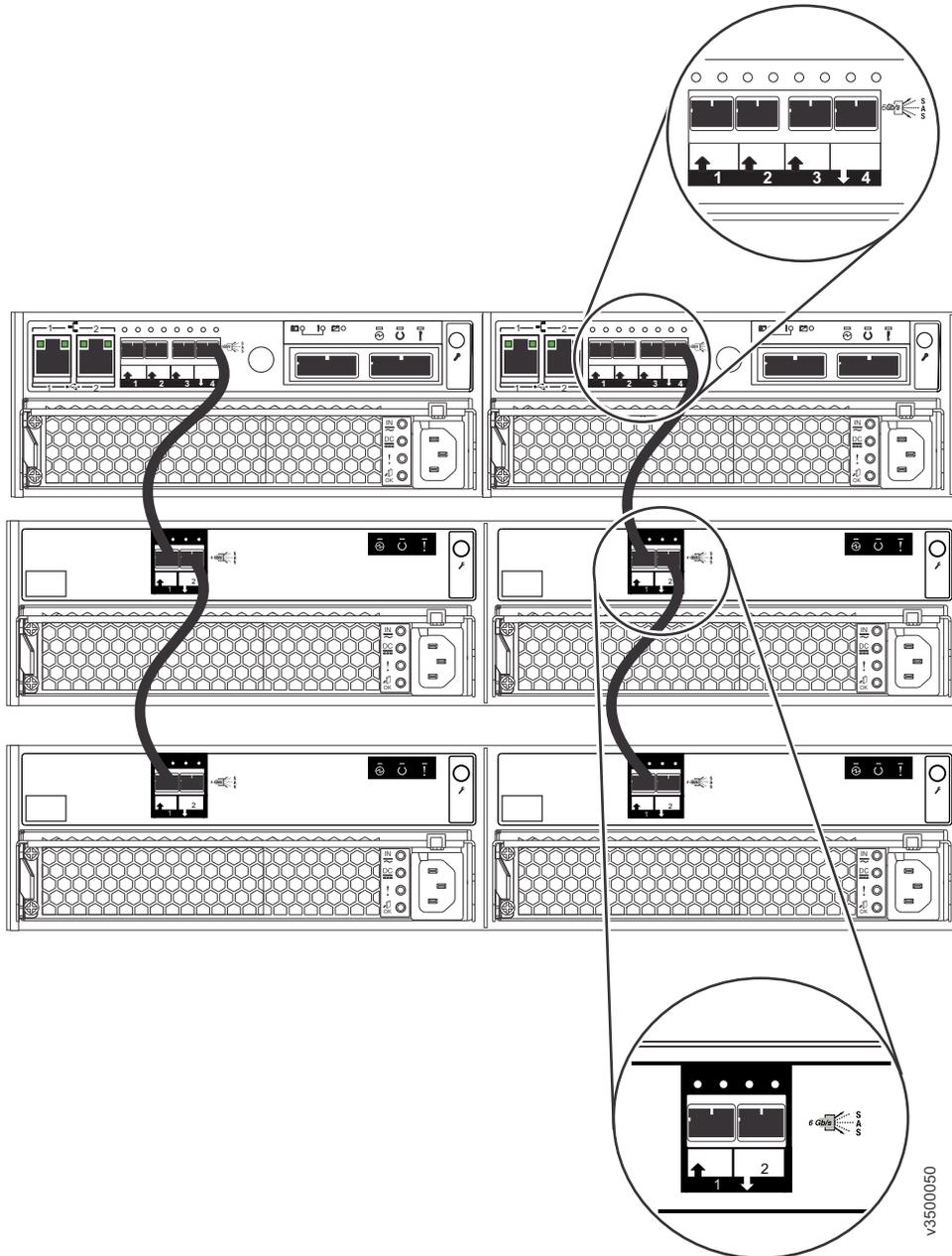


Figure 28. Connecting the SAS cables

2. If additional expansion enclosures are installed, connect each one to the previous expansion enclosure as shown in Figure 28 on page 42.
 - a. Use one cable to connect SAS port 2 of the left expansion canister in the previous expansion enclosure to SAS port 1 of the left expansion canister in the newly installed expansion enclosure.
 - b. Use the second cable to connect SAS port 2 of the right expansion canister in the previous expansion enclosure to SAS port 1 of the right expansion canister in the newly installed expansion enclosure.

Note: A control enclosure can support up to nine expansion enclosures.

SAS cabling guidelines

When connecting SAS cables between enclosures, you must follow a list of guidelines to ensure that your configuration is valid.

Orienting the connector

When inserting SAS cables, make sure the connector (Figure 29) is oriented correctly.

- The orientation of the connector must match the orientation of the port before you push the connector into the port. The cable connector and socket are keyed, and it is important that you have proper alignment of the keys when the cable is inserted.
- The blue pull tab must be **below** the connector.
- Insert the connector **gently** until it clicks into place. If you feel resistance, the connector is probably oriented the wrong way. Do **not** force it.
- When inserted correctly, the connector can only be removed by pulling the tab.
- When both ends of a SAS cable are inserted correctly, the green link LEDs next to the connected SAS ports are lit.

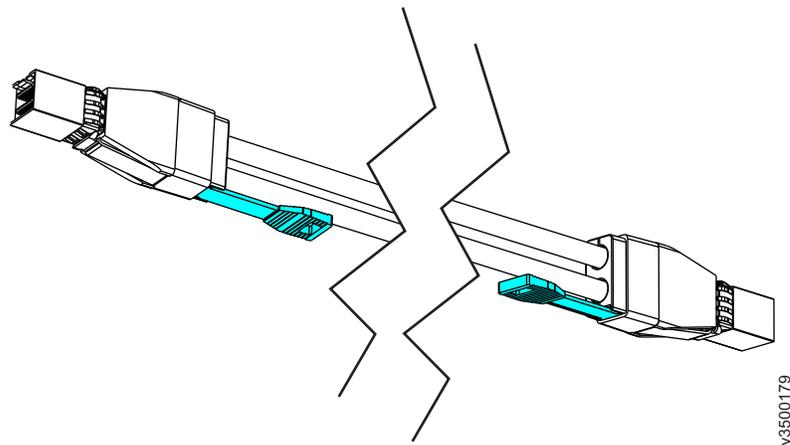


Figure 29. SAS cable connectors

Guidelines

Be aware of the following guidelines when you begin to attach the cables to the SAS ports.

- No more than nine expansion enclosures can be chained to port 4 of a node canister.

- No cable can be connected between a port on a left canister and a port on a right canister.
- A cable must not be connected between ports in the same enclosure.
- Port 4 of a control enclosure is not cabled to another control enclosure.
- Attach cables serially between enclosures. Do not skip an enclosure.
- The last enclosure in a chain must not have cables in port 2 of canister 1 and port 2 of canister 2.
- A connected port on the node canister must connect to a single port on an expansion canister. Cables that split the connector out into separate physical connections are not supported.
- Ensure that cables are installed in an orderly way to reduce the risk of cable damage when replaceable units are removed or inserted.
- Arrange your cables to provide access to the following items:

USB ports

USB port access is required when you use a USB flash drive to configure the system.

Enclosures

Access is required to the hardware for servicing and for safely removing and replacing components using two or more people.

Connecting Ethernet cables to node canisters

To provide system management connectivity for your Storwize V3700 system, you must connect Ethernet cables to Ethernet port 1 of each node canister in the control enclosure. This connection can optionally also be used for iSCSI host connection. Ethernet port 2 can optionally be connected to provide a second system management address, a second iSCSI host connection, or both.

Procedure

To install the Ethernet cables, complete the following steps.

1. Connect Ethernet port 1 of each node canister in the system to the IP network that will provide connection to the system management interfaces, as shown in Figure 30. This port can also be used for iSCSI connectivity to the system by hosts on the network. Where more than one control enclosure is present in the system, ensure port 1 of every node canister is connected to the same network to provide access if the configuration node fails.

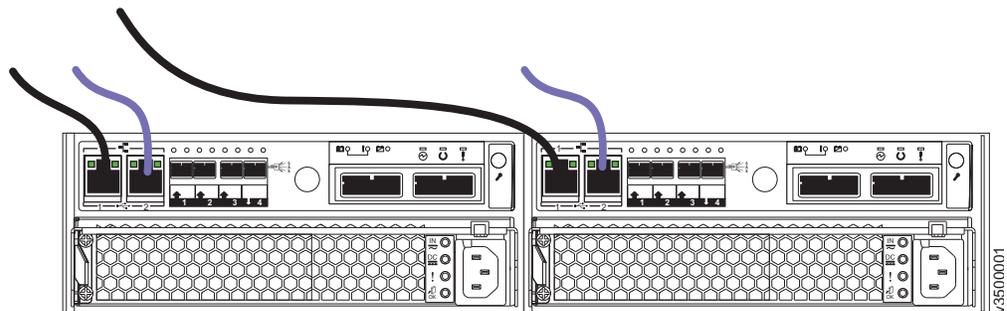


Figure 30. Connecting the Ethernet cables

2. Optionally, connect Ethernet port 2 of each node canister in the system to a second IP network that will provide redundant connection to the system

management interfaces, as shown by the lighter cable connection in Figure 30 on page 44. This port can also be used for iSCSI connectivity to the system by hosts on the network. If there is more than one control enclosure in the system, ensure that port 2 of every node canister is connected to the same network to provide access if the configuration node fails.

Connecting Ethernet cables to 1 Gbps iSCSI 4-port host interface adapters

If you installed 1 Gbps iSCSI 4-port host interface adapters, you can use Ethernet cables to connect them to your Ethernet SAN.

About this task

The Ethernet port numbering on the host interface adapter starts at 3, because Ethernet ports one and two are built into the canister.

Note: The Ethernet cables are connected in pairs. Both canisters must have the same number of cables connected.

Procedure

To install the cables, complete the following steps.

1. Identify the correct pair of Ethernet cables for the Ethernet ports labeled 3 in the left canister and the right canister.
2. Connect the appropriate cable to each port.
3. For each additional pair of Ethernet ports in the right and left canisters, identify the correct pair of cables and connect them.

Results

Figure 31 shows an example configuration with a pair of Ethernet cables connected to port 3 in each canister, and another pair connected to port 4 in each canister.

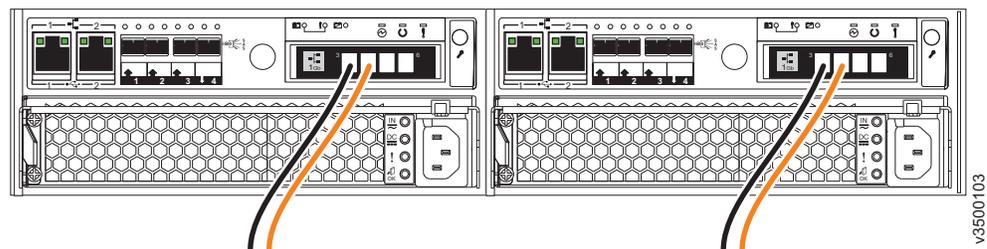


Figure 31. Example configuration with two pairs of Ethernet cables connected to 1 Gbps iSCSI 4-port host interface adapters

Connecting fibre cables to a 10 Gbps iSCSI-FCoE 2-port host interface adapter

If your Storwize V3700 system has 10 Gbps iSCSI-FCoE 2-port host interface adapters installed, you can use fibre cables to connect them to your 10 Gbps Ethernet or FCoE SAN.

About this task

The Ethernet port numbering on the host interface adapter starts at 3, because Ethernet ports one and two are built into the canister.

Note: The fibre cables are connected in pairs. Both canisters must have the same number of cables connected.

Procedure

To install the cables, complete the following steps.

1. Identify the correct pair of fibre cables for the Ethernet ports that are labeled 3 in the left canister and the right canister.
2. Connect the appropriate cable to each port.
3. For each additional pair of Ethernet ports in the right and left canisters, identify the correct pair of cables and connect them.

Results

Figure 32 shows an example configuration. The figure shows a pair of Ethernet cables that are connected to port 3 in each canister, and another pair that is connected to port 4 in each canister.

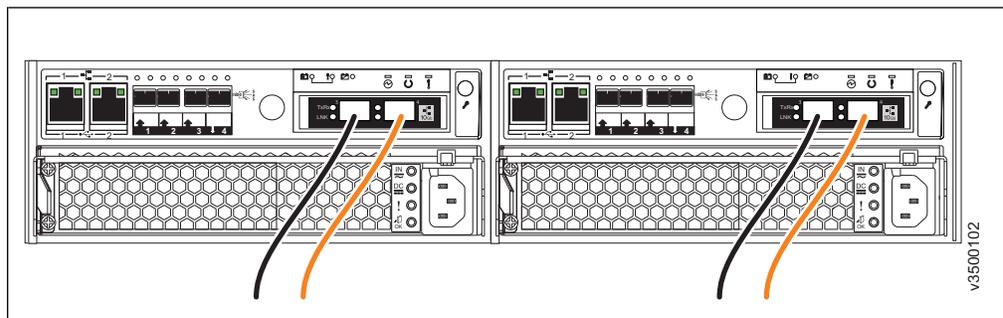


Figure 32. Example configuration with two pairs of Ethernet cables connected to 10 Gbps iSCSI-FCoE 2-port host interface adapters

4 Connecting Fibre Channel cables to Fibre Channel host interface adapter

If your Storwize V3700 has 8 Gbps Fibre Channel 4-port host interface adapters installed, you can use Fibre Channel cables to connect them to your Fibre Channel SAN.

Procedure

To install the cables, complete the following steps.

1. Connect the required number of Fibre Channel cables. Refer to the “Planning” section of the information center for instructions on determining the number of cables required.

Note: Both canisters must have the same number of cables connected.

Figure 33 shows an example configuration with two Fibre Channel cables connected to each canister.

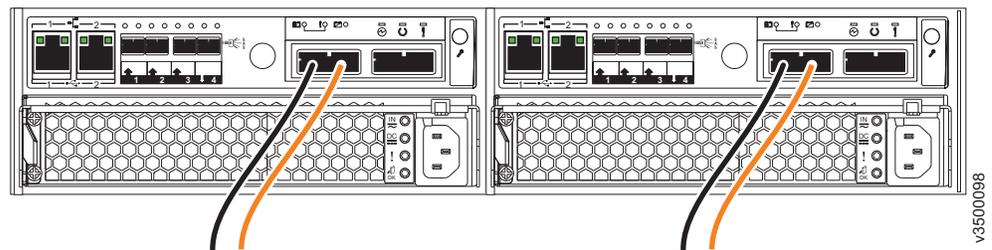


Figure 33. Example configuration with two Fibre Channel cables per canister

2. If you want to connect additional Fibre Channel cables, make sure to connect the same number of cables to each canister. Figure 34 shows an example configuration with four Fibre Channel cables connected to each canister.

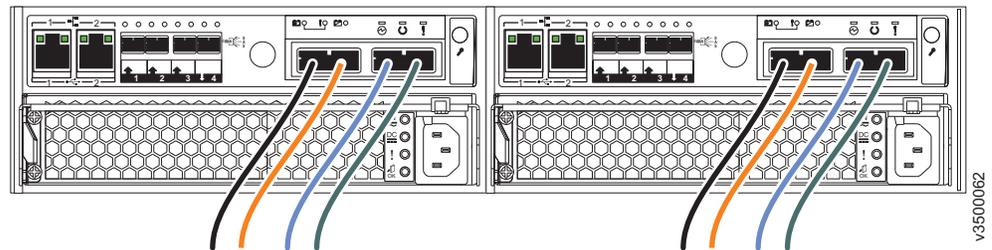


Figure 34. Example configuration with four Fibre Channel cables per canister

Connecting a control enclosure to a host

When installing a control enclosure, you can connect it to a host with SAS cables.

About this task

Two types of SAS cables are used for host attachment, depending on the requirements of the host.

- Mini SAS HD to Mini SAS HD (Figure 35 on page 48)

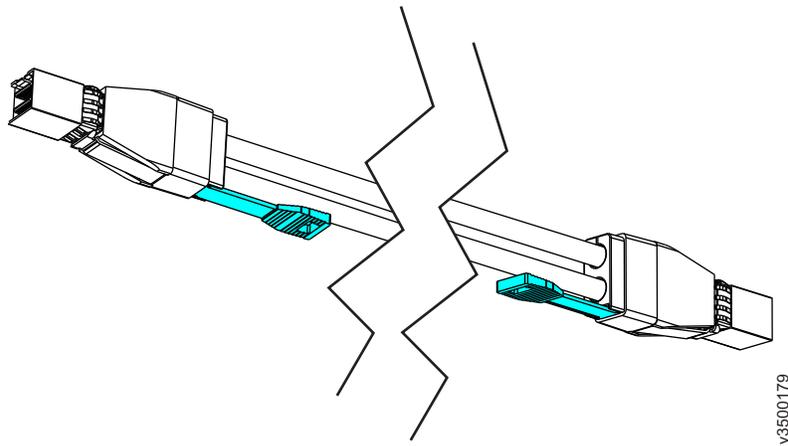


Figure 35. Mini SAS HD to Mini SAS HD cable

- Mini SAS HD to Mini SAS (Figure 36)

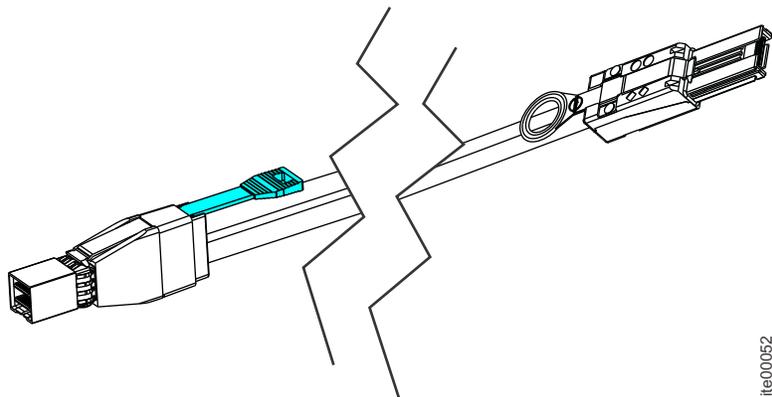


Figure 36. Mini SAS HD to Mini SAS cable

Note: When inserting SAS cables, make sure that the connector is oriented correctly.

- When connecting to the SAS ports on the left side of the node canister, the blue pull tab must be **below** the connector.
- When connecting to a SAS 4-port host interface adapter, the blue pull tab must be **above** the connector.
- Insert the connector **gently** until it clicks into place. If you feel resistance, the connector is probably oriented the wrong way. Do **not** force it.
- When inserted correctly, the connector can only be removed by pulling the tab.

Procedure

To install the cables, complete the following steps.

1. Connect the required number of SAS cables. Refer to the “Planning” section of the Knowledge Center for instructions on determining the number of cables required.

Note: When connecting to the SAS ports on the left side of the node canister, each host must be connected to **both** canisters. Both canisters must have the **same** number of cables connected.

2. Arrange the cables to provide access to the hardware.
 - **USB ports.** USB port access is required when you use a USB flash drive to configure the system.
 - **The enclosures themselves.** Access is required to the hardware for servicing and for safely removing and replacing components using two or more people.

Results

Figure 37 shows an example configuration with three SAS cables that are connected to each canister.

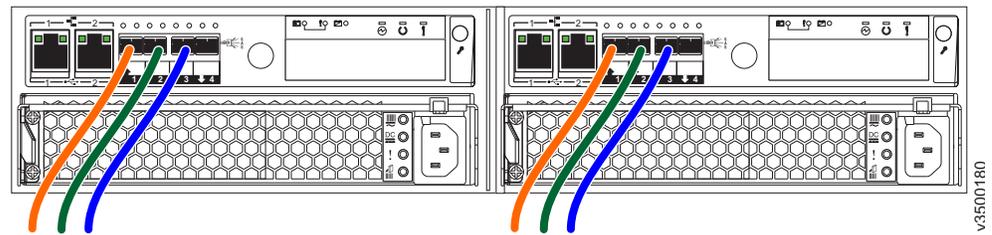


Figure 37. Example configuration with three SAS cables per canister

Figure 38 shows an example configuration with two SAS cables that are connected to a SAS 4-port host interface adapter.

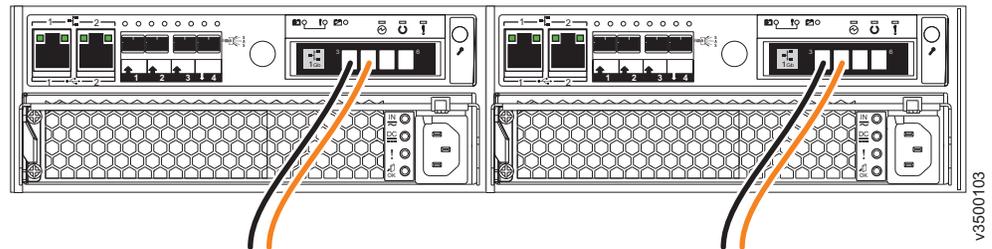


Figure 38. Example configuration with two SAS cables connected to a SAS 4-port host interface adapter

Powering on the system

After installing all hardware components, you must power on the system and check its status.

About this task

Attention: Do not power on the system with any open bays or slots.

- Every unused drive bay must be occupied by a filler panel.
- Filler panels must be installed in all empty host interface adapter slots.

Open bays or slots disrupt the internal air flow, causing the drives to receive insufficient cooling.

Procedure

To power on the system, complete the following steps.

1. Power on all expansion enclosures by connecting both power supply units of the enclosure to their power sources, using the supplied power cables. If the power sources have circuit breakers or switches, ensure that they are turned on. The enclosure does not have power switches. Repeat this step for each expansion enclosure in the system.

Note: Each enclosure has two power supply units. To provide power failure redundancy, connect the two power cords to separate power circuits.

2. From the rear of the expansion enclosure, check the LEDs on each expansion canister (see Figure 39).

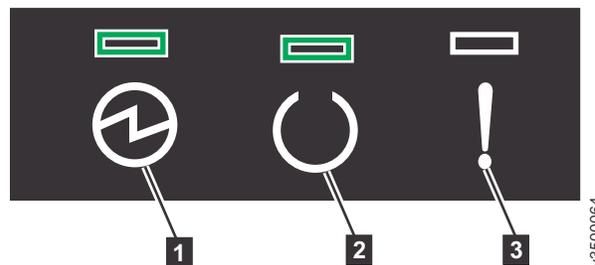


Figure 39. Expansion canister LEDs

- 1** Power
- 2** Status
- 3** Fault

The canister is ready with no critical errors when **Power** is illuminated, **Status** is illuminated, and **Fault** is off. If a canister is *not* ready, refer to the “Procedure: Understanding the system status using the LEDs” topic in “Troubleshooting”.

3. Wait for all expansion canisters to finish powering on.
4. Power on the control enclosure by connecting both power supply units of the enclosure to their power sources, using the supplied power cables. If the power sources have circuit breakers or switches, ensure that they are turned on. The enclosure does not have power switches.

Note: Each enclosure has two power supply units. To provide power failure redundancy, connect the two power cords to separate power circuits.

- From the rear of the control enclosure, check the LEDs on each node canister (see Figure 40).

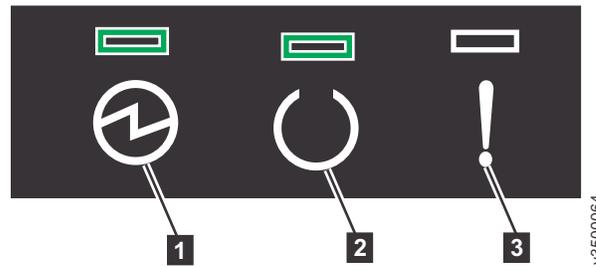


Figure 40. Node canister LEDs

- 1** Power
- 2** Status
- 3** Fault

The canister is ready with no critical errors when **Power** is illuminated, **Status** is blinking, and **Fault** is off. If a canister is *not* ready, refer to the “Procedure: Understanding the system status using the LEDs” topic in “Troubleshooting”.

Chapter 3. Configuring the system

Configuring your system is necessary in two situations: when you power up a new system for the first time, and when you add an expansion enclosure to an existing system.

The following instructions use the supplied USB flash drive to initialize the system. If you are not authorized to use a USB flash drive in your situation, refer to the “Troubleshooting” section of the IBM Knowledge Center. This topic describes how to make an Ethernet connection to the enclosure and to initialize the system by using the service assistant GUI.

After initializing the system, you will use the Storwize management GUI to complete the configuration procedures.

- The management GUI requires a supported web browser (see “Checking your web browser settings for the management GUI”).
- To configure a new system, you will log on to the management GUI with the default user name and password (see “User name and password for system initialization”).

The steps for initializing a new system vary, depending on the operating system of the computer you use for the procedure.

- For Microsoft Windows, refer to “Initializing the system with a Microsoft Windows computer” on page 57.
- For Apple MacOS, refer to “Initializing the system with an Apple Macintosh computer” on page 59.
- For Linux, refer to “Initializing the system with a Linux computer” on page 61.

The steps for adding an expansion enclosure to an existing system are described in “Adding an expansion enclosure to an existing system” on page 62.

Checking your web browser settings for the management GUI

To access the management GUI, you must ensure that your web browser is supported and has the appropriate settings enabled.

Before you begin

The management GUI supports the following web browsers:

- Mozilla Firefox 41
- Mozilla Firefox Extended Support Release (ESR) 38
- Microsoft Internet Explorer (IE) 11 and Microsoft Edge
- Google Chrome 46

IBM supports higher versions of the browsers if the vendors do not remove or disable function that the product relies upon. For browser levels higher than the versions that are certified with the product, customer support accepts usage-related and defect-related service requests. If the support center cannot re-create the issue, support might request the client to re-create the problem on a certified browser version. Defects are not accepted for cosmetic differences between browsers or

browser versions that do not affect the functional behavior of the product. If a problem is identified in the product, defects are accepted. If a problem is identified with the browser, IBM might investigate potential solutions or work-arounds that the client can implement until a permanent solution becomes available.

Procedure

To configure your web browser, follow these steps:

1. Enable JavaScript for your web browser.

For Mozilla Firefox, JavaScript is enabled by default and requires no additional configuration.

For Microsoft Internet Explorer (IE) running on Microsoft Windows 7:

- a. In Internet Explorer, click **Tools > Internet Options**.
- b. Click **Security Settings**.
- c. Click **Internet** to choose the Internet zone.
- d. Click **Custom Level**.
- e. Scroll down to the **Scripting** section, and then in **Active Scripting**, click **Enable**.
- f. Click **OK** to close **Security Settings**.
- g. Click **Yes** to confirm the change for the zone.
- h. Click **OK** to close **Internet Options**.
- i. Refresh your browser.

For Microsoft Internet Explorer (IE) running on Microsoft Windows Server 2008:

- a. In Internet Explorer, click **Tools > Internet Options**.
- b. Click **Security**.
- c. Click **Trusted sites**.
- d. On the **Trusted sites** dialog, verify that the web address for the management GUI is correct and click **Add**.
- e. Verify that the correct web address was added to the **Trusted sites** dialog.
- f. Click **Close** on the **Trusted sites** dialog.
- g. Click **OK**.
- h. Refresh your browser.

For Google Chrome:

- a. On the menu bar in the Google Chrome browser window, click **Settings**.
- b. Click **Show advanced settings**.
- c. In the **Privacy** section, click **Content settings**.
- d. In the **JavaScript** section, select **Allow all sites to run JavaScript**.
- e. Click **OK**.
- f. Refresh your browser.

2. Enable cookies in your web browser.

For Mozilla Firefox:

- a. On the menu bar in the Firefox browser window, click **Tools > Options**.
- b. On the Options window, select **Privacy**.
- c. Set "Firefox will" to **Use custom settings for history**.
- d. Select **Accept cookies from sites** to enable cookies.
- e. Click **OK**.

- f. Refresh the browser.
- For Microsoft Internet Explorer:
- a. In Internet Explorer, click **Tools > Internet Options**.
 - b. Click **Privacy**. Under **Settings**, move the slider to the bottom to allow all cookies.
 - c. Click **OK**.
 - d. Refresh your browser.
- For Google Chrome:
- a. On the menu bar in the Google Chrome browser window, click **Settings**.
 - b. Click **Show advanced settings**.
 - c. In the **Privacy** section, click **Content settings**.
 - d. In the **Cookies** section, select **Allow local data to be set**.
 - e. Click **OK**.
 - f. Refresh your browser.
3. Enable file download on IE 10 and 11 running on Windows 2012.
 - a. In Internet Explorer, click **Tools > Internet Options**.
 - b. On the Internet Options window, select the **Security** tab.
 - c. On the **Security** tab, click the **Internet zone**.
 - d. Click **Custom level** to customize the security level for this zone.
 - e. Scroll down to **Downloads** and select **Enable** under File download.
 - f. Click **OK**.
 - g. Click **Yes** to confirm.
 - h. Click **OK** to close the Internet Options.
 4. Enable scripts to disable or replace context menus. (Mozilla Firefox only).

For Mozilla Firefox:

 - a. On the menu bar in the Firefox browser window, click **Tools > Options**.
 - b. On the Options window, select **Content**.
 - c. Click **Advanced** by the **Enable JavaScript** setting.
 - d. Select **Disable or replace context menus**.
 - e. Click **OK** to close the Advanced window.
 - f. Click **OK** to close the Options window.
 - g. Refresh your browser.
 5. Enable TLS 1.1/1.2 (Microsoft Internet Explorer 9 and 10 only).

For Microsoft Internet Explorer:

 - a. Open Internet Explorer.
 - b. Select **Tools > Internet Options**.
 - c. Select the **Advanced** tab.
 - d. Scroll to the **Security** section.
 - e. Check the **Use TLS 1.1** and **Use TLS 1.2** checkboxes.

Note: IE 11 and later enable TLS 1.1/1.2 by default.

User name and password for system initialization

During the initialization procedure, you need to log in to the management GUI for the Storwize V3700 system.

The default user name and password for the management GUI are listed in Table 12.

Table 12. Default user name and password for the management GUI

User name	Password
superuser	passw0rd

Note: The 0 character in the password is a zero, not the letter O.

Initializing the system with a Microsoft Windows computer

To initialize a new system with a Microsoft Windows computer, use the initialization tool that was shipped with your order.

Before you begin

- Begin this procedure *after* you have installed all the enclosures, drives and other options you have purchased.
- You need a Microsoft Windows computer to complete the initialization procedure. The computer must have:
 - A USB port
 - A supported browser

For best results, the Microsoft Windows computer and the Storwize system must be connected to the same network.

About this task

This procedure is valid for Microsoft Windows 8.1 (64-bit) or Microsoft Windows 7 (64-bit).

- Use this procedure *only* when initializing a new control enclosure (with, optionally, one or more expansion enclosures).
- Do *not* use this procedure when adding an expansion enclosure to an existing system.

Procedure

To initialize the system, complete the following steps.

1. Gather the information you will use to configure the system.
 - You must have the IP network address you will use to manage the system.
 - IP address
 - Subnet mask
 - Gateway
 - Other information is optional, but useful for enabling additional capabilities.
 - The IP address of a Network Time Protocol (NTP) server for automated setting of date and time
 - The IP address of a simple mail transfer protocol (SMTP) server for sending notification of alerts
2. Locate the USB flash drive that was shipped with your order in the documentation package.
3. Insert the USB flash drive into a USB port on the Microsoft Windows computer.
4. To launch the tool, open the USB flash drive. and double-click **InitTool.bat**. The initialization tool wizard starts.
5. In the wizard, click **Next** and select **Create a new system**.
6. Follow the on-screen instructions given by the initialization tool. You will be instructed to complete the following actions:
 - a. Enter the details of the system management address you need to use.
 - b. Connect the USB flash drive to the Storwize system and allow it to initialize.
 - c. Connect the USB flash drive to the computer to check that the initialization completed.

7. If the system initialization completed successfully, click **Finish**. If you have a network connection to the Storwize system, the system management GUI is displayed. If the computer does not have a network connection to the Storwize system, go to the computer you will use to manage the system and start a supported browser. Direct the browser to the management address you specified for the system.
8. Log in with user name **superuser** and password **passw0rd**.

Note: The **0** character in the password is a zero, not the letter O.

9. Follow the on-screen instructions to begin setting up your system.

Note: The other options that are available in the initialization tool are used to recover the service IP address or the superuser password.

Initializing the system with an Apple Macintosh computer

To initialize a new system with an Apple Macintosh computer, use the initialization tool that was shipped with your order.

Before you begin

- Begin this procedure *after* you have installed all the enclosures, drives and other options you have purchased.
- You need an Apple Macintosh computer to complete the initialization procedure. The computer must have:
 - A USB port
 - A supported browser

For best results, the Apple Macintosh computer and the Storwize system must be connected to the same network.

About this task

This procedure is valid for Apple MacOS X 10.7.

- Use this procedure *only* when initializing a new control enclosure (with, optionally, one or more expansion enclosures).
- Do *not* use this procedure when adding an expansion enclosure to an existing system.

Procedure

To initialize the system, complete the following steps.

1. Gather the information you will use to configure the system.
 - You must have the IP network address you will use to manage the system.
 - IP address
 - Subnet mask
 - Gateway
 - Other information is optional, but useful for enabling additional capabilities.
 - The IP address of a Network Time Protocol (NTP) server for automated setting of date and time
 - The IP address of a simple mail transfer protocol (SMTP) server for sending notification of alerts
2. Locate the USB flash drive that was shipped with your order in the documentation package.
3. Insert the USB flash drive into a USB port on the Apple Macintosh computer.
4. Open a terminal window.
5. Locate the root directory of the USB flash drive. The root directory is usually located in the /Volumes/ directory.
6. Type: **sh InitTool.sh** The initialization tool wizard starts.
7. In the wizard, click **Next** and select **Create a new system**.
8. Follow the on-screen instructions given by the initialization tool. You will be instructed to complete the following actions:
 - a. Enter the details of the system management address you need to use.
 - b. Eject the USB flash drive and remove it from the computer.

- c. Connect the USB flash drive to the Storwize system and allow it to initialize.
 - d. Connect the USB flash drive to the computer to check that the initialization completed.
9. If the system initialization completed successfully, click **Finish**. If you have a network connection to the Storwize system, the system management GUI is displayed. If the computer does not have a network connection to the Storwize system, go to the computer you will use to manage the system and start a supported browser. Direct the browser to the management address you specified for the system.
 10. Log in with user name **superuser** and password **passw0rd**.

Note: The **0** character in the password is a zero, not the letter O.

11. Follow the on-screen instructions to begin setting up your system.

Note: The other options in the initialization tool are used to reset the service IP address or the superuser password.

Initializing the system with a Linux computer

To initialize a new system with a Linux computer, use the initialization tool that was shipped with your order.

Before you begin

- Begin this procedure *after* you have installed all the enclosures, drives and other options you have purchased.
- You need a Linux computer to complete the initialization procedure. The computer must have:
 - A USB port
 - A supported browser

For best results, the Linux computer and the Storwize system must be connected to the same network.

About this task

This procedure is valid for Red Hat Enterprise Server 5 and 6 or Ubuntu desktop 11.04 and 13.10.

- Use this procedure *only* when initializing a new control enclosure (with, optionally, one or more expansion enclosures).
- Do *not* use this procedure when adding an expansion enclosure to an existing system.

Procedure

To initialize the system, complete the following steps.

1. Gather the information you will use to configure the system.
 - You must have the IP network address you will use to manage the system.
 - IP address
 - Subnet mask
 - Gateway
 - Other information is optional, but useful for enabling additional capabilities.
 - The IP address of a Network Time Protocol (NTP) server for automated setting of date and time
 - The IP address of a simple mail transfer protocol (SMTP) server for sending notification of alerts
2. Locate the USB flash drive that was shipped with your order in the documentation package.
3. Insert the USB flash drive into a USB port on the Linux computer.
4. Open a terminal window.
5. Locate the root directory of the USB flash drive. It is usually located in the `/media/` directory. If an automatic mount system is used, the root directory can be located by typing the `mount` command.
6. Type: **sh InitTool.sh** The initialization tool wizard starts.
7. In the wizard, click **Next** and select **Create a new system**.
8. Follow the on-screen instructions given by the initialization tool. You will be instructed to complete the following actions:
 - a. Enter the details of the system management address that you need to use.

- b. Connect the USB flash drive to the Storwize system and allow it to initialize.
 - c. Connect the USB flash drive to the computer to check that the initialization completed.
9. If the system initialization completed successfully, click **Finish**. If you have a network connection to the Storwize system, the system management GUI is displayed. If the computer does not have a network connection to the Storwize system, go to the computer that you will use to manage the system and start a supported browser. Direct the browser to the management address you specified for the system.
 10. Log in with user name **superuser** and password **passw0rd**.

Note: The **0** character in the password is a zero, not the letter O.
 11. Follow the on-screen instructions to begin setting up your system.

Note: The other options that are available in the initialization tool are used to recover the service IP address or the superuser password.

Configuring a Storwize V3700 system to be NEBS compliant

For operation in Network Equipment-Building System (NEBS) compliant installations, the Storwize V3700 system can be configured to extend its operational temperature range to meet NEBS operating temperature requirements.

Note: The Storwize V3700 system might not be able to save its cache and state data if the power fails while it is operating within the extended temperature range. This is because the battery capacity decreases as temperature rises. If the save of cache and state data cannot be completed, an extended service action is required to recover the system and data might be lost. Keep the temperature within the normal operating range if possible, and maintain a reliable power supply.

- To extend the operational temperature range of all enclosures in the system to meet NEBS operating temperature requirements, enter the following CLI command:

```
chsystem -hightempmode on
```

Once set, `high_temp_mode` will be applied to all enclosures in the system.

- To configure the default operating temperature ranges, enter the following CLI command:

```
chsystem -hightempmode off
```

- To determine which mode is currently configured, read the value of the `high_temp_mode` parameter in the **lssystem** output.

Note: Configuring the Storwize V3700 system to be NEBS compliant only changes the way the system responds to raised temperature. You must also ensure that the way the system is racked, and the operating environment, conforms to NEBS requirements. (See “NEBS compliant earth connection” on page 19.)

Adding an expansion enclosure to an existing system

When you add an expansion enclosure to an existing system, you must use the Storwize management GUI to update the system configuration.

About this task

The management GUI requires a supported web browser (see “Checking your web browser settings for the management GUI” on page 53).

Procedure

To add an expansion enclosure to your system, complete the following steps.

1. Install support rails for the new enclosure.
2. Install the new enclosure in the rack.
3. Connect the expansion enclosure attachment cables.
4. Connect the power cables and wait for the SAS light-emitting diodes (LEDs) to illuminate.
5. Start the management GUI.
6. Go to **Monitoring > System**.
7. On the System page, select **Actions > Add Enclosures**.
8. Continue to follow the on-screen instructions.

Appendix A. Accessibility features for IBM Storwize V3700

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.

Accessibility features

These are the major accessibility features for the Storwize V3700:

- You can use screen-reader software and a digital speech synthesizer to hear what is displayed on the screen. HTML documents have been tested using JAWS version 15.0.
- This product uses standard Windows navigation keys.
- Interfaces are commonly used by screen readers.
- Industry-standard devices, ports, and connectors.

The Storwize V3700 online documentation and its related publications are accessibility-enabled. The accessibility features of the online documentation are described in Viewing information in the information center .

Keyboard navigation

You can use keys or key combinations to perform operations and initiate menu actions that can also be done through mouse actions. You can navigate the Storwize V3700 online documentation from the keyboard by using the shortcut keys for your browser or screen-reader software. See your browser or screen-reader software Help for a list of shortcut keys that it supports.

IBM and accessibility

See the IBM Human Ability and Accessibility Center for more information about the commitment that IBM has to accessibility.

Appendix B. Where to find the Statement of Limited Warranty

The Statement of Limited Warranty is available in both hardcopy format and in the Storwize V3700 information center.

The Statement of Limited Warranty is shipped (in hardcopy form) with your product. It can also be ordered from IBM (see Table 2 on page xviii for the part number).

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This section contains the electronic emission notices or statements for the United States and other countries.

Federal Communications Commission (FCC) statement

This explains the Federal Communications Commission's (FCC's) statement.

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

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors, or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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

Industry Canada compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

Australia and New Zealand Class A Statement

Attention: This is a Class A product. In a domestic environment this product might cause radio interference in which case the user might be required to take adequate measures.

European Union Electromagnetic Compatibility Directive

This product is in conformity with the protection requirements of European Union (EU) Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

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Responsible Manufacturer:

International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

European community contact:

IBM Deutschland GmbH
Technical Regulations, Department M372
IBM-Allee 1, 71139 Ehningen, Germany
Tele: +49 (0) 800 225 5423 or +49 (0) 180 331 3233
Email: halloibm@de.ibm.com

Germany Electromagnetic Compatibility Directive

Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

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EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:

“Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen.”

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem “Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG).” Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:

International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

IBM Deutschland GmbH
Technical Regulations, Abteilung M372
IBM-Allee 1, 71139 Ehningen, Germany
Tele: +49 (0) 800 225 5423 or +49 (0) 180 331 3233
Email: halloibm@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

People's Republic of China Class A Statement

中华人民共和国“A类”警告声明

声明

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

Taiwan Class A compliance statement

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這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Taiwan Contact Information

This topic contains the product service contact information for Taiwan.

IBM Taiwan Product Service Contact Information:
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3F, No 7, Song Ren Rd., Taipei Taiwan
Tel: 0800-016-888

台灣IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路7號3樓
電話：0800-016-888

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Japan VCCI Council Class A statement

This explains the Japan Voluntary Control Council for Interference (VCCI) statement.

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

Japan Electronics and Information Technology Industries Association Statement

This explains the Japan Electronics and Information Technology Industries Association (JEITA) statement for less than or equal to 20 A per phase.

高調波ガイドライン適合品

jeita1

This explains the JEITA statement for greater than 20 A per phase.

高調波ガイドライン準用品

jeita2

Korean Communications Commission Class A Statement

This explains the Korean Communications Commission (KCC) statement.

이 기기는 업무용(A급)으로 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Russia Electromagnetic Interference Class A Statement

This statement explains the Russia Electromagnetic Interference (EMI) statement.

ВНИМАНИЕ! Настоящее изделие относится к классу А.
В жилых помещениях оно может создавать радиопомехи, для снижения которых необходимы дополнительные меры

rusemi

European Contact Information

This topic contains the product service contact information for Europe.

European Community contact:
IBM Technical Regulations
Pascalstr. 100, Stuttgart, Germany 70569
Tele: 0049 (0)711 785 1176
Fax: 0049 (0)711 785 1283
Email: [mailto: tjahn @ de.ibm.com](mailto:tjahn@de.ibm.com)

Taiwan Contact Information

This topic contains the product service contact information for Taiwan.

IBM Taiwan Product Service Contact Information:
IBM Taiwan Corporation
3F, No 7, Song Ren Rd., Taipei Taiwan
Tel: 0800-016-888

台灣IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路7號3樓
電話：0800-016-888

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