

IBM Storwize V7000 Expansion Enclosure Installation
Guide

*IBM Storwize V7000 Expansion
Enclosure Installation Guide*



Note

Before using this information and the product it supports, read the general information in “Notices” on page 19, the information in the “Safety and environmental notices” on page iii, as well as the information in the *IBM Environmental Notices and User Guide*, which is provided on a DVD.

This edition applies to IBM Storwize V7000 and IBM Flex System V7000 Storage Node versions, and to all subsequent releases and modifications until otherwise indicated in new editions.

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Safety and environmental notices

Review the multilingual safety notices for the IBM® Storwize® V7000 system 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.

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 following examples, the numbers (C001) and (D002) are the identification numbers.

CAUTION:

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

DANGER

A danger notice indicates the presence of a hazard that has the potential of causing death or serious personal injury. (D002)
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2. Locate *IBM Storwize V7000 Safety Notices* with the user publications that were provided with the Storwize V7000 hardware.
3. Find the matching identification number in the *IBM Storwize V7000 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 V7000 website. Go to www.ibm.com/storage/support/storwize/v7000 and click the documentation link.

Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الأمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安裝本產品之前，請仔細閱讀 **Safety Information**
(安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítajte Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Safety statements

Each caution and danger statement in this document is labeled with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the *Safety Information* document. For example, if a caution statement is labeled “Statement 1”, translations for that caution statement are in the *Safety Information* document under “Statement 1.”

Important:

Be sure to read all caution and danger statements in this document before you perform the procedures. Read any additional safety information that comes with the system or optional device before you install the device.

Statement 1



DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet.
- Connect to properly wired outlets any equipment that will be attached to this product.
- 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 table when installing, moving, or opening covers on this product or attached devices.

To Connect:	To Disconnect:
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

Statement 2



CAUTION:

When replacing the lithium battery, use only IBM Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

Do not:

- Throw or immerse into water
- Heat to more than 100°C (212°F)
- Repair or disassemble

Dispose of the battery as required by local ordinances or regulations.

Statement 3



CAUTION:

When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.



DANGER

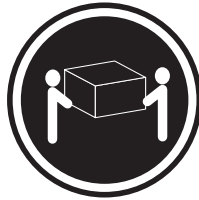
Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.



Class 1 Laser Product
Laser Klasse 1
Laser Klass 1
Luokan 1 Laserlaite
Appareil À Laser de Classe 1

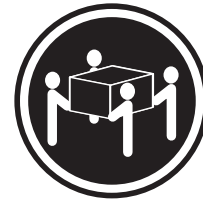
Statement 4



≥ 18 kg (39.7 lb)



≥ 32 kg (70.5 lb)



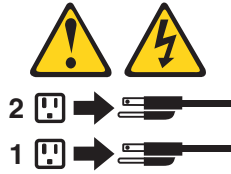
≥ 55 kg (121.2 lb)

CAUTION:
Use safe practices when lifting.

Statement 5



CAUTION:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.



Statement 8



CAUTION:

Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

Statement 26



CAUTION:

Do not place any object on top of rack-mounted devices.



This node is suitable for use on an IT power-distribution system whose maximum phase-to-phase voltage is 240 V under any distribution fault condition.

Important: This product is not suitable for use with visual display workplace devices according to Clause 2 of the German Ordinance for Work with Visual Display Units.

Sound pressure

Attention: Depending on local conditions, the sound pressure can exceed 85 dB(A) during service operations. In such cases, wear appropriate hearing protection.

About this guide

This guide provides instructions for unpacking your shipping order and installing the IBM Storwize V7000 2076 expansion enclosure.

The IBM Storwize V7000 2076 expansion enclosure works with your existing system.

Who should use this guide

This guide is intended for users who are adding the IBM Storwize V7000 2076 expansion enclosures to their existing system..

Accessibility

IBM has a long-standing commitment to people with disabilities. In keeping with that commitment to accessibility, IBM strongly supports the U.S. Federal government's use of accessibility as a criterion in the procurement of Electronic Information Technology (EIT).

IBM strives to provide products with usable access for everyone, regardless of age or ability.

This product uses standard Windows navigation keys.

For more information, see Accessibility features for *IBM Storwize V7000*.

Emphasis

Different typefaces are used in this guide to show emphasis.

The following typefaces are used to show emphasis:

Boldface	Text in boldface represents menu items.
Bold monospace	Text in bold monospace represents command names.
<i>Italics</i>	Text in <i>italics</i> is used to emphasize a word. In command syntax, it is used for variables for which you supply actual values, such as a default directory or the name of a system.
Monospace	Text in monospace identifies the data or commands that you type, samples of command output, examples of program code or messages from the system, or names of command flags, parameters, arguments, and name-value pairs.

Storwize V7000 library and related publications

Product manuals, other publications, and websites contain information that relates to Storwize V7000.

Storwize V7000 Information Center

The IBM Storwize V7000 Information Center contains all of the information that is required to install, configure, and manage the Storwize V7000. The information center is updated between Storwize V7000 product releases to provide the most current documentation. The information center is available at the following website:

publib.boulder.ibm.com/infocenter/storwize/ic/index.jsp

Storwize V7000 library

Unless otherwise noted, the publications in the Storwize V7000 library are available in Adobe portable document format (PDF) from the following website:

www.ibm.com/storage/support/storwize/v7000

Each of the PDF publications in Table 1 is available in this information center by clicking the number in the “Order number” column:

Table 1. Storwize V7000 library

Title	Description	Order number
<i>IBM Storwize V7000 Quick Installation Guide</i>	This guide provides instructions for unpacking your shipping order and installing your system. The first of three chapters 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.	GC27-2290
<i>IBM Storwize V7000 Expansion Enclosure Installation Guide, Machine type 2076</i>	This guide provides instructions for unpacking your shipping order and installing the 2076 expansion enclosure for the Storwize V7000 system.	
<i>IBM Storwize V7000 Troubleshooting, Recovery, and Maintenance Guide</i>	This guide describes how to service, maintain, and troubleshoot the Storwize V7000 system.	GC27-2291

Table 1. Storwize V7000 library (continued)

Title	Description	Order number
<i>IBM Storwize V7000 CIM Agent Developer's Guide</i>	This guide describes the concepts of the Common Information Model (CIM) environment. Procedures describe such tasks as using the CIM agent object class instances to complete basic storage configuration tasks, establishing new Copy Services relationships, and performing CIM agent maintenance and diagnostic tasks.	GC27-2292
<i>IBM Systems Safety Notices</i>	This guide contains translated caution and danger statements. Each caution and danger statement in the Storwize V7000 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 V7000 Read First Flyer</i>	This document introduces the major components of the Storwize V7000 system and describes how to get started with the <i>IBM Storwize V7000 Quick Installation Guide</i> .	GC27-2293
<i>IBM System Storage SAN Volume Controller and IBM Storwize V7000 Command-Line Interface User's Guide</i>	This guide describes the commands that you can use from the Storwize V7000 command-line interface (CLI).	GC27-2287
<i>IBM Statement of Limited Warranty (2145 and 2076)</i>	This multilingual document provides information about the IBM warranty for machine types 2145 and 2076.	Part number: 4377322
<i>IBM License Agreement for Machine Code</i>	This multilingual guide contains the License Agreement for Machine Code for the Storwize V7000 product.	SC28-6872 (contains Z125-5468)

Other IBM publications

Table 2 on page xiv lists IBM publications that contain information related to the Storwize V7000.

Table 2. Other IBM publications

Title	Description	Order number
<i>IBM Storage Management Pack for Microsoft System Center Operations Manager User Guide</i>	This guide describes how to install, configure, and use the IBM Storage Management Pack for Microsoft System Center Operations Manager (SCOM).	GC27-3909 publibfp.dhe.ibm.com/epubs/pdf/c2739092.pdf
<i>IBM Storage Management Console for VMware vCenter, version 3.0.0, User Guide</i>	This publication describes how to install, configure, and use the IBM Storage Management Console for VMware vCenter, which enables Storwize V7000 and other IBM storage systems to be integrated in VMware vCenter environments.	GA32-0929 publibfp.dhe.ibm.com/epubs/pdf/a3209295.pdf

IBM documentation and related websites

Table 3 lists websites that provide publications and other information about the Storwize V7000 or related products or technologies.

Table 3. IBM documentation and related websites

Website	Address
Support for Storwize V7000 (2076)	www.ibm.com/storage/support/storwize/v7000
Support for IBM System Storage® and IBM TotalStorage products	www.ibm.com/storage/support/
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 Acrobat 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

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 V7000 documentation:

- Go to the feedback page on the website for the Storwize V7000 Information Center at publib.boulder.ibm.com/infocenter/storwize/ic/index.jsp?topic=/com.ibm.storwize.v7000.doc/feedback.htm. There you can use the feedback page to enter and submit comments or browse to the topic and use the feedback link in the running footer of that page to identify the topic for which you have a comment.
- Send your comments by email to starpubs@us.ibm.com. Include the following information for this publication or use suitable replacements for the publication title and form number for the publication on which you are commenting:
 - Publication title: IBM Storwize V7000 Expansion Enclosure Installation Guide
 - Publication form number: SGC27-4234-00
 - Page, table, or illustration numbers that you are commenting on
 - A detailed description of any information that should be changed

Chapter 1. Product overview

This topic provides an overview of the machine type models 2076-212 and 2076-224 expansion enclosures.

Machine type models 2076-212 and 2076-224 expansion enclosures overview

The IBM Storwize V7000 expansion enclosure is a high-capacity 24-drive bay (2.5-inch drives) or 12-drive bay (3.5-inch drives) unit packaged in a 2U rack-mountable enclosure.

Expansion enclosures add additional storage capacity to your system. They are high-capacity units, packaged in a 2U rack-mountable enclosure.

Expansion enclosures connect either to control enclosures or to other expansion enclosures through the SAS ports. These are the expansion enclosure models:

- Machine type and model 2076-212, which can hold up to 12 3.5-inch drives.
- Machine type and model 2076-224, which can hold up to 24 2.5-inch drives.

The machine type and model (MTM) are shown on labels that are located on the front and the rear of each enclosure.

- The labels also show the enclosure serial number. You must know the serial number when you contact IBM® support.

Chapter 2. Physical configuration planning of a system

Before you install the expansion enclosure, plan the physical configuration and the initial settings for your system (refer to your system's Information Center). After configuration planning, you can plan the physical installation required for your specific system.

Location and cabling guidelines

Certain specifications for the physical site must be met before you can set up your environment. This activity includes verifying that adequate space is available and that requirements for power and environmental conditions are met.

Locating expansion enclosures

Before installing one or more expansion enclosures you must develop a hardware location chart. The system in which you are adding the expansion enclosures provides detailed guidelines for locating expansion units. Keep in mind that each enclosure requires two standard rack units of space in a rack.

Identify the appropriate location for each enclosure by following the hardware location chart.

SAS cabling

SAS cables are required. Make sure you have the proper number and lengths before you begin installation. Again, make sure that you follow the location hardware location chart based on your system's guidelines.

Planning for power

Plan to attach each of the two power supplies in an enclosure to separate main power supply lines.

Each expansion enclosure consists of two canisters (upper and lower). The lower is a reverse of the upper canister.

Attention: The power cord is the main power disconnect. Ensure that the socket outlets are located near the equipment and are easily accessible.

Figure 1 on page 4 (**3** and **4**) shows the rear view of an expansion enclosure's two canisters, and identifies the location of the power supply units (**1** and **2**). The ports and their use are described later in this section.

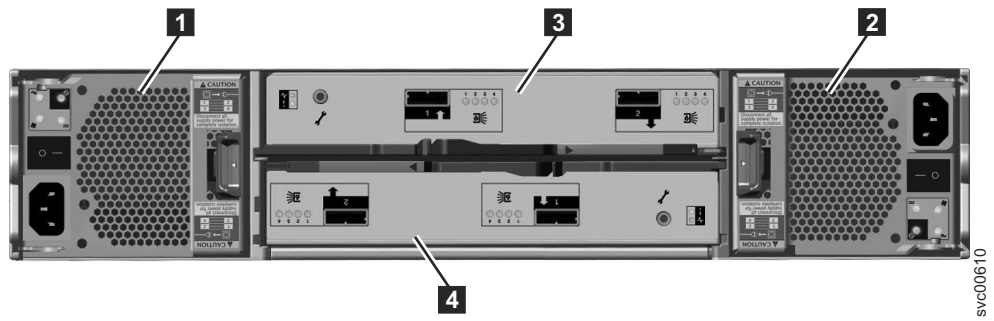


Figure 1. Rear view of a model 2076-212 or a model 2076-224 expansion enclosure

Chapter 3. Before you begin the installation

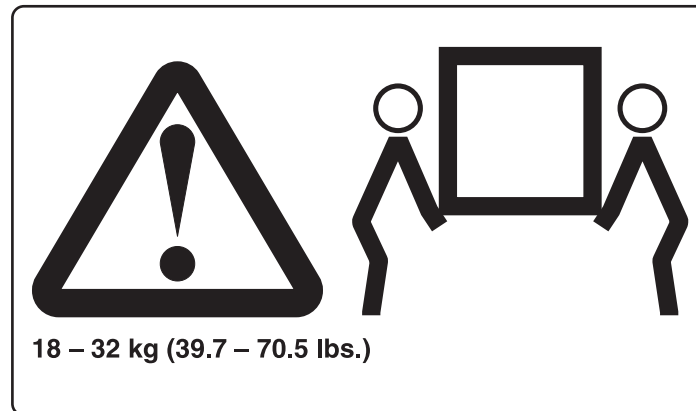
This topic contains a set of instructions to help you unpack your shipping order and install your system. The first steps involve verifying your order, becoming familiar with the hardware component terminology, and ensuring that you have met the environmental requirements.

Before you begin installation make sure that:

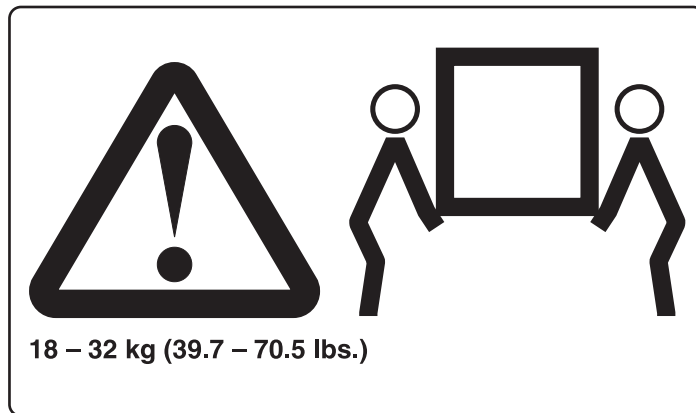
1. You have read the planning information regarding your physical environment.
2. The cables are ready for installation.

Be familiar with the following information

- Where it is applicable, a CAUTION notice indicates situations that can be potentially hazardous to you. Before doing a step that contains a caution notice, read and understand the statement that accompanies it.



- **Sliding drawers:** Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.
- **Fixed drawers:** Any fixed drawer (like the Storwize V7000) must not be removed for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack.
- Use safe practices when lifting. The fully populated enclosure weighs about 57.2 lbs (26 kg). At least two people are required to lift and install the enclosure into the rack or to remove an enclosure from the rack.



- Do not use rack-mounted devices as a shelf or workspace. Do not place any object on top of rack-mounted devices.

Tools needed

A screwdriver is the only tool needed for the system installation. The screwdriver can be either a flat-blade screwdriver or a cross head screwdriver.

Reviewing your packing slip

After you open your box or boxes, locate your packing slip. Ensure that the items that are listed in your packing slip match what is in the box. Ensure that any optional items that you ordered are included in the list. Your shipment might contain additional items depending on the order.

Standard ship group contents:

- ___ • Expansion enclosure (models 2076-212 or 2076-224). The last two digits of the model number identify the number of drive slots, either 12 or 24.
- ___ • Rack-mounting hardware kit, including:
 - ___ – Two rails (right and left assembly)
 - ___ – Two M5 x 15 Hex Phillips screws per rail (two rails)
 - ___ – Two M5 x 15 Hex Phillips screws per chassis

Note: Two parts of the rail kit are attached to each side of the enclosure.

- ___ • Two power cords
- ___ • Drive assemblies or blank carriers (installed in the enclosure).
Verify the number of drives and the size of the drives.

Other shipped items:

- ___ • Environmental Notices flyer
- ___ • Limited Warranty information
- ___ • Software CD that contains the environmental notices, the publication PDFs, and the information center content. One CD is shipped per enclosure.
- ___ • License Function authorization document

Additional components for expansion enclosure:

- ___ • One set of SAS cables for each expansion enclosure

Identifying the hardware components

Expansion enclosure components

Figure 2 shows the rear view of an expansion enclosure and identifies the location of the power supply units and the canisters. The ports and their use are described later in this section.

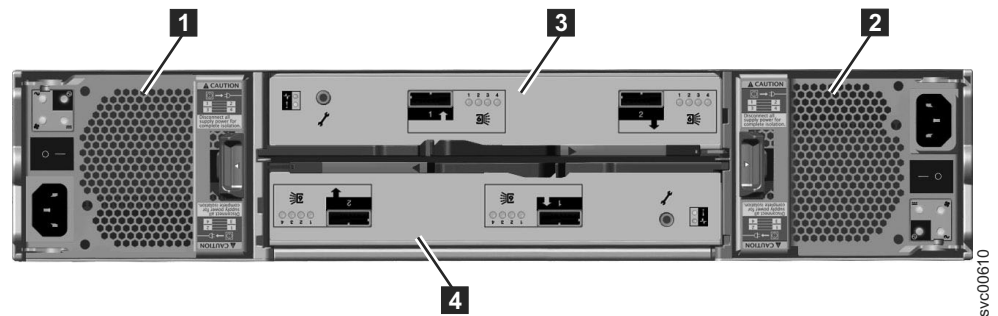


Figure 2. Rear view of a model 2076-212 or a model 2076-224 expansion enclosure

- Power supply units are on the left and right of the canisters. Power supply **1** is located on the left. Power supply **2** is located on the right. Power supply 1 is inserted top side up, and power supply 2 is inverted, or top side down.
- Two canisters are housed in the middle of the enclosure. Each canister is known as an expansion canister. The upper canister, as shown in Figure 2, is canister **3**, and the lower canister is canister **4**. Canister 3 is top side up, and canister 4 is inverted, or top side down.

Figure 3 shows the rear view of an expansion enclosure and identifies the SAS port locations.

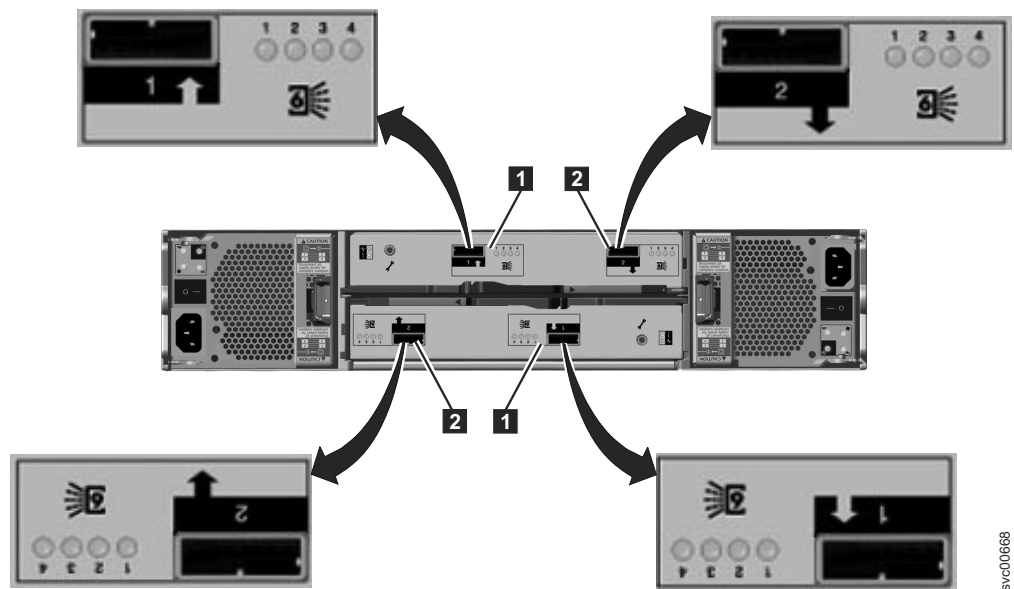


Figure 3. SAS ports and LEDs in rear of expansion enclosure

Each canister has two SAS ports that are numbered 1 on the left **1** and 2 on the right **2**.

Port 1 is the input port, as indicated by the arrow at **1** . Port 1 must always be connected.

Port 2 is the output port, as indicated by the arrow at **2** . Port 2 is only connected if this expansion unit is not the last one in the chain.

Note: The reference to the left and right locations applies to canister 1, which is the upper canister. The port locations are inverted for canister 2, which is the lower canister.

Chapter 4. Performing the hardware installation

You have completed the initial steps of verifying the shipping contents and becoming familiar with the hardware components. You have verified that the power 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.

Installing the support rails

About this task

To install the support rails, perform the following steps:

1. Locate the rack mounting rails and screws.

The rail assembly is made up of two sets of rails. One set of rails is already installed, or preinstalled, on the sides of the enclosures. The other set of rails must be installed in the rack cabinet. The rails on the sides of the enclosures slide into the rails that are installed in the rack cabinet.

2. Working at the front of the rack cabinet, identify the two standard rack units of space in the rack into which you want to install the support rails.

Figure 4 shows two rack units with the front mounting holes identified.

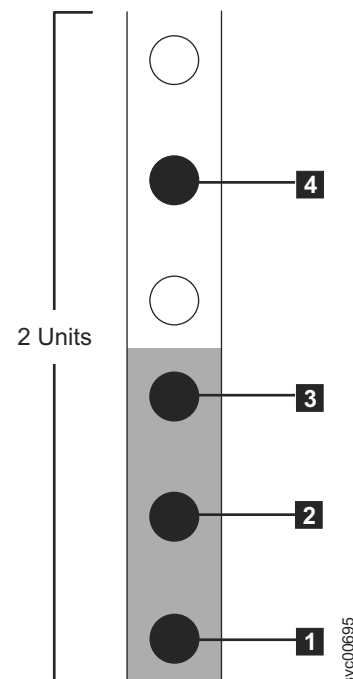


Figure 4. Hole locations in the front of the rack

- **1** Bottom rail location pin hole
- **2** Enclosure mounting screw hole. Do not insert the screw until the enclosure is installed.
- **3** Rack mounting screw hole

- **4** Top rail location pin hole
3. Align the bottom of the rail with the bottom of the two rack units. Insert the rail location pins **1** and **4** through the holes in the rack cabinet.
 4. Insert a clamping screw into the rack mounting hole **3** between the rail location pins.
 5. Tighten the screw to secure the rail to the rack.
 6. Working from the rear of the rack cabinet, extend the rail that you secured to the front to align the bottom of the rail with the bottom of the two rack units.

Note: Ensure that the rail is level between the front and the back.

Figure 5 shows two rack units with the back mounting holes identified.

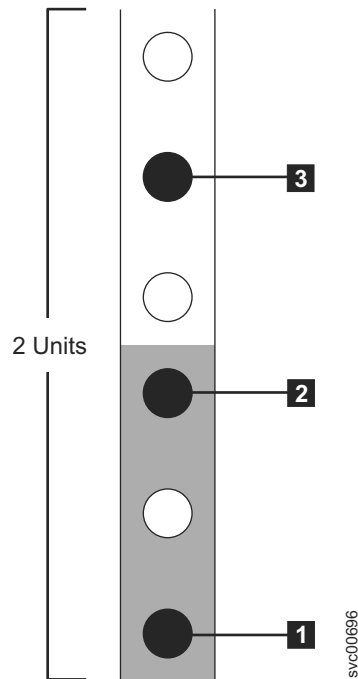


Figure 5. Hole locations in the back of the rack

- **1** Bottom rail location pin hole
 - **2** Rack mounting screw hole
 - **3** Top rail location pin hole
7. Insert the rail location pins through the holes **1** and **3** in the rack cabinet.
 8. Insert a clamping screw into the rack mounting hole **2** between the rail location pins.
 9. Tighten the screw to secure the rail to the rack from the back side.
 10. Repeat the steps to secure the opposite rail to the rack cabinet.
 11. Repeat the procedure for each additional enclosure.

Installing the enclosures

About this task

CAUTION:

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

Following your enclosure location plan, install the enclosure, starting from the bottom.

1. On either side of the drive assemblies, remove the enclosure end caps by squeezing the middle of the cap and pulling it away from the front of the enclosure.



Figure 6. Removing the enclosure end cap

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.

Notes:

- a. The preinstalled rails on the sides of the enclosure must fit into the rack-mounted rails that you previously installed.
 - b. The rails are not designed to hold an enclosure that is partially inserted. The enclosure must always be in a fully inserted position.
 - c. Do not have more than one enclosure extended out of the rack at the same time to avoid the danger of the rack toppling over.
4. Insert a screw into the hole behind each enclosure end cap and tighten the screw.



Figure 7. Securing an enclosure to a rack cabinet

5. After matching each end cap's serial number to the serial number found on the rear of each enclosure, push the end caps back into position.
6. Repeat this procedure for each additional enclosure that you install.

Connecting the SAS cables

About this task

This task applies if you are installing one or more expansion enclosures.

Note: The enclosure terminology that is used in this topic is described fully in “Identifying the hardware components” on page 7.

Be aware of these guidelines when you begin to attach the cables to the SAS ports:

- Attach cables serially between enclosures; do not skip an enclosure.
- Ensure that cables are installed in a tidy manner to reduce the risk of cable damage when Storwize V7000 replaceable units are removed or inserted.
- Arrange your cables to provide access to:
 - The enclosures themselves. Access is required to the hardware for servicing and for safely removing and replacing components using two or more people.
- Ensure that each SAS cable is fully inserted. A click is heard when the cable is successfully inserted.
- Ensure the SAS cable has the correct end connector for both this enclosure and the enclosure to which you are connecting.

Note: If you make a mistake during cabling and must unplug a SAS cable, pull the blue tag to release the cable.

Connecting the power cords

About this task

Two power supply units are located in each enclosure. Ensure that the power switches for each power supply unit are off.

Note: Each power supply unit comes with an attached cable retention bracket that fastens around the power cord to prevent the cord from being removed accidentally.

Perform the following steps when you attach the power cord to each power supply unit:

1. Straighten the cable tie on the cable retention bracket. The cable retention bracket is attached to the power supply unit.
2. Open the cable retention bracket.

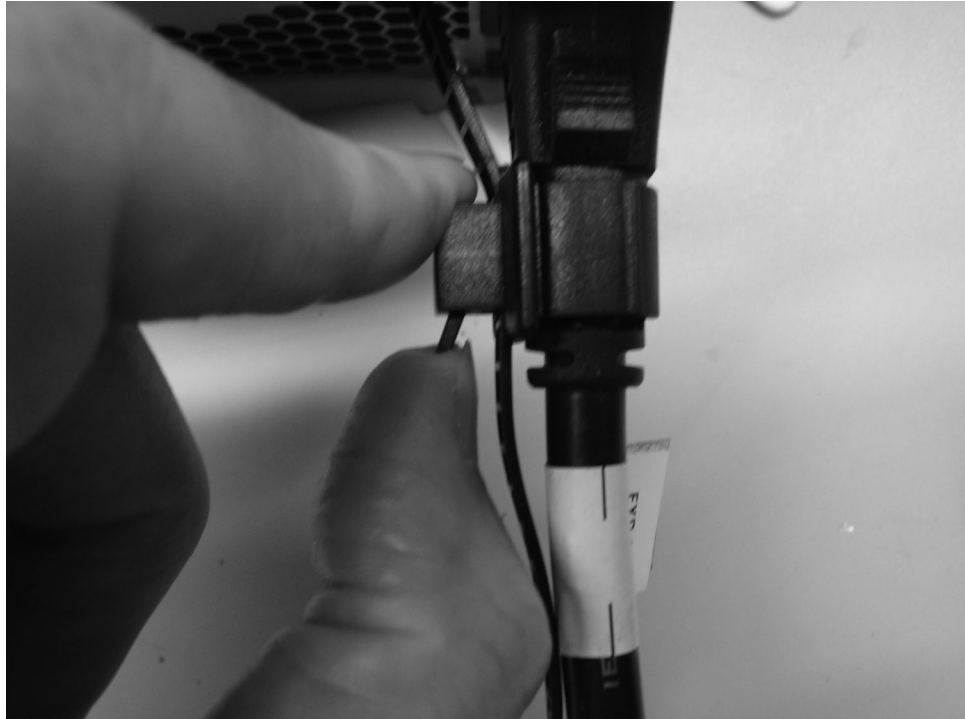


Figure 8. Unlocking the cable retention bracket

3. Slide the cable retention bracket away from the power supply unit until there is enough room to attach the cable retention bracket to the cable. When sliding

the bracket away from the cable plug-in, pull the lever on the bracket that controls the cable tie slightly towards the center of the canister. You do not need to pull the lever to slide the bracket towards the cable plug-in.

4. Attach a power cord to each of the two power supply units in each enclosure. Ensure that cables are installed in a tidy manner to reduce the risk of cable damage when Storwize V7000 replaceable units are removed or inserted.
5. Place the cable retention bracket around the end of the cable that plugs into the power supply unit.
6. Slide the cable retention bracket along the cord until it fits snugly against the plug end of the cable.



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Figure 9. Sliding the cable retention bracket directly behind the power cord

7. Tighten the fastener around the plug.
8. Repeat the steps for each additional power cord.
9. Plug the power cords into a properly grounded electrical outlet. To provide power failure redundancy, plug the power cords for the individual power supply units for each enclosure into separate power distribution units, if possible.

Powering on the system

About this task

Attention: Do not operate the system when the drive assemblies are missing. Drive assemblies that are missing disrupt the airflow; the drives do not receive sufficient cooling. You must insert blank carriers into unused drive bays.

Powering on an expansion enclosure:

1. Power on the newly installed enclosures. Use the power switch on each of the two power supply units in the back of the expansion enclosure.
2. Use the information in Table 4 to verify the state of the light emitting diodes (LEDs) on the system. Verify that no faults are detected. Refer to your system Information Center's Troubleshooting section.

Figure 10 shows the location of the LEDs on the power supply units in the rear of the expansion enclosure.

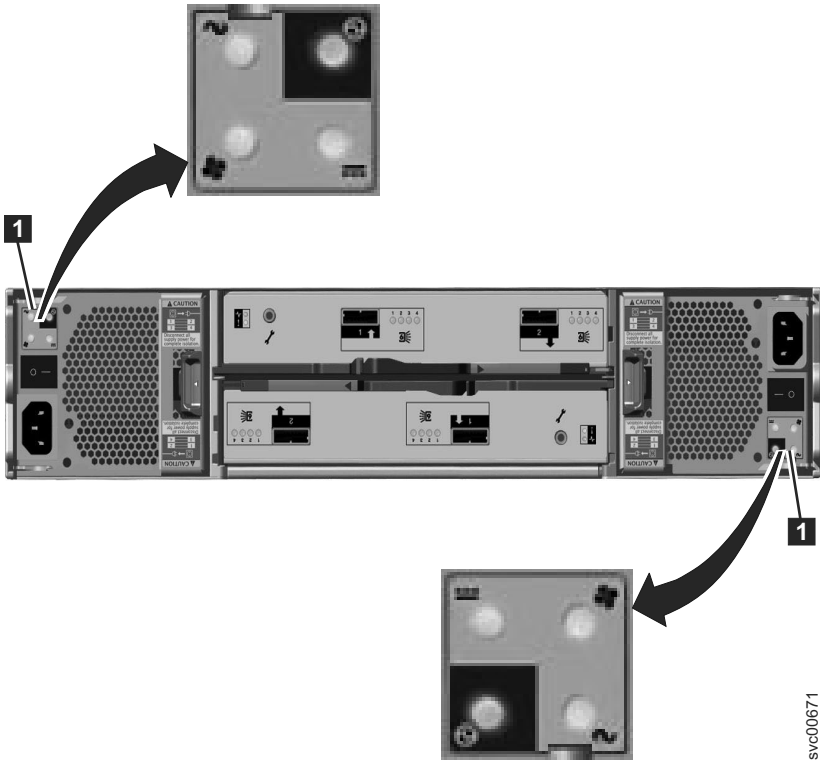


Figure 10. LEDs on the power supply units of the expansion enclosure

Table 4. LED status when expansion enclosures are powered on










Hardware component	LED name and symbol	If power on and no fault is detected
Left enclosure end cap, front of enclosure	Power, top 	LED is on.
	Fault, middle 	LED is off.
	Identify, bottom 	LED is off.
Expansion canister, rear. The reference to the top and bottom locations applies to canister 1, which is the upper canister. The LED locations are inverted for canister 2, which is the lower canister.	Canister status, top 	LED is on.
	Fault status, bottom 	LED is off.

Table 4. LED status when expansion enclosures are powered on (continued)

Hardware component	LED name and symbol	If power on and no fault is detected
Power supply unit, expansion enclosure. The reference to the left and right locations applies to power supply unit 1, which is the left power supply. The LED locations are inverted for power supply unit 2, which is the right power supply.	Power supply, upper right 	LED is on.
	Fan failure 	LED is off.
	dc power failure 	LED is off.
	ac power failure 	LED is off.

Chapter 5. Configuring your system

Refer to your system's installation instructions to configure your system.

In the previous steps, you installed the enclosures in the rack, connected all cables, powered the system on, and checked the LED status for the system. After you have completed all these steps configure the system.

Open your system's management GUI and follow its wizard for configuring the expansion enclosures.

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