IBM System Storage DS8000

Parts Catalog

Version 1 Release 2

S127-0980-01

IBM System Storage DS8000

Parts Catalog

Version 1 Release 2

S127-0980-01

Note
Before using this information and the product it supports, read the information in "Notices" on page 153.

Second Edition (November 2006)

This edition replaces S127-0980-00.

Technical changes to the text are indicated by a vertical line to the left of the text.

Contents

Notices and publication information

This section contains information about safety notices that are used in this guide, environmental notices for this product, publication information, and information about sending your comments to IBM.

Safety notices

Complete this task to find information about safety notices.

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

1. Look for the identification number at the end of each danger notice or each caution notice. In the following examples, the numbers **1000** and **1001** 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.

   1000

   CAUTION:
   A caution notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury.

   1001

2. Find the number that matches in the *IBM System Storage™ Solutions Safety Notices for IBM Versatile Storage Server and IBM System Storage Enterprise Storage Server*, GC26-7229.

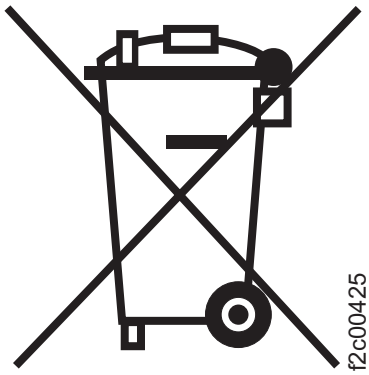
Environmental notices

This section identifies the environmental guidelines that pertain to this product.

Product recycling and disposal

This unit contains recyclable materials.

This unit must be recycled or discarded according to applicable local and national regulations. IBM® encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of product return programs and services in several countries to assist equipment owners in recycling their IT products. Information on IBM product recycling offerings can be found on IBM's Internet site at http://www.ibm.com/ibm/environment/products/prp.shtml.



Notice: This mark applies only to countries within the European Union (EU) and Norway.

Appliances are labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

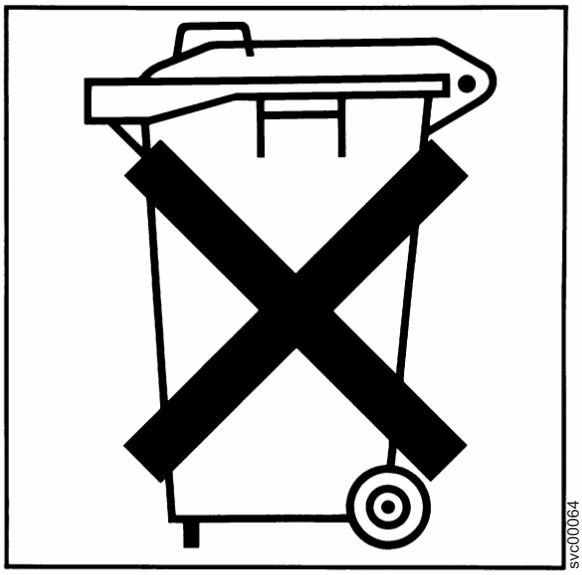
In accordance with the European WEEE Directive, electrical and electronic equipment (EEE) is to be collected separately and to be reused, recycled, or recovered at end of life. Users of EEE with the WEEE marking per Annex IV of the WEEE Directive, as shown above, must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to customers for the return, recycling and recovery of WEEE. Customer participation is important to minimize any potential effects of EEE on the environment and human health due to the potential presence of hazardous substances in EEE. For proper collection and treatment, contact your local IBM representative.

Battery return program

This product may contain sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery. Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available in your area. For information on disposal of batteries outside the United States, go to http://www.ibm.com/ibm/environment/products/batteryrecycle.shtml or contact your local waste disposal facility.

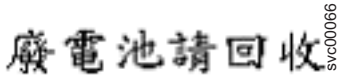
In the United States, IBM has established a return process for reuse, recycling, or proper disposal of used IBM sealed lead acid, nickel cadmium, nickel metal hydride, and other battery packs from IBM Equipment. For information on proper disposal of these batteries, contact IBM at 1-800-426-4333. Please have the IBM part number listed on the battery available prior to your call.

In the Netherlands the following applies:



For Taiwan:

Please recycle batteries.



Conventions used in this guide

The following typefaces are used to show emphasis:

boldface
Text in **boldface** represents menu items and lowercase or mixed-case command names.

italics
Text in *italics* is used to emphasize a word. In command syntax, it is used for variables for which you supply actual values.

`monospace`
Text in `monospace` identifies the data or commands that you type, samples of command output, or examples of program code or messages from the system.

Related information

The tables in this section list and describe the following publications:

- The publications that make up the IBM® System Storage™ DS8000™ series library
- Other IBM publications that relate to the DS8000 series
- Non-IBM publications that relate to the DS8000 series

See "Ordering IBM publications" on page xiii for information about how to order publications in the IBM System Storage DS8000 series publication library. See "How to send your comments" on page xiv for information about how to send comments about the publications.

DS8000 series library

These customer publications make up the DS8000 series library.

Unless otherwise noted, these publications are available in Adobe portable document format (PDF) on a compact disc (CD) that comes with the storage unit. If you need additional copies of this CD, the order number is SK2T-8825. These publications are also available as PDF files by clicking on the **Documentation link** on the following Web site:

http://www-1.ibm.com/servers/storage/support/disk

See "Ordering IBM publications" on page xiii for information about ordering these and other IBM publications.

Title	Description	Order Number
IBM System Storage DS: Command-Line Interface User's Guide	This guide describes the commands that you can use from the command-line interface (CLI) for managing your DS8000 configuration and Copy Services relationships. The CLI application provides a set of commands that you can use to write customized scripts for a host system. The scripts initiate predefined tasks in a Copy Services server application. You can use the CLI commands to indirectly control Remote Mirror and Copy and FlashCopy® configuration tasks within a Copy Services server group.	SC26-7625 (See Note.)
IBM System Storage DS8000: Host Systems Attachment Guide	This guide provides guidelines for attaching the DS8000 to your host system and for migrating to fibre-channel attachment from a small computer system interface.	SC26-7628 (See Note.)
IBM System Storage DS8000: Introduction and Planning Guide	This guide introduces the DS8000 product and lists the features you can order. It also provides guidelines for planning the installation and configuration of the storage unit.	GC35-0495
IBM System Storage Multipath Subsystem Device Driver User's Guide	This publication describes how to use the IBM Subsystem Device Driver (SDD) on open-systems hosts to enhance performance and availability on the DS8000. SDD creates single devices (vpaths) that consolidate redundant paths for logical unit numbers. SDD permits applications to run without interruption when path errors occur. It balances the workload across paths, and it transparently integrates with applications.	SC30-4096
IBM System Storage DS8000: User's Guide	This guide provides instructions for setting up and operating the DS8000 and for analyzing problems.	SC26-7623 (See Note.)
IBM System Storage DS Application Programming Interface Reference	This publication provides reference information for the IBM System Storage DS application programming interface (API) and provides instructions for installing the Common Information Model Agent, which implements the API.	GC35-0493

Title	Description	Order Number
IBM System Storage DS8000 Messages Reference	This publication provides explanations of error, information, and warning messages that are issued from the DS8000 user interfaces.	GC26-7659
Note: No hardcopy book is produced for this publication. However, a PDF file is available from the following Web site: http://www-1.ibm.com/servers/storage/support/disk		

Other IBM publications

Other IBM publications contain additional information that is related to the DS product library.

The following list is divided into categories to help you find publications that are related to specific topics. Some of the publications are listed under more than one category. See "Ordering IBM publications" on page xiii for information about ordering these and other IBM publications.

Title	Description	Order Number
Data-copy services		
z/OS DFSMS Advanced Copy Services	This publication helps you understand and use IBM Advanced Copy Services functions. It describes three dynamic copy functions and several point-in-time copy functions. These functions provide backup and recovery of data if a disaster occurs to your data center. The dynamic copy functions are peer-to-peer remote copy, extended remote copy, and coupled extended remote copy. Collectively, these functions are known as remote copy. FlashCopy, SnapShot, and concurrent copy are the point-in-time copy functions.	SC35-0428
IBM Enterprise Storage Server	This publication, from the IBM International Technical Support Organization, introduces the Enterprise Storage Server and provides an understanding of its benefits. It also describes in detail the architecture, hardware, and functions, including the advanced copy functions, of the Enterprise Storage Server.	SG24-5465
Implementing Copy Services 0n S/390	This publication, from the IBM International Technical Support Organization, tells you how to install, customize, and configure Copy Services on an Enterprise Storage Server that is attached to an S/390 or zSeries host system. Copy Services functions include peer-to-peer remote copy (PPRC), extended remote copy (XRC), FlashCopy®, and concurrent copy. This publication describes the functions, prerequisites, and corequisites and describes how to implement each function into your environment.	SG24-5680
IBM TotalStorage ESS Implementing Copy Services in an Open Environment	This publication, from the IBM International Technical Support Organization, tells you how to install, customize, and configure Copy Services on UNIX, Windows NT®, Windows 2000, Sun Solaris, HP-UX, Tru64, OpenVMS, and iSeries host systems. The Copy Services functions that are described include peer-to-peer remote copy (PPRC) and FlashCopy. This publication describes the functions and shows you how to implement them into your environment. It also shows you how to implement these functions in a high-availability cluster multiprocessing environment.	SG24-5757
Fibre channel		

Title	Description	Order Number
Fibre Channel Connection (FICON) I/O Interface: Physical Layer	This publication provides information about the fibre-channel I/O interface. This book is also available as a PDF file from the following Web site: http://www.ibm.com/servers/resourcelink/	SA24-7172
Fibre Transport Services (FTS): Physical and Configuration Planning Guide	This publication provides information about fibre-optic and ESCON-trunking systems.	GA22-7234
IBM SAN Fibre Channel Switch: 2109 Model S08 Installation and Service Guide	This guide describes how to install and maintain the IBM SAN Fibre Channel Switch 2109 Model S08.	SC26-7350
IBM SAN Fibre Channel Switch: 2109 Model S08 User's Guide	This guide describes the IBM SAN Fibre Channel Switch and the IBM TotalStorage ESS Specialist. It provides information about the commands and how to manage the switch with Telnet and the Simple Network Management Protocol.	SC26-7349
IBM SAN Fibre Channel Switch: 2109 Model S16 Installation and Service Guide	This publication describes how to install and maintain the IBM SAN Fibre Channel Switch 2109 Model S16. It is intended for trained service representatives and service providers.	SC26-7352
IBM SAN Fibre Channel Switch: 2109 Model S16 User's Guide	This guide introduces the IBM SAN Fibre Channel Switch 2109 Model S16 and tells you how to manage and monitor the switch using zoning and how to manage the switch remotely.	SC26-7351
Implementing Fibre Channel Attachment on the ESS	This publication, from the IBM International Technical Support Organization, helps you install, tailor, and configure fibre-channel attachment of open-systems hosts to the Enterprise Storage Server. It provides you with a broad understanding of the procedures that are involved and describes the prerequisites and requirements. It also shows you how to implement fibre-channel attachment.	SG24-6113
Open-systems hosts		
ESS Solutions for Open Systems Storage: Compaq AlphaServer, HP, and Sun	This publication, from the IBM International Technical Support Organization, helps you install, tailor, and configure the Enterprise Storage Server when you attach Compaq AlphaServer (running Tru64 UNIX), HP, and Sun hosts. This book does not cover Compaq AlphaServer that is running the OpenVMS operating system. This book also focuses on the settings that are required to give optimal performance and on the settings for device driver levels. This book is for the experienced UNIX professional who has a broad understanding of storage concepts.	SG24-6119
IBM TotalStorage ESS Implementing Copy Services in an Open Environment	This publication, from the IBM International Technical Support Organization, tells you how to install, customize, and configure Copy Services on UNIX or Windows 2000 host systems. The Copy Services functions that are described include peer-to-peer remote copy and FlashCopy. This publication describes the functions and shows you how to implement them into your environment. It also shows you how to implement these functions in a high-availability cluster multiprocessing environment.	SG24-5757
Implementing Fibre Channel Attachment on the ESS	This publication, from the IBM International Technical Support Organization, helps you install, tailor, and configure fibre-channel attachment of open-systems hosts to the Enterprise Storage Server. It gives you a broad understanding of the procedures that are involved and describes the prerequisites and requirements. It also shows you how to implement fibre-channel attachment.	SG24-6113

Title	Description	Order Number
S/390 and zSeries hosts		
Device Support Facilities: User's Guide and Reference	This publication describes the IBM Device Support Facilities (ICKDSF) product that are used with IBM direct access storage device (DASD) subsystems. ICKDSF is a program that you can use to perform functions that are needed for the installation, the use, and the maintenance of IBM DASD. You can also use it to perform service functions, error detection, and media maintenance.	GC35-0033
z/OS Advanced Copy Services	This publication helps you understand and use IBM Advanced Copy Services functions. It describes three dynamic copy functions and several point-in-time copy functions. These functions provide backup and recovery of data if a disaster occurs to your data center. The dynamic copy functions are peer-to-peer remote copy, extended remote copy, and coupled extended remote copy. Collectively, these functions are known as remote copy. FlashCopy, SnapShot, and concurrent copy are the point-in-time copy functions.	SC35-0428
DFSMS/MVS V1: Remote Copy Guide and Reference	This publication provides guidelines for using remote copy functions with S/390 and zSeries hosts.	SC35-0169
Fibre Transport Services (FTS): Physical and Configuration Planning Guide	This publication provides information about fibre-optic and ESCON-trunking systems.	GA22-7234
Implementing ESS Copy Services on S/390	This publication, from the IBM International Technical Support Organization, tells you how to install, customize, and configure Copy Services on an Enterprise Storage Server that is attached to an S/390 or zSeries host system. Copy Services functions include peer-to-peer remote copy, extended remote copy, FlashCopy, and concurrent copy. This publication describes the functions, prerequisites, and corequisites and describes how to implement each function into your environment.	SG24-5680
ES/9000, ES/3090: IOCP User Guide Volume A04	This publication describes the Input/Output Configuration Program that supports the Enterprise Systems Connection (ESCON) architecture. It describes how to define, install, and configure the channels or channel paths, control units, and I/O devices on the ES/9000 processors and the IBM ES/3090 Processor Complex.	GC38-0097
IOCP User's Guide, IBM e(logo)server zSeries 800 and 900	This publication describes the Input/Output Configuration Program that supports the zSeries 800 and 900 servers. This publication is available in PDF format by accessing ResourceLink at the following Web site: www.ibm.com/servers/resourcelink/	SB10-7029
IOCP User's Guide, IBM e(logo)server zSeries	This publication describes the Input/Output Configuration Program that supports the zSeries server. This publication is available in PDF format by accessing ResourceLink at the following Web site: www.ibm.com/servers/resourcelink/	SB10-7037
S/390: Input/Output Configuration Program User's Guide and ESCON Channel-to-Channel Reference	This publication describes the Input/Output Configuration Program that supports ESCON architecture and the ESCON multiple image facility.	GC38-0401
IBM z/OS Hardware Configuration Definition User's Guide	This guide provides conceptual and procedural information to help you use the z/OS Hardware Configuration Definition (HCD) application. It also explains: • How to migrate existing IOCP/MVSCP definitions • How to use HCD to dynamically activate a new configuration • How to resolve problems in conjunction with MVS/ESA HCD	SC33-7988

Title	Description	Order Number
OS/390: Hardware Configuration Definition User's Guide	This guide provides detailed information about the input/output definition file and about how to configure parallel access volumes. This guide discusses how to use Hardware Configuration Definition for both OS/390® and z/OS V1R1.	SC28-1848
OS/390 V2R10.0: MVS System Messages Volume 1 (ABA - ASA)	This publication lists OS/390 MVS™ system messages ABA to ASA.	GC28-1784
Using IBM 3390 Direct Access Storage in a VM Environment	This publication provides device-specific information for the various models of the 3390 and describes methods you can use to manage storage efficiently using the VM operating system. It provides guidance on managing system performance, availability, and space through effective use of the direct access storage subsystem.	GG26-4575
Using IBM 3390 Direct Access Storage in a VSE Environment	This publication helps you use the 3390 in a VSE environment. It includes planning information for adding new 3390 units and instructions for installing devices, migrating data, and performing ongoing storage management activities.	GC26-4576
Using IBM 3390 Direct Access Storage in an MVS Environment	This publication helps you use the 3390 in an MVS environment. It includes device-specific information for the various models of the 3390 and illustrates techniques for more efficient storage management. It also offers guidance on managing system performance, availability, and space utilization through effective use of the direct access storage subsystem.	GC26-4574
z/Architecture Principles of Operation	This publication provides a detailed definition of the z/Architecture™. It is written as a reference for use primarily by assembler language programmers and describes each function at the level of detail needed to prepare an assembler language program that relies on a particular function. However, anyone concerned with the functional details of z/Architecture will find this publication useful.	SA22-7832
SAN		
IBM OS/390 Hardware Configuration Definition User's Guide	This guide explains how to use the Hardware Configuration Data application to perform the following tasks: • Define new hardware configurations • View and modify existing hardware configurations • Activate configurations • Query supported hardware • Maintain input/output definition files (IODFs) • Compare two IODFs or compare an IODF with an actual configuration • Print reports of configurations • Create graphical reports of a configuration • Migrate existing configuration data	SC28-1848
IBM SAN Fibre Channel Switch: 2109 Model S08 Installation and Service Guide	This guide describes how to install and maintain the IBM SAN Fibre Channel Switch 2109 Model S08.	SC26-7350
IBM SAN Fibre Channel Switch: 2109 Model S08 User's Guide	This guide describes the IBM SAN Fibre Channel Switch and the IBM TotalStorage ESS Specialist. It provides information about the commands and how to manage the switch with Telnet and the Simple Network Management Protocol (SNMP).	SC26-7349
IBM SAN Fibre Channel Switch: 2109 Model S16 Installation and Service Guide	This publication describes how to install and maintain the IBM SAN Fibre Channel Switch 2109 Model S16. It is intended for trained service representatives and service providers.	SC26-7352

Title	Description	Order Number
IBM SAN Fibre Channel Switch: 2109 Model S16 User's Guide	This guide introduces the IBM SAN Fibre Channel Switch 2109 Model S16 and tells you how to manage and monitor the switch using zoning and how to manage the switch remotely.	SC26-7351
Implementing Fibre Channel Attachment on the ESS	This publication, from the IBM International Technical Support Organization, helps you install, tailor, and configure fibre-channel attachment of open-systems hosts to the Enterprise Storage Server. It provides you with a broad understanding of the procedures that are involved and describes the prerequisites and requirements. It also shows you how to implement fibre-channel attachment.	SG24-6113
Seascape family		
IBM Enterprise Storage Server	This publication, from the IBM International Technical Support Organization, introduces the Enterprise Storage Server and provides an understanding of its benefits. It also describes in detail the architecture, hardware, and functions, including the advanced copy functions, of the Enterprise Storage Server.	SG24-5465
IBM Enterprise Storage Server Performance Monitoring and Tuning Guide	This guide, from the IBM International Technical Support Organization, provides guidance on the best way to configure, monitor, and manage your Enterprise Storage Server to ensure optimum performance.	SG24-5656
IBM Versatile Storage Server: Introduction and Planning Guide	This publication introduces the IBM Versatile Storage Server™ and lists the features you can order. It also provides planning information for both 2105 Models B09 and 100.	GC26-7223
Implementing the IBM Enterprise Storage Server in Your Environment	This publication, from the IBM International Technical Support Organization, can help you install, tailor, and configure the Enterprise Storage Server in your environment.	SG24-5420
Storage management		
Device Support Facilities: User's Guide and Reference	This publication describes the IBM Device Support Facilities (ICKDSF) product used with IBM direct access storage device (DASD) subsystems. ICKDSF is a program that you can use to perform functions that are needed for the installation, the use, and the maintenance of IBM DASD. You can also use it to perform service functions, error detection, and media maintenance.	GC35-0033
IBM TotalStorage Solutions Handbook	This handbook, from the IBM International Technical Support Organization, helps you understand what makes up enterprise storage management. The concepts include the key technologies that you must know and the IBM subsystems, software, and solutions that are available today. It also provides guidelines for implementing various enterprise storage administration tasks so that you can establish your own enterprise storage management environment.	SG24-5250

Ordering IBM publications

You can order copies of IBM publications using the IBM publications center.

IBM publications center

The 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 free of 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 Web site:

http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi

Note: Open the Web site in a new browser window by right clicking on the link and selecting ″Open in New Window.″

Web sites

The following Web sites provide information about the IBM System Storage DS8000 series and other IBM storage products.

Type of Storage Information	Web Site
Concurrent Copy for S/390 and zSeries host systems	http://www.storage.ibm.com/software/sms/sdm/
Copy Services command-line interface (CLI)	http://www-1.ibm.com/servers/storage/support/software/cscli/
DS8000 Information Center	http://publib.boulder.ibm.com/infocenter/ds8000ic/index.jsp
DS8000 series publications	http://www-1.ibm.com/servers/storage/support/disk Click **Documentation**.
FlashCopy for S/390 and zSeries host systems	http://www.storage.ibm.com/software/sms/sdm/
Host system models, operating systems, and adapters that the storage unit supports	http://www.ibm.com/servers/storage/disk/ds8000/ Click **Interoperability matrix**.
IBM Disk Storage Feature Activation (DSFA)	http://www.ibm.com/storage/dsfa
IBM storage products	http://www.storage.ibm.com/
IBM System Storage DS8000 series	http://www-1.ibm.com/servers/storage/disk/ds8000
IBM version of the Java (JRE) that is often required for IBM products	http://www-106.ibm.com/developerworks/java/jdk/
Multiple Device Manager (MDM)	http://www.ibm.com/servers/storage/support/ Click **Storage Virtualization**.
Remote Mirror and Copy (formerly PPRC) for S/390 and zSeries host systems	http://www.storage.ibm.com/software/sms/sdm/
SAN fibre channel switches	http://www.ibm.com/storage/fcswitch/
Storage Area Network Gateway and Router	http://www-1.ibm.com/servers/storage/support/san/
Subsystem Device Driver (SDD)	http://www-03.ibm.com/servers/storage/support/software/sdd
Technical notes and product tips	http://www.ibm.com/servers/storage/support/disk/ds8100/ Click **Technical notes** on the Troubleshooting tab.
z/OS Global Mirror (formerly XRC) for S/390 and zSeries host systems	http://www.storage.ibm.com/software/sms/sdm/

How to send your comments

Your feedback is important to help us provide the highest quality information. If you have any comments about this information or any other DS8000 series documentation, you can submit them in the following ways:

- e-mail

  Submit your comments electronically to the following e-mail address:

starpubs@us.ibm.com

Be sure to include the name and order number of the book and, if applicable, the specific location of the text you are commenting on, such as a page number or table number.

- Mail

  Fill out the Readers' Comments form (RCF) at the back of this book. Return it by mail or give it to an IBM representative. If the RCF has been removed, you can address your comments to:

  International Business Machines Corporation
  RCF Processing Department
  Department 61C
  9032 South Rita Road
  TUCSON AZ 85775-4401

Part numbers, locations, and LEDs

This section contains three sets of reference material: part numbers, location codes, and light indicators (LEDs).

To detemine which topic contains information about a part, go to *Finding parts using a visual index* and determine which main assembly contains that part. If you know which main assembly contains the part, go to the appropriate topic under *Part numbers* or *Location codes*. To locate an LED and interpret it based upon its condition, go to *Light indicators (LEDs)*.

Finding parts and locations using a visual index

To find a part number or location code, determine which section of the machine contains the part. For Rack-1 (a base rack), see Figure 1 on page 4 and Figure 2 on page 5. For an expansion rack, see Figure 3 on page 6 and Figure 4 on page 7. After you determine which section of the machine contains the part, refer to the appropriate topic in Table 1. To find information about cables, go to the topic that contains information about the part that the cable is connected to.

Table 1. DS8000 Part numbers and location codes

Part numbers	**Location codes**
"CEC enclosure part numbers" on page 9	"CEC enclosure location codes" on page 101
"I/O enclosure part numbers" on page 29	"I/O enclosure location codes" on page 106
"Rack power and cooling part numbers" on page 60	"Rack power and cooling location codes" on page 111
"Storage enclosure part numbers" on page 94	"Storage enclosure location codes" on page 123
"Management console (MC) part numbers" on page 38	"Management console (MC) server location codes" on page 110
"Service ship group part numbers" on page 92	

Visual index of assemblies

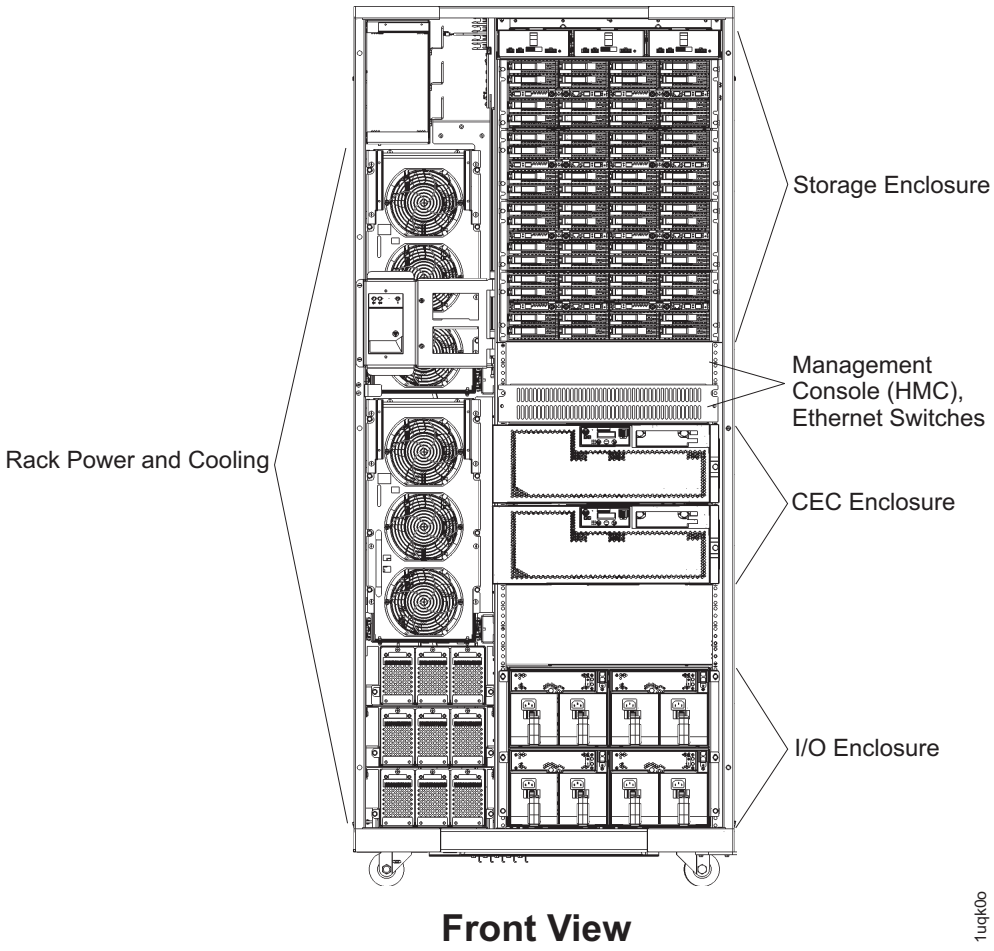


Figure 1. Visual index of Rack-1 (front)

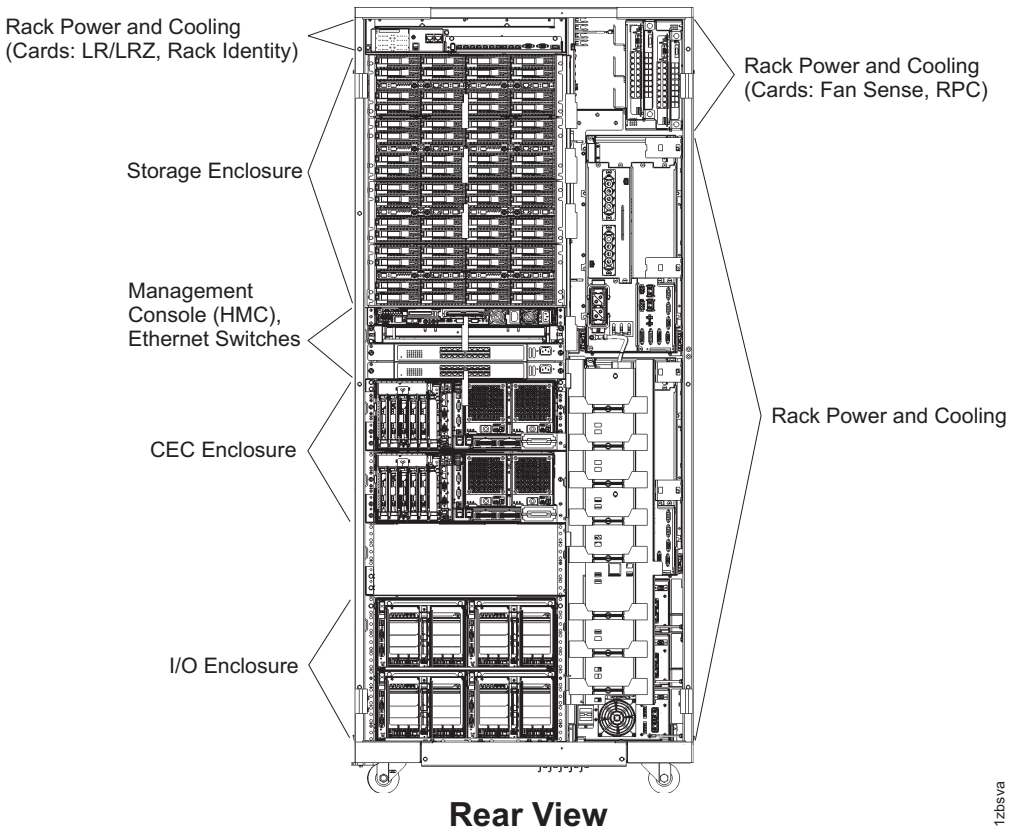


Figure 2. Visual index of Rack-1 (rear)

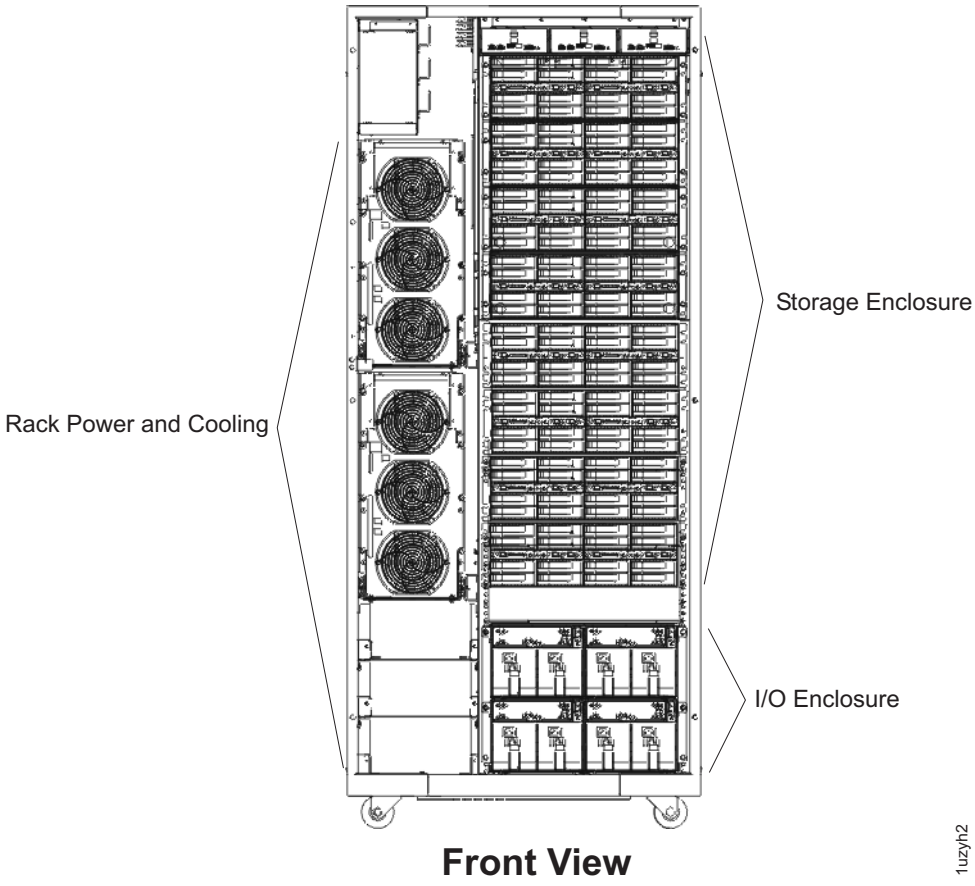


Figure 3. Visual index of an expansion rack (front)

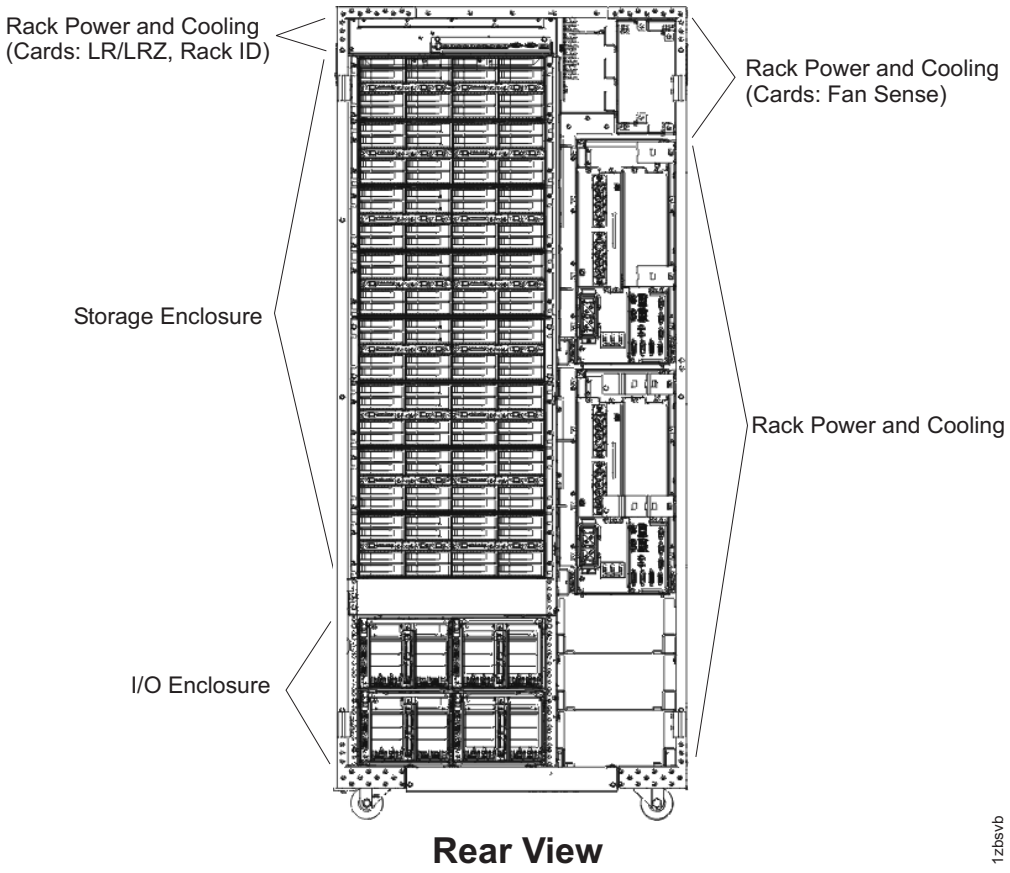


Figure 4. Visual index of an expansion rack (rear)

Part numbers

Use this section to find part numbers (P/Ns).

Cable part numbers

To find part information about cables, see the topic that contains information about the part to which the cable is connected.

"CEC enclosure part numbers"
"Ethernet switch part numbers" on page 26
"I/O enclosure part numbers" on page 29
"Management console (MC) part numbers" on page 38
"Rack power and cooling part numbers" on page 60
"Storage enclosure part numbers" on page 94

CEC enclosure part numbers

Information about CEC enclosure parts is listed below. Use Table 2 as a directory.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Table 2. Start here

Part name	Figure
Cables	Figure 14 on page 25
CEC disk drive	Figure 6 on page 13
CEC enclosure control panel	Figure 5 on page 11
CEC enclosure fan	Figure 5 on page 11 Figure 6 on page 13
CEC enclosure I/O backplane assembly	Figure 7 on page 16
CEC enclosure power supply	Figure 7 on page 16
CEC enclosure RIO card	Figure 7 on page 16
CEC enclosure RIO card filler	Figure 7 on page 16
Disk drive backplane assembly	Figure 6 on page 13
DVD-RAM drive	Figure 5 on page 11
Ethernet card	Figure 10 on page 20
Media backplane assembly	Figure 5 on page 11
Memory DIMM	Figure 11 on page 21

Table 2. Start here (continued)

Part name	Figure
NVC card	Figure 7 on page 16 Figure 10 on page 20
Service processor card	Figure 7 on page 16
System processor backplane assembly	Figure 6 on page 13
System processor card	Figure 6 on page 13
System processor dummy card	Figure 6 on page 13
System processor voltage card	Figure 5 on page 11
System processor voltage dummy card	Figure 5 on page 11
Time of day battery (service processor card)	Figure 12 on page 23
VPD card	Figure 9 on page 19
All other parts	(Find the appropriate figure below)

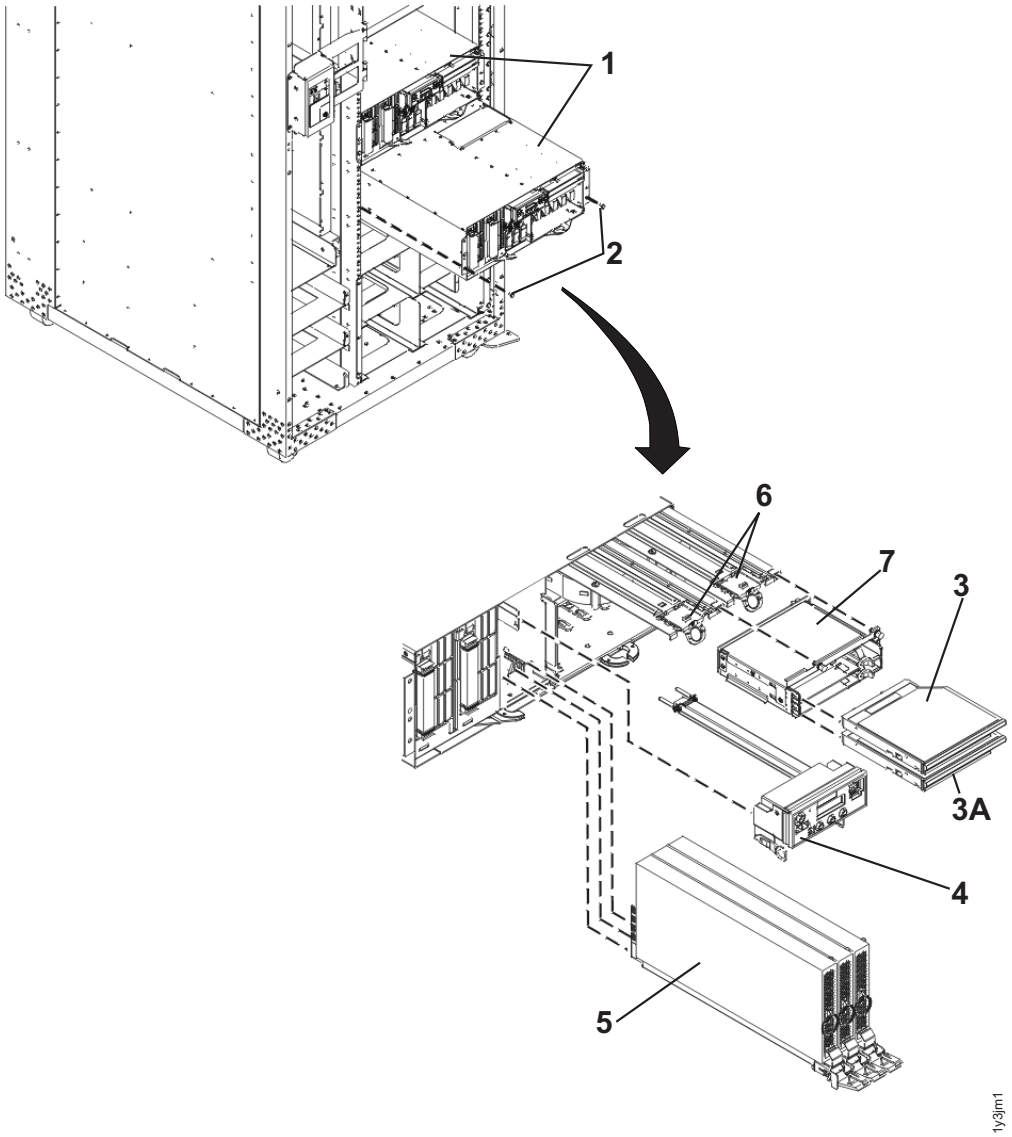


Figure 5. CEC enclosure parts

Table 3. CEC enclosure parts (front view) - 1 of 2

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
			See Version Notes at the start of this topic section	
1	CEC enclosure chassis[2]		53P5049	21P8359
2	Screw		54G2882	54G2882
3	DVD-RAM drive, version 1		97P6883	39J1364
	DVD-RAM drive, version 2		97P6884	39J1364
3a	Media dummy card		53P5867	53P5867
4	CEC enclosure control panel	28D4	97P4940	39J3272
5	System processor voltage card	28E8	97P5678	39J0473

Table 3. CEC enclosure parts (front view) - 1 of 2 (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
			See Version Notes at the start of this topic section	
5	System processor voltage dummy card		97P3318	97P3318
6	CEC enclosure fan		53P5070	39J0859
7	Media backplane assembly	28DC	80P4556	03N4808

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are some exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer™ P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.
2. The CEC enclosure chassis is a special order item. The chassis to be replaced has bar code labels with the specific MTMS (machine type model serial number) information. Contact next level of support to determine if the label can be moved to the new chassis. The MTMS should stay the same as there is not an HMC menu option to change it. The MTMS on the bar code label must match the MTMS in the code, as the CEC enclosure serial number is used in serviceable event FRU list and exchange part lists.

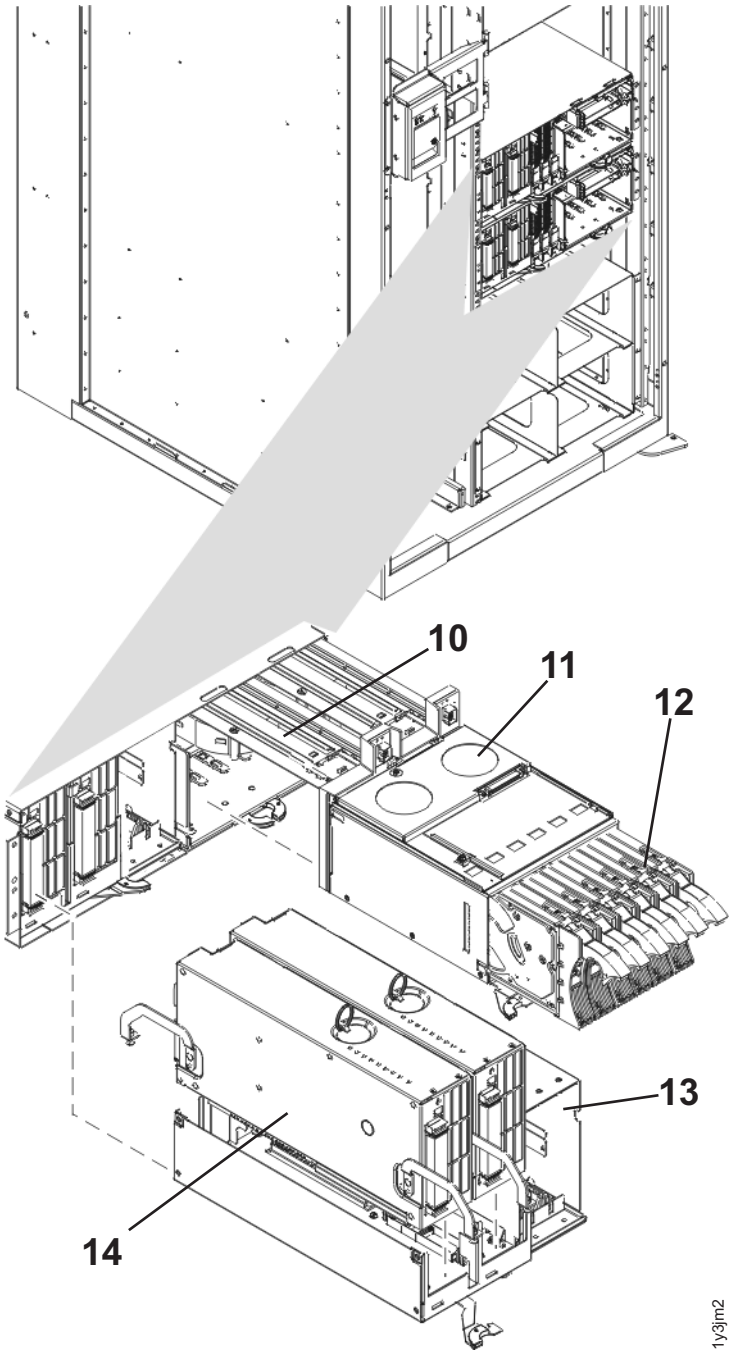


Figure 6. CEC enclosure parts

Table 4. CEC enclosure parts (front view) - 2 of 2

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
10	CEC enclosure fan		53P5070	39J0859
11	Disk drive backplane assembly	28DB	80P4812	03N4801

Table 4. CEC enclosure parts (front view) - 2 of 2 (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
12	CEC disk drive, 73 GB **Important:** Engineering note: Two CEC disk drives work together as a mirrored pair. A 73 GB drive should always be replaced with a 73 GB drive. If a 73 GB drive is replaced with a 146 GB drive, the mirrored pair will work, but if the remaining 73 GB drive ever needs to be replaced, it MUST be replaced with a 146 GB drive, not a 73 GB drive.		00P3072[2] 00P3833	
	CEC disk drive, 146 GB, standard version (replace with same version)		00P3835	03N5265
	CEC disk drive, 146 GB, RPQ version (replace with same version)		00P2664[3] 00P2665	03N6330 03N6330
13	System processor backplane assembly	27AE	80P4990	3N4920
14	System processor dummy card		97P3289	39J0854
	System processor card, 1.5 GHz **Important:** In order to prevent errors during power up, both system processor cards in a CEC enclosure must have the same CCIN. The firmware detects the CCIN and makes adjustments to the speed and voltages for the pair of cards.	26EF	80P7079	N/A
	System processor card, 1.9 GHz nominal voltage w/out CoD **Important:** In order to prevent errors during power up, both system processor cards in a CEC enclosure must have the same CCIN. The firmware detects the CCIN and makes adjustments to the speed and voltages for the pair of cards.	272E	80P7083	N/A
	System processor card, 1.9 GHz high voltage w/out CoD **Important:** In order to prevent errors during power up, both system processor cards in a CEC enclosure must have the same CCIN. The firmware detects the CCIN and makes adjustments to the speed and voltages for the pair of cards.	272F	80P7084	N/A
	System processor card, 2.2 GHz Version 2.1 Version 3.1 **Important:** In order to prevent errors during power up, both system processor cards in a CEC enclosure must have the same CCIN. The firmware detects the CCIN and makes adjustments to the speed and voltages for the pair of cards.	832E 832E	N/A N/A	10N7471 10N7109

Table 4. CEC enclosure parts (front view) - 2 of 2 (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are some exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.
2. The CEC disk drive (73 GB) might call home with a P/N of 00P2672, which is the P/N of the disk drive itself. The FRU P/N 00P3072 is for the assembly of the disk drive that is mounted on the carrier. When replacing a CEC disk drive (73 GB), replace it with P/N 00P3072.
3. P/N 00P2664 is a manufacturing P/N that might appear in a serviceable FRU list, but P/N 00P2665 is the FRU P/N that you should order. This FRU P/N is a special version of the 146 GB drive for an RPQ feature. You must replace an RPQ drive with an RPQ drive P/N.

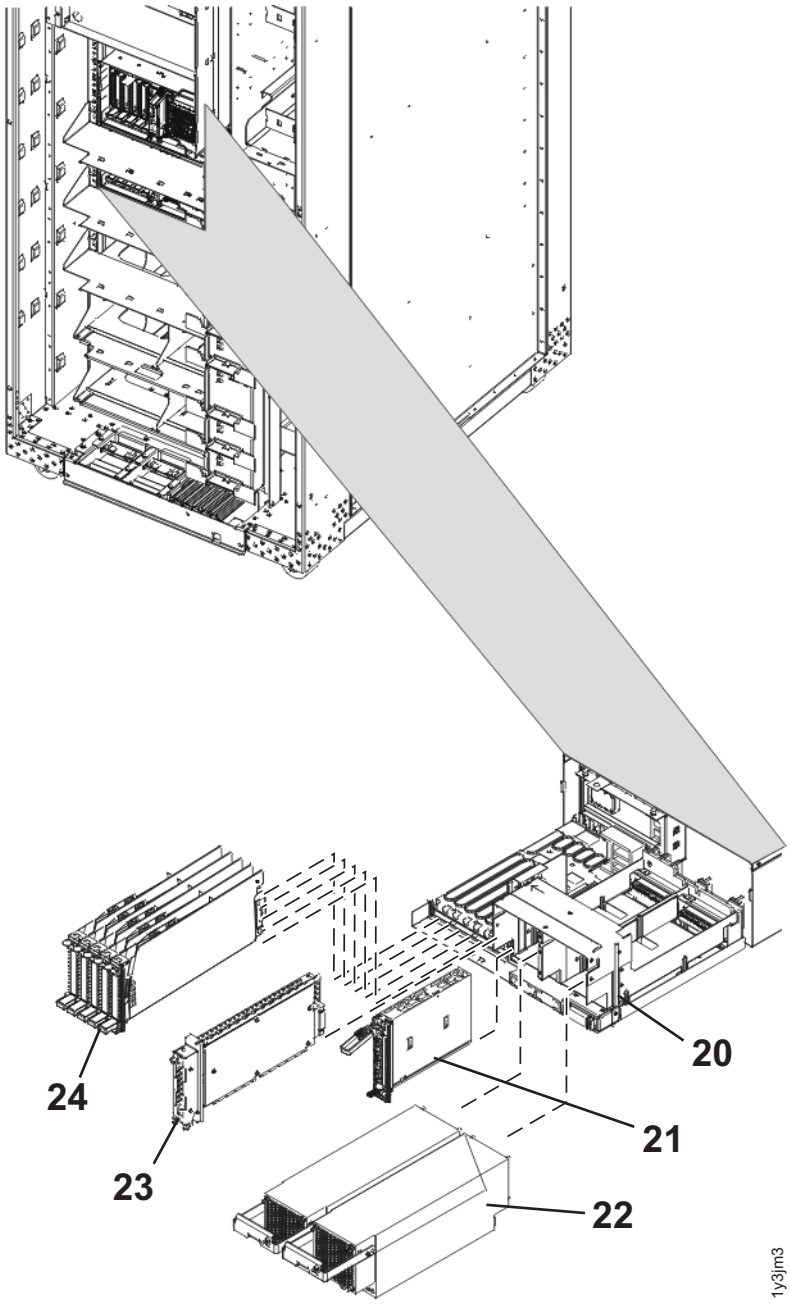


Figure 7. CEC enclosure parts

Table 5. CEC enclosure parts (rear view)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
20	CEC enclosure I/O backplane assembly	27AE	39J0202	39J3748
21	Service processor card (Rel 1.x firmware, bundles 6.0.xxx.xxx or 6.1.xxx.xxx)	28EA	22R6221 [2]	17P8787 [2]
21	Service processor card (Rel 2.x firmware, bundle 6.2.xxx.xxx)	28EA	N/A	17P8788 [2]
22	CEC enclosure power supply		97P5676	39J2779
23	CEC enclosure RIO card filler		97P4725	39J1338

Table 5. CEC enclosure parts (rear view) (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
23	CEC enclosure RIO card	1800	97P6219	39J0792
24	NVC card **Note:** In newer machines, the NVC card has been eliminated.		24R0622	24R2129

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are some exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.
2. The P/N listed in the serviceable event FRU list and in the call home is the P/N from the service processor card VPD. The VPD has the generic manufacturing P/N and not the FRU P/N. The generic manufacturing P/N does not indicate which level of firmware is present in the FRU. The manufacturing P/N may be one of the following: 80P5319, 03N6355, 03N6603, or 10N8505.

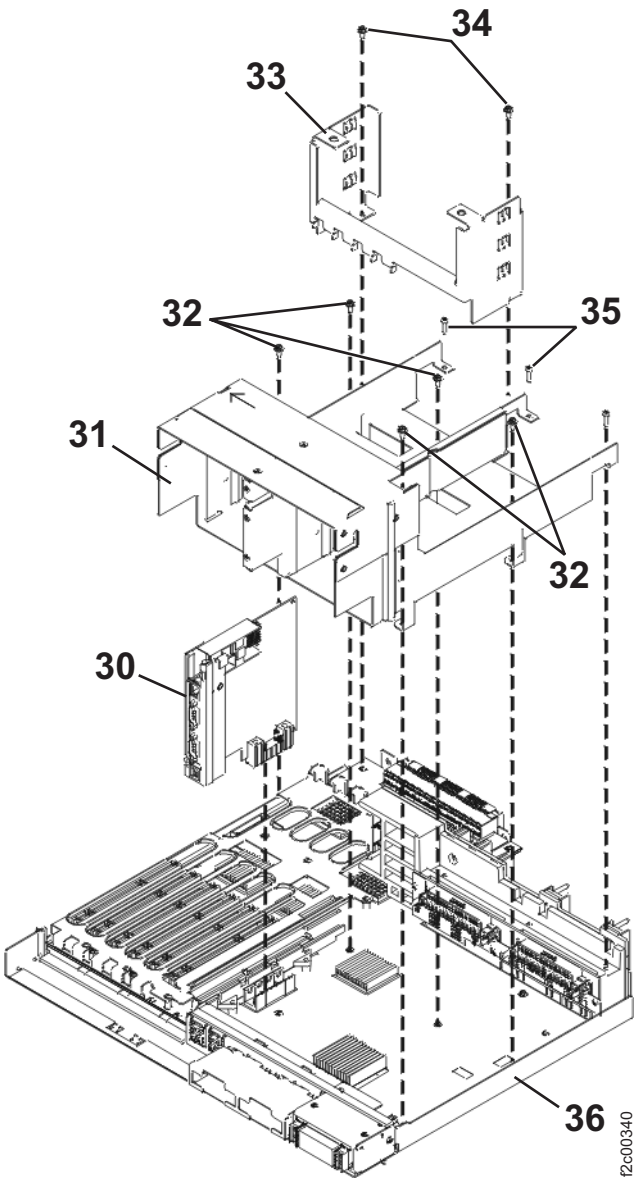


Figure 8. CEC enclosure parts (internal)

Table 6. CEC enclosure parts (internal view)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
30	Card		97P4214	39J0780
31	Shelf, power supply		53P5060	39J1130
32	Screw		75G2878	75G2878
33	Screw		44H8203	44H8203
34	Bracket		53P5068	21P8383
35	Screw, power shelf		75G2878	75G2878
36	CEC enclosure I/O backplane assembly	27AE	39J0202	39J3748

Table 6. CEC enclosure parts (internal view) (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are some exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.

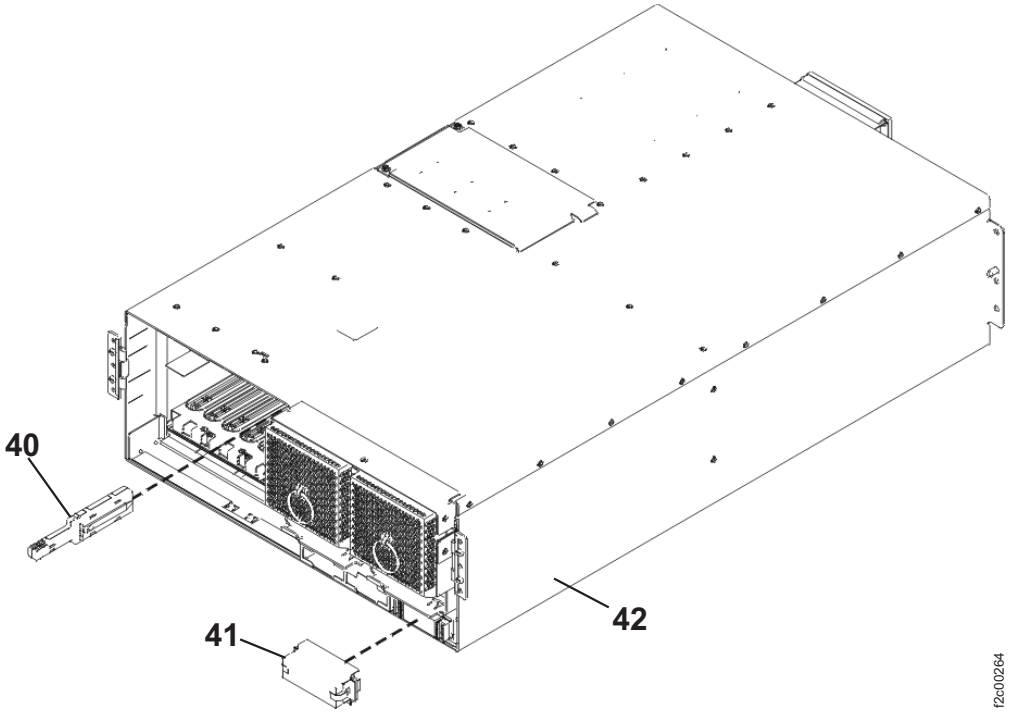


Figure 9. CEC enclosure parts

Table 7. CEC enclosure parts (rear view)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
40	VPD card	528E	80P5110	03N6018
41	Cover, connector[2]		97P5704	N/A
42	Chassis assembly		53P5049	21P8359

Table 7. CEC enclosure parts (rear view) (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are some exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.
2. Not used on later models.

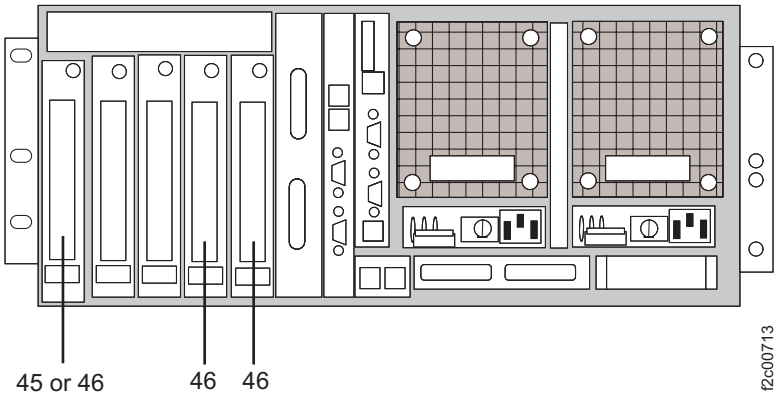


Figure 10. PCI card slots on the rear of the CEC enclosure

Table 8. NVC card and Ethernet card

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
45	NVC card **Note:** In newer machines, the NVC card has been eliminated.		24R0622	24R2129
46	Ethernet card	5706	00P6131	03N5297

Table 8. NVC card and Ethernet card (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are some exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.

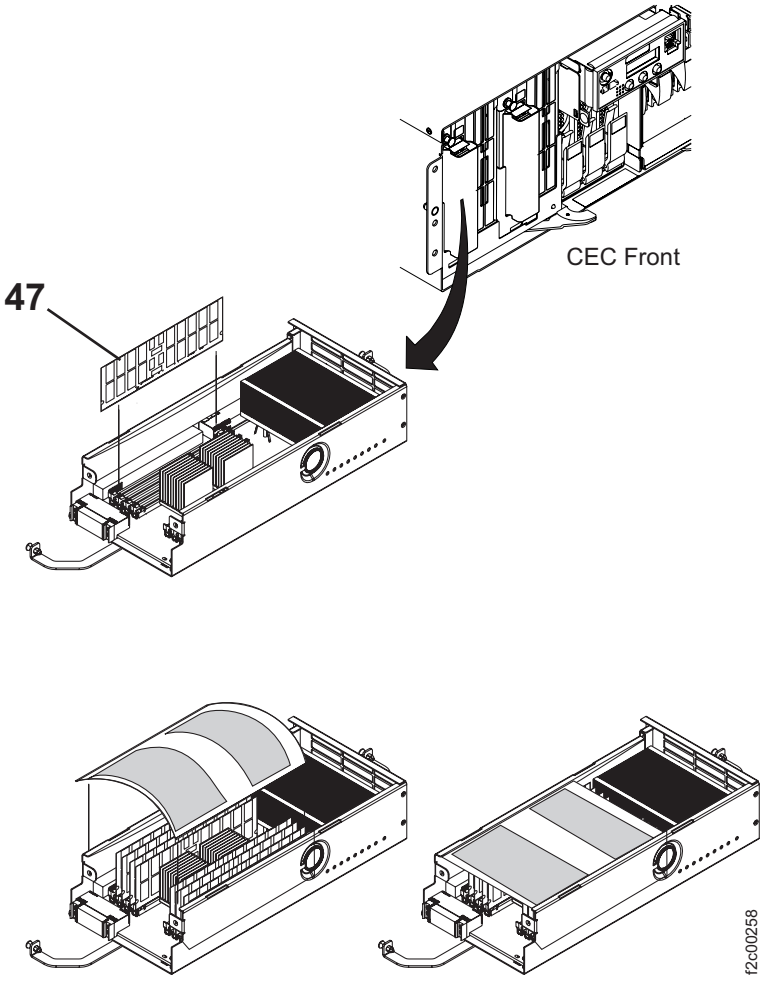


Figure 11. CEC enclosure parts

Table 9. Memory DIMM

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
47	Memory DIMM, 2 GB DDR1	30AA	53P3232	12R9259
47	Memory DIMM, 2 GB DDR2	30F3	N/A	16R1530
47	Memory DIMM, 4 GB DDR1	310E	12R7631[2]	12R9264[2]
47	Memory DIMM, 4 GB DDR2	312F	N/A	12R8994
47	Memory DIMM, 8 GB DDR1	30F7	16R1221	12R9269
47	Memory DIMM, 8 GB DDR2	314C	N/A	12R8468

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are some exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.
2. There is a known problem with the parts ordering system. The system might incorrectly identify this P/N as a 16 GB memory DIMM, even though the part that is shipped is a 4 GB memory DIMM. Ensure that “4 GB” is on the label on the memory DIMM. The problem is being fixed.

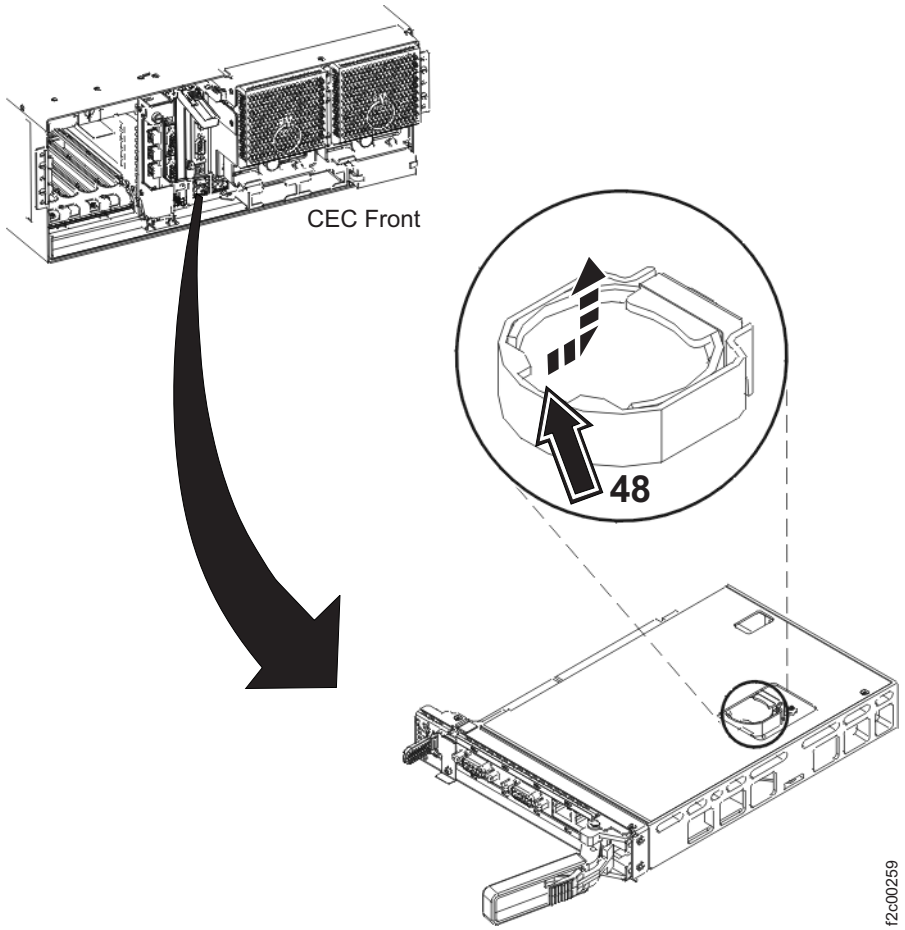


Figure 12. Time of day battery

Table 10. Time of day battery

Index	Part name	Part number	
		Version 1	**Version 2**
48	Time of day battery (service processor card)	16G8095	16G8095

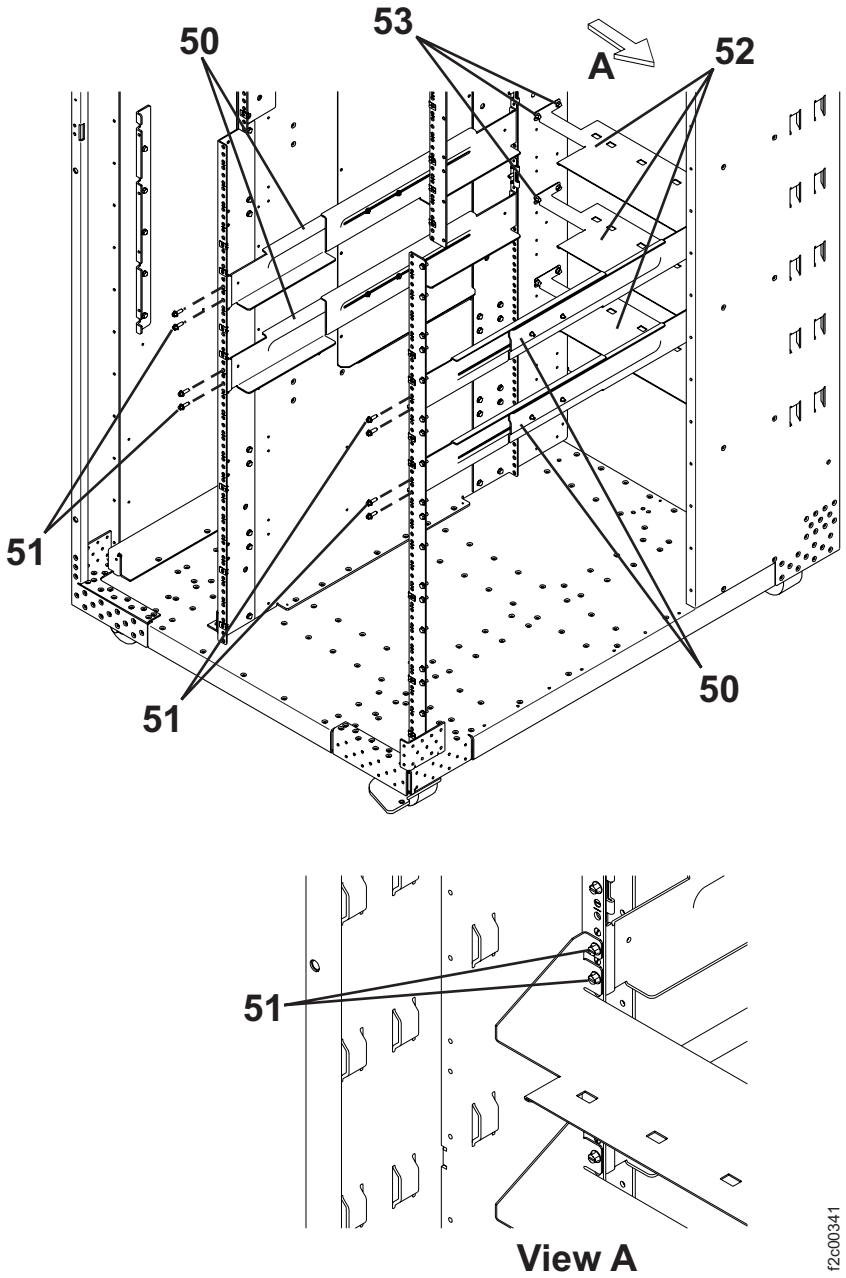


Figure 13. Parts for mounting a CEC enclosure chassis

Table 11. CEC enclosure parts (internal view)

Index	Part name	Part number	
		Version 1	Version 2
51	Rail kit, version 1	97P4735	23R0409
	Rail kit, version 2	22R5185	23R0409
52	Screw, rail kit	54G2882	54G2882
53	Bracket, CEC cabling	17P7890	22R4947

Cables for CEC enclosure parts

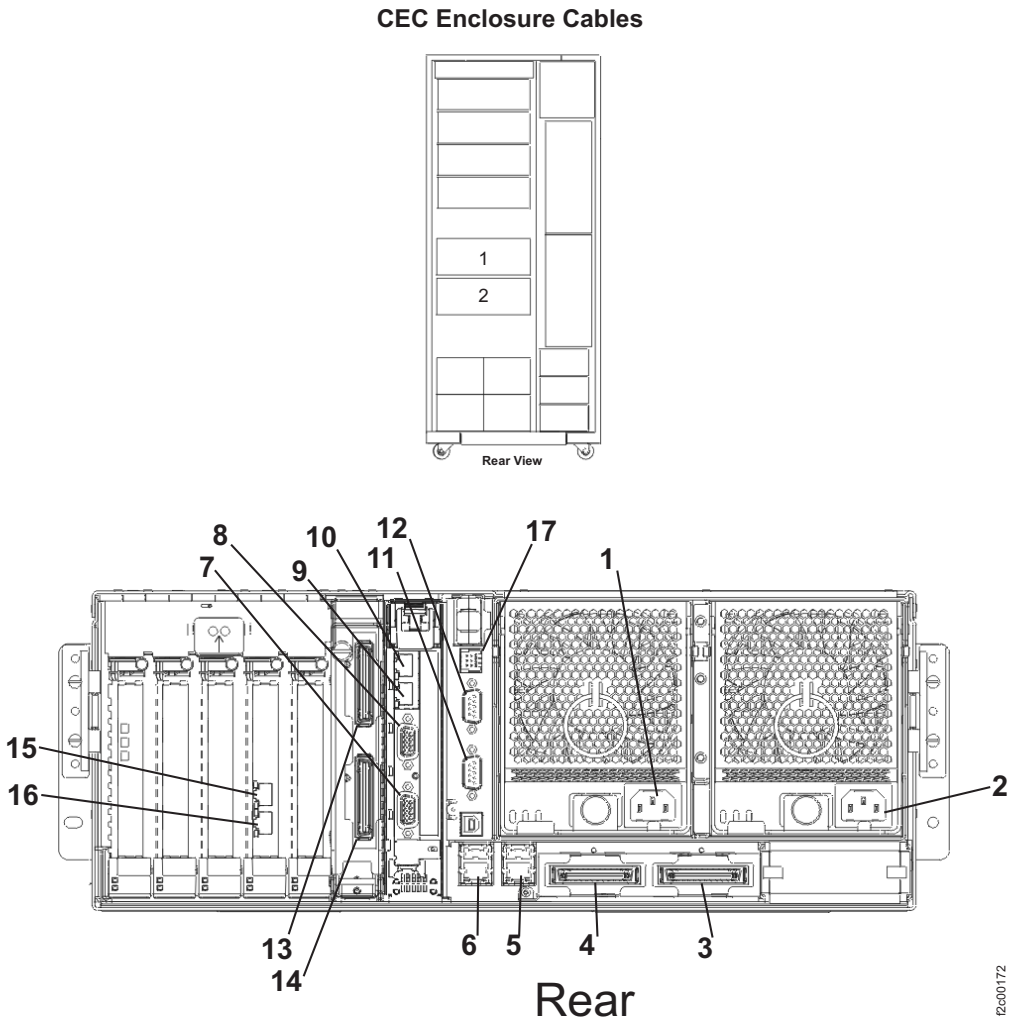


Figure 14. CEC enclosure cables

Table 12. Cables for CEC enclosure parts (rear view)

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, power (from 208VDC bus bar, 4.4 m)	22R0976	22R5828
2	Cable, power (from 208VDC bus bar, 5.4 m)	22R0977	22R5829
3-4	Cable, RIO-G, 1.0 m	21P5454	39J2562
	Cable, RIO-G, 3.5 m	53P2676	39J2554
5-6	Cable, Ethernet, CEC enclosure 1 (1.0 m grey)	22R0997	22R0997
	Cable, Ethernet, CEC enclosure 2 (1.2 m grey)	22R0998	22R0998
7-8	Cable, SPCN, 0.4 m	22R1240	22R5215
	Cable, SPCN, 1.0 m	17P7879	22R5216
	Cable, SPCN, 4.0 m	22R0872	22R5218
9	Cable, Ethernet, CEC enclosure 1 (1.1 m grey)	22R0995	22R0995
	Cable, Ethernet, CEC enclosure 2 (1.2 m grey)	22R0996	22R0996

Table 12. Cables for CEC enclosure parts (rear view) (continued)

Index	Part name	Part number	
		Version 1	Version 2
10	Cable, Ethernet, CEC enclosure 1 (1.0 m black)	22R0990	22R0990
	Cable, Ethernet, CEC enclosure 2 (1.2 m black)	22R0991	22R0991
11	(Call next level of support)		
12	(Call next level of support)		
13-14	Cable, RIO-G, 1.0 m	21P5454	39J2562
	Cable, RIO-G, 3.5 m	53P2676	39J2554
15	Cable, Ethernet, CEC enclosure 1 (1.1 m black)	22R2214	22R2214
	Cable, Ethernet, CEC enclosure 2 (1.2 m black)	22R2216	22R2216
16	Cable, Ethernet, CEC enclosure 1 (1.1 m grey)	22R2215	22R2215
	Cable, Ethernet, CEC enclosure 2 (1.2 m grey)	22R2217	22R2217
17	Cable, RPC card, CEC enclosure 1	22R0416	22R6143
	Cable, RPC card, CEC enclosure 2	22R0417	22R6144

Ethernet switch part numbers

Information about Ethernet switch parts is listed below. Use Table 13 as a directory.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Table 13. Start here

Part name	Figure
Cables	Figure 16 on page 27
Ethernet switch	Figure 15 on page 27

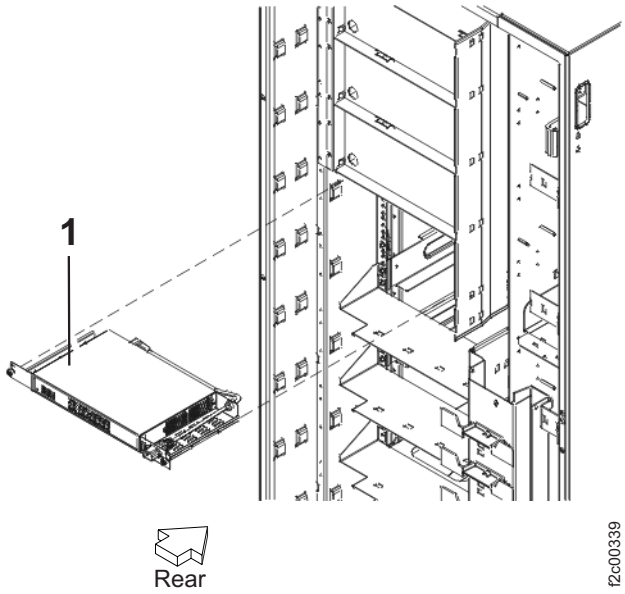


Figure 15. Ethernet switch

Table 14. Ethernet switch parts

Index	Part name	Part number	
		Version 1	Version 2
1	Ethernet switch	22R0804	22R4916

Cables for Ethernet switch SW1

To find part numbers for the cables that are connected to Ethernet switch SW1 (the upper Ethernet switch), see Figure 16 and Table 15 on page 28.

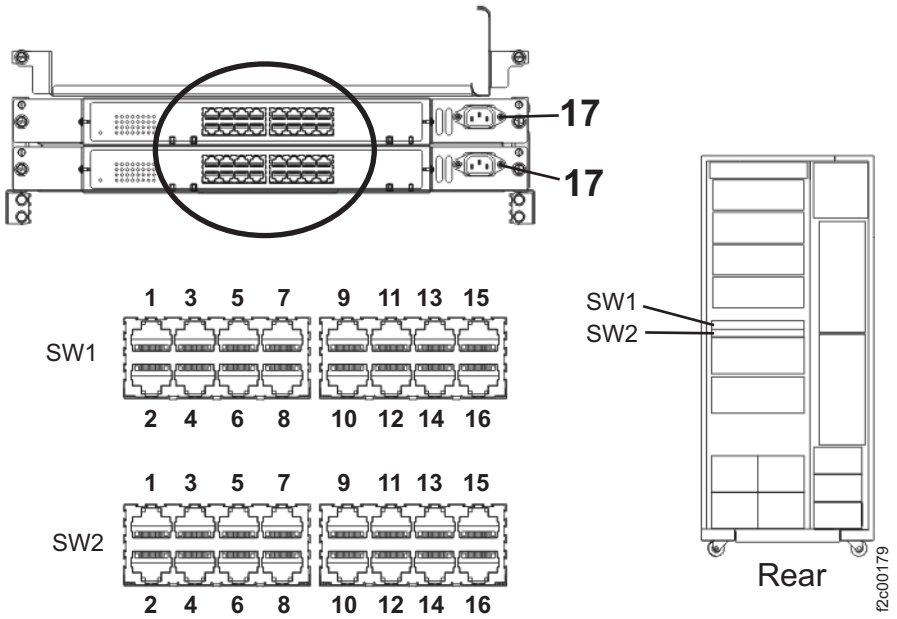


Figure 16. Ethernet switch cables

Table 15. Cables for Ethernet switch SW1

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, Ethernet switch SW1 -to- HMC (1.0 m black)	22R0989	22R0989
2	(Call your next level of support)		
3	Cable, Ethernet switch SW1 -to- CEC enclosure XC1[1] (1.1 m black)	22R0990	22R0990
4	Cable, Ethernet switch SW1 -to- CEC enclosure XC2[2] (1.2 m black)	22R0991	22R0991
5	Cable, Ethernet switch SW1 -to- CEC enclosure XC1[1] (1.0 m black)	22R0992	22R0992
6	Cable, Ethernet switch SW1 -to- CEC enclosure XC2[2] (1.2 m black)	22R3748	22R3748
7	Cable, Ethernet switch SW1 -to- CEC enclosure XC2[2] (1.1 m black)	22R2214	22R2214
8	Cable, Ethernet switch SW1 -to- CEC enclosure XC2[2] (1.3 m black)	22R2216	22R2216
9 - 16	(Call your next level of support)		
17	Multi-connector power cord[3]	22R0842	22R5759

Notes:

1. XC1 is the upper CEC enclosure.
2. XC2 is the lower CEC enclosure.
3. This chord is hardwired to a junction connector that receives power from both PPSs. The junction connector also supplies power to the management console, the display/keyboard tray, and Ethernet switch SW2.

Cables for Ethernet switch SW2

To find part numbers for the cables that are connected to Ethernet switch SW2 (the lower Ethernet switch), see Figure 16 on page 27 and Table 16.

Table 16. Cables for Ethernet switch SW2

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, Ethernet switch SW2 -to- HMC (1.0 m grey)	22R0994	22R0994
2	(Call your next level of support)		
3	Cable, Ethernet switch SW2 -to- CEC enclosure XC1[1] (1.1 m grey)	22R0995	22R0995
4	Cable, Ethernet switch SW2 -to- CEC enclosure XC2[2] (1.2 m grey)	22R0996	22R0996
5	Cable, Ethernet switch SW2 -to- CEC enclosure XC1[1] (1.0 m grey)	22R0997	22R0997
6	Cable, Ethernet switch SW2 -to- CEC enclosure XC2[2] (1.2 m grey)	22R3749	22R3749
7	Cable, Ethernet switch SW2 -to- CEC enclosure XC2[2] (1.1 m grey)	22R2215	22R2215
8	Cable, Ethernet switch SW2 -to- CEC enclosure XC2[2] (1.3 m grey)	22R2217	22R2217

Table 16. Cables for Ethernet switch SW2 (continued)

Index	Part name	Part number	
		Version 1	Version 2
9 - 16	(Call your next level of support)		
17	Multi-connector power cord[3]	22R0842	22R5759

Notes:

1. XC1 is the upper CEC enclosure.
2. XC2 is the lower CEC enclosure.
3. This chord is hardwired to a junction connector that receives power from both PPSs. The junction connector also supplies power to the management console, the display/keyboard tray, and Ethernet switch SW1.

I/O enclosure part numbers

Information about I/O enclosure parts is listed below. Use Table 17 as a directory.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Table 17. Start here

Part name	Figure
Cables, except I/O enclosure fan	Figure 22 on page 37
Cable, I/O enclosure fan	Figure 18 on page 32
Device adapter card	Figure 19 on page 34
ESCON host card	Figure 19 on page 34
Fibre Channel host card	Figure 19 on page 34
I/O enclosure backplane (includes SPCN connector card)	Figure 18 on page 32
I/O enclosure fan	Figure 18 on page 32
I/O enclosure fan cable	Figure 18 on page 32
I/O enclosure power supply	Figure 17 on page 30
I/O enclosure RIO card	Figure 19 on page 34
All other parts	(Find the appropriate figure below)

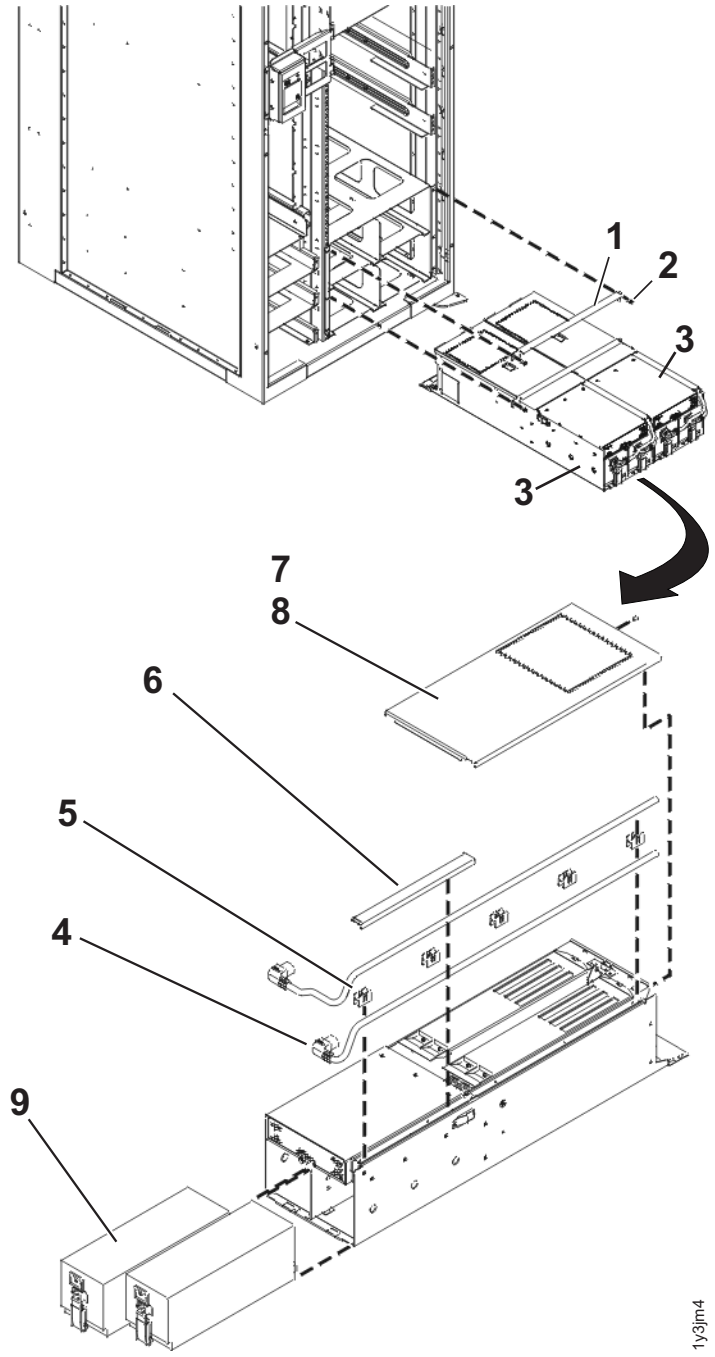


Figure 17. I/O enclosure parts

Table 18. I/O enclosure parts (front view)

Index	Part name	Part number	
		Version 1	Version 2
1	Bracket, hold down	22R4532	22R4532
2	Screw, cover mounting (M5X16)	77G0599	77G0599
3	I/O drawer	39J1826	03N6372
4	I/O enclosure power cord	See Table 23 on page 37	See Table 23 on page 37

Table 18. I/O enclosure parts (front view) (continued)

Index	Part name	Part number	
		Version 1	**Version 2**
5	Clip, power cord	09P3185	09P3185
6	Power cable tray cover	80P2654	80P2654
7	I/O enclosure cover	80P2646	80P2646
8	Screw	1624743	1624743
9	I/O enclosure power supply	22R3958	22R3958

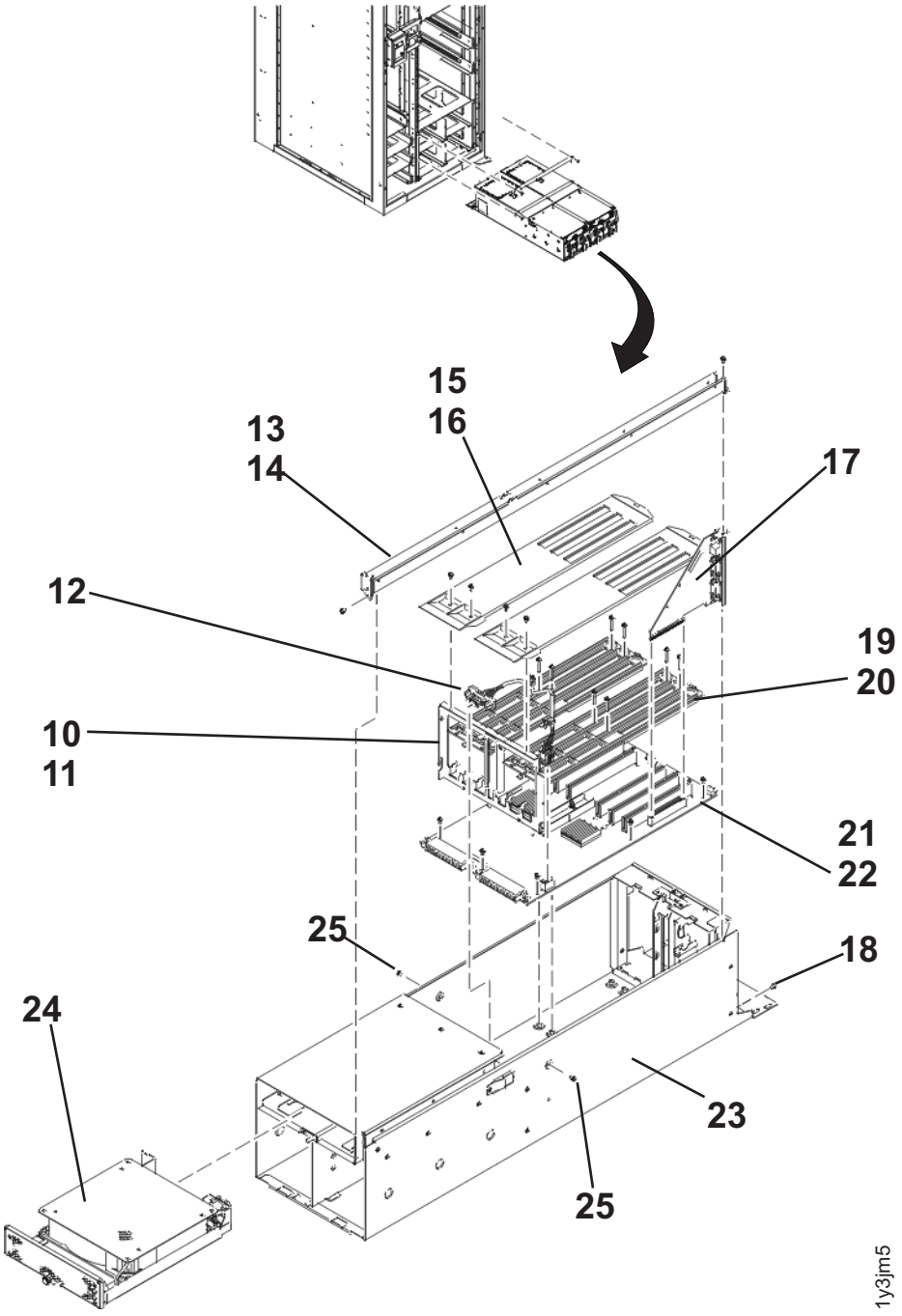


Figure 18. I/O enclosure parts (continued)

Table 19. I/O enclosure parts (rear view)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
10	Bulkhead bracket		80P2645	80P2645
11	Screw, bracket		93H4729	93H4729
12	I/O enclosure fan cable		09P5417	03N6196
13	Cable tray		80P2648	80P2648
14	Screw, cable tray mounting		1621829	1621829

Table 19. I/O enclosure parts (rear view) (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
15	Card guide, upper		80P2673	80P2673
16	Screw, cable tray mounting		1621829	1621829
17	SPCN connector card (included as part of I/O enclosure backplane)		80P2843	03N5893
18	Screw		1621829	1621829
19	Card guide, lower		80P2672	80P2672
20	Screw, card guide mounting		1624749	1624749
21	I/O enclosure backplane (includes SPCN connector card)	28BB	22R6222	23R0181
22	Screw, card mounting		1624743	1624743
23	Sheet metal enclosure (not a FRU)[2]		80P2631	80P2631
24	I/O enclosure fan		80P2650	03N6069
25	Screw		1621829	1621829

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. There are a couple of exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present.
2. The enclosure chassis is a special order item. The chassis to be replaced has bar code labels with the specific MTMS (machine type model serial number) information. Contact next level of support to determine if the label can be moved to the new chassis. The MTMS should stay the same as there is not an HMC menu option to change it. The MTMS on the bar code label must match the MTMS in the code, as the enclosure serial number is used in serviceable event FRU list and exchange part lists.

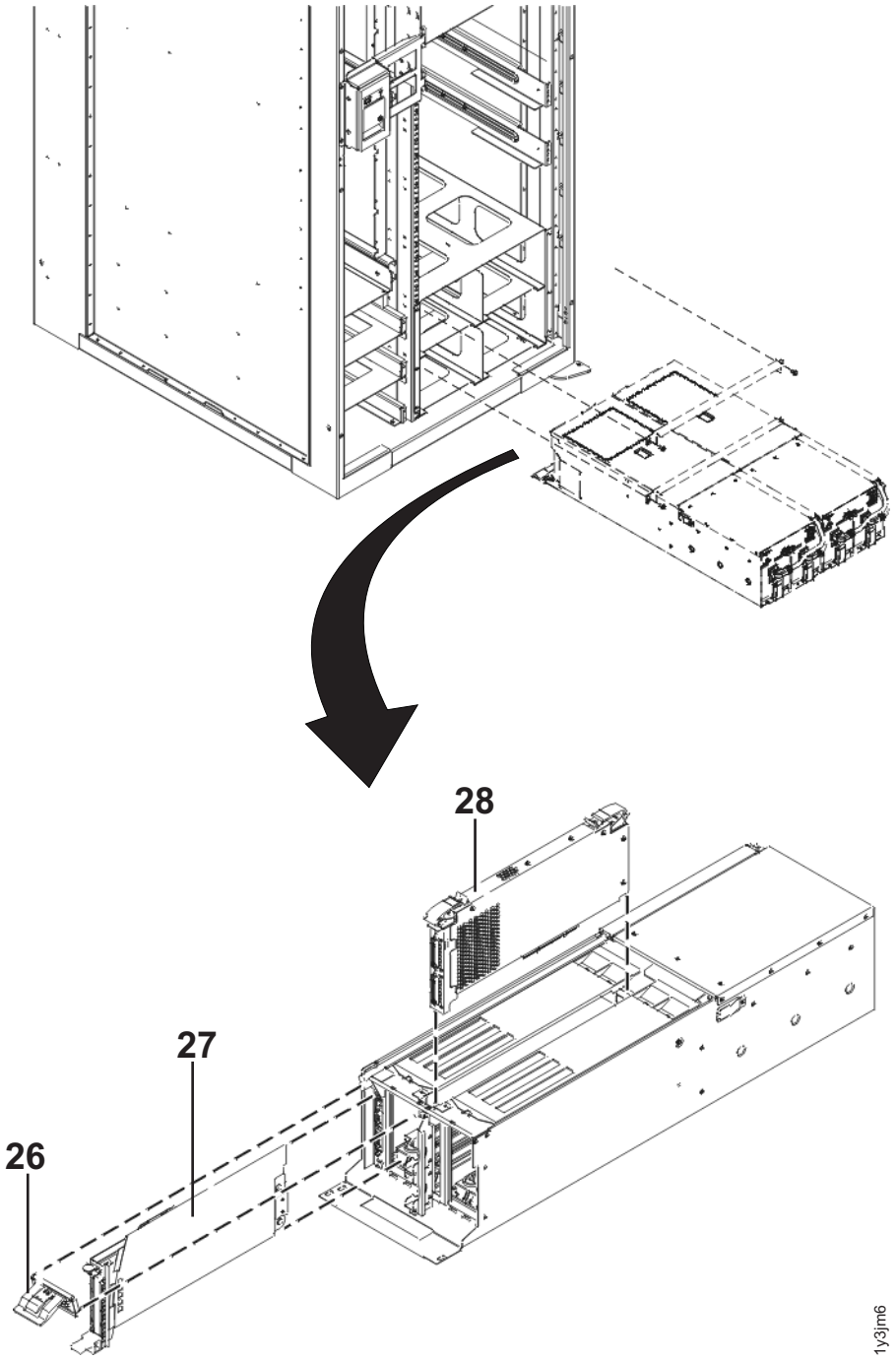


Figure 19. I/O enclosure parts (continued)

Table 20. I/O enclosure parts

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
26	I/O enclosure card retainer		03N6541	03N6541
27	Device adapter card	DAFC (DA)	64P8380	64P8382
27	ESCON host card	HA2E (HA2)	22R1800	23R0241

Table 20. I/O enclosure parts (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
27	Fibre Channel host card, short wave, 2 Gb	HA1S	22R4912	22R6207
27	Fibre Channel host card, short wave, 4 Gb	HA3S	N/A	23R0185
27	Fibre Channel host card, long wave, 2 Gb	HA1L	22R4913	22R6209
27	Fibre Channel host card, long wave, 4 Gb, 4 Km	HA34	N/A	23R0873
27	Fibre Channel host card, long wave, 4 Gb, 10 Km	HA3L	N/A	23R0187
28	I/O enclosure RIO card	28FF	80P4904	03N5633

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000.There are a couple of exceptions where the P/N on the DS8000 FRU P/N is not the same P/N that is reported and called home. The P/N reported and called home may be the original eServer P/N which may have firmware that is not appropriate for DS8000. You must order the DS8000 FRU P/N to ensure the correct firmware is present. CCINs that are in parentheses are reported by earlier levels of the LIC code bundle.

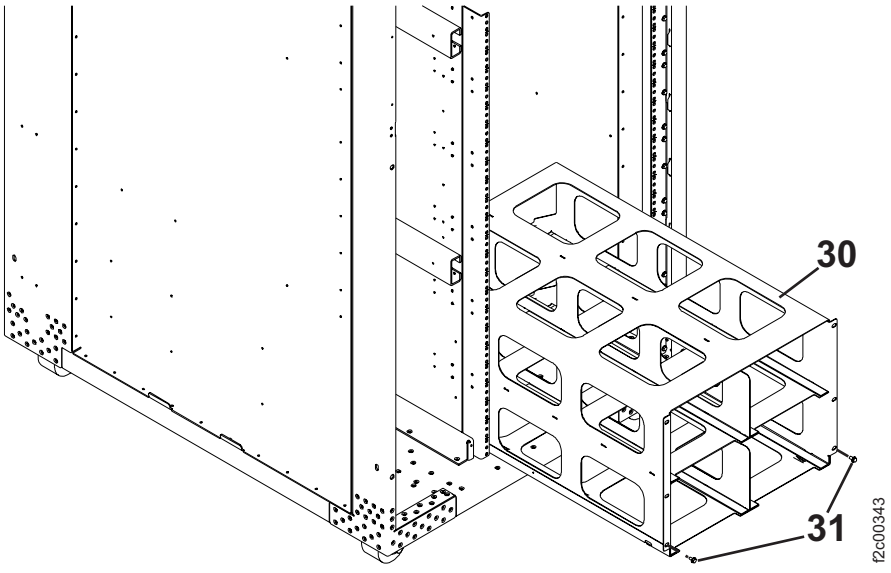


Figure 20. I/O wrapper frame

Table 21. I/O enclosure frame, brackets, and screws

Index	Part name	Part number	
		Version 1	Version 2
30	I/O wrapper frame	23R1338	23R1338
31	Screw	54G2882	54G2882

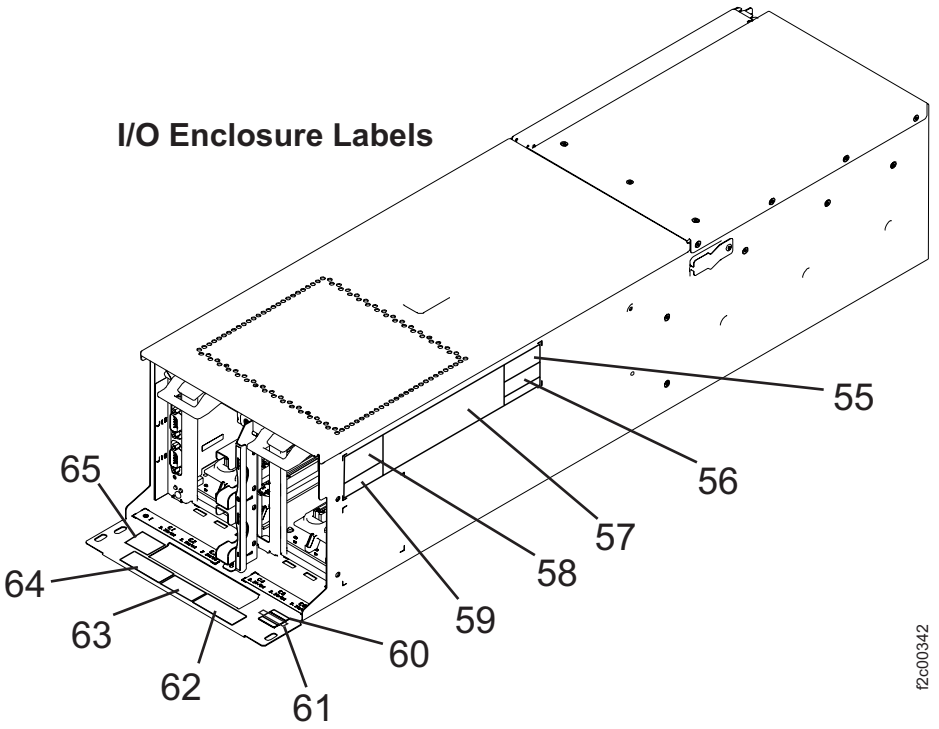


Figure 21. I/O enclosure labels

Table 22. I/O enclosure labels

Index	Part name	Part number	
		Version 1	Version 2
55	Label, FC 5790	80P4655	80P4655
56	Label, COO US	44P3946	44P3946
56	Label, COO US Korea	44P3947	44P3947
57	Label, agency	80P4614	80P4614
58	Label, IBM logo	97P2549	97P2549
59	Label, new / used parts statement	97P2550	97P2550
60	Label, asset protection VIN security	21H7141	21H7141
61	Label, serial number (rear)	53P3435	53P3435
61	Label, FC 57901	80P4655	80P4655
62	Label, Nordic	80P4509	80P4509
63	Label, serial number barcode	44H8386	44H8386
64	Label, serial number barcode	44H8386	44H8386
65	Label, Taiwan battery notice	22R2305	22R2305

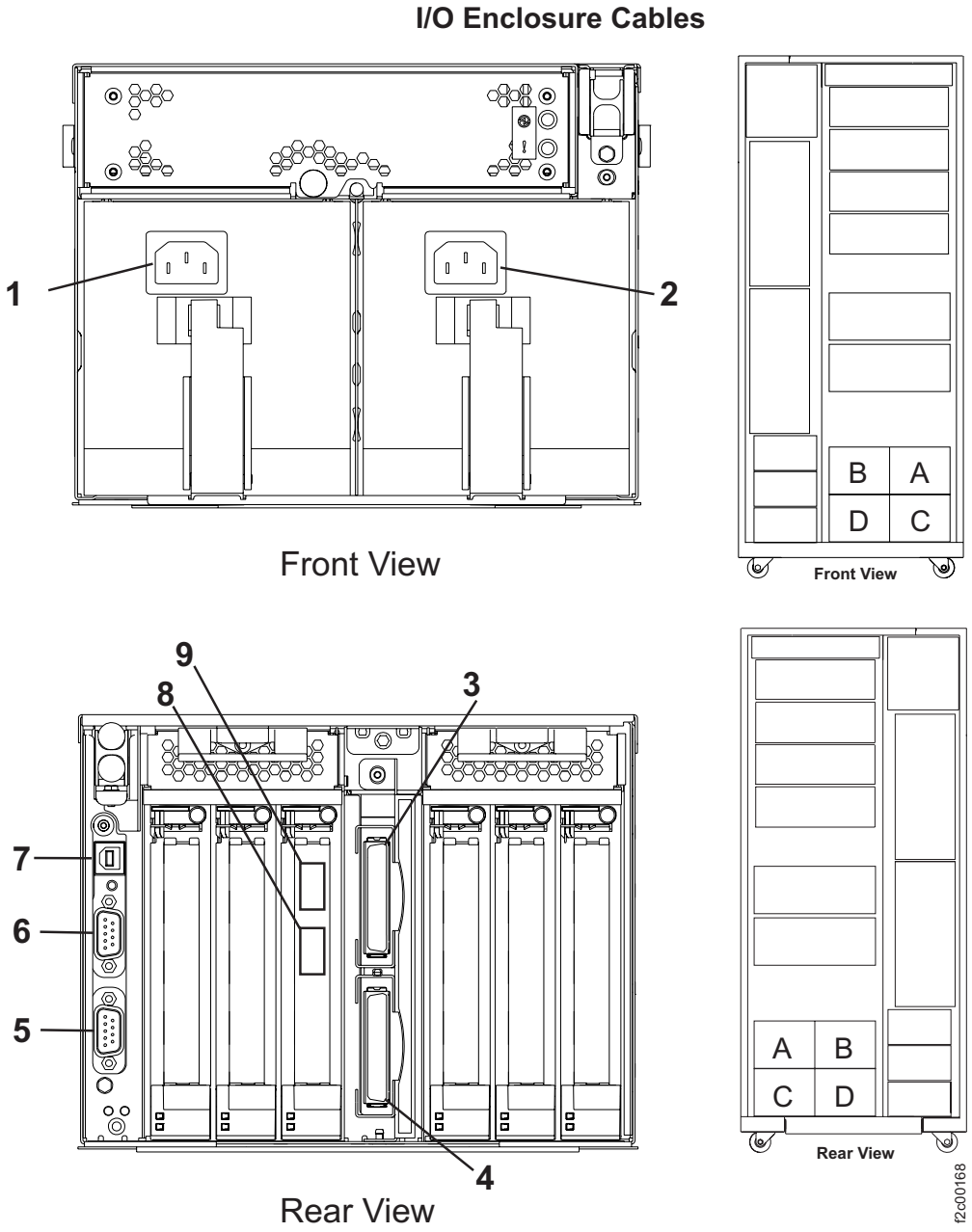


Figure 22. I/O enclosure cables

Table 23. I/O enclosure cables

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, power, I/O enclosure 1 (from 208V bus bar)	22R0973	22R5833
	Cable, power, I/O enclosure 2 (from 208V bus bar)	22R0971	22R5831
2	Cable, power, I/O enclosure 1 (from 208V bus bar)	22R0974	22R5834
	Cable, power, I/O enclosure 2 (from 208V bus bar)	22R0972	22R5832
3-4	Cable, RIO-G (1.0 m)	21P5454	39J2562

Table 23. I/O enclosure cables (continued)

Index	Part name	Part number	
		Version 1	Version 2
5-6	Cable, SPCN (0.4 m)	22R1240	22R5215
	Cable, SPCN (1.0 m)	17P7879	22R5216
	Cable, SPCN (4.0 m)	22R0872	22R5218
7	Cable, rack identity card, I/O enclosure 1 (2.2 m)	22R2907	22R5922
	Cable, rack identity card, I/O enclosure 2 (2.0 m)	22R2908	22R5923
	Cable, rack identity card, I/O enclosure 3 (2.3 m)	22R2909	22R5924
	Cable, rack identity card, I/O enclosure 4 (2.1 m)	22R2910	22R5925
8-9	Cable, Fibre Channel (set of 8 cables)	22R2828	22R5264

Management console (MC) part numbers

Use this section to locate information about parts that are associated with the management console (MC) server and the display/keyboard tray.

Display/keyboard tray part numbers

Note: The information in this section applies regardless of the type of MC server (X335 or X336).

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Use the figures and tables below to locate information about parts that are associated with the display/keyboard tray.

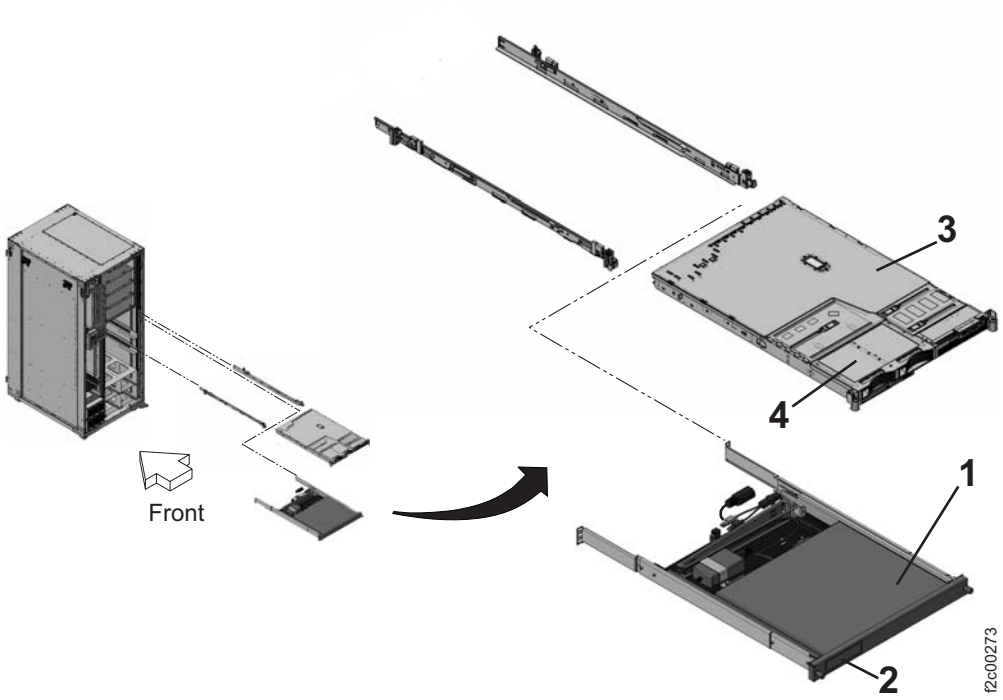


Figure 23. Management console display/keyboard tray (X336 MC server is shown; X335 MC server is similar)

Table 24. Parts of the display/keyboard tray

Index	Part name	Part number	
		Version 1	Version 2
1	Display/tray assembly, 15″ (does not include keyboard)	N/A	17P8487[3]
	USB keyboard, Japanese for 15″ display/tray	N/A	40K9414
	USB keyboard, US/English for 15″ display/tray	N/A	40K9400
	Display/tray assembly, 17″ (does not include keyboard)	23K4885	23R2051
	PS2 keyboard, Japanese for 17″ display/tray	89P8514	40K9414
	PS2 keyboard, US/English for 17″ display/tray	89P8500	40K9400
2	HMC role label	22R2707	22R2707
	Cable, keyboard/mouse/video	[2]	[2]
	Cable management arm[1] for 17″ display/tray	23K4889	23K4889
	Jumper cord[1] for 17″ display/tray	36L8886	36L8886
	Miscellaneous hardware kit[1] for 17″ display/tray	26K4103	26K4103
	Slide assembly[1] for 17″ display/tray	23K4887	23K4887

Table 24. Parts of the display/keyboard tray (continued)

Index	Part name	Part number	
		Version 1	Version 2

Notes:

1. This part is not shown in the figure, but it is associated with the 1U keyboard tray chassis.
2. For X335 MC server, see "X335 MC server part numbers." For X336 MC server, see "X336 MC server part numbers" on page 42.
3. This FRU includes an Ethernet switch air baffle bracket 22R6977. If you are replacing a 17″ display/tray with the new 15″ display/tray and have a DS8000 built prior to approximately July 2006, the new display/tray may interfere with the Ethernet switch air baffle bracket below it. If this is the case, then replace that bracket with the air baffle bracket included in this kit.

X335 MC server part numbers

Use the figures and tables below to locate information about the X335 management console (MC) server.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Table 25. Main parts of the X335 management console (MC) server

Part name	Part number		Figure
	Version 1	Version 2	
Cables			Figure 26 on page 42
DVD-RAM drive (old stock)	33P3307		Figure 24 on page 41, Index **4**
DVD-RAM drive (new stock)	26K5417		Figure 24 on page 41, Index **4**
Ethernet card[1]	00P6131	03N5297	Figure 25 on page 42
Hard drive, 80 GB IDE 7200 RPM, standard version (replace with same version)	24P3665	N/A	
Hard drive, 80 GB IDE 7200 RPM, RPQ version[2] (replace with same version) **Note:** This FRU P/N is a special version of the hard drive. You must replace an RPQ drive with an RPQ drive P/N.	23R0813	N/A	
Microprocessor (3.2 GHz)	23K4739	N/A	
Modem card[1]	80P4702	N/A	Figure 25 on page 42
Server assembly[3], Model 8676-G2X[4]	23K4727[4]	N/A	Figure 24 on page 41, Index **3**
Server assembly[3], Model 8676-GHX	31R0827	N/A	Figure 24 on page 41, Index **3**
System board[5], Model 8676-G2X	22R6176	N/A	
System board[5], Model 8676-GHX	22R6176	N/A	

Table 25. Main parts of the X335 management console (MC) server (continued)

Part name	Part number		Figure
	Version 1	Version 2	
All other management console server parts	6	6	6

Notes:

1. To replace the part, refer to the appropriate manual that is on the *IBM System Storage DS8000 series Service Documents CDROM*:
   - *xSeries® 335 Type 8676, Type 8830 Hardware Maintenance Manual and Troubleshooting Guide*
   - *xSeries 336 Type 1879 and Type 8837 Hardware Maintenance Manual and Troubleshooting Guide*
2. This FRU P/N is a special version of the hard drive. You must replace an RPQ drive with an RPQ drive P/N.
3. Ordering the management console server assembly requires approval from the next level of support. The assembly is not a field replaceable unit for normal repairs. If requested by next level of support, you can order a replacement assembly using the part number that is listed. The new assembly will need to have all code and configuration information loaded onto the hard drive (the same procedure as if you were replacing the hard drive).
4. Not available. Order Model 8676-GHX.
5. The management console system board has special firmware for the DS8000. The part number is unique for DS8000, so the standard system board for the X335 should not be used. When you order the part number listed in the *xSeries 335 Type 8676, Type 8830 Hardware Maintenance Manual and Troubleshooting Guide*, select the option for DS8000 usage. The correct part number will be substituted and sent to you. The system board must be loaded with special BIOS firmware for the DS8000. The replacement part should come with a diskette or CD that contains the firmware and the instructions on how to load it and then restore the machine type, model, and serial number of the MC server. If the CD or instructions are missing, contact the next level of support who should have the downloadable images and instructions on the DS8000 - Engineering Web site.
6. FRUs not listed in the table are listed in the *xSeries 335 Type 8676, Type 8830 Hardware Maintenance Manual and Troubleshooting Guide*, chapter 7. The guide contains information (including part numbers) about those FRUs.

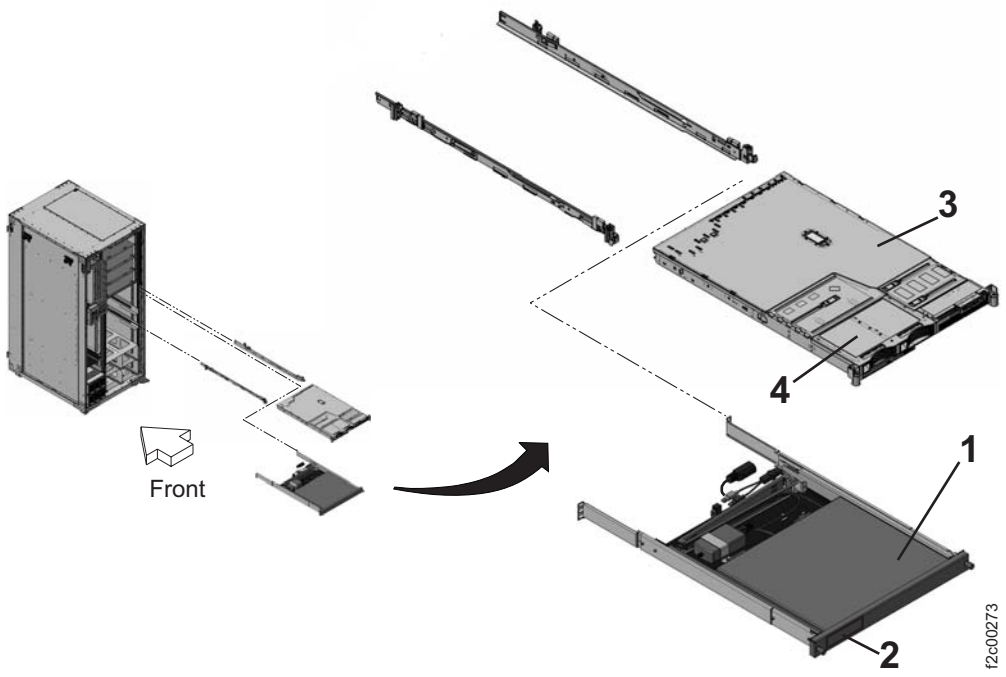


Figure 24. Management console display/keyboard tray (X336 MC server is shown; X335 MC server is similar)

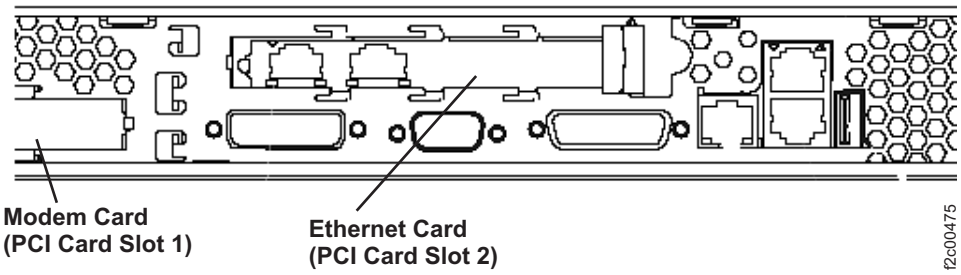


Figure 25. Cards in the slots at the rear of the X335 management console (MC) server

Cables for the X335 management console server

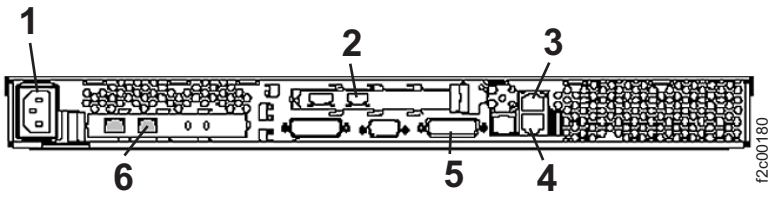


Figure 26. Connectors on the rear of the X335 management console (MC) server

Table 26. Cables for the X335 management console server

Index	Part name	Part number	
		Version 1	Version 2
1	Cable (multi-connector power cord)[1]	22R0842	22R5759
2	Cable, Ethernet, 1.0 m, internal HMC (black)	22R0989	22R0989
	Cable, Ethernet, 31.0 m, external HMC (black)	22R1798	22R1798
3	Cable, Ethernet, 1.0 m, internal HMC (gray)	22R0994	22R0994
	Cable, Ethernet, 31.0 m, external HMC (gray)	22R1799	22R1799
4	Cable, Ethernet (network cable supplied by the customer)	N/A	N/A
5	Cable, mouse/keyboard/video (C2T OUT)	00N6954	
6	(Phone cable supplied by the customer)	N/A	N/A

Notes:

1. This cable is hard wired to a junction connector that receives power from both PPSs. The junction connector also supplies power to both Ethernet switches and the display/keyboard tray.

X336 MC server part numbers

Use the figures and tables below to locate information about the X336 management console (MC) server.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.

- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Table 27. Main parts of the X336 management console (MC) server

Part name	Part number		Figure
	Version 1	Version 2	
Cables			Figure 29 on page 44
DVD-RAM drive	33P3306	39M3522	Figure 27 on page 44, Index **4**
Ethernet card[1]	00P6131	03N5531	Figure 28 on page 44
Hard drive, 160 GB SATA	39M4505	39M4505	
Microprocessor, 3.2 GHz (in server model 8837-PLM)	25R4768	N/A	
Microprocessor, 3.4 GHz (in server model 8837-PQZ)	N/A	39Y6947	
Modem card[1]	80P4702	03N7041	Figure 28 on page 44
Server assembly, Model 8837-PLM[3]	39R6168	N/A	Figure 27 on page 44, Index **3**
Server assembly, Model 8837-PQZ[3]	N/A	42C3601	Figure 27 on page 44, Index **3**
System board[4]	22R6177	22R6177	
All other management console server parts	[5]	[5]	[5]

Notes:

1. To replace the part, refer to the *xSeries 336 Type 1879 and Type 8837 Hardware Maintenance Manual and Troubleshooting Guide*.
2. This FRU P/N is a special version of the hard drive. You must replace an RPQ drive with an RPQ drive P/N.
3. Ordering the management console server assembly requires approval from the next level of support. The assembly is not a field replaceable unit for normal repairs. If requested by next level of support, you can order a replacement assembly using the part number that is listed. The new assembly will need to have all code and configuration information loaded onto the hard drive (the same procedure as if you were replacing the hard drive).
4. The management console system board has special firmware for the DS8000. The part number is unique for DS8000, so the standard system board for the X336 should not be used. When you order the part number listed in the *xSeries 336 Type 1879 and Type 8837 Hardware Maintenance Manual and Troubleshooting Guide*, select the option for DS8000 usage. The correct part number will be substituted and sent to you. The system board must be loaded with special BIOS firmware for the DS8000. The replacement part should come with a diskette or CD that contains the firmware and the instructions on how to load it and then restore the machine type, model, and serial number of the MC server. If the CD or instructions are missing, contact the next level of support who should have the downloadable images and instructions on the DS8000 - 2107 Engineering Web site .
5. FRUs not listed in the table are listed in the *xSeries 336 Type 1879 and Type 8837 Hardware Maintenance Manual and Troubleshooting Guide*, chapter 7. The guide contains information (including part numbers) about those FRUs.

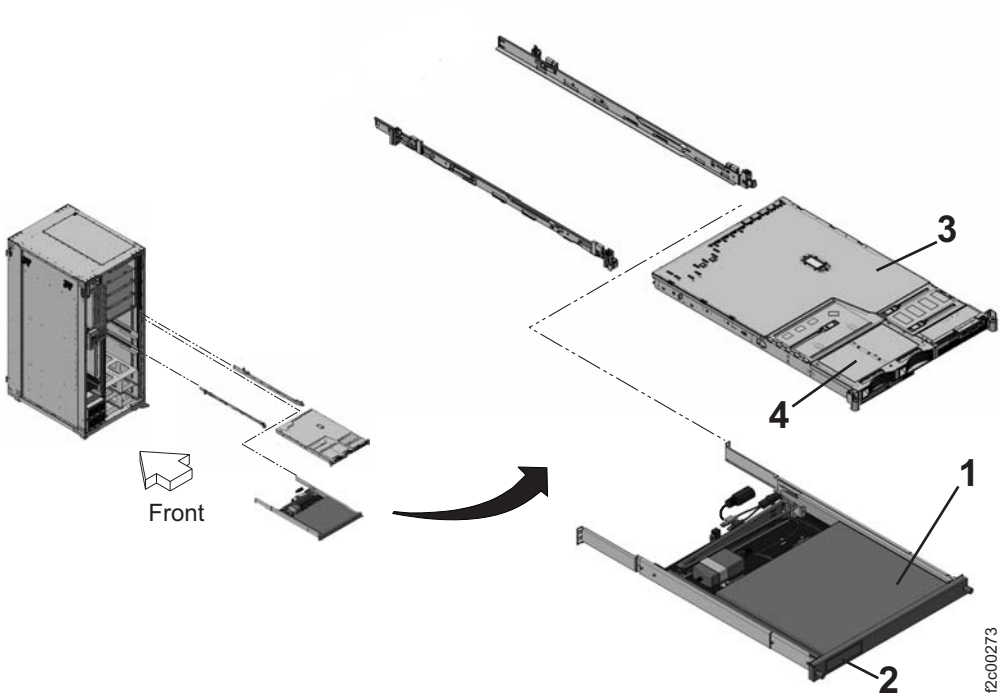


Figure 27. Management console display/keyboard tray (X336 MC server is shown; X335 MC server is similar)

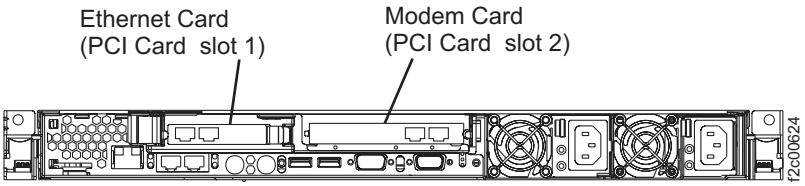


Figure 28. X336 management console (MC) server card slots

Cables for the X336 management console server

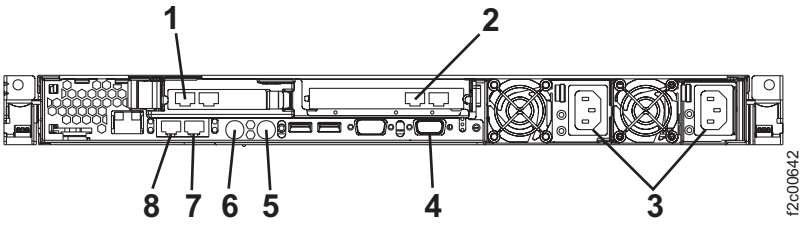


Figure 29. X336 management console (MC) server cables

Table 28. Cables for the X336 management console server

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, Ethernet, 1.0 m, internal HMC (black)	22R0989	22R0989
	Cable, Ethernet, 31.0 m, external HMC (black)	22R1798	22R1798
2	(Phone cable supplied by the customer)	N/A	N/A

Table 28. Cables for the X336 management console server (continued)

Index	Part name	Part number	
		Version 1	**Version 2**
3	Cable (multi-connector power cord)[1]	22R0842	22R5759
4	Cable, video[2]	32P1652[2]	39M2897
5	Cable, keyboard[2]	32P1652[2]	39M2897
6	Cable, mouse[2]	32P1652[2]	39M2897
7	Cable, Ethernet, 1.0 m, internal HMC (gray)	22R0994	22R0994
	Cable, Ethernet, 31.0 m, external HMC (gray)	22R1799	22R1799
8	Ethernet (network cable supplied by the customer)	N/A	N/A

Notes:

1. This cord is hard wired to a junction connector that receives power from both PPSs. The junction connector also supplies power to both Ethernet switches and the display/keyboard tray.
2. Combined keyboard, mouse, and video cable.

Rack brackets, sheetmetal, and covers part numbers

Use the figures and tables below to find information about parts such as rack brackets, sheetmetal, and covers.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

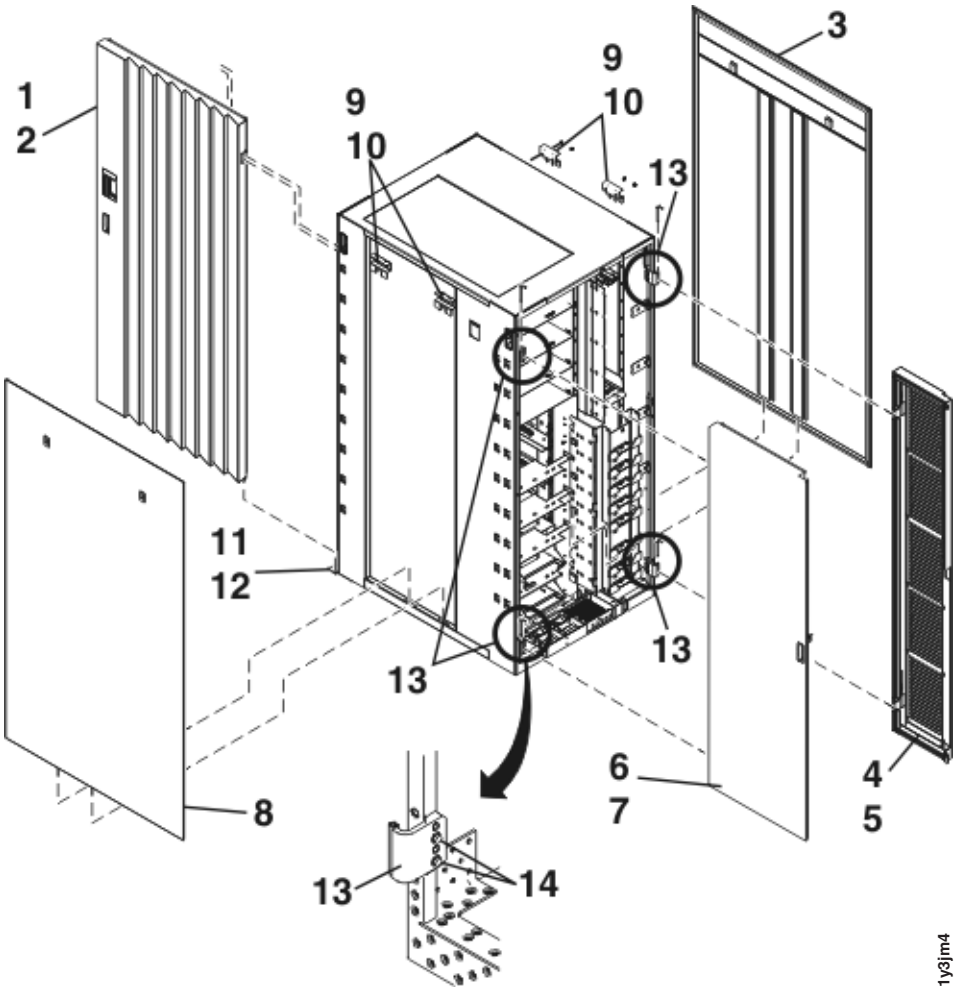


Figure 30. Rack cover parts

Table 29. Rack covers parts

Index	Description	Part number	
		Version 1	Version 2
1	Cover, front, aluminum	22R1404	22R1404
	Cover, front, steel	23R0275	23R0275
2	Screw	54G2882	54G2882
3	Cover, side	22R2975[1]	22R5966[2]
4	Cover, rear, left[3]	22R5956	22R4296
5	Screw (M5x8)	1621381	39J3128
6	Cover, rear, right[3]	22R5958	22R4300
7	Pin, cover hinge	34L2486	22R4298
8	Cover, side	22R2975[1]	22R5966[2]
9	Bracket, side cover-to-rack	22R1728	N/A
10	Screw, side cover bracket	1621842	1621842
11	Bracket, bottom hinge	22R1415	22R4959
12	Screw, bracket-to-frame	23R1520	23R1520

Table 29. Rack covers parts (continued)

Index	Description	Part number	
		Version 1	Version 2
13	Hinge, rear cover	18P4578	18P4578
14	Screw, rear cover hinge-to-frame	23R1520	23R1520

Notes:

1. Two finger latches secure the early version cover (at the side of the rack).
2. Two screws (P/N 31L7540) secure the later version cover (at the top of the rack).
3. Viewed from the front.

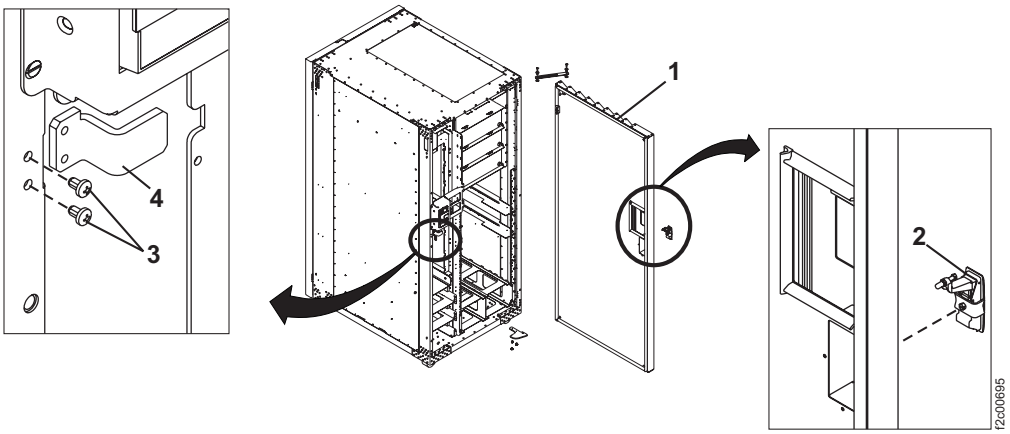


Figure 31. Front cover latch parts

Table 30. Front cover latch parts

Index	Description	Part number	
		Version 1	Version 2
1	Cover, front, aluminum	22R1404	22R1404
	Cover, front, steel	23R0275	23R0275
2	Latch, front cover	21P4054	21P4054
3	Screw, bracket-to-frame	22R0780	22R0780
4	Bracket, front cover latch	31L7545	41V0082

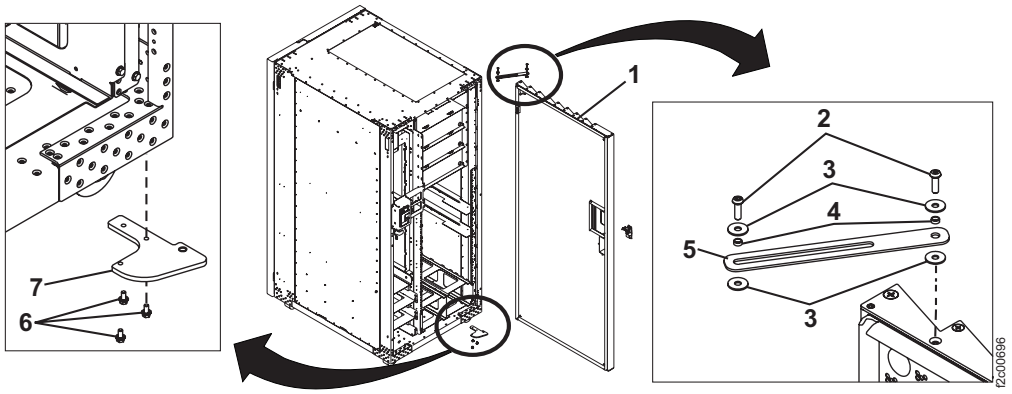


Figure 32. Front cover stop and lower hinge parts

Table 31. Front cover stop and lower hinge parts

Index	Description	Part number	
		Version 1	**Version 2**
1	Cover, front, aluminum	22R1404	22R1404
	Cover, front, steel	23R0275	23R0275
2	Screw, stop strap (M6x20)[1]	22R3604	22R3604
3	Washer, stop strap[1]	22R3496	22R3496
4	Bushing/spacer, stop strap[1]	22R3495	22R3495
5	Bracket, stop strap[1]	22R3481	22R3481
6	Screw, bracket/hinge-to-frame	23R1520	23R1520
7	Bracket/hinge, front cover mount, lower	22R1415	22R4959

Notes:

1. Part of the stop strap kit P/N 23R1261.

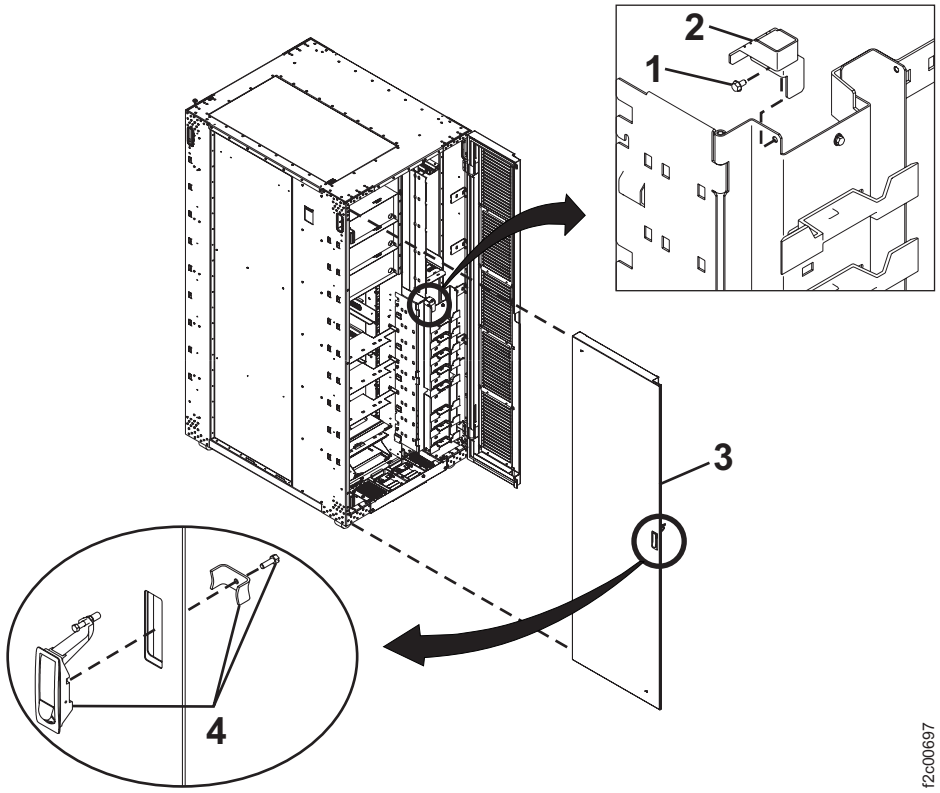


Figure 33. Rear cover latch parts

Table 32. Rear cover latch parts

Index	Description	Part number	
		Version 1	**Version 2**
1	Screw, bracket-to-frame	23R1520	23R1520
2	Bracket, rear cover latch	23R0871	23R0871
3	Rear cover, right[1]	22R5958	22R4300
4	Latch, rear cover	21P4054	21P4054

Notes:

1. Viewed from the front.

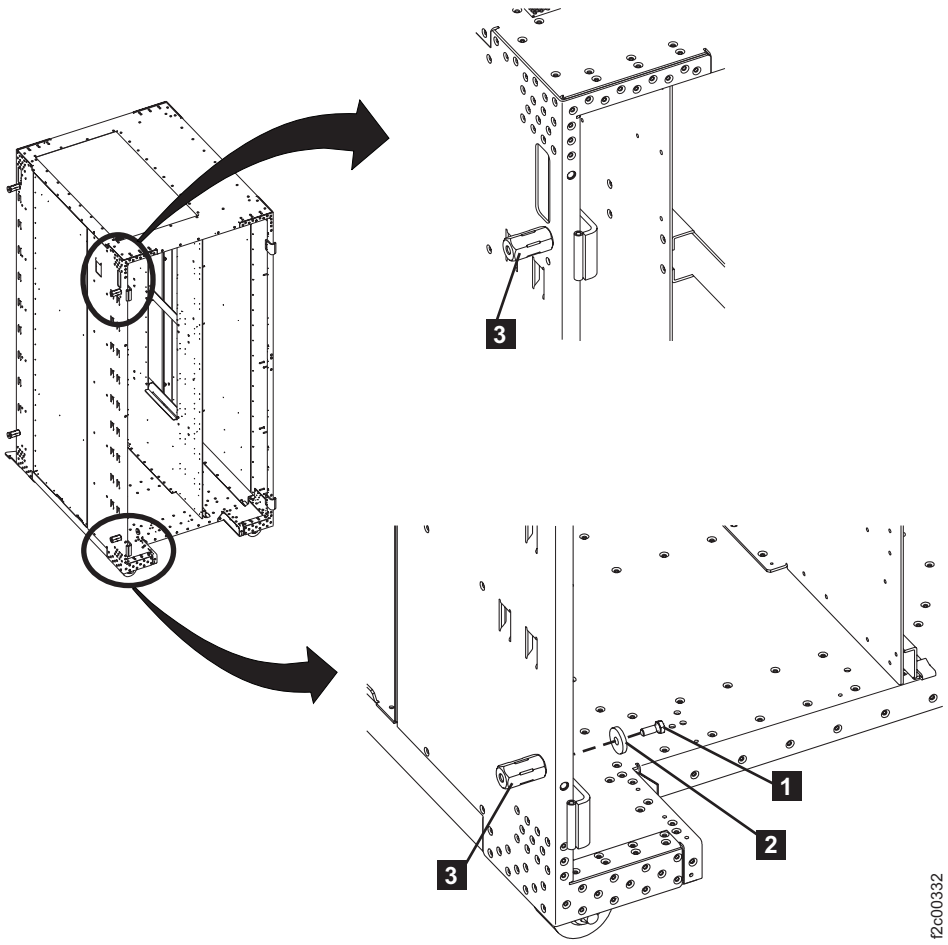


Figure 34. Interrack spacer studs

Table 33. Interrack spacer studs

Index	Description	Part number	
		Version 1	**Version 2**
1	Bolt, interrack spacer stud	1621545	1621545
2	Washer, interrack spacer stud (M8)	84X5850	84X5850
3	Spacer stud, interrack	22R5046	22R5046

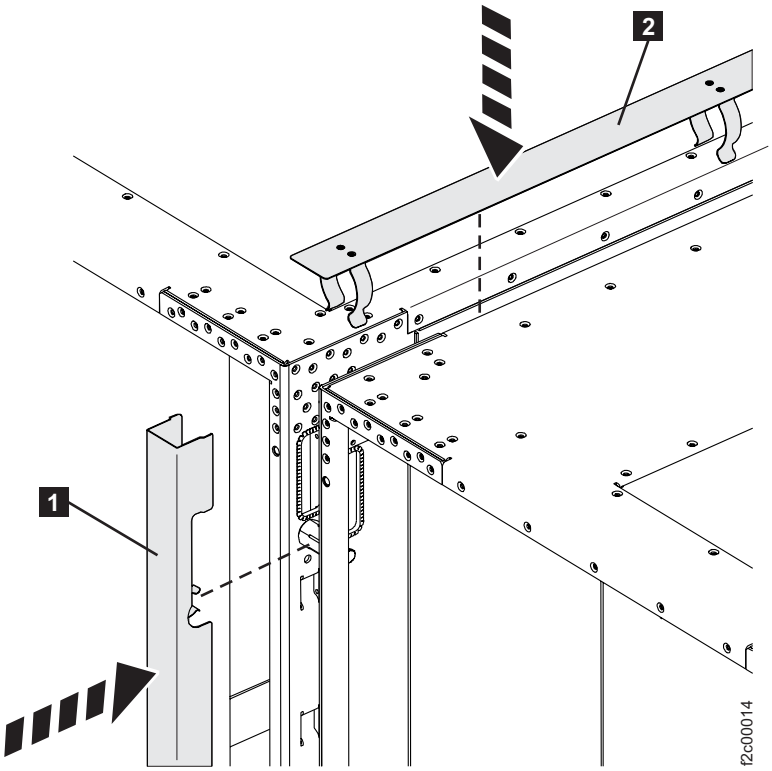


Figure 35. Installing the interrack decorative covers

Table 34. Interrack decorative covers

Index	Description	Part number	
		Version 1	**Version 2**
1	Cover, interrack decorative, side (one-piece early version)	22R4964	22R4964
	Cover, interrack decorative, side (two-piece/hinged later version)	23R1050[1]	23R1050[1]
2	Cover, interrack decorative, top	22R4962	22R4962

Notes:

1. For details, see Figure 36 on page 52.

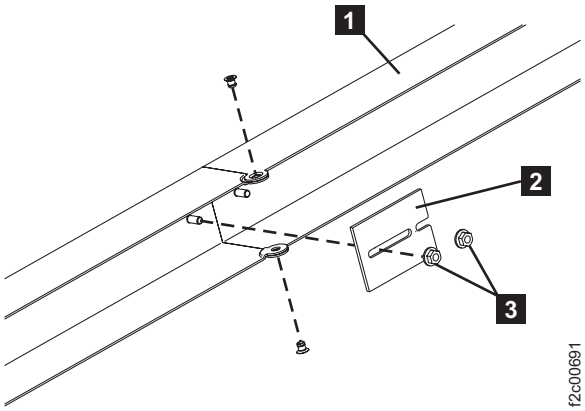


Figure 36. Assembling the later version of the interrack decorative side covers

Table 35. Interrack decorative side covers (later version)

Index	Description	Part number	
		Version 1	**Version 2**
1	Cover, interrack decorative, side (two-piece/hinged later version)	23R1050	23R1050
2	Bracket	23R2044	23R2044
3	Nut	84X4841	84X4841

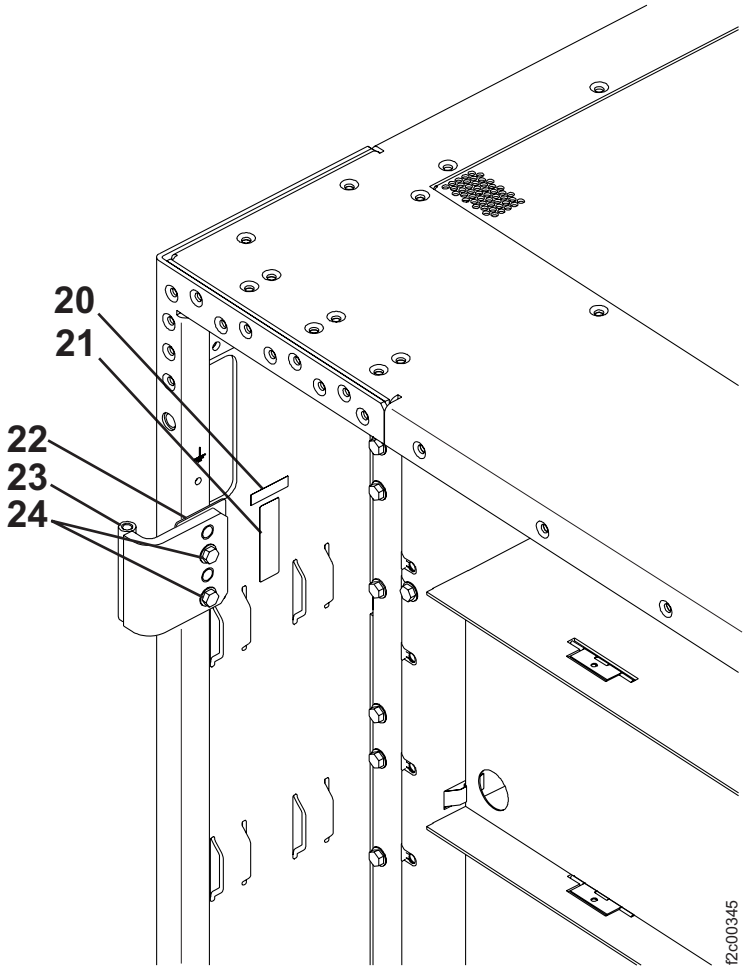


Figure 37. Rack labels

Table 36. Frames and covers labels

Index	Description	Part number	
		Version 1	**Version 2**
20	Label, serial number	05J7400	05J7400
21	Label, barcode serial number	44F0924	44F0924
22	Shim, rear door adjustment	22R2942	22R6151
23	Hinge, rear covers	18P4578	18P4578
24	Screw, rear hinges	54G2882	54G2882

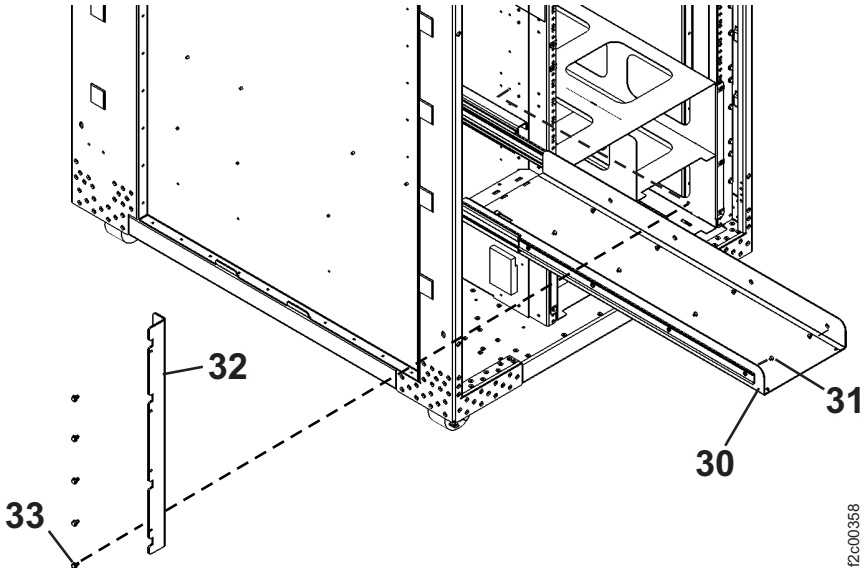


Figure 38. Rack shelves and brackets

Table 37. Frames and covers PPS shelf and bracket

Index	Description	Part number	
		Version 1	Version 2
30	Shelf, PPS	17P7883	22R4942
31	Screw, PPS shelf mounting (M5x6)	1621329	1621329
N/A	Bracket, PPS left (not shown)	17P7885	22R4943
32	Bracket, PPS right	17P7886	22R4944
33	Screw, PPS bracket (M5x8)	1621842	1621842

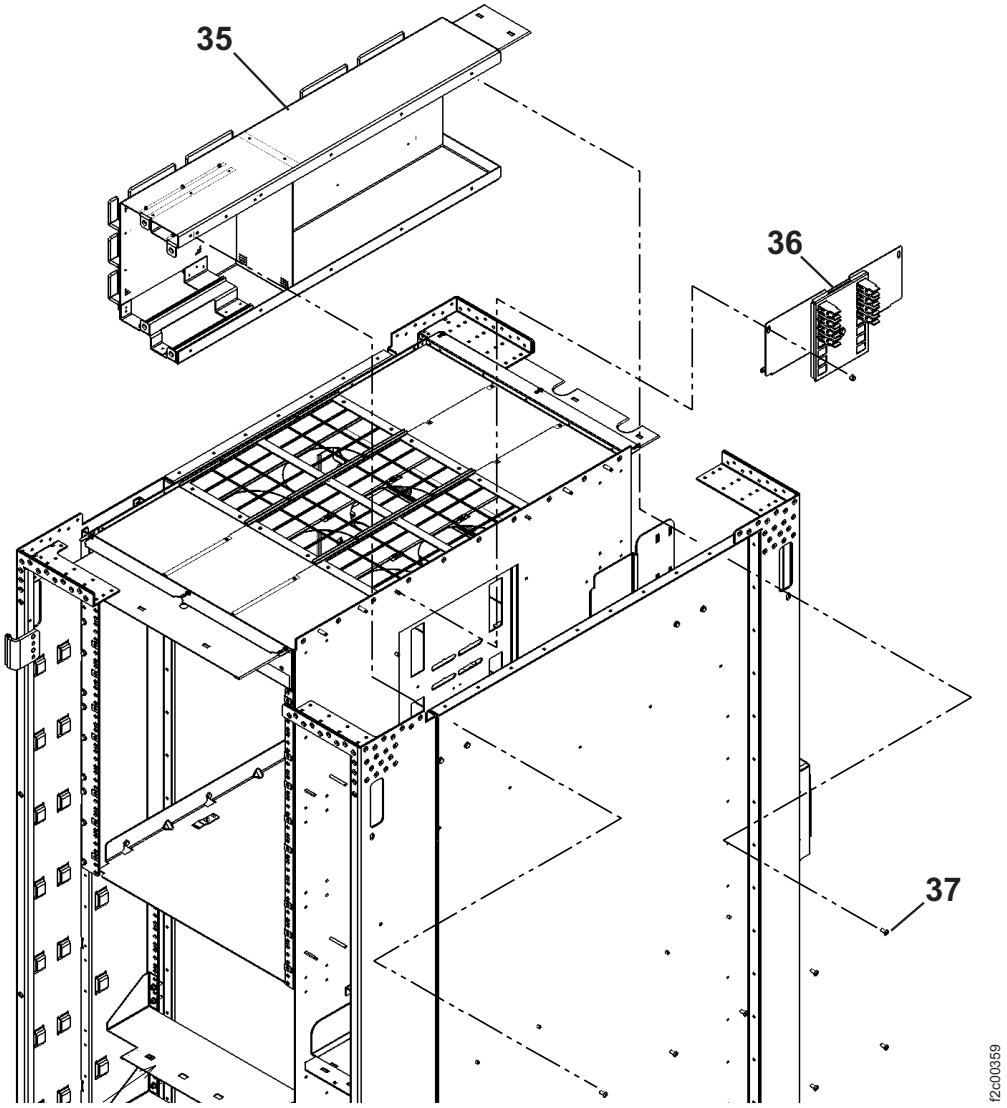


Figure 39. Rack shelves and brackets

Table 38. Frames and covers PPS shelf and bracket

Index	Description	Part number	
		Version 1	Version 2
35	Housing assembly, RPC card	17P7882	22R4940
36	Bracket, cable routing	22R0633	22R6122
37	Rivets, RPC housing	04F1988	04F1988

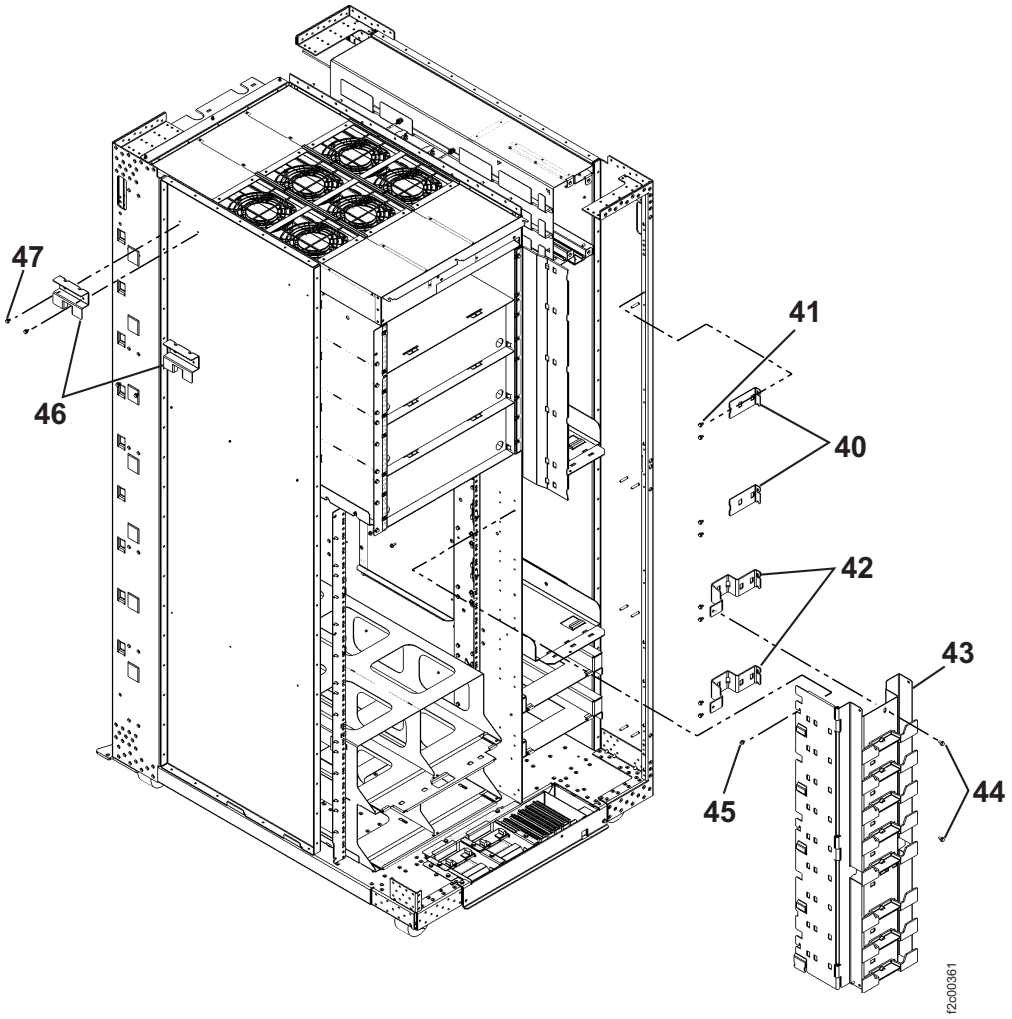


Figure 40. Rack shelves and brackets

Table 39. Frames and covers brackets and screws

Index	Description	Part number	
		Version 1	Version 2
40	Bracket, cable routing	22R0905	22R6135
41	Screw, cable routing bracket	1621842	1621842
42	Bracket, cable routing	22R0906	22R6136
43	Bracket, bus bar	22R0902	22R6132
44	Screw, bus bar	54G2882	54G2882
45	Screw, bus bar	1624775	1624775
46	Bracket, side covers	22R1728	N/A
47	Screw, side cover bracket	1621842	1621842

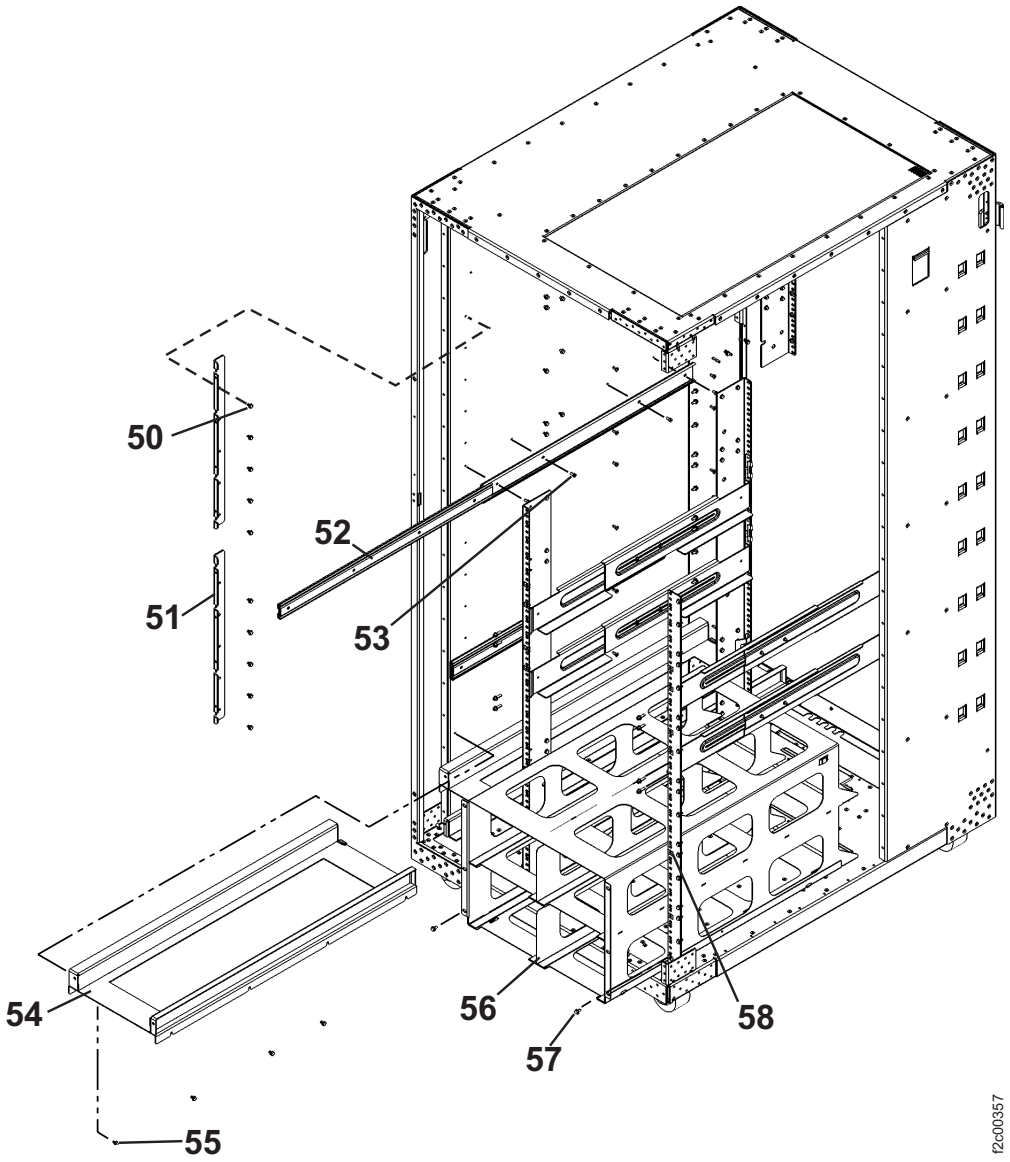


Figure 41. Rack shelves and wrappers

Table 40. Frames and covers shelves and wrappers

Index	Description	Part number	
		Version 1	**Version 2**
50	Screw	1621842	1621842
51	Bracket, PPS left	17P7885	22R4943
52	Slide, PPS	17P7887	22R4945
53	Screw, PPS slide mounting (M5x8)	22R0780	22R0780
54	Shelf, battery	17P7888	22R4946
55	Screw, battery shelf	1621842	1621842
56	Wrapper, I/O enclosure	23R1338	23R1338
57	Screw, wrapper	54G2882	54G2882
58	Nut clip, wrapper	74F1823	74F1823

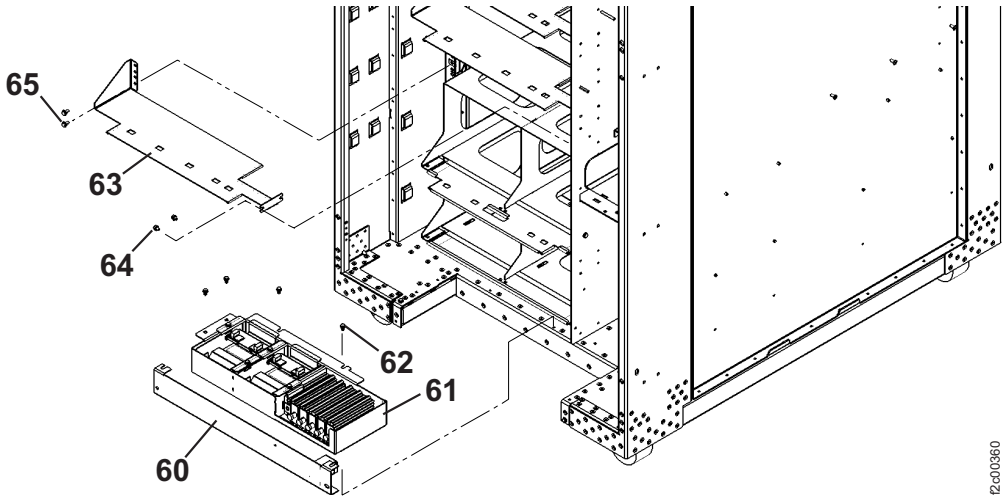


Figure 42. Rack shelves and brackets

Table 41. Frames and covers brackets and screws

Index	Description	Part number	
		Version 1	**Version 2**
60	Tailgate bar	22R3069	23R0039
61	Tailgate assembly, early version	22R0111	N/A
61	Tailgate assembly, later version[1]	23R2456	23R2456
62	Screw, tailgate assembly	1621842	1621842
63	Bracket, cable	17P7890	22R4947
64	Screw, cable bracket	1624775	1624775
65	Screw, cable bracket	54G2882	54G2882

Notes:

1. See Figure 44 on page 59.

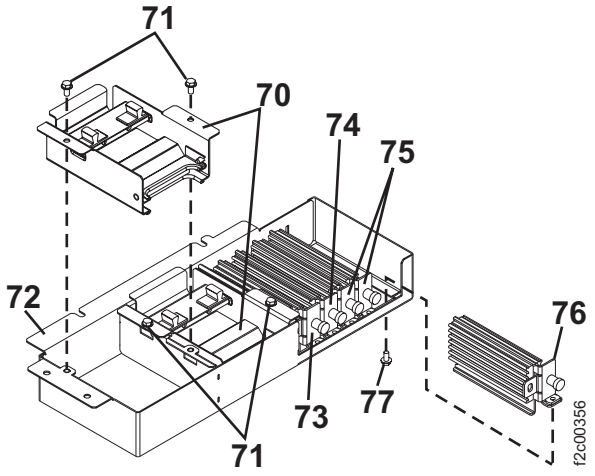


Figure 43. Tailgate parts (early version)

Table 42. Tailgate parts (early version)

Index	Description	Part number	
		Version 1	**Version 2**
70	Bracket, strain relief	22R0113	N/A
71	Screw, strain relief assembly mounting	54G2882	N/A
72	Tailgate frame	22R0112	N/A
73	Tailgate insert (clamping bracket)[1]	07H6823	N/A
74	Tailgate insert (clamping bracket)[2]	07H6822	N/A
75	Tailgate insert (clamping bracket)[3]	44P4450	N/A
76	Tailgate insert (clamping bracket)[4]	44P4451	N/A
77	Screw, tailgate insert mounting	54G2882	N/A

Notes:

1. The rubber pad on the left side of the bracket is 11 mm (0.43 in.) thick.The right pad is 6 mm (0.24 in.) thick.
2. The rubber pad on the left side of the bracket is 9 mm (0.35) thick.The right pad is 6 mm (0.24 in.) thick.
3. The rubber pad on the left side of the bracket is 6 mm (0.24) thick.The right pad is 11 mm (0.43 in.) thick.
4. The rubber pad on each side of the bracket is 11 mm (0.43 in.) thick.

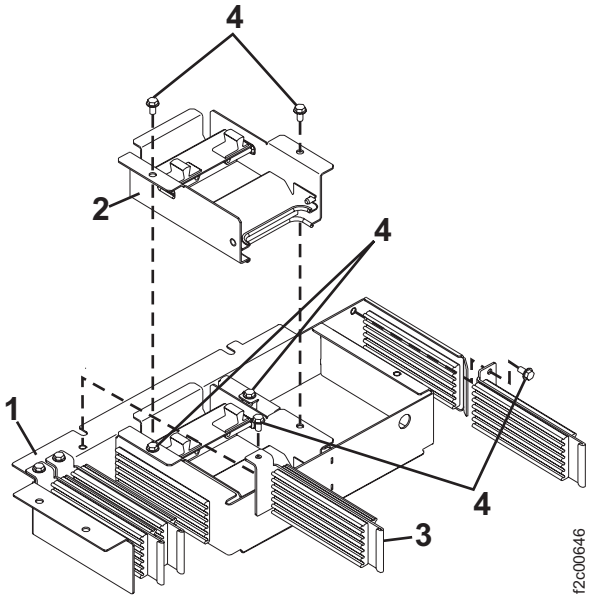


Figure 44. Tailgate parts (later version)

Table 43. Tailgate parts (later version)

Index	Description	Part number	
		Version 1	**Version 2**
1	Tailgate frame	22R2457	22R2457
2	Bracket, strain relief	22R4950	22R4950
3	Tailgate insert (clamping bracket)	[1]	[1]
4	Screw	54G2882	54G2882

Table 43. Tailgate parts (later version) (continued)

Index	Description	Part number	
		Version 1	Version 2
Notes: 1. Call the next level of support.			

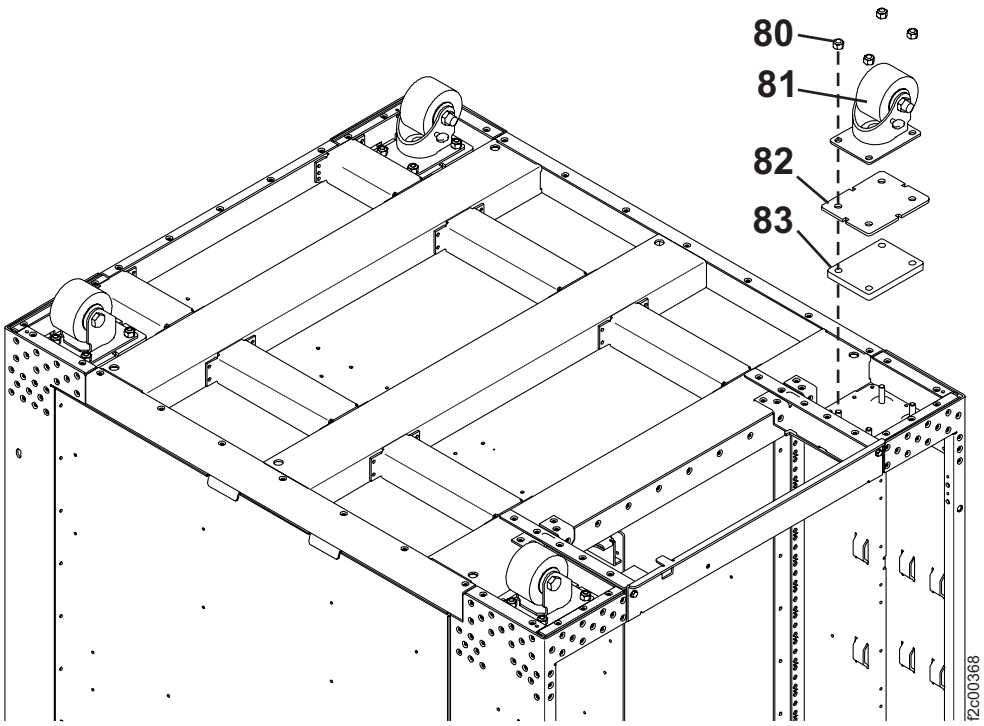


Figure 45. Caster parts

Table 44. Casters

Index	Description	Part number	
		Version 1	Version 2
80	Nut, caster mounting	1622420	1622420
81	Caster	31L7521	22R4156
82	Caster load plate	34L7027	22R4155
83	Caster shock pad	74X3431	22R4154

Rack power and cooling part numbers

Information about rack power and cooling parts is listed below. Use Table 45 on page 61 as a directory.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.

- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Table 45. Start here

Part name	Figure
5/12V DDM power module	Figure 47 on page 63
Battery module set (a set is three battery modules)	Figure 46 on page 62
Battery module chassis	Figure 46 on page 62
Battery module chassis fan	Figure 46 on page 62
Battery module filler	Figure 46 on page 62
Booster power module	Figure 47 on page 63
Bus bar A1, 208VDC, primary	Figure 54 on page 71
Bus bar B1, 208VDC, primary	Figure 54 on page 71
Bus bar A2 and B2, 208VDC, secondary	Figure 55 on page 72
Bus bar A and B, 5/12V, primary	Figure 52 on page 69
Bus bar A and B, 5/12V, secondary	Figure 52 on page 69
Bus bar A, 5/12V, primary to 5/12V secondary	Figure 53 on page 70
Bus bar B, 5/12V, primary to 5/12V secondary	Figure 53 on page 70
Cables, battery module set	Figure 59 on page 78
Cables, bus bar, A1, 208VDC, primary	Figure 57 on page 76
Cables, bus bar, B1, 208VDC, primary	Figure 57 on page 76
Cables, bus bar, A2, 208VDC, secondary	Figure 57 on page 76
Cables, bus bar, B2, 208VDC, secondary	Figure 57 on page 76
Cables, fan sense card	Figure 60 on page 79
Cables, primary power supply (PPS)	Figure 56 on page 73
Cables, rack identity card	Figure 62 on page 81
Cables, rack operator panel UEPO switch assembly	Figure 63 on page 82
Cables, RPC card	Figure 64 on page 83
DASD fan tray assembly	Figure 49 on page 66
Fan sense card	Figure 48 on page 65
Local remote switch card	Figure 49 on page 66
Primary power supply	Figure 47 on page 63
Primary power supply fan	Figure 47 on page 63
Rack identity card	Figure 49 on page 66
Rack operator panel UEPO switch assembly	Figure 50 on page 67
RPC card	Figure 48 on page 65
Sequencer module	Figure 47 on page 63
zSeries local remote switch card	Figure 49 on page 66
All other parts	(Find the appropriate figure below)

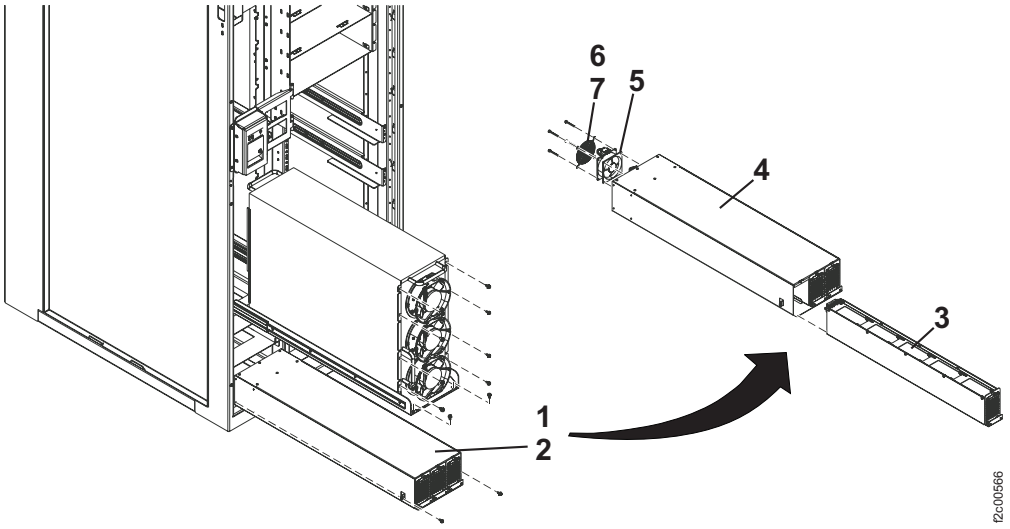


Figure 46. Battery module parts

Table 46. Battery module parts

Index	Part name	Part number	
		Version 1	Version 2
1	Battery module chassis	22R1129	22R4417
2	Screw	54G2882	54G2882
3	Battery module filler	22R1015	23R0207
3	Battery module set (three modules)	22R0328	22R4420
4	Battery module frame (not a FRU)	[1]	[1]
5	Battery module chassis fan	17P7656	22R4419
6	Fan guard, battery module chassis	93H6016	93H6016
7	Screw	1621200	1621200

Notes:

1. Call your next level of support.

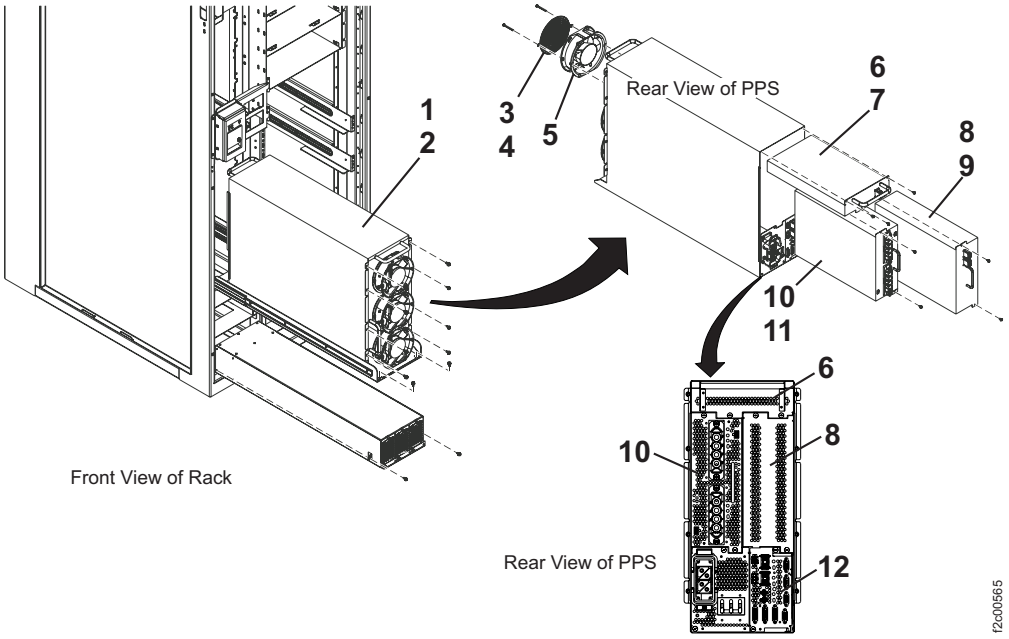


Figure 47. PPS parts

Table 47. PPS parts

Index	Part name	Part number	
		Version 1	Version 2
1	Primary power supply (PPS) A base PPS contains the following parts: • 208VDC base module • 5/12V DDM power module • AC input power module • PFC module • Sequencer module	22R2350	22R4215
2	Screw	54G2882	54G2882
3	Fan guard	18P4733	22R5052
4	Screw, fan guard	1621289	22R6069
5	PPS Fan	17P7389	22R4210
6	Booster power module (optional)	22R2349	22R4208
7	Screw	54G2882	54G2882
8	5/12V DDM power module[1] (optional)	22R1409	22R4207
8	Cover[2]	17P7450	22R4212
9	Screw	[3]	[3]
10	5/12V DDM power module	22R1409	22R4207
11	Screw	[3]	[3]

Table 47. PPS parts (continued)

Index	Part name	Part number	
		Version 1	**Version 2**
12	Sequencer module **Note:** The sequencer module is only replaced by itself if the PPS failed during a LIC code firmware CDA update. In this special case, the firmware in the sequencer module is probably corrupted. MAP20A0 Protected 208 VDC is Off is the only MAP that can call the sequencer module as a FRU. For all other repairs, replace the part listed in the serviceable event FRU list or isolation MAP.	22R5730	23R0639
Notes: 1. Expansion rack with room for 16 storage enclosures. 2. Expansion rack with room for eight storage enclosures. 3. Call your next level of support.			

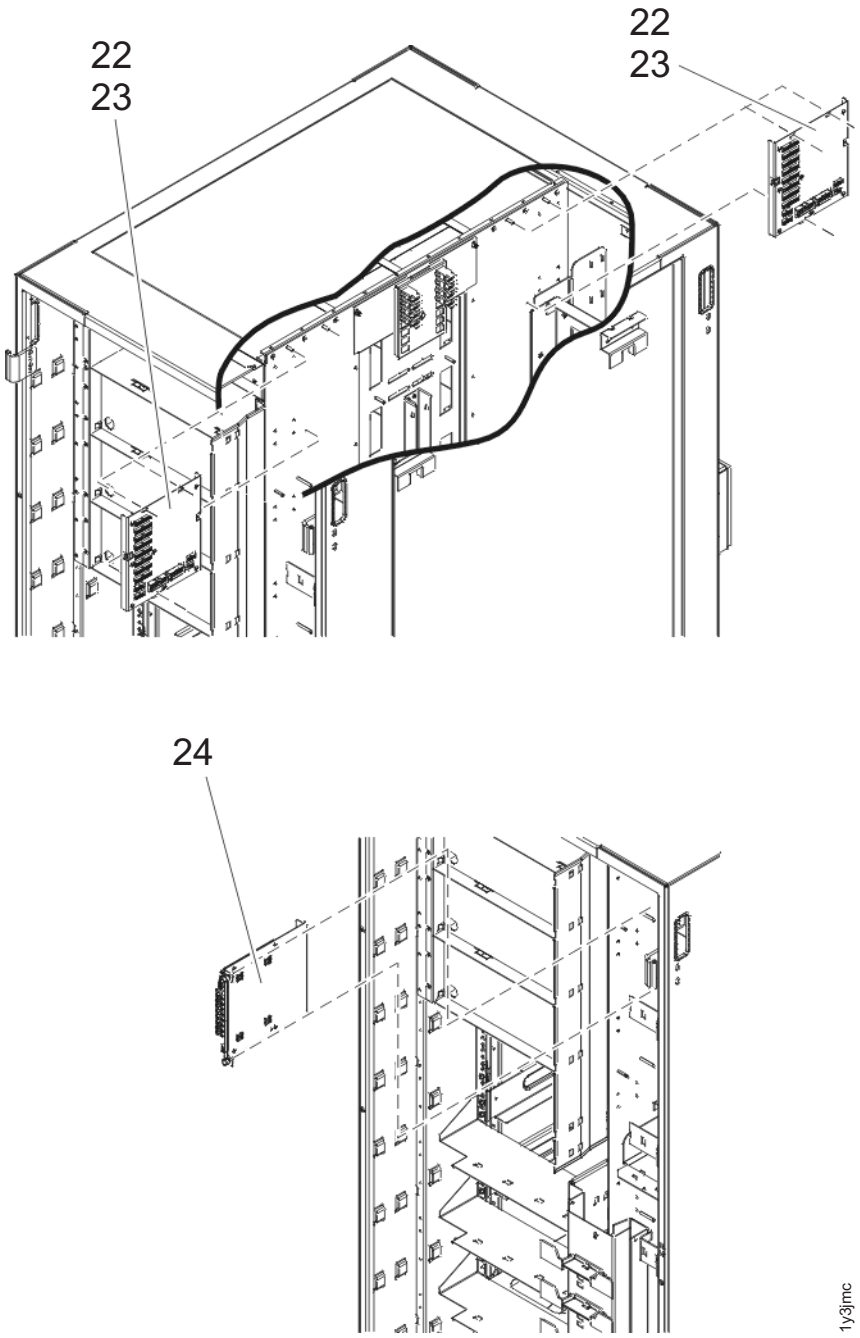


Figure 48. Rack power and cooling parts (continued)

Table 48. Rack power and cooling parts (1 of 3)

Index	Part name	Part number	
		Version 1	Version 2
22	Fan sense card	22R1784	22R4917
23	Screw	1621842	1621842
24	RPC card	24R1414	95P1959

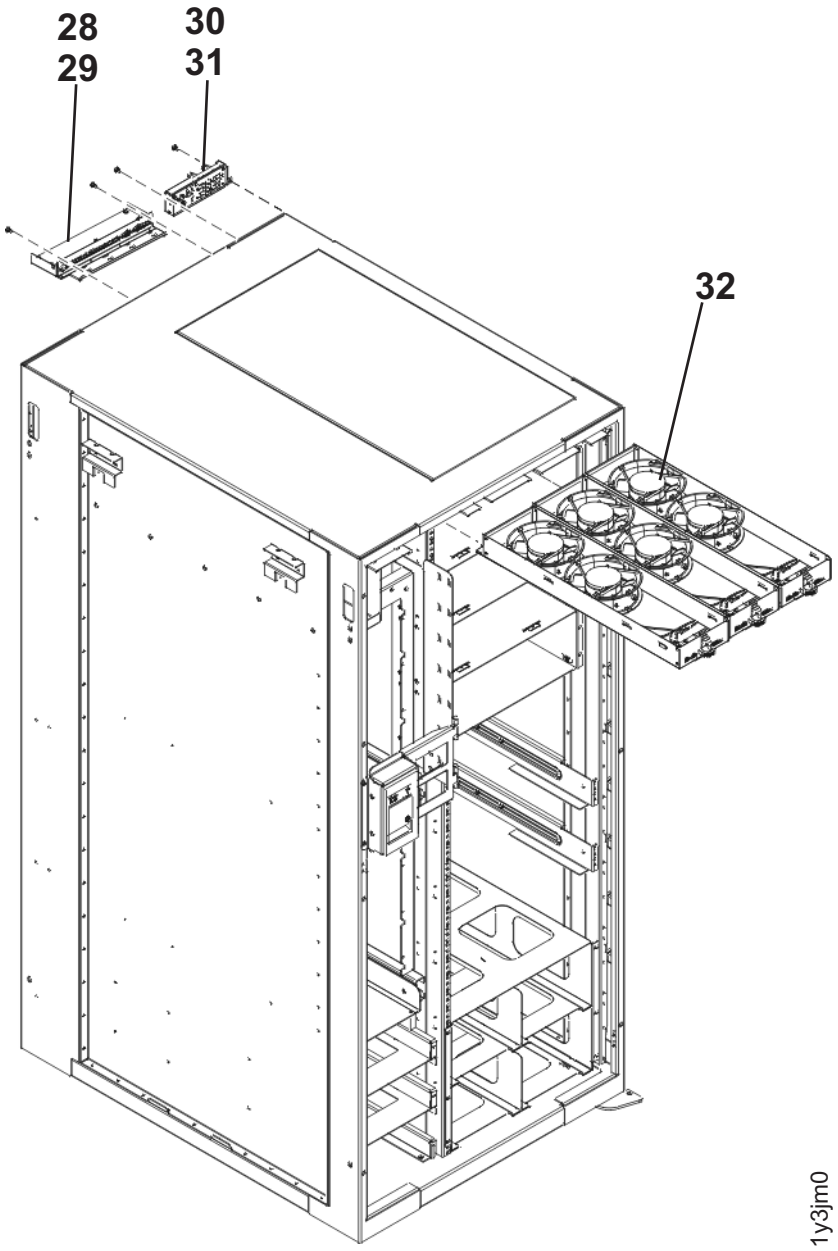


Figure 49. Rack power and cooling parts (continued)

Table 49. Rack power and cooling parts (2 of 3)

Index	Part name	Part number	
		Version 1	Version 2
28	Rack identity card	22R1498	22R5740
29	Screw	54G2882	54G2882
30	Card, local remote switch	24R1385	95P1963
30	Card, zSeries local remote switch	24R1384	95P1962
31	Screw	54G2882	54G2882
32	DASD fan tray assembly	22R4022	22R5051

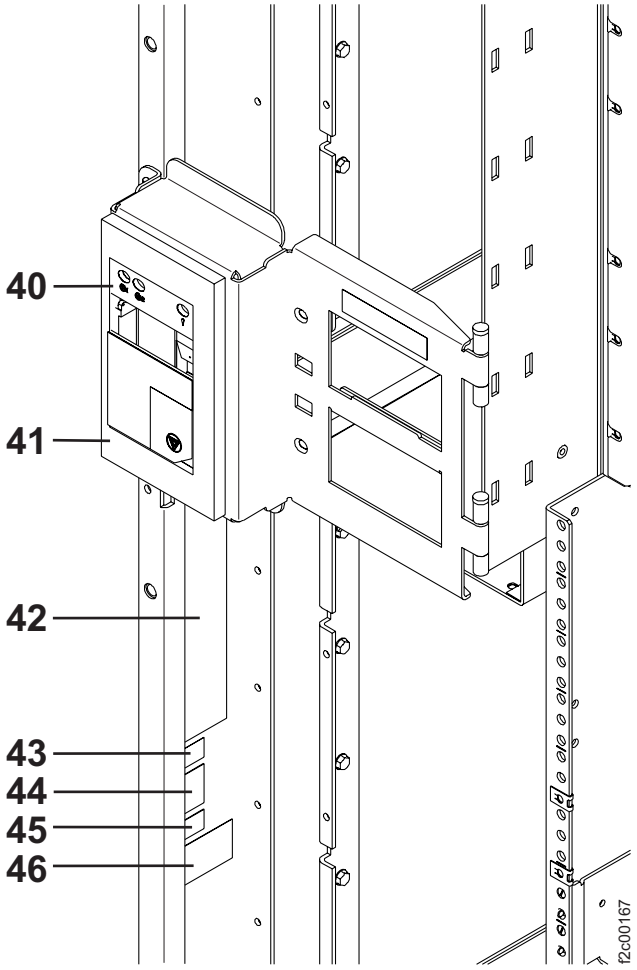


Figure 50. Rack power and cooling parts (continued)

Table 50. Rack power and cooling parts (3 of 3)

Index	Part name	Part number	
		Version 1	Version 2
40	Rack operator panel UEPO switch assembly	22R0203	22R5741
41	Cover gasket	22R1453	22R1453
42	Label, agency	22R1790	22R1790
43	Label, country of origin, Hungary	53P5888	53P5888
43	Label, country of origin, US	44P3946	44P3946
44	Label, IBM logo	97P2549	97P2549
45	Label, manufacturing site, Hungary	22R1805	22R1805
45	Label, manufacturing site, San Jose, CA	22R1804	22R1804
46	Label, Nordic	97P5092	97P5092

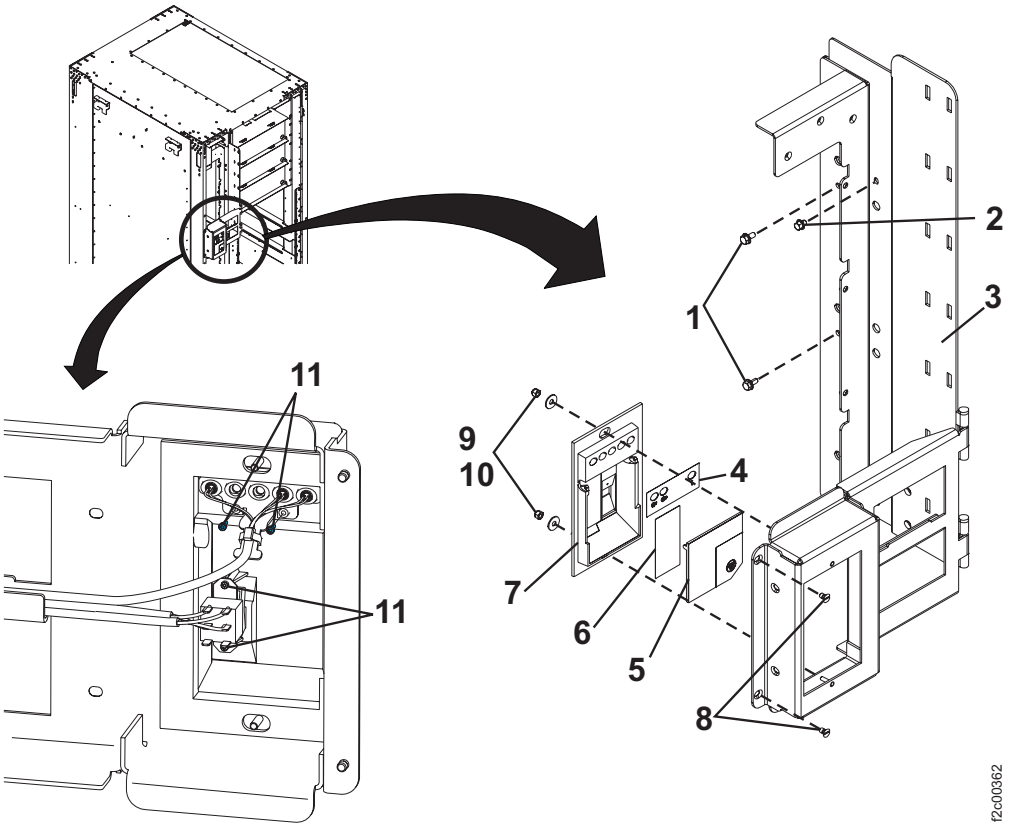


Figure 51. Rack operator panel UEPO switch assembly parts

Table 51. Parts of the rack operator panel UEPO switch assembly

Index	Part name	Part number	
		Version 1	Version 2
1	Screw, operator panel gate	54G2882	54G2882
2	Screw, operator panel gate	1624775	1624775
3	Operator panel gate	22R3734	22R4905
4	Label, operator panel	22R5887	22R5887
5	Door, operator panel, early version[1]	22R0179	N/A
	Door, operator panel, later version[1]	N/A	22R3997
6	Label, emergency switch	22R1047	22R1047
7	Housing, operator panel, early version[1]	22R0178	N/A
	Housing, operator panel, later version[1]	N/A	22R3996
8	Screw, operator panel gate[2]	1621319	1621319
9	Lock nut, housing mounting	1622417	1622417
10	Washer, housing mounting	1622276	1622276
11	Screw, connector-to-housing	1622660	1622660

Notes:

1. On the early version, nipples on the door pivot on holes in the housing. On the later version, holes in the door pivot on nipples on the housing. An early version door will not work with a later version housing and vice versa.
2. Keeps the gate closed.

Parts of the rack power and cooling bus bars

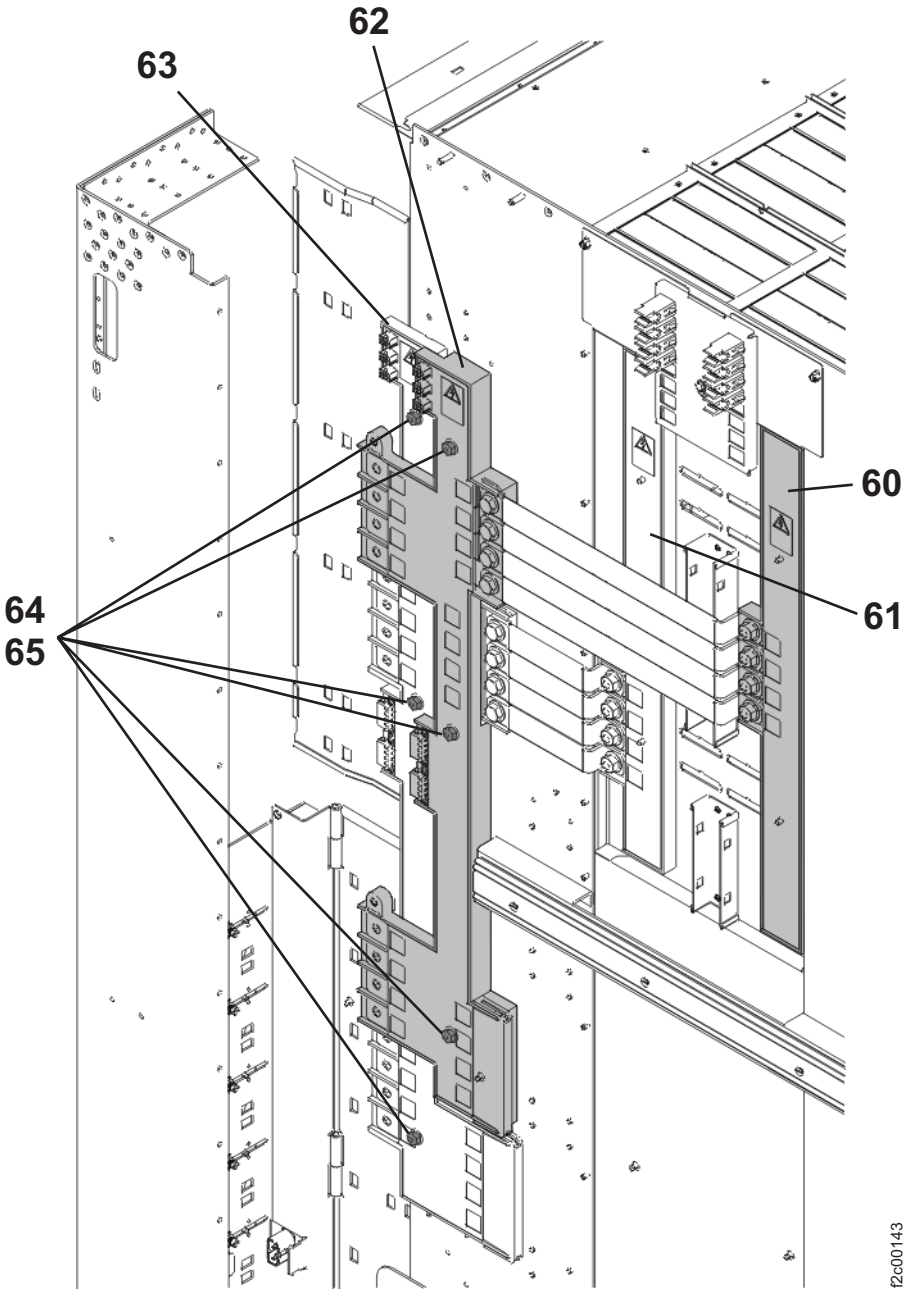


Figure 52. Rack power and cooling parts (continued)

Table 52. Parts of the rack power and cooling bus bars (1 of 4)

Index	Part name	Part number	
		Version 1	Version 2
60	Bus bar A, 5/12V, primary	22R0060	22R6100
61	Bus bar B, 5/12V, primary	22R0061	22R6101
62	Bus bar A, 5/12V, secondary	22R0073	22R6102
63	Bus bar B, 5/12V, secondary	22R0074	22R6103

Table 52. Parts of the rack power and cooling bus bars (1 of 4) (continued)

Index	Part name	Part number	
		Version 1	Version 2
64	Washer	1622276	1622276
65	Lock nut	1622418	1622418

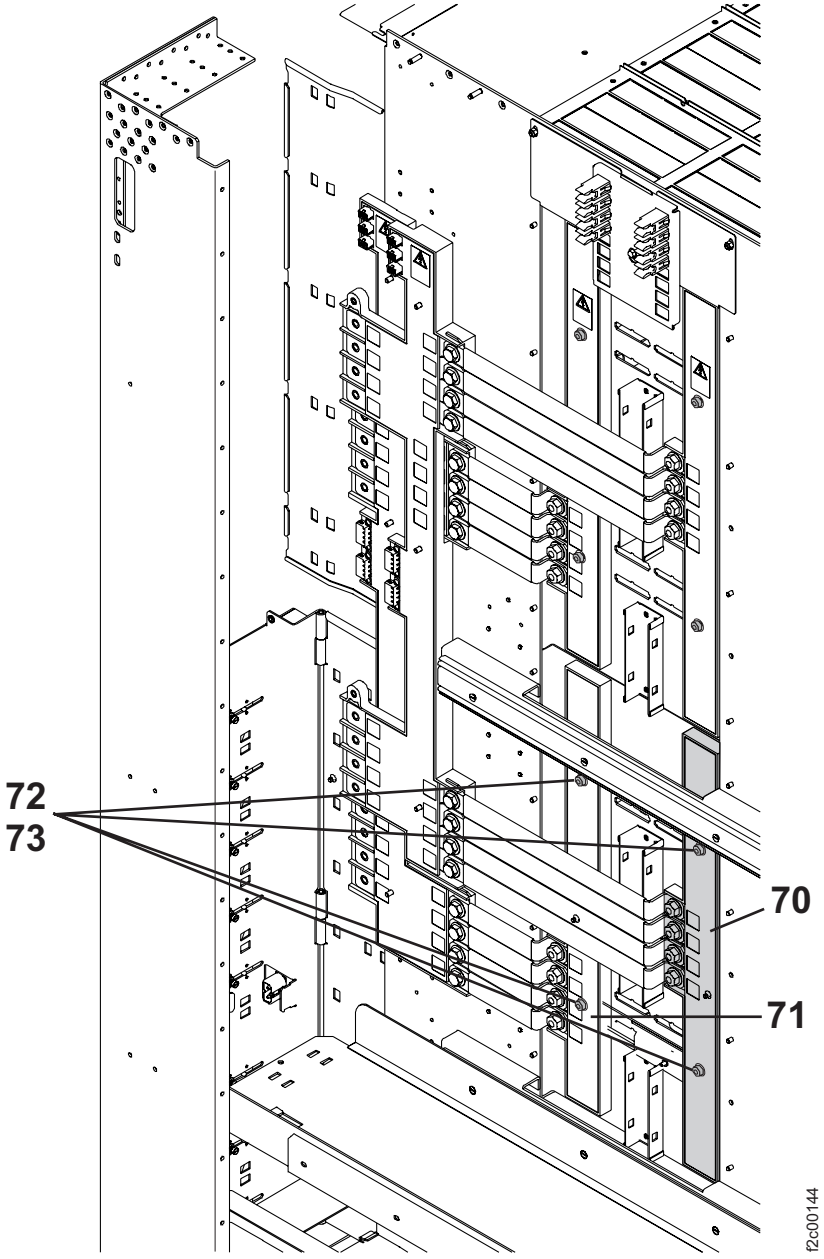


Figure 53. Rack power and cooling parts (continued)

Table 53. Parts of the rack power and cooling bus bars (2 of 4)

Index	Part name	Part number	
		Version 1	Version 2
70	Cable, bus bar -to- bus bar	22R0062	22R6104
71	Cable, bus bar -to- bus bar	22R0063	22R6105
72	Washer	1622276	1622276
73	Lock nut	1622418	1622418

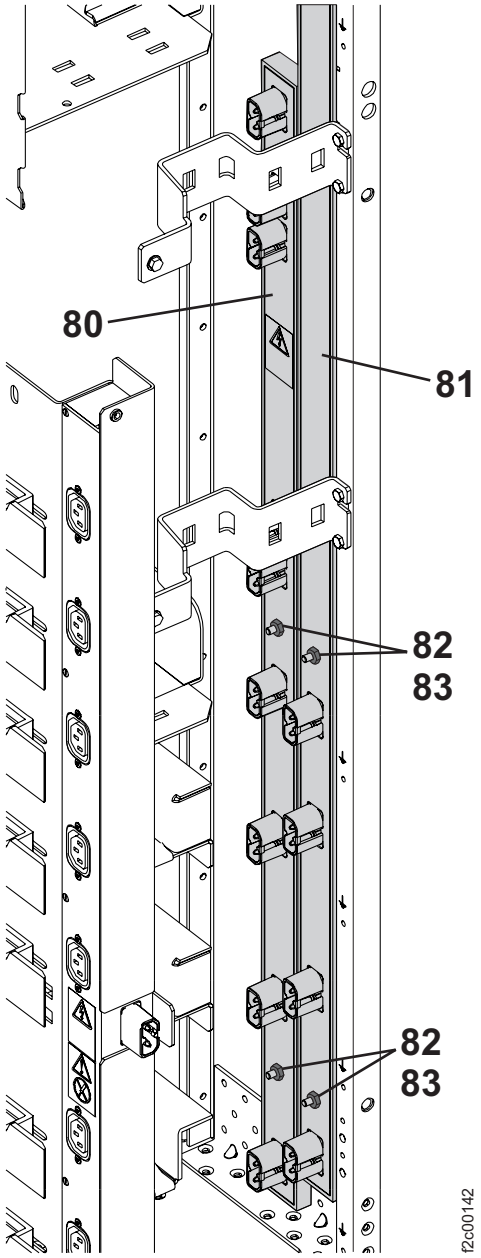


Figure 54. Rack power and cooling parts (continued)

Table 54. Parts of the rack power and cooling bus bars (3 of 4)

Index	Part name	Part number	
		Version 1	Version 2
80	Bus bar B1, 208VDC, primary	22R0221	22R6125
81	Bus bar A1, 208VDC, primary	22R0220	22R6124
82	Washer	1622276	1622276
83	Lock nut	1622418	1622418

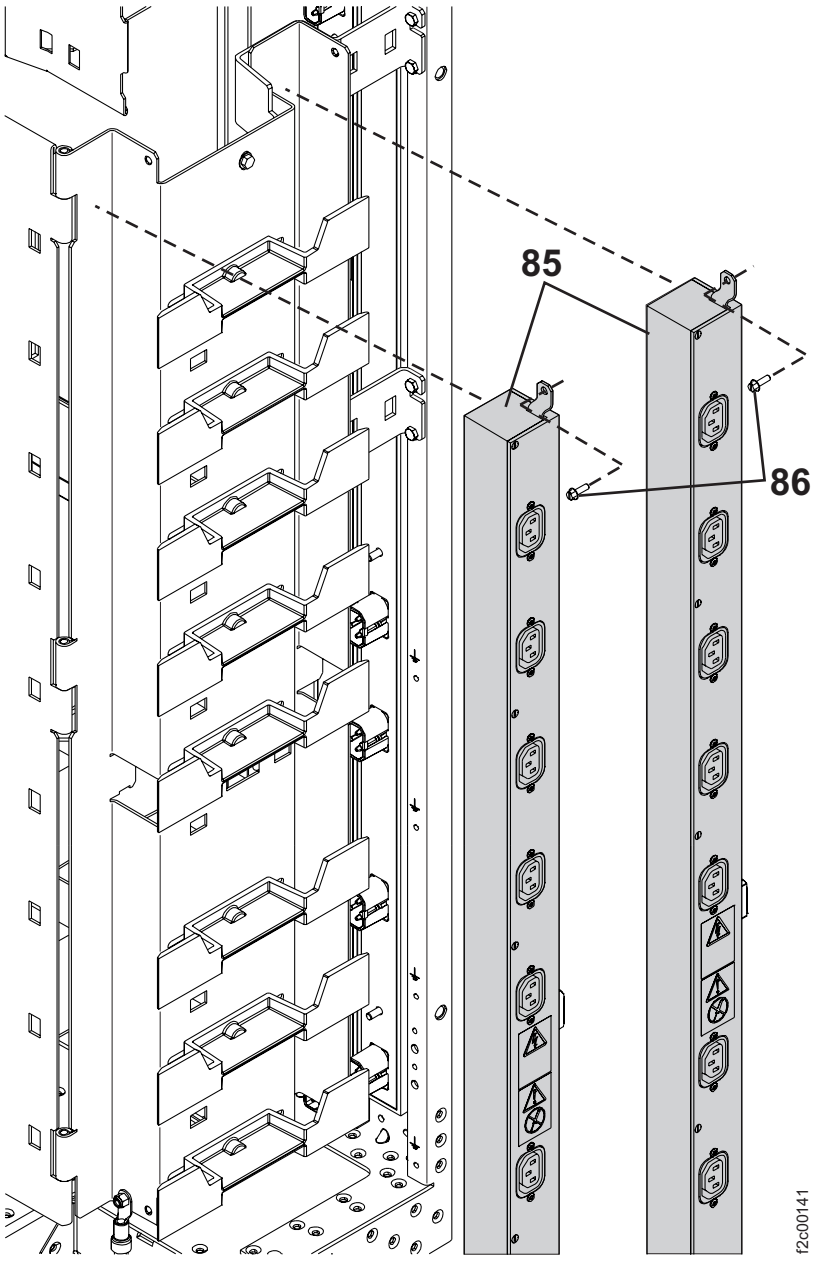


Figure 55. Rack power and cooling parts (continued)

Table 55. Parts of the rack power and cooling bus bars (4 of 4)

Index	Part name	Part number	
		Version 1	Version 2
85	Bus bar A2 and B2, 208VDC, secondary	22R0222	22R6126
86	Screw	54G2882	54G2882

Cables for rack power and cooling parts

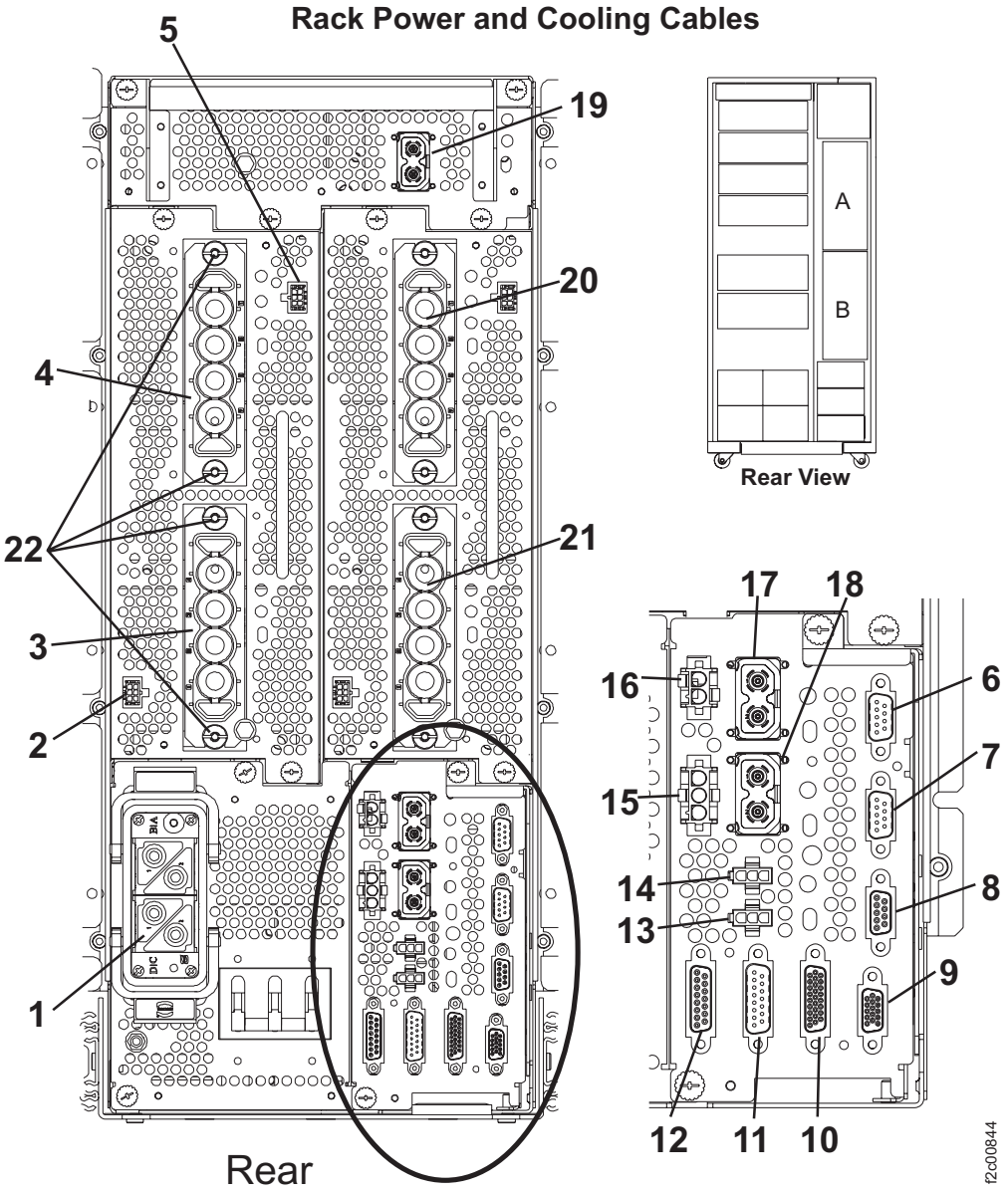


Figure 56. Rack power and cooling cables

Table 56. Cables for rack power and cooling parts

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, power (3-phase), long (PPS 1), EMEA (17.5 feet)	22R3795	22R3795
	Cable, power (3-phase), long (PPS 1), 60A Japan (17.5 feet)	22R2224	22R2224
	Cable, power (3-phase), long (PPS 1), non-EMEA (17.5 feet)	22R2222	22R2222
	Cable, power (3-phase), long (PPS 1), 60A Chicago (9.5 feet)	22R1189	22R1189
	Cable, power (3-phase), short (PPS 2), EMEA (15.8 feet)	22R3794	22R3794
	Cable, power (3-phase), short (PPS 2), 60A Japan (15.8 feet)	22R1191	22R1191
	Cable, power (3-phase), short (PPS 2), non-EMEA (15.8 feet)	22R1190	22R1190
	Cable, power (3-phase), short (PPS 2), 60A Chicago (7.7 feet)	22R1188	22R1188
2	Cable, PPS 1 -to- 5/12V bus bar	22R0386	22R6116
	Cable, PPS 2 -to- 5/12V bus bar	22R0387	22R6117
3	Cable, PPS -to- 5/12V bus bar Base rack only	22R0119	22R6106
	Cable, PPS -to- 5/12V bus bar Expansion rack only	22R0121	22R6108
4	Cable, PPS -to- 5/12V bus bar Base rack only	22R0119	22R6106
	Cable, PPS -to- 5/12V bus bar *x* Expansion rack only	22R0120	22R6107
5	Cable, PPS 1 -to- 5/12V bus bar	22R0384	22R6114
	Cable, PPS 2 -to- 5/12V bus bar	22R0385	22R6115
6	Cable, PPS -to- RPC card (except Rack-1)	22R0629	22R6139
	Cable, PPS -to- RPC card (Rack 1)	22R0420	22R6147
7	Cable, PPS -to- RPC card (except Rack-1)	22R0630	22R6140
	Cable, PPS -to- RPC card (Rack 1)	22R0421	22R6148
8	Cable, PPS 1 -to- rack identity card	22R0626	22R5756
	Cable, PPS 2 -to- rack identity card	22R0627	22R5757
9	Cable, PPS -to- PPS	22R0606	22R5754
10	Cable, PPS 1 -to- fan sense card	22R0209	22R5743
	Cable, PPS 2 -to- fan sense card	22R0210	22R5744
11	Cable, PPS 1 -to- fan sense card	22R0212	22R5746
	Cable, PPS 2-to- fan sense card	22R0213	22R5747
12	Cable, PPS 1 -to- battery module	22R1771	22R5752
	Cable, PPS 2 -to- battery module	22R1772	22R5753
13	Cable (multi-connector power cord)[1]	22R0842	22R5759

Table 56. Cables for rack power and cooling parts (continued)

Index	Part name	Part number	
		Version 1	**Version 2**
14	Cable (multi-connector power cord)[1]	22R0842	22R5759
15	Cable, PPS 1-to- battery module	22R2190	22R5749
	Cable, PPS 2 -to- battery module	22R2191	22R5750
16	Cable, PPS -to- rack operator panel UEPO switch	22R0203	22R5741
19	Cable, PPS -to- 208V bus bar	22R0364	22R6127
20	Cable, PPS -to- 5/12V bus bar *x* Expansion rack only	22R0120	22R6107
21	Cable, PPS -to- 5/12V bus bar Expansion rack only	22R0121	22R6108
22	Screw, 5/12V cable retention	22R0123	22R0123

Notes:

1. This cable is hardwired to a junction connector that provides power to the Ethernet switches, the display/ keyboard tray, and the management console. The junction box also receives power from the other PPS via this cord.

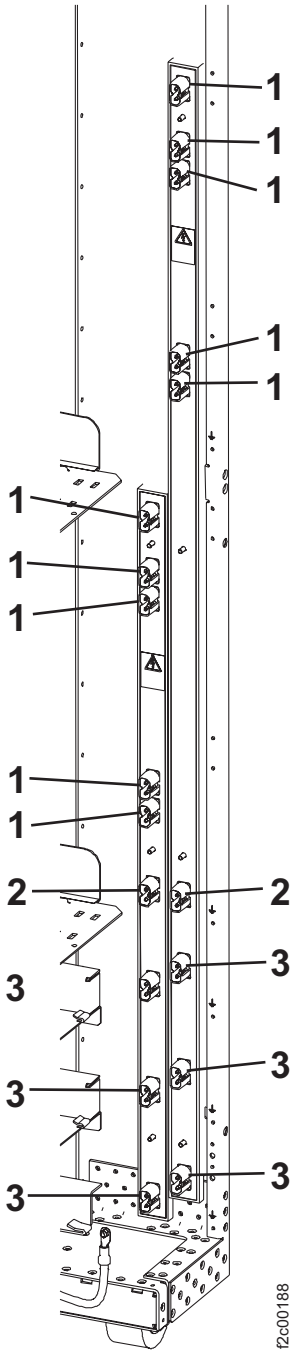


Figure 57. Rack power and cooling 208VDC bus bars (A1 and B1)

Table 57. Cables for 208V bus bars A1 and B1

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, 208V bus bar -to- PPS	22R0364	22R6127
2	Cable, 208V bus bar A1 -to- 208V bus bar A2	22R0900	22R6129
	Cable, 208V bus bar B1 -to- 208V bus bar B2	22R0901	22R6130
3	Cable, 208V bus bar -to- battery module	22R0365	22R6128

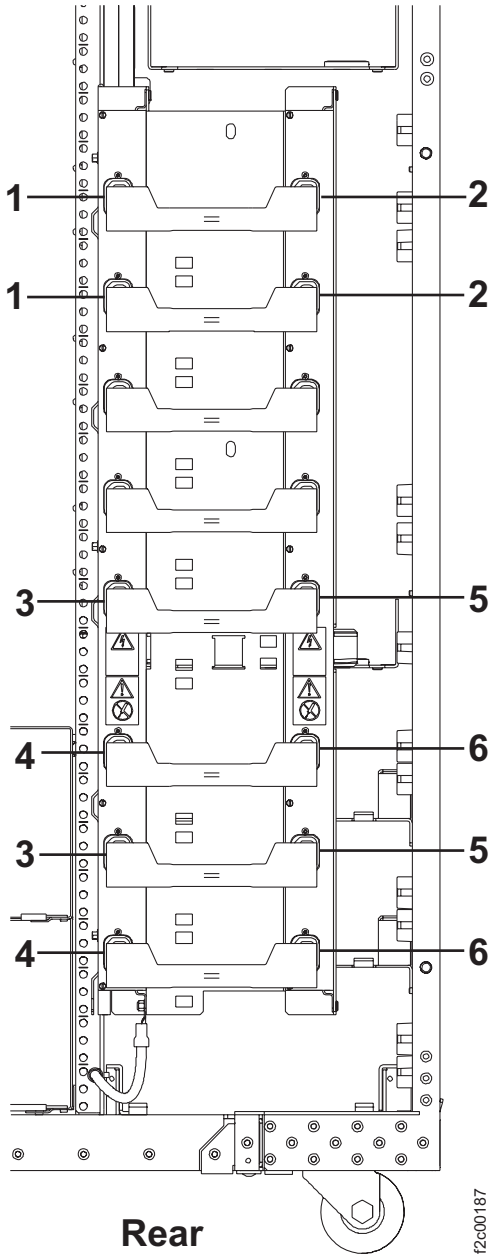


Figure 58. Rack power and cooling 208VDC bus bars (A2 and B2)

Table 58. Cables for 208V bus bars A2 and B2

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, 208V bus bar -to- CEC enclosure power supply	22R0976	22R5828
2	Cable, 208V bus bar -to- CEC enclosure power supply	22R0977	22R5829
3	Cable, 208V bus bar -to- I/O enclosure power supply	22R0972	22R5832
4	Cable, 208V bus bar -to- I/O enclosure power supply	22R0974	22R5834

Table 58. Cables for 208V bus bars A2 and B2 (continued)

Index	Part name	Part number	
		Version 1	Version 2
5	Cable, 208V bus bar -to- I/O enclosure power supply	22R0971	22R5831
6	Cable, 208V bus bar -to- I/O enclosure power supply	22R0973	22R5833

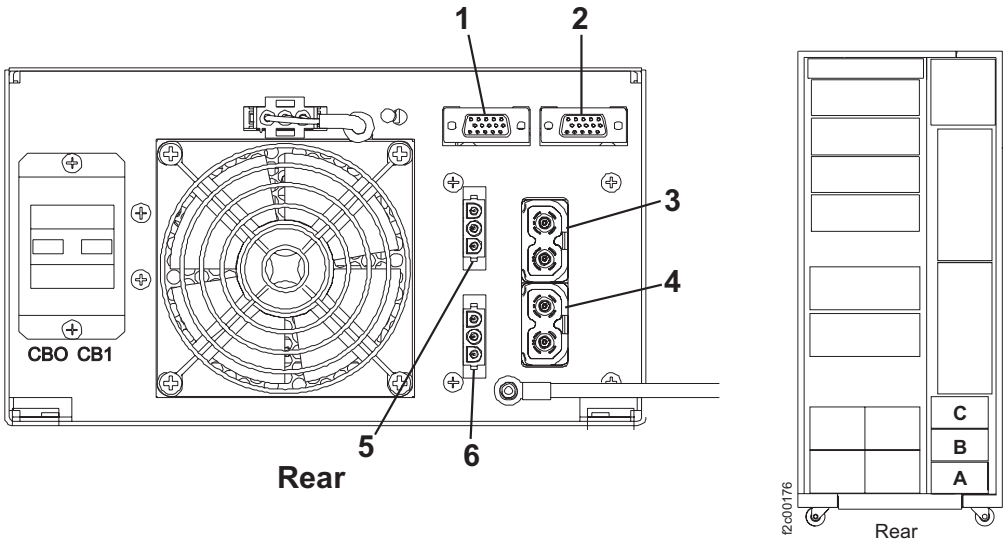


Figure 59. Rack power and cooling battery module set cables

Table 59. Cables for a battery module set

Index	Part name	Part number	
		Version 1	Version 2
1-2	Cable, battery module -to- PPS 1	22R1771	22R5752
	Cable, battery module -to- PPS 2	22R1772	22R5753
3-4	Cable, battery module -to- 208V bus bar	22R0365	22R6128
5	Cable, battery module -to- PPS 1	22R2190	22R5749
6	Cable, battery module -to- PPS 2	22R2191	22R5750

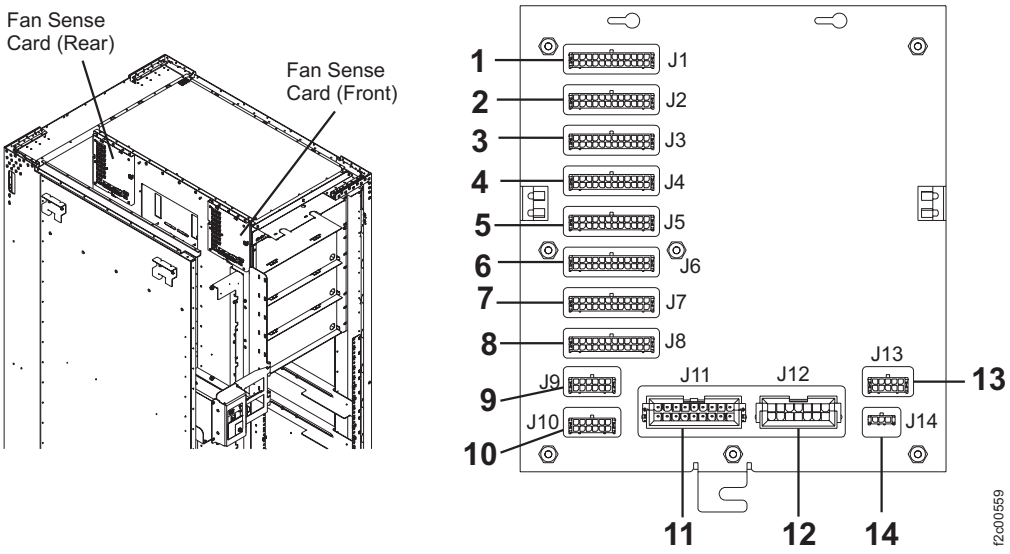


Figure 60. Cables on the fan sense cards

Table 60. Cables for the fan sense card (front card)

Index	Part name	Part number	
		Version 1	Version 2
1-4	Cable, fan sense card (front) -to- storage enclosure	22R1150	22R6110
5-8	Cable, fan sense card (front) -to- storage enclosure[1, 2]	22R1152	22R6112
9-10	Cable, fan sense card (front) -to- DASD fan tray assy.	17P8101	22R5474
11	Cable, fan sense card (front) -to- PPS 1	22R0209	22R5743
12	Cable, fan sense card (front) -to- PPS 1	22R0212	22R5746
13	Cable, fan sense card (front) -to- rack identity card	17P8106	22R5916
14	Cable, fan sense card -to- fan sense card	17P8103	22R5476

Notes:

1. Expansion rack only.
2. The circuit between the fan sense card and the storage enclosure consists of two cables that are joined at the center wall (bulkhead). This part is a four-cable harness that runs between the fan sense card and the center wall. The part number of the cable that runs between the center wall and the storage enclosure is 22R2192 (old P/N) or 22R6109 (new P/N). This cable is also known as the ″Y″ cable because one leg of the ″Y″ leads to the storage enclosure and the other leg leads to a bus bar on the center wall.

Table 61. Cables for the fan sense card (rear card)

Index	Part name	Part number	
		Version 1	Version 2
1-4	Cable, fan sense card (rear) -to- storage enclosure	22R1151	22R6111
5-8	Cable, fan sense card (rear) -to- storage enclosure[1, 2]	22R1153	22R6113
9-10	Cable, fan sense card (rear) -to- DASD fan tray assy.	17P8102	22R5475
11	Cable, fan sense card (rear) -to- PPS 2	22R0210	22R5744
12	Cable, fan sense card (rear) -to- PPS 2	22R0213	22R5747
13	Cable, fan sense card (rear) -to- rack identity card	17P8107	22R5917
14	Cable, fan sense card -to- fan sense card	17P8103	22R5476

Table 61. Cables for the fan sense card (rear card) (continued)

Index	Part name	Part number	
		Version 1	Version 2
Notes: 1. Expansion rack only. 2. The circuit between the fan sense card and the storage enclosure consists of two cables that are joined at the center wall (bulkhead). This part is a four-cable harness that runs between the fan sense card and the center wall. The part number of the cable that runs between the center wall and the storage enclosure is 22R2192 (old P/N) or 22R6109 (new P/N). This cable is also known as the ″Y″ cable because one leg of the ″Y″ leads to the storage enclosure and the other leg leads to a bus bar on the center wall.			

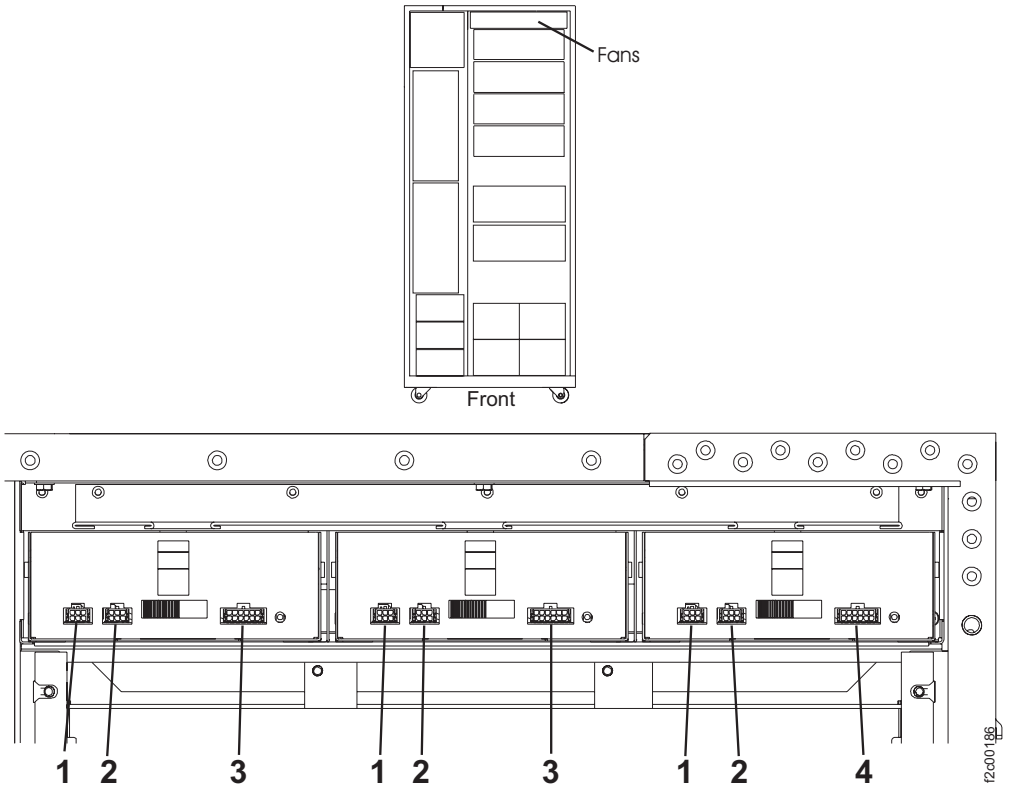


Figure 61. Rack power and cooling fan tray cables

Table 62. Cables for the DASD fan trays

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, DASD fan tray -to- 5/12V secondary bus bar	17P8100	22R5473
2	Cable, DASD fan tray -to- 5/12V secondary bus bar	17P8099	22R5472
3	Cable, DASD fan tray -to- fan sense card (front)	17P8101	22R5474
4	Cable, DASD fan tray -to- fan sense card (rear)	17P8102	22R5475

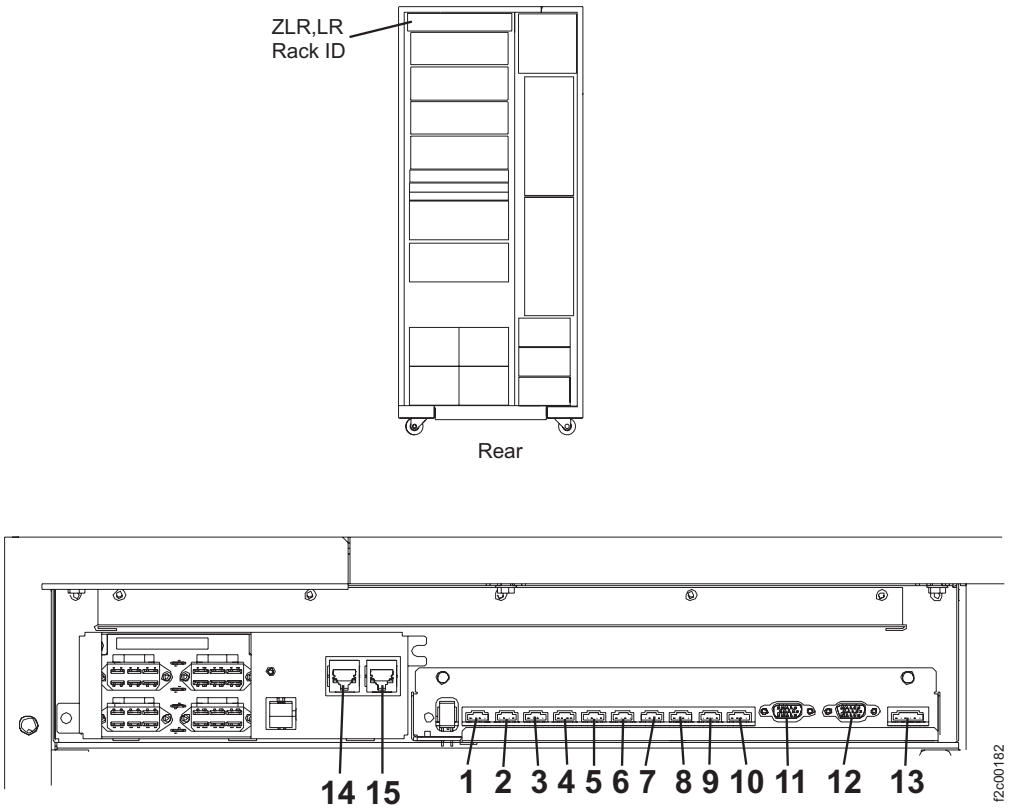


Figure 62. Rack power and cooling local remote and rack identity card cables

Table 63. Cables for the rack identity card and the local remote switch card

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, rack identity card -to- fan sense card (front)	17P8106	22R5916
2	Cable, rack identity card -to- fan sense card (rear)	17P8107	22R5917
3-4	Cable, rack identity card -to- CEC enclosure 1	17P8109	22R5919
	Cable, rack identity card -to- CEC enclosure 2	17P8110	22R5920
	Cable, rack identity card -to- CEC enclosure 3	17P8111	22R5921
5	Cable, rack identity card -to- I/O enclosure	22R2907	22R5922
6	Cable, rack identity card -to- I/O enclosure	22R2908	22R5923
7	Cable, rack identity card -to- I/O enclosure	22R2909	22R5924
8	Cable, rack identity card -to- I/O enclosure	22R2910	22R5925
9	Cable, rack identity card -to- PPS	22R0626	22R5756
10	Cable, rack identity card -to- PPS	22R0627	22R5757
11	Cable, rack identity card -to- RPC card	22R0418	22R6145
12	Cable, rack identity card -to- RPC card	22R0419	22R6146
13	Cable, rack identity card -to- rack operator panel LED assembly	22R0816	22R5758
14	Cable, local remote switch card -to- Ethernet	22R0414	22R6141
15	Cable, local remote switch card -to- Ethernet	22R0415	22R6142

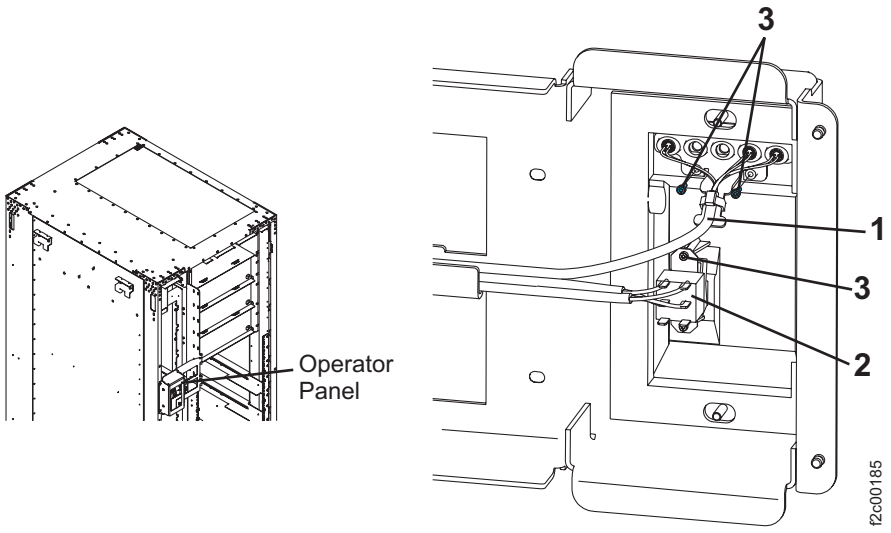


Figure 63. Rack operator panel UEPO switch cables

Table 64. Cables for the rack operator panel UEPO switch

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, rack operator panel LED assembly	22R0816	22R5758
2	Cable, rack operator panel UEPO switch	22R0203	22R5741
3	Screw, connector-to-housing	1622660	1622660

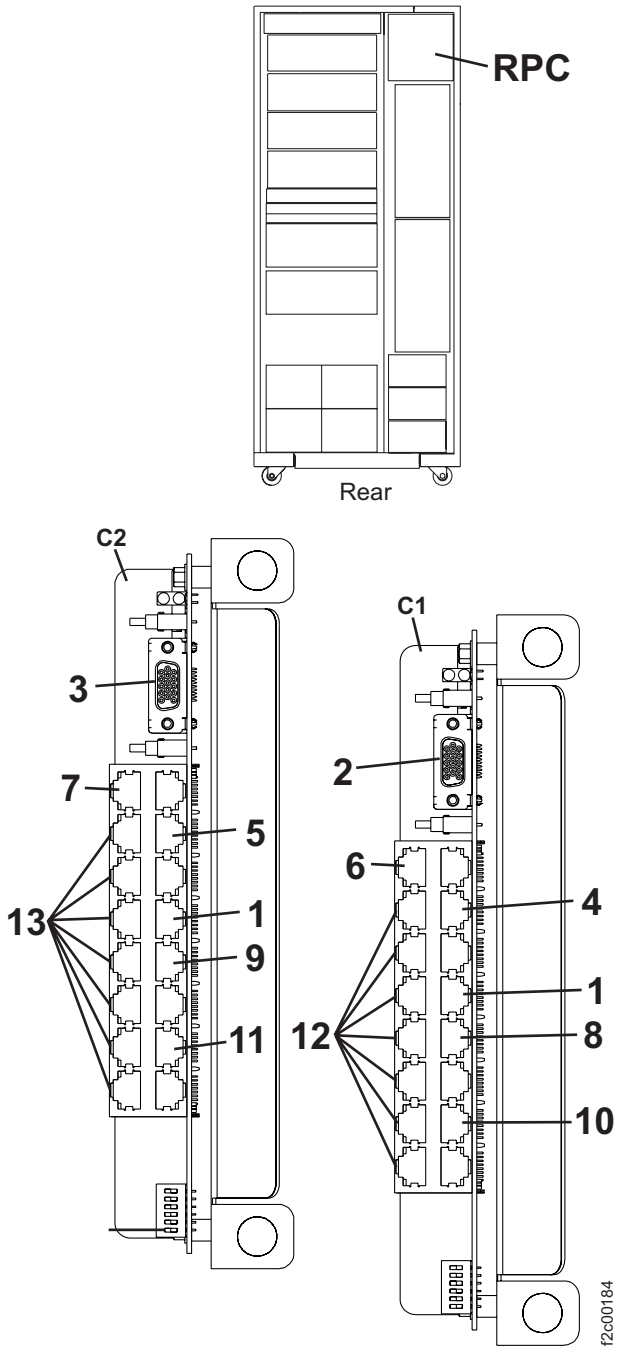


Figure 64. Rack power and cooling RPC card

Table 65. Cables for the RPC card

Index	Part name	Part number	
		Version 1	Version 2
1	Cable, RPC card -to- RPC card	22R0413	22R6138
2	Cable, RPC card -to- rack identity card	22R0418	22R6145
3	Cable, RPC card -to- rack identity card	22R0419	22R6146
4	Cable, RPC card -to- device adapter card	22R0414	22R6141
5	Cable, RPC card -to- device adapter card	22R0415	22R6142

Table 65. Cables for the RPC card (continued)

Index	Part name	Part number	
		Version 1	Version 2
6	Cable, RPC card -to- PPS	22R0420	22R6147
7	Cable, RPC card -to- PPS	22R0421	22R6148
8-9	Cable, RPC card -to- CEC enclosure	22R0416	22R6143
10-11	Cable, RPC card -to- CEC enclosure	22R0417	22R6144
12	Cable, RPC card -to- PPS rack	22R0629	22R6139
13	Cable, RPC card -to- PPS rack	22R0630	22R6140

Earthquake resistance kit part numbers

Use the following sections to locate information about earthquake resistance kit parts.

- "Earthquake resistance kit parts at the front of the rack (stiffeners)"
- "Earthquake resistance kit parts at the rear of the rack (stiffeners)" on page 87
- "Earthquake resistance kit parts for non-raised floor (tie-downs)" on page 89
- "Earthquake resistance kit parts for raised floor (tie-downs)" on page 90

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Earthquake resistance kit parts at the front of the rack (stiffeners)

Use the figures and tables below to locate information about the earthquake resistance kit brackets (stiffeners) at the front of the rack.

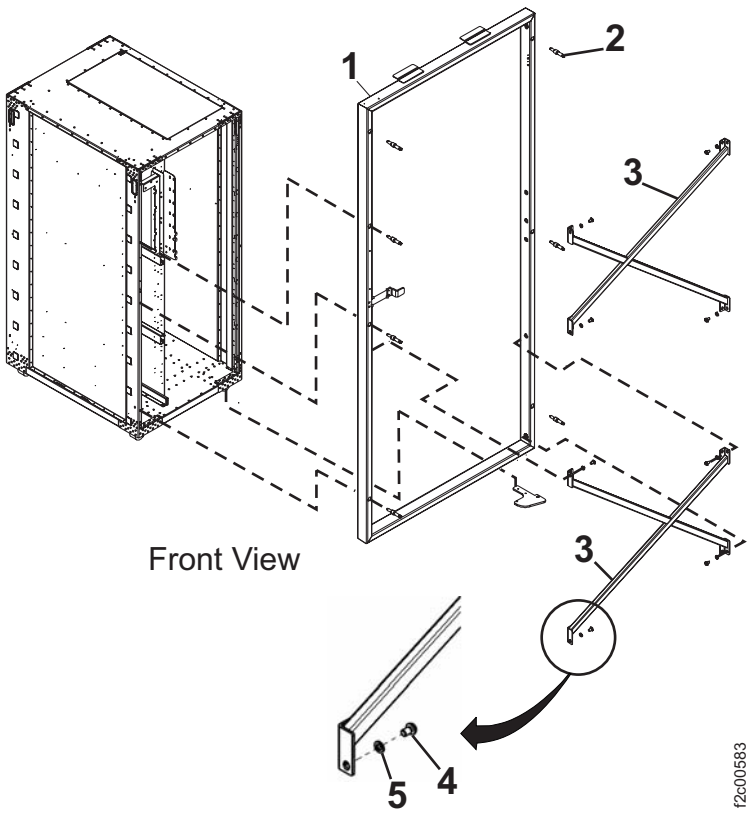


Figure 65. Earthquake resistance kit parts at the front of the rack

Table 66. Earthquake resistance kit parts (except relocation bracket for the operator panel)

Index	Part name	Part number	
		Version 1	**Version 2**
1	Brace extension frame	22R1317	22R1317
2	Screw	22R2193	22R2193
3	X-brace	22R1321	22R1321
4	Screw (20mm)	1621538	1621538
5	Washer, Lock	1622321	1622321

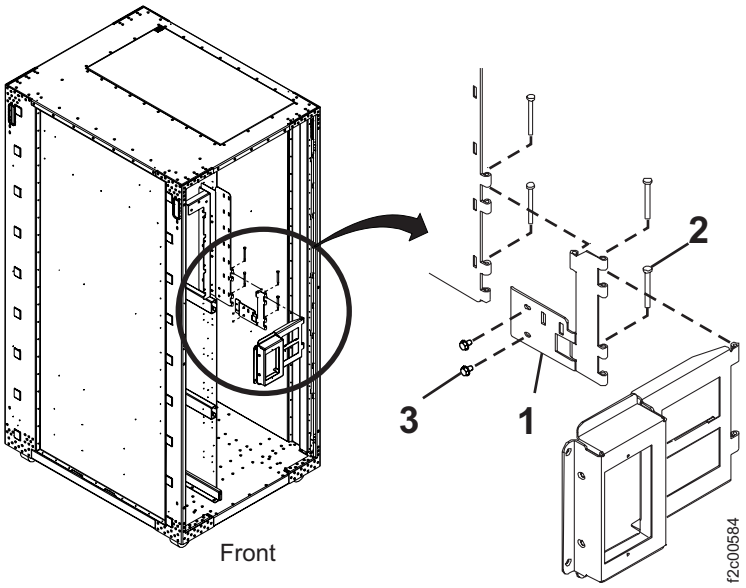


Figure 66. Earthquake resistance kit parts - Relocation bracket for the operator panel

Table 67. Earthquake resistance kit relocation bracket for the operator panel

Index	Part name	Part number	
		Version 1	Version 2
1	Bracket, relocation	22R1793	22R1793
2	Pin, pivot	22R1794	22R1794
3	Screw	1621842	1621842

Earthquake resistance kit parts CEC stiffeners

Use the figure and table that follow to locate information about the earthquake resistance kit CEC stiffeners.

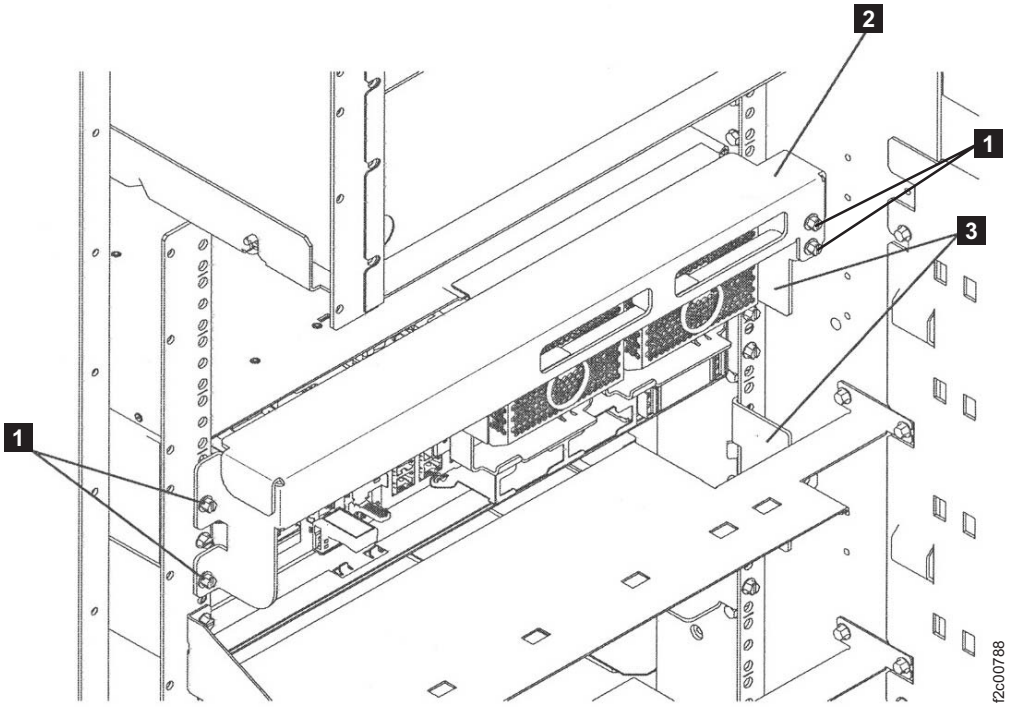


Figure 67. Earthquake resistance kit parts CEC stiffeners

Table 68. Earthquake resistance kit CEC stiffeners

Index	Part name	Part number	
		Version 1	Version 2
1	Screw	23R1520	23R1520
2	Bracket, stiffener	22R2002	22R2002
3	Bracket, mounting	17P8485	17P8485

Earthquake resistance kit parts at the rear of the rack (stiffeners)

Use the figures and tables below to locate information about the earthquake resistance kit brackets (stiffeners) at the rear of the rack.

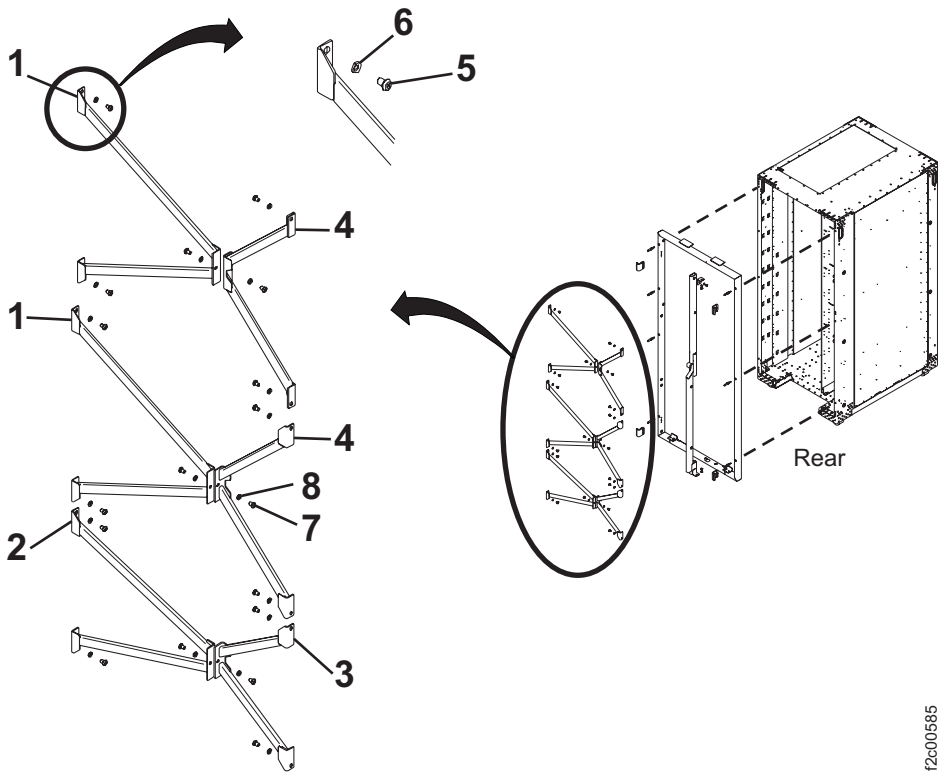


Figure 68. Earthquake resistance kit V-braces at the rear of the rack

Table 69. Earthquake resistance kit V-braces

Index	Part name	Part number	
		Version 1	**Version 2**
1	V-brace, main, upper	22R1313	22R1313
2	V-brace, main, lower	22R1315	22R1315
3	V-brace, power, lower	22R1316	22R1316
4	V-brace, power, upper	22R1314	22R1314
5	Screw (20mm)	1621538	1621538
6	Washer, Lock	1622321	1622321

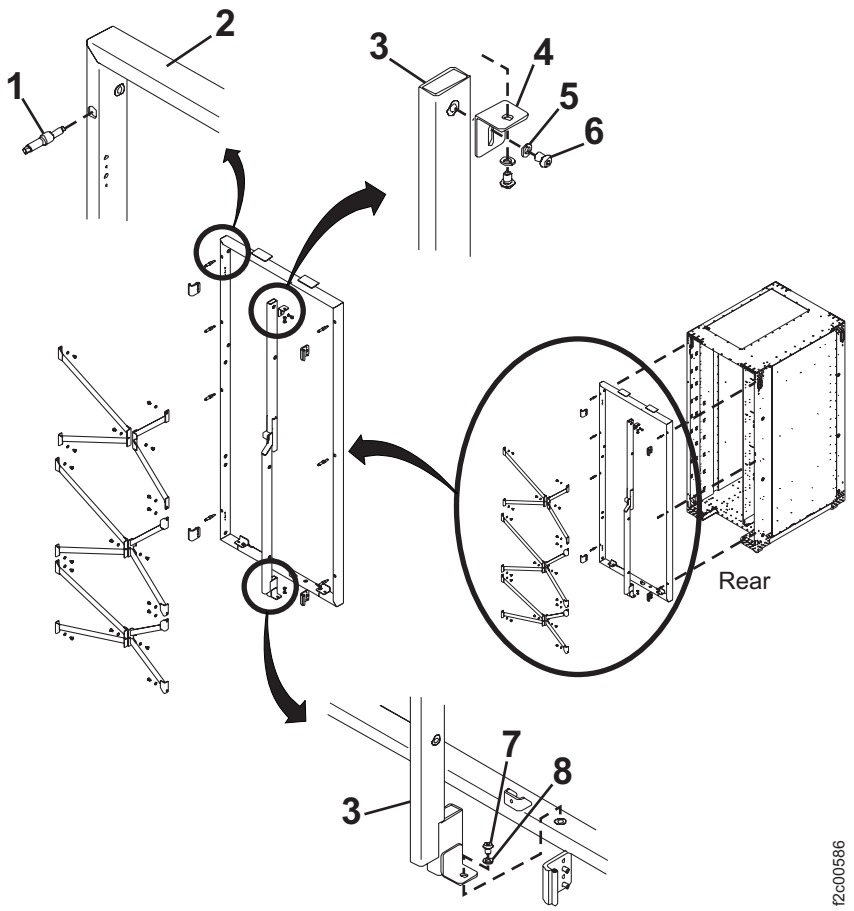


Figure 69. Earthquake resistance kit parts at the rear of the rack (except V-braces)

Table 70. Earthquake resistance kit parts (except V-braces)

Index	Part name	Part number	
		Version 1	Version 2
1	Screw	22R2193	22R2193
2	Brace extension frame	22R1303	22R1303
3	Vertical brace	22R1304	22R1304
4	Bracket, vertical brace to frame	22R1305	22R1305
5	Washer	1622321	1622321
6	Screw	1621538	1621538
7	Screw	1621538	1621538
8	Washer	1622321	1622321

Earthquake resistance kit parts for non-raised floor (tie-downs)

Use the figure and table below to locate information about the earthquake resistance kit parts that tie the rack to the non-raised floor.

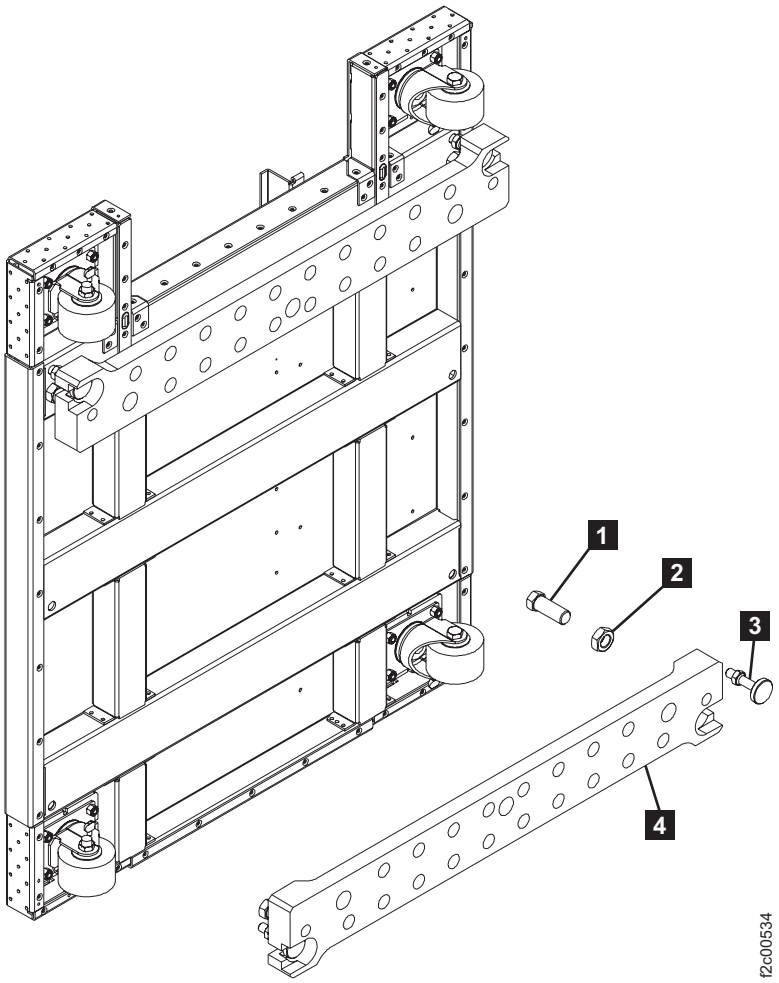


Figure 70. Floor tie-down parts of the earthquake resistance kit (non-raised floor)

Table 71. Floor tie-down parts of the earthquake resistance kit (non-raised floor)

Index	Part name[1]	Part number	
		Version 1	Version 2
1	Leveler	22R1462	22R1462
2	Jam nut	22R1463	22R1463
3	Stud	22R1461	22R1461
4	Load plate	22R1515	22R1515
Notes			
[1] - Part of the tie-down hardware kit P/N 22R1472.			

Earthquake resistance kit parts for raised floor (tie-downs)

Use the figure and table below to locate information about the earthquake resistance kit parts that tie the rack to the raised floor.

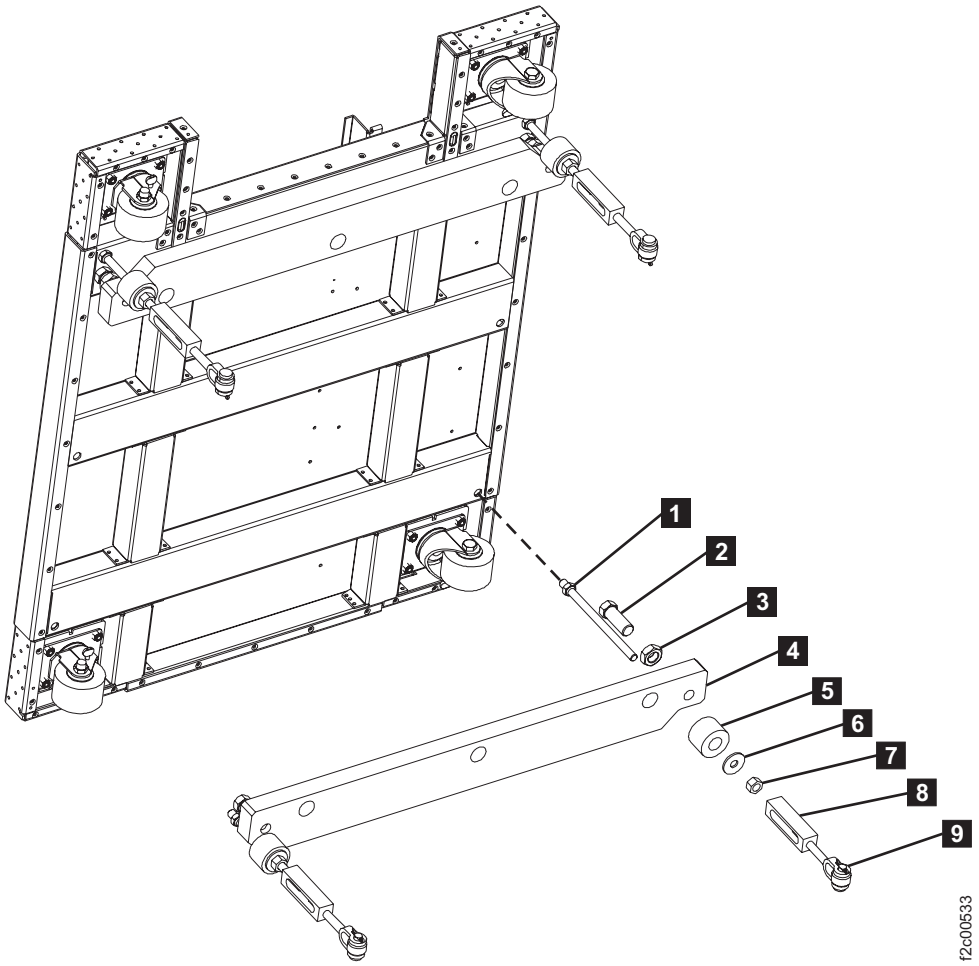


Figure 71. Floor tie-down parts of the earthquake resistance kit (raised floor)

Table 72. Floor tie-down parts of the earthquake resistance kit (raised floor)

Index	Part name	Part number	
		Version 1	**Version 2**
1	Stud, frame-to-turnbuckle	22R1464	22R1464
2	Leveler	22R1462	22R1462
3	Jam nut	22R1463	22R1463
4	Load plate	22R1301	22R1301
5	Bushing, rubber	44P2997	44P2997
6	Washer (M12)	[1]	[1]
7	Nut (M12x1.75)	[2]	[2]
8	Turnbuckle, short[3]	22R1465	22R1465
8	Turnbuckle, long[4]	22R1467	22R1467
9	Spacer, jaw-to-floor hardware	21L3667	21L3667
Notes			
[1] - McMaster-Carr P/N 91100A180 or IBM approved equivalent.			
[2] - McMaster-Carr P/N 90591A181 or IBM approved equivalent.			
[3] - Part of the short tie-down hardware kit (P/N 22R1466).			

Table 72. Floor tie-down parts of the earthquake resistance kit (raised floor) (continued)

Index	Part name	Part number	
		Version 1	Version 2
[4] - Part of the long tie-down hardware kit (P/N 22R1468).			

Service ship group part numbers

The parts in a service ship group vary depending on whether the ship group is for a base rack or an expansion rack:

"Service ship group for a base rack"

"Service ship group for an expansion rack" on page 93

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Service ship group for a base rack

The parts of a ship group for a base rack are listed in the following table.

Note: For part quantities, see the bill of materials in the ship group.

Table 73. Service ship group part numbers (base rack)

Description	Part number	
	Version 1	Version 2
Cable, Ethernet, black, 31.0 m	22R1798	22R1798
Cable, Ethernet, gray, 31.0 m	22R1799	22R1799
CD-ROM, Code Bundle	[1]	[1]
CD-ROM, Customer Documents	[1]	[1]
CD-ROM, Service Documents	[1]	[1]
Label, operator panel warning, translated	22R1789	22R1789
Publication, Service Provider Start Here	22R4228	22R4228
Publication, Installation Guide	[1]	[1]
Publication, Statement of Limited Warranty	22R5940	22R6401
Publication, Waste Equipment (WEEE)	22R5822	22R5822
Tag, "Do Not Operate"	23R0280	23R0280
Tie wrap	07J6655	07J6655
Wheel chocks (set of 4)	08J5557	08J5557
Wrap plug, ESCON	05N6767	12R9312
Wrap plug, Ethernet	00G2380	03N6070
Wrap plug, Fibre Channel, copper (device adapter)	23R0856	23R0856

Table 73. Service ship group part numbers (base rack) (continued)

Description	Part number	
	Version 1	**Version 2**
Wrap plug, Fibre Channel, optic (host adapter)	12R9314	12R9314
Notes: 1. The part number changes with each release. Call the next level of support.		

Service ship group for an expansion rack

The parts of a ship group for an expansion rack are listed in the following table.

Note: For part quantities, see the bill of materials in the ship group.

Table 74. Service ship group part numbers (expansion rack)

Description	Part number	
	Version 1	**Version 2**
Bolt, M8 x 20, interrack spacer	1621545	1621545
Cable, Ethernet, black, 31.0 m	22R1798	22R1798
Cable, Ethernet, gray, 31.0 m	22R1799	22R1799
CD-ROM, Code Bundle	[1]	[1]
CD-ROM, Customer Documents	[1]	[1]
CD-ROM, Service Documents	[1]	[1]
Cover, interrack decorative, side (one-piece)	22R4964	22R4964
Cover, interrack decorative, side (two-piece, hinged)[2]	23R1050[2]	23R1050[2]
Cover, interrack decorative, top	22R4962	22R4962
Drawing, interrack spacer stud	22R5481	22R5481
Label, operator panel warning, translated	22R1789	22R1789
Publication, Service Provider Start Here	22R4228	22R4228
Publication, Installation Guide	[1]	[1]
Publication, Installing an Expansion Rack	[1]	[1]
Publication, Statement of Limited Warranty	22R5940	22R6401
Publication, Waste Equipment (WEEE)	22R5822	22R5822
Spacer stud, interrack	22R5046	22R5046
Tag, "Do Not Operate"	23R0280	23R0280
Tie wrap	07J6655	07J6655
Washer, M8, interrack spacer	84X5850	84X5850
Wheel chocks (set of 4)	08J5557	08J5557
Notes: 1. The part number changes with each release. Call the next level of support. 2. A bracket (23R2044) and two nuts (84X4841) secure the two pieces at the hinge.		

Storage enclosure part numbers

Information about storage enclosure parts is listed below. Use Table 75 as a directory.

Notes:

- Version 1 part numbers are *not* eligible for use in European Union member states.
- Version 2 part numbers are eligible for use everywhere including European Union member states.
- Only the most recent part numbers are listed. Your DS8000 or serviceable event FRU list may contain an older part number. The parts ordering system can automatically substitute a later part number as needed.

Table 75. Start here

Part name	Figure
Cables, Fibre Channel interface card (FCIC)	Figure 73 on page 97
Cables, storage enclosure backplane	Figure 75 on page 99
Disk drive dummy module	Figure 72 on page 95
Disk drive module (DDM)	Figure 72 on page 95
Fibre channel interface card (FCIC)	Figure 72 on page 95
Storage enclosure backplane	Figure 72 on page 95
All other parts	(Find the appropriate figure below)

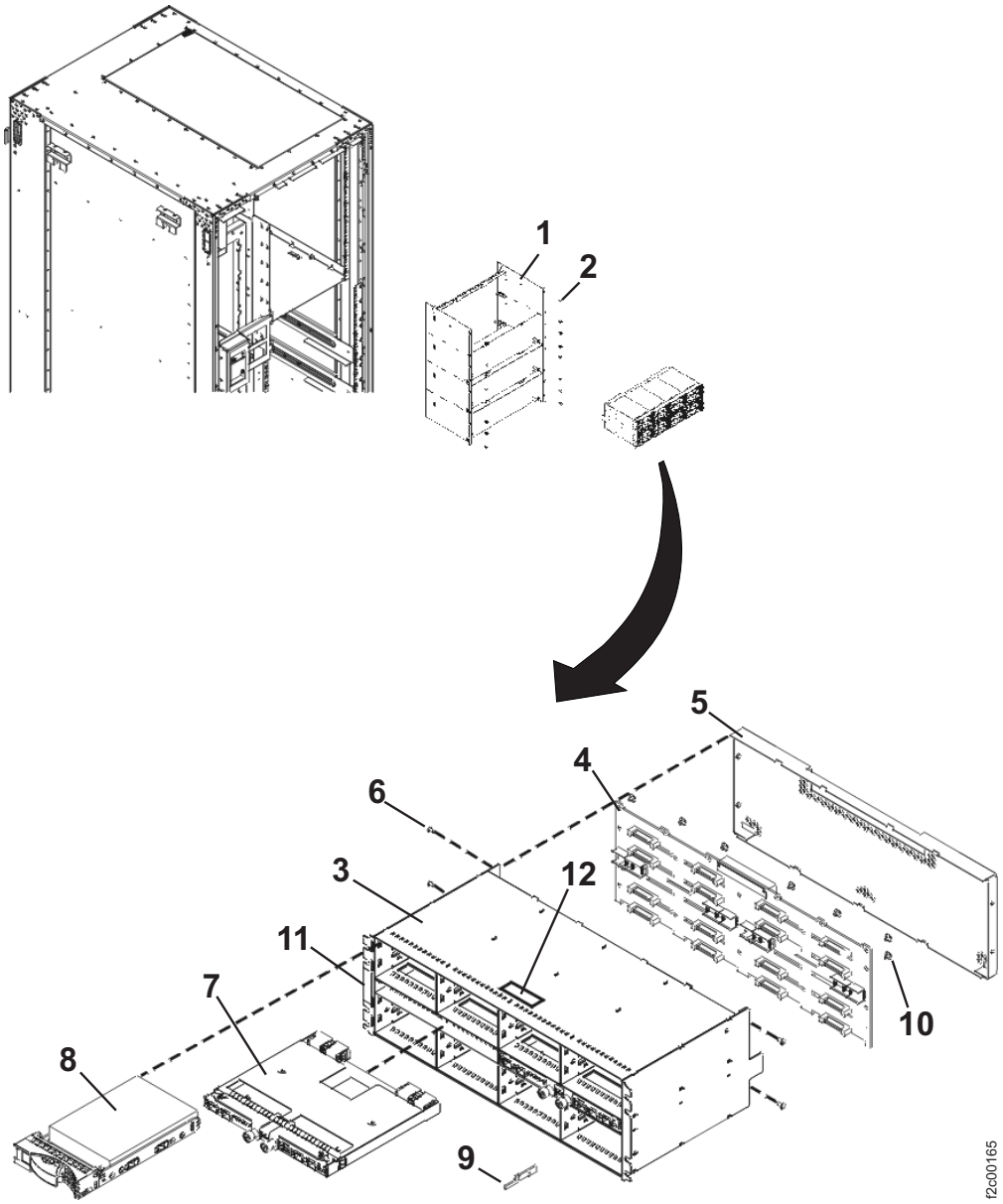


Figure 72. Storage enclosure parts

Table 76. Storage enclosure parts

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
1	Storage enclosure wrapper		17P7686	
2	Screw		77G0599	
3	Chassis[2]		22R5011	22R4844
4	Storage enclosure backplane	SEBP	24R1062	95P1961
5	Cover		22R5194	22R5194
6	Screw (M3x6)		05J7942	
7	Fibre channel interface card (FCIC)	FCIC	24R1058	95P1960

Table 76. Storage enclosure parts (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
8	Disk drive dummy module (slot baffle)	SBFL	24R1485	22R2805
8	Disk drive module (DDM), 73 GB 15K RPM, version 1 (replace with same version)	D07C (DDM)	22R1770	23R0828
8	Disk drive module (DDM), 73 GB 15K RPM, version 2 (replace with same version)	D07C (DDM)	22R5488	23R0828
8	Disk drive module (DDM), 146 GB 10K RPM, version 1 (replace with same version)	D15B (DDM)	22R1558	23R0829
8	Disk drive module (DDM), 146 GB 10K RPM, version 2 (replace with same version)	D15B (DDM)	22R5489	23R0829
8	Disk drive module (DDM), 146 GB 15K RPM	D15C (DDM)	22R5492	23R0830
8	Disk drive module (DDM), 300 GB 10K RPM, standard version (replace with same version)	D30C (DDM)	22R1559	23R0831
8	Disk drive module (DDM), 300 GB 10K RPM, RPQ version[5] (replace with same version)	D30C (DDM)	22R5491	23R0831
8	Disk drive module (DDM), 500 GB 7.2K RPM	N50A		22R5950
9	Key, Fibre Channel		22R2678	22R2678
10	Screw		05J7942	05J7942
11	Label, serial number		44F0924	44F0924
12	Label, safety > 35 lbs		5423461	5423461

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000. CCINs that are in parentheses are reported by earlier levels of the LIC code bundle.
2. The enclosure chassis is a special order item. The chassis to be replaced has bar code labels with the specific MTMS (machine type model serial number) information. Contact next level of support to determine if the label can be moved to the new chassis. The MTMS should stay the same as there is not an HMC menu option to change it. The MTMS on the bar code label must match the MTMS in the code, as the enclosure serial number is used in serviceable event FRU list and exchange part lists.

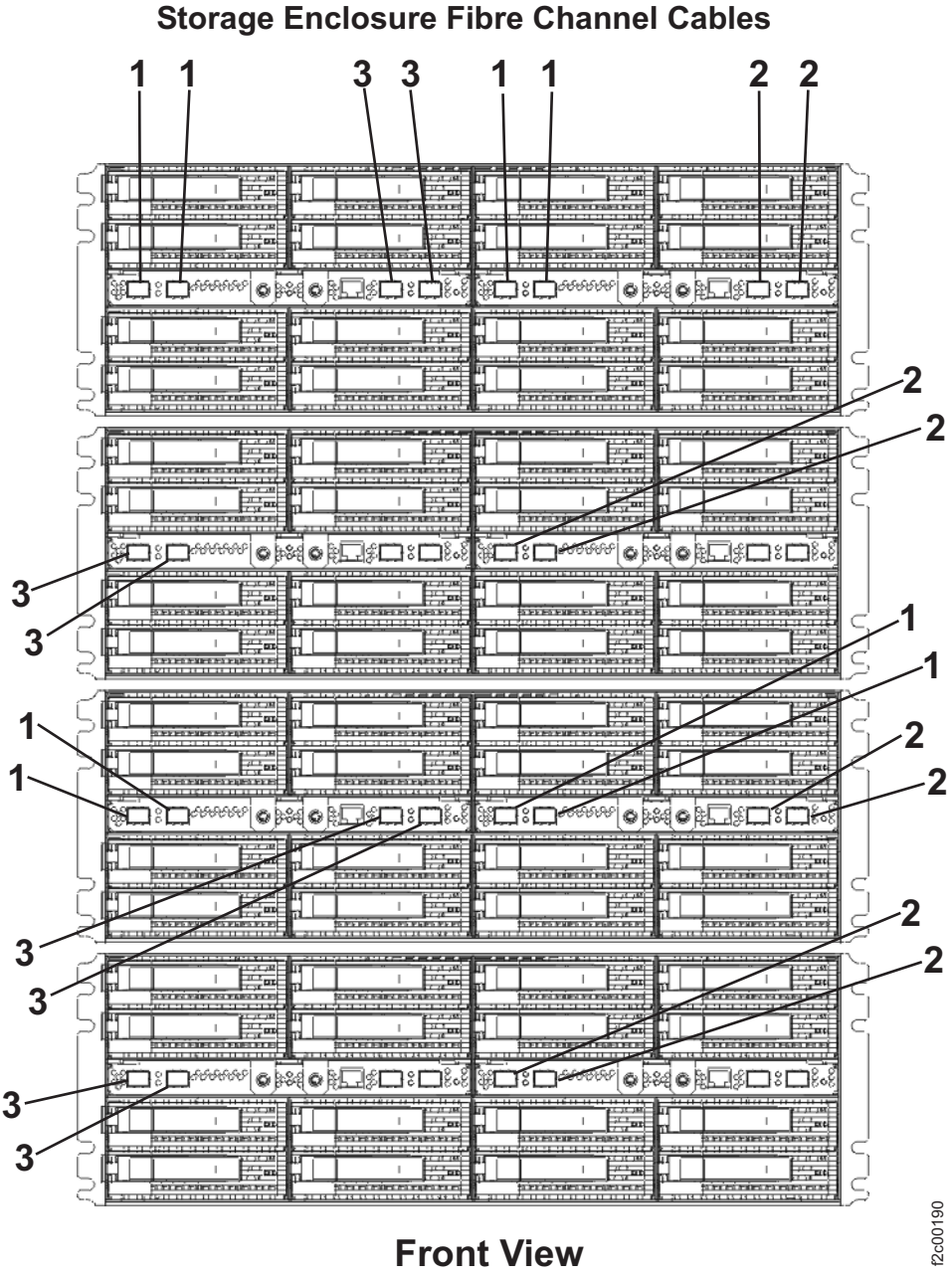


Figure 73. Storage enclosure cables (front)

IBM PART NUMBER
EC NUMBER
MANUFACTURER'S NAME OR CODE
COUNTRY OF ORIGIN
DATE OF MANUFACTURE (WEEK AND YEAR, ex: 26-2004)

f2c00562

Figure 74. The format of information on a cable bundle label

CAUTION:
Cables must only be replaced one at a time using the appropriate guided maintenance procedure.

Table 77. Storage enclosure cables (front)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
1-3	Cable, Fibre Channel	FCBL[2]	[3]	[3]

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000.
2. Later levels of the LIC code bundle report this CCIN. Earlier levels do not report a CCIN.
3. Use the following information to order a cable:
   - Cable bundles have a P/N label. See Figure 74 on page 97.
   - Individual cables within a bundle do NOT have a P/N label; individual replacement cables DO have a P/N label.
   - Cable bundles are not field-stocked. They must be special ordered.
   - There are only four individual replacement cables that are field-stocked:
     - P/N 17P8059 (version 1 P/N) or 22R5251 (version 2 P/N): 0.6 meters (2 ft.)
     - P/N 17P8060 (version 1 P/N) or 22R5252 (version 2 P/N): 2.5 meters (8 ft. 2 in.)
     - P/N 17P8061 (version 1 P/N) or 22R5253 (version 2 P/N): 5.5 meters (18 ft.)
     - P/N 17P8062 (version 1 P/N) or 22R5254 (version 2 P/N): 9.0 meters (29 ft. 6 in.)
   - To receive an individual replacement cable of the proper length, enter the P/N of the cable bundle in the parts ordering system. The system will automatically substitute an individual cable that is the same length or longer than the cable that you are exchanging.

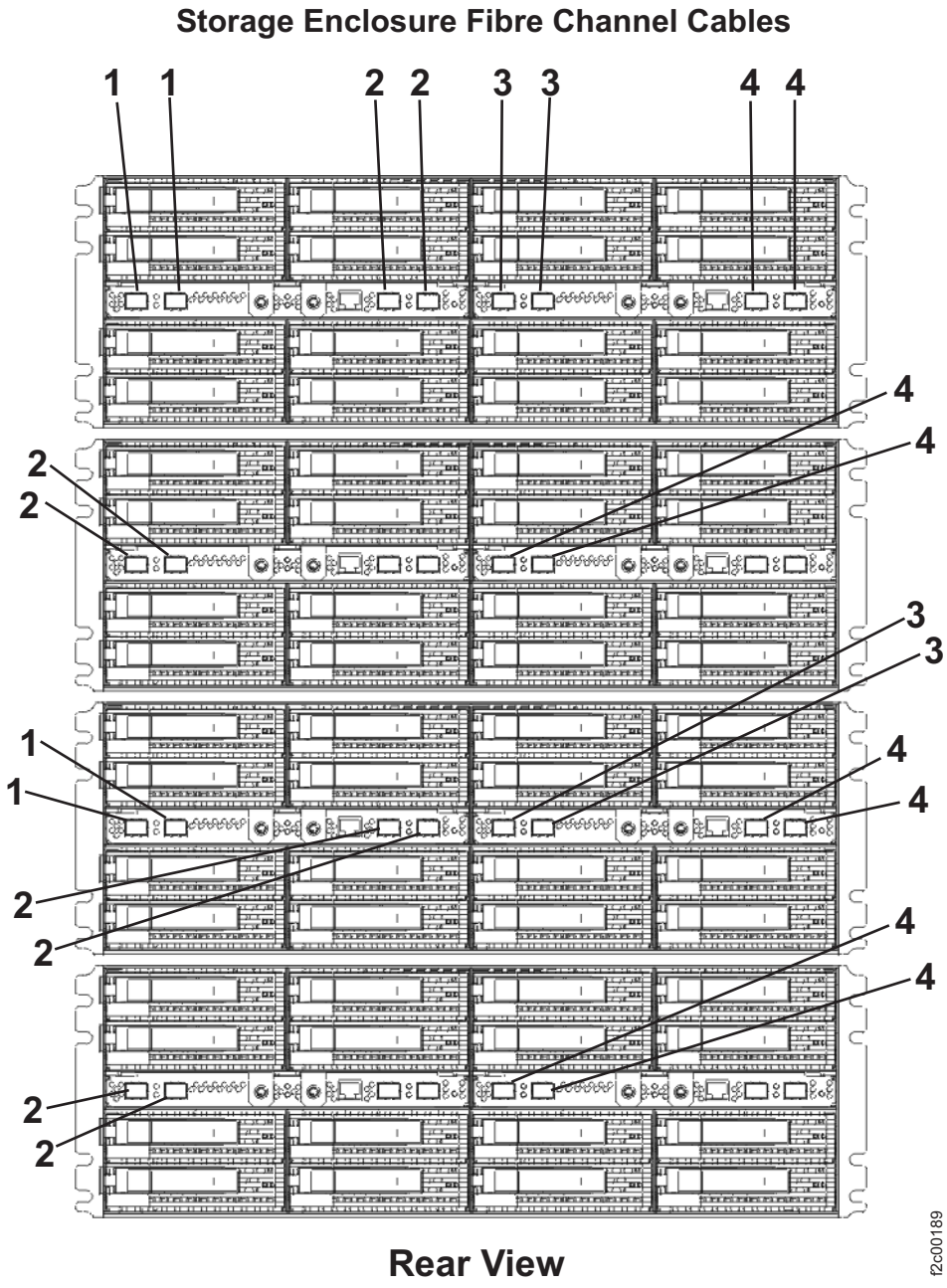


Figure 75. Storage enclosure cables (rear)

CAUTION:
Cables must only be replaced one at a time using the appropriate guided maintenance procedure.

Table 78. Storage enclosure cables (rear)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2
1-4	Cable, Fibre Channel	FCBL[2]	[3]	[3]

Table 78. Storage enclosure cables (rear) (continued)

Index	Part name	CCIN[1]	Part number	
			Version 1	Version 2

Notes:

1. Important, read this entire paragraph as there are exceptions to what part number to order. The custom card identification number (CCIN) identifies the physical features and logical behavior of a part. If two parts appear physically identical but have different CCINs, they are not interchangeable unless stated elsewhere in the maintenance package or by the next level of support. If two parts have different part numbers and yet have the same CCIN, they are interchangeable. When you order a part number (P/N) reported in a serviceable event or call home record, please check if the parts ordering system has a conditional substitute for DS8000.
2. Later levels of the LIC code bundle report this CCIN. Earlier levels do not report a CCIN.
3. Use the following information to order a cable:
   - Cable bundles have a P/N label. See Figure 74 on page 97.
   - Individual cables within a bundle do NOT have a P/N label; individual replacement cables DO have a P/N label.
   - Cable bundles are not field-stocked. They must be special ordered.
   - There are only four individual replacement cables that are field-stocked:
     - P/N 17P8059 (version 1 P/N) or 22R5251 (version 2 P/N): 0.6 meters (2 ft.)
     - P/N 17P8060 (version 1 P/N) or 22R5252 (version 2 P/N): 2.5 meters (8 ft. 2 in.)
     - P/N 17P8061 (version 1 P/N) or 22R5253 (version 2 P/N): 5.5 meters (18 ft.)
     - P/N 17P8062 (version 1 P/N) or 22R5254 (version 2 P/N): 9.0 meters (29 ft. 6 in.)
   - To receive an individual replacement cable of the proper length, enter the P/N of the cable bundle in the parts ordering system. The system will automatically substitute an individual cable that is the same length or longer than the cable that you are exchanging.

Location codes in serviceable events

This section contains information about location codes that are in serviceable events. For information about physical location codes that are in the MES/Install instructions, see “Location codes in MES/Install instructions” on page 125.

How to translate a location code

For details, see MAP1245 Finding FRUs using location codes.

CEC enclosure location codes

The list below summarizes the CEC enclosure assembly with figures and related tables that contain location code information. For part numbers, see “CEC enclosure part numbers” on page 9.

Table 79.

Assembly	Reference
CEC enclosure front overview	Figure 76
CEC enclosure front locations	Figure 77 on page 102
CEC enclosure rear overview	Figure 78 on page 103
CEC enclosure rear locations	Figure 79 on page 104
CEC enclosure memory DIMM locations	Figure 80 on page 106
CEC enclosure PCI bridge sets and PCI slot locations	Table 82 on page 105

CEC enclosure front overview

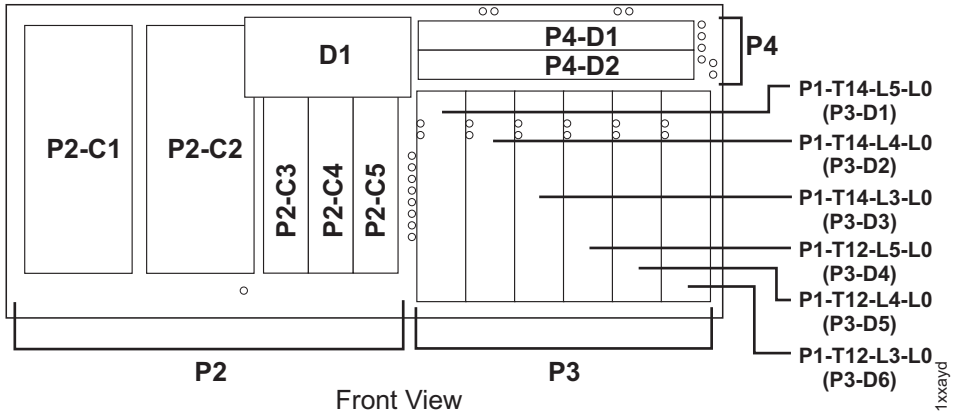


Figure 76. CEC enclosure locations (front overview)

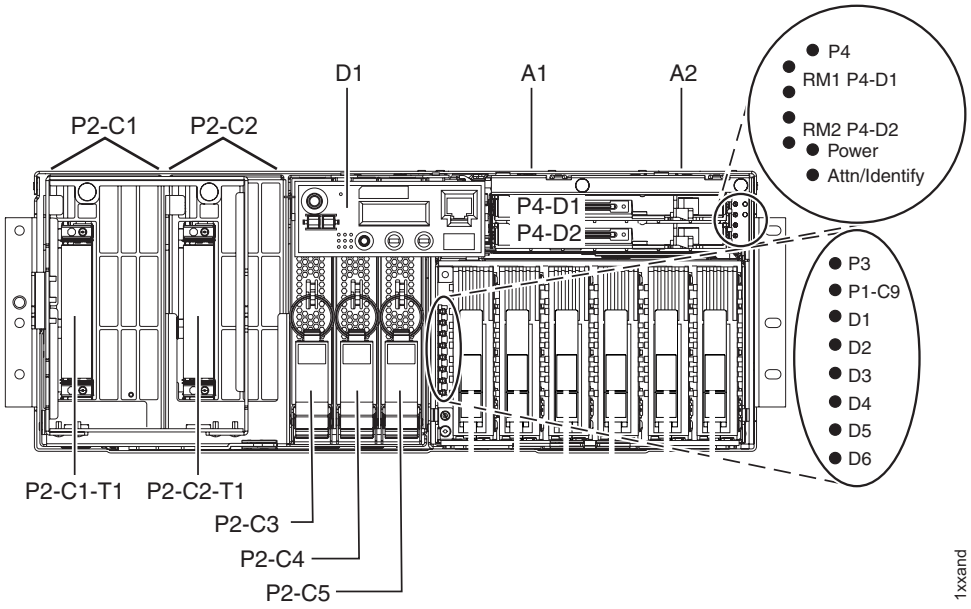


Figure 77. CEC enclosure locations (front)

Table 80. Location codes for the CEC enclosure (front)

Location code	Part name	Connector
U7879.001.sssssss-A1	Fan inside CEC enclosure power supply	
U7879.001.sssssss-A2	Fan inside CEC enclosure power supply	
U7879.001.sssssss-D1	CEC enclosure control panel	
U7879.001.sssssss-P2	System processor backplane assembly	
U7879.001.sssssss-P2-C1	System processor card 1.5 GHz 1.9 GHz nominal voltage 1.9 GHz high voltage	
U7879.001.sssssss-P2-C1-T1		SMP V-bus
U7879.001.sssssss-P2-C1-Cx (x = slot 1-8, top to bottom)	Memory DIMM (2-, 4-, or 8 GB)	
U7879.001.sssssss-P2-C2	System processor card 1.5 GHz 1.9 GHz nominal voltage 1.9 GHz high voltage	
U7879.001.sssssss-P2-C2-T1		SMP V-bus
U7879.001.sssssss-P2-C2-Cx (x = slot 1-8, top to bottom)	Memory DIMM (2-, 4-, or 8 GB)	
U7879.001.sssssss-P2-C3	System processor voltage card	
U7879.001.sssssss-P2-C4	System processor voltage card	
U7879.001.sssssss-P2-C5	System processor voltage card	
U7879.001.sssssss-P3	CEC disk drive backplane assembly	
U7879.001.sssssss-P1-T14-L5-L0 (P3-D1 on label in front of drives)	Disk drive	

Table 80. Location codes for the CEC enclosure (front) (continued)

Location code	Part name	Connector
U7879.001.sssssss-P1-T14-L4-L0 (P3-D2 on label in front of drives)	Disk drive	
U7879.001.sssssss-P1-T14-L3-L0 (P3-D3 on label in front of drives)	Disk drive	
U7879.001.sssssss-P1-T12-L5-L0 (P3-D4 on label in front of drives)	Disk drive	
U7879.001.sssssss-P1-T12-L4-L0 (P3-D5 on label in front of drives)	Disk drive	
U7879.001.sssssss-P1-T12-L3-L0 (P3-D6 on label in front of drives)	Disk drive	
U7879.001.sssssss-P4	Media backplane assembly	
U7879.001.sssssss-P4-D1	DVD-RAM drive (top)	
U7879.001.sssssss-P4-D2	not used (bottom)	

CEC enclosure rear overview

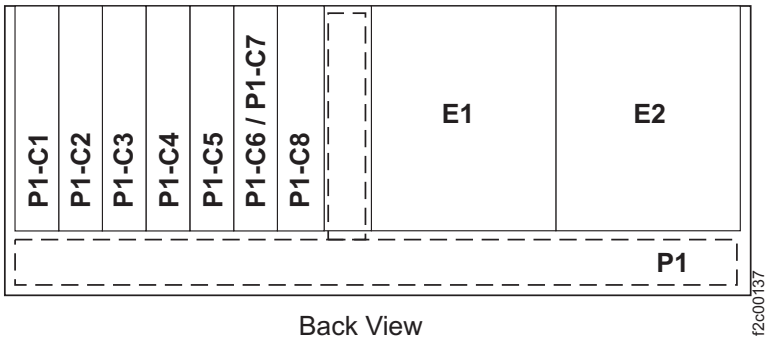


Figure 78. CEC enclosure locations (rear overview)

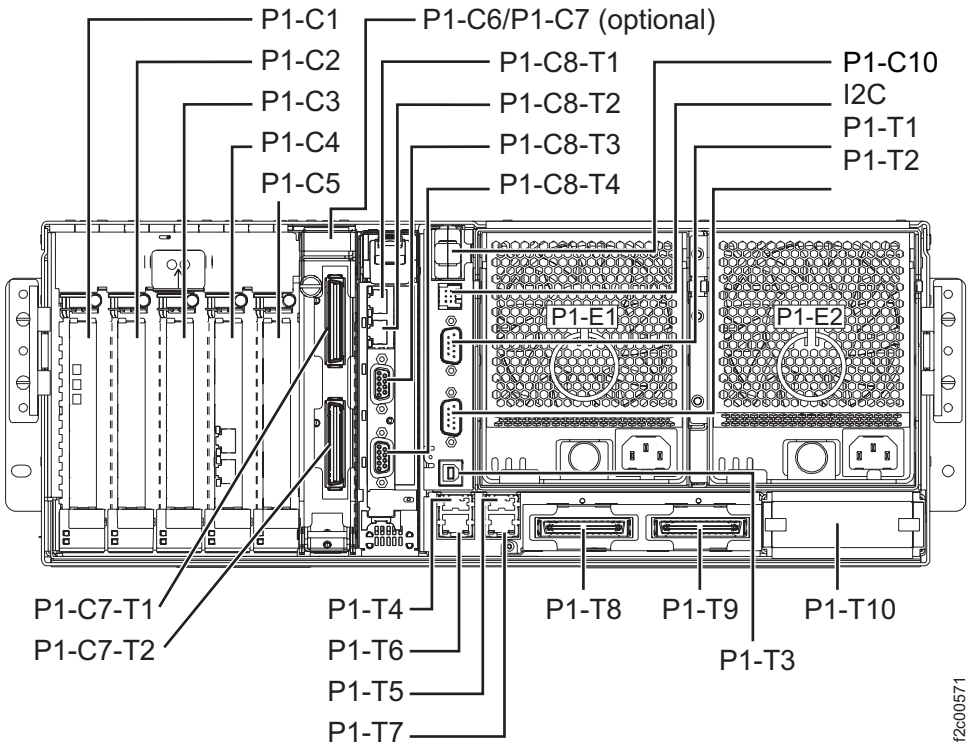


Figure 79. Location codes for the CEC enclosure (rear)

Table 81. Location codes for the CEC enclosure (rear) - Except PCI bridge sets

Location code	Part name	Connector
U7879.001.sssssss-P1[1]	CEC enclosure I/O backplane assembly	
U7879.001.sssssss-P1-I2C (printed on card sheetmetal)		I2C to RPC cards
U7879.001.sssssss-P1-T1		System port 2
U7879.001.sssssss-P1-T2		System port 1
U7879.001.sssssss-P1-T3		Rack ID
U7879.001.sssssss-P1-T4		USB 1
U7879.001.sssssss-P1-T5		USB 2
U7879.001.sssssss-P1-T6		Ethernet 1
U7879.001.sssssss-P1-T7		Ethernet 2
U7879.001.sssssss-P1-T8		HSL/RIO 0
U7879.001.sssssss-P1-T9		HSL/RIO 1
U7879.001.sssssss-P1-T10		System connector
U7879.001.sssssss-P1-T12	SCSI controller 1 - bus 0, on I/O backplane	
U7879.001.sssssss-P1-T13	SCSI controller 1 - bus 1, on I/O backplane	
U7879.001.sssssss-P1-T14	SCSI controller 2 - bus 0, on I/O backplane	
U7879.001.sssssss-P1-T15	IDE controller, on I/O backplane	

Table 81. Location codes for the CEC enclosure (rear) - Except PCI bridge sets (continued)

Location code	Part name	Connector
U7879.001.sssssss-P1-C1	NVC card or Ethernet card **Note:** In newer machines, the NVC card has been eliminated.	
U7879.001.sssssss-P1-C2	not used	
U7879.001.sssssss-P1-C3	not used	
U7879.001.sssssss-P1-C4	Ethernet card (optional)	
U7879.001.sssssss-P1-C4-T1		(top connector)
U7879.001.sssssss-P1-C4-T2		(bottom connector)
U7879.001.sssssss-P1-C5	NVC card or Ethernet card **Note:** In newer machines, the NVC card has been eliminated.	
U7879.001.sssssss-P1-C7	CEC enclosure RIO card (optional)	
U7879.001.sssssss-P1-C7-T1		HSL/RIO 0
U7879.001.sssssss-P1-C7-T2		HSL/RIO 1
U7879.001.sssssss-P1-C8	Service processor card	
U7879.001.sssssss-P1-C8-E1	Time-of-day battery on service processor card	
U7879.001.sssssss-P1-C8-T1		Ethernet
U7879.001.sssssss-P1-C8-T2		Ethernet
U7879.001.sssssss-P1-C8-T3		SPCN 0
U7879.001.sssssss-P1-C8-T4		SPCN 1
U7879.001.sssssss-P1-C10	VPD card	
U7879.001.sssssss-E1	CEC enclosure power supply	
U7879.001.sssssss-E2	CEC enclosure power supply	
Notes: 1. For the location codes of PCI bridge sets (multi-adapter bridge domain), see Table 82.		

Table 82. Location codes for the CEC enclosure (rear) - Multi-adapter bridge domain / Peripheral Component Interconnect (PCI) bridge set

Location code[1]	Part name	Connector
U7879.001.sssssss-P1 (Planar)	PCI bridge set 1 (on the CEC enclosure I/O backplane assembly)	
U7879.001.sssssss-P1 (Planar) U7879.001.sssssss-P1-C1 (PCI slot) U7879.001.sssssss-P1-C2 (PCI slot)	PCI bridge set 2 (on the CEC enclosure I/O backplane assembly)	

Table 82. Location codes for the CEC enclosure (rear) - Multi-adapter bridge domain / Peripheral Component Interconnect (PCI) bridge set (continued)

Location code[1]	Part name	Connector
U7879.001.sssssss-P1 (Planar) U7879.001.sssssss-P1-C3 (PCI slot) U7879.001.sssssss-P1-C4 (PCI slot) U7879.001.sssssss-P1-C5 (PCI slot) U7879.001.sssssss-P1-C6 (PCI slot)	PCI bridge set 3 (on the CEC enclosure I/O backplane assembly)	
Notes: 1. See Figure 76 on page 101.		

CEC enclosure memory DIMM location codes

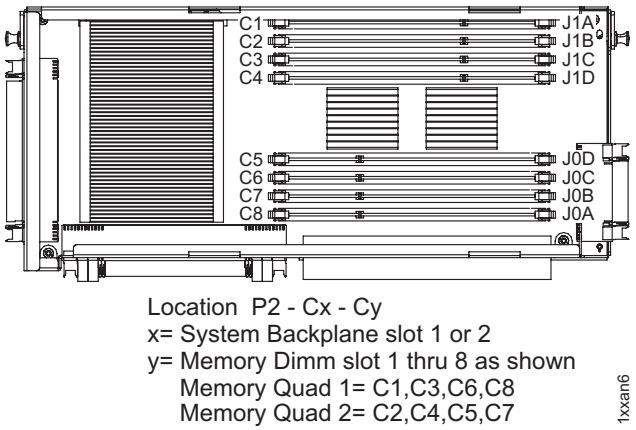


Figure 80. CEC memory DIMM card locations

Table 83. Location codes for the CEC enclosure memory DIMM

Location code	Part name
P2-Cx-Cy x = System backplane slot 1 or 2 y = Memory DIMM slot 1 - 8 as shown	Memory DIMM (2-, 4-, or 8 GB)

I/O enclosure location codes

Use this section to find location codes for parts on the I/O enclosure. For part numbers, see "I/O enclosure part numbers" on page 29.

Table 84. I/O enclosure locations (front)

Part	See
I/O enclosure fan	Figure 81 on page 107
I/O enclosure power supply, left	Figure 81 on page 107
I/O enclosure power supply, right	Figure 81 on page 107

Table 85. I/O enclosure locations (rear)

Assembly	Reference
Device adapter card	Figure 83 on page 108
ESCON host card	Figure 84 on page 109
Fibre channel host card	Figure 85 on page 109
I/O enclosure backplane	Figure 82 on page 108
I/O enclosure RIO card	Figure 82 on page 108

I/O enclosure locations (front)

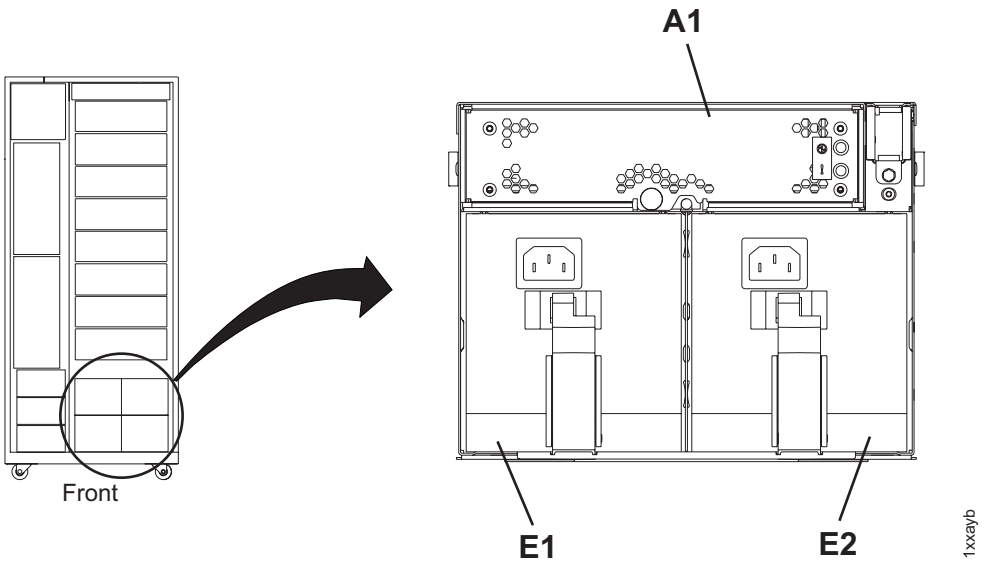


Figure 81. I/O enclosure locations (front)

Table 86. Location codes for the I/O enclosure (front)

Location code	Part name	Connector
U1300.001.sssssss-A1	I/O enclosure fan	
U1300.001.sssssss-E1	I/O enclosure power supply	
U1300.001.sssssss-E2	I/O enclosure power supply	

I/O enclosure locations (rear)

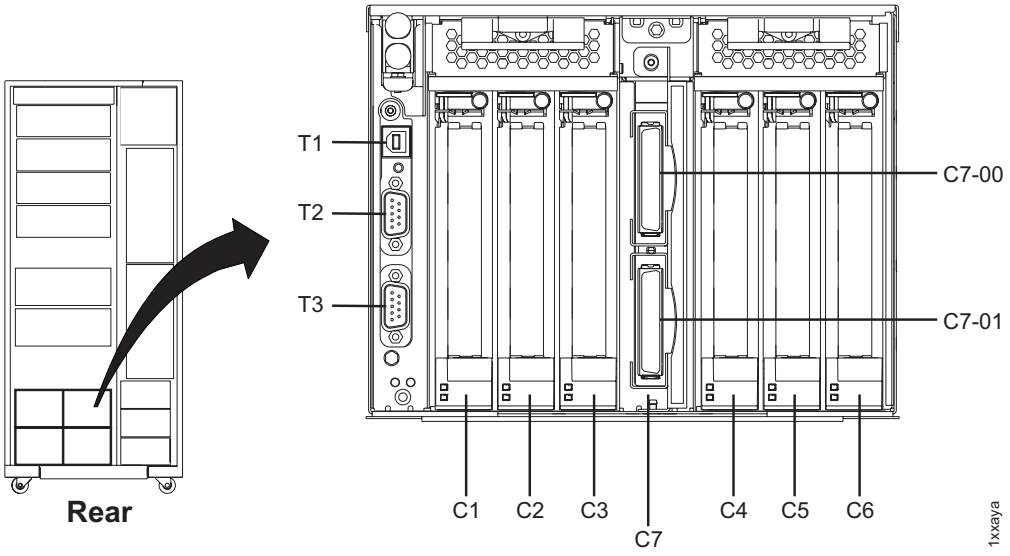


Figure 82. I/O enclosure locations (rear)

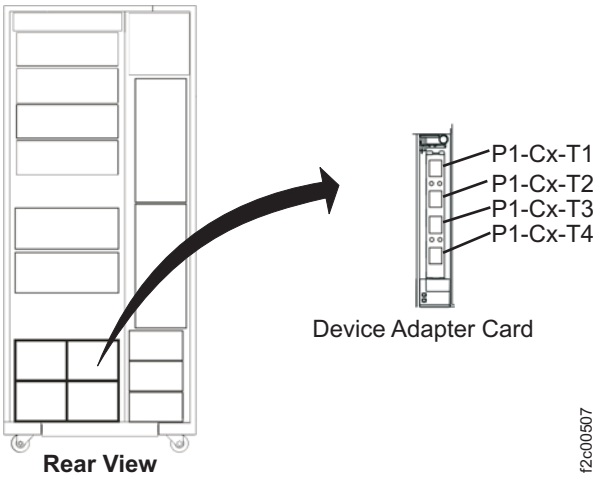


Figure 83. Location codes for the device adapter card

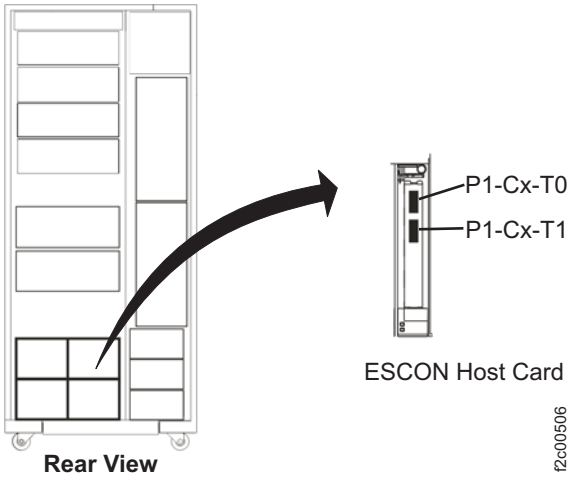


Figure 84. Location codes for the ESCON host card

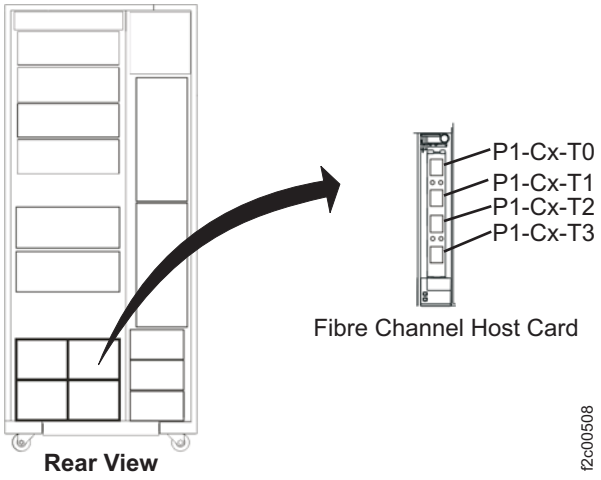


Figure 85. Location codes for the Fibre channel host card

Table 87. Location codes for the I/O enclosure (rear)

Location code	Part name	Connector
U1300.001.sssssss	I/O enclosure	
U1300.001.sssssss-P1	I/O enclosure backplane	
U1300.001.sssssss-P1-Cx (x = 1, 2, 4, 5)	ESCON host card	
U1300.001.sssssss-P1-Cx-Ty (x = 1, 2, 4, 5) (y = 0, 1, 2, 3 top to bottom)[1]		Customer ESCON cable
U1300.001.sssssss-P1-Cx (x = 1, 2, 4, 5)	Fibre channel host card (short wave, long wave)	
U1300.001.sssssss-P1-Cx-Ty (x = 1, 2, 4, 5) (y = 0, 1, 2, 3 top to bottom)[1]		Customer Fibre cable
U1300.001.sssssss-P1-Cx (x = 3, 6)	Device adapter card	

Table 87. Location codes for the I/O enclosure (rear) (continued)

Location code	Part name	Connector
U1300.001.sssssss-P1-Cx-Ty (x = 3, 6) (y = 1, 2, 3, 4 top to bottom)[1]		FC-AL cable
U1300.001.sssssss-P1-C7	I/O enclosure RIO card	
U1300.001.sssssss-P1-C7-00		RIO (top)
U1300.001.sssssss-P1-C7-01		RIO (bottom)
U1300.001.sssssss-P1-T1		Rack identity card cable
U1300.001.sssssss-P1-T2		SPCN 0
U1300.001.sssssss-P1-T3		SPCN 1

Notes:

1. Some physical location codes begin with zero and count upwards, others begin with one and count upwards. The storage facility uses parts from different hardware platforms. Most microcode and firmware logical resources identifiers begin with zero and count upwards.

Management console (MC) server location codes

Figure 86 (X335 server), Figure 87 on page 111 (X336 server), and Table 88 on page 111 contain location code information for the management console (MC) server. For part numbers, see "Management console (MC) part numbers" on page 38.

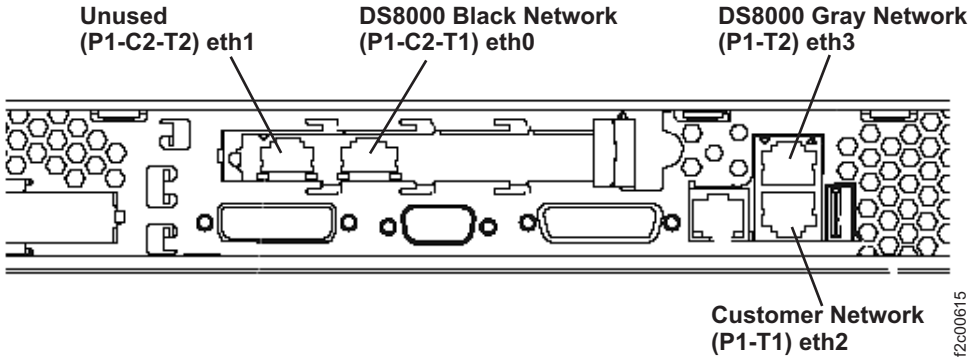


Figure 86. Ethernet connectors on the rear of the X335 management console server

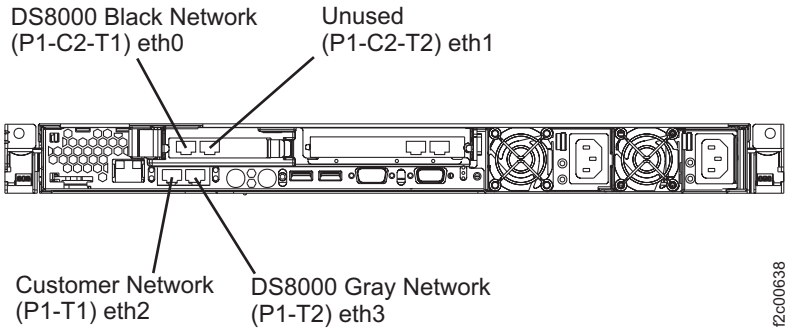


Figure 87. Ethernet connectors on the rear of the X336 management console server

Table 88. Location codes for the Management Console (HMC) server

Location code	Part name	Connected to
8676.mmm.sssssss-P1-C2-T1	Ethernet card	Ethernet
8676.mmm.sssssss-P1-C2-T2	Ethernet card	(not used)
8676.mmm.sssssss-P1-T1	System board[1]	Ethernet
8676.mmm.sssssss-P1-T2	System board[1]	Ethernet

Notes:

1. For more information, see the appropriate *Hardware Maintenance Manual and Troubleshooting Guide* (X335 or X336), chapter 7. The guide is on the DS8000 documentation CD (the CD is part of the ship group).

Rack power and cooling location codes

Use the following table to find the part of the rack power and cooling system for which you seek location code information. For part numbers, see "Rack power and cooling part numbers" on page 60.

Part	See
Locations overview Base rack Expansion rack	 Figure 88 on page 112 Figure 89 on page 113
Battery module set	Figure 94 on page 118
DASD fan tray assembly	Figure 95 on page 119
Fan sense card	Figure 96 on page 120
Local remote switch card	Figure 97 on page 121
Primary power supply (PPS) Front 208VDC base module Fans PFC module Rear 5/12V DDM power module AC input power module Booster power module Sequencer module	 Figure 90 on page 114 Figure 91 on page 115
Rack identity card	Figure 98 on page 121
RPC card	Figure 99 on page 122

Part	See
System z™ local remote switch card	Figure 100 on page 123

Overview of locations (base rack)

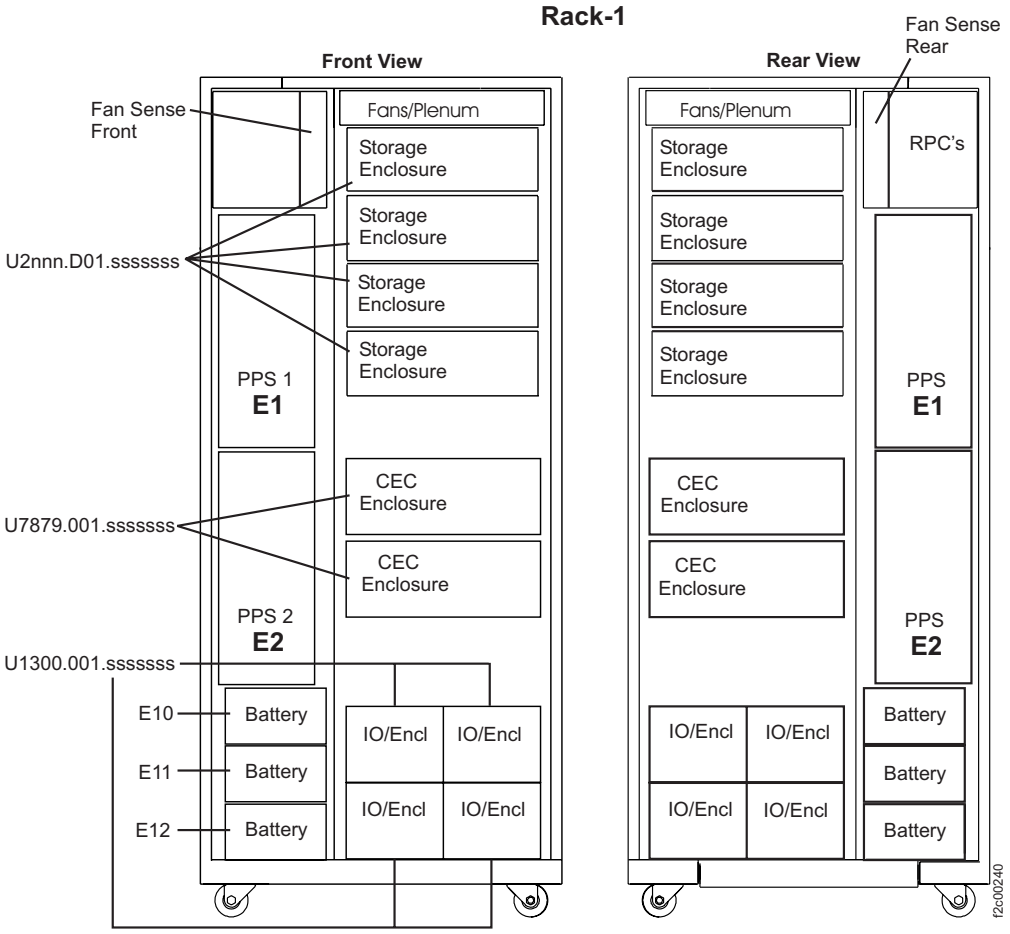


Figure 88. Primary power supply rack locations (overview)

Table 89. Location codes for a base rack

Location code	Part name
E10 thru E12	Battery module chassis
E1 and E2	Primary power supply
U7879.001.*ssssss*	CEC enclosure
U1300.001.*sssssss*	I/O enclosure
U2*nnn*.D01.*sssssss*	Storage enclosure

Overview of locations (expansion rack)

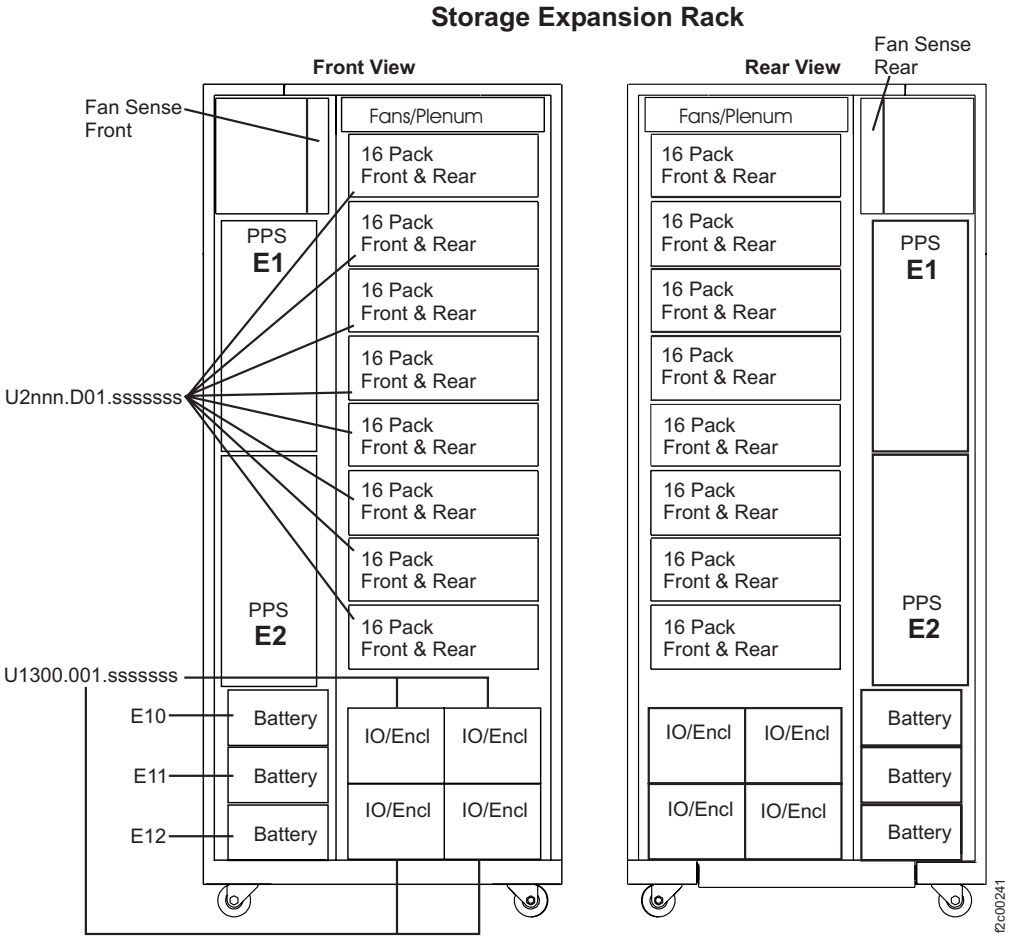


Figure 89. Storage expansion rack locations

Table 90. Location codes for an expansion rack

Location code	Part name
E10 thru E12	Battery module
E1 and E2	Primary power supply
U1300.001.*sssssss*	I/O enclosure
U2*nnn*.D01.*sssssss*	Storage enclosure

PPS locations (front)

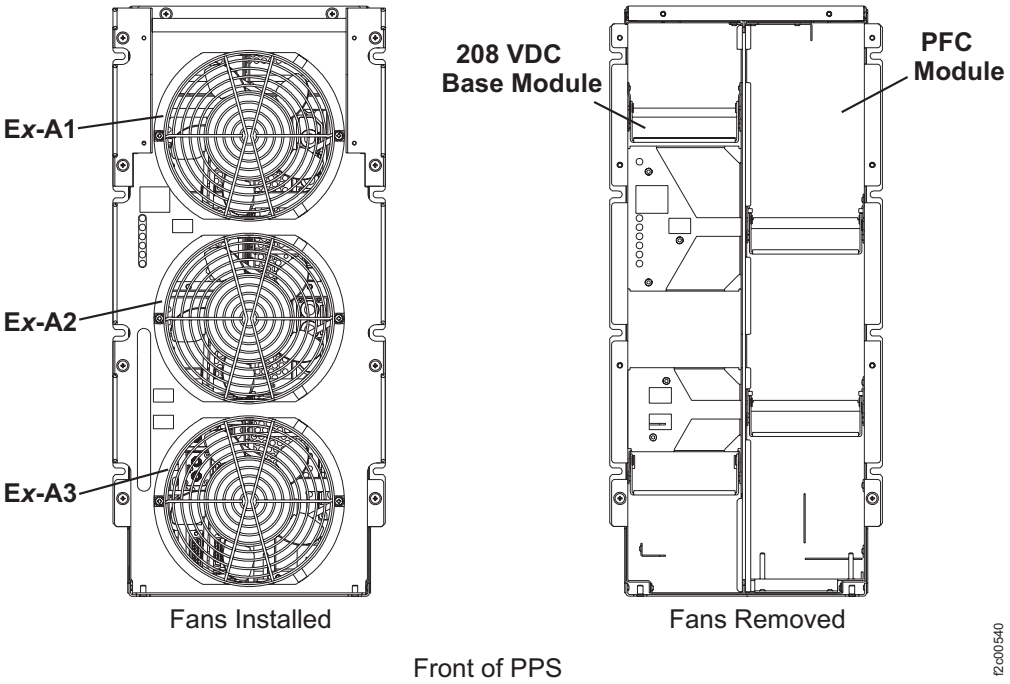


Figure 90. Location codes for the PPS (front)

Table 91. PPS locations (front)

Location code	Part name	Connector
U2*nnn*.mmm.sssssss-E*x*[1]	Primary power supply (PPS)	
U2*nnn*.mmm.sssssss-E*x*-A1	PPS fan (top)	Power/signal
U2*nnn*.mmm.sssssss-E*x*-A2	PPS fan (middle)	Power/signal
U2*nnn*.mmm.sssssss-E*x*-A3	PPS fan (bottom)	Power/signal
[2]	208VDC base module	
[2]	PFC module	

Notes:

1. Where *x* is 1 = top PPS; where *x* is 2 = bottom PPS.
2. A code is not associated with the location of this part. The part is shown only for reference.

PPS locations (rear)

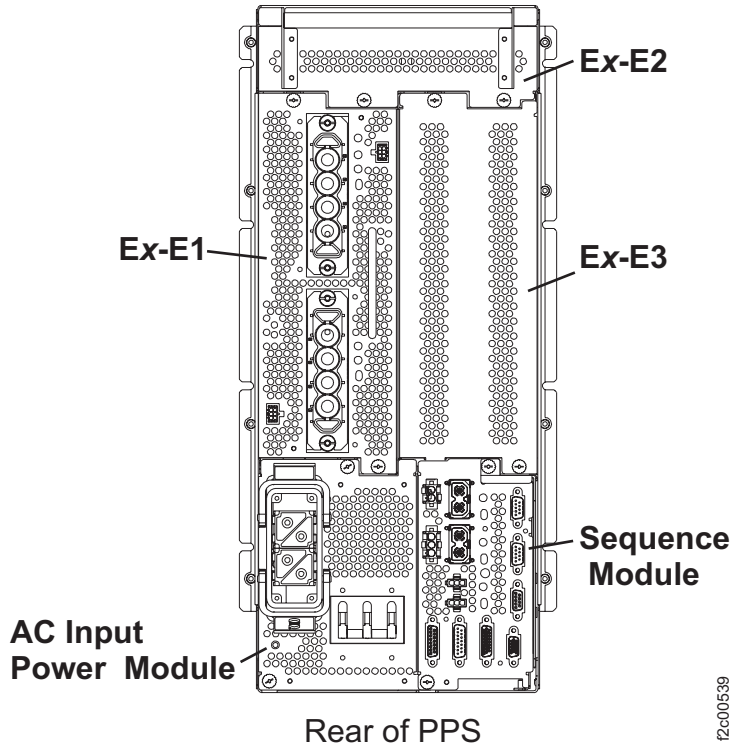


Figure 91. Location codes for the PPS (rear)

Table 92. PPS locations (rear)

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-E*x*[1]	Primary power supply (PPS)	
U2*nnn.mmm.sssssss*-E*x*-E1	5/12V DDM power module	
U2*nnn.mmm.sssssss*-E*x*-E2	Booster power module (optional)	
U2*nnn.mmm.sssssss*-E*x*-E3	5/12V DDM power module (optional)[2]	
[3]	AC input power module[4]	
[3]	Sequencer module[5]	

Notes:

1. Where *x* is 1 = top PPS; where *x* is 2 = bottom PPS.
2. Expansion rack with room for 16 storage enclosures.
3. A code is not associated with the location of this part. The part is shown only for reference.
4. For details, see Figure 92 on page 116.
5. For details, see Figure 93 on page 117.

AC input power module locations

A code is not associated with the location of the parts on the AC input power module. These parts are shown only for reference.

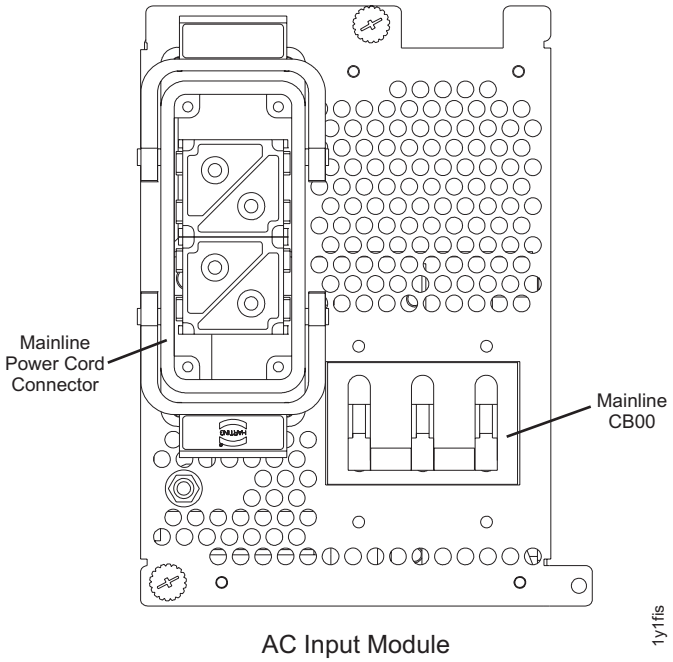


Figure 92. Location codes for the AC input power module

Sequencer module locations

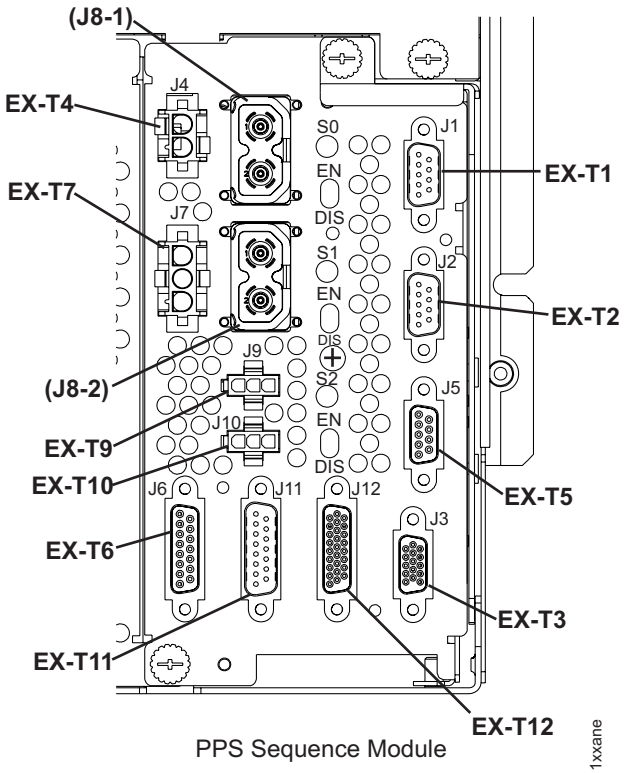


Figure 93. Location codes for the sequencer module

Table 93. Sequencer module locations

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-E*x*	Sequencer module	
U2*nnn.mmm.sssssss*-E*x*-T1		RPC 1 communication
U2*nnn.mmm.sssssss*-E*x*-T2		RPC 2 communication
U2*nnn.mmm.sssssss*-E*x*-T3		PPS to PPS communication
U2*nnn.mmm.sssssss*-E*x*-T4		UEPO loop
U2*nnn.mmm.sssssss*-E*x*-T5		Rack identity card
U2*nnn.mmm.sssssss*-E*x*-T6		Battery backup unit interface
U2*nnn.mmm.sssssss*-E*x*-T7		Battery backup unit charge
U2*nnn.mmm.sssssss*-E*x*-T11		Fan sense card
U2*nnn.mmm.sssssss*-E*x*-T12		Fan sense card

Battery module set rear locations

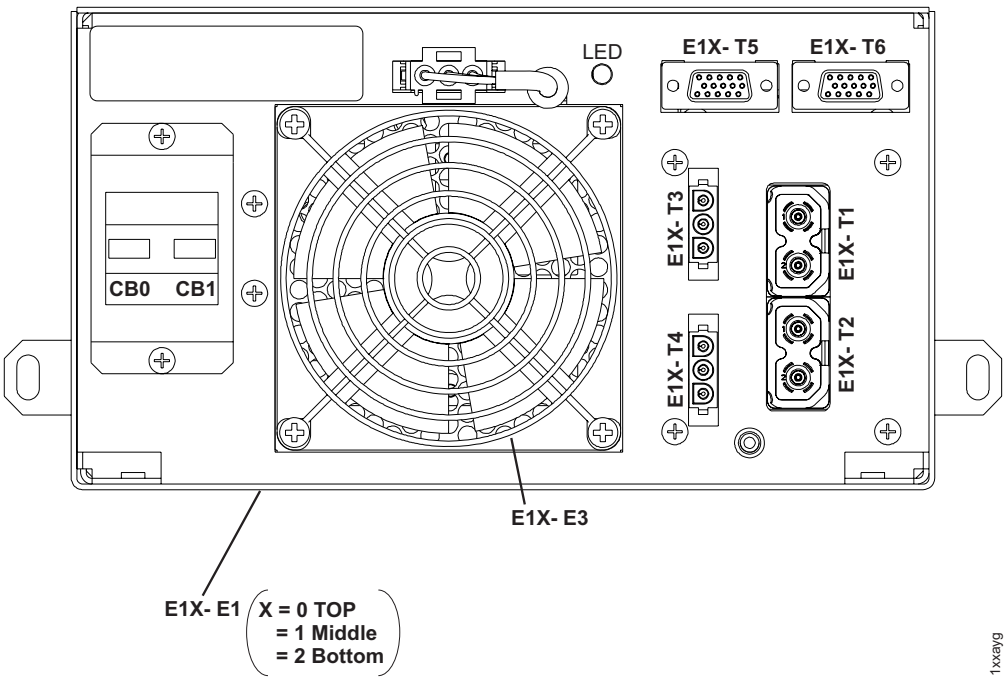


Figure 94. Battery module set locations (rear)

Table 94. Battery module set rear locations

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-E1*x*-E1 *x* = 0 (top position) *x* = 1 (middle position) *x* = 2 (bottom position)	Battery module chassis	
U2*nnn.mmm.sssssss*-E1*x*-E2	Battery module set (3 battery modules)	
U2*nnn.mmm.sssssss*-E1*x*-T1		208VDC bus bar
U2*nnn.mmm.sssssss*-E1*x*-T2		208VDC bus bar
U2*nnn.mmm.sssssss*-E1*x*-T3		PPS charging
U2*nnn.mmm.sssssss*-E1*x*-T4		PPS charging
U2*nnn.mmm.sssssss*-E1*x*-T5		PPS control interface
U2*nnn.mmm.sssssss*-E1*x*-T6		PPS control interface
U2*nnn.mmm.sssssss*-E1*x*-A1	Battery module chassis fan	

DASD fan tray assembly

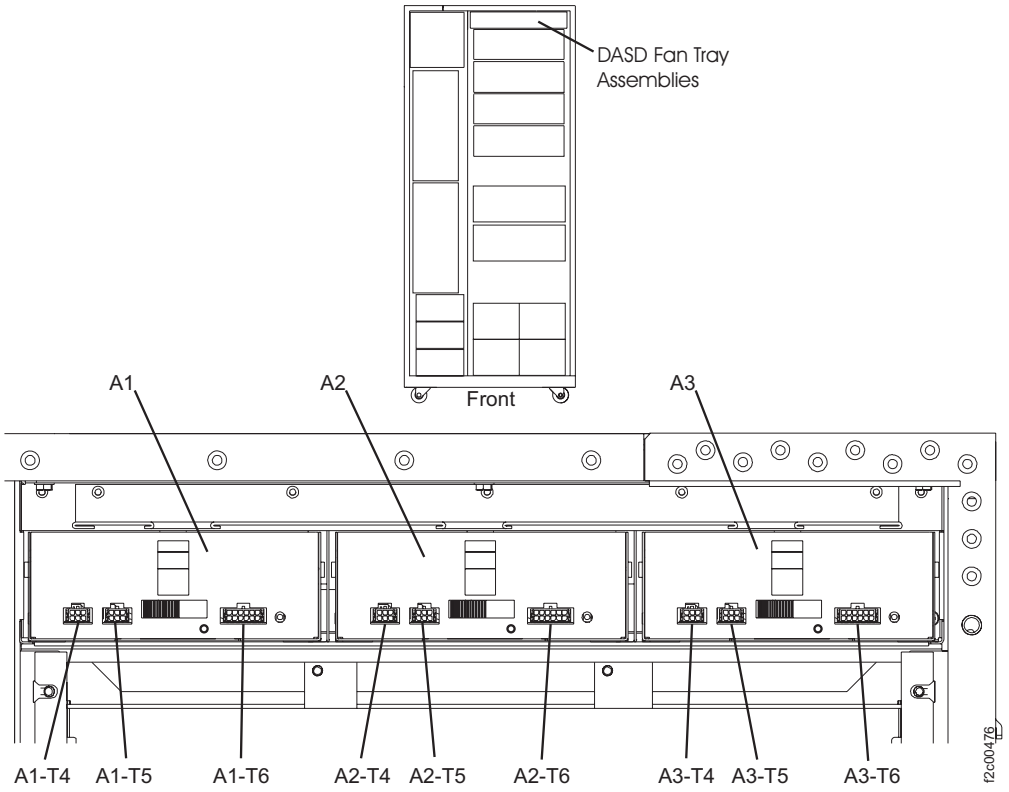


Figure 95. Location codes for the DASD fan tray assemblies

Table 95. Location codes for the DASD fan tray assemblies

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-A1	DASD fan tray assembly	
U2*nnn.mmm.sssssss*-A1-T4		5/12V power
U2*nnn.mmm.sssssss*-A1-T5		5/12V power
U2*nnn.mmm.sssssss*-A1-T6		Control interface
U2*nnn.mmm.sssssss*-A2	DASD fan tray assembly	
U2*nnn.mmm.sssssss*-A2-T4		5/12V power
U2*nnn.mmm.sssssss*-A2-T5		5/12V power
U2*nnn.mmm.sssssss*-A2-T6		Control interface
U2*nnn.mmm.sssssss*-A3	DASD fan tray assembly	
U2*nnn.mmm.sssssss*-A3-T4		5/12V power
U2*nnn.mmm.sssssss*-A3-T5		5/12V power
U2*nnn.mmm.sssssss*-A3-T6		Control interface

Fan sense card locations

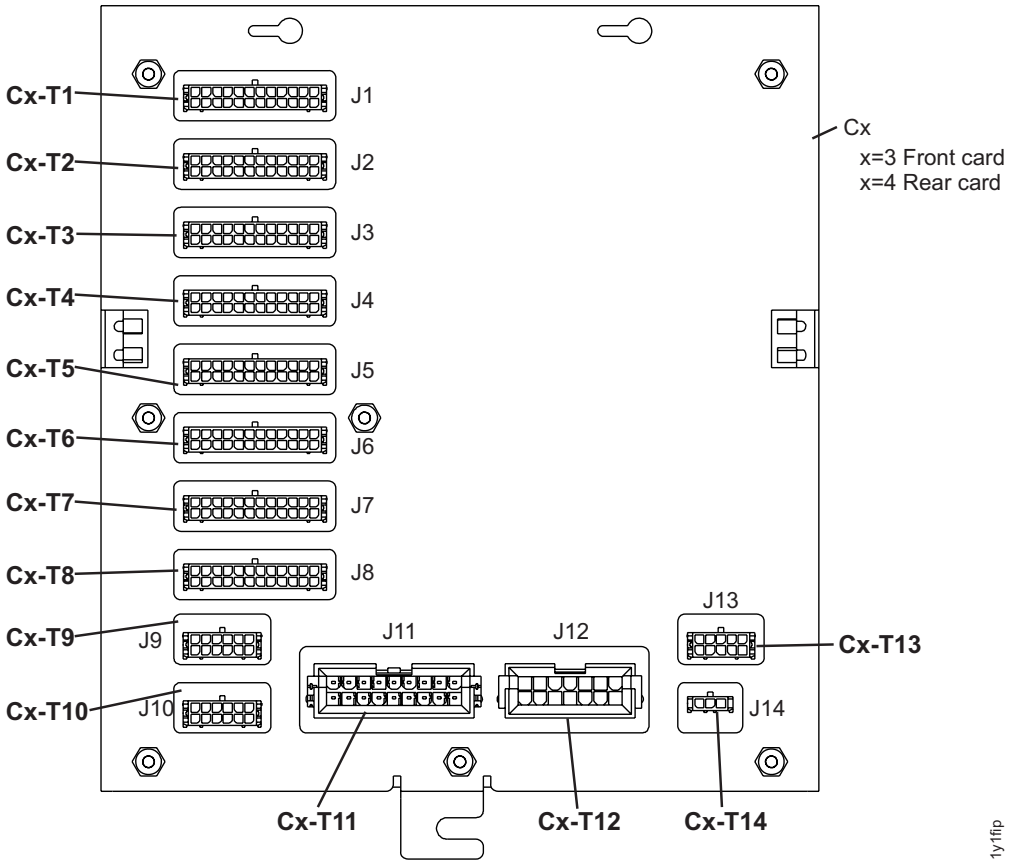


Figure 96. Location codes for the fan sense card

Table 96. Fan sense card locations

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-C*x* (*x* = 3, front of rack) (*x* = 4, rear of rack)	Fan sense card	
U2*nnn.mmm.sssssss*-C*x*-T1		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T2		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T3		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T4		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T5		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T6		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T7		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T8		Storage enclosure
U2*nnn.mmm.sssssss*-C*x*-T9		DASD fan tray
U2*nnn.mmm.sssssss*-C*x*-T10		DASD fan tray
U2*nnn.mmm.sssssss*-C*x*-T11		PPS 1
U2*nnn.mmm.sssssss*-C*x*-T12		PPS 2
U2*nnn.mmm.sssssss*-C*x*-T13		Fan sense card to fan sense card

Table 96. Fan sense card locations (continued)

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-C*x*-T14		Rack identity card

Local remote switch card locations

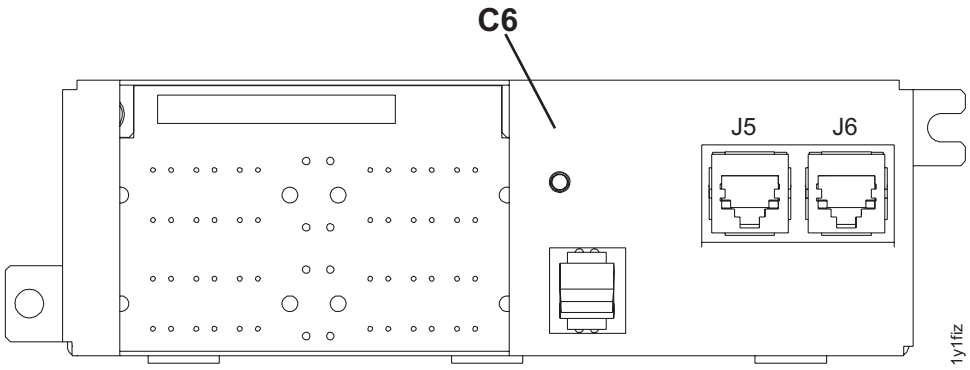


Figure 97. Location codes for the local remote switch card

Table 97. Local remote switch card locations

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-C6	Local remote switch card	

Rack identity card locations

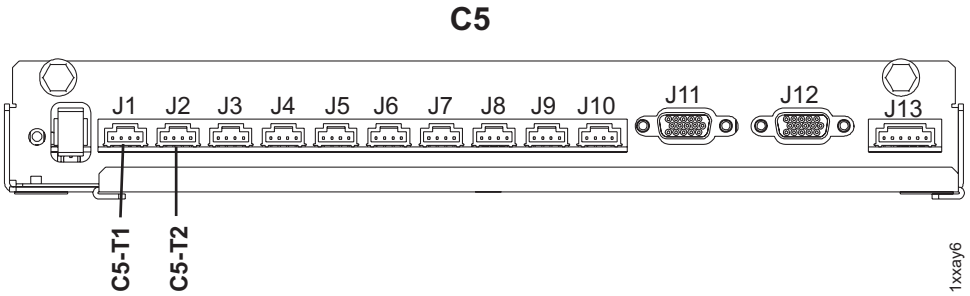


Figure 98. Location codes for the rack identity card

Table 98. Rack identity card locations

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-C5	Rack identity card (right from rear view)	
U2*nnn.mmm.sssssss*-C5-T1		Fan sense card, front
U2*nnn.mmm.sssssss*-C5-T2		Fan sense card, rear

RPC card locations

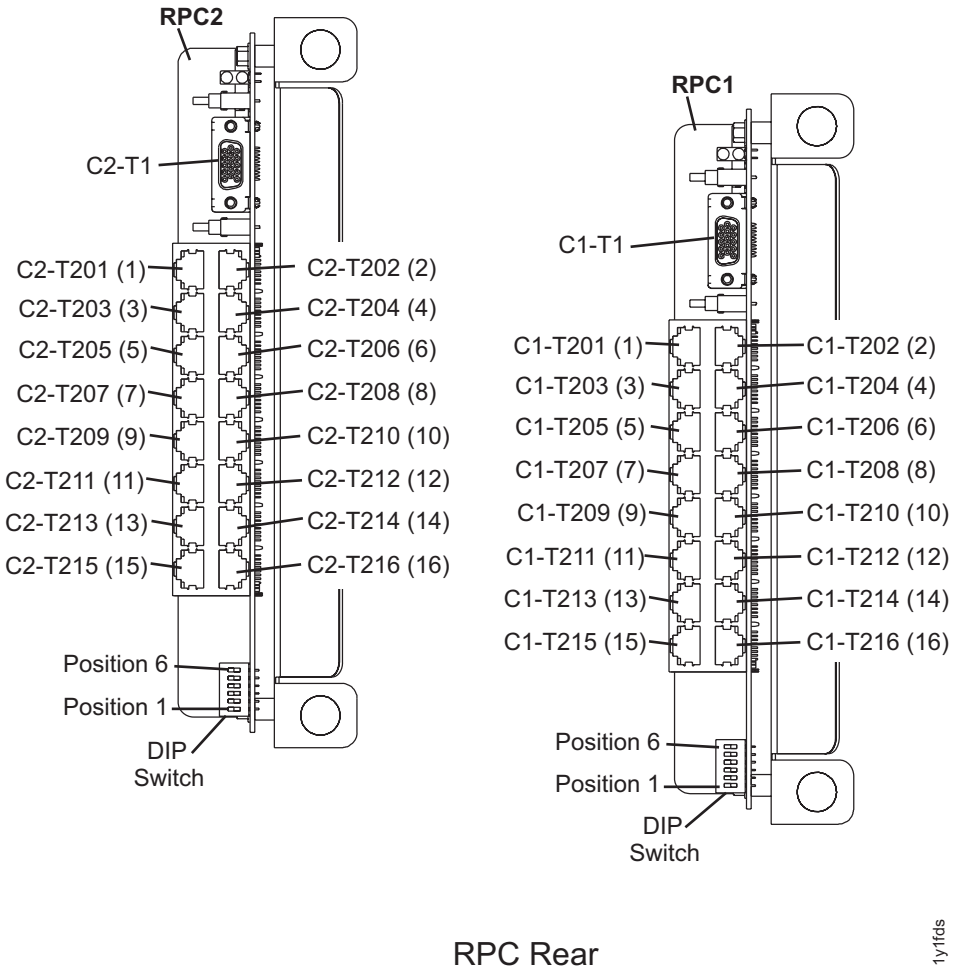


Figure 99. Location codes for the RPC card

Table 99. RPC card locations

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-C1	RPC card (right from rear view)	
U2*nnn.mmm.sssssss*-C2	RPC card (left from rear view)	
U2*nnn.mmm.sssssss*-C*x*-T1		Rack identity card
U2*nnn.mmm.sssssss*-C*x*-T201		PPS rack 1
U2*nnn.mmm.sssssss*-C*x*-T202		reserved
U2*nnn.mmm.sssssss*-C*x*-T203		PPS rack 2
U2*nnn.mmm.sssssss*-C*x*-T204		Local remote switch card
U2*nnn.mmm.sssssss*-C*x*-T205		PPS rack 3
U2*nnn.mmm.sssssss*-C*x*-T206		reserved
U2*nnn.mmm.sssssss*-C*x*-T207		reserved
U2*nnn.mmm.sssssss*-C*x*-T208		RPC card to RPC card
U2*nnn.mmm.sssssss*-C*x*-T209		reserved
U2*nnn.mmm.sssssss*-C*x*-T210		CEC enclosure 1

Table 99. RPC card locations (continued)

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-C*x*-T211		reserved
U2*nnn.mmm.sssssss*-C*x*-T212		reserved
U2*nnn.mmm.sssssss*-C*x*-T213		reserved
U2*nnn.mmm.sssssss*-C*x*-T214		CEC enclosure 2
U2*nnn.mmm.sssssss*-C*x*-T215		reserved
U2*nnn.mmm.sssssss*-C*x*-T216		not used

System z local remote switch card locations

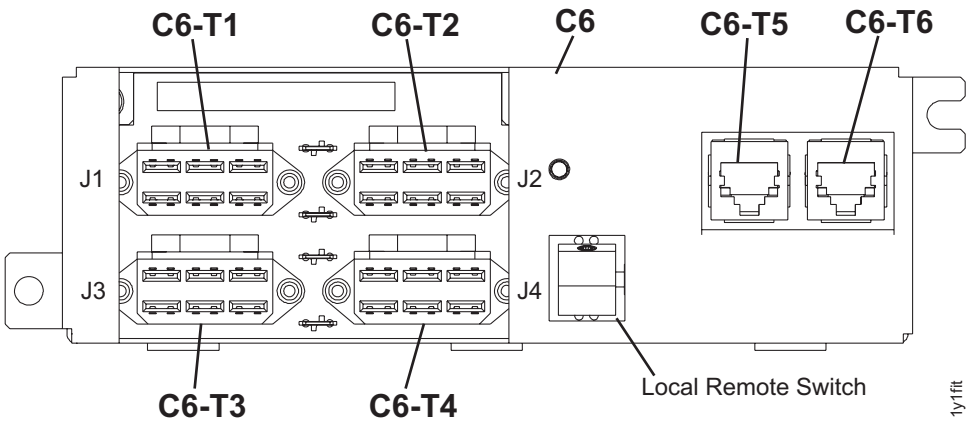


Figure 100. Location codes for the zSeries local remote switch card

Table 100. System z local remote switch card locations

Location code	Part name	Connector
U2*nnn.mmm.sssssss*-C6	System z local remote switch card	

Storage enclosure location codes

For storage enclosure location codes, see Figure 101 on page 124 and Figure 102 on page 124. For storage enclosure part numbers, see “Storage enclosure part numbers” on page 94.

Location codes for parts except DDMs

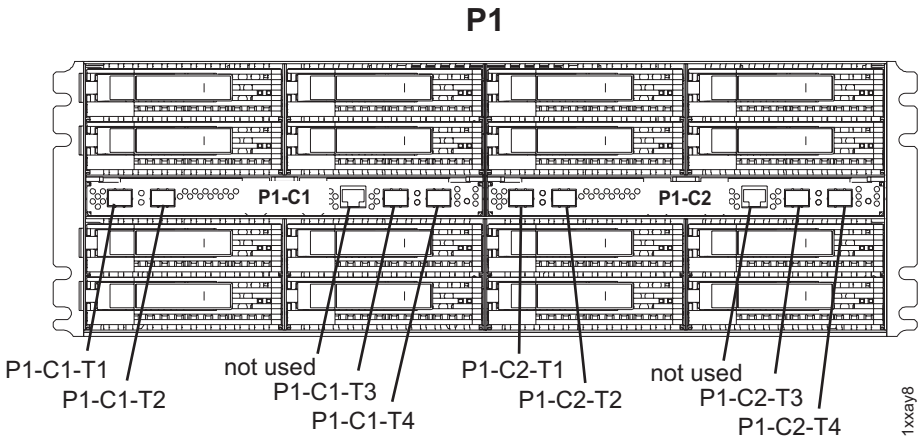


Figure 101. Storage enclosure locations

Table 101. Location codes for parts except DDMs

Location code	Part name
U2*nnn*.D01.sssssss	Storage enclosure
U2*nnn*.D01.sssssss-P1	Storage enclosure backplane
U2*nnn*.D01.sssssss-P1-C1	Fibre channel interface card (FCIC)
U2*nnn*.D01.sssssss-P1-C1-Tx (x = 1-4 left to right)	(Connector on FCIC)
U2*nnn*.D01.sssssss-P1-C2	Fibre channel interface card (FCIC)
U2*nnn*.D01.sssssss-P1-C2-Tx (x = 1-4 left to right)	(Connector on FCIC)

Location codes for DDMs

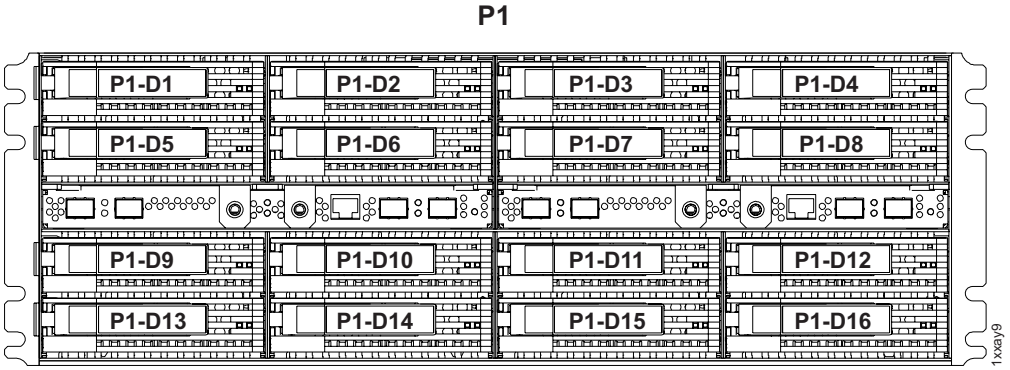


Figure 102. Storage enclosure locations (continued)

Table 102. Location codes for DDMs

Location code	Part name
U2*nnn*.D01.sssssss-P1-Dx (x = 1-16)	Disk drive module 73 GB 15K RPM DDM 146 GB 10K RPM DDM 146 GB 15K RPM DDM 300 GB 10K RPM DDM

Location codes in MES/Install instructions

Physical location codes are used in the MES/Install instructions. To determine the physical location code for a part, see the appropriate Figure:

Rack	See
Rack-1	Figure 103
Expansion rack	Figure 104 on page 126

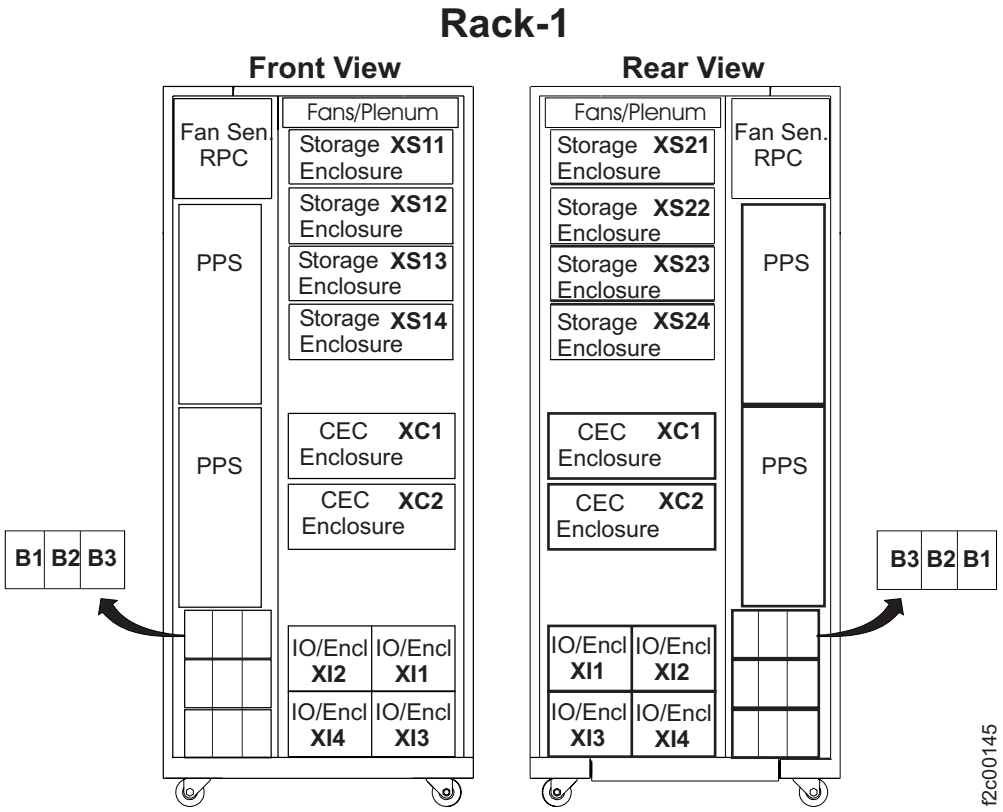


Figure 103. Physical location codes (Rack-1)

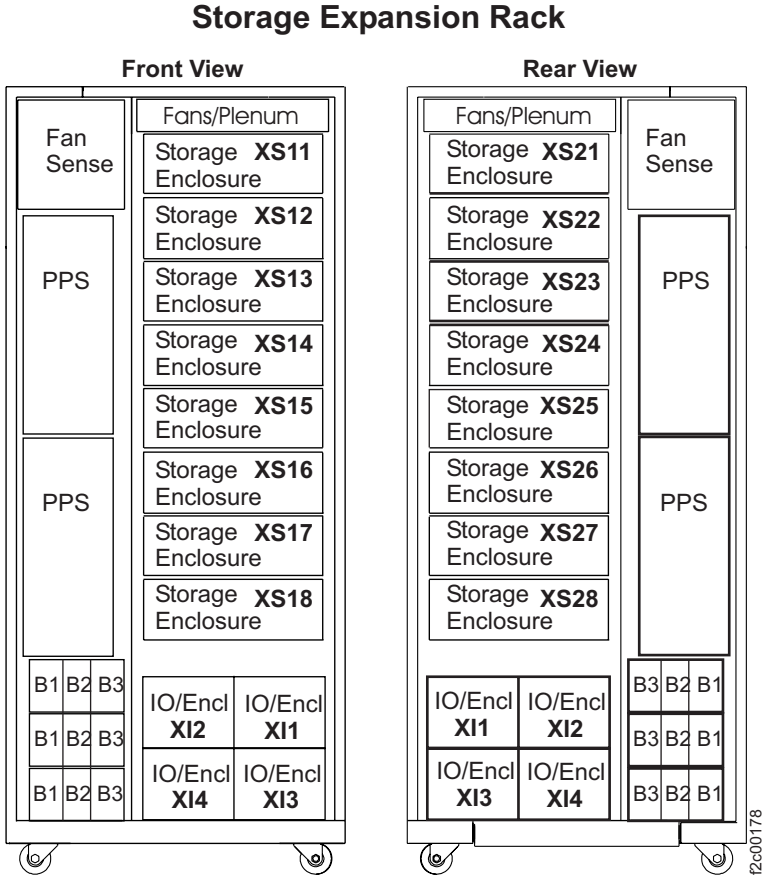


Figure 104. Physical location codes (expansion rack)

Light indicators (LEDs)

This section contains FRUs that have LED indicators. Each assembly is shown with a description of its LEDs. This section is for reference only, because although LED indicators may indicate a failure, they should not be used as a starting point for a repair.

CEC enclosure light indicators

Table 103 lists the CEC enclosure assemblies with LED descriptions that are defined in this document. While LED indicators may indicate a failure, they should not be used as a starting point for a repair.

Table 103. List of CEC enclosure assemblies with LEDs

Assembly	**Reference**
CEC enclosure (front)	Figure 105 on page 128
CEC enclosure (left rear)	Figure 106 on page 130
CEC enclosure power supply (rear right)	Figure 107 on page 131
Ethernet card (PCI)	Figure 108 on page 132
Service processor card	Figure 109 on page 133

CEC Enclosure LEDs (Front)

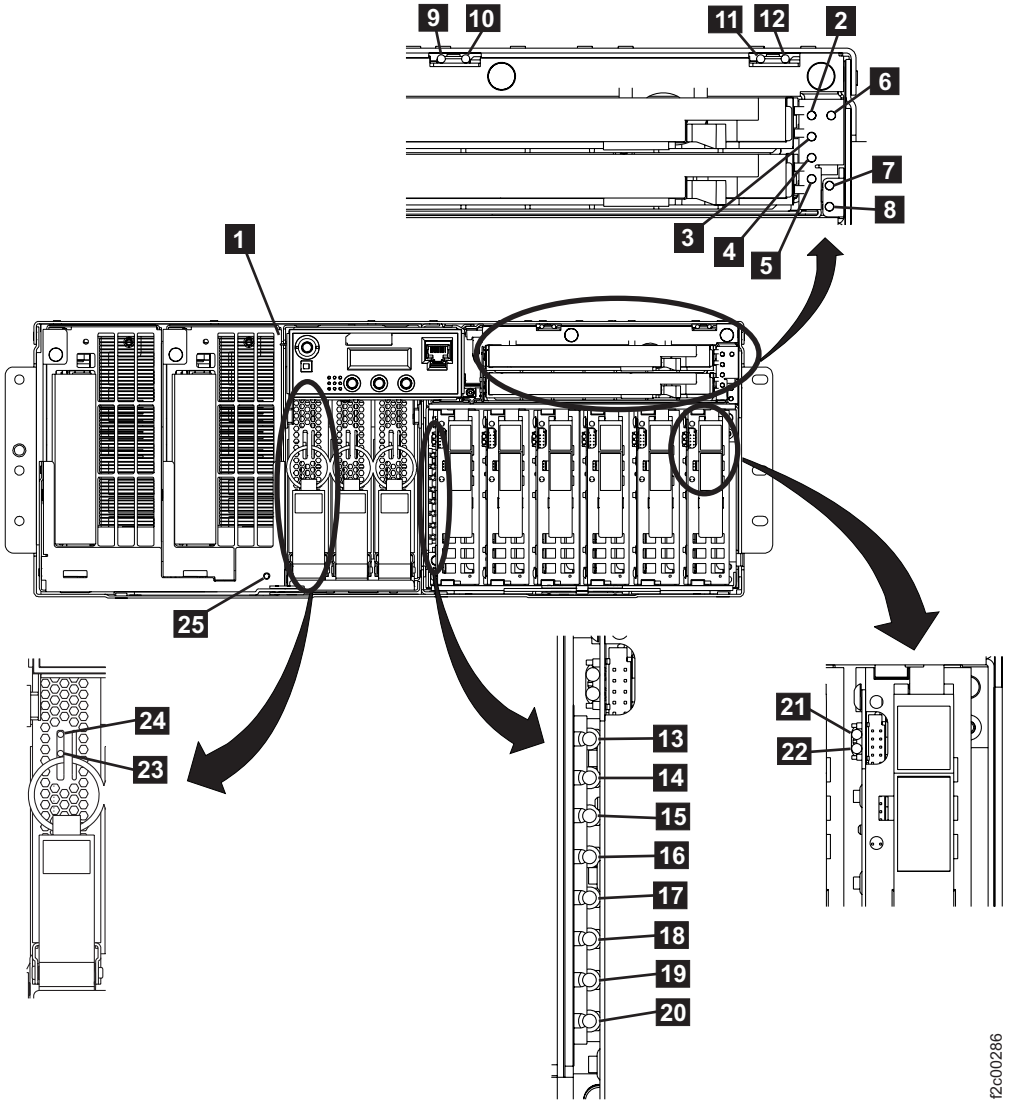


Figure 105. LED CEC enclosure front

Table 104. Interpreting the LEDs on the CEC enclosure (front)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Power for CEC enclosure	MTMS	Green	power off	power on	n/a
2	Power for Removable media upper slot	P4-D1	Green	power off	power on	n/a
3	Identify for Removable media upper slot	P4-D1	Amber	normal	action	identify
4	Power for Removable media lower slot	P4-D2	Green	power off	power on	n/a

Table 104. Interpreting the LEDs on the CEC enclosure (front) (continued)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
5	Identify for Removable media lower slot	P4-D2	Amber	normal	action	identify
6	Identify for media backplane assembly	P4	Amber	normal	action	identify
7	Power for media back plane assembly	P4	Green	power off	power on	n/a
8	Attention and identify for CEC enclosure		Amber	normal	attention	identify
9	Identify for CEC Enclosure Fan	A1	Amber	normal	action	identify
10	Power for CEC Enclosure Fan	A1	Green	power off	power on	n/a
11	Identify for CEC Enclosure Fan	A2	Amber	normal	action	identify
12	Power for CEC Enclosure Fan	A2	Green	power off	power on	n/a
13	Identify for disk drive backplane assembly	P3	Amber	normal	action	identify
14	Identify for optional card not used in DS8000					
15	Power for CEC disk drive	P3-D1	Green	power off	power on	n/a
16	Power for CEC disk drive	P3-D2	Green	power off	power on	n/a
17	Power for CEC disk drive	P3-D3	Green	power off	power on	n/a
18	Power for CEC disk drive	P3-D4	Green	power off	power on	n/a
19	Power for CEC disk drive	P3-D5	Green	power off	power on	n/a
20	Power for CEC disk drive	P3-D6	Green	power off	power on	n/a
21	Activity for CEC disk drive	P3-Dx	Green	not active	n/a	Identify
22	Identify for CEC disk drive	P3-Dx	Amber	normal	action	identify
23	Identify for system processor voltage card	P2-Cx	Amber	normal	action	identify
24	Power for system processor voltage card	P2-Cx	Green	power off	power on	n/a

Table 104. Interpreting the LEDs on the CEC enclosure (front) (continued)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
25	Identify for system processor backplane assembly	P2	Amber	normal	action	identify

CEC enclosure (left rear)

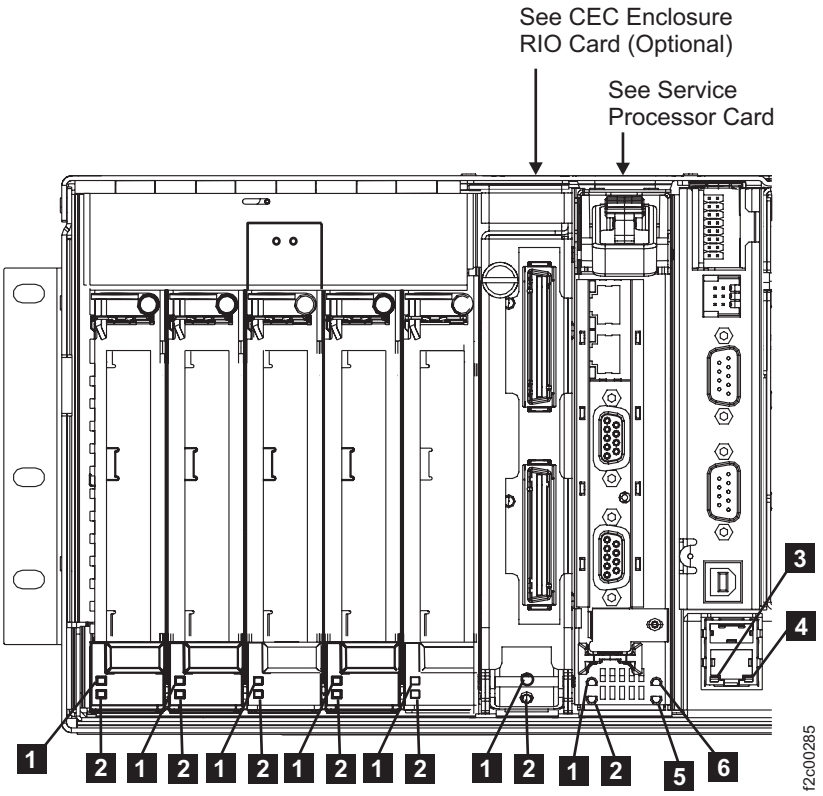


Figure 106. LED CEC enclosure left rear

Table 105. Interpreting the LEDs on the CEC enclosure (rear left)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Power for CEC enclosure PCI slots 1-7	P1-Cx	Green	power off	power on	n/a
2	Identify for CEC enclosure PCI slots 1-7	P1-Cx	Amber	power off	power on	n/a
3	Link for Ethernet port	T6	Green	link bad	link OK	n/a
4	Activity for Ethernet port	T6	Green	no activity	link is bad	activity

CEC enclosure power supply (rear right)

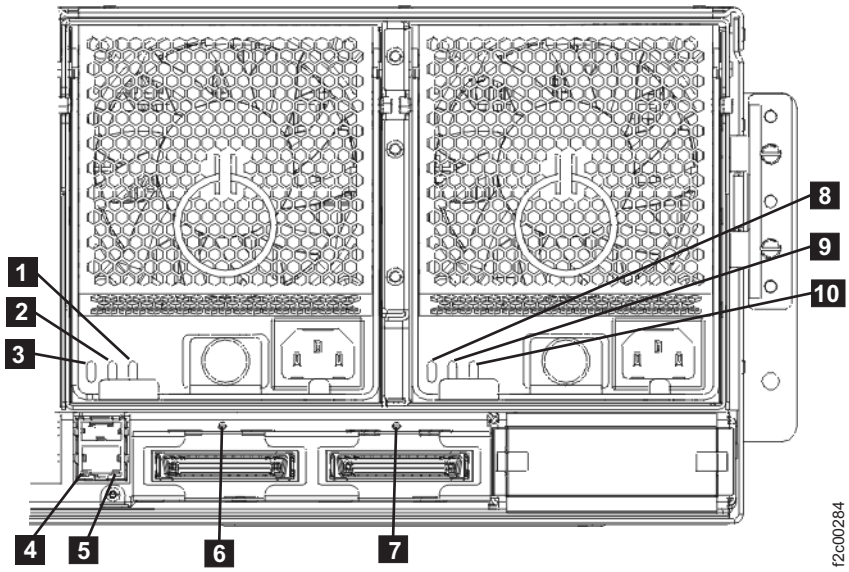


Figure 107. LED CEC enclosure right rear

Table 106. Interpreting the LEDs on the CEC enclosure power supply

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify for CEC enclosure power supply	E1	Amber	normal	n/a	fast: identify slow: com fail
2	Output power for CEC enclosure power supply	E1	Green	standby off	output on	standby
3	Input power for CEC enclosure power supply	E1	Green	no input	input good	n/a
4	Link for Ethernet port	T7	Green	link bad	link OK	n/a
5	Activity for Ethernet port	T7	Green	no activity	link bad	activity
6	Identify for RIO port	T8	Amber	normal	n/a	identify
7	Identify for RIO port	T9	Amber	normal	n/a	identify

Table 106. Interpreting the LEDs on the CEC enclosure power supply (continued)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
8	Input power for CEC enclosure power supply	E2	Green	no input	input good	n/a
9	Output power for CEC enclosure power supply	E2	Green	standby off	output on	standby
10	Identify for CEC enclosure power supply	E2	Amber	normal	n/a	fast: identify slow: com fail

Ethernet card (PCI)

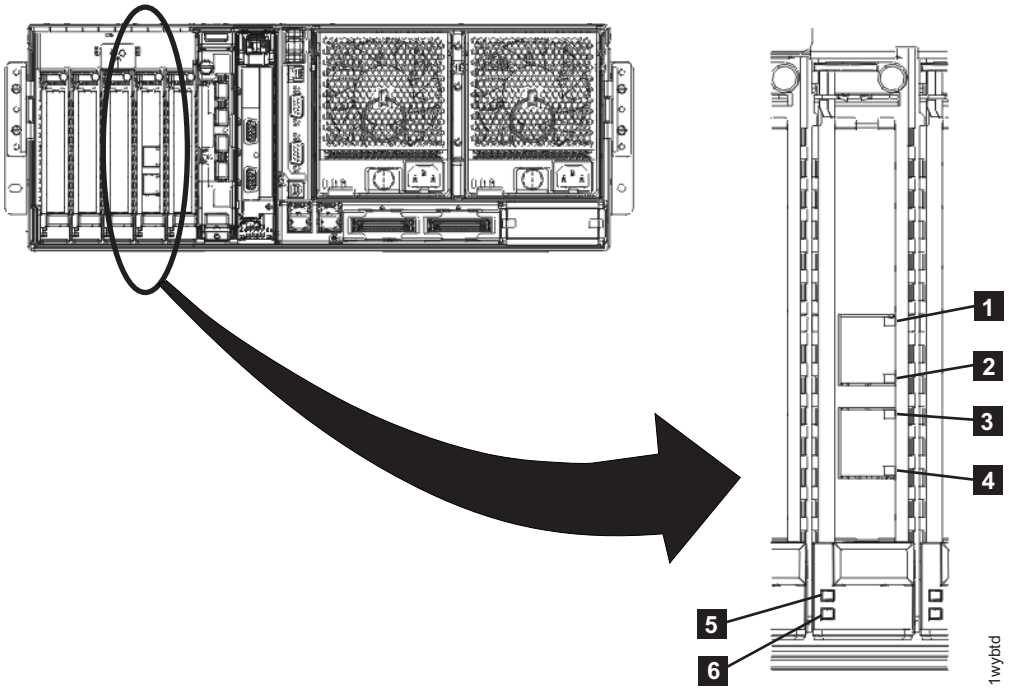


Figure 108. LED CEC enclosure Ethernet PCI card

Table 107. Interpreting the LEDs on the Ethernet card (PCI)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Link for Ethernet port	P1-C4-T1	Green	link bad	link OK	n/a
2	Activity for Ethernet port	P1-C4-T1	Green	no activity	link is bad	activity
3	Link for Ethernet port	P1-C4-T2	Green	link bad	link OK	n/a
4	Activity for Ethernet port	P1-C4-T2	Green	no activity	link is bad	activity

Table 107. Interpreting the LEDs on the Ethernet card (PCI) (continued)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
5	Power for CEC enclosure PCI slots 4	P1-C4	Green	power off	power on	n/a
6	Identify for CEC enclosure PCI slots 4	P1-C4	Amber	normal	n/a	identify

Service processor card

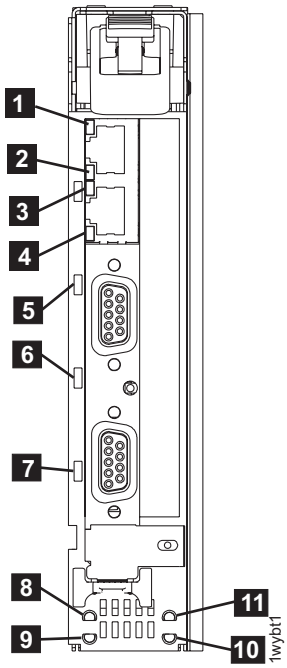


Figure 109. LED CEC enclosure service processor card

Table 108. Interpreting the LEDs on the service processor card

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Link for Ethernet port	P1-C8-T1	Green	link bad	link OK	n/a
2	Activity for Ethernet port	P1-C8-T1	Green	no activity	link bad	activity
3	Link for Ethernet port	P1-C8-T2	Green	link bad	link OK	n/a
4	Activity for Ethernet port	P1-C8-T2	Green	no activity	link bad	activity
5	Identify for service processor card SPCN port	P1-C8-T3	Amber	normal	n/a	identify

Table 108. Interpreting the LEDs on the service processor card (continued)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
6	Identify for service processor card	P1-C8	Amber	normal	n/a	identify
7	Identify for service processor card SPCN port	P1-C8-T4	Amber	normal	n/a	identify
8	Power for CEC enclosure RIO card	P1-C7	Green	power off	power on	n/a
9	Identify for CEC enclosure RIO card	P1-C7	Amber	normal	n/a	identify
10	Attention for CEC enclosure	MTMS	Amber	normal	attention	identify
11	Identify for CEC enclosure I/O backplane assembly	P1	Amber	normal	n/a	identify

I/O enclosure light indicators

This section contains FRUs that have LED indicators. Each listed assembly is shown with a description of its LEDs. Do not use LEDs as a starting point for diagnosing a problem.

I/O enclosure FRUs with LEDs

Table 109 lists the assemblies with LED descriptions that are defined in this document.

Table 109. List of I/O enclosure assemblies with LEDs

Assembly	Reference
I/O enclosure (front)	Figure 110 on page 135
I/O enclosure and RIO card (rear)	Figure 111 on page 136

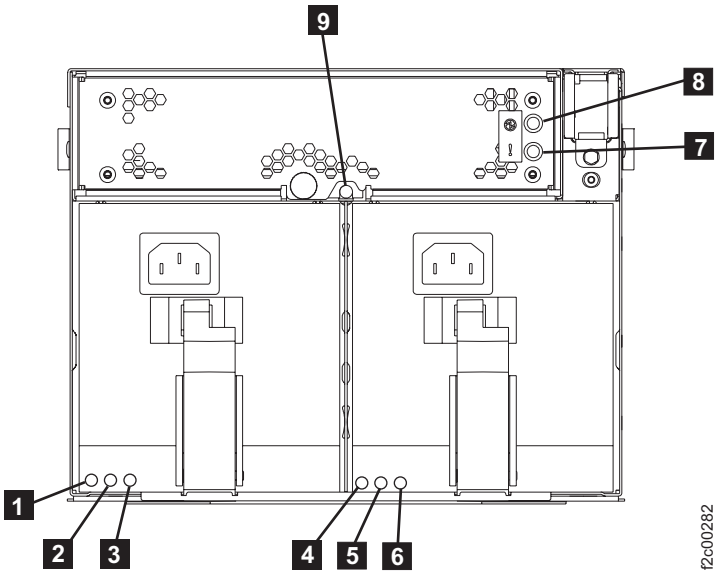


Figure 110. LEDs on the I/O enclosure (front)

Table 110. Interpreting the LEDs on the I/O enclosure (front)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Input power for I/O enclosure power supply	E1	Green	no input	input good	n/a
2	Output power for I/O enclosure power supply	E1	Green	standby off	output on	standby
3	Identify for I/O enclosure power supply	E1	Amber	normal	n/a	fast = identify, slow = com fail
4	Input power for I/O enclosure power supply	E2	Green	no input	input good	n/a
5	Output power for I/O enclosure power supply	E2	Green	standby off	output on	standby
6	Identify for I/O enclosure power supply	E2	Amber	normal	n/a	fast = identify, slow = com fail
7	Identify for I/O enclosure fan	P1-A1	Amber	normal	n/a	identify
8	Power I/O enclosure fan	P1-A1	Green	power off	power on	n/a
9	Identify for I/O enclosure	P1	Amber	normal	n/a	identify

I/O enclosure rear

This enclosure also contains the I/O enclosure RIO card.

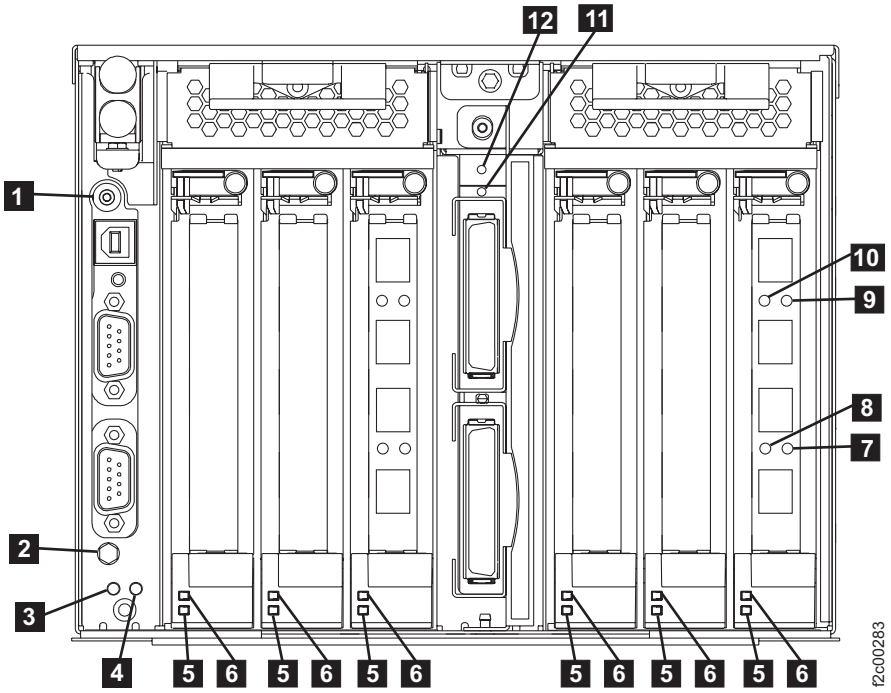


Figure 111. LEDs on the I/O enclosure (rear) and RIO card

Table 111. Interpreting the LEDs on the I/O enclosure (rear) and RIO card

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify for I/O enclosure SPCN connector	P1-T2	Amber	normal	n/a	identify
2	Identify for I/O enclosure SPCN connector	P1-T3	Amber	normal	n/a	identify
3	Power for I/O enclosure	P1	Green	power off	power on	n/a
4	Identify for I/O enclosure	P1	Amber	normal	n/a	identify
5	Identity for I/O enclosure PCI slot	P1-Cx	Amber	normal	n/a	identify
6	Power for I/O enclosure PCI slot	P1-Cx	Green	power off	power on	n/a
7	Activity for device adapter card	P1-Cx-T3	Green	Note 1 on page 137	Note 2 on page 137	Note 3 on page 137

Table 111. Interpreting the LEDs on the I/O enclosure (rear) and RIO card (continued)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
8	Activity for device adapter card	P1-Cx-T2	Amber	normal	n/a	identify
9	Activity for device adapter card	P1-Cx-T1	Green	Note 1	Note 2	Note 3
10	Activity for device adapter card	P1-Cx-T0	Amber	normal	n/a	identify
11	Identity for I/O enclosure RIO card connector	P1-Cx-T0	Amber	normal	n/a	identify
12	Identity for I/O enclosure RIO card connector	P1-C7-T1	Amber	normal	n/a	identify

Notes:

1. LED off indicates port above and port below LED are both not “Ready”.
2. LED on solid indicates port above and port below LED are both “Ready” (operational).
3. If LED is blinking 0.75 sec ON and 0.25 sec OFF, then only the port above the LED is “Ready”.
   If LED is blinking 0.25 sec ON and 0.75 sec OFF, then only the port below the LED is failing.

Management console (MC) server light indicators

This section contains information about LEDs that are on the management console (MC) server. Although the condition of LEDs might indicate a failure, the LEDs should not be used as a starting point for a repair.

X335 management console server light indicators

This section contains information about LEDs that are on the X335 management console server. Although the condition of LEDs might indicate a failure, the LEDs should not be used as a starting point for a repair.

LEDs on the front of the X335 server

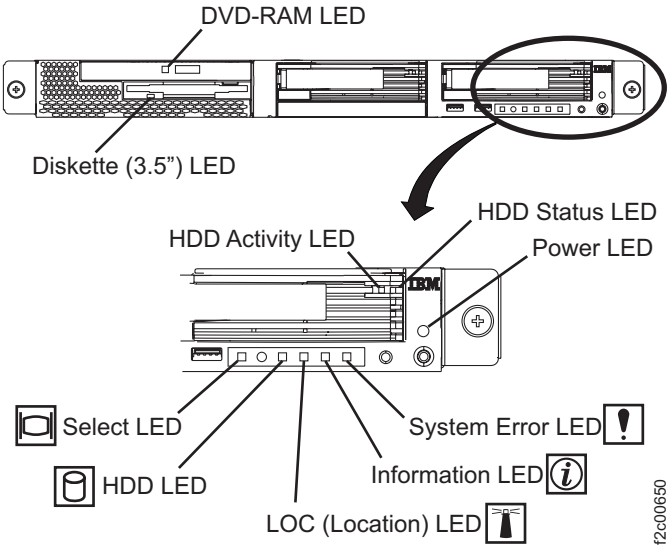


Figure 112. LEDs on the front of the X335 management console server

- **Diskette (3.5″) LED**: On = The diskette drive is in use.
- **DVD-RAM LED**: On = The DVD-RAM drive is in use.
- **HDD Activity LED**: On = The hard disk drive is in use.
- **HDD Status LED**: On = The hard disk drive has failed. If an optional RAID adapter is installed in the server and the LED flashes slowly (one flash per second), the drive is being rebuilt. If the LED flashes rapidly (three flashes per second), the controller is identifying the drive.
- **HDD LED** (Panel): On = Either of the hard disk drives is in use.
- **Information LED**: On = A non-critical event has occurred and is identified in the error log.
- **LOC (Location) LED**: Use this blue LED to visually locate the server if it is in a location with numerous other servers. You can use IBM Director to light this LED remotely. (Not used on the DS8000.)
- **Power LED**: On = Input power (ac) and output power (dc) are present in the server. Flashing = The server is in Standby mode. Off = Input power is not present, the power supply has failed, or the LED itself has failed. A power LED is also on the rear of the server.

  Note: To remove all electrical power from the server, you must disconnect the power cord from the electrical outlet.
- **Select LED**: The C2T chain uses special cables to allow two or more X335 servers to share one keyboard/display. The DS8000 does not use this feature, so this LED should always be lit. A select LED is also on the rear of the server.
- **System Error LED**: On = A system error has occurred. An LED on the Light Path Diagnostics panel on the system board is also lit to help isolate the error. A system error LED is also on the front of the server.

LEDs on the rear of the X335 server

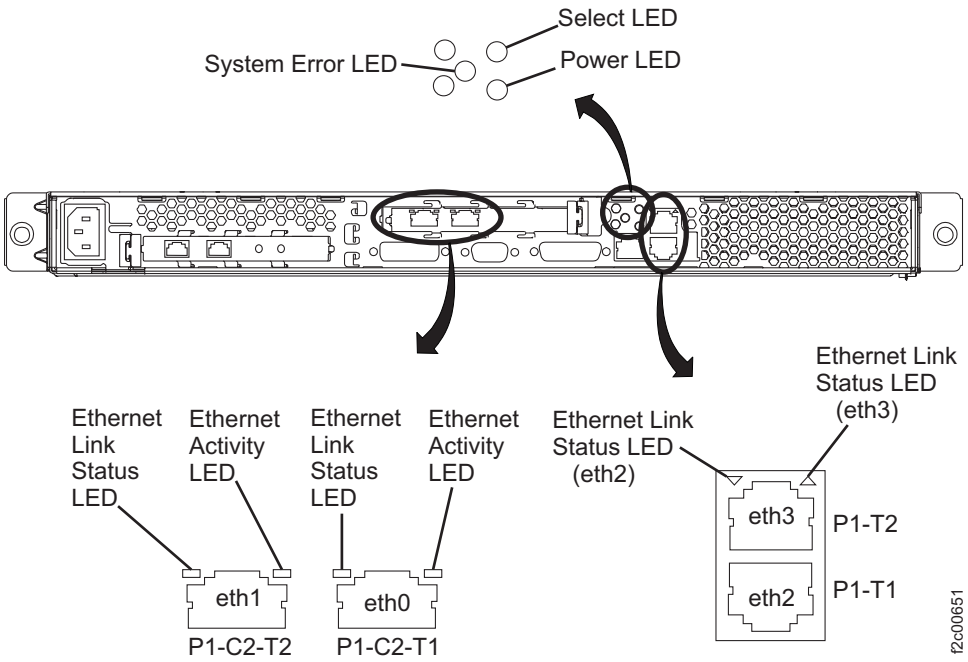


Figure 113. LEDs on the rear of the X335 management console server

- **Ethernet Activity LED**: On = The Ethernet link is bad. Off = Ethernet activity is not occurring. Flashing = Ethernet activity is occurring.
- **Ethernet Link Status LED**: On = The Ethernet link is okay. Off = The Ethernet link is bad.
- **Power LED**: On = Input power (ac) and output power (dc) are present in the server. Flashing = The server is in Standby mode. Off = Input power is not present, the power supply has failed, or the LED itself has failed. A power LED is also on the front of the server.

  Note: To remove all electrical power from the server, you must disconnect the power cord from the electrical outlet.
- **Select LED**: The C2T chain uses special cables to allow two or more X335 servers to share one keyboard/display. The DS8000 does not use this feature, so this LED should always be lit. A select LED is also on the front of the server.
- **System Error LED**: On = A system error has occurred. An LED on the Light Path Diagnostics panel on the system board is also lit to help isolate the error. A system error LED is also on the front of the server.

X336 management console server light indicators

This section contains information about LEDs that are on the X336 management console server. Although the condition of LEDs might indicate a failure, the LEDs should not be used as a starting point for a repair.

LEDs on the front of the X336 server

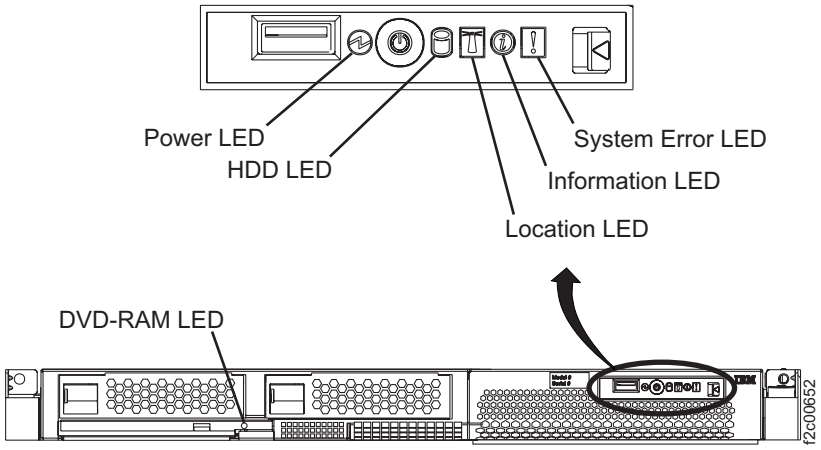


Figure 114. LEDs on the front of the X336 management console server

- **DVD-RAM LED**: On = The DVD-RAM drive is in use.
- **Information LED**: On = A non-critical event has occurred and is identified in the error log.
- **Location LED**: Use this blue LED to visually locate the server if it is in a location with numerous other servers. You can use IBM Director to light this LED remotely.
- **Power LED**: On = Input power (ac) and output power (dc) are present in the server. Flashing = The server is in Standby mode. Off = Input power is not present, the power supply has failed, or the LED itself has failed. A power LED is also on the rear of the server.

  Note: To remove all electrical power from the server, you must disconnect the power cord from the electrical outlet.
- **System Error LED**: On = A system error has occurred. An LED on the Light Path Diagnostics panel on the system board is also lit to help isolate the error. A system error LED is also on the front of the server.

LEDs on the rear of the X336 server

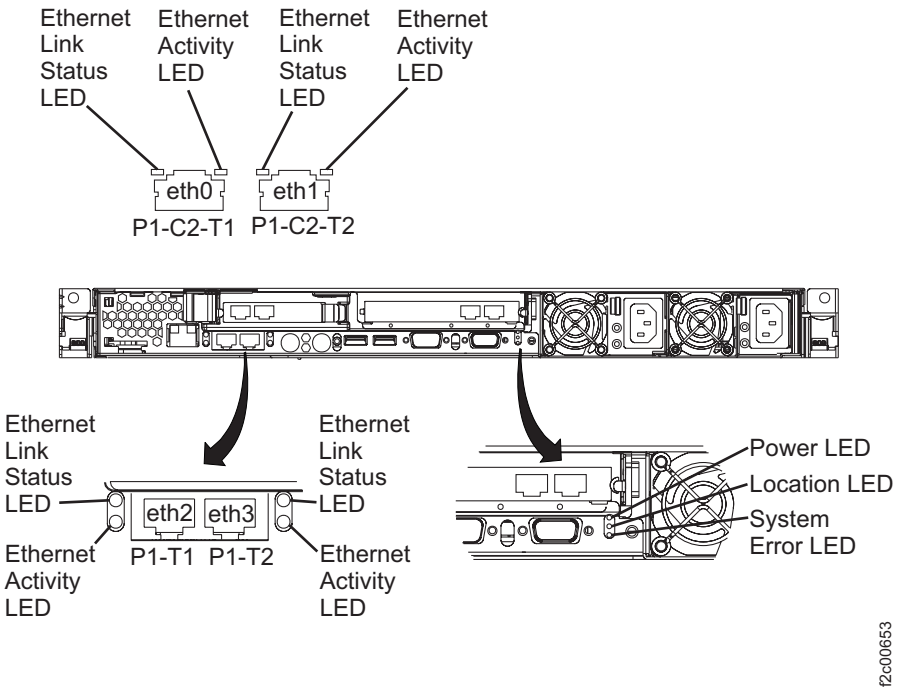


Figure 115. LEDs on the rear of the X336 management console server

- **Ethernet Activity LED**: On = The Ethernet link is bad. Off = Ethernet activity is not occurring. Flashing = Ethernet activity is occurring.
- **Ethernet Link Status LED**: On = The Ethernet link is okay. Off = The Ethernet link is bad.
- **Location LED**: Use this blue LED to visually locate the server if it is in a location with numerous other servers. You can use IBM Director to light this LED remotely. (Not used on the DS8000.)
- **Power LED**: On = Input power (ac) is present at the server. Off = Input power (ac) is not present, the power supply has failed, or the LED itself has failed. A power LED is also on the front of the server.

  Note: To remove all electrical power from the server, you must disconnect the power cord from the electrical outlet.
- **Power Input LED**: On = Input power (ac) is present at the server. Off = Input power is not present at the server. A power LED is also on the front of the server.
- **Power Output LED**: On = The power supply is providing output power (dc) to the server. Off = The power supply is not providing output power (dc) to the server.
- **System Error LED**: On = A system error has occurred. An LED on the Light Path Diagnostics panel on the system board is also lit to help isolate the error. A system error LED is also on the front of the server.

Rack power and cooling light indicators

This section contains rack power and cooling FRUs that have LED indicators. Each listed assembly is shown with a description of its LEDs. Although LED indicators may indicate a failure, they should not be used as a starting point for a repair.

Rack power and cooling FRUs with LEDs

Table 112 lists the assemblies with LED descriptions that are defined in this document.

Table 112. Parts of the rack power and cooling assembly that contain LEDs

Assembly	Reference
DASD fan tray assembly	Figure 121 on page 147
Fan sense card	Figure 122 on page 148
PPS Overview (front) 208VDC power module 5/12V DDM power module Booster power module Sequencer module	 Figure 116 Figure 117 on page 143 Figure 118 on page 144 Figure 119 on page 145 Figure 120 on page 146
Rack identity card	Figure 123 on page 148
Rack operator panel UEPO switch assembly	Figure 124 on page 149
RPC card	Figure 125 on page 150

LEDs on the primary power supply (front)

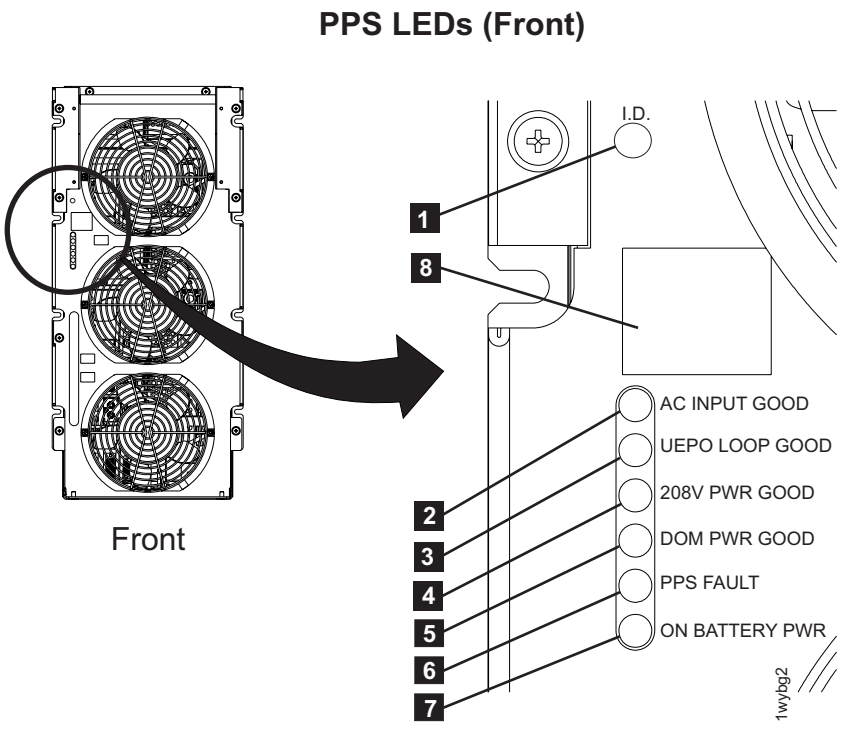


Figure 116. LEDs on the PPS (front)

Table 113. Interpreting LEDs on the primary power supply (front)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify for primary power supply		Amber	normal	n/a	Identify

Table 113. Interpreting LEDs on the primary power supply (front) (continued)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
2	AC input good		Green	missing input or CB00 off	normal	n/a
3	UEPO loop good		Green	PPS off or UEPO switch is tripped	normal	n/a
4	208VDC output power good		Green	PPS off	normal	n/a
5	DDM output power good		Green	PPS off	normal	n/a
6	PPS fault		Amber	normal	n/a	Identify
7	On battery		Amber	normal	n/a	Identify
8	Status display (see MAP2340)		n/a	n/a	n/a	n/a

LEDs on the 208VDC power module

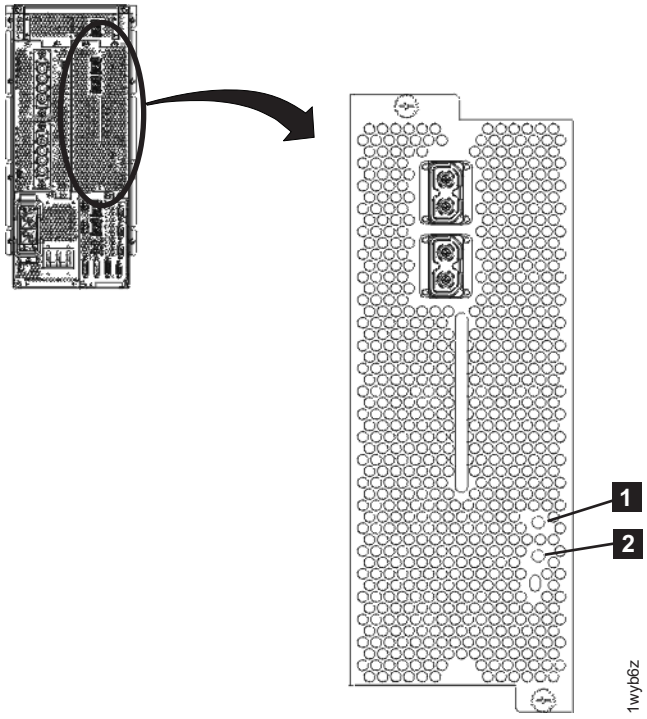


Figure 117. LEDs on the 208VDC power module

Table 114. Interpreting LEDs on the 208 VDC power module

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify		Amber	normal	n/a	Identify
2	208VDC output		Green Amber	PPS off	normal fault	n/a

LEDs on the 5/12V DDM power module

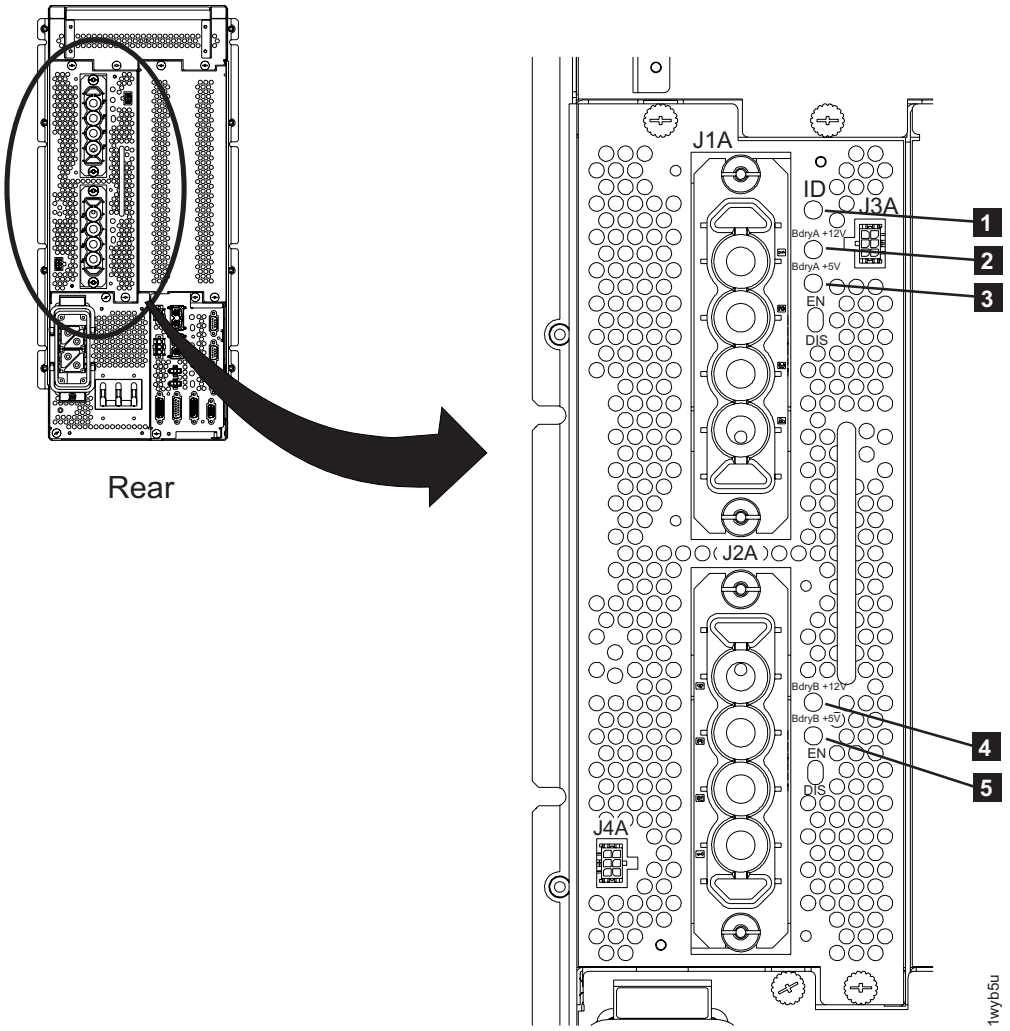


Figure 118. LEDs on the 5/12V DDM power module

Table 115. Interpreting LEDs on the 5/12V DDM power module

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify		Amber	normal	n/a	Identify
2	Boundary A +12V output		Green Amber	PPS off	normal fault	n/a
3	Boundary A +5V output		Green Amber	PPS off	normal fault	n/a
4	Boundary B +12V output		Green Amber	PPS off	normal fault	n/a
5	Boundary B +5V output		Green Amber	PPS off	normal fault	n/a

LEDs on the booster power module

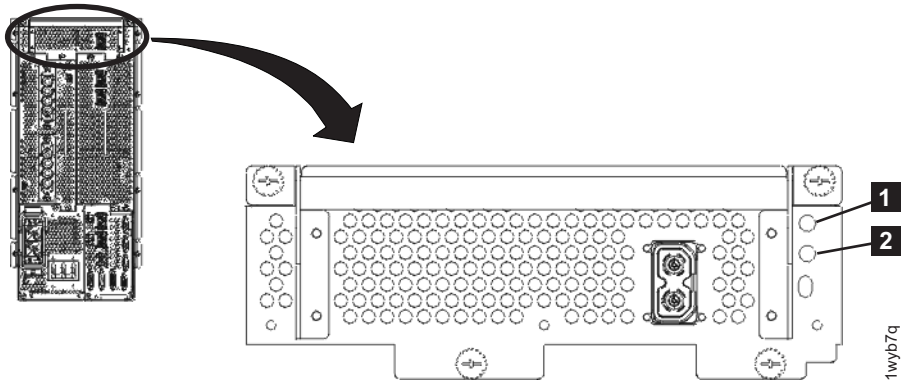


Figure 119. LEDs on the booster power module

Table 116. Interpreting LEDs on the booster power module

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify		Amber	normal	n/a	Identify
2	Booster		Green Amber	PPS off	normal fault	n/a

LEDs on the sequencer module

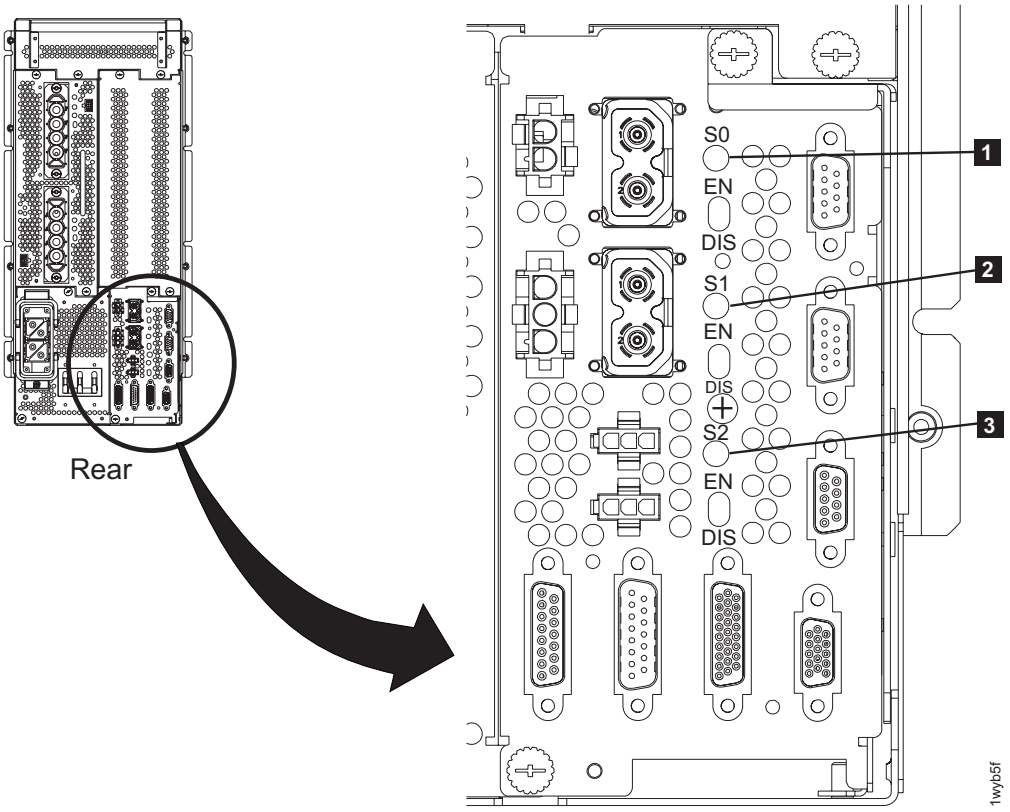


Figure 120. LEDs on the sequencer module

Table 117. Interpreting LEDs on the sequencer module

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Main 208VDC output		Green Amber	PPS off	normal fault	n/a
2	Protected 208 VDC output 0		Green Amber	PPS off	normal fault	n/a
3	Protected 208 VDC output 1		Green Amber	PPS off	normal fault	n/a

LEDs on the DASD fan tray

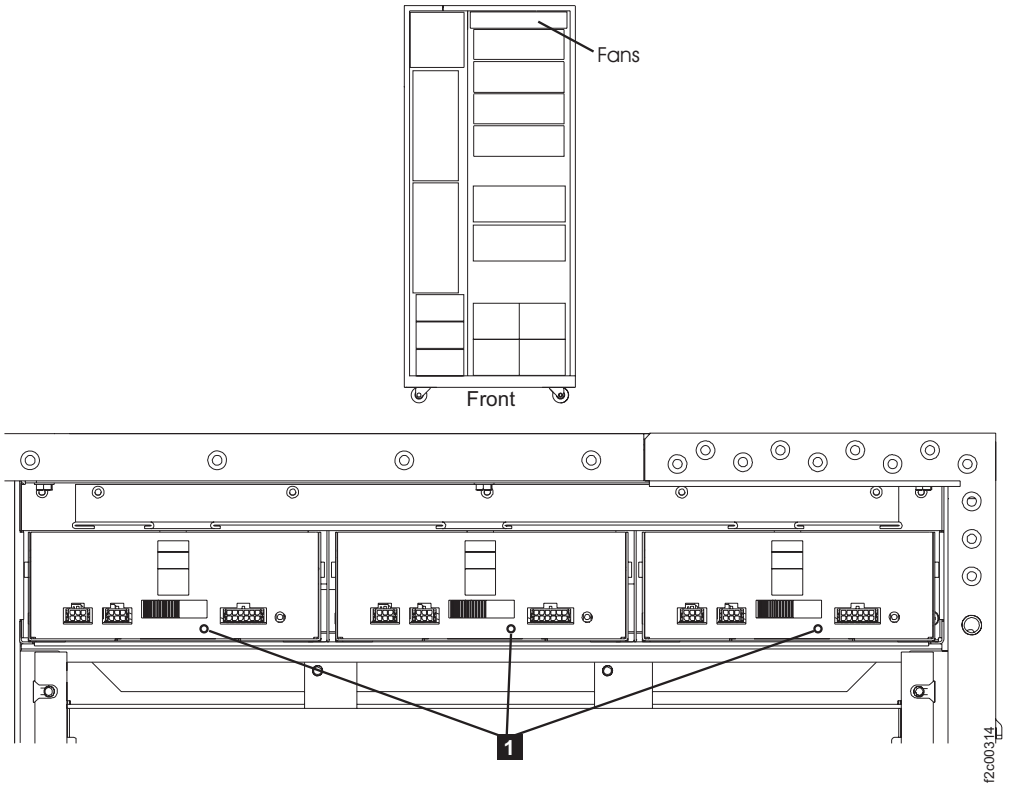


Figure 121. The "Identify" indicator (LED) for a DASD fan tray

Table 118. Interpreting LEDs on the DASD fan tray

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify		Amber	Normal	n/a	Identify

LEDs on the fan sense card

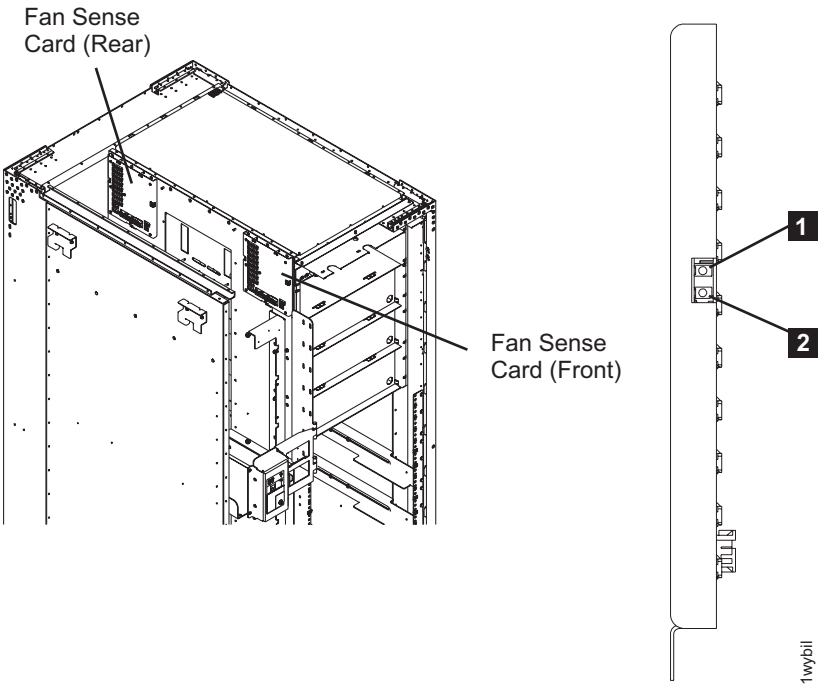


Figure 122. LEDs on the fan sense cards

Table 119. Interpreting LEDs on the fan sense card

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Operational	C1	Green	fenced or no input power	operational	n/a
2	Identify	C2	Amber	normal	n/a	Identify

LEDs on the rack identity card

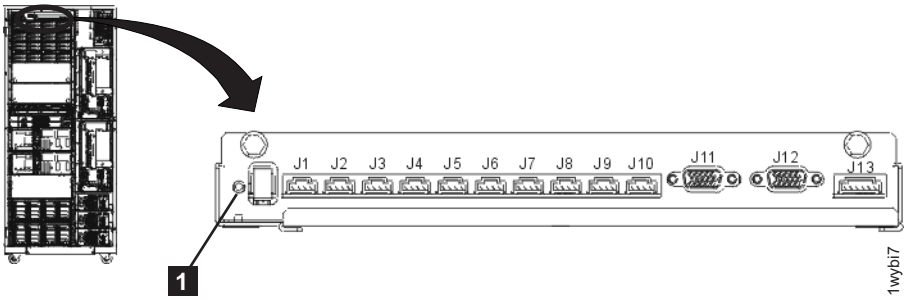


Figure 123. LEDs on the rack identity card

Table 120. Interpreting LEDs on the rack identity card

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Identify	C2	Amber	normal	n/a	Identify

LEDs on the rack operator panel UEPO switch assembly

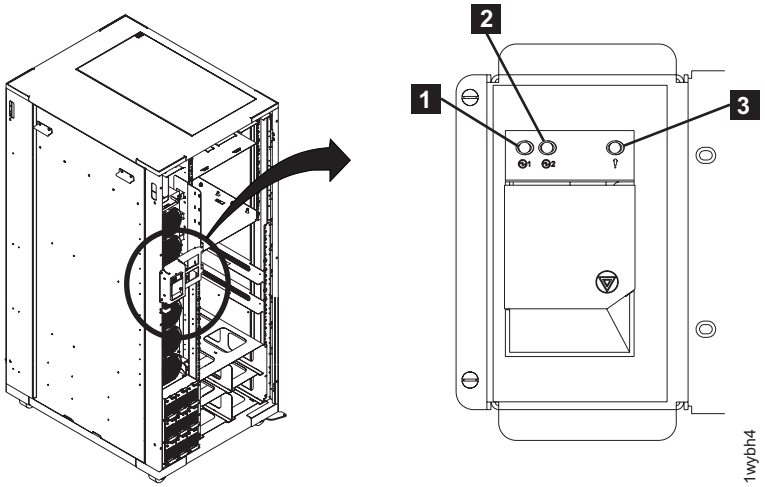


Figure 124. LEDs on the rack operator panel

Table 121. Interpreting LEDs on the rack operator panel UEPO switch assembly

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Line cord 1		Green	[1]	[2]	[3]
2	Line cord 2		Green	[1]	[2]	[3]
3	Identify or System Attention		Amber	normal	Attention[4]	Identify[4]

Notes:

1. Off under any of the following conditions:
   - customer power is not present
   - standby power is present and the Remote Force Power Off is not active
   - the corresponding RPC or PPS is fenced
   - the LED is broken
2. On solid when PPS DDM Power is on.
3. Flashes slow (1 flash per 2 seconds) when a PPS is in Standby, a PPS is not fenced, or the Remote Force Power Off switch is active. Flashes rapidly (2 flashes per second) during the PPS power ON, power OFF, and Force Power OFF sequences.
4. Identify is valid for any rack. Attention is only valid for Rack-1. If both conditions are present, Identify (flash) overrides Attention (on solid).

LEDs on the RPC cards

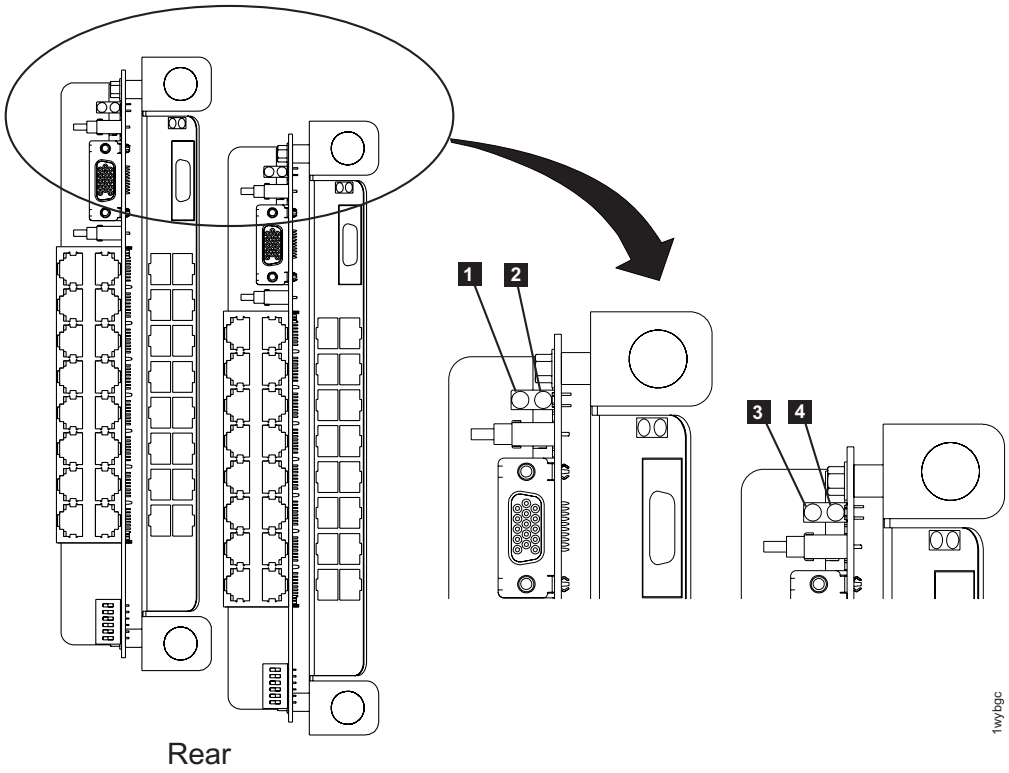


Figure 125. LEDs on the RPC cards

Table 122. Interpreting LEDs on the RPC cards

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Operational	C2	Green	fenced, not booted, or no input power	operational	n/a
2	Identify	C2	Amber	normal	[1]	Identify
3	Operational	C1	Green	fenced, not booted, or no input power	operational	n/a
4	Identify	C1	Amber	normal	[1]	Identify

Notes:

1. When this LED is on solid, the flash memory in the other RPC card is corrupted.

Storage enclosure light indicators

This section contains storage enclosure FRUs that have LED indicators. Each listed assembly is shown with a description of its LEDs. While LED indicators may indicate a failure, they should not be used as a starting point for a repair.

Storage enclosure FRUs with LEDs

Table 123 lists parts of the storage enclosure that have LEDs on them.

Table 123. Parts of the storage enclosure that contain LEDs

Part name	Reference
Fibre channel interface card (FCIC)	Figure 126
Disk drive module (DDM)	Figure 127 on page 152

LEDs on the Fibre Channel interface card (FCIC)

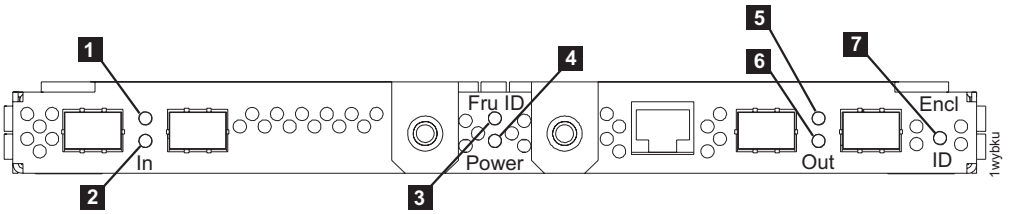


Figure 126. LEDs on a fibre channel interface card (at a storage enclosure)

Table 124. Interpreting LEDs on the Fibre Channel interface card (FCIC)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	Status FCIC card port In	P1-Cx-T1	Green	[1]	normal	n/a
2	Status FCIC card port In	P1-Cx-T2	Green	[1]	normal	n/a
3	Identify FCIC card FRU	P1-Cx	Amber	normal	n/a	identify
4	Power FCIC card power	P1-Cx	Green	no power	normal	n/a
5	Status FCIC port Out	P1-Cx-T3	Green	[1]	normal	n/a
6	Status FCIC port Out	P1-Cx-T4	Green	[1]	normal	n/a
7	Identify Storage enclosure (not FCIC FRU)	P1-Cx	Amber	normal	n/a	identify

Notes:

1. If an FC-AL cable is not connected to the FCIC, LED Off is normal. If an FC-AL cable is connected to the FCIC, LED Off indicates an error.

LEDs on disk drive modules (DDMs)

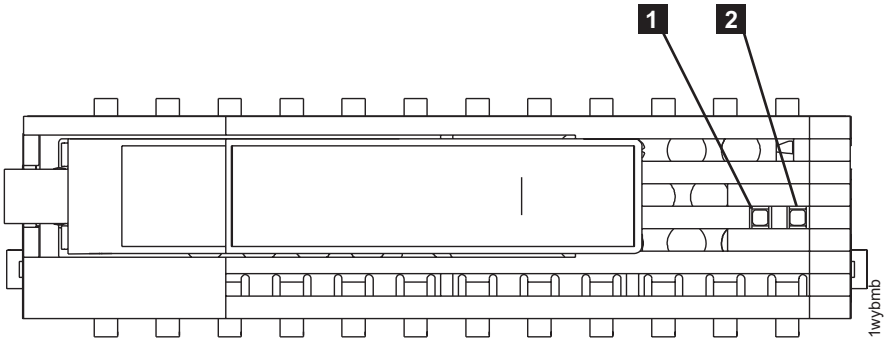


Figure 127. LEDs on a disk drive module (DDM)

Table 125. Interpreting LEDs on the disk drive modules (DDMs)

Index	LED Function	Location	Color	LED Off	LED On	LED Flash
1	DDM status		Green	[1]	normal	[2]
2	Identify DDM		Amber	normal	n/a	Identify

Notes:

1. The DDM has failed or is not receiving power.
2. After power on, a slow flash for 20 seconds followed by a fast flash for 5 seconds means normal.

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Accessing the publications

You can find HTML versions of the IBM System Storage DS8000 information at the following Web site: http://www.ehone.ibm.com/public/applications/publications/cgibin/pbi.cgi

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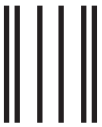

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