

Power Systems

*Finding parts, locations, and addresses*

**IBM**



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**Note**

Before using this information and the product it supports, read the information in “Safety notices” on page v, “Notices” on page 115, the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

This edition applies to IBM Power Systems™ servers that contain the POWER8 processor and to all associated models.

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## Safety notices

Safety notices may be printed throughout this guide:

- **DANGER** notices call attention to a situation that is potentially lethal or extremely hazardous to people.
- **CAUTION** notices call attention to a situation that is potentially hazardous to people because of some existing condition.
- **Attention** notices call attention to the possibility of damage to a program, device, system, or data.

### World Trade safety information

Several countries require the safety information contained in product publications to be presented in their national languages. If this requirement applies to your country, safety information documentation is included in the publications package (such as in printed documentation, on DVD, or as part of the product) shipped with the product. The documentation contains the safety information in your national language with references to the U.S. English source. Before using a U.S. English publication to install, operate, or service this product, you must first become familiar with the related safety information documentation. You should also refer to the safety information documentation any time you do not clearly understand any safety information in the U.S. English publications.

Replacement or additional copies of safety information documentation can be obtained by calling the IBM Hotline at 1-800-300-8751.

### German safety information

Das Produkt ist nicht für den Einsatz an Bildschirmarbeitsplätzen im Sinne § 2 der Bildschirmarbeitsverordnung geeignet.

### Laser safety information

IBM® servers can use I/O cards or features that are fiber-optic based and that utilize lasers or LEDs.

#### Laser compliance

IBM servers may be installed inside or outside of an IT equipment rack.

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

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

- If IBM supplied the power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.
- Do not open or service any power supply assembly.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.
  - For AC power, disconnect all power cords from their AC power source.
  - For racks with a DC power distribution panel (PDP), disconnect the customer's DC power source to the PDP.
- When connecting power to the product ensure all power cables are properly connected.

- For racks with AC power, connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.
- For racks with a DC power distribution panel (PDP), connect the customer's DC power source to the PDP. Ensure that the proper polarity is used when attaching the DC power and DC power return wiring.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Do not attempt to switch on power to the machine until all possible unsafe conditions are corrected.
- Assume that an electrical safety hazard is present. Perform all continuity, grounding, and power checks specified during the subsystem installation procedures to ensure that the machine meets safety requirements.
- Do not continue with the inspection if any unsafe conditions are present.
- Before you open the device covers, unless instructed otherwise in the installation and configuration procedures: Disconnect the attached AC power cords, turn off the applicable circuit breakers located in the rack power distribution panel (PDP), and disconnect any telecommunications systems, networks, and modems.

**DANGER:**

- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To Disconnect:

1. Turn off everything (unless instructed otherwise).
2. For AC power, remove the power cords from the outlets.
3. For racks with a DC power distribution panel (PDP), turn off the circuit breakers located in the PDP and remove the power from the Customer's DC power source.
4. Remove the signal cables from the connectors.
5. Remove all cables from the devices.

To Connect:

1. Turn off everything (unless instructed otherwise).
2. Attach all cables to the devices.
3. Attach the signal cables to the connectors.
4. For AC power, attach the power cords to the outlets.
5. For racks with a DC power distribution panel (PDP), restore the power from the Customer's DC power source and turn on the circuit breakers located in the PDP.
6. Turn on the devices.

Sharp edges, corners and joints may be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching. (D005)

**(R001 part 1 of 2):**

**DANGER:** Observe the following precautions when working on or around your IT rack system:

- Heavy equipment—personal injury or equipment damage might result if mishandled.
- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet.
- To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.
- Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack mounted devices and do not use them to stabilize your body position (for example, when working from a ladder).





- Each rack cabinet might have more than one power cord.
  - For AC powered racks, be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.
  - For racks with a DC power distribution panel (PDP), turn off the circuit breaker that controls the power to the system unit(s), or disconnect the customer's DC power source, when directed to disconnect power during servicing.
- Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

**(R001 part 2 of 2):**

**CAUTION:**

- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.
- *(For sliding drawers.)* Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.



- *(For fixed drawers.)* This drawer is a fixed drawer and must not be moved for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack.

**CAUTION:**

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

- Reduce the weight of the rack cabinet by removing equipment starting at the top of the rack cabinet. When possible, restore the rack cabinet to the configuration of the rack cabinet as you received it. If this configuration is not known, you must observe the following precautions:
  - Remove all devices in the 32U position (compliance ID RACK-001 or 22U (compliance ID RR001) and above.
  - Ensure that the heaviest devices are installed in the bottom of the rack cabinet.
  - Ensure that there are little-to-no empty U-levels between devices installed in the rack cabinet below the 32U (compliance ID RACK-001 or 22U (compliance ID RR001) level, unless the received configuration specifically allowed it.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- If the rack cabinet you are relocating was supplied with removable outriggers they must be reinstalled before the cabinet is relocated.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to the documentation that comes with your rack cabinet for the weight of a loaded rack cabinet.
- Verify that all door openings are at least 760 x 230 mm (30 x 80 in.).
- Ensure that all devices, shelves, drawers, doors, and cables are secure.
- Ensure that the four leveling pads are raised to their highest position.
- Ensure that there is no stabilizer bracket installed on the rack cabinet during movement.
- Do not use a ramp inclined at more than 10 degrees.
- When the rack cabinet is in the new location, complete the following steps:
  - Lower the four leveling pads.
  - Install stabilizer brackets on the rack cabinet.
  - If you removed any devices from the rack cabinet, repopulate the rack cabinet from the lowest position to the highest position.
- If a long-distance relocation is required, restore the rack cabinet to the configuration of the rack cabinet as you received it. Pack the rack cabinet in the original packaging material, or equivalent. Also lower the leveling pads to raise the casters off of the pallet and bolt the rack cabinet to the pallet.

(R002)

(L001)



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

(L002)



**DANGER:** Rack-mounted devices are not to be used as shelves or work spaces. (L002)

(L003)



or



or



or



or



**DANGER:** Multiple power cords. The product might be equipped with multiple AC power cords or multiple DC power cables. To remove all hazardous voltages, disconnect all power cords and power cables. (L003)

(L007)



**CAUTION:** A hot surface nearby. (L007)

(L008)



**CAUTION:** Hazardous moving parts nearby. (L008)

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with IEC 60825 as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

**CAUTION:**

**This product might contain one or more of the following devices: CD-ROM drive, DVD-ROM drive, DVD-RAM drive, or laser module, which are Class 1 laser products. Note the following information:**

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

(C026)

**CAUTION:**

Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Although shining light into one end and looking into the other end of a disconnected optical fiber to verify the continuity of optic fibers many not injure the eye, this procedure is potentially dangerous. Therefore, verifying the continuity of optical fibers by shining light into one end and looking at the other end is not recommended. To verify continuity of a fiber optic cable, use an optical light source and power meter. (C027)

**CAUTION:**

**This product contains a Class 1M laser. Do not view directly with optical instruments. (C028)**

**CAUTION:**

**Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following information: laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam. (C030)**

**CAUTION:**

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

*Do Not:*

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

**Exchange only with the IBM-approved part. Recycle or discard the battery as instructed by local regulations. In the United States, IBM has a process for the collection of this battery. For information, call 1-800-426-4333. Have the IBM part number for the battery unit available when you call. (C003)**

## CAUTION:

Regarding IBM provided VENDOR LIFT TOOL:

- Operation of LIFT TOOL by authorized personnel only.
- LIFT TOOL intended for use to assist, lift, install, remove units (load) up into rack elevations. It is not to be used loaded transporting over major ramps nor as a replacement for such designated tools like pallet jacks, walkies, fork trucks and such related relocation practices. When this is not practicable, specially trained persons or services must be used (for instance, riggers or movers).
- Read and completely understand the contents of LIFT TOOL operator's manual before using. Failure to read, understand, obey safety rules, and follow instructions may result in property damage and/or personal injury. If there are questions, contact the vendor's service and support. Local paper manual must remain with machine in provided storage sleeve area. Latest revision manual available on vendor's web site.
- Test verify stabilizer brake function before each use. Do not over-force moving or rolling the LIFT TOOL with stabilizer brake engaged.
- Do not move LIFT TOOL while platform is raised, except for minor positioning.
- Do not exceed rated load capacity. See LOAD CAPACITY CHART regarding maximum loads at center versus edge of extended platform.
- Only raise load if properly centered on platform. Do not place more than 200 lb (91 kg) on edge of sliding platform shelf also considering the load's center of mass/gravity (CoG).
- Do not corner load the platform tilt riser accessory option. Secure platform riser tilt option to main shelf in all four (4x) locations with provided hardware only, prior to use. Load objects are designed to slide on/off smooth platforms without appreciable force, so take care not to push or lean. Keep riser tilt option flat at all times except for final minor adjustment when needed.
- Do not stand under overhanging load.
- Do not use on uneven surface, incline or decline (major ramps).
- Do not stack loads.
- Do not operate while under the influence of drugs or alcohol.
- Do not support ladder against LIFT TOOL.
- Tipping hazard. Do not push or lean against load with raised platform.
- Do not use as a personnel lifting platform or step. No riders.
- Do not stand on any part of lift. Not a step.
- Do not climb on mast.
- Do not operate a damaged or malfunctioning LIFT TOOL machine.
- Crush and pinch point hazard below platform. Only lower load in areas clear of personnel and obstructions. Keep hands and feet clear during operation.
- No Forks. Never lift or move bare LIFT TOOL MACHINE with pallet truck, jack or fork lift.
- Mast extends higher than platform. Be aware of ceiling height, cable trays, sprinklers, lights, and other overhead objects.
- Do not leave LIFT TOOL machine unattended with an elevated load.
- Watch and keep hands, fingers, and clothing clear when equipment is in motion.
- Turn Winch with hand power only. If winch handle cannot be cranked easily with one hand, it is probably over-loaded. Do not continue to turn winch past top or bottom of platform travel. Excessive unwinding will detach handle and damage cable. Always hold handle when lowering, unwinding. Always assure self that winch is holding load before releasing winch handle.
- A winch accident could cause serious injury. Not for moving humans. Make certain clicking sound is heard as the equipment is being raised. Be sure winch is locked in position before releasing handle. Read instruction page before operating this winch. Never allow winch to unwind freely. Freewheeling will cause uneven cable wrapping around winch drum, damage cable, and may cause serious injury. (C048)

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

The following comments apply to the IBM servers that have been designated as conforming to NEBS (Network Equipment-Building System) GR-1089-CORE:

The equipment is suitable for installation in the following:

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

The intrabuilding ports of this equipment are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intrabuilding ports of this equipment *must not* be metalically connected to the interfaces that connect to the OSP (outside plant) or its wiring. These interfaces are designed for use as intrabuilding interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection to connect these interfaces metalically to OSP wiring.

**Note:** All Ethernet cables must be shielded and grounded at both ends.

The ac-powered system does not require the use of an external surge protection device (SPD).

The dc-powered system employs an isolated DC return (DC-I) design. The DC battery return terminal *shall not* be connected to the chassis or frame ground.

The dc-powered system is intended to be installed in a common bonding network (CBN) as described in GR-1089-CORE.





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## Finding parts, locations, and addresses

Locate physical part locations and identify parts with system diagrams.

You can identify the enclosure in which a field-replaceable unit (FRU) is plugged by its location code. The first character of the location code is always U followed by a 4-character feature code or enclosure type as shown in the following example: U78CB.001.10ABCDE-P3-C31 In this example, the enclosure type is **78CB**.

The next 3 characters of the location code indicate the model of the enclosure (**001** in the example). The next string of characters provides the enclosure serial number (**10ABCDE** in the example).

Using this information, locate the enclosure with the FRU you want to replace. Find the enclosure type in the following table and go to the service guide for that enclosure.

Enclosure number	System
U78CB.001	5148-21L, 5148-22L, 8247-21L, 8247-22L, 8284-21A, or 8284-22A
U78C9.001	8247-42L, 8286-41A, or 8286-42A
U78C7.001	8408-44E or 8408-E8E
U78CC.001	9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system control unit
U78CA.001	9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system node
U5887.001	5887 disk drive enclosure
U78CD.001	EMX0 PCIe Gen3 I/O expansion drawer
U5147.024	5147-024 storage enclosure
UESLL.001	ESLL storage enclosure
UESLS.001	ESLS storage enclosure

### Locate the FRU

The string of characters that follow the enclosure serial number identifies the FRU location within the enclosure: U78CB.001.10ABCDE-P3-C31 In this example, **P3-C31** is the location of the FRU to be replaced. Use the graphics and tables to locate the FRU and link to its removal and replacement procedure.

---

## Part locations and location codes

You can find part locations by using location codes. Illustrations are provided to help you map a location code to a position on the server or expansion unit.

### Using location codes

For additional information about reading your location code, use the following table to link to a specific topic.

Location code topics that might be of interest	Description
"Location code overview" on page 2	Contains background information on the use of location codes.

Location code topics that might be of interest	Description
"Physical location codes"	Provides a definition for physical location code.
"Logical location codes"	Provides a definition for a logical location code.
"Location code format" on page 3	Provides descriptive information of the <i>Un</i> value in the location code string. For example, U5887.001.
"Location code labels" on page 4	Provides a table that identifies and defines the location code labels. The location code labels begin with an alphabetic character and follow the system serial number. For example, U5887.001.10ABCDE-P3-C31-T2-L23. (The system serial number is the 10ABCDE in the previous example.) The P3, C31, T2, and L23 all contain an alphabetic character that is identified in the Location code labels table.
"Worldwide unique identifier" on page 4	Provides a definition for the worldwide unique identifier. This group of digits follows the resource code labels and always begins with the letter <i>W</i> .

## Location code overview

Servers (system unit and expansion units) use physical location codes to provide mapping of replaceable units. Location codes are produced by the server's firmware, which structures them so that they can be used to identify specific parts in a system. The location code format is the same for all servers.

If you are working with a specific location code, the feature immediately follows the first character (U5887). See the Unit type and locations table.

If the location code ends with **-Txx-Lxx**, the server's firmware could not identify the physical location. When a physical location cannot be identified, a logical location code is provided. Where logical location codes occur in enclosures, the locations topic for the enclosure has the known conversions listed. For logical location codes with no conversion, contact your next level of support.

If the location code begins with **UTMPx**, the expansion I/O unit's machine type, model, and serial number have not been set yet and this is a temporary unit identifier. To identify the unit, examine the display panels on all of the expansion I/O units connected to the server until you find one with the same characters in the first 5 digits of the top line in the unit's display. Record the unit's real machine type and model from the unit label. Match the unit's machine type and model in the Unit type and locations table, and follow the link to determine the service information.

**Note:** If locations for units are not in the preceding format, either they are not supported or there is a problem in the firmware. Contact your next level of support.

## Physical location codes

Physical location codes provide a mapping of logical functions and components (such as backplanes, removable modules, connectors, ports, cables, and devices) to their specific locations within the physical structure of the server.

## Logical location codes

If the physical location cannot be mapped to a physical location code, the server's firmware generates a logical location code. A logical location code is a sequence of location labels that identifies the path that the system uses to communicate with a given resource.

**Note:** A resource has as many logical location codes as it has logical connections to the system. For example, an external tape device connected to two I/O adapters will have two logical location codes.

An example of a logical location code is:

U5887.001.10ABCDE-P3-C31-T2-L23

The first part of the location code (through the T2 label) represents the physical location code for the resource that communicates with the target resource. The remainder of the logical location code (L23) represents exactly which resource is indicated.

## Location code format

The location code is an alphanumeric string of variable length, consisting of a series of location identifiers, separated by a dash. An example of a physical location for a fan is  $U_n-A1$ .

The first position, represented by  $U_n$  (where  $n$  is equal to any string contained between the U and the hyphen) in the preceding example, is displayed in one of the forms in the following table.

**Note:** In location codes, the U is a constant digit; however, the numbered positions following the U are variables and are dependent on your server. Each column defines the numbers that follow the U in the beginning of the location code.

Machine type and model number in a location code	Feature codes and sequence numbers in a location code
$Utttt.mmm.ssssss-A1$	$Uffff.ccc.ssssss-A1$
The leftmost code is always U.	The leftmost code is always U.
$tttt$ represents the unit type of the enclosure (drawer or node).	$ffff$ represents the feature code of the enclosure (drawer or node).
$mmm$ represents the model of the enclosure.	$ccc$ represents the sequence number of the enclosure.
$ssssss$ represents the serial number for the enclosure.	$ssssss$ represents the serial number of the enclosure.
<p><b>Note:</b> The <math>mmm</math> or <math>ccc</math> number might not be displayed on all location codes for all servers. If the <math>mmm</math> value is not displayed, the location code is displayed in one of the following forms:</p> <ul style="list-style-type: none"> <li><math>Utttt.ssssss-A1</math></li> <li><math>Uffff.ssssss-A1</math></li> </ul>	

The location code is hierarchical; that is, each location identifier in the string represents a physical part. The order (from left to right), in which each identifier is shown, allows you to determine which parts contain other parts in the string.

The dash (-) separator character represents a relationship between two components in the unit. In the example of the fan, whose location code is  $U_n-A1$ , the dash shows that the fan (A1) is contained in the base unit (or  $U_n$ ). Modules, adapters, cables, and devices are all parts that are plugged into another part. Their location codes always show that they are plugged into another part as components of the server. Another example follows:  $U_n-P1-C9$  is a memory DIMM, with memory DIMM (C9) plugged into a backplane (P1), which is inside the unit ( $U_n$ ).

**Note:** For devices, certain error conditions might cause an IBM i device to display the device location in an AIX® format.

Table 1. Unit type and locations

Unit type (Utttt)	Link to location information
U78CB.001	5148-21L, 5148-22L, 8247-21L, 8247-22L, 8284-21A, or 8284-22A locations

Table 1. Unit type and locations (continued)

Unit type (Utttt)	Link to location information
U78C9.001	8247-42L, 8286-41A, or 8286-42A locations
U78C7.001	8408-44E or 8408-E8E locations
U78CC.001	9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system control unit locations
U78CA.001	9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system node locations
U5887.001	5887 disk drive enclosure locations
U78CD.001	EMX0 PCIe Gen3 I/O expansion drawer locations
U5147.024	5147-024, ESLL, or ESLS locations
UESLL.001	5147-024, ESLL, or ESLS locations
UESLS.001	5147-024, ESLL, or ESLS locations

## Location code labels

The location code label represents a physical part of the server. The following table describes the prefixes of location code labels.

**Note:** These labels apply to system units only.

Table 2. Prefixes of location code labels for system units

Prefix	Description	Example
A	Air-moving device	Fan, blower
C	Card connector	IOP, IOA, DIMM, processor card
D	Device	Diskette, control panel
E	Electrical	Battery, power supply, ac charger
L	Logical path SAS target	Integrated drive electronics (IDE) address, Fibre Channel LUN
N	Horizontal placement for an empty rack location	
P	Planar	System backplane
T	Port	
U	Unit	
V	Virtual planar	
W	Worldwide unique ID	
X	EIA value for an empty rack location	
Y	Firmware FRU	

## Worldwide unique identifier

The location code label for the worldwide unique identifier consists of the prefix W followed by a maximum of 16 uppercase hexadecimal digits with no leading zeros. A location code might not consist of a worldwide unique identifier. When present, the worldwide unique identifier location label follows the location label of the resource that interfaces with the resource that has the worldwide unique identifier, usually a port.

## 5148-21L, 5148-22L, 8247-21L, 8247-22L, 8284-21A, or 8284-22A locations

Use this information to help you map a location code to a position on the unit.

The following diagrams show field-replaceable unit (FRU) layouts in the system. Use these diagrams with the following tables.

### Rack views

**Note:** The following graphics represent location codes for 5148-22L, 8247-22L, or 8284-22A. The 5148-21L, 8247-21L, and the 8284-21A systems have the same location codes, but only a subset of the locations support hardware. The asterisk (\*) in the FRU location table indicates locations that are not supported for the 5148-21L, 8247-21L, or the 8284-21A.

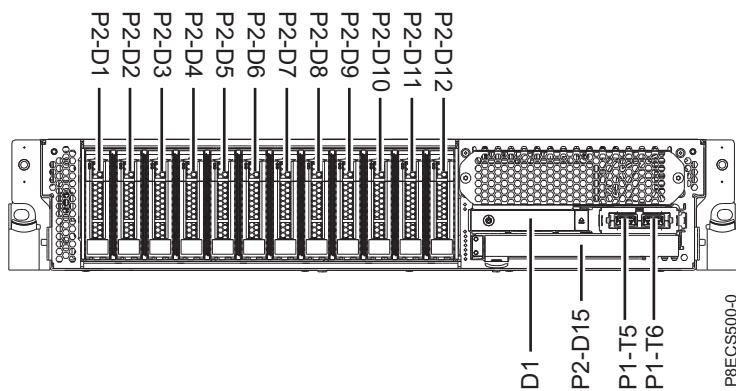


Figure 1. Rack front view (base function)

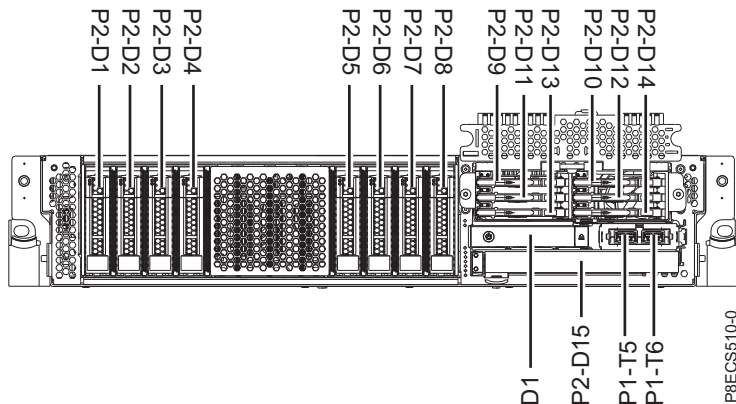
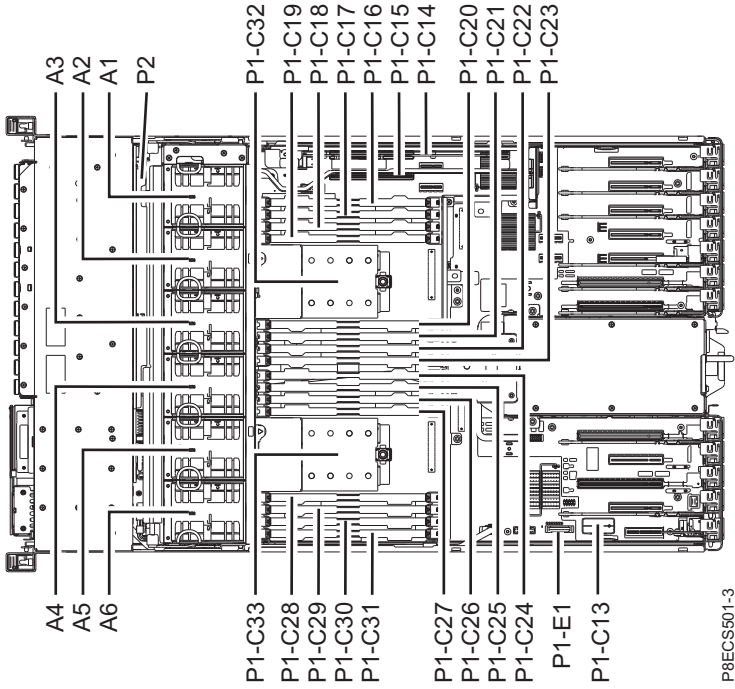
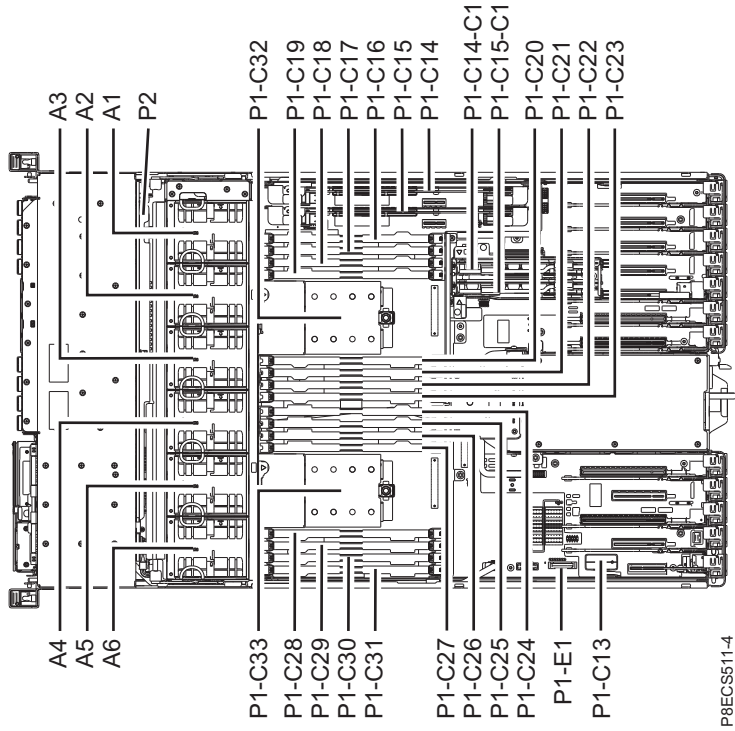


Figure 2. Rack front view (expanded function)



P8ECS501-3

Figure 3. Rack top view (base function)



P8ECS511-4

Figure 4. Rack top view (expanded function)

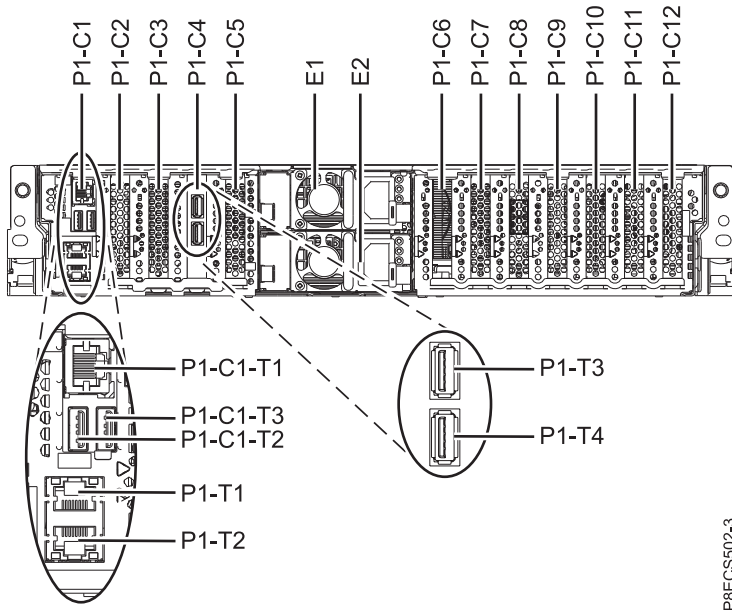


Figure 5. Rack rear view (base function)

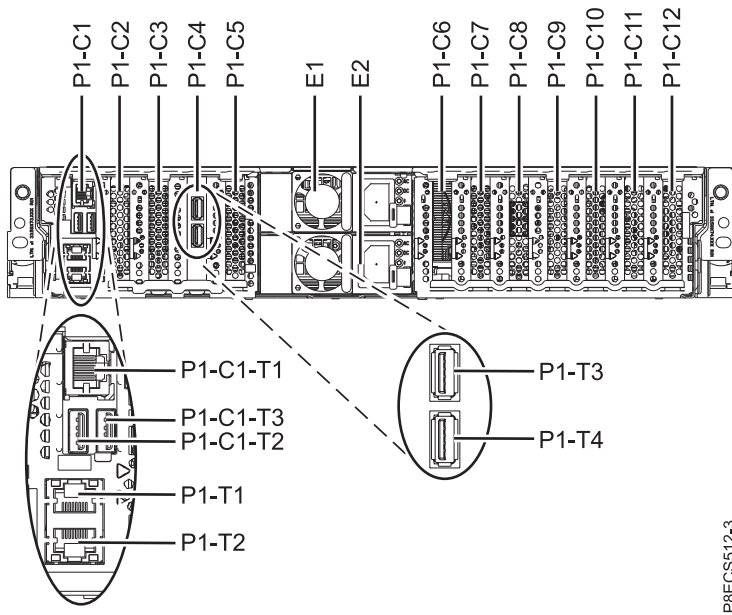


Figure 6. Rack rear view (expanded function)

The following table provides location codes for parts that comprise the server.

Table 3. FRU location

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
System unit	U <sub>n</sub>		
Fans			

Table 3. FRU location (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Fan 1	Un-A1	Yes	See Fans.
Fan 2	Un-A2	Yes	
Fan 3	Un-A3	Yes	
Fan 4	Un-A4	Yes	
Fan 5*	Un-A5	Yes	
Fan 6*	Un-A6	Yes	
<b>Power supplies</b>			
Power supply 1	Un-E1	Yes	See Power supply.
Power supply 2	Un-E2	Yes	
<b>Backplanes</b>			
System backplane <b>Note:</b> The service processor is part of the system backplane.	Un-P1	Yes	See System backplane.
Time-of-day battery	Un-P1-E1	Yes	See Time-of-day battery.
Disk drive backplane	Un-P2	Yes	See Disk drive backplane.
<b>Ports</b>			
HMC port 1	Un-P1-T1	No	
HMC port 2	Un-P1-T2	No	
Serial port	Un-P1-C1-T1	No	
USB 2.0 port 1 (rear) <b>Note:</b> This port is used only for firmware update and uninterruptible power supply (UPS). This port is unavailable for host operating systems.	Un-P1-C1-T2	No	
USB 2.0 port 2 (rear) <b>Note:</b> This port is used only for firmware update and uninterruptible power supply (UPS). This port is unavailable for host operating systems.	Un-P1-C1-T3	No	
USB 3.0 port 1 (rear) 5148-21L, 8247-21L, and 8284-21A only	Un-P1-T3	No	
USB 3.0 port 2 (rear) 5148-21L, 8247-21L, and 8284-21A only	Un-P1-T4	No	
USB 3.0 port 3 (front)	Un-P1-T5	No	
USB 3.0 port 4 (front)	Un-P1-T6	No	
<b>Adapters</b>			
System I/O card	Un-P1-C1	Yes	See System I/O card.



Table 3. FRU location (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
PCIe x8 slot 1*	Un-P1-C2	Yes	See PCI Adapters.
PCIe x16 slot 2*	Un-P1-C3	Yes	
PCIe x16 slot 4*	Un-P1-C5	Yes	
PCIe x16 slot 5	Un-P1-C6	Yes	
PCIe x16 slot 6	Un-P1-C7	Yes	
PCIe x8 slot 8	Un-P1-C9	Yes	
PCIe x8 slot 9	Un-P1-C10	Yes	
PCIe x8 slot 10	Un-P1-C11	Yes	
PCIe x8 slot 11	Un-P1-C12	Yes	
Slot for USB 3.0 port - slot 3	Un-P1-C4	No	
Mini-SAS HD cable with two external SAS ports used with the PCIe3 x8 cache SAS RAID internal adapter*	Un-P1-C8	No	
System VPD card	Un-P1-C13	Yes	See Vital product data card.
PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	Un-P1-C14	Yes	See PCIe3 x8 cache SAS RAID internal adapter.
Backup power module card for the PCIe3 x8 cache SAS RAID internal adapter	Un-P1-C14-C1	Yes	See PCIe3 x8 SAS RAID internal adapter.
PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	Un-P1-C15	Yes	
Backup power module card for the PCIe3 x8 cache SAS RAID internal adapter	Un-P1-C15-C1	Yes	
<b>Memory modules</b>			

Table 3. FRU location (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Memory module 1	Un-P1-C16	Yes	See Memory modules.
Memory module 2	Un-P1-C17	Yes	
Memory module 3	Un-P1-C18	Yes	
Memory module 4	Un-P1-C19	Yes	
Memory module 5	Un-P1-C20	Yes	
Memory module 6	Un-P1-C21	Yes	
Memory module 7	Un-P1-C22	Yes	
Memory module 8	Un-P1-C23	Yes	
Memory module 9*	Un-P1-C24	Yes	
Memory module 10*	Un-P1-C25	Yes	
Memory module 11*	Un-P1-C26	Yes	
Memory module 12*	Un-P1-C27	Yes	
Memory module 13*	Un-P1-C28	Yes	
Memory module 14*	Un-P1-C29	Yes	
Memory module 15*	Un-P1-C30	Yes	
Memory module 16*	Un-P1-C31	Yes	
<b>Processor and processor regulator</b>			
POWER8® processor module 1	Un-P1-C32	Yes	See System processor module.
POWER8 processor module 2*	Un-P1-C33	Yes	
<b>Device physical locations for systems (base function)</b>			
Drive 1	Un-P2-D1	Yes	See Disk drives or solid-state drives.
Drive 2	Un-P2-D2	Yes	
Drive 3	Un-P2-D3	Yes	
Drive 4	Un-P2-D4	Yes	
Drive 5	Un-P2-D5	Yes	
Drive 6	Un-P2-D6	Yes	
Drive 7	Un-P2-D7	Yes	
Drive 8	Un-P2-D8	Yes	
Drive 9	Un-P2-D9	Yes	
Drive 10	Un-P2-D10	Yes	
Drive 11	Un-P2-D11	Yes	
Drive 12	Un-P2-D12	Yes	
DVD	Un-P2-D15	Yes	See Media devices.
<b>Device physical locations for systems (expanded function)</b>			

Table 3. FRU location (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Drive 1	Un-P2-D1	Yes	See Disk drives or solid-state drives.
Drive 2	Un-P2-D2	Yes	
Drive 3	Un-P2-D3	Yes	
Drive 4	Un-P2-D4	Yes	
Drive 5	Un-P2-D5	Yes	
Drive 6	Un-P2-D6	Yes	
Drive 7	Un-P2-D7	Yes	
Drive 8	Un-P2-D8	Yes	
Drive 9*	Un-P2-D9 (for systems with a solid-state drive cage)	Yes	
Drive 10*	Un-P2-D10 (for systems with a solid-state drive cage)	Yes	
Drive 11*	Un-P2-D11 (for systems with a solid-state drive cage)	Yes	
Drive 12*	Un-P2-D12 (for systems with a solid-state drive cage)	Yes	
Drive 13*	Un-P2-D13 (for systems with a solid-state drive cage)	Yes	
Drive 14*	Un-P2-D14 (for systems with a solid-state drive cage)	Yes	
DVD	Un-P2-D15	Yes	See Media devices.
<b>Control panel</b>			
Control panel	Un-D1	No	See Control panel.

\*Not applicable for 5148-21L, 8247-21L, or 8284-21A.

**Related reference:**

5148-21L, 5148-22L, 8247-21L, 8247-22L, 8284-21A, or 8284-22A system parts  
 Indexed drawings show system part numbers of each part.

**8247-42L, 8286-41A, or 8286-42A locations**

Use this information to help you map a location code to a position on the unit.

The following diagrams show field-replaceable unit (FRU) layouts in the system. Use these diagrams with the following tables.

**Rack views**

The following graphics represent location codes for 8247-42L or 8286-42A. The 8286-41A has the same location codes, but only a subset of the locations support hardware. The asterisk (\*) in the FRU location table indicates locations that are not supported for 8286-41A.

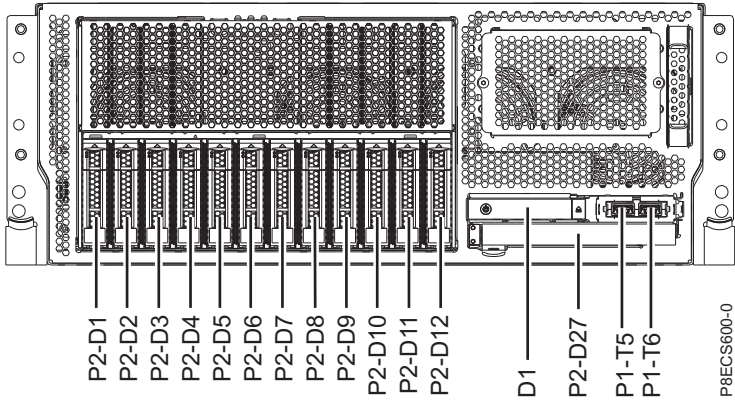


Figure 7. Rack front view (base function)

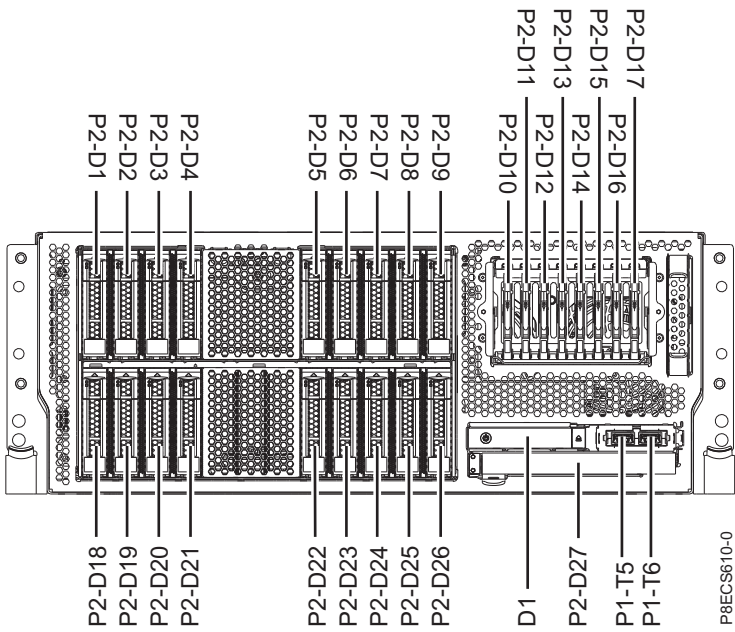


Figure 8. Rack front view (expanded function)

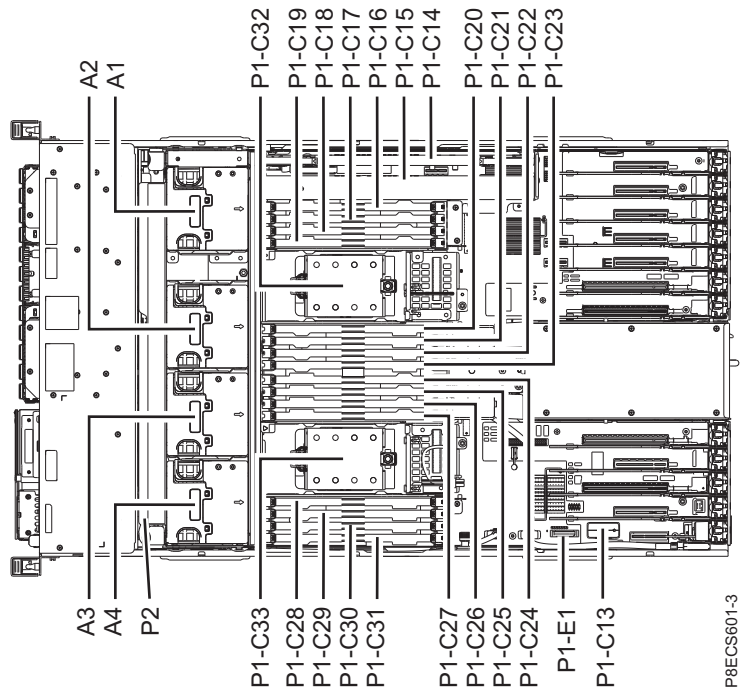


Figure 9. Rack top view (base function)

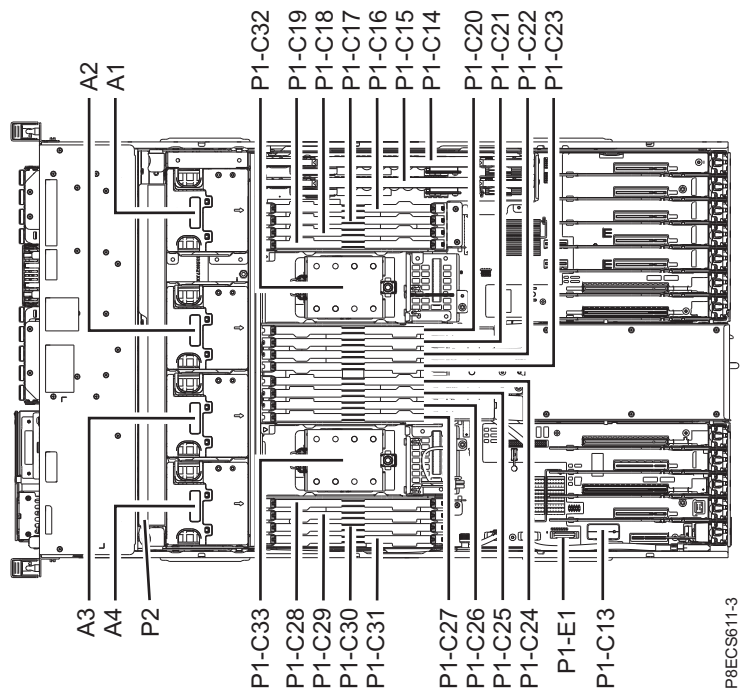
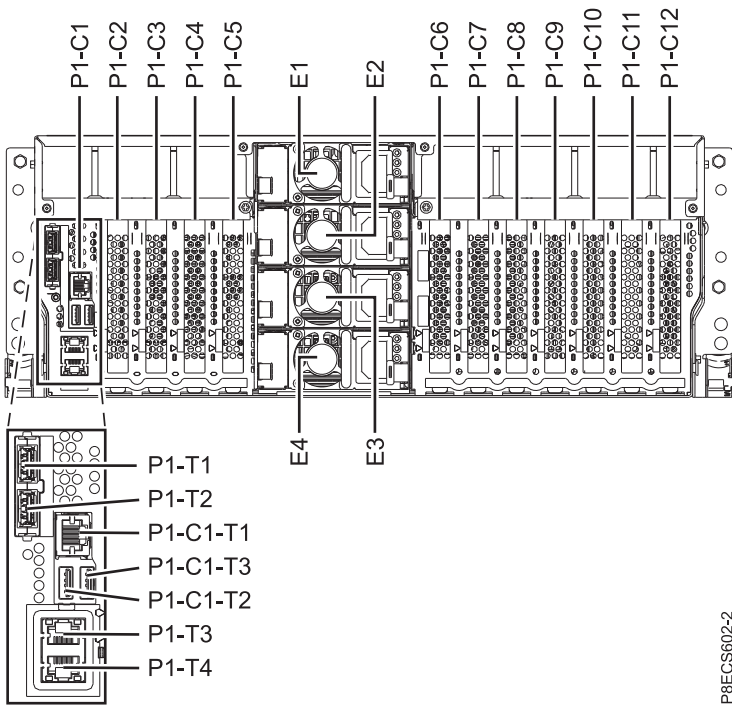
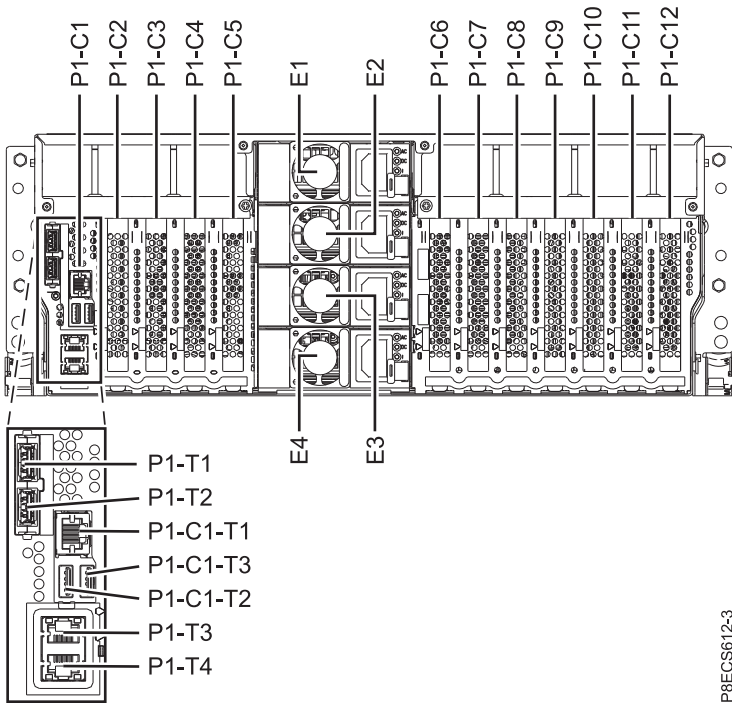


Figure 10. Rack top view (expanded function)



P8ECS602-2

Figure 11. Rack rear view (base function)



P8ECS612-3

Figure 12. Rack rear view (expanded function)

## Tower views

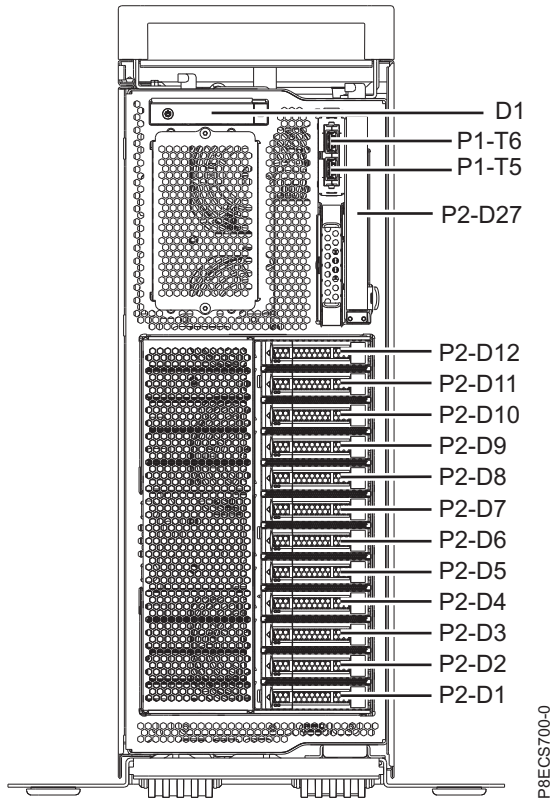


Figure 13. Tower front view (base function)

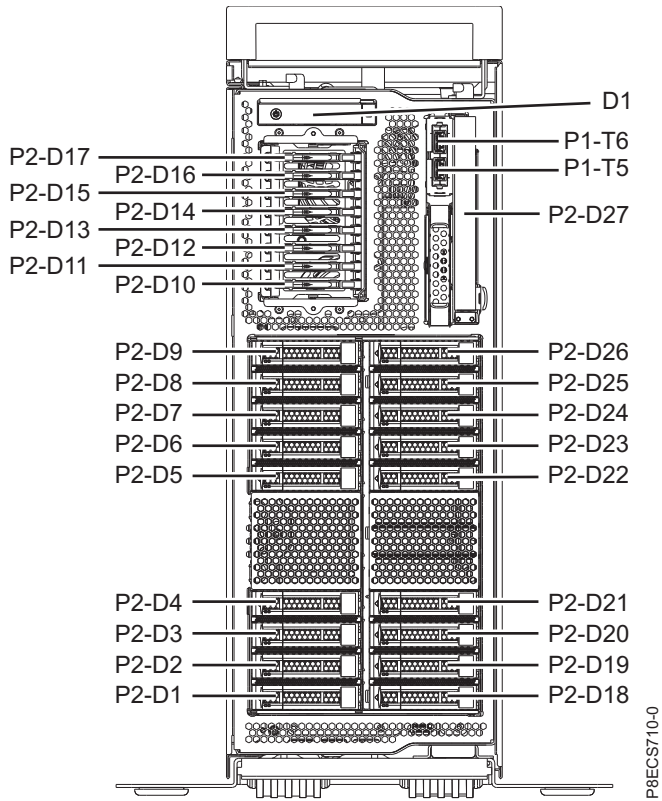


Figure 14. Tower front view (expanded function)

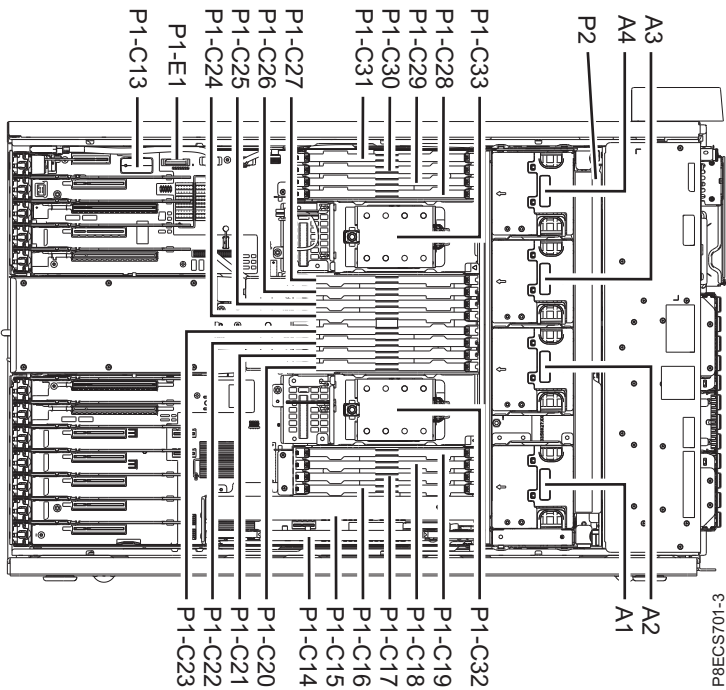


Figure 15. Tower side view (base function)



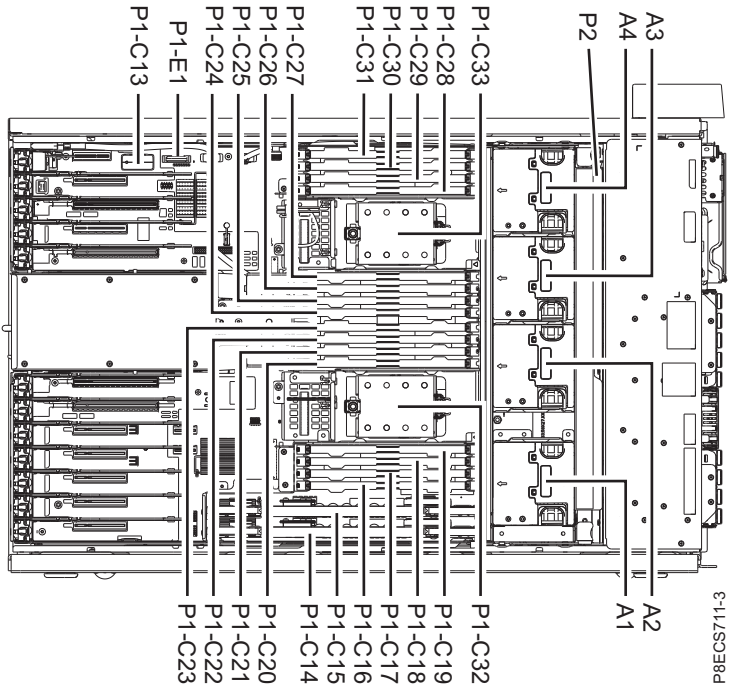


Figure 16. Tower side view (expanded function)

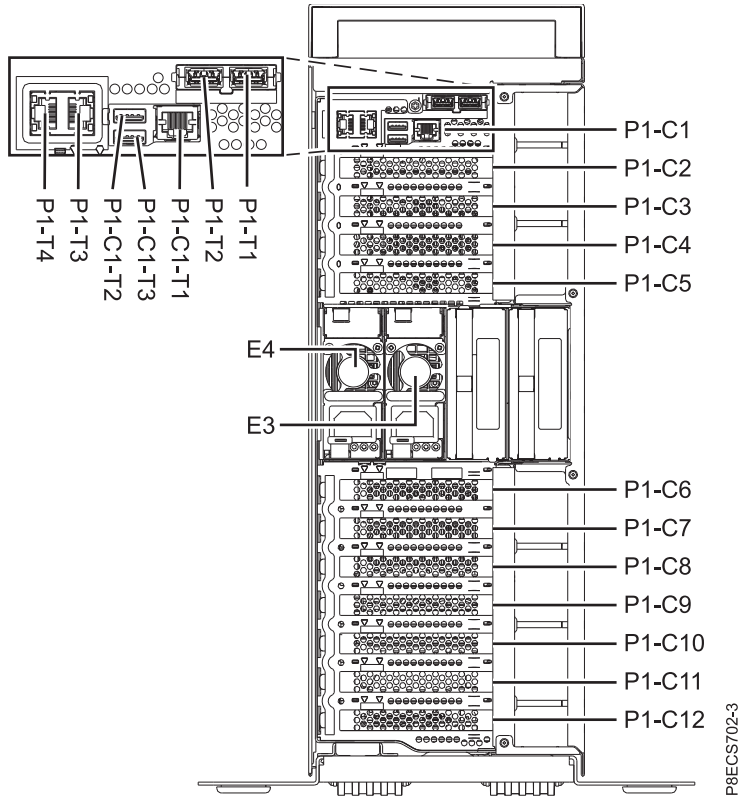


Figure 17. Tower rear view (base function)

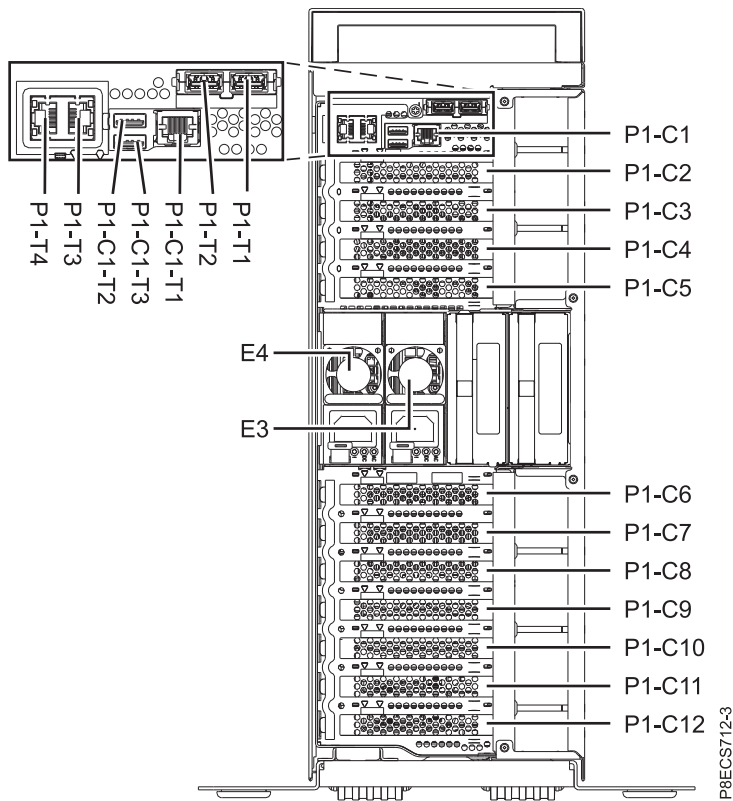


Figure 18. Tower rear view (expanded function)

The following table provides location codes for parts that comprise the server.

Table 4. FRU location

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
System unit	<i>Un</i>		
<b>Fans</b>			
Fan 1	<i>Un-A1</i>	Yes	See Fans.
Fan 2	<i>Un-A2</i>	Yes	
Fan 3*	<i>Un-A3</i>	Yes	
Fan 4*	<i>Un-A4</i>	Yes	
<b>Power supplies</b>			
Power supply 1*	<i>Un-E1</i>	Yes	See Power supply.
Power supply 2*	<i>Un-E2</i>	Yes	
Power supply 3	<i>Un-E3</i>	Yes	
Power supply 4	<i>Un-E4</i>	Yes	
<b>Backplanes</b>			
System backplane	<i>Un-P1</i>	Yes	See System backplane.
<b>Note:</b> The service processor is part of the system backplane.			
Time-of-day battery	<i>Un-P1-E1</i>	Yes	See Time-of-day battery.

Table 4. FRU location (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Disk drive backplane	Un-P2	Yes	See Disk drive backplane.
<b>Ports</b>			
USB 3.0 port 1 (rear)	Un-P1-T1	No	
USB 3.0 port 2 (rear)	Un-P1-T2	No	
Serial port	Un-P1-C1-T1	No	
USB 2.0 port 1 (rear) <b>Note:</b> This port is used only for firmware update and uninterruptible power supply (UPS). This port is unavailable for host operating systems.	Un-P1-C1-T2	No	
USB 2.0 port 2 (rear) <b>Note:</b> This port is used only for firmware update and uninterruptible power supply (UPS). This port is unavailable for host operating systems.	Un-P1-C1-T3	No	
HMC port 1	Un-P1-T3	No	
HMC port 2	Un-P1-T4	No	
USB 3.0 port 3 (front)	Un-P1-T5	No	
USB 3.0 port 4 (front)	Un-P1-T6	No	
<b>Adapters</b>			
System I/O card	Un-P1-C1	Yes	See System I/O card.
PCIe x8 slot 1*	Un-P1-C2	Yes	See PCI Adapters.
PCIe x16 slot 2*	Un-P1-C3	Yes	
PCIe x8 slot 3*	Un-P1-C4	Yes	
PCIe x16 slot 4*	Un-P1-C5	Yes	
PCIe x16 slot 5	Un-P1-C6	Yes	
PCIe x16 slot 6	Un-P1-C7	Yes	
PCIe x8 slot 7	Un-P1-C8	Yes	
PCIe x8 slot 8	Un-P1-C9	Yes	
PCIe x8 slot 9	Un-P1-C10	Yes	
PCIe x8 slot 10	Un-P1-C11	Yes	
PCIe x8 slot 11	Un-P1-C12	Yes	
System VPD card	Un-P1-C13	Yes	See Vital product data card.
PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	Un-P1-C14	Yes	See PCIe3 x8 cache SAS RAID internal adapter.
PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	Un-P1-C15	Yes	See PCIe3 x8 SAS RAID internal adapter.

Table 4. FRU location (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
<b>Memory modules</b>			
Memory module 1	Un-P1-C16	Yes	See Memory modules.
Memory module 2	Un-P1-C17	Yes	
Memory module 3	Un-P1-C18	Yes	
Memory module 4	Un-P1-C19	Yes	
Memory module 5	Un-P1-C20	Yes	
Memory module 6	Un-P1-C21	Yes	
Memory module 7	Un-P1-C22	Yes	
Memory module 8	Un-P1-C23	Yes	
Memory module 9*	Un-P1-C24	Yes	
Memory module 10*	Un-P1-C25	Yes	
Memory module 11*	Un-P1-C26	Yes	
Memory module 12*	Un-P1-C27	Yes	
Memory module 13*	Un-P1-C28	Yes	
Memory module 14*	Un-P1-C29	Yes	
Memory module 15*	Un-P1-C30	Yes	
Memory module 16*	Un-P1-C31	Yes	
<b>Processor and processor regulator</b>			
POWER8 processor module 1	Un-P1-C32	Yes	See System processor module.
POWER8 processor module 2*	Un-P1-C33	Yes	
<b>Device physical locations for systems (base function)</b>			
Drive 1	Un-P2-D1	Yes	See Disk drives or solid-state drives.
Drive 2	Un-P2-D2	Yes	
Drive 3	Un-P2-D3	Yes	
Drive 4	Un-P2-D4	Yes	
Drive 5	Un-P2-D5	Yes	
Drive 6	Un-P2-D6	Yes	
Drive 7	Un-P2-D7	Yes	
Drive 8	Un-P2-D8	Yes	
Drive 9	Un-P2-D9	Yes	
Drive 10	Un-P2-D10	Yes	
Drive 11	Un-P2-D11	Yes	
Drive 12	Un-P2-D12	Yes	
DVD	Un-P2-D27	Yes	See Media devices.
<b>Device physical locations for systems (expanded function)</b>			

Table 4. FRU location (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Drive 1	Un-P2-D1	Yes	See Disk drives or solid-state drives.
Drive 2	Un-P2-D2	Yes	
Drive 3	Un-P2-D3	Yes	
Drive 4	Un-P2-D4	Yes	
Drive 5	Un-P2-D5	Yes	
Drive 6	Un-P2-D6	Yes	
Drive 7	Un-P2-D7	Yes	
Drive 8	Un-P2-D8	Yes	
Drive 9	Un-P2-D9	Yes	
Drive 10*	Un-P2-D10 (for systems with a solid-state drive cage)	Yes	
Drive 11*	Un-P2-D11 (for systems with a solid-state drive cage)	Yes	
Drive 12*	Un-P2-D12 (for systems with a solid-state drive cage)	Yes	
Drive 13*	Un-P2-D13 (for systems with a solid-state drive cage)	Yes	
Drive 14*	Un-P2-D14 (for systems with a solid-state drive cage)	Yes	
Drive 15*	Un-P2-D15 (for systems with a solid-state drive cage)	Yes	
Drive 16*	Un-P2-D16 (for systems with a solid-state drive cage)	Yes	
Drive 17*	Un-P2-D17 (for systems with a solid-state drive cage)	Yes	
Drive 18	Un-P2-D18	Yes	
Drive 19	Un-P2-D19	Yes	
Drive 20	Un-P2-D20	Yes	
Drive 21	Un-P2-D21	Yes	
Drive 22	Un-P2-D22	Yes	
Drive 23	Un-P2-D23	Yes	
Drive 24	Un-P2-D24	Yes	
Drive 25	Un-P2-D25	Yes	
Drive 26	Un-P2-D26	Yes	
DVD	Un-P2-D27	Yes	
<b>Control panel</b>			
Control panel	Un -D1	No	See Control panel.
*Not applicable for 8286-41A.			

**Related reference:**

8247-42L, 8286-41A, or 8286-42A system parts  
 Indexed drawings show system part numbers of each part.

## 8408-44E or 8408-E8E locations

Use this information to help you map a location code to a position on the unit.

The following diagrams show field-replaceable unit (FRU) layouts in the system. Use these diagrams with the following tables.

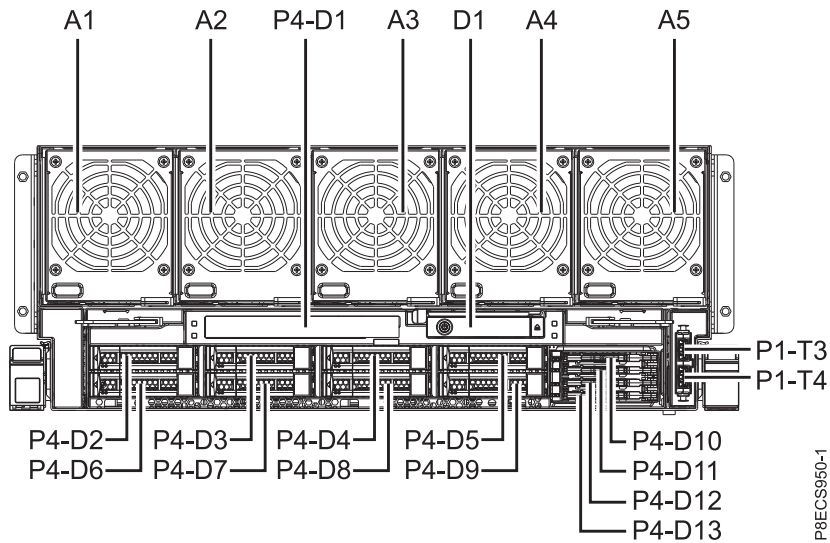


Figure 19. Front view

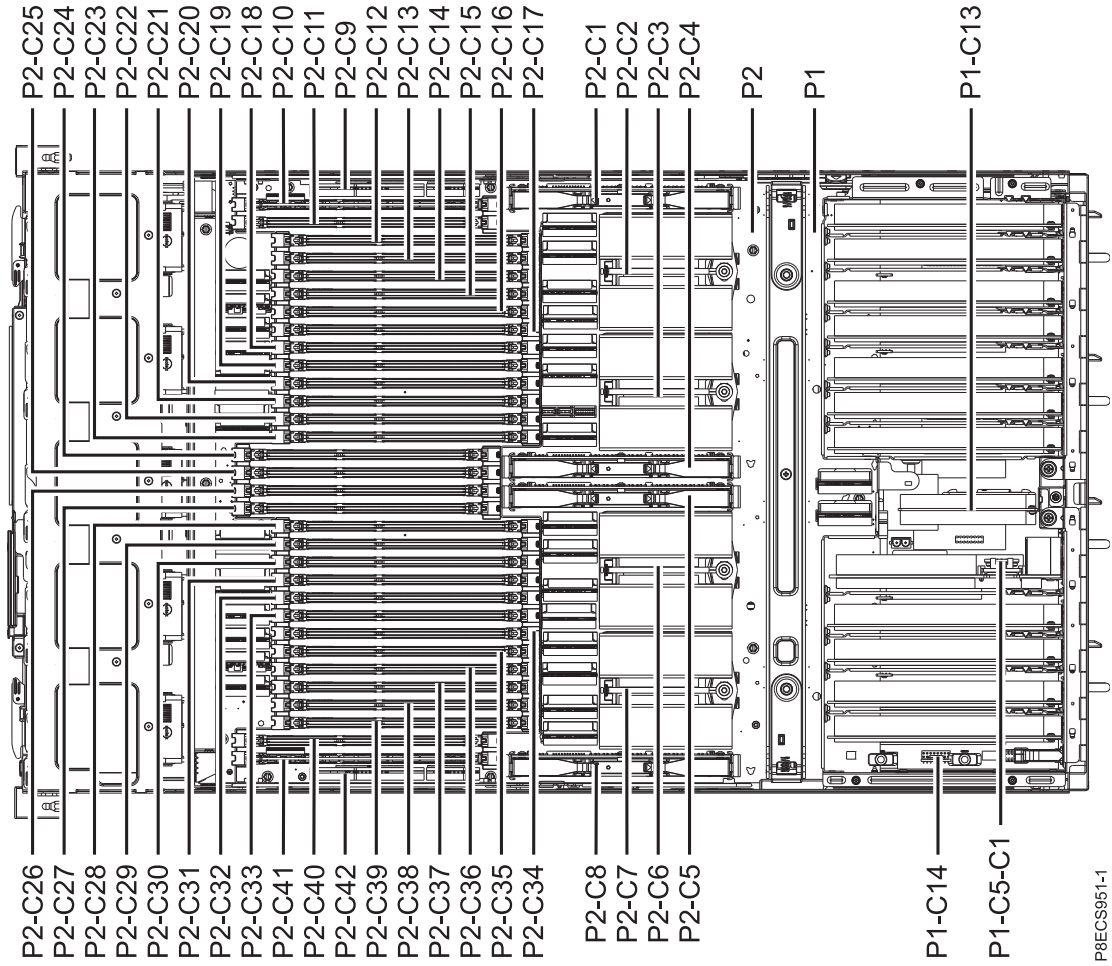
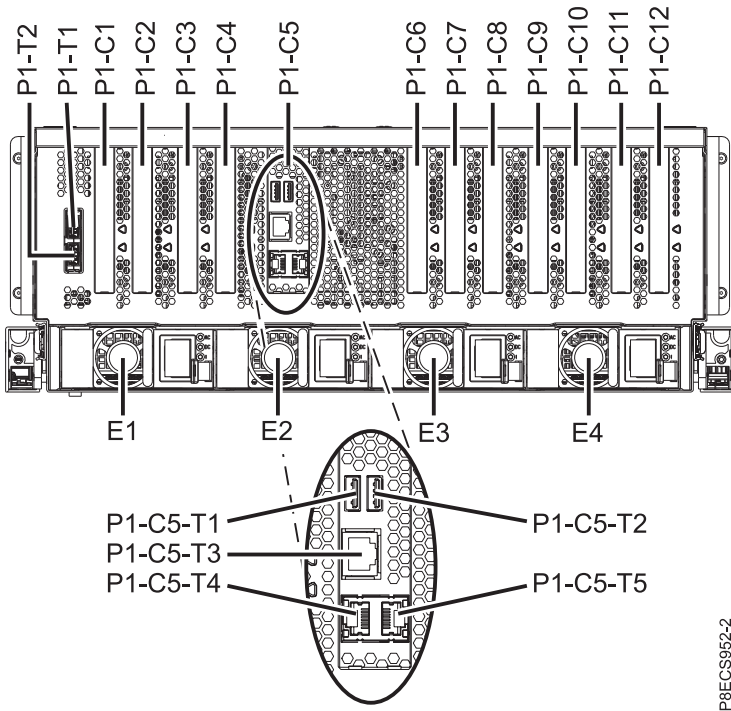


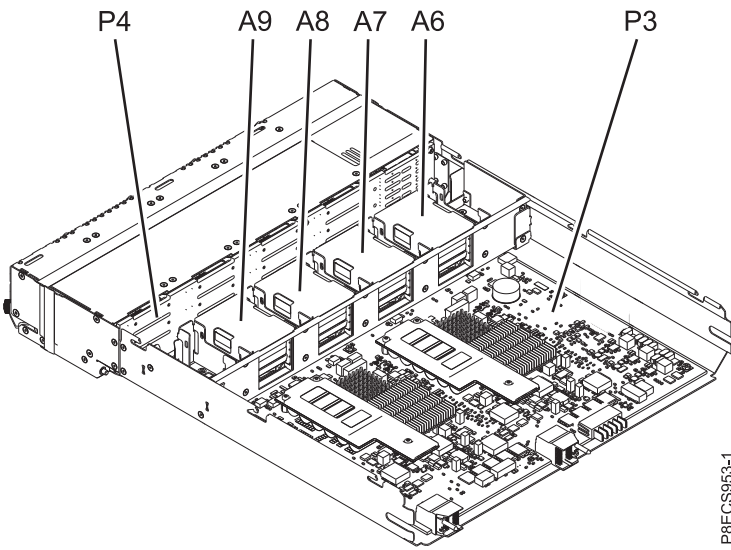
Figure 20. Top view

P8ECS951-1



P8ECS952-2

Figure 21. Rear view



P8ECS953-1

Figure 22. Assembly view

The following table provides location codes for parts that comprise the server.

Table 5. System locations.

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
System unit	Un		
Fans			



Table 5. System locations (continued).

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Fan 1	Un-A1	Yes	See Fans.
Fan 2	Un-A2	Yes	
Fan 3	Un-A3	Yes	
Fan 4	Un-A4	Yes	
Fan 5	Un-A5	Yes	
Fan 6	Un-A6	Yes	
Fan 7	Un-A7	Yes	
Fan 8	Un-A8	Yes	
Fan 9	Un-A9	Yes	
<b>Power supplies</b>			
Power supply 1	Un-E1	Yes	See Power supplies.
Power supply 2	Un-E2	Yes	
Power supply 3	Un-E3	Yes	
Power supply 4	Un-E4	Yes	
<b>Backplanes</b>			
I/O backplane	Un-P1	Yes	See I/O backplane.
System backplane	Un-P2	Yes	See System backplane.
RAID card	Un-P3	Yes	See RAID card.
Disk drive backplane	Un-P4	Yes	See Disk drive backplane.
Power midplane	Un-P5	No	See Power midplane.
<b>Adapters</b>			
PCIe x16 slot 1	Un-P1-C1	Yes	See PCI adapters.
PCIe x16 slot 2	Un-P1-C2	Yes	
PCIe x16 slot 3	Un-P1-C3	Yes	
PCIe x16 slot 4	Un-P1-C4	Yes	
PCIe x8 slot 5	Un-P1-C6	Yes	
PCIe x8 slot 6	Un-P1-C7	Yes	
PCIe x16 slot 7	Un-P1-C8	Yes	
PCIe x16 slot 8	Un-P1-C9	Yes	
PCIe x16 slot 9	Un-P1-C10	Yes	
PCIe x8 slot 10	Un-P1-C11	Yes	
PCIe x16 slot 11	Un-P1-C12	Yes	
<b>Cards</b>			
Service processor card	Un-P1-C5	Yes	See Service processor card.
Time-of-day battery card	Un-P1-C5-C1	Yes	See Time-of-day battery card.
Vital product data (VPD) card	Un-P1-C14	Yes	See Vital product data card.

Table 5. System locations (continued).

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
<b>Ports</b>			
USB 3.0 port 1 (rear)	Un-P1-T1	No	
USB 3.0 port 2 (rear)	Un-P1-T2	No	
USB 3.0 port 3 (front)	Un-P1-T3	No	
USB 3.0 port 4 (front)	Un-P1-T4	No	
USB 2.0 port 1 <b>Note:</b> This port is used only for firmware update and uninterruptible power supply (UPS). This port is unavailable for host operating systems.	Un-P1-C5-T1	No	
USB 2.0 port 2 <b>Note:</b> This port is used only for firmware update and uninterruptible power supply (UPS). This port is unavailable for host operating systems.	Un-P1-C5-T2	No	
Serial port	Un-P1-C5-T3	No	
HMC port 1	Un-P1-C5-T4	No	
HMC port 2	Un-P1-C5-T5	No	
<b>Processor and processor regulator</b>			
POWER8 processor module 1	Un-P2-C2	Yes	See System processor modules.
POWER8 processor module 2	Un-P2-C3	Yes	
POWER8 processor module 3	Un-P2-C6	Yes	
POWER8 processor module 4	Un-P2-C7	Yes	
POWER8 processor voltage regulator module (VRM) 1	Un-P2-C1	Yes	See Voltage regulator modules.
POWER8 processor VRM 2	Un-P2-C4	Yes	
POWER8 processor VRM 3	Un-P2-C5	Yes	
POWER8 processor VRM 4	Un-P2-C8	Yes	
<b>Device physical locations for systems</b>			

Table 5. System locations (continued).

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Drive 1	Un-P4-D2	Yes	See Disk drives or solid-state drives.
Drive 2	Un-P4-D3	Yes	
Drive 3	Un-P4-D4	Yes	
Drive 4	Un-P4-D5	Yes	
Drive 5	Un-P4-D6	Yes	
Drive 6	Un-P4-D7	Yes	
Drive 7	Un-P4-D8	Yes	
Drive 8	Un-P4-D9	Yes	
Drive 9	Un-P4-D10	Yes	
Drive 10	Un-P4-D11	Yes	
Drive 11	Un-P4-D12	Yes	
Drive 12	Un-P4-D13	Yes	
DVD	Un-P4-D1	Yes	
<b>Memory</b>			

Table 5. System locations (continued).

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Memory 1	Un-P2-C10	Yes	See Memory.
Memory 2	Un-P2-C11	Yes	
Memory 3	Un-P2-C12	Yes	
Memory 4	Un-P2-C13	Yes	
Memory 5	Un-P2-C14	Yes	
Memory 6	Un-P2-C15	Yes	
Memory 7	Un-P2-C16	Yes	
Memory 8	Un-P2-C17	Yes	
Memory 9	Un-P2-C18	Yes	
Memory 10	Un-P2-C19	Yes	
Memory 11	Un-P2-C20	Yes	
Memory 12	Un-P2-C21	Yes	
Memory 13	Un-P2-C22	Yes	
Memory 14	Un-P2-C23	Yes	
Memory 15	Un-P2-C24	Yes	
Memory 16	Un-P2-C25	Yes	
Memory 17	Un-P2-C26	Yes	
Memory 18	Un-P2-C27	Yes	
Memory 19	Un-P2-C28	Yes	
Memory 20	Un-P2-C29	Yes	
Memory 21	Un-P2-C30	Yes	
Memory 22	Un-P2-C31	Yes	
Memory 23	Un-P2-C32	Yes	
Memory 24	Un-P2-C33	Yes	
Memory 25	Un-P2-C34	Yes	
Memory 26	Un-P2-C35	Yes	
Memory 27	Un-P2-C36	Yes	
Memory 28	Un-P2-C37	Yes	
Memory 29	Un-P2-C38	Yes	
Memory 30	Un-P2-C39	Yes	
Memory 31	Un-P2-C40	Yes	
Memory 32	Un-P2-C41	Yes	
<b>Voltage regulator modules (VRMs)</b>			
Memory voltage regulator module 1	Un-P2-C9	Yes	See Voltage regulator modules.
I/O voltage regulator module	Un-P1-C13	Yes	See Voltage regulator modules.
Memory voltage regulator module 2	Un-P2-C42	Yes	See Voltage regulator modules.

Table 5. System locations (continued).

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
<b>Control panel</b>			
Control panel	Un-D1	No	See Control panel.
Control panel USB port	Un-D1-T1	No	

**Related reference:**

“8408-44E and 8408-E8E system parts” on page 76  
 Indexed drawings show system part numbers of each part.

**9080-MHE, 9080-MME, 9119-MHE, or 9119-MME locations**

Use this information to help you map a location code to a position on the unit.

The following diagrams show field-replaceable unit (FRU) layouts in the system. Use these diagrams with the following tables.

**System control unit views**

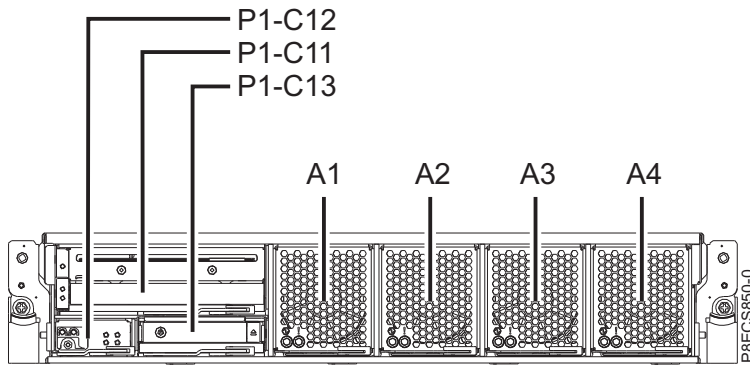


Figure 23. Front view

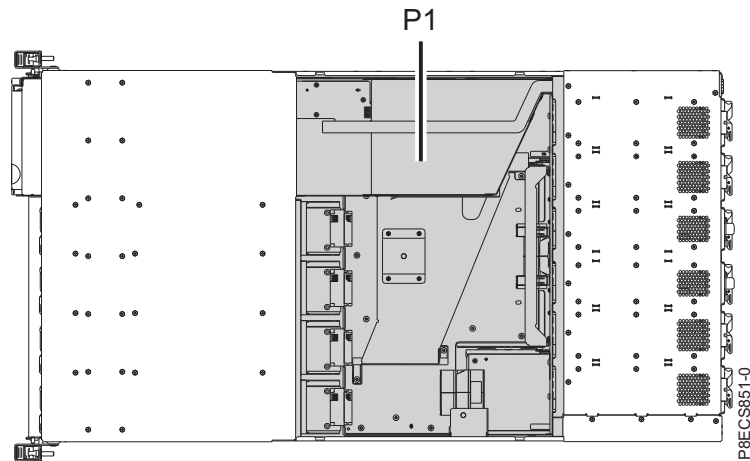


Figure 24. Top view

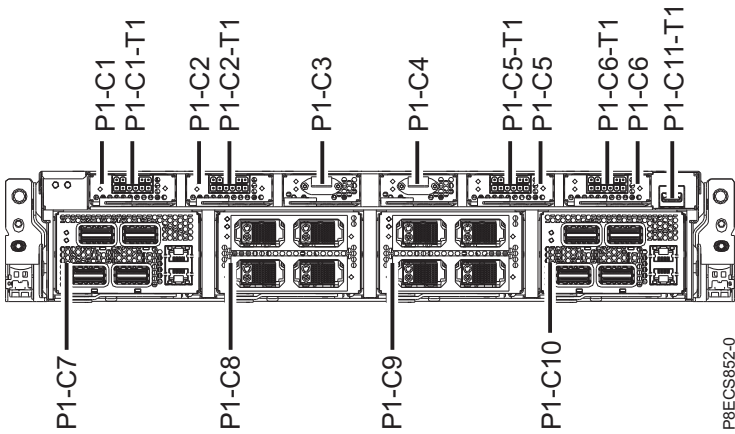


Figure 25. Rear view

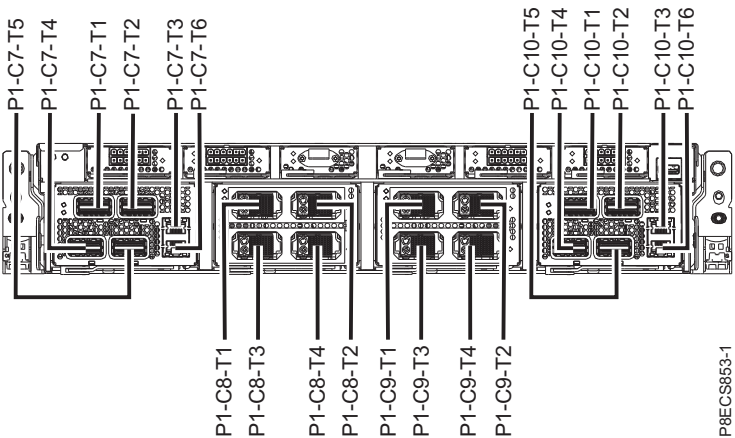


Figure 26. Rear view (continued)

The following table provides location codes for parts that comprise the server.

Table 6. System control unit FRU locations

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
System unit	Un		
<b>Fans</b>			
Fan 1	Un-A1	Yes	See Removing and replacing parts.
Fan 2	Un-A2	Yes	
Fan 3	Un-A3	Yes	
Fan 4	Un-A4 <b>Note:</b> Some systems do not support a fan in location Un-A4.	Yes	
<b>Backplanes</b>			
System backplane	Un-P1	Yes	See Removing and replacing parts.
<b>Cards</b>			

Table 6. System control unit FRU locations (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Power interface card 1	Un-P1-C1 <b>Note:</b> Some systems with only one system node do not support a power interface card in location Un-P1-C1.	Yes	See Removing and replacing parts.
Power interface card 2	Un-P1-C2	Yes	
Real time clock battery card 1	Un-P1-C3	Yes	
Real time clock battery card 2	Un-P1-C4	Yes	
Power interface card 3	Un-P1-C5	Yes	
Power interface card 4	Un-P1-C6 <b>Note:</b> Some systems with only one system node do not support a power interface card in location Un-P1-C6.	Yes	
Service processor card 1	Un-P1-C7	Yes	See Removing and replacing parts.
Clock card 1	Un-P1-C8	Yes	
Clock card 2	Un-P1-C9	Yes	
Service processor card 2	Un-P1-C10	Yes	
System VPD card	Un-P1-C12	Yes	
<b>Ports</b>			
UPIC port 1	Un-P1-C1-T1	Yes	See Removing and replacing parts.
UPIC port 2	Un-P1-C2-T1	Yes	
UPIC port 3	Un-P1-C5-T1	Yes	
UPIC port 4	Un-P1-C6-T1	Yes	
Service processor card 1 - port 1	Un-P1-C7-T1	Yes	See Removing and replacing parts.
Service processor card 1 - port 2	Un-P1-C7-T2	Yes	
Service processor card 1 - HMC port 1	Un-P1-C7-T3	No	
Service processor card 1 - port 3	Un-P1-C7-T4	Yes	
Service processor card 1 - port 4	Un-P1-C7-T5	Yes	
Service processor card 1 - HMC port 2	Un-P1-C7-T6	No	
Clock card 1 - port 1	Un-P1-C8-T1	Yes	See Removing and replacing parts.
Clock card 1 - port 2	Un-P1-C8-T2	Yes	
Clock card 1 - port 3	Un-P1-C8-T3	Yes	
Clock card 1 - port 4	Un-P1-C8-T4	Yes	
Clock card 2 - port 1	Un-P1-C9-T1	Yes	
Clock card 2 - port 2	Un-P1-C9-T2	Yes	
Clock card 2 - port 3	Un-P1-C9-T3	Yes	
Clock card 2 - port 4	Un-P1-C9-T4	Yes	

Table 6. System control unit FRU locations (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Service processor card 2 - port 1	Un-P1-C10-T1	Yes	See Removing and replacing parts.
Service processor card 2 - port 2	Un-P1-C10-T2	Yes	
Service processor card 2 - HMC port 1	Un-P1-C10-T3	No	
Service processor card 2 - port 3	Un-P1-C10-T4	Yes	
Service processor card 2 - port 4	Un-P1-C10-T5	Yes	
Service processor card 2 - HMC port 2	Un-P1-C10-T6	No	
DVD USB port	Un-P1-C11-T1	No	See Removing and replacing parts.
<b>Devices</b>			
DVD	Un-P1-C11	Yes	See Removing and replacing parts.
<b>Control panel</b>			
Control panel	Un-P1-C13	Yes	See Removing and replacing parts.

## System node views

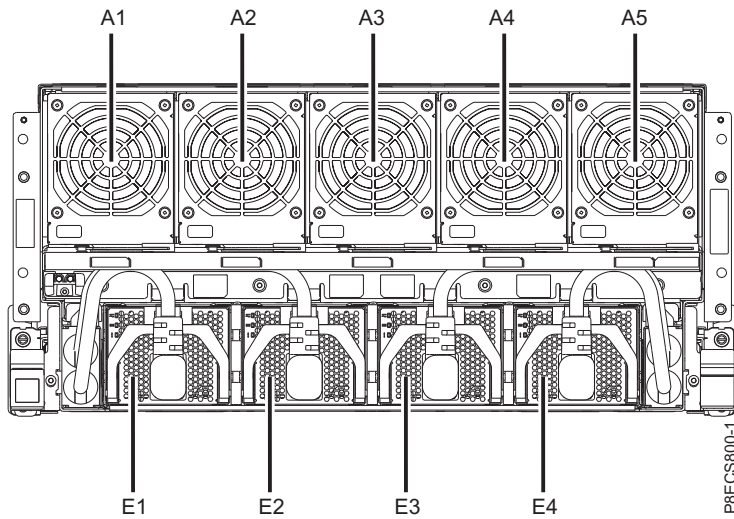


Figure 27. Front view



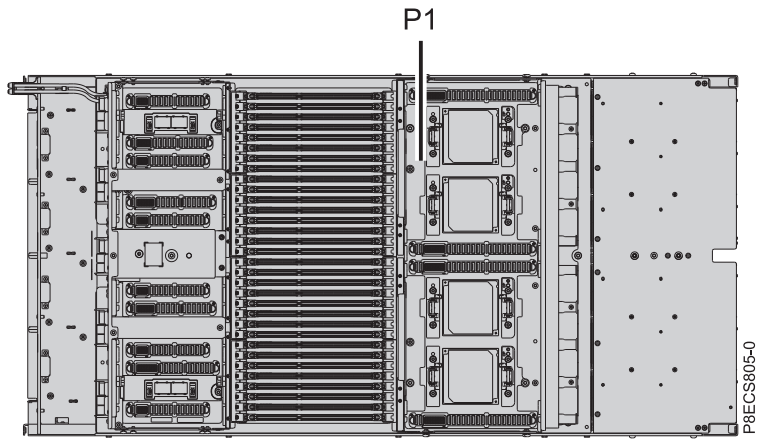


Figure 28. Top view

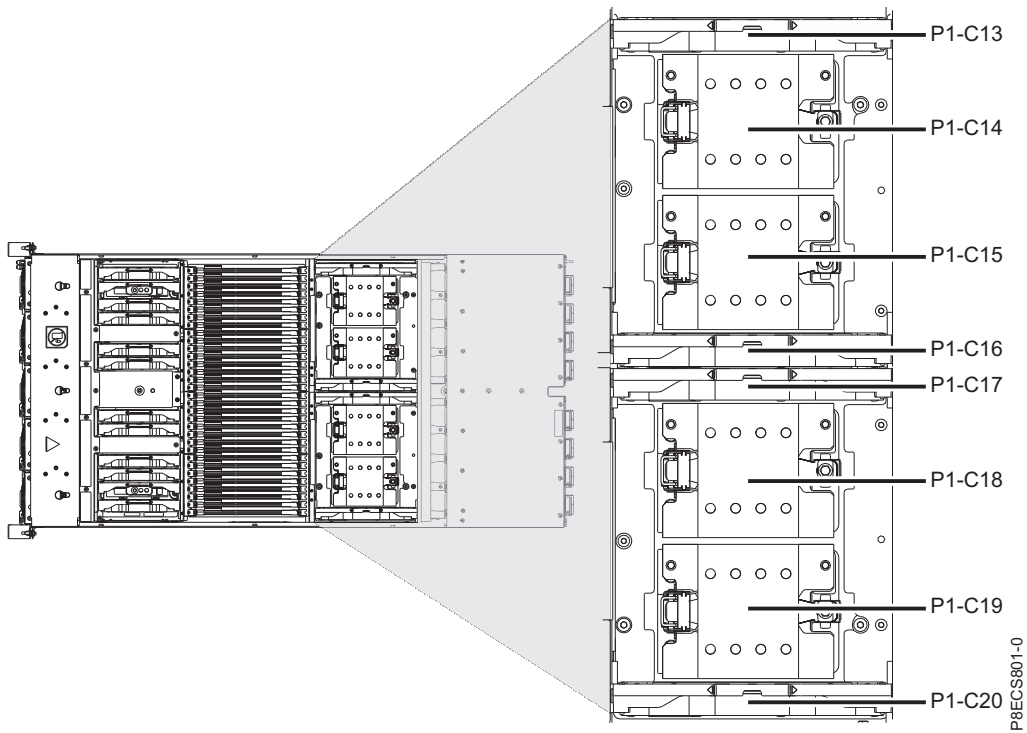


Figure 29. Top view

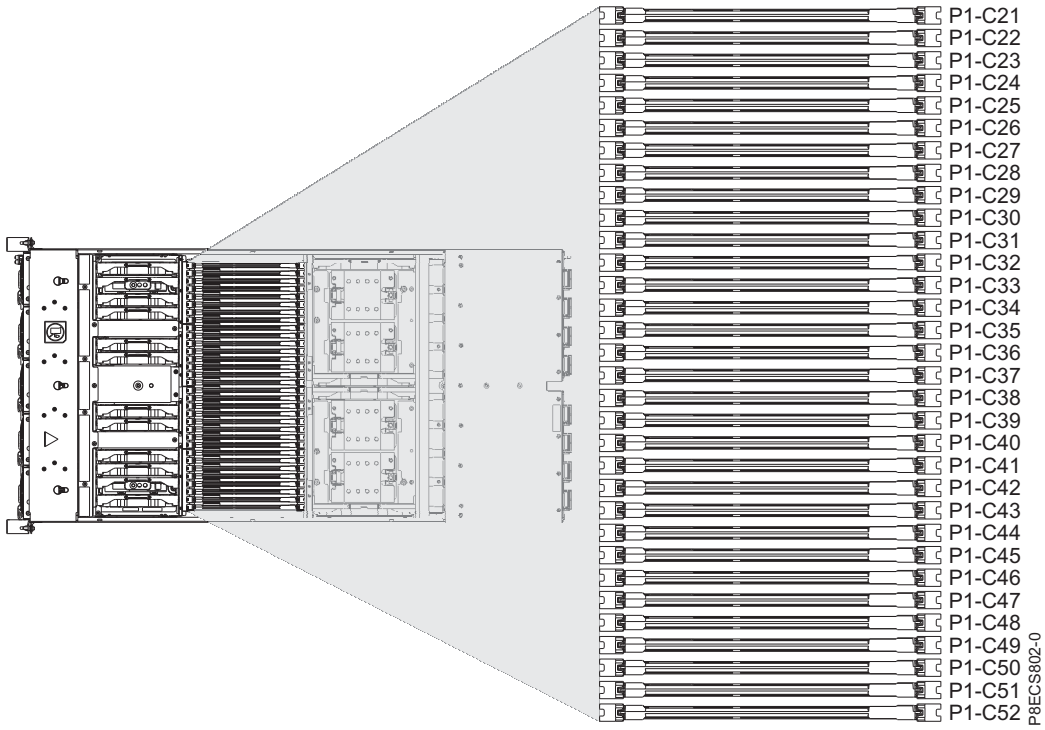


Figure 30. Top view

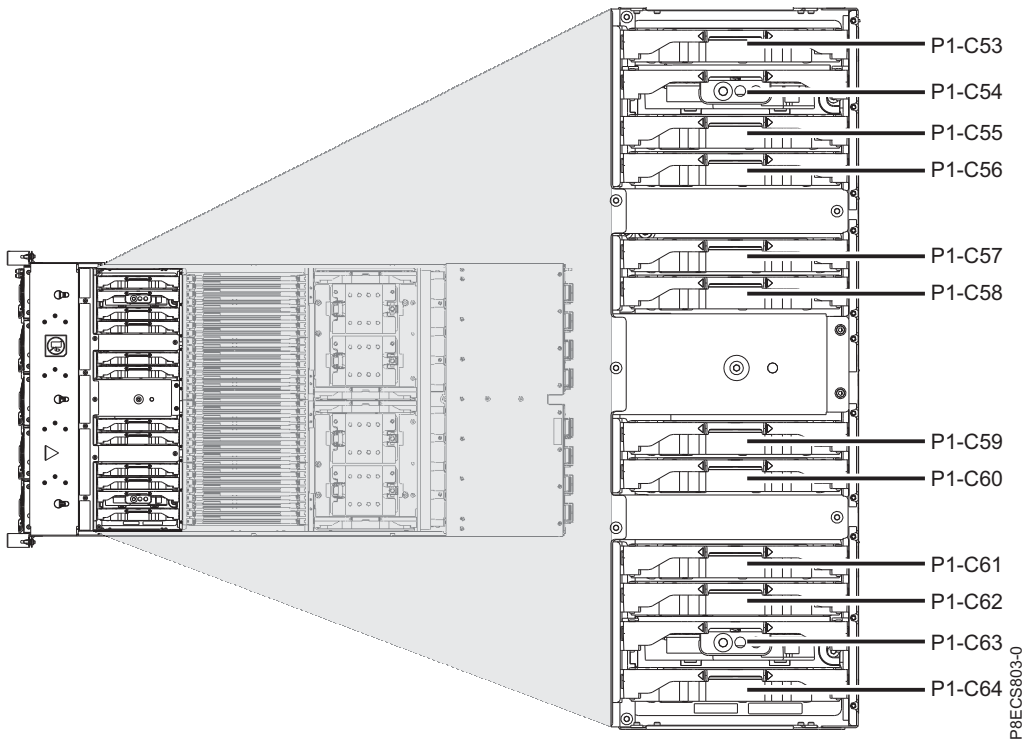


Figure 31. Top view

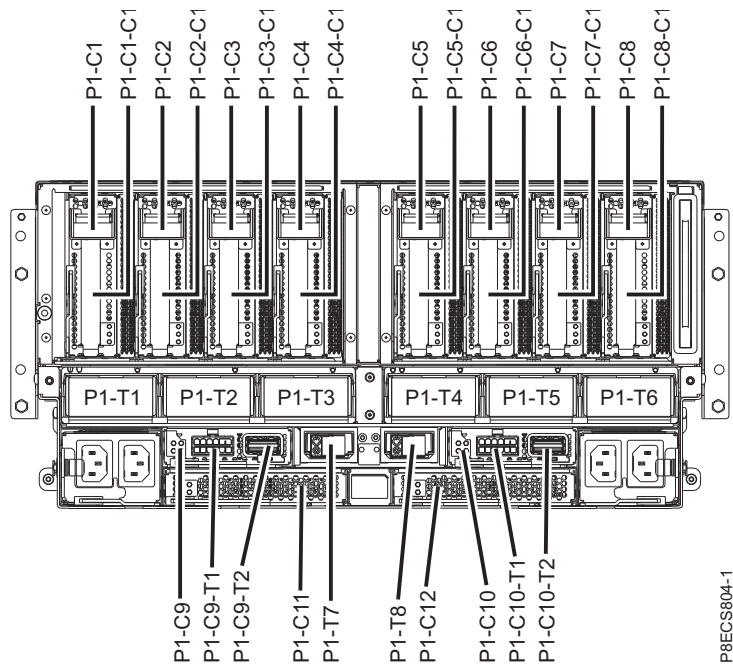


Figure 32. Rear view

The following table provides location codes for parts that comprise the server.

Table 7. System node FRU locations

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
System unit	Un		
<b>Fans</b>			
Fan 1	Un-A1	Yes	See Removing and replacing parts.
Fan 2	Un-A2	Yes	
Fan 3	Un-A3	Yes	
Fan 4	Un-A4	Yes	
Fan 5	Un-A5	Yes	
<b>Power supplies</b>			
Power supply 1	Un-E1	Yes	See Removing and replacing parts.
Power supply 2	Un-E2	Yes	
Power supply 3	Un-E3	Yes	
Power supply 4	Un-E4	Yes	
<b>Backplanes</b>			
System backplane	Un-P1	Yes	See Removing and replacing parts.
<b>Adapters</b>			

Table 7. System node FRU locations (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
PCIe slot 1	Un-P1-C1-C1	Yes	See Removing and replacing parts.
PCIe slot 2	Un-P1-C2-C1	Yes	
PCIe slot 3	Un-P1-C3-C1	Yes	
PCIe slot 4	Un-P1-C4-C1	Yes	
PCIe slot 5	Un-P1-C5-C1	Yes	
PCIe slot 6	Un-P1-C6-C1	Yes	
PCIe slot 7	Un-P1-C7-C1	Yes	
PCIe slot 8	Un-P1-C8-C1	Yes	
<b>Cards</b>			
PCIe extender card 1	Un-P1-C1	Yes	See Removing and replacing parts.
PCIe extender card 2	Un-P1-C2	Yes	
PCIe extender card 3	Un-P1-C3	Yes	
PCIe extender card 4	Un-P1-C4	Yes	
PCIe extender card 5	Un-P1-C5	Yes	
PCIe extender card 6	Un-P1-C6	Yes	
PCIe extender card 7	Un-P1-C7	Yes	
PCIe extender card 8	Un-P1-C8	Yes	
GFSP interface card 1	Un-P1-C9	Yes	See Removing and replacing parts.
GFSP interface card 2	Un-P1-C10	Yes	
Local clock card 1	Un-P1-C11	Yes	
Local clock card 2	Un-P1-C12	Yes	
Power APSS card 1	Un-P1-C54	Yes	
Power APSS card 2	Un-P1-C63	Yes	
<b>Ports</b>			
UPIC port 1	Un-P1-C9-T1	Yes	See Removing and replacing parts.
GFSP interface card port 1	Un-P1-C9-T2	Yes	
UPIC port 2	Un-P1-C10-T1	Yes	
GFSP interface card port 2	Un-P1-C10-T2	Yes	
SMP port 1	Un-P1-T1	Yes	See Removing and replacing parts.
SMP port 2	Un-P1-T2	Yes	
SMP port 3	Un-P1-T3	Yes	
SMP port 4	Un-P1-T4	Yes	
SMP port 5	Un-P1-T5	Yes	
SMP port 6	Un-P1-T6	Yes	
Clock interface port 1	Un-P1-T7	Yes	See Removing and replacing parts.
Clock interface port 2	Un-P1-T8	Yes	
<b>Processor and processor regulator</b>			

Table 7. System node FRU locations (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
POWER8 processor module 1	Un-P1-C14	Yes	See Removing and replacing parts.
POWER8 processor module 2	Un-P1-C15	Yes	
POWER8 processor module 3	Un-P1-C18	Yes	
POWER8 processor module 4	Un-P1-C19	Yes	
POWER8 processor module 1 VRM	Un-P1-C13	Yes	See Removing and replacing parts.
POWER8 processor module 2 VRM	Un-P1-C16	Yes	
POWER8 processor module 3 VRM	Un-P1-C17	Yes	
POWER8 processor module 4 VRM	Un-P1-C20	Yes	
<b>Memory modules</b>			

Table 7. System node FRU locations (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Memory module 1	Un-P1-C21	Yes	See Removing and replacing parts.
Memory module 2	Un-P1-C22	Yes	
Memory module 3	Un-P1-C23	Yes	
Memory module 4	Un-P1-C24	Yes	
Memory module 5	Un-P1-C25	Yes	
Memory module 6	Un-P1-C26	Yes	
Memory module 7	Un-P1-C27	Yes	
Memory module 8	Un-P1-C28	Yes	
Memory module 9	Un-P1-C29	Yes	
Memory module 10	Un-P1-C30	Yes	
Memory module 11	Un-P1-C31	Yes	
Memory module 12	Un-P1-C32	Yes	
Memory module 13	Un-P1-C33	Yes	
Memory module 14	Un-P1-C34	Yes	
Memory module 15	Un-P1-C35	Yes	
Memory module 16	Un-P1-C36	Yes	
Memory module 17	Un-P1-C37	Yes	
Memory module 18	Un-P1-C38	Yes	
Memory module 19	Un-P1-C39	Yes	
Memory module 20	Un-P1-C40	Yes	
Memory module 21	Un-P1-C41	Yes	
Memory module 22	Un-P1-C42	Yes	
Memory module 23	Un-P1-C43	Yes	
Memory module 24	Un-P1-C44	Yes	
Memory module 25	Un-P1-C45	Yes	
Memory module 26	Un-P1-C46	Yes	
Memory module 27	Un-P1-C47	Yes	
Memory module 28	Un-P1-C48	Yes	
Memory module 29	Un-P1-C49	Yes	
Memory module 30	Un-P1-C50	Yes	
Memory module 31	Un-P1-C51	Yes	
Memory module 32	Un-P1-C52	Yes	
<b>VRMs</b>			

Table 7. System node FRU locations (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Memory voltage regulator module	Un-P1-C53	Yes	See Removing and replacing parts.
Vpp voltage regulator module	Un-P1-C55	Yes	
Memory voltage regulator module	Un-P1-C56	Yes	
Memory buffer voltage regulator module	Un-P1-C57	Yes	
Memory voltage regulator module	Un-P1-C58	Yes	
Memory voltage regulator module	Un-P1-C59	Yes	
Memory buffer voltage regulator module	Un-P1-C60	Yes	
Memory voltage regulator module	Un-P1-C61	Yes	
Miscellaneous voltage regulator module	Un-P1-C62	Yes	
Memory voltage regulator module	Un-P1-C64	Yes	

**Related reference:**

“9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system parts” on page 83  
 Indexed drawings show system part numbers of each part.

**5887 disk drive enclosure locations**

Use this information to help you map a location code to a position on the unit.

**Note:** The known logical location codes for this unit are listed next to the corresponding physical location in the following information. If you are working with a logical location code for this unit and it is not listed in the following information, contact your next level of support.

The following diagrams show the field replaceable unit (FRU) layout in the system. Use these diagrams with the following tables.

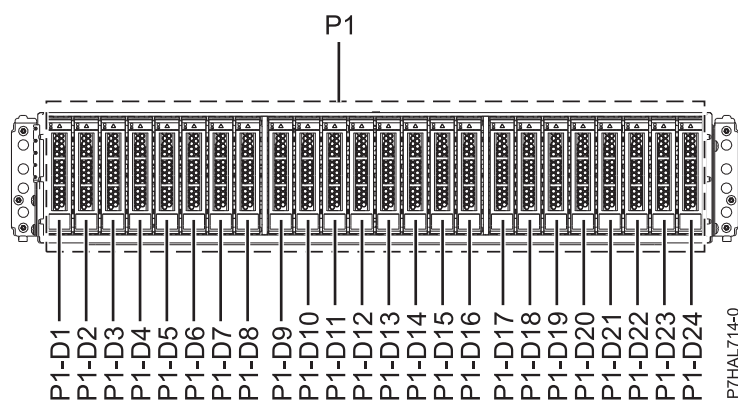


Figure 33. Front view

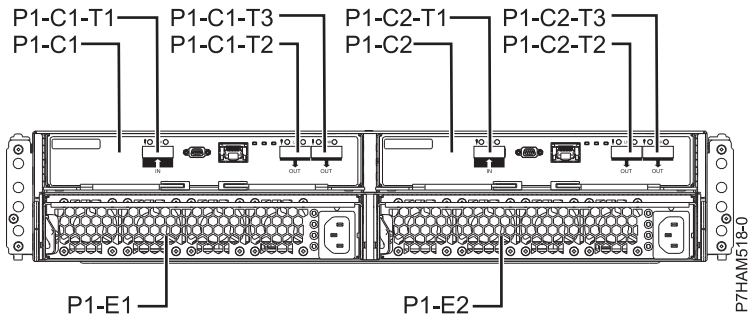


Figure 34. Rear view

The following table provides location codes for parts that make up the server.

Table 8. FRU locations and failing components

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
System unit	Un		
<b>ESM</b>			
Event Services Manager (ESM) A	Un-P1-C1	Yes	See Removing and installing an enclosure services manager.
ESM B	Un-P1-C2	Yes	
ESM A connector	Un-P1-C1-T1		
ESM A connector	Un-P1-C1-T2		
ESM A connector	Un-P1-C1-T3		
ESM B connector	Un-P1-C2-T1		
ESM B connector	Un-P1-C2-T2		
ESM B connector	Un-P1-C2-T3		
<b>Power supplies</b>			
Power supply	Un-P1-E1	Yes	See Removing and installing a power supply.
Power supply	Un-P1-E2	Yes	
<b>Midplane</b>			
Midplane	Un-P1	Yes	See Removing and installing a midplane.
<b>Device physical locations</b>			



Table 8. FRU locations and failing components (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Disk drive 1	Un-P1-D1	Yes	See Removing and installing a disk drive.
Disk drive 2	Un-P1-D2	Yes	
Disk drive 3	Un-P1-D3	Yes	
Disk drive 4	Un-P1-D4	Yes	
Disk drive 5	Un-P1-D5	Yes	
Disk drive 6	Un-P1-D6	Yes	
Disk drive 7	Un-P1-D7	Yes	
Disk drive 8	Un-P1-D8	Yes	
Disk drive 9	Un-P1-D9	Yes	
Disk drive 10	Un-P1-D10	Yes	
Disk drive 11	Un-P1-D11	Yes	
Disk drive 12	Un-P1-D12	Yes	
Disk drive 13	Un-P1-D13	Yes	
Disk drive 14	Un-P1-D14	Yes	
Disk drive 15	Un-P1-D15	Yes	
Disk drive 16	Un-P1-D16	Yes	
Disk drive 17	Un-P1-D17	Yes	
Disk drive 18	Un-P1-D18	Yes	
Disk drive 19	Un-P1-D19	Yes	
Disk drive 20	Un-P1-D20	Yes	
Disk drive 21	Un-P1-D21	Yes	
Disk drive 22	Un-P1-D22	Yes	
Disk drive 23	Un-P1-D23	Yes	
Disk drive 24	Un-P1-D24	Yes	

**Related reference:**

5887 disk drive enclosure system parts  
 Indexed drawings show system part numbers.

**EMX0 PCIe Gen3 I/O expansion drawer locations**

Use this information to help you map a location code to a position on the unit.

The following diagrams show the field-replaceable unit (FRU) layout in the system. Use these diagrams with the following tables.

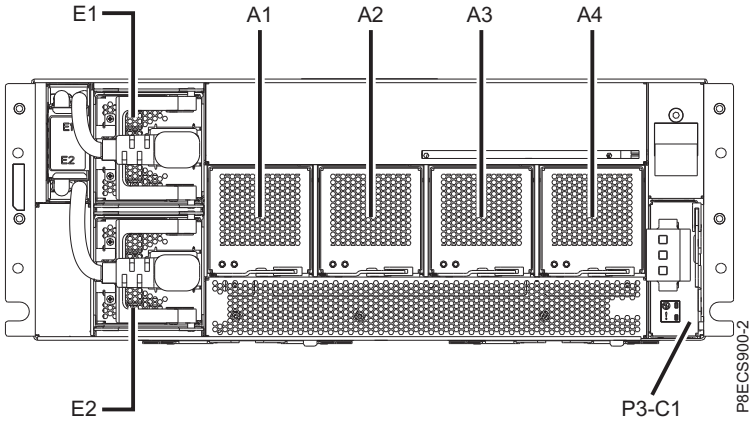


Figure 35. Front view

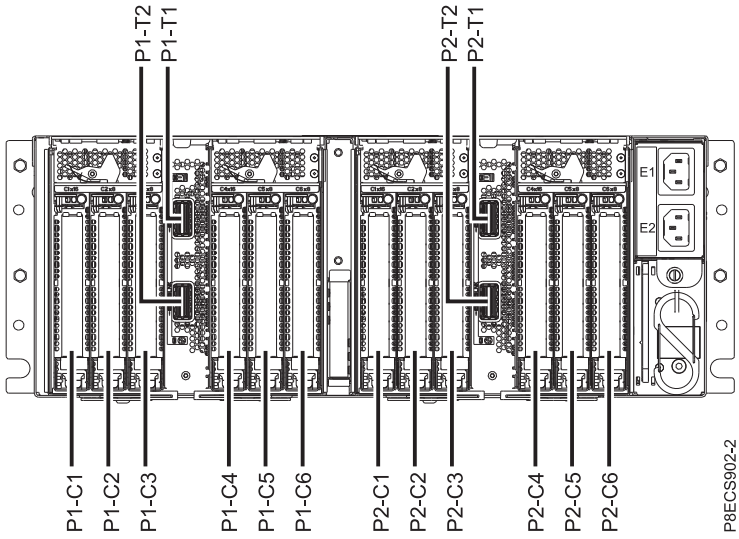


Figure 36. Rear view

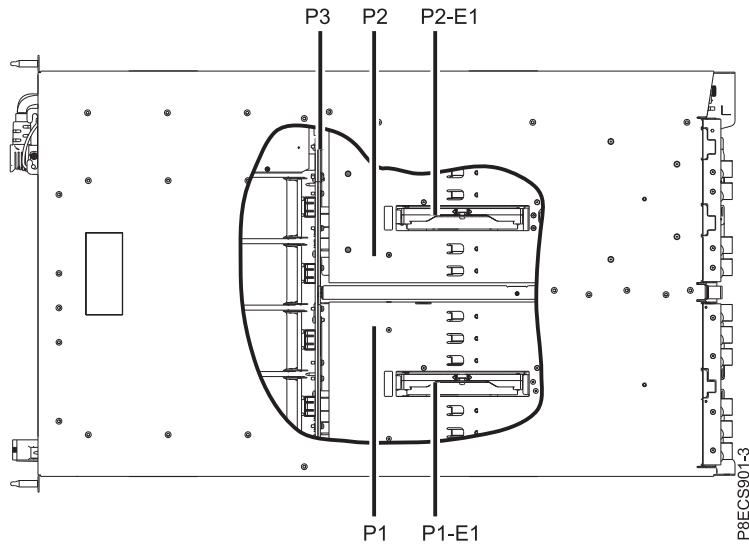


Figure 37. Top view

The following table provides location codes for parts that make up the server.

Table 9. FRU locations and failing components

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
<b>Fans</b>			
Fan	Un-A1	Yes	See Removing and replacing parts.
Fan	Un-A2	Yes	
Fan	Un-A3	Yes	
Fan	Un-A4	Yes	
<b>Left PCIe3 6-slot fanout module</b>			
Left I/O module	Un-P1	Yes	See Removing and replacing parts.
PCIe x16 slot 1	Un-P1-C1	Yes	See Removing and replacing parts.
PCIe x8 slot 2	Un-P1-C2	Yes	
PCIe x8 slot 3	Un-P1-C3	Yes	
PCIe x16 slot 4	Un-P1-C4	Yes	
PCIe x8 slot 5	Un-P1-C5	Yes	
PCIe x8 slot 6	Un-P1-C6	Yes	
Top expansion drawer cable	Un-P1-T1	Yes	See Removing and replacing parts.
Bottom expansion drawer cable	Un-P1-T2	Yes	
<b>Right PCIe3 6-slot fanout module</b>			
Right I/O module	Un-P2	Yes	See Removing and replacing parts.

Table 9. FRU locations and failing components (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
PCIe x16 slot 1	Un-P2-C1	Yes	See Removing and replacing parts.
PCIe x8 slot 2	Un-P2-C2	Yes	
PCIe x8 slot 3	Un-P2-C3	Yes	
PCIe x16 slot 4	Un-P2-C4	Yes	
PCIe x8 slot 5	Un-P2-C5	Yes	
PCIe x8 slot 6	Un-P2-C6	Yes	
Top expansion drawer cable	Un-P2-T1	Yes	See Removing and replacing parts.
Bottom expansion drawer cable	Un-P2-T2	Yes	
<b>Chassis management card</b>			
Chassis management card	Un-P3-C1	Yes	See Removing and replacing parts.
<b>Midplane</b>			
Midplane	Un-P3	Yes	See Removing and replacing parts.
<b>VRMs</b>			
Voltage regulator module 1	Un-P1-E1	Yes	See Removing and replacing parts.
Voltage regulator module 2	Un-P2-E1	Yes	
<b>Power supplies</b>			
Power supply (top)	Un-E1	Yes	See Removing and replacing parts.
Power supply (bottom)	Un-E2	Yes	

**Related reference:**

EMX0 PCIe Gen3 I/O expansion drawer system parts  
 Indexed drawings show system part numbers.

**5147-024, ESLL, or ESLS storage enclosure locations**

Use this information to help you map a location code to a position on the unit.

**Note:** The known logical location codes for this unit are listed next to the corresponding physical location in the following information. If you are working with a logical location code for this unit and it is not listed in the following information, contact your next level of support.

The following diagrams show the field replaceable unit (FRU) layout in the system. Use these diagrams with the following tables.

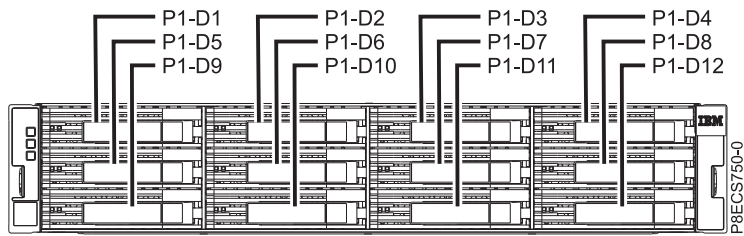


Figure 38. Front view of the ESLL storage enclosure

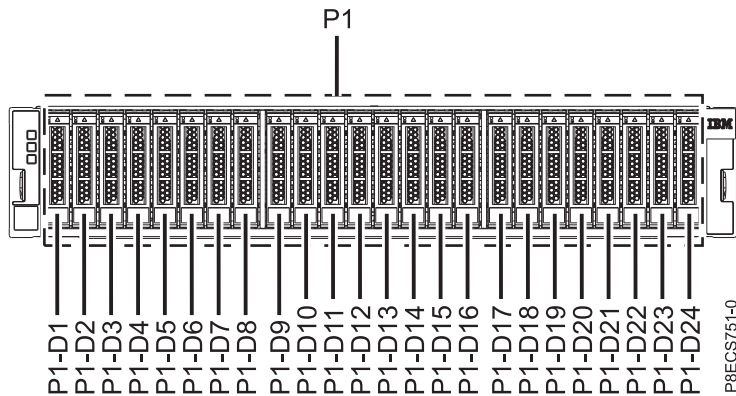


Figure 39. Front view of the 5147-024 or ESLS storage enclosure

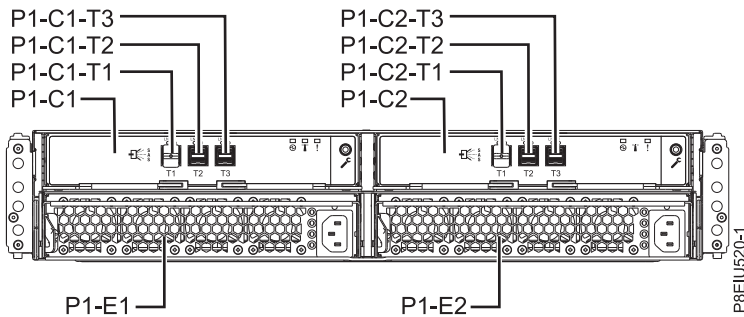


Figure 40. Rear view of the 5147-024, ESLL, or ESLS storage enclosure

The following table provides location codes for parts that make up the storage enclosure.

Table 10. FRU locations and failing components

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Storage enclosure	Un	Yes	
<b>ESM</b>			
Enclosure Services Manager (ESM) A	Un-P1-C1	Yes	See Removing and replacing an enclosure services manager in the 5147-024, ESLL, or ESLS storage enclosure.
ESM B	Un-P1-C2	Yes	

Table 10. FRU locations and failing components (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
ESM A connector	Un-P1-C1-T1		<b>Note:</b> The ESLL and ESLS storage enclosures do not use the connector in the Un-P1-C1-T1 location.
ESM A connector	Un-P1-C1-T2		
ESM A connector	Un-P1-C1-T3		
ESM B connector	Un-P1-C2-T1		<b>Note:</b> The ESLL and ESLS storage enclosures do not use the connector in the Un-P1-C2-T1 location.
ESM B connector	Un-P1-C2-T2		
ESM B connector	Un-P1-C2-T3		
<b>Power supplies</b>			
Power supply	Un-P1-E1	Yes	See Removing and replacing a power supply in the 5147-024, ESLL, or ESLS storage enclosure.
Power supply	Un-P1-E2	Yes	
<b>Midplane</b>			
Midplane	Un-P1		See Removing and replacing a midplane in the 5147-024, ESLL, or ESLS storage enclosure.
<b>5147-024, ESLL, or ESLS device physical locations</b>			
Disk drive 1	Un-P1-D1	Yes	See Removing and replacing disk drives or solid-state drives in the 5147-024, ESLL, or ESLS storage enclosure.
Disk drive 2	Un-P1-D2	Yes	
Disk drive 3	Un-P1-D3	Yes	
Disk drive 4	Un-P1-D4	Yes	
Disk drive 5	Un-P1-D5	Yes	
Disk drive 6	Un-P1-D6	Yes	
Disk drive 7	Un-P1-D7	Yes	
Disk drive 8	Un-P1-D8	Yes	
Disk drive 9	Un-P1-D9	Yes	
Disk drive 10	Un-P1-D10	Yes	
Disk drive 11	Un-P1-D11	Yes	
Disk drive 12	Un-P1-D12	Yes	
<b>5147-024 and ESLS device physical locations</b>			

Table 10. FRU locations and failing components (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Disk drive 13	Un-P1-D13	Yes	See Removing and replacing disk drives or solid-state drives in the 5147-024, ESLL, or ESLS storage enclosure.
Disk drive 14	Un-P1-D14	Yes	
Disk drive 15	Un-P1-D15	Yes	
Disk drive 16	Un-P1-D16	Yes	
Disk drive 17	Un-P1-D17	Yes	
Disk drive 18	Un-P1-D18	Yes	
Disk drive 19	Un-P1-D19	Yes	
Disk drive 20	Un-P1-D20	Yes	
Disk drive 21	Un-P1-D21	Yes	
Disk drive 22	Un-P1-D22	Yes	
Disk drive 23	Un-P1-D23	Yes	
Disk drive 24	Un-P1-D24	Yes	

## Addresses

Use this information to locate system addresses.

Use the address to find the location, and then go to “Part locations and location codes” on page 1 to find the physical location.

### 8247-42L, 8286-41A, or 8286-42A addresses

You can cross-reference the address to the physical location code.

Use the address to find the location for the system, and then go to “8247-42L, 8286-41A, or 8286-42A locations” on page 11 to find additional location information.

Table 11. IOA and device address information

Position	Possible failing item	Direct select address (DSA)	Unit address
Un-P1	Embedded USB controller	001B0000	Not applicable
Un-P1-C2	PCIe adapter	00280000	Not applicable
Un-P1-C3	PCIe adapter	00290000	Not applicable
Un-P1-C4	PCIe adapter	00200000	Not applicable
Un-P1-C5	PCIe adapter	00210000	Not applicable
Un-P1-C6	PCIe adapter	00180000	Not applicable
Un-P1-C7	PCIe adapter	00100000	Not applicable
Un-P1-C8	PCIe adapter	001C0000	Not applicable
Un-P1-C9	PCIe adapter	001D0000	Not applicable
Un-P1-C10	PCIe adapter	001E0000	Not applicable
Un-P1-C11	PCIe adapter	00130000	Not applicable
Un-P1-C12	PCIe adapter	00140000	Not applicable

Table 11. IOA and device address information (continued)

Position	Possible failing item	Direct select address (DSA)	Unit address
Un-P1-C14	PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	00150000	Not applicable
Un-P1-C15	PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	001F0000	Not applicable
Un-P2-D1	Drive 1	00150000 or 001F0000	000x00FF
Un-P2-D2	Drive 2	00150000 or 001F0000	000x01FF
Un-P2-D3	Drive 3	00150000 or 001F0000	000x02FF
Un-P2-D4	Drive 4	00150000 or 001F0000	000x03FF
Un-P2-D5	Drive 5	00150000 or 001F0000	000x04FF
Un-P2-D6	Drive 6	00150000 or 001F0000	000x05FF
Un-P2-D7	Drive 7	00150000 or 001F0000	000x06FF
Un-P2-D8	Drive 8	00150000 or 001F0000	000x07FF
Un-P2-D9	Drive 9	00150000 or 001F0000	000x08FF
Un-P2-D10	Drive 10	00150000 or 001F0000	000x09FF
Un-P2-D11	Drive 11	00150000 or 001F0000	000x0AFF
Un-P2-D12	Drive 12	00150000 or 001F0000	000x0BFF
Un-P2-D13	Drive 13	00150000 or 001F0000	000x0CFF
Un-P2-D14	Drive 14	00150000 or 001F0000	000x0DFF
Un-P2-D15	Drive 15	00150000 or 001F0000	000x0EFF
Un-P2-D16	Drive 16	00150000 or 001F0000	000x0FFF
Un-P2-D17	Drive 17	00150000 or 001F0000	000x10FF
Un-P2-D18	Drive 18	00150000 or 001F0000	000x11FF
Un-P2-D19	Drive 19	00150000 or 001F0000	000x12FF
Un-P2-D20	Drive 20	00150000 or 001F0000	000x13FF
Un-P2-D21	Drive 21	00150000 or 001F0000	000x14FF
Un-P2-D22	Drive 22	00150000 or 001F0000	000x15FF
Un-P2-D23	Drive 23	00150000 or 001F0000	000x16FF
Un-P2-D24	Drive 24	00150000 or 001F0000	000x17FF
Un-P2-D25	Drive 25	00150000 or 001F0000	000x18FF
Un-P2-D26	Drive 26	00150000 or 001F0000	000x19FF
Un-P2-D27	DVD	00150000 or 001F0000	000AFFFF

## 8284-21A addresses

You can cross-reference the address to the physical location code.

Use the address to find the location for the system, and then go to 5148-21L, 5148-22L, 8247-21L, 8247-22L, 8284-21A, or 8284-22A locations to find additional location information.



Table 12. IOA and device address information

Position	Possible failing item	Direct select address (DSA)	Unit address
<b>Adapters</b>			
Un-P1	Embedded USB controller	001B0000	B0FFFFFF
Un-P1-C6	PCIe adapter	00180000	Not applicable
Un-P1-C7	PCIe adapter	00100000	Not applicable
Un-P1-C9	PCIe adapter	001D0000	Not applicable
Un-P1-C10	PCIe adapter	001E0000	Not applicable
Un-P1-C11	PCIe adapter	00130000	Not applicable
Un-P1-C12	PCIe adapter	00140000	Not applicable
Un-P1-C14	PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	00150000	Not applicable
Un-P1-C15	PCIe3 x8 SAS RAID internal adapter or PCIe3 x8 cache SAS RAID internal adapter	001F0000	Not applicable
<b>Devices (base function)</b>			
Un-P2-D1	Drive 1	00150000 or 001F0000	0000FFFF
Un-P2-D2	Drive 2	00150000 or 001F0000	0001FFFF
Un-P2-D3	Drive 3	00150000 or 001F0000	0002FFFF
Un-P2-D4	Drive 4	00150000 or 001F0000	0004FFFF
Un-P2-D5	Drive 5	00150000 or 001F0000	0005FFFF
Un-P2-D6	Drive 6	00150000 or 001F0000	0006FFFF
Un-P2-D7	Drive 7	00150000 or 001F0000	0008FFFF
Un-P2-D8	Drive 8	00150000 or 001F0000	0009FFFF
Un-P2-D9	Drive 9	00150000 or 001F0000	000AFFFF
Un-P2-D10	Drive 10	00150000 or 001F0000	000CFFFF
Un-P2-D11	Drive 11	00150000 or 001F0000	000DFFFF
Un-P2-D12	Drive 12	00150000 or 001F0000	000EFFFF
Un-P2-D15	DVD	00150000 or 001F0000	000FFFFFF
<b>Devices (expanded function)</b>			
Un-P2-D1	Drive 1	00150000 or 001F0000	000800FF or 000C00FF
Un-P2-D2	Drive 2	00150000 or 001F0000	000801FF or 000C01FF
Un-P2-D3	Drive 3	00150000 or 001F0000	000802FF or 000C02FF
Un-P2-D4	Drive 4	00150000 or 001F0000	000803FF or 000C03FF
Un-P2-D5	Drive 5	00150000 or 001F0000	000804FF or 000C04FF
Un-P2-D6	Drive 6	00150000 or 001F0000	000805FF or 000C05FF
Un-P2-D7	Drive 7	00150000 or 001F0000	000806FF or 000C06FF
Un-P2-D8	Drive 8	00150000 or 001F0000	000807FF or 000C07FF
Un-P2-D15	DVD	00150000 or 001F0000	000FFFFFF

## 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME addresses

You can cross-reference a disk drive physical location code to the address.

Use the address to find the location for the system, and then go to “9080-MHE, 9080-MME, 9119-MHE, or 9119-MME locations” on page 29 to find additional location information.

*Table 13. Device address information (system node)*

Physical location code	Possible failing item	Direct select address (DSA)	Unit address
Un-P1-C1-C1	PCIe adapter	0010xxxx (node 1) 0020xxxx (node 2) 0030xxxx (node 3) 0040xxxx (node 4)	Not applicable
Un-P1-C2-C1	PCIe adapter	0011xxxx (node 1) 0021xxxx (node 2) 0031xxxx (node 3) 0041xxxx (node 4)	Not applicable
Un-P1-C3-C1	PCIe adapter	0012xxxx (node 1) 0022xxxx (node 2) 0032xxxx (node 3) 0042xxxx (node 4)	Not applicable
Un-P1-C4-C1	PCIe adapter	0013xxxx (node 1) 0023xxxx (node 2) 0033xxxx (node 3) 0043xxxx (node 4)	Not applicable
Un-P1-C5-C1	PCIe adapter	0014xxxx (node 1) 0024xxxx (node 2) 0034xxxx (node 3) 0044xxxx (node 4)	Not applicable
Un-P1-C6-C1	PCIe adapter	0015xxxx (node 1) 0025xxxx (node 2) 0035xxxx (node 3) 0045xxxx (node 4)	Not applicable
Un-P1-C7-C1	PCIe adapter	0016xxxx (node 1) 0026xxxx (node 2) 0036xxxx (node 3) 0046xxxx (node 4)	Not applicable

Table 13. Device address information (system node) (continued)

Physical location code	Possible failing item	Direct select address (DSA)	Unit address
Un-P1-C8-C1	PCIe adapter	0017xxxx (node 1) 0027xxxx (node 2) 0037xxxx (node 3) 0047xxxx (node 4)	Not applicable

## 5887 disk drive enclosure addresses

You can cross-reference a disk drive physical location code to the address.

Use the address to find the location for the system, and then go to “5887 disk drive enclosure locations” on page 39 to find additional location information.

**Note:** The *x* in the following table depends on which I/O adapter port is used and can have values of 0, 4, or 8.

Table 14. Device address information

Physical location code	Unit address
Un-P1-D1	0x0000FF or 00xx00FF
Un-P1-D2	0x0100FF or 00xx01FF
Un-P1-D3	0x0200FF or 00xx02FF
Un-P1-D4	0x0300FF or 00xx03FF
Un-P1-D5	0x0400FF or 00xx04FF
Un-P1-D6	0x0500FF or 00xx05FF
Un-P1-D7	0x0600FF or 00xx06FF
Un-P1-D8	0x0700FF or 00xx07FF
Un-P1-D9	0x0800FF or 00xx08FF
Un-P1-D10	0x0900FF or 00xx09FF
Un-P1-D11	0x0A00FF or 00xx0AFF
Un-P1-D12	0x0B00FF or 00xx0BFF
Un-P1-D13	0x0C00FF or 00xx0CFF
Un-P1-D14	0x0D00FF or 00xx0DFF
Un-P1-D15	0x0E00FF or 00xx0EFF
Un-P1-D16	0x0F00FF or 00xx0FFF
Un-P1-D17	0x1000FF or 00xx10FF
Un-P1-D18	0x1100FF or 00xx11FF
Un-P1-D19	0x1200FF or 00xx12FF
Un-P1-D20	0x1300FF or 00xx13FF
Un-P1-D21	0x1400FF or 00xx14FF
Un-P1-D22	0x1500FF or 00xx15FF
Un-P1-D23	0x1600FF or 00xx16FF
Un-P1-D24	0x1700FF or 00xx17FF

## EMX0 PCIe Gen3 I/O expansion drawer addresses

You can cross-reference a PCIe adapter physical location code to the address.

Use the direct select address (DSA) to find the location for the system, and then go to “EMX0 PCIe Gen3 I/O expansion drawer locations” on page 41 to find additional location information.

Table 15. Address information for a EMX0 PCIe Gen3 I/O expansion drawer

Physical location code	Possible failing item	DSA (BBBBcbb)	Unit address
Un-Py-C1	PCIe adapter	0xx1xxxx	Not applicable
Un-Py-C2	PCIe adapter	0xx2xxxx	Not applicable
Un-Py-C3	PCIe adapter	0xx3xxxx	Not applicable
Un-Py-C4	PCIe adapter	0xx4xxxx	Not applicable
Un-Py-C5	PCIe adapter	0xx5xxxx	Not applicable
Un-Py-C6	PCIe adapter	0xx6xxxx	Not applicable

To determine if Py is P1 or P2, complete the following steps:

1. The hexadecimal IOA card bus number is the four leftmost digits of the DSA. Convert the hexadecimal IOA card bus number into a hexadecimal PCIe3 optical cable adapter bus number by removing the first and last digits of the IOA card bus number. For example, if the IOA card bus number is 0102, then the PCIe3 optical cable adapter bus number is 10.
2. Go to Card positions, find the table for your system unit, and use the hexadecimal PCIe3 optical cable adapter bus number to look up the location of the PCIe3 cable adapter.
3. Trace the cables from the PCIe3 cable adapter in the system unit to the I/O module in the EMX0 PCIe Gen3 I/O expansion drawer. The I/O module on the left side is P1. The I/O module on the right side is P2.

## ESLL or ESLS storage enclosure addresses

You can cross-reference a disk drive physical location code to the address.

Use the address to find the location for the system, and then go to “5147-024, ESLL, or ESLS storage enclosure locations” on page 44 to find additional location information.

**Note:** The *x* in the following table depends on which I/O adapter port is used and it can have values of 0, 4, or 8.

Table 16. Device address information

Physical location code	Unit address
Un-P1-D1	0x0000FF or 00xx00FF
Un-P1-D2	0x0100FF or 00xx01FF
Un-P1-D3	0x0200FF or 00xx02FF
Un-P1-D4	0x0300FF or 00xx03FF
Un-P1-D5	0x0400FF or 00xx04FF
Un-P1-D6	0x0500FF or 00xx05FF
Un-P1-D7	0x0600FF or 00xx06FF
Un-P1-D8	0x0700FF or 00xx07FF
Un-P1-D9	0x0800FF or 00xx08FF
Un-P1-D10	0x0900FF or 00xx09FF

Table 16. Device address information (continued)

Physical location code	Unit address
Un-P1-D11	0x0A00FF or 00xx0AFF
Un-P1-D12	0x0B00FF or 00xx0BFF
Un-P1-D13	0x0C00FF or 00xx0CFF
Un-P1-D14	0x0D00FF or 00xx0DFF
Un-P1-D15	0x0E00FF or 00xx0EFF
Un-P1-D16	0x0F00FF or 00xx0FFF
Un-P1-D17	0x1000FF or 00xx10FF
Un-P1-D18	0x1100FF or 00xx11FF
Un-P1-D19	0x1200FF or 00xx12FF
Un-P1-D20	0x1300FF or 00xx13FF
Un-P1-D21	0x1400FF or 00xx14FF
Un-P1-D22	0x1500FF or 00xx15FF
Un-P1-D23	0x1600FF or 00xx16FF
Un-P1-D24	0x1700FF or 00xx17FF

## System parts

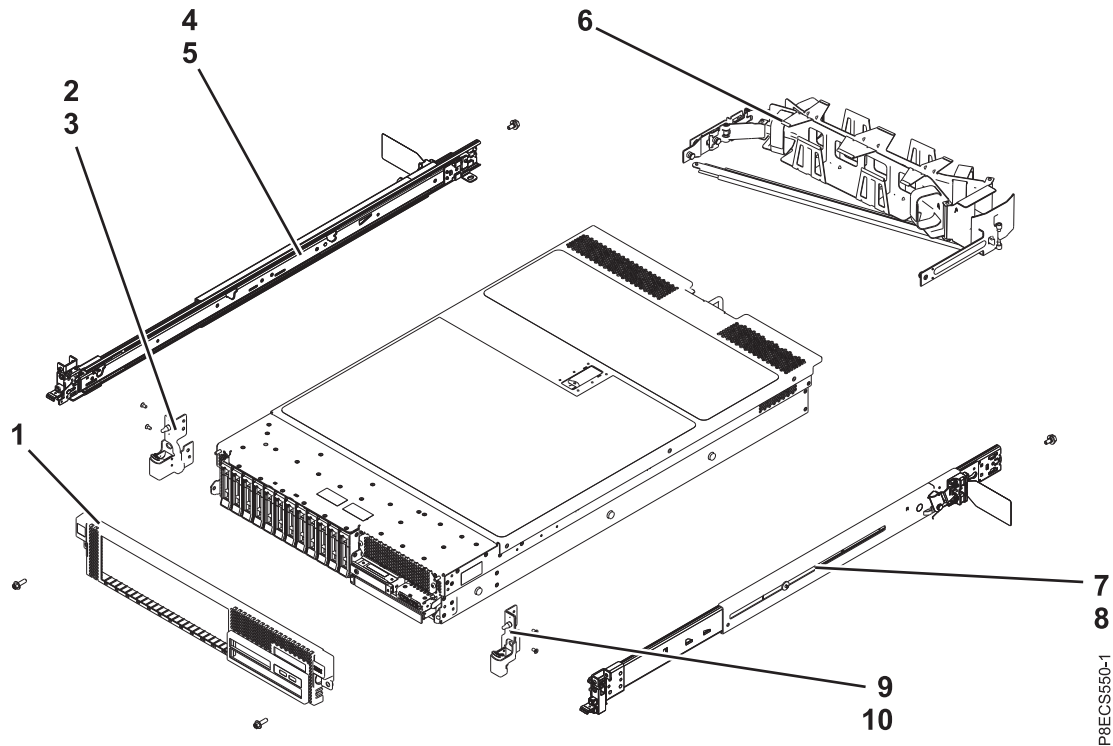
Use this information to locate and identify common hardware parts.

This section contains only the part numbers that are likely to be needed during hardware servicing, and is not a complete part number listing. Indexed assembly diagrams help you map the part to its position on the unit. Use “Part locations and location codes” on page 1 to help you identify location codes.

### **5148-21L, 5148-22L, 8247-21L, 8247-22L, 8284-21A, or 8284-22A system parts**

Indexed drawings show system part numbers of each part.

## Rack final assembly (base and expanded function)



P8ECS550-1

Table 17. Rack assembly part numbers (base and expanded function)

Index number	CCIN	Part number	Units per assembly	Description
1		00FV716	1	Front bezel (5148-21L or any base function 8247-21L, 8247-22L, 8284-21A, or 8284-22A)
1		00FV715	1	Front bezel (5148-22L or any expanded function 8247-21L, 8247-22L, 8284-21A, or 8284-22A)
2		00E7328	1	EIA bracket (left)
3		90P1959	2	Attaching screw for EIA bracket (left)
4		68Y7226	1	Rail kit - contains left and right rails and attaching screws
5			1	Attaching screw for rail kit
6		74Y9063	1	Cable management arm assembly
7		68Y7226	1	Rail kit - contains left and right rails and attaching screws
8			1	Attaching screw for rail kit
9		00E7329	1	EIA bracket (right)
10		90P1959	2	Attaching screw for EIA bracket (right)

# Rack assembly detail (base function)

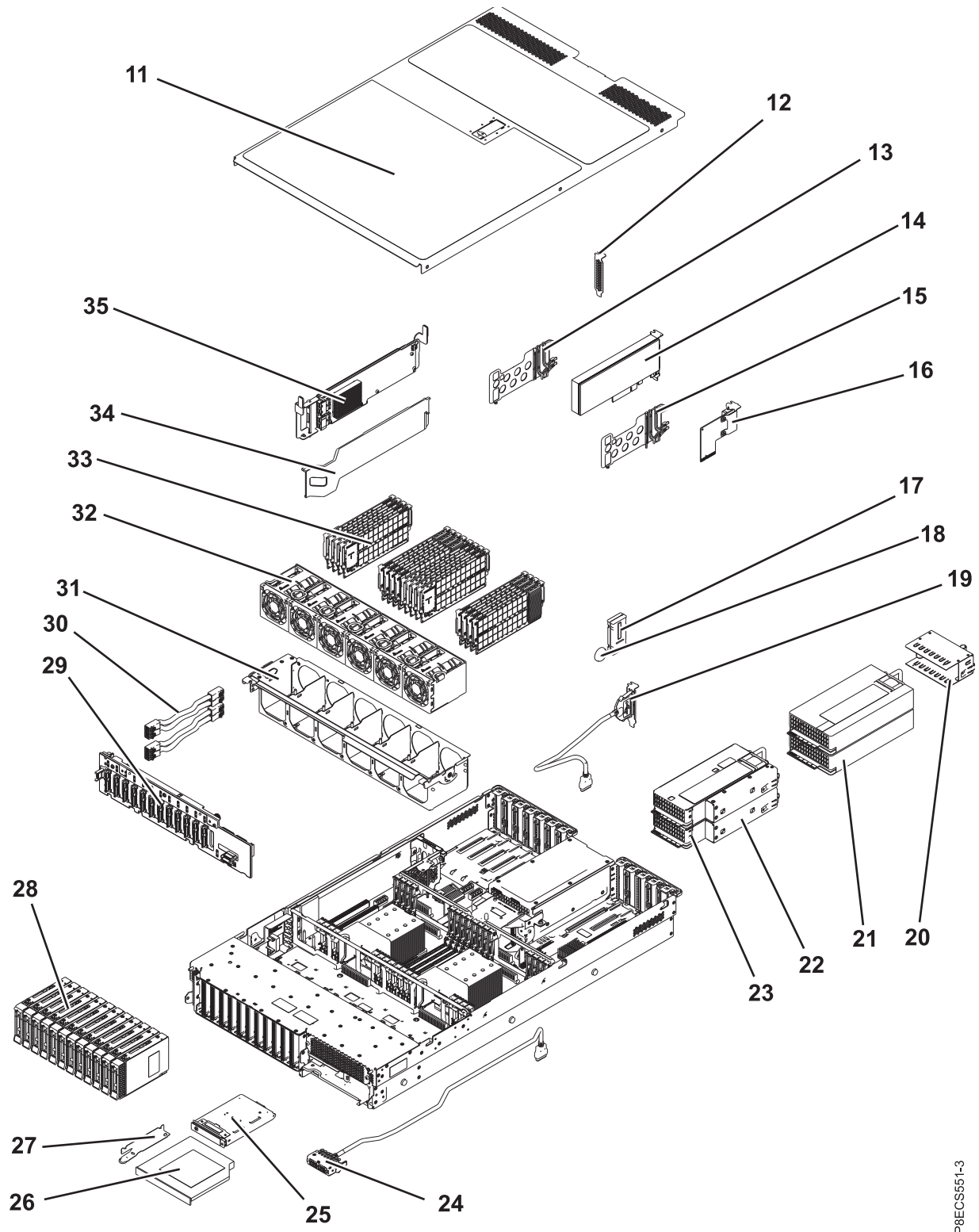


Table 18. Rack assembly part numbers (base function)

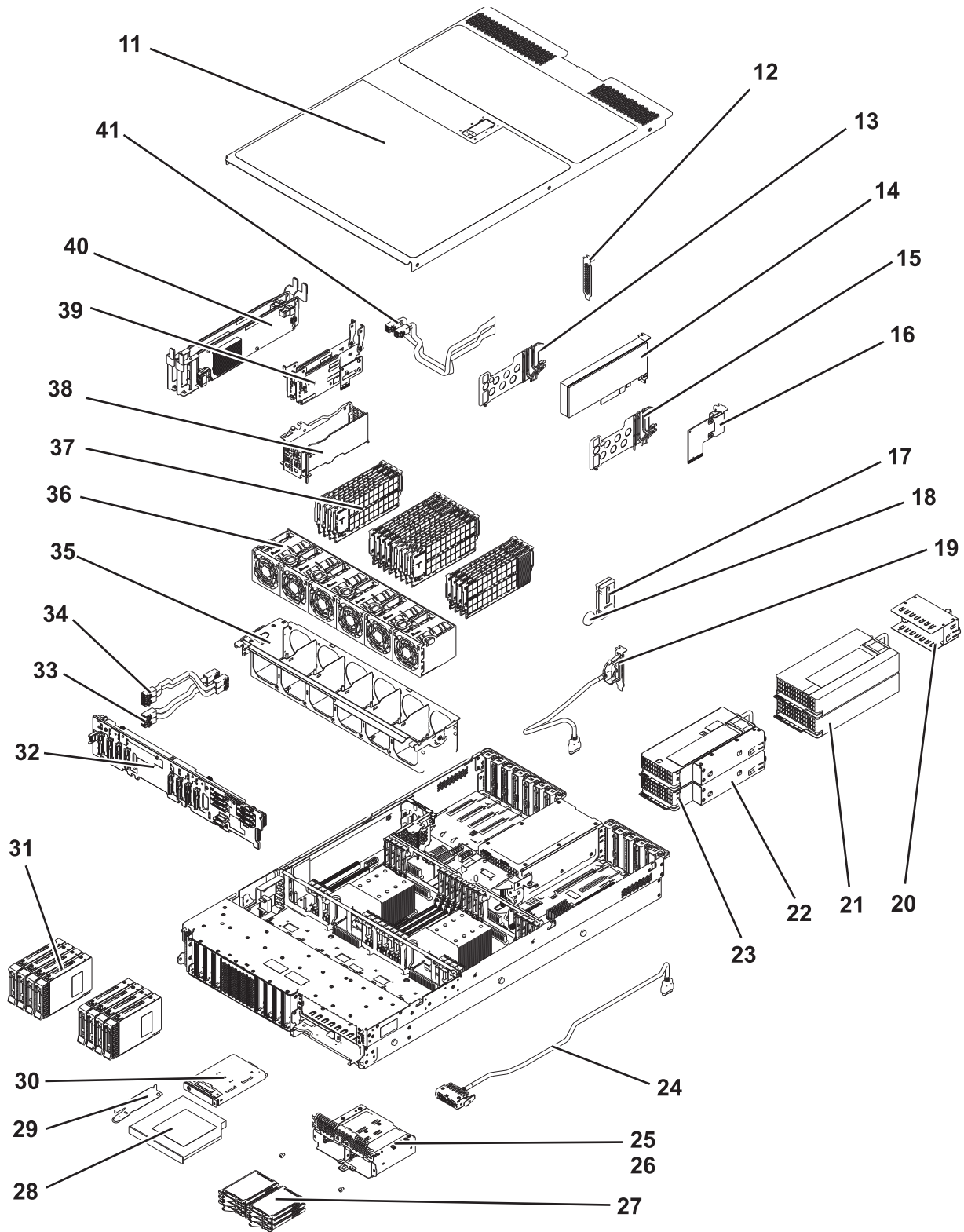
Index number	CCIN	Part number	Units per assembly	Description
11			1	Top access cover assembly
12		00E7338	1 - 11	PCI tailstock
13		00E7333	1 - 7	PCI adapter divider (one light pipe)
14			1 - 8	PCI adapters. Use the CCIN or feature type of the adapter to find the FRU number in PCI adapter information by feature type.
15		00FX240	1	PCI adapter divider (two light pipes)
16		00E2164	1	System I/O card
17	560F	00E3429	1	System VPD card (5148-21L, 8247-21L, or 8284-21A)
17	524D	00E3427	1	System VPD card (8247-22L)
17	52F5	00E2150	1	System VPD card (8284-22A)
18		74Y9628	1	Time-of-day battery
19		00E7324	1	Rear USB cable (5148-21L, 8247-21L, or 8284-21A)
20			1 - 2	Power supply filler
21	2B1E	94Y8157	1 - 2	1400 W 200-240 VAC Power supply assembly (5148-22L, 8247-22L, or 8284-22A)
21	2B75	00RR025	1 - 2	1400 W Power supply assembly (8247-21L, 8247-22L, or 8284-22A)
22			1 - 2	Power supply filler - Small form factor (SFF)
23	2B1D	00FV929	1 - 2	900 W Power supply assembly (5148-21L, 8247-21L, or 8284-21A)
23	51D8	00FX892	1 - 2	750 W Power supply assembly (8247-22L or 8284-22A)
24		00FW686	1	Front USB cable (8247-21L, 8247-22L, 8284-21A, or 8284-22A)
25		00E1966	1	Control panel assembly
26			1	DVD drive. See Managing DVD drives.
27		00FX140	1	DVD drive retain latch
28			1 - 12	See Disk drive and solid-state drive system parts.
29	2B09	00E1945	1	Disk drive backplane
30		00FV690	2	Front SAS cable (short)
31		01AF830	1	Fan cage assembly
32		00FV726	4 - 6	60 mm fan assembly
33	31E8	00VK192	1 - 8 or 1 - 16	16 GB, 1600 MHz DDR3 DIMM
33	31EC	00VK247	1 - 8 or 1 - 16	16 GB, DDR4 CDIMM
33	31E9	00VK194	1 - 8 or 1 - 16	32 GB, 1600 MHz DDR3 DIMM
33	31ED	00VK291	1 - 8 or 1 - 16	32 GB, DDR4 CDIMM
33	31EA	00VK196	1 - 8 or 1 - 16	64 GB, 1600 MHz DDR3 DIMM
33	31EE	00VK301	1 - 8 or 1 - 16	64 GB, DDR4 CDIMM
33	31EF	00VK273	1 - 8 or 1 - 16	128 GB, DDR4 CDIMM
33		00FW990	1 - 8 or 1 - 16	DIMM filler



Table 18. Rack assembly part numbers (base function) (continued)

<b>Index number</b>	<b>CCIN</b>	<b>Part number</b>	<b>Units per assembly</b>	<b>Description</b>
34		00FV454	1 - 2	PCIe3 SAS RAID internal adapter filler
35	57D7	00MH906	1 - 2	PCIe3 x8 SAS RAID internal adapter

# Rack assembly detail (expanded function)



P8ECS561-2

Table 19. Rack assembly part numbers (expanded function)

Index number	CCIN	Part number	Units per assembly	Description
11			1	Top access cover assembly
12		00E7338	1 - 11	PCI tailstock
13		00E7333	1 - 7	PCI adapter divider (one light pipe)
14			1 - 8	PCI adapters. Use the CCIN or feature type of the adapter to find the FRU number in PCI adapter information by feature type.
15		00FX240	1	PCI adapter divider (two light pipes)
16		00E2164	1	System I/O card
17	560F	00E3429	1	System VPD card (8247-21L or 8284-21A)
17	524D	00E3427	1	System VPD card (5148-22L or 8247-22L)
17	52F5	00E2150	1	System VPD card (8284-22A)
18		74Y9628	1	Time-of-day battery
19		00E7324	1	Rear USB cable (8247-21L or 8284-21A)
20			1 - 2	Power supply filler
21	2B1E	94Y8157	1 - 2	1400 W 200-240 VAC Power supply assembly (5148-22L, 8247-22L, or 8284-22A)
21	2B75	00RR025	1 - 2	1400 W 192-400 HVDC power supply assembly (8247-22L or 8284-22A)
22			1 - 2	Power supply filler - Small form factor (SFF)
23	2B1D	00FV929	1 - 2	900 W Power supply assembly (8247-21L or 8284-21A)
24		00FW686	1	Front USB cable (8247-21L, 8247-22L, 8284-21A, or 8284-22A)
25		00FV824	1	SSD cage
25		00FV820	1	SSD cage EMC shield
26			2	Attaching screws for SSD cage
27			1 - 6	See Disk drive and solid-state drive system parts.
28			1	DVD drive. See Managing DVD drives.
29		00FX140	1	DVD drive retain latch
30		00E1966	1	Control panel assembly
31			1 - 8	See Disk drive and solid-state drive system parts.
32	2B5A	00E1978	1	Disk drive backplane
33		00FV690	1	Front SAS cable (short) <b>Note:</b> Used with the adapter at location $U_n$ -P1-C14.
34		00FV689	1	Front SAS cable (long) <b>Note:</b> Used with the adapter at location $U_n$ -P1-C15.
35		01AF830	1	Fan cage assembly
36		00FV726	4 - 6	60 mm fan assembly
37	31E8	00VK192	1 - 8 or 1 - 16	16 GB, 1600 MHz DDR3 DIMM
37	31EC	00VK247	1 - 8 or 1 - 16	16 GB, DDR4 CDIMM

Table 19. Rack assembly part numbers (expanded function) (continued)

Index number	CCIN	Part number	Units per assembly	Description
37	31E9	00VK194	1 - 8 or 1 - 16	32 GB, 1600 MHz DDR3 DIMM
37	31ED	00VK291	1 - 8 or 1 - 16	32 GB, DDR4 CDIMM
37	31EA	00VK196	1 - 8 or 1 - 16	64 GB, 1600 MHz DDR3 DIMM
37	31EE	00VK301	1 - 8 or 1 - 16	64 GB, DDR4 CDIMM
37	31EF	00VK273	1 - 8 or 1 - 16	128 GB, DDR4 CDIMM
37		00FW990	1 - 8 or 1 - 16	DIMM filler
38			1	Backup power module card cage
39			1 - 2	Backup power module card <b>Note:</b> The backup power module card is included with the PCIe3 x8 cache SAS RAID internal adapter part number. Replace the PCIe3 x8 cache SAS RAID internal adapter and the backup power module card together.
40	57D8	00MA025	1 - 2	PCIe3 x8 cache SAS RAID internal adapter (8247-21L or 8284-21A)
40	57D7	00MH906	1 - 2	PCIe3 SAS internal adapter
40	57DC	00WV511	1 - 2	PCIe3 x8 cache SAS RAID internal adapter <b>Note:</b> This adapter is supported only on the IBM Elastic Storage Server.
41		00FV688	1	Rear SAS cable

# Rack assembly detail, continued (air-cooled base and expanded function)

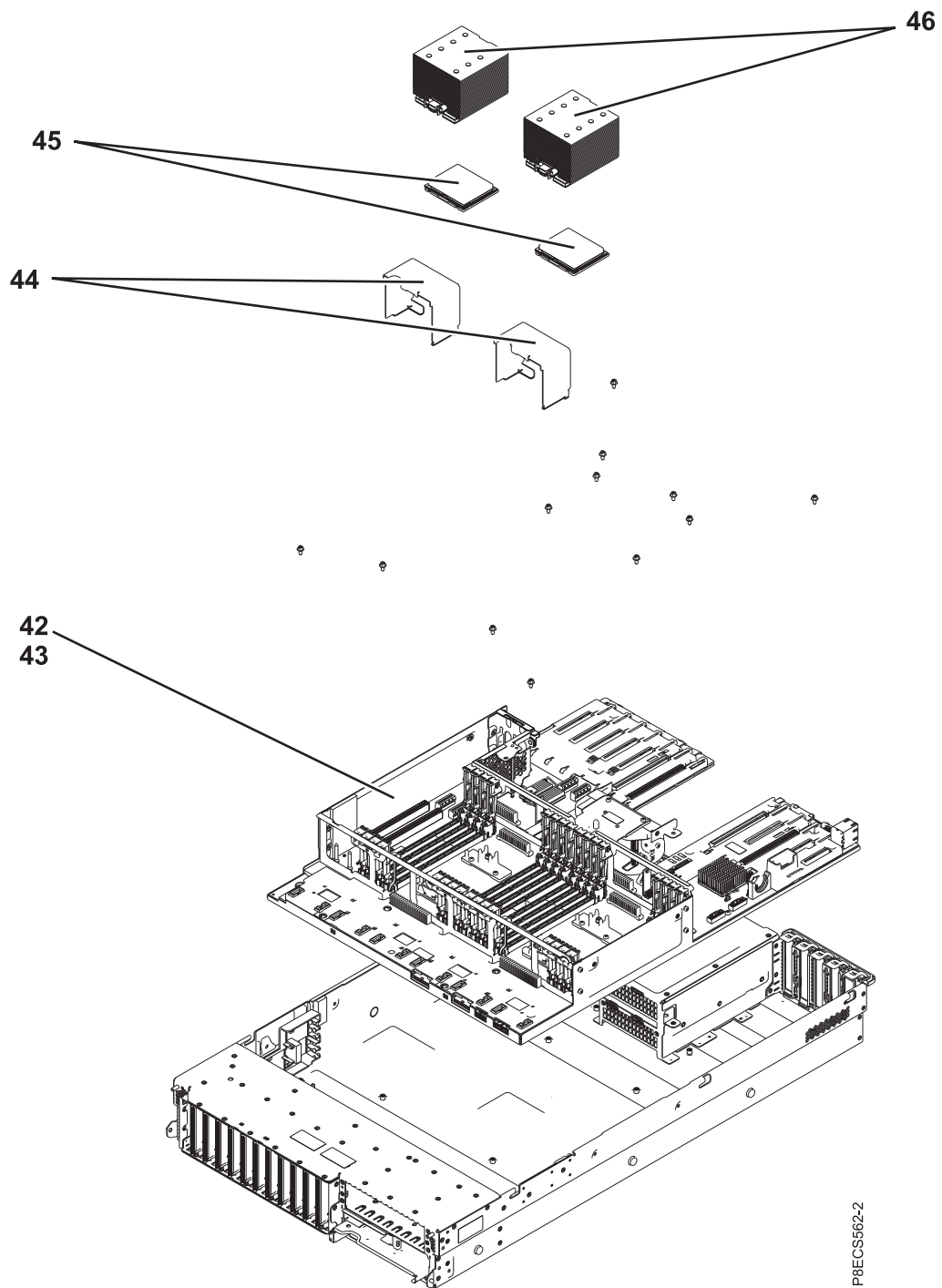
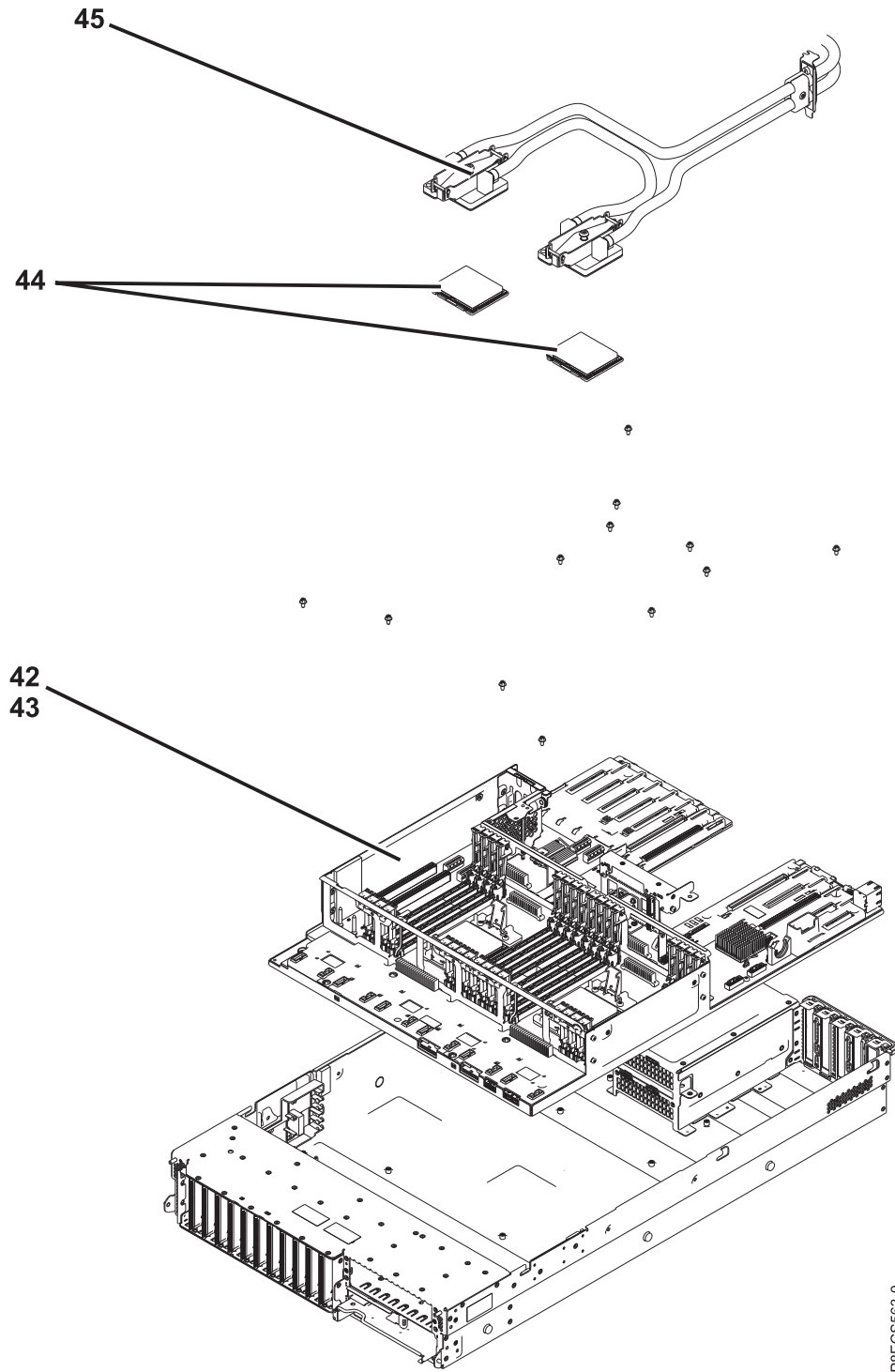


Table 20. Rack assembly part numbers (air-cooled base and expanded function)

Index number	CCIN	Part number	Units per assembly	Description
42	2CD7	00E2026	1	System backplane (5148-21L, 8247-21L, or 8284-21A)
42	2CD6	00E2022	1	System backplane (5148-22L, 8247-22L, or 8284-22A)
43			12	Attaching screws for system backplane
44			1 - 2	Processor module air baffle
45	54E9	00FX975	1	1 core 3.026 GHz processor module (8284-21A with the IBM i operating system) 4 core 3.026 GHz processor module (8284-21A with the AIX operating system)
45	54E6	00FX522	1 - 2	6 core 3.89 GHz processor module (8284-22A)
45	54E8	00FX518	1 - 2	10 core 3.42 GHz processor module (5148-21L, 5148-22L, 8247-21L, 8247-22L, or 8284-22A)
45	54E4	00FX520	1 - 2	12 core 3.02 GHz processor module (8247-21L, 8247-22L, or 8284-22A)
46		00FV742	1 - 2	Heat sink

# Rack assembly detail, continued (water-cooled base and expanded function)



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Table 21. Rack assembly part numbers (water-cooled base and expanded function)

Index number	CCIN	Part number	Units per assembly	Description
42	2CD6	00E2022	1	System backplane (8247-22L or 8284-22A) <b>Note:</b> Two water-cooled processor module kits must also be ordered when you replace the system backplane. For part number information, see table 7.
43			12	Attaching screws for system backplane
44	54E6	00FX522	1 - 2	6 core 3.89 GHz processor module (8284-22A) <b>Note:</b> One water-cooled processor module kit must also be ordered when you replace the processor module. For part number information, see table 7.
44	54E8	00FX518	1 - 2	10 core 3.42 GHz processor module <b>Note:</b> One water-cooled processor module kit must also be ordered when you replace the processor module. For part number information, see table 7.
44	54E4	00FX520	1 - 2	12 core 3.02 GHz processor module <b>Note:</b> One water-cooled processor module kit must also be ordered when you replace the processor module. For part number information, see table 7.
44	54E5	00FX519	1 - 2	8 core 4.15 GHz processor module <b>Note:</b> One water-cooled processor module kit must also be ordered when you replace the processor module. For part number information, see table 7.
45		01AF810 or 01AF849	1	Cold plate assembly

Table 22. Cables (base and expanded function)

Description	Part number
6-meter RS232 cable	00FW217
Disk drive backplane power cable (base function)	00FX686
Disk drive backplane power cable (base function or expanded function)	00FV872
Disk drive backplane signal cable	00FV876
Graphics cable	00E3060
Operator panel cable	00E7291
Power distribution board (PDB) signal cable	00FW701

Table 23. Miscellaneous parts (base and expanded function)

Description	Part number
Cable configuration	See Enclosures and expansion units.
External cables and cords	See Planning for cables.
Power and UPS cables	See Planning for power.
Keyboard parts	See Keyboard parts.
Removable media	See Managing devices.



Table 23. Miscellaneous parts (base and expanded function) (continued)

Description	Part number
Heat sink and thermal interface material (TIM) kit	00FV742
Water-cooled processor module kit (includes tray, TIM, and TIM scraper)	01AF170
Water-cooled manifold assembly	01AF826

## 8247-42L, 8286-41A, or 8286-42A system parts

Indexed drawings show system part numbers of each part.

### Rack final assembly (base and expanded function)

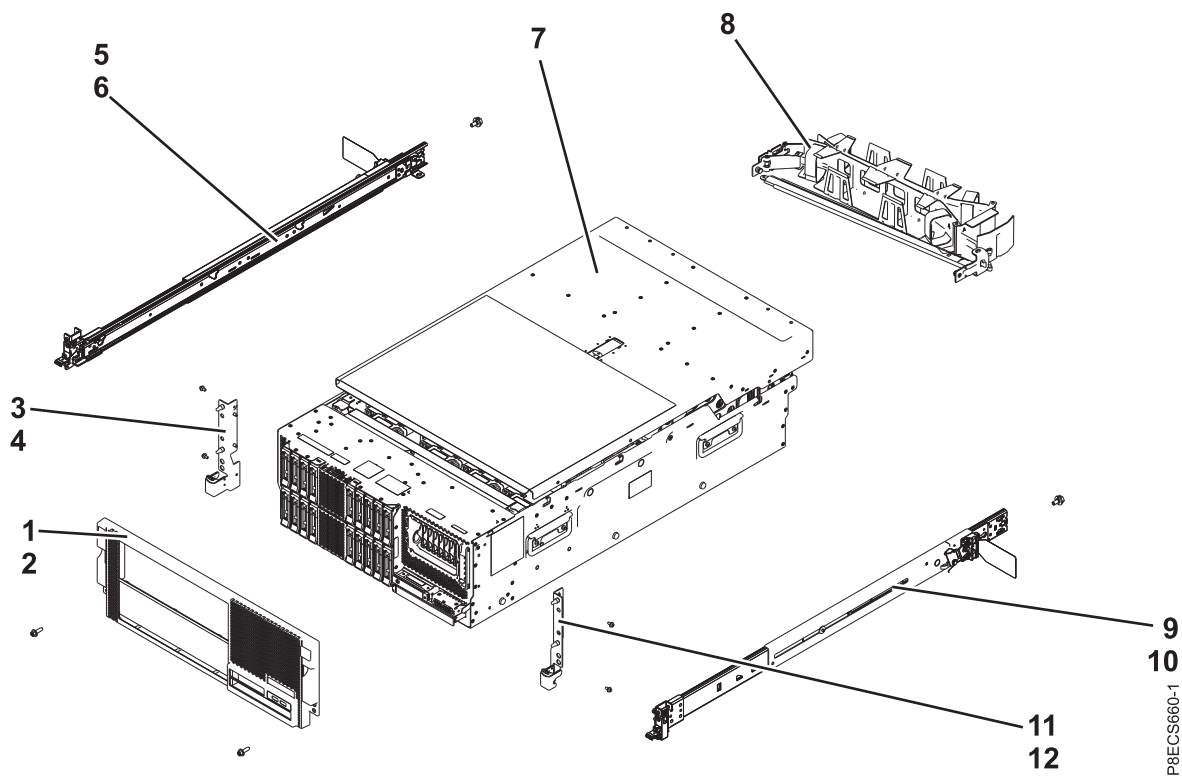


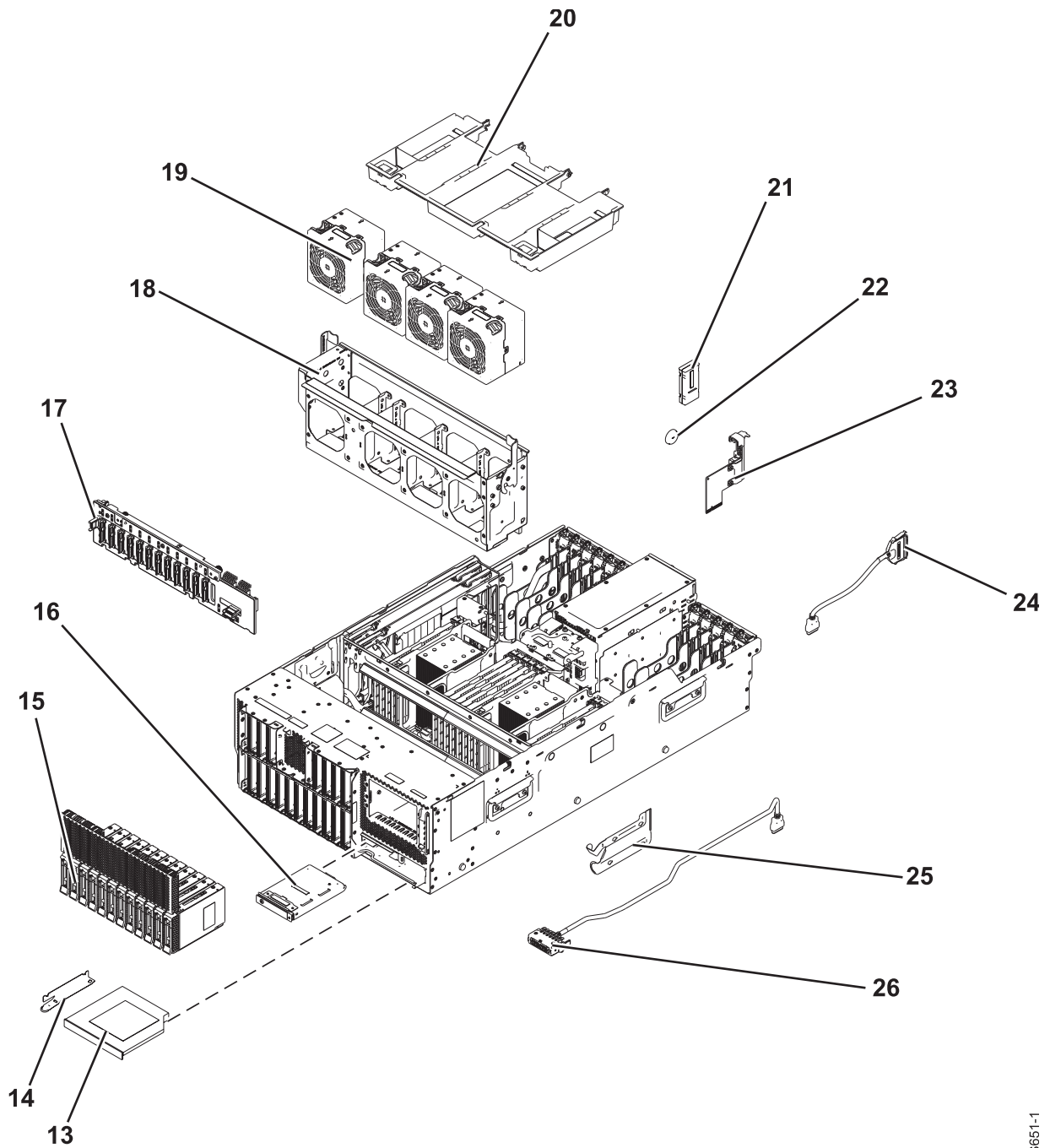
Table 24. Rack assembly part numbers (base and expanded function)

Index number	CCIN	Part number	Units per assembly	Description
1		00FV769	1	Front bezel
2			2	Attaching screw for front bezel
3		46K5096	1	EIA bracket (left)
4			2	Attaching screw for EIA bracket (left)
5		68Y7226	1	Rail kit - contains left and right rails and attaching screws
6			1	Attaching screw for rail kit
7			1	Top access cover assembly

Table 24. Rack assembly part numbers (base and expanded function) (continued)

Index number	CCIN	Part number	Units per assembly	Description
8		74Y9063	1	Cable management arm assembly
9		68Y7226	1	Rail kit - contains left and right rails and attaching screws
10			1	Attaching screw for rail kit
11		46K5097	1	EIA bracket (right)
12			2	Attaching screw for EIA bracket (right)

## Rack assembly detail (base function)



P8ECS651-1

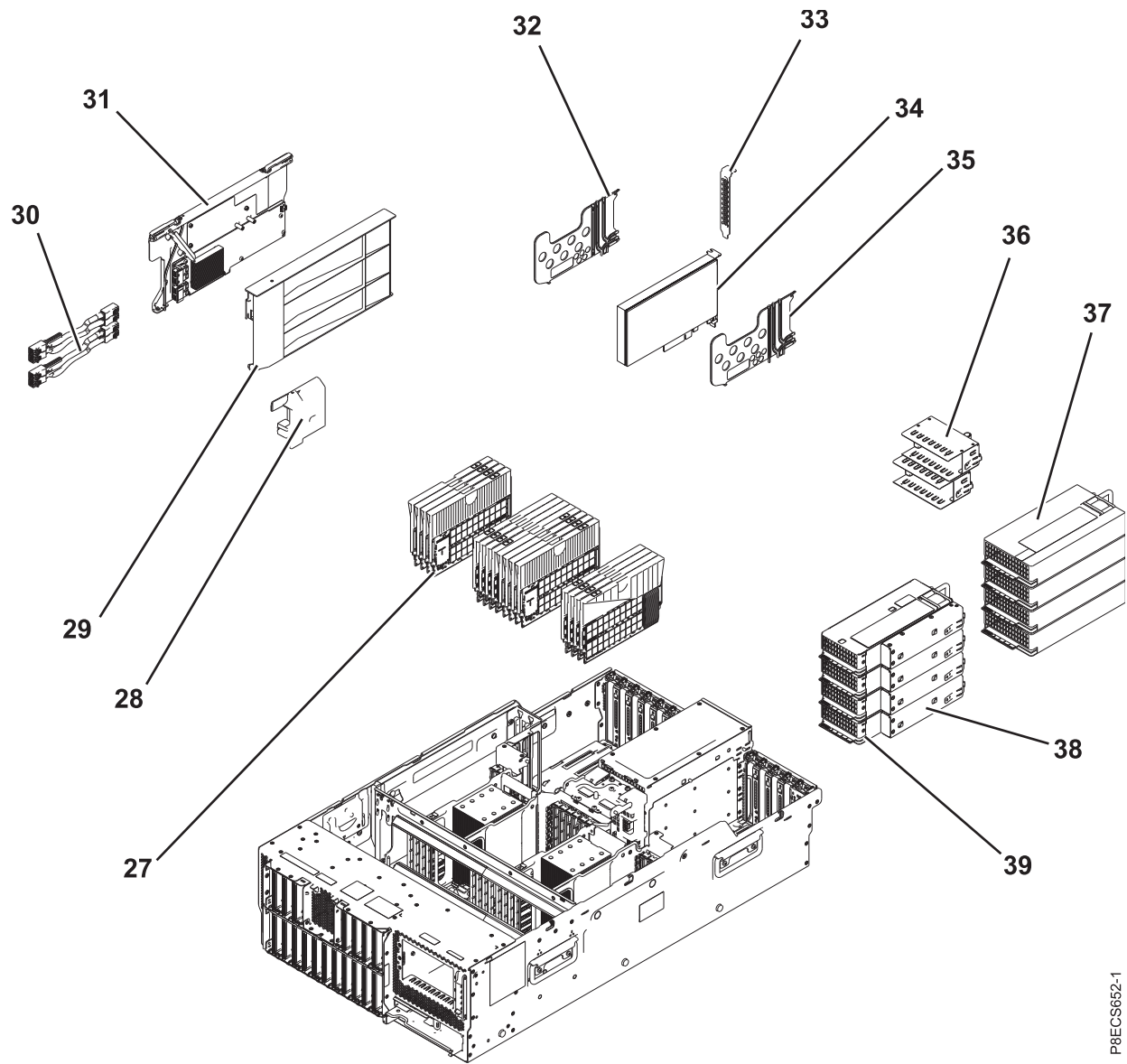
Table 25. Rack assembly part numbers (base function)

Index number	CCIN	Part number	Units per assembly	Description
13			1	DVD drive. See Managing DVD drives.
14		00FX140	1	DVD drive retain latch
15			1 - 12	See Disk drive and solid-state drive system parts.

Table 25. Rack assembly part numbers (base function) (continued)

Index number	CCIN	Part number	Units per assembly	Description
16		00E1966	1	Control panel assembly
17	2B09	00E1945	1	Disk drive backplane
18		00FX078	1	Fan cage assembly
19		00FV629	1 - 4	80 mm fan assembly
20		00FX092	1	Processor and memory air baffle
21	561A	74Y4326	1	System VPD card (8247-42L)
21	52F2	00E2152	1	System VPD card (8286-41A)
21	52FE	00E2147	1	System VPD card (8286-42A)
22		74Y9628	1	Time-of-day battery
23		00E1960	1	System I/O card
24		00E7284	1	Rear USB cable
25		00FV613	1	USB cable cover
26		00E7283	1	Front USB cable

## Rack assembly detail, continued (base function)



P8ECS652-1

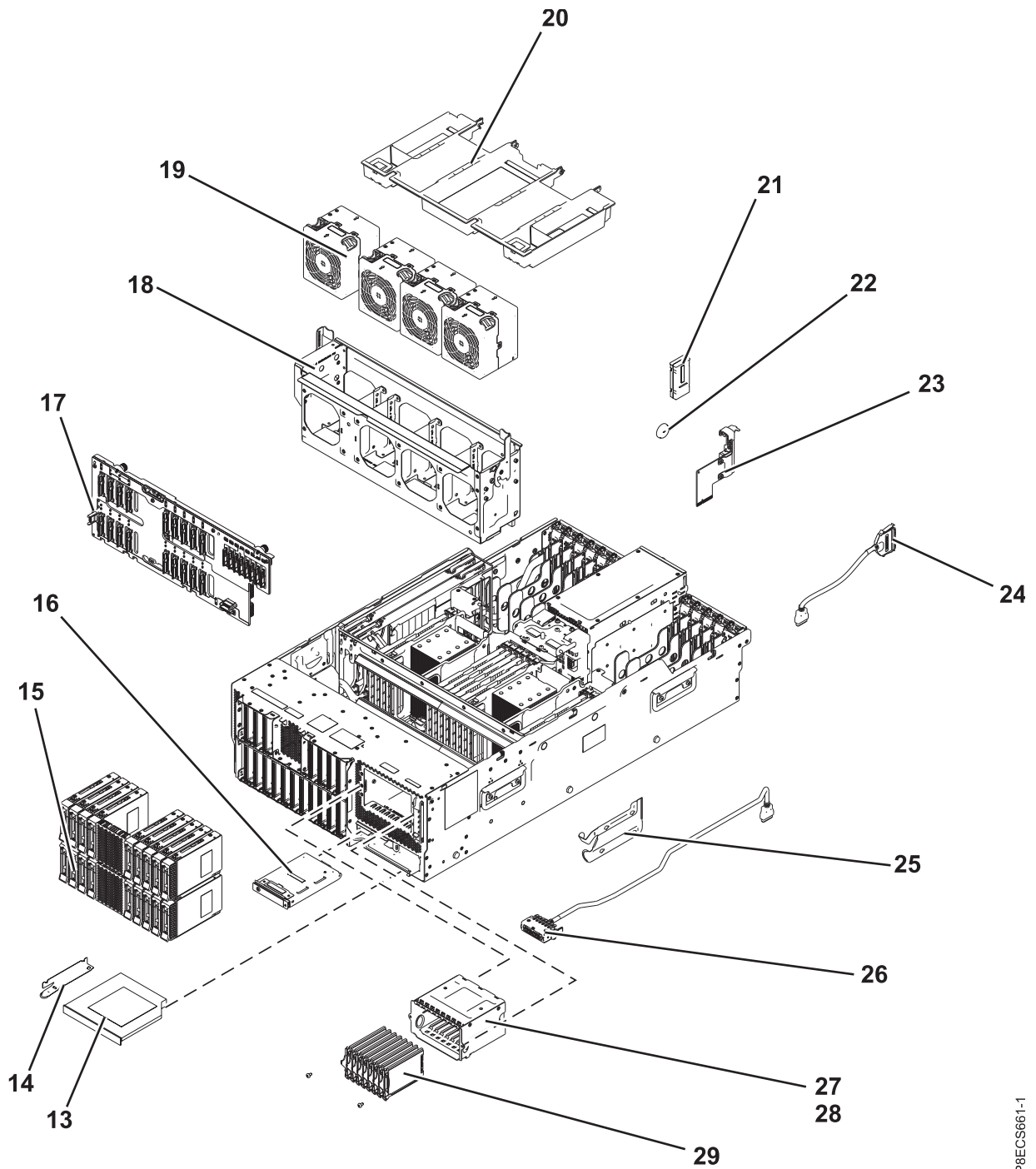
Table 26. Rack assembly part numbers (base function)

Index number	CCIN	Part number	Units per assembly	Description
27	31E8	00VK193	1 - 8 or 1 - 16	16 GB, 1600 MHz DDR3 DIMM
27	31EC	00VK252	1 - 8 or 1 - 16	16 GB, DDR4 CDIMM
27	31E9	00VK195	1 - 8 or 1 - 16	32 GB, 1600 MHz DDR3 DIMM
27	31ED	00VK296	1 - 8 or 1 - 16	32 GB, DDR4 CDIMM
27	31EA	00VK197	1 - 8 or 1 - 16	64 GB, 1600 MHz DDR3 DIMM
27	31EE	00VK306	1 - 8 or 1 - 16	64 GB, DDR4 CDIMM
27	31EB	00VK198	1 - 8 or 1 - 16	128 GB, 1600 MHz DDR3 DIMM
27	31EF	00VK351	1 - 8 or 1 - 16	128 GB, DDR4 CDIMM
27	31FC	00VK243	1 - 8 or 1 - 16	256 GB, DDR4 CDIMM (8247-42L and 8286-42A)

Table 26. Rack assembly part numbers (base function) (continued)

Index number	CCIN	Part number	Units per assembly	Description
27		00FW989	1 - 8 or 1 - 16	DIMM filler
28		00FV613	1	SAS cable cover
29		00FW232	1	PCIe3 SAS RAID internal adapter filler
30		00FV690	1 - 2	Disk drive backplane SAS signal cable (short)  <b>Note:</b> Used with the adapter at location $U_{n-P1-C14}$ .
31	57D7	00MH908	1	PCIe3 x8 SAS RAID internal adapter
32		00FX087	1 - 10	PCI adapter divider (one light pipe)
33			1 - 11	PCI tailstock
34			1 - 11	PCI adapters. Use the CCIN or feature type of the adapter to find the FRU number in PCI adapter information by feature type.
35		00FX090	1	PCI adapter divider (two light pipes)
36			1 - 4	Power supply filler
37	2B1E	94Y8157	1 - 4	1400 W power supply assembly (200-240 VAC)
37	2B75	00RR025	1 - 4	1400 W power supply assembly (192-400 HVDC, 8286-41A or 8286-42A)
38			1 - 4	Power supply filler - Small form factor (SFF)
39	2B1D	00FV929	1 - 4	900 W power supply assembly

## Rack assembly detail (expanded function)



P8ECS661-1

Table 27. Rack assembly part numbers (expanded function)

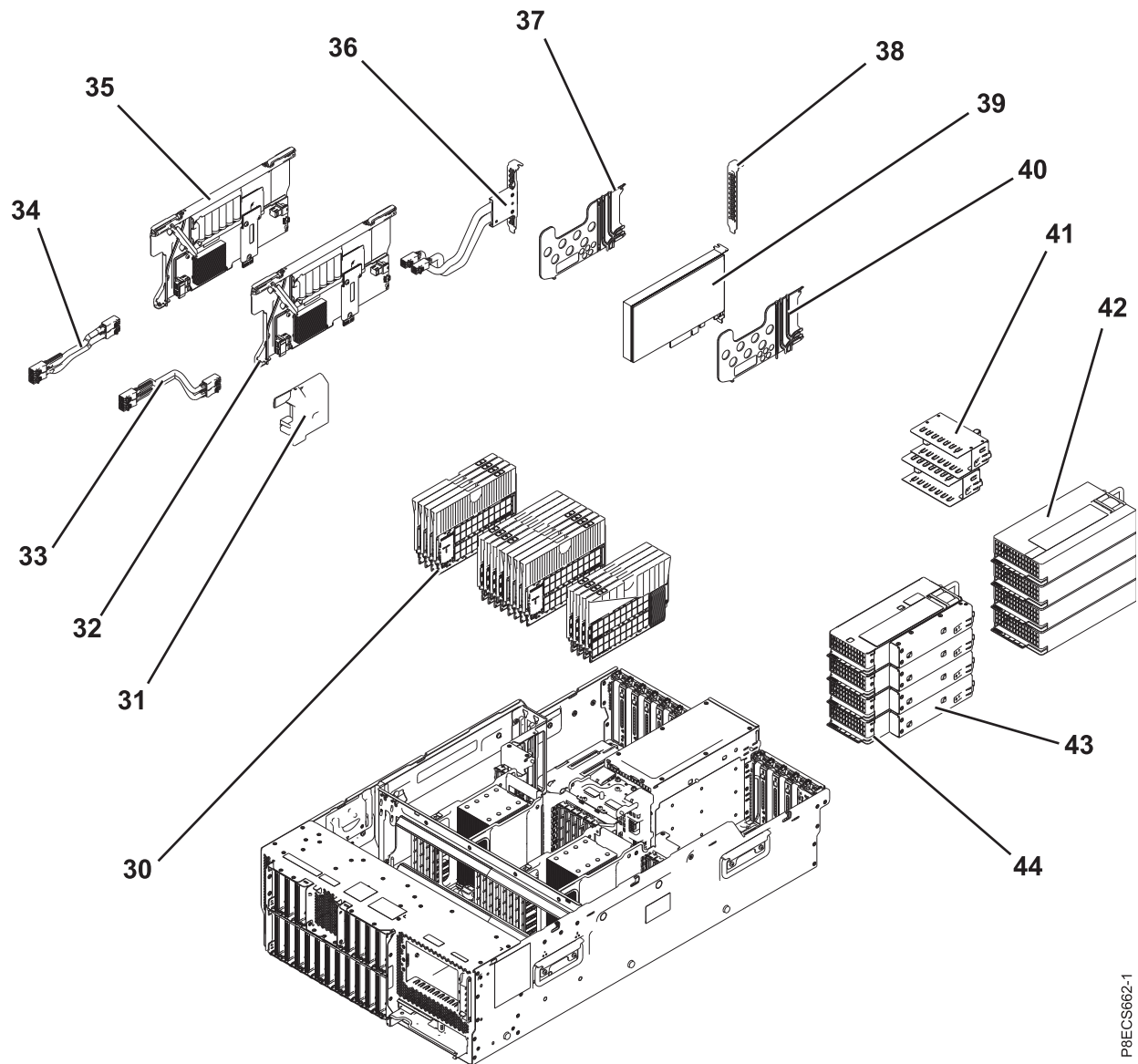
Index number	CCIN	Part number	Units per assembly	Description
13			1	DVD drive. See Managing DVD drives.
14		00FX140	1	DVD drive retain latch
15			1 - 12	See Disk drive and solid-state drive system parts.

Table 27. Rack assembly part numbers (expanded function) (continued)

Index number	CCIN	Part number	Units per assembly	Description
16		00E1966	1	Control panel assembly
17	2B0F	00E1976	1	Disk drive backplane
18		00FX078	1	Fan cage assembly
19		00FV629	1 - 4	80 mm fan assembly
20		00FX092	1	Processor and memory air baffle
21	561A	74Y4326	1	System VPD card (8247-42L)
21	52F2	00E2152	1	System VPD card (8286-41A)
21	52FE	00E2147	1	System VPD card (8286-42A)
22		74Y9628	1	Time-of-day battery
23		00E1960	1	System I/O card
24		00E7284	1	Rear USB cable
25			1	USB cable cover
26		00E7283	1	Front USB cable
27		00FW699	1	SSD cage
28			2	Attaching screws for SSD cage
29			1 - 8	See Disk drive and solid-state drive system parts.



## Rack assembly detail, continued (expanded function)



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Table 28. Rack assembly part numbers (expanded function)

Index number	CCIN	Part number	Units per assembly	Description
30	31E8	00VK193	1 - 8 or 1 - 16	16 GB, 1600 MHz DDR3 DIMM
30	31EC	00VK252	1 - 8 or 1 - 16	16 GB, DDR4 CDIMM
30	31E9	00VK195	1 - 8 or 1 - 16	32 GB, 1600 MHz DDR3 DIMM
30	31ED	00VK296	1 - 8 or 1 - 16	32 GB, DDR4 CDIMM
30	31EA	00VK197	1 - 8 or 1 - 16	64 GB, 1600 MHz DDR3 DIMM
30	31EE	00VK306	1 - 8 or 1 - 16	64 GB, DDR4 CDIMM
30	31EB	00VK198	1 - 8 or 1 - 16	128 GB, 1600 MHz DDR3 DIMM
30	31EF	00VK351	1 - 8 or 1 - 16	128 GB, DDR4 CDIMM
30	31FC	00VK243	1 - 8 or 1 - 16	256 GB, DDR4 CDIMM (8247-42L and 8286-42A)

Table 28. Rack assembly part numbers (expanded function) (continued)

Index number	CCIN	Part number	Units per assembly	Description
30		00FW989	1 - 8 or 1 - 16	DIMM filler
31		00FW233	1	SAS cable cover
32 and 35	57D8	00MA020	1 - 2	PCIe3 x8 cache SAS RAID internal adapter
33		00FV689	1 - 2	Disk drive backplane SAS signal cable (long) <b>Note:</b> Used with the adapter at location $U_n$ -P1-C15.
34		00FV690	1 - 2	Disk drive backplane SAS signal cable (short) <b>Note:</b> Used with the adapter at location $U_n$ -P1-C14.
36		00FV687	1	Rear SAS cable
37		00FX087	1 - 10	PCI adapter divider (one light pipe)
38		00E8903	1 - 11	PCI tailstock
39			1 - 11	PCI adapters. Use the CCIN or feature type of the adapter to find the FRU number in PCI adapter information by feature type.
40		00FX090	1	PCI adapter divider (two light pipes)
41			1 - 4	Power supply filler
42	2B1E	94Y8157	1 - 4	1400 W power supply assembly (200-240 VAC)
42	2B75	00RR025	1 - 4	1400 W power supply assembly (192-400 HVDC, 8286-41A or 8286-42A)
43			1 - 4	Power supply filler - Small form factor (SFF)
44	2B1D	00FV929	1 - 4	900 W power supply assembly

## Rack assembly detail, continued (base and expanded function)

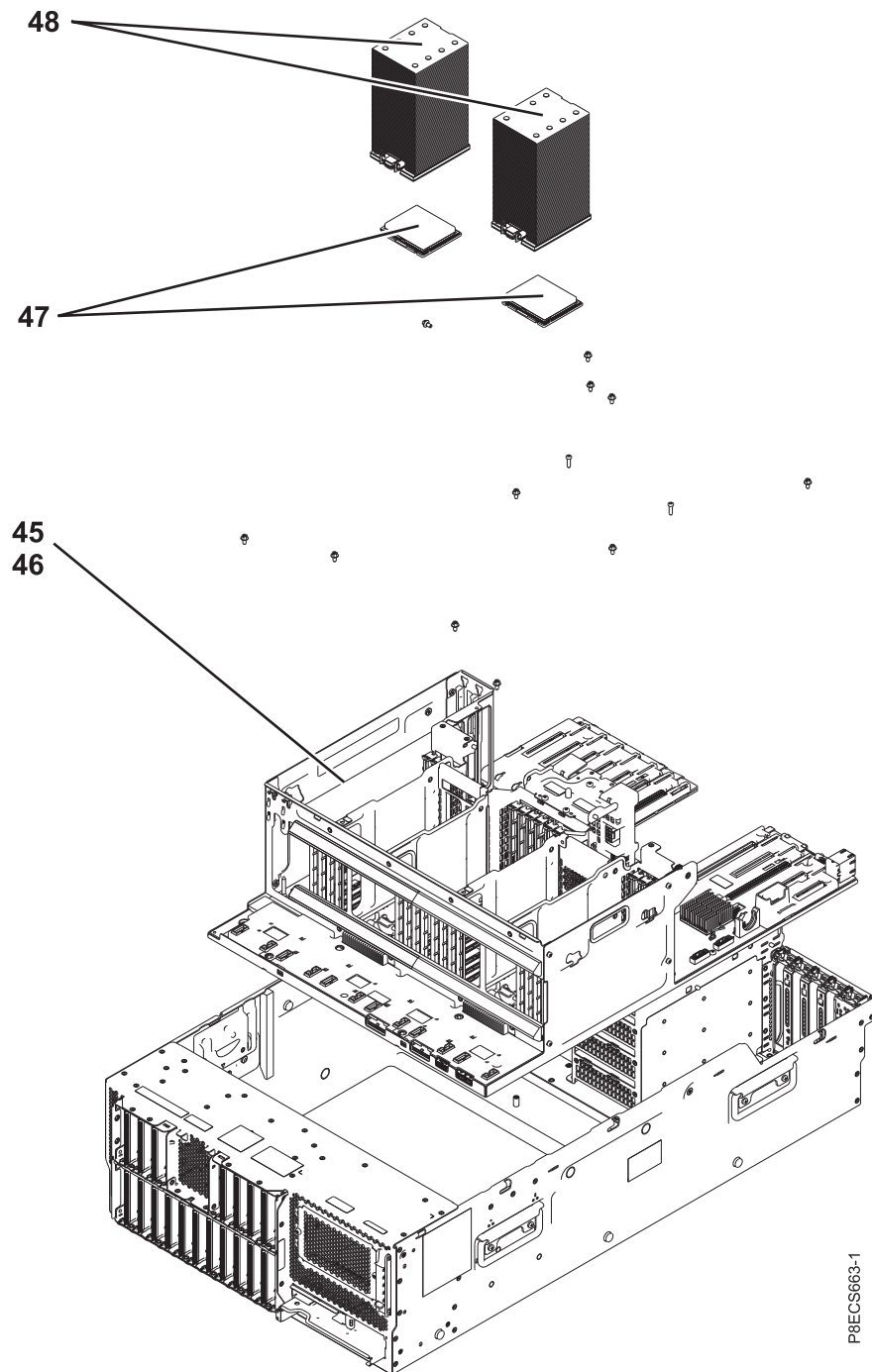


Table 29. Rack assembly part numbers (base and expanded function)

Index number	CCIN	Part number	Units per assembly	Description
45	2CD4	00E1962	1	System backplane (8247-42L or 8286-42A)
45	2CD5	00E1964	1	System backplane (8286-41A)
46			12	Attaching screws for system backplane
47	54E9	00FX975	1 - 2	4 core 3.02 GHz processor module (8286-41A)

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Table 29. Rack assembly part numbers (base and expanded function) (continued)

Index number	CCIN	Part number	Units per assembly	Description
47	54E1	00FX523	1 - 2	6 core 3.02 GHz processor module (8286-41A)
47	54E6	00FX522	1 - 2	6 core 3.89 GHz processor module (8286-42A)
47	54E0	00FX557	1 - 2	8 core 3.72 GHz processor module (8286-41A rack model)
47	54E5	00FX519	1 - 2	8 core 4.15 GHz processor module (8286-42A)
47	54E8	00FX518	1 - 2	10 core 3.42 GHz processor module (8247-42L)
47	54E4	00FX520	1 - 2	12 core 3.02 GHz processor module (8247-42L)
47	54E3	00FX516	1 - 2	12 core 3.52 GHz processor module (8286-42A)
48		00E8868	1 - 2	Heat sink

Table 30. Cables (base and expanded function)

Description	Part number
6-meter RS232 cable	00FW217
Disk drive backplane power cable (base function)	00FX686
Disk drive backplane power cable (base function or expanded function)	00FV872
Disk drive backplane signal cable	00FV876
Graphics cable	00E3060
Operator panel cable (for a rack-mounted system)	00E7291
Operator panel cable (for a stand-alone system)	00E8936
Power distribution board (PDB) signal cable	00FW701

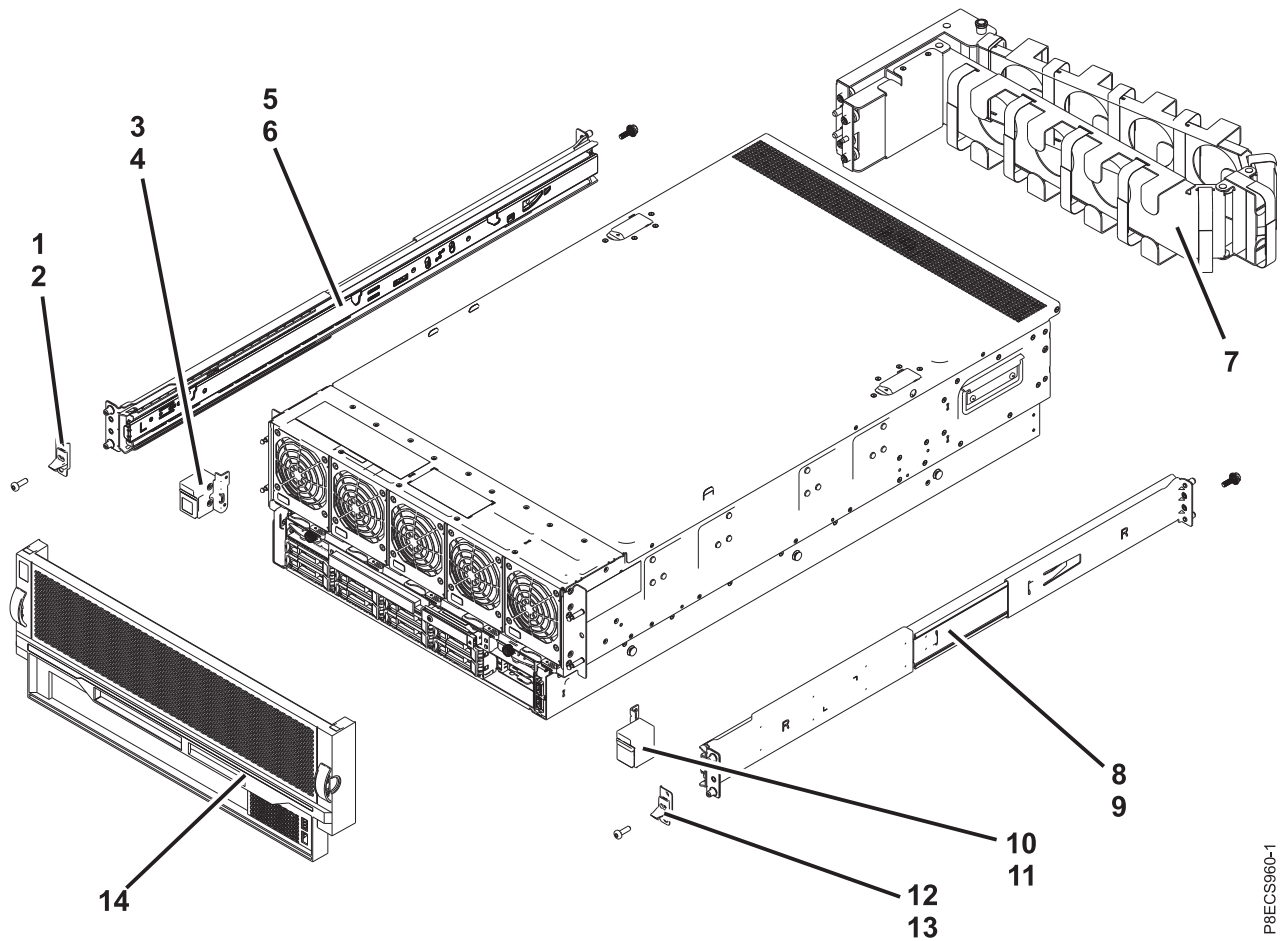
Table 31. Miscellaneous parts (base and expanded function)

Description	Part number
Cable configuration	See Enclosures and expansion units.
External cables and cords	See Planning for cables.
Power and UPS cables	See Planning for power.
Keyboard parts	See Keyboard parts.
Removable media	See Managing devices.
Heat sink and thermal interface material (TIM) kit	00E8868

## 8408-44E and 8408-E8E system parts

Indexed drawings show system part numbers of each part.

## Cover assembly



P8ECS960-1

Table 32. Cover assembly part numbers

Index number	CCIN	Part number	Units per assembly	Description
1		00RR013	1	Hook assembly (left)
2		46K4480	1	Attaching screw for hook assembly (left) - M3 x 0.5 L5 Torx drive
3		00LU602	1	EIA bracket (left)
4		46K2775	2	Attaching screw for EIA bracket (left) - M3 x 0.5 L3 Torx drive
5		00LU600	1	Rail kit (left)
6		46C6380	2	Attaching screw for rail kit (left) - M5 x 16 slotted Phillips drive
7		00LU917	1	Cable management arm assembly
8		00LU601	1	Rail kit (right)
9		46C6380	2	Attaching screw for rail kit (right) - M5 x 16 slotted Phillips drive
10		00LU603	1	EIA bracket (right)
11		46K2775	2	Attaching screw for EIA bracket (right) - M3 x 0.5 L3 Torx drive

Table 32. Cover assembly part numbers (continued)

Index number	CCIN	Part number	Units per assembly	Description
12		00RR014	1	Hook assembly (right)
13		46K4480	1	Attaching screw for hook assembly (right) - M3 x 0.5 L5 Torx drive
14		01KU425	1	Front bezel (8408-44E)
14		00LU871	1	Front bezel (8408-E8E)

### Final assembly (front)

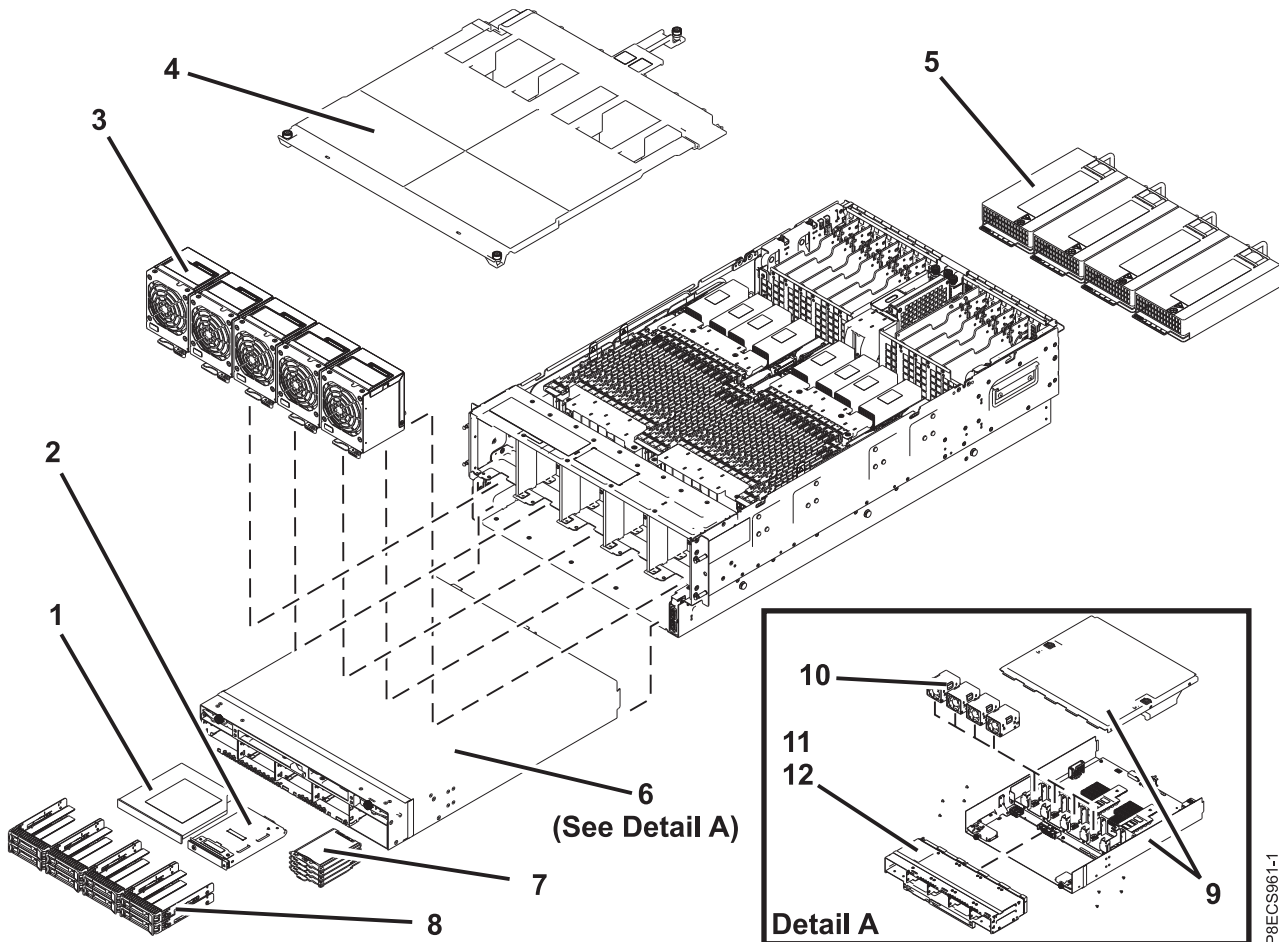


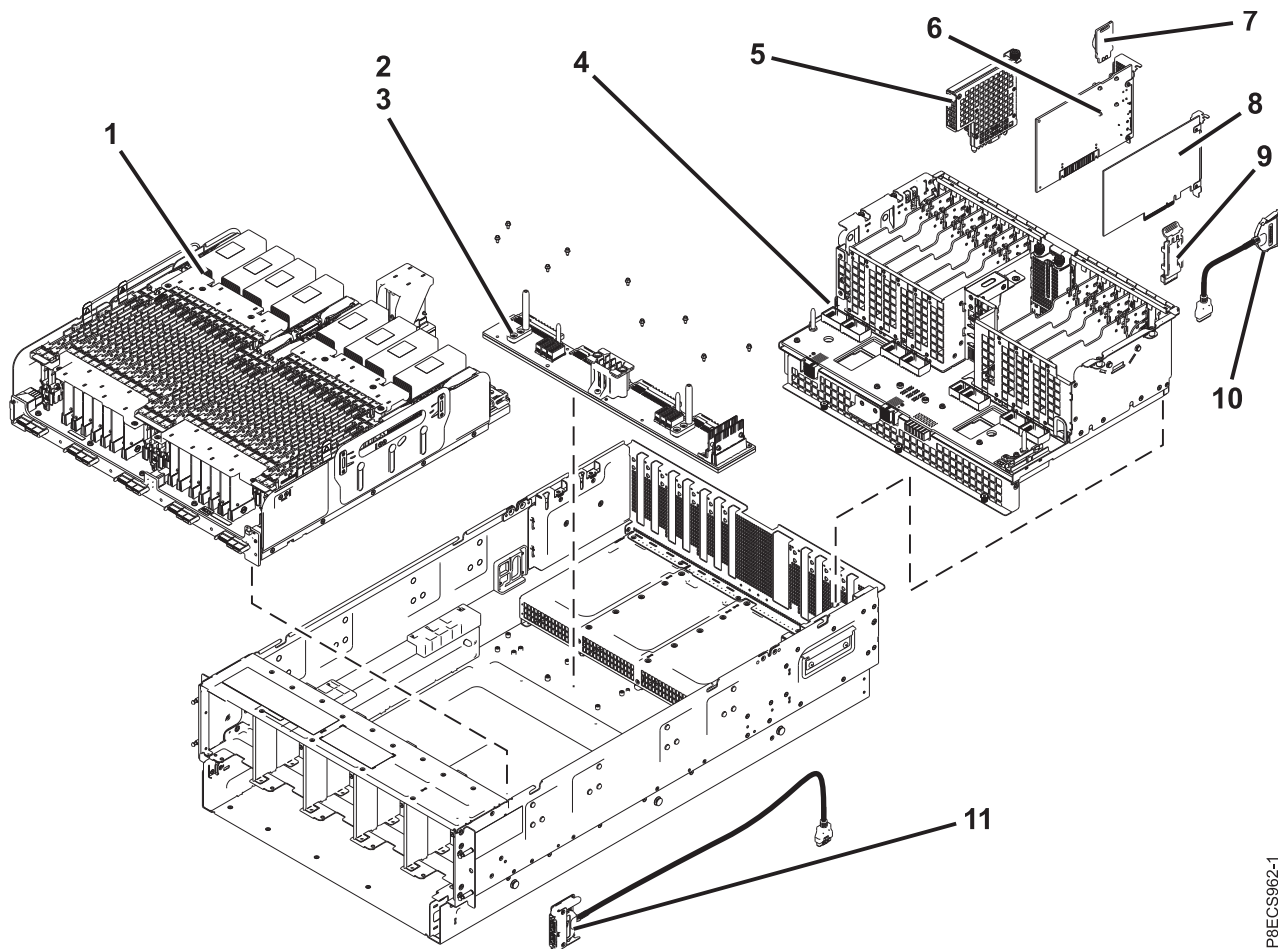
Table 33. Final assembly (front) part numbers

Index number	CCIN	Part number	Units per assembly	Description
1			1	DVD drive. See Managing DVD drives.
2	2B08	00E1966	1	Control panel assembly
3	6B42	00E9335	5	Front fan assembly (single fan)
4		01EL527	1	Safety cover (8408-44E)
4		00LU753	1	Safety cover (8408-E8E)
5	51DE	01EL710	4	2000 W power supply (200-240 VAC) (8408-44E)

Table 33. Final assembly (front) part numbers (continued)

Index number	CCIN	Part number	Units per assembly	Description
5	2B1E	94Y8157	4	1400 W power supply (200-240 VAC) (8408-E8E)
5	2B75	00RR025	4	1400 W power supply (192-400 HVDC) (8408-E8E)
6			1	RAID assembly
7			1 - 4	1.8" solid state drive (SSD) bays. See Disk drive and solid-state drive system parts.
8			1 - 8	2.5" small form factor (SFF) bays. See Disk drive and solid-state drive system parts.
9	2CCA	00E4315	1	RAID card (dual embedded controllers with write cache); includes RAID assembly cover (8408-44E)
9	2CCA	00E3968	1	RAID card (dual embedded controllers with write cache); includes RAID assembly cover (8408-E8E)
9	2CD2	00E4316	1	RAID card (dual embedded controllers without write cache); includes RAID assembly cover (8408-44E)
9	2CD2	00E3991	1	RAID card (dual embedded controllers without write cache); includes RAID assembly cover (8408-E8E)
9	2CCD	00E4317	1	RAID card (two embedded controllers without write cache used in split backplane configuration); includes RAID assembly cover (8408-44E)
9	2CCD	00E3992	1	RAID card (two embedded controllers without write cache used in split backplane configuration); includes RAID assembly cover 8408-E8E)
10	2CD0	00LU710	1	Internal fan assembly (contains 4 fans)
11	2CCB	00E3934	1	Disk drive backplane
12		98F2977	8	Attaching screws for disk drive backplane - M3 x 8 Torx drive

## Final assembly (rear)



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Table 34. Final assembly (rear) part numbers

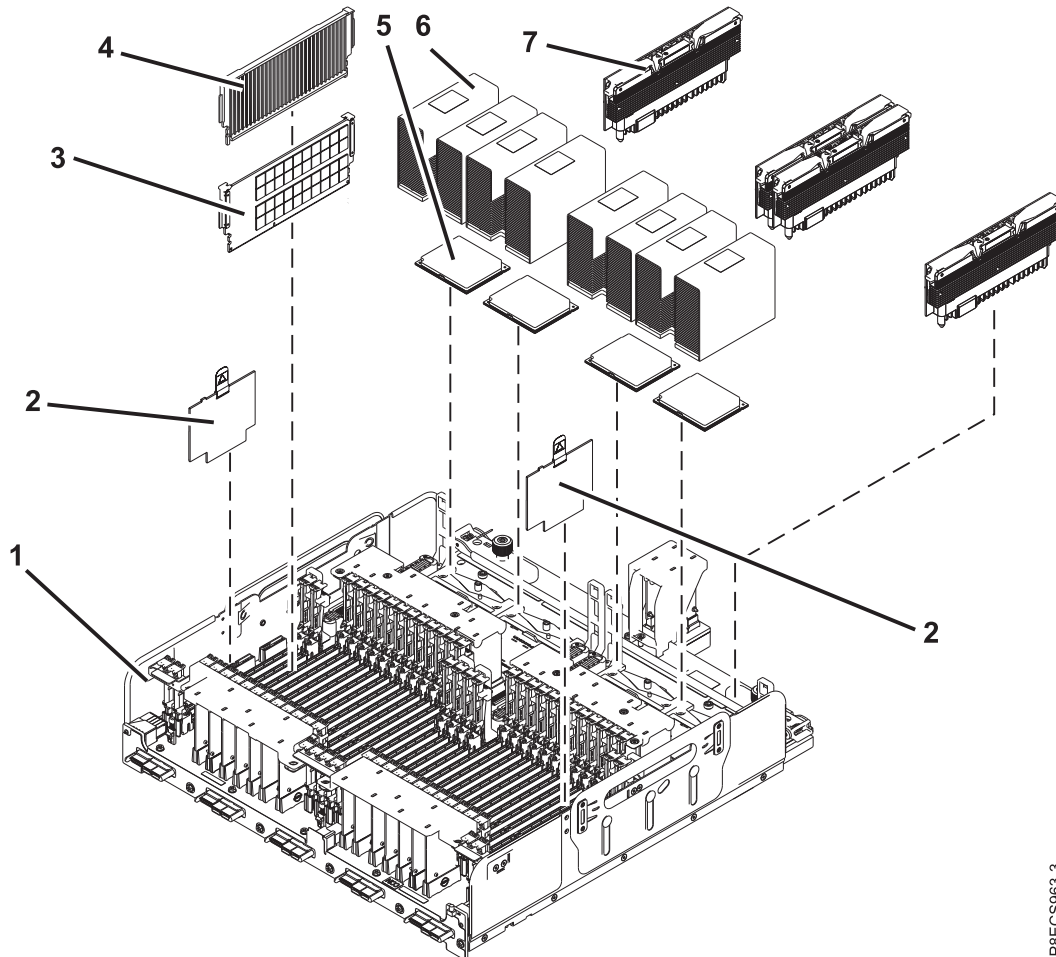
Index number	CCIN	Part number	Units per assembly	Description
1			1	Processor and memory assembly (see "Processor and memory assembly" on page 81)
2	2D32	00E4865	1	Power midplane kit - includes foam stand for processor assembly (8408-44E)
2	2CC8	00LR496	1	Power midplane kit - includes foam stand for processor assembly (8408-E8E)
3			9	Attaching screws for power midplane - M3 x 8 Torx drive and M3.5 x 10 Torx drive
4	2CC9	00E4862	1	I/O backplane kit - includes foam stand for processor assembly (8408-44E)
4	2CC9	00LR495	1	I/O backplane kit - includes foam stand for processor assembly (8408-E8E)
5	2CCF	01KU188	1	I/O voltage regulator card (8408-44E)
5	2CCF	00LR458	1	I/O voltage regulator card (8408-E8E)
6	2CED	00LV180	1	Service processor card (8408-44E)



Table 34. Final assembly (rear) part numbers (continued)

Index number	CCIN	Part number	Units per assembly	Description
6	2CC7		1	Service processor card (8408-E8E) <b>Note:</b> For systems with system firmware FW840.1 or earlier, order part number 00E3963. Otherwise, order part number 01EL493.
7		00E3910	1	Time-of-day battery card
8			1 - 11	PCI adapters. Use the CCIN or feature type of the adapter to find the FRU number in PCI adapter information by feature type.
9	562D	01DH151	1	System VPD card (8408-44E)
9	560E	00E4341	1	System VPD card (8408-E8E)
10		00LU764	1	Rear USB cable
11		00LR497	1	Front USB cable kit - includes foam stand for processor assembly

### Processor and memory assembly



P8ECS963-3

Table 35. Processor and memory assembly part numbers

Index number	CCIN	Part number	Units per assembly	Description
1	2CEE	00E4861	1	System backplane kit - includes foam stand for processor assembly, heat sink, thermal interface material (TIM) and replacement tools (8408-44E)
1	2CC6	00LR476	1	System backplane kit - includes foam stand for processor assembly, heat sink, thermal interface material (TIM) and replacement tools (8408-E8E)
2	51DC	01EL972	2	Memory voltage regulator module (8408-44E)
2	51D6	00LU855	0 - 2	Memory voltage regulator module (8408-E8E) <b>Note:</b> Two memory voltage regulator modules and system firmware FW840.20 or later are required to support DDR4 memory.
3	31EC	00VK247	2 - 32	16 GB memory (DDR4) (8408-44E)
3	31E8	00VK192	2 - 32	16 GB memory (DDR3) (8408-E8E)
3	31ED	00VK291	2 - 32	32 GB memory (DDR4) (8408-44E)
3	31E9	00VK194	2 - 32	32 GB memory (DDR3) (8408-E8E)
3	31EE	00VK301	2 - 32	64 GB memory (DDR4) (8408-44E)
3	31EA	00VK196	2 - 32	64 GB memory (DDR3) (8408-E8E)
3	31EF	00VK273	2 - 32	128 GB memory (DDR4) (8408-44E or 8408-E8E) <b>Note:</b> Two memory voltage regulator modules and system firmware FW840.20 or later are required to support DDR4 memory on an 8408-E8E system. If you have service processor card part number 00E3963, you must replace it with a newer service processor card to support DDR4 memory on an 8408-E8E system.
4		41U9794	2 - 30	Memory filler
5 - 6	552C	01EL288	2 - 4	12 core 3.658 GHz processor module FRU kit (includes processor module, heat sink, and TIM) (8408-44E)
5 - 6	551C	00LU543	2 - 4	12 core 3.02 GHz processor module FRU kit (includes processor module, heat sink, and TIM) (8408-E8E)
5 - 6	552B	01EL289	2 - 4	10 core 3.957 GHz processor module FRU kit (includes processor module, heat sink, and TIM) (8408-44E)
5 - 6	551B	00LU833	2 - 4	10 core 3.35 GHz processor module FRU kit (includes processor module, heat sink, and TIM) (8408-E8E)
5 - 6	552A	01EL290	2 - 4	8 core 4.223 GHz processor module FRU kit, which includes processor module, heat sink, and TIM) (8408-44E)
5 - 6	550E	00LU834	2 - 4	8 core 3.72 GHz processor module FRU kit, which includes processor module, heat sink, and TIM) (8408-E8E)
6		00LR426		Heat sink and TIM kit
6		00LU589	0 - 1	Processor socket cover (one for each empty processor socket)

Table 35. Processor and memory assembly part numbers (continued)

Index number	CCIN	Part number	Units per assembly	Description
7	51DB	01EL787	2 - 4	Processor voltage regulator module (VRM) (8408-44E)
7	2B80	00LU854	2 - 4	Processor voltage regulator module (VRM) (8408-E8E)
7		00LP891	1 - 2	Processor VRM filler (8408-44E)
7		00LU588	1 - 2	Processor VRM filler (8408-E8E)

Table 36. Miscellaneous parts

Description	Part number
Cable configuration	See Enclosures and expansion units.
External cables and cords	See Planning for cables.
Power and UPS cables	See Planning for power.
Keyboard parts	See Keyboard parts.
Removable media	See Managing devices.
T25 hex hand tool	00LR460
4mm Allen hand tool	46K5039
Removable handle kit	00LR295

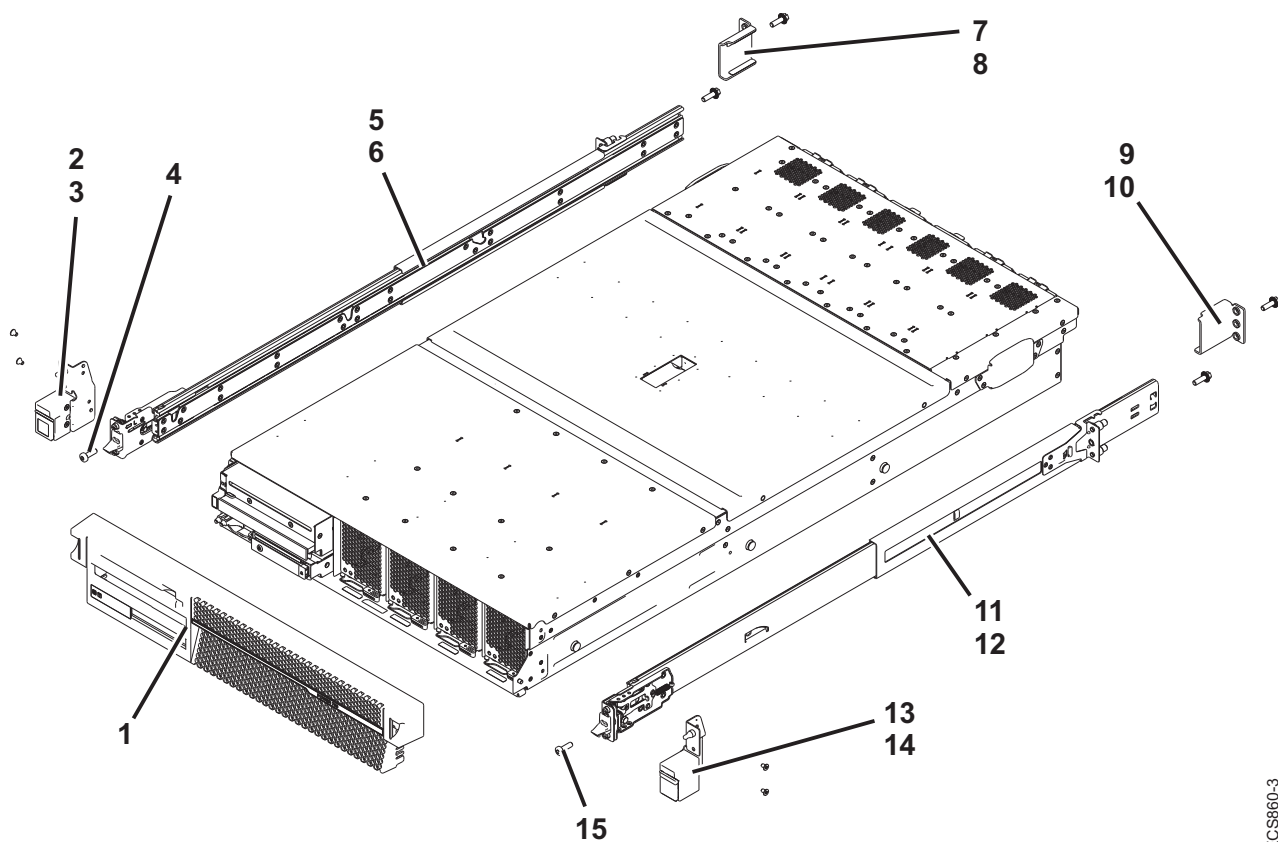
## 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system parts

Indexed drawings show system part numbers of each part.

- System control unit
- System node

### System control unit

## Rack assembly detail (system control unit)



PBECSS60-3

Table 37. Rack assembly part numbers (system control unit)

Index number	CCIN	Part number	Units per assembly	Description
1		01KL141	1	Front bezel (9080-MHE)
1		01KL140	1	Front bezel (9080-MME)
1		00RR223	1	Front bezel (9119-MHE)
1		00RR222	1	Front bezel (9119-MME)
2			1	EIA bracket (left)
3			2	Attaching screw for EIA bracket (left)
4			1	Attaching screw for hook assembly (left)
5		00FY322	1	Rail kit (left)
6			1	Attaching screw for rail kit (left)
7			1	HLD bracket (left)
8			2	Attaching screw for HLD bracket (left)
9			1	HLD bracket (right)
10			2	Attaching screw for HLD bracket (right)
11		00FY323	1	Rail kit (right)
12			1	Attaching screw for rail kit (right)
13			1	EIA bracket (right)

Table 37. Rack assembly part numbers (system control unit) (continued)

Index number	CCIN	Part number	Units per assembly	Description
14			2	Attaching screw for EIA bracket (right)
15			1	Attaching screw for hook assembly (right)

**Rack assembly detail, continued (system control unit)**

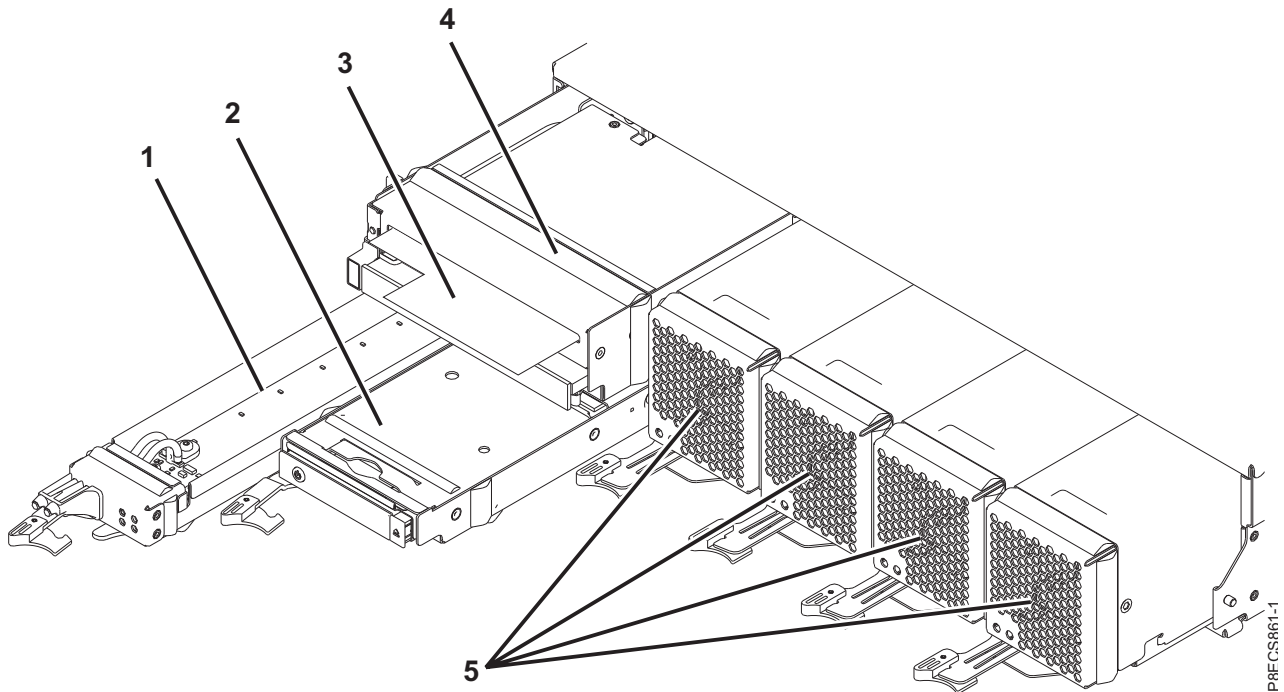
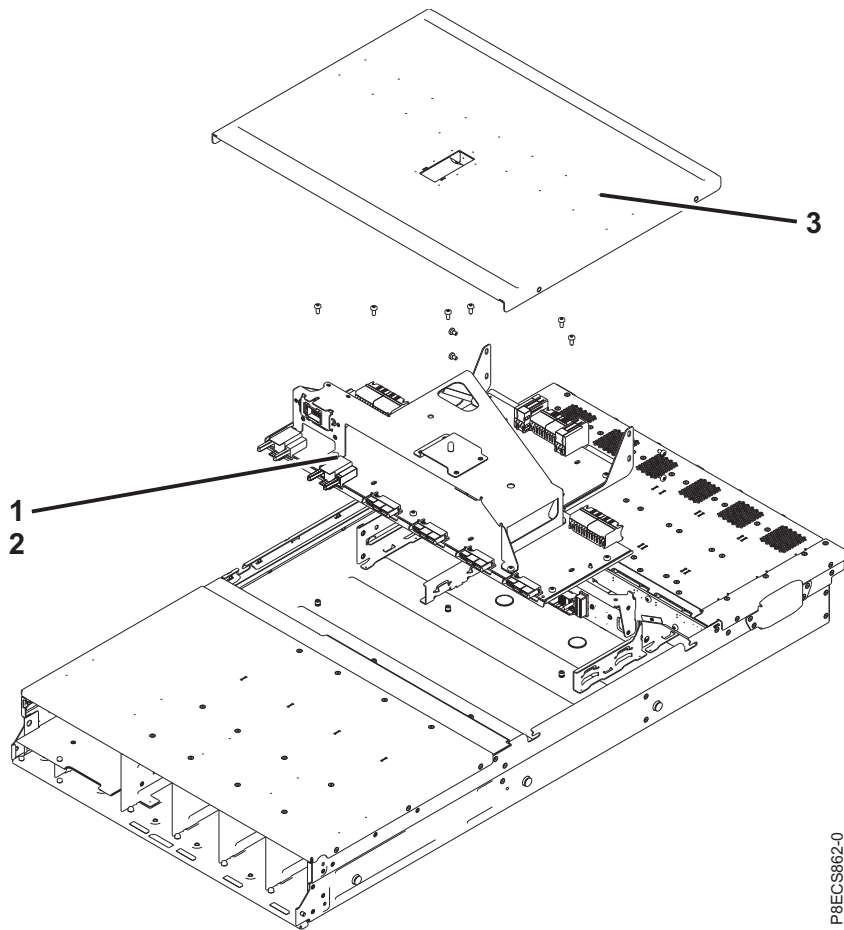


Table 38. Rack assembly part numbers (system control unit)

Index number	CCIN	Part number	Units per assembly	Description
1	52F1	00E2898	1	System VPD card
2	6B45	00E2327	1	Control panel assembly
3			1	Service card
4		00E3324	1	DVD assembly (contains DVD and DVD sled)
5	6B44	00FV798	3 - 4	Fan <b>Note:</b> Some systems support only three fans.

## Rack assembly detail, continued (system control unit)

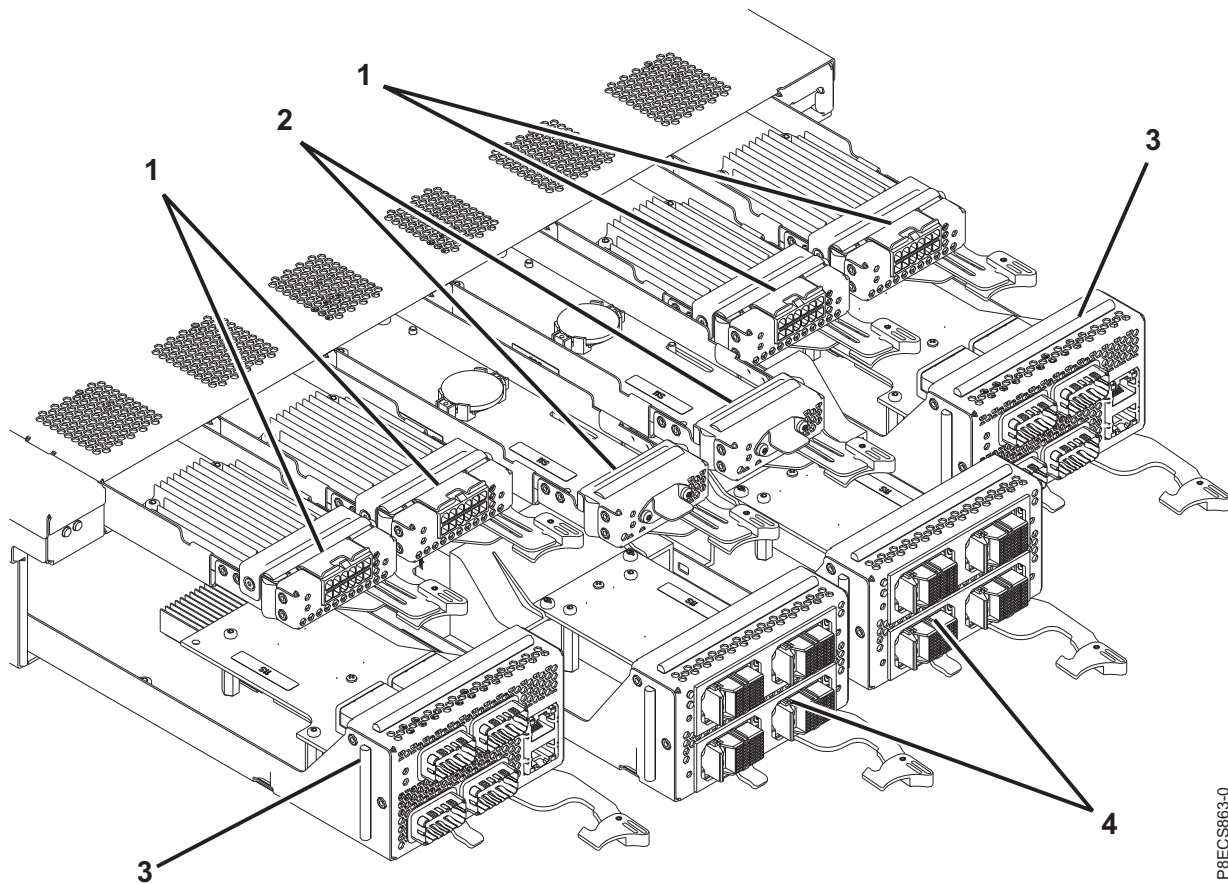


P8ECS862-0

Table 39. Rack assembly part numbers (system control unit)

Index number	CCIN	Part number	Units per assembly	Description
1	6B46	00E2352	1	System backplane
2			11	Attaching screws for system backplane
3			1	Top access cover assembly

## Rack assembly detail, continued (system control unit)



P8ECS863-0

Table 40. Rack assembly part numbers (system control unit)

Index number	CCIN	Part number	Units per assembly	Description
1	6B4D	00E2344	2 - 4	Power interface card <b>Note:</b> Some systems with only one system node have two power interface cards instead of four power interface cards.
1		01AF900	0 - 2	Power interface card filler <b>Note:</b> Power interface card fillers are used on systems with two power interface cards instead of four power interface cards.
2	6B48	00E2336	2	Real time clock battery card
3	6B4B	00E2380	2	Service processor card
4	6B49	00E2365	2	Clock card

Table 41. Cables (system control unit)

Description	Part number
Clock flex cable (D1L) <b>Note:</b> From system control unit port location U3-P1-C8-T2 to system node port location U2-P1-T7.	00RP855

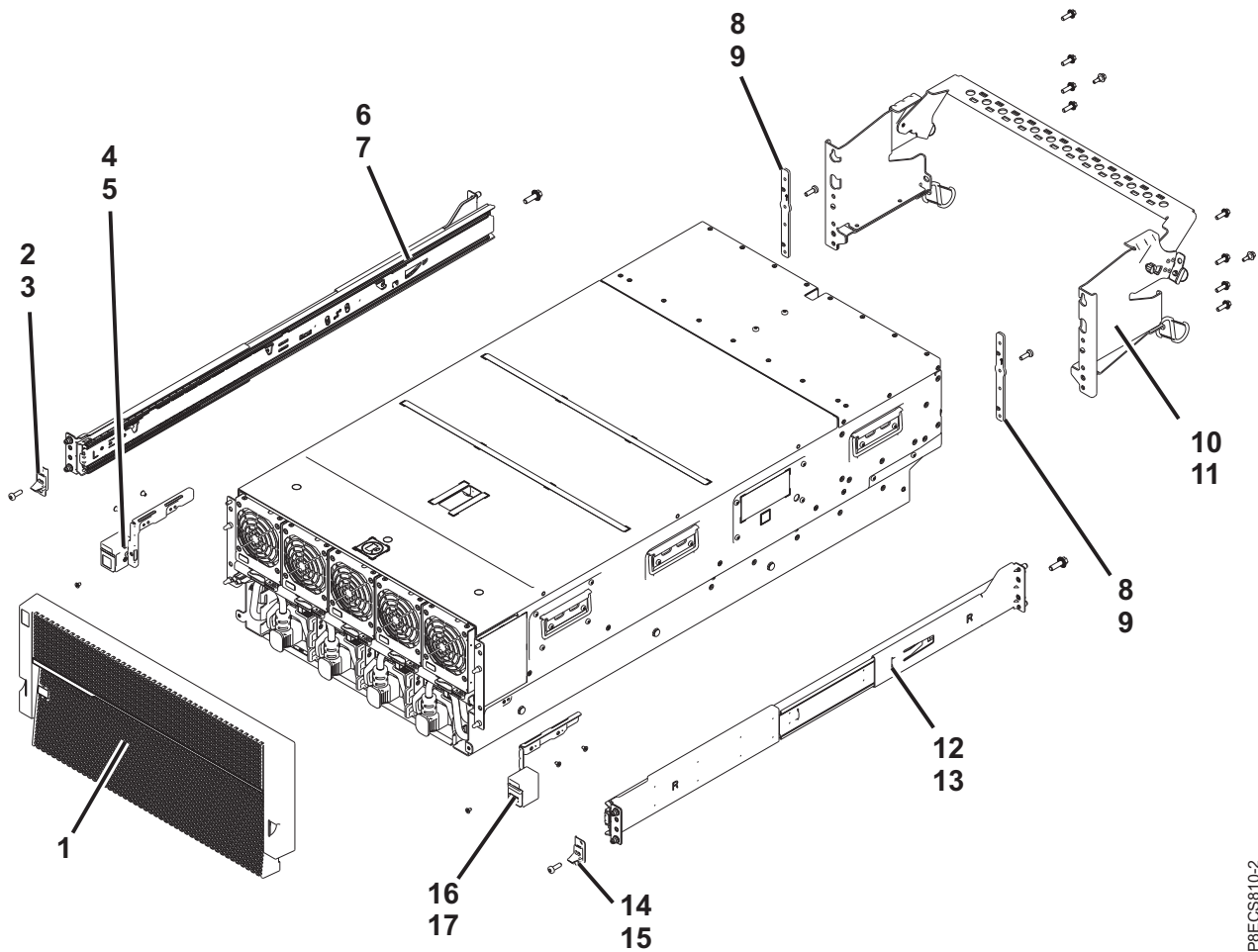
Table 41. Cables (system control unit) (continued)

Description	Part number
Clock flex cable (D1R) <b>Note:</b> From system control unit port location U3-P1-C9-T1 to system node port location U2-P1-T8.	00RP854
Clock flex cable (D2L) <b>Note:</b> From system control unit port location U3-P1-C8-T3 to system node port location U4-P1-T7.	00RP857
Clock flex cable (D2R) <b>Note:</b> From system control unit port location U3-P1-C9-T4 to system node port location U4-P1-T8.	00RP856
Clock flex cable (D3L) <b>Note:</b> From system control unit port location U3-P1-C8-T4 to system node port location U5-P1-T7.	00RP859
Clock flex cable (D3R) <b>Note:</b> From system control unit port location U3-P1-C9-T3 to system node port location U5-P1-T8.	00RP858
Clock flex cable (D4L) <b>Note:</b> From system control unit port location U3-P1-C8-T1 to system node port location U1-P1-T7.	00RP861
Clock flex cable (D4R) <b>Note:</b> From system control unit port location U3-P1-C9-T2 to system node port location U1-P1-T8.	00RP860
Global flexible service processor (GFSP) 1 m cable	00FX191
UPIC cable to system control unit (long)	00FX185
UPIC cable to system control unit (short)	00FX186
USB cable for DVD	00FX908

## System node



## Rack final assembly (system node)



PRECS810-2

Table 42. Rack assembly part numbers (system node)

Index number	CCIN	Part number	Units per assembly	Description
1		01KL139	1	Front bezel (9080-MHE)
1		01KL138	1	Front bezel (9080-MME)
1		00RR113	1	Front bezel (9119-MHE)
1		00RR112	1	Front bezel (9119-MME)
2			1	Hook assembly (left)
3			1	Attaching screw for hook assembly (left)
4			1	EIA bracket (left)
5			3	Attaching screw for EIA bracket (left)
6		00RP979	1	Rail kit (left)
7			1	Attaching screw for rail kit (left)
8			2	EIA stiffener
9			2	Attaching screws for EIA stiffener
10			1	Cable management bracket (left)
10			1	Cable management bracket (right)

Table 42. Rack assembly part numbers (system node) (continued)

Index number	CCIN	Part number	Units per assembly	Description
10			1	Cable management horizontal bracket
10			2	Double-gated carabiner
10			2	Attaching screws for cable management brackets
11			8	Attaching screws for cable management arm assembly
11			2	Attaching screws for cable management arm assembly
12		00RP980	1	Rail kit (right)
13			1	Attaching screw for rail kit (right)
14			1	Hook assembly (right)
15		46K4480	1	Attaching screw for hook assembly (right)
16			1	EIA bracket (right)
17			3	Attaching screw for EIA bracket (right)

**Rack assembly detail, continued (system node)**

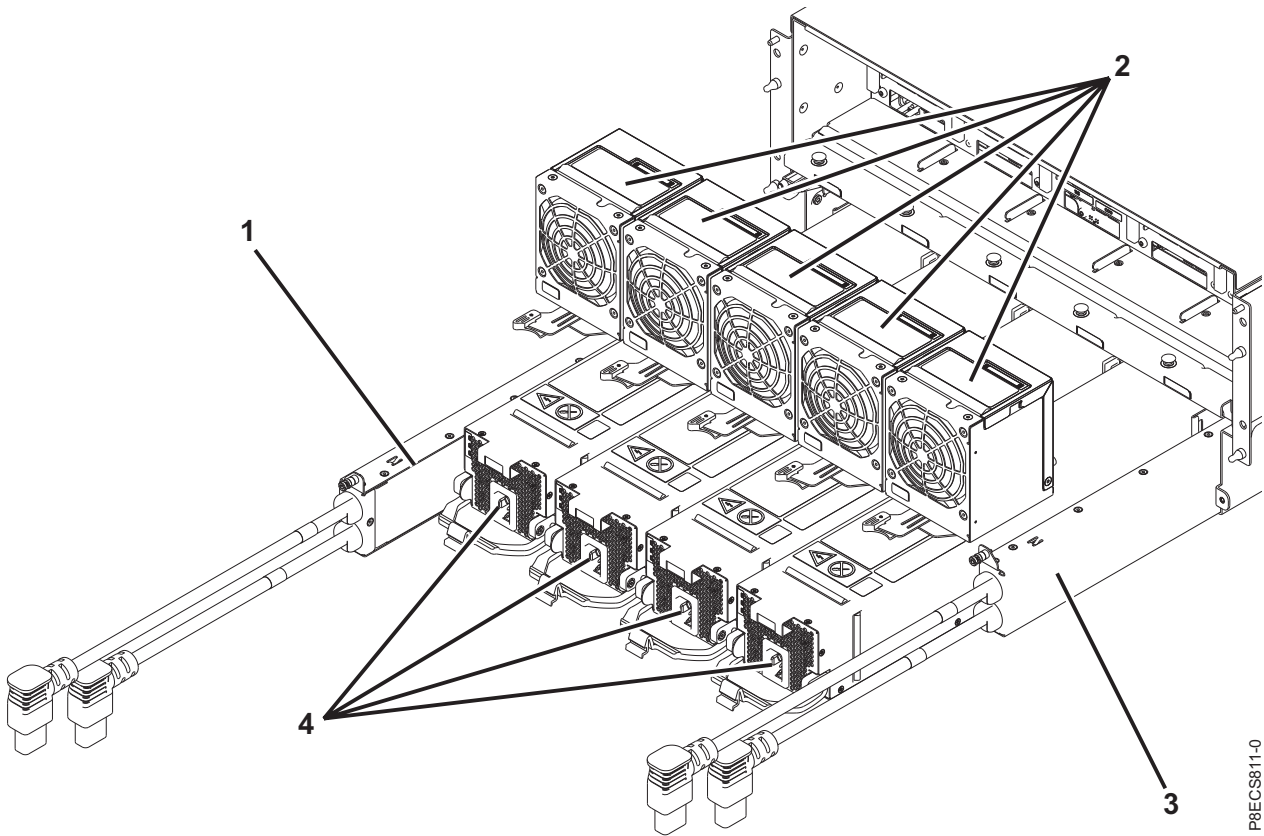
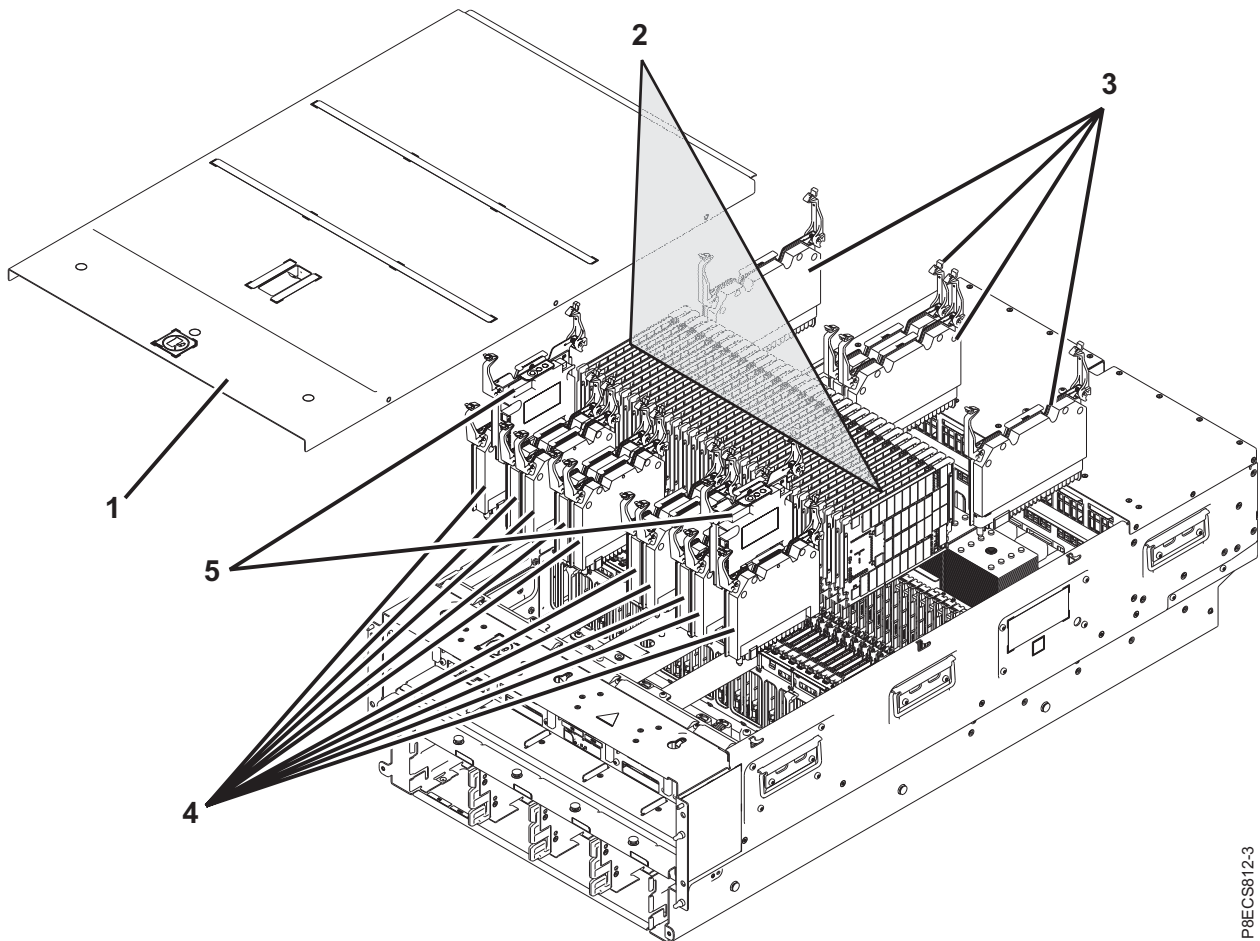


Table 43. Rack assembly part numbers (system node)

Index number	CCIN	Part number	Units per assembly	Description
1		00FV898	1	Front line cord conduit (left) <b>Note:</b> To replace the complete line cord conduit, you must also order the part number for the left rear line cord conduit. For information about the left rear line cord conduit, see table 10.
2	6B42	00E9335	5	Fan
3		00FV902	1	Front line cord conduit (right) <b>Note:</b> To replace the complete line cord conduit, you must also order the part number for the right rear line cord conduit. For information about the right rear line cord conduit, see table 10.
4	51D2	00FX964	4	Power supply

**Rack assembly detail, continued (system node)**

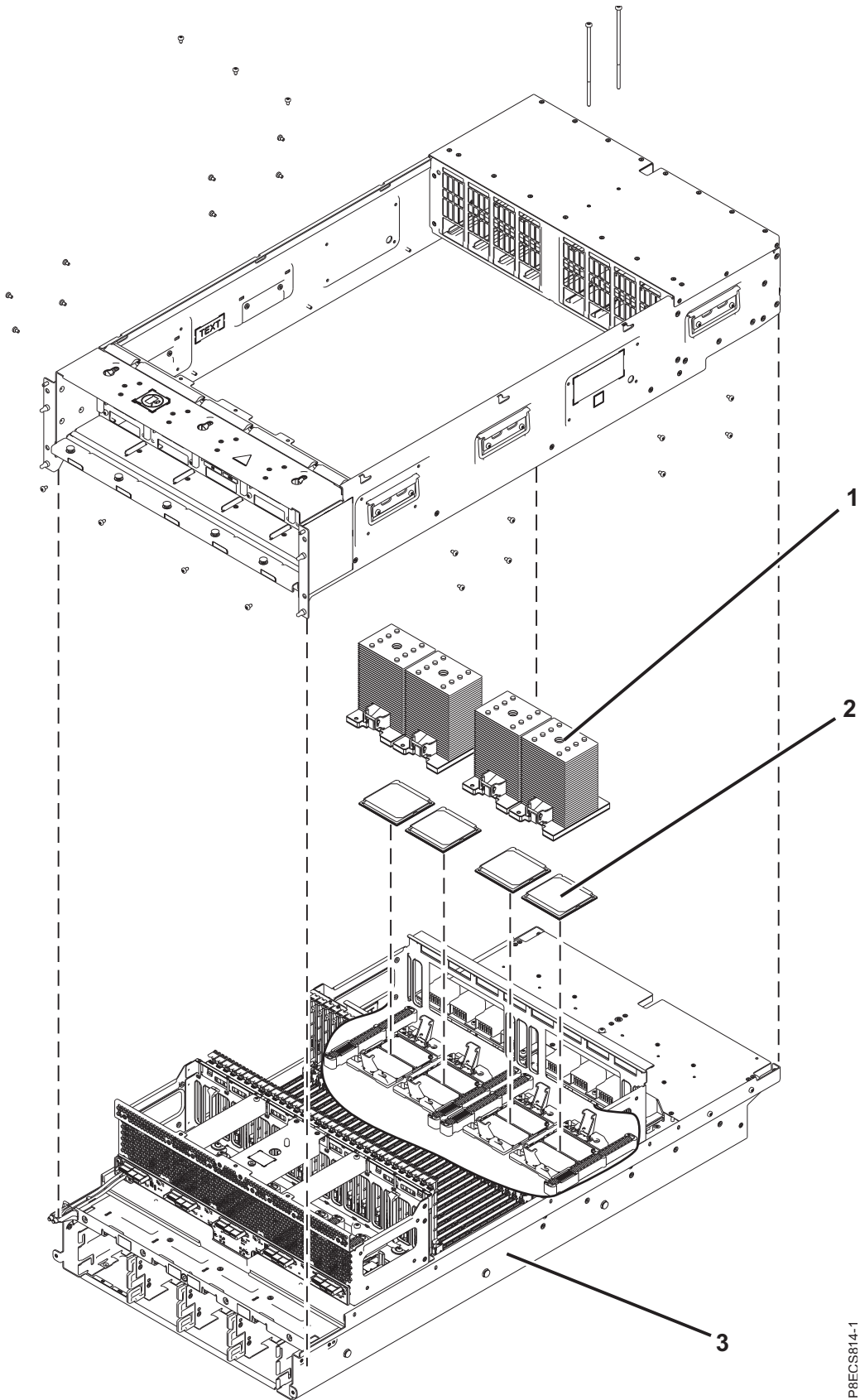


P8ECS812-3

Table 44. Rack assembly part numbers (system node)

Index number	CCIN	Part number	Units per assembly	Description
1			1	Top access cover assembly
2	31E8	00VK193	0 - 32	16 GB CDIMM DDR3*
2	31EC	00VK252	0 - 32	16 GB CDIMM DDR4* <b>Note:</b> System firmware FW860.10 or later is required to support DDR4 memory on a 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system.
2	31E9	00VK195	0 - 32	32 GB CDIMM DDR3*
2	31ED	00VK296	0 - 32	32 GB CDIMM DDR4* <b>Note:</b> System firmware FW860.10 or later is required to support DDR4 memory on a 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system.
2	31EA	00VK197	0 - 32	64 GB CDIMM DDR3*
2	31EE	00VK306	0 - 32	64 GB CDIMM DDR4* <b>Note:</b> System firmware FW860.10 or later is required to support DDR4 memory on a 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system.
2	31EB	00VK198	0 - 32	128 GB CDIMM DDR3*
2	31EF	00VK351	0 - 32	128 GB CDIMM DDR4* <b>Note:</b> System firmware FW860.10 or later is required to support DDR4 memory on a 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system.
2	31FC	00VK242	0 - 32	256 GB CDIMM DDR4* <b>Note:</b> System firmware FW860.10 or later is required to support DDR4 memory on a 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME system.
2		00FW989	0 - 32	CDIMM filler
3	6B31	00RP695	4	Processor voltage regulator module
4	6B32	00RP696	6	Memory voltage regulator module
4	6B33	00RP698	2	Memory buffer voltage regulator module
4	6B34	00RP699	1	Vpp voltage regulator module
4	6B35	00RP697	1	Miscellaneous voltage regulator module
5	6B28	00E2578	2	Power APSS card
*You can install DDR3 and DDR4 memory within a single system as long as all of the memory within each system node is the same type and your system has firmware FW860.10 or later.				

## Rack assembly detail, continued (system node)

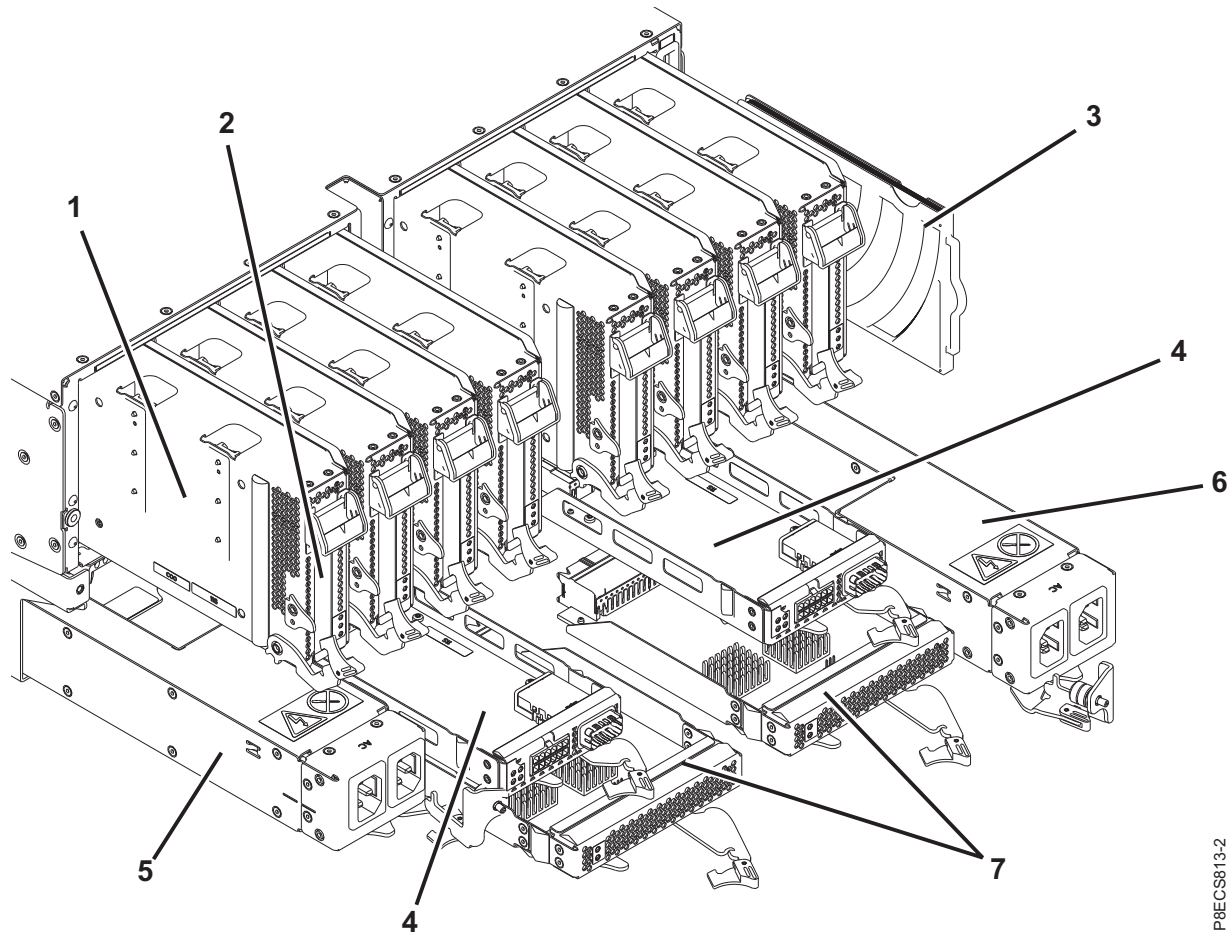


P8ECS814-1

Table 45. Rack assembly part numbers (system node)

Index number	CCIN	Part number	Units per assembly	Description
1		00RR232	4	Heat sink
2	54EF	00RR140	4	8 core 4.35 GHz processor module (9080-MHE and 9119-MHE)
2	54EE	00RR143	4	8 core 4.02 GHz processor module (9080-MME and 9119-MME)
2	550B	00RR137	4	10 core 4.19 GHz processor module (9080-MHE, 9119-MHE, and 9119-MME)
2	550C	02CM167	4	10 core 4.02 GHz processor module (9080-MHE and 9119-MHE) <b>Note:</b> The 10 core and 12 core 4.02 GHz processor modules have the same CCIN but different part numbers. Order the part number that has the same number of cores as the processor that you are replacing.
2	550C	00RR176	4	12 core 4.02 GHz processor module (9080-MHE and 9119-MHE) <b>Note:</b> The 10 core and 12 core 4.02 GHz processor modules have the same CCIN but different part numbers. Order the part number that has the same number of cores as the processor that you are replacing.
3		00E2494	1	System backplane

## Rack assembly detail, continued (system node)



P8ECS813-2

Table 46. Rack assembly part numbers (system node)

Index number	CCIN	Part number	Units per assembly	Description
1	6B29	00E2608	8	I/O blind swap cassette with PCIe extender card
2			1 - 8	PCI adapters. Use the CCIN or feature type of the adapter to find the FRU number in PCI adapter information by feature type.
3			1	Service information card
4	6B2E	00E2598	2	GFSP interface card
5		00FV915	1	AC rear line cord conduit (right) <b>Note:</b> To replace the complete line cord conduit, you must also order the part number for the right front line cord conduit. For information about the right front line cord conduit, see table 7.
5		01AF309	1	DC rear line cord conduit (right) <b>Note:</b> To replace the complete line cord conduit, you must also order the part number for the right front line cord conduit. For information about the right front line cord conduit, see table 7.

Table 46. Rack assembly part numbers (system node) (continued)

Index number	CCIN	Part number	Units per assembly	Description
6		00FV906	1	AC rear line cord conduit (left) <b>Note:</b> To replace the complete line cord conduit, you must also order the part number for the left front line cord conduit. For information about the left front line cord conduit, see table 7.
6		01AF308	1	DC rear line cord conduit (left) <b>Note:</b> To replace the complete line cord conduit, you must also order the part number for the left front line cord conduit. For information about the left front line cord conduit, see table 7.
7	6B2D	00E2394	2	Local clock card

Table 47. Cables (system node)

Description	Part number
PDU power cables	See Supported PDU power cords.
Clock flex cable (D1L) <b>Note:</b> From system control unit port location U3-P1-C8-T2 to system node port location U2-P1-T7.	00RP855
Clock flex cable (D1R) <b>Note:</b> From system control unit port location U3-P1-C9-T1 to system node port location U2-P1-T8.	00RP854
Clock flex cable (D2L) <b>Note:</b> From system control unit port location U3-P1-C8-T3 to system node port location U4-P1-T7.	00RP857
Clock flex cable (D2R) <b>Note:</b> From system control unit port location U3-P1-C9-T4 to system node port location U4-P1-T8.	00RP856
Clock flex cable (D3L) <b>Note:</b> From system control unit port location U3-P1-C8-T4 to system node port location U5-P1-T7.	00RP859
Clock flex cable (D3R) <b>Note:</b> From system control unit port location U3-P1-C9-T3 to system node port location U5-P1-T8.	00RP858
Clock flex cable (D4L) <b>Note:</b> From system control unit port location U3-P1-C8-T1 to system node port location U1-P1-T7.	00RP861
Clock flex cable (D4R) <b>Note:</b> From system control unit port location U3-P1-C9-T2 to system node port location U1-P1-T8.	00RP860
Global flexible service processor (GFSP) 1 m cable	00FX191
SMP 1.25 m cable	46K3418
SMP 1.5 m cable	46K3419
UPIC cable to system control unit (long)	00FX185
UPIC cable to system control unit (short)	00FX186



Table 48. Miscellaneous parts

Description	Part number
Cable configuration	See Enclosures and expansion units.
External cables and cords	See Planning for cables.
Power and UPS cables	See Planning for power.
Keyboard parts	See Keyboard parts.
Removable media	See Managing devices.

## 5887 disk drive enclosure system parts

Indexed drawings show system part numbers.

### Final assembly

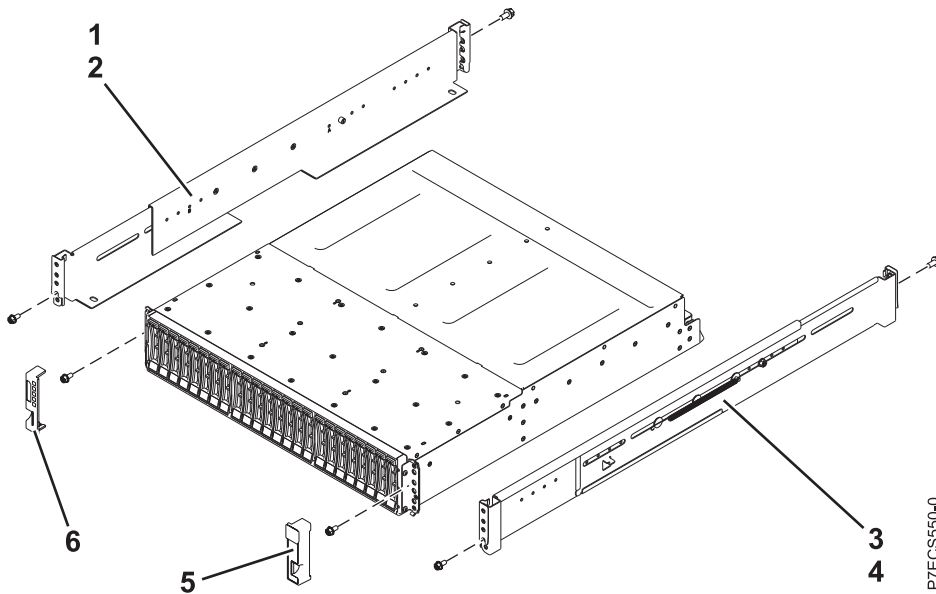


Table 49. Final assembly part numbers

Index number	CCIN	Part number	Units	Description
1		45W8836	1	Rail kit (left slide rail assembly)
2			1	Attaching screw for the left slide rail assembly
3		45W8836	1	Rail kit (right slide rail assembly)
4			1	Attaching screw for the right slide rail assembly
5			1	Right bezel
6			1	Left bezel

## System assembly

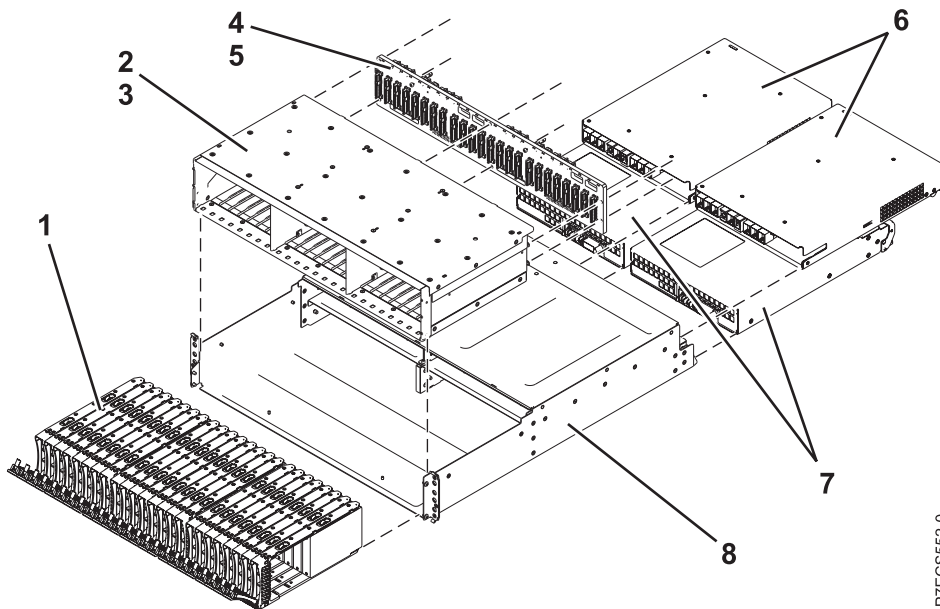


Table 50. System assembly part numbers

Index number	CCIN	Part number	Units	Description
1			1 – 24	See Disk drive and solid-state drive system parts.
2			1	Midplane assembly
3			2	Attaching screw for the midplane assembly
4	50B0	45W9576	1	Midplane
5			6	Attaching screw for the midplane
6	50B1	45W7653	2	Enclosure Services Manager (ESM)
7	50B2	45W8229	2	Power supply
8			1	Enclosure chassis

Table 51. Cables

CCIN	Part number	Description
	44V4157	1.5 meter SAS YO cable (5887 in Mode 1 connected to a single I/O adapter)
	44V4158	3 meter SAS YO cable (5887 in Mode 1 connected to a single I/O adapter)
	44V4159	6 meter SAS YO cable (5887 in Mode 1 connected to a single I/O adapter) <b>Note:</b> The SAS YO cable that is used to attach a 5887 disk drive enclosure, an ESLL storage enclosure, or an ESLS storage enclosure to the rear SAS ports of the system model 8247-21L, 8247-22L, 8247-42L, 8284-21A, 8284-22A, 8286-41A, or 8286-42A must not exceed the maximum supported length of 3 m (9.8 ft).
	44V4160	15 meter SAS YO cable (5887 in Mode 1 connected to a single I/O adapter) <b>Note:</b> The SAS YO cable that is used to attach a 5887 disk drive enclosure, an ESLL storage enclosure, or an ESLS storage enclosure to the rear SAS ports of the system model 8247-21L, 8247-22L, 8247-42L, 8284-21A, 8284-22A, 8286-41A, or 8286-42A must not exceed the maximum supported length of 3 m (9.8 ft).
	44V4161	1.5 meter SAS YI cable
	44V4162	3 meter SAS YI cable

Table 51. Cables (continued)

CCIN	Part number	Description
	44V4154	3 meter SAS X cable (5887 in Mode 2 or 4 connected to dual SAS adapters)
	44V4155	6 meter SAS X cable (5887 in Mode 2 or 4 connected to dual SAS adapters)
	44V4156	15 meter SAS X cable (5887 in Mode 2 or 4 connected to dual SAS adapters)

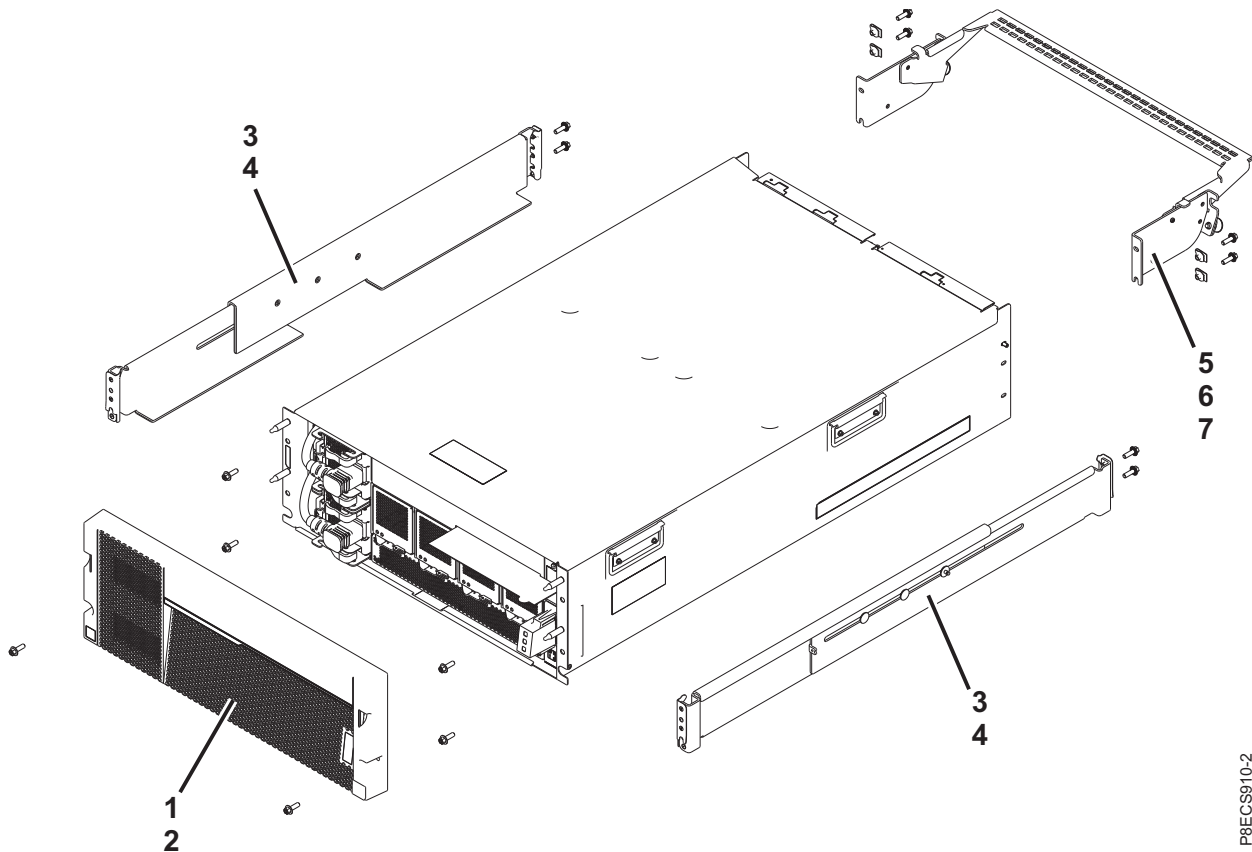
Table 52. Miscellaneous parts

CCIN	Part number	Description
	External cables and cords	See Planning for cables.
	Cable configuration	See Enclosures and expansion units.
	39M5377	Power cord rack jumper
	45W8836	Rail kit
	45W8681	Disk drive filler

## EMX0 PCIe Gen3 I/O expansion drawer system parts

Indexed drawings show system part numbers.

### Final assembly



P8ECS910-2

Table 53. Final assembly part numbers

Index number	CCIN	Part number	Units	Description
1		00FV896	1	Front bezel
2			2	Attaching screws for the front bezel
3		44V8572	1	Rail kit (not all parts in the kit are used for the EMX0 PCIe Gen3 I/O expansion drawer)
4			2	Attaching screw for rail kit
5		00FY274	1	Cable management bracket assembly
6			4	Attaching screws for the cable management bracket assembly
7			4	Nut clips for the cable management bracket assembly

## System assembly

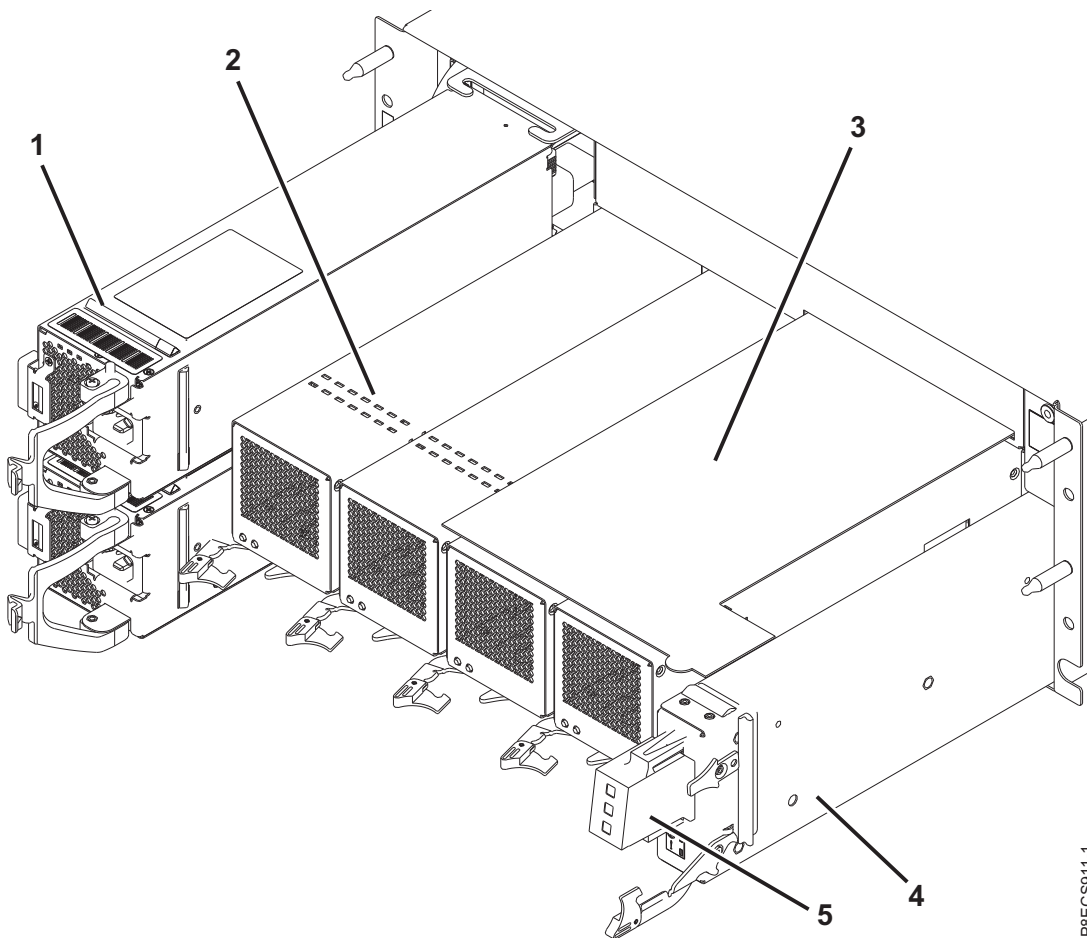


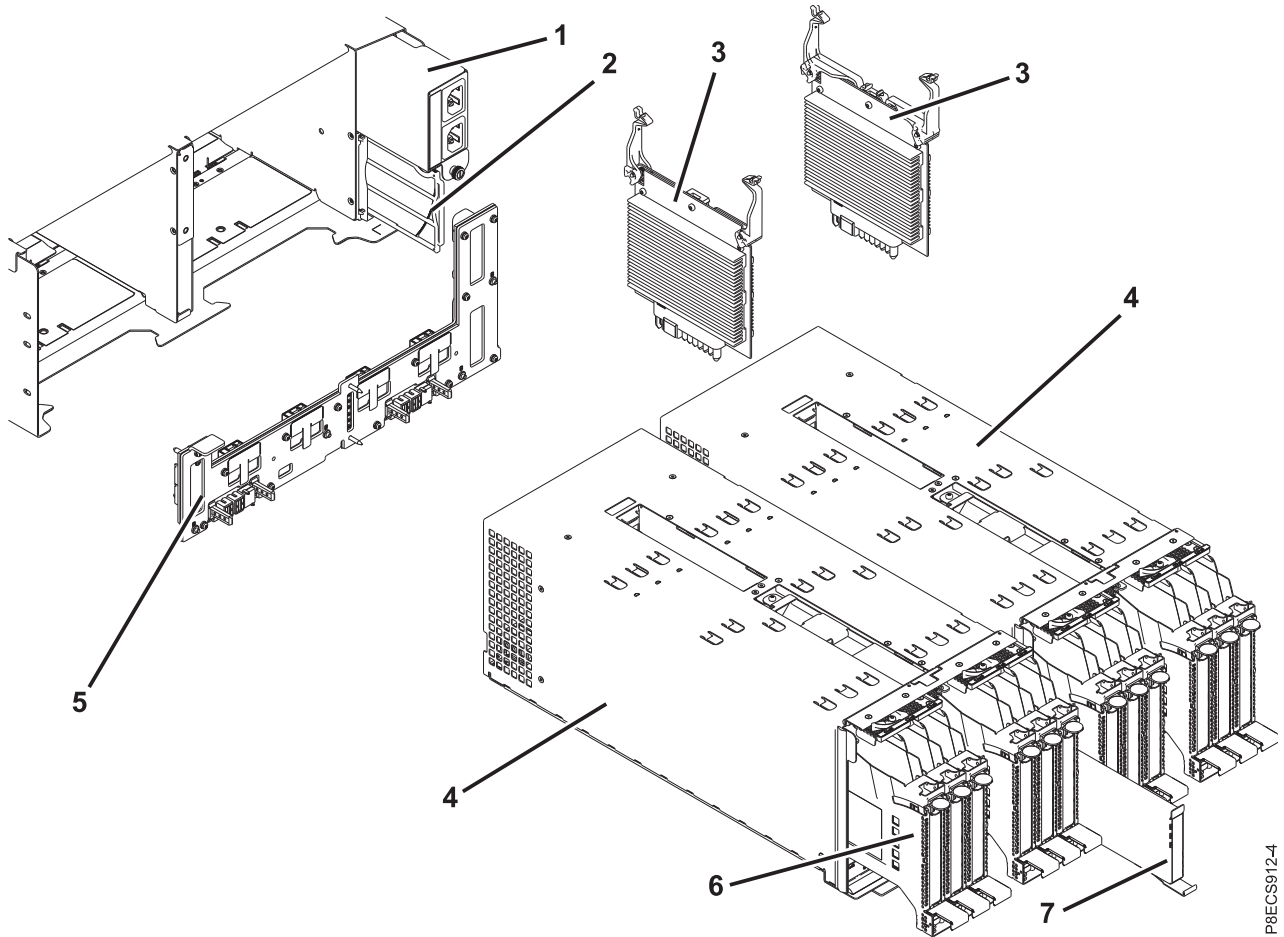
Table 54. System assembly part numbers

Index number	CCIN	Part number	Units	Description
1	51D3	00FX951	2	Power supply
2	50D0	00RP836	4	Fan
3			1	Front service card

Table 54. System assembly part numbers (continued)

Index number	CCIN	Part number	Units	Description
4	50C7	00TK681	1	Chassis management card
5		00FV844	1	Chassis management card light-pipe assembly

## System assembly, continued



P8ECS912-4

Table 55. System assembly part numbers

Index number	CCIN	Part number	Units	Description
1		41T9177	1	AC power conduit
1		01AF307	1	DC power conduit
2			1	Rear service booklet
3	50CF	00RP693	1 - 2	Voltage regulator module
4	50CB	00TK674	1 - 2	PCIe3 6-slot fanout module
5	50C8	00LY054	1	Midplane
6		44V4768	1 - 12	Blind swap cassette for PCIe adapters. To find the part number of a PCIe adapter, use the CCIN or feature type of the adapter to find the FRU number in PCIe adapter information by feature type.

Table 55. System assembly part numbers (continued)

Index number	CCIN	Part number	Units	Description
6		46K6170	1 - 4	Blind swap cassette for PCIe Cryptographic Coprocessor. To find the part number of a PCIe adapter, use the CCIN or feature type of the adapter to find the FRU number in PCIe adapter information by feature type.
7		41T9176	1	Light pipe conduit assembly

Table 56. Cables

Description	Part number
2-meter active optical cable (AOC) for 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME only	78P3967
3-meter active optical cable (AOC) for 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, 8286-42A, and 8408-E8E only	78P4418
10-meter active optical cable (AOC)	78P3776
20-meter active optical cable (AOC) for 9080-MHE, 9080-MME, 9119-MHE, or 9119-MME only	78P4536
3-meter expansion drawer cable (copper)	01KL050 <b>Note:</b> Copper expansion drawer cables are not supported on 9080-MHE, 9080-MME, 9119-MHE, and 9119-MME systems.

Table 57. Miscellaneous parts

Description	Part number
External cables and cords	See Planning for cables.
Cable configuration	See Enclosures and expansion units.
Tailstock filler	39J0260
I/O module filler	00FX483

## 5147-024, ESLL, or ESLS storage enclosure system parts

Indexed drawings show system part numbers.

## ESLL storage enclosure final assembly

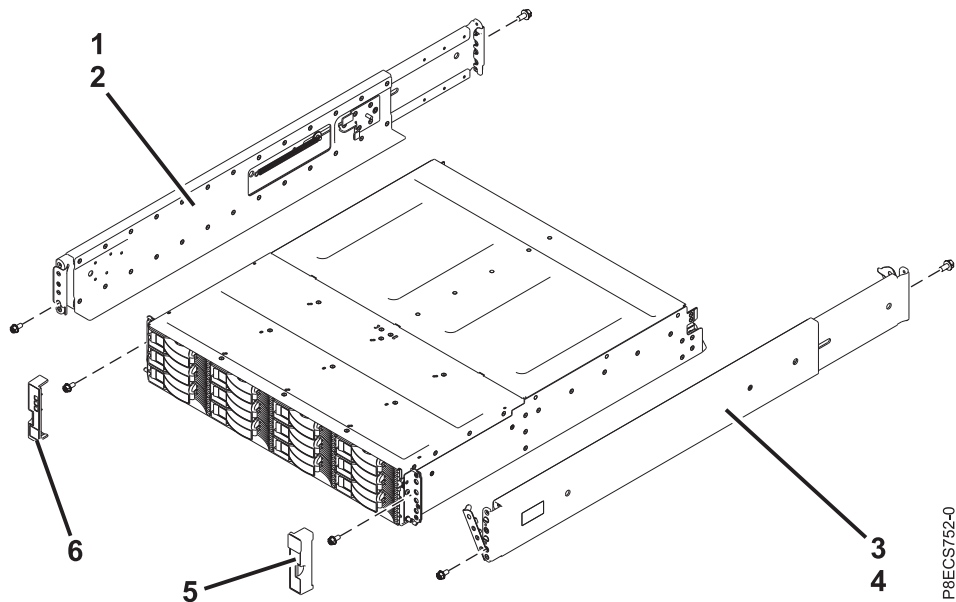


Table 58. ESLL storage enclosure final assembly part numbers

Index	CCIN	Part number	Units	Description
1		00RY309	1	Rail kit (left slide rail assembly)
2			2	Attaching screw for the left slide rail assembly
3		00RY309	1	Rail kit (right slide rail assembly)
4			2	Attaching screw for the right slide rail assembly
5		00Y2436	1	Right bezel
6		01DH721	1	Left bezel

## 5147-024 or ESLS storage enclosure final assembly

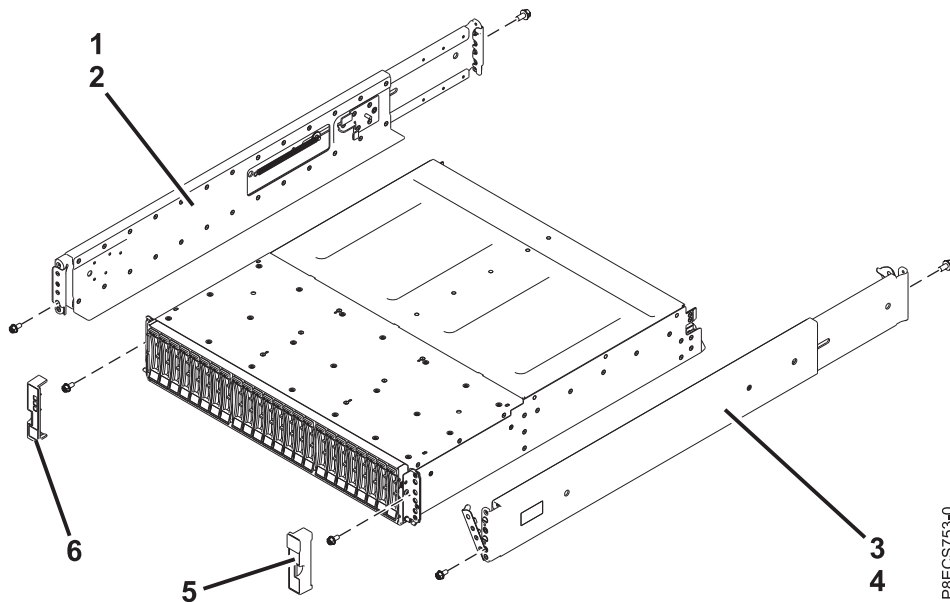
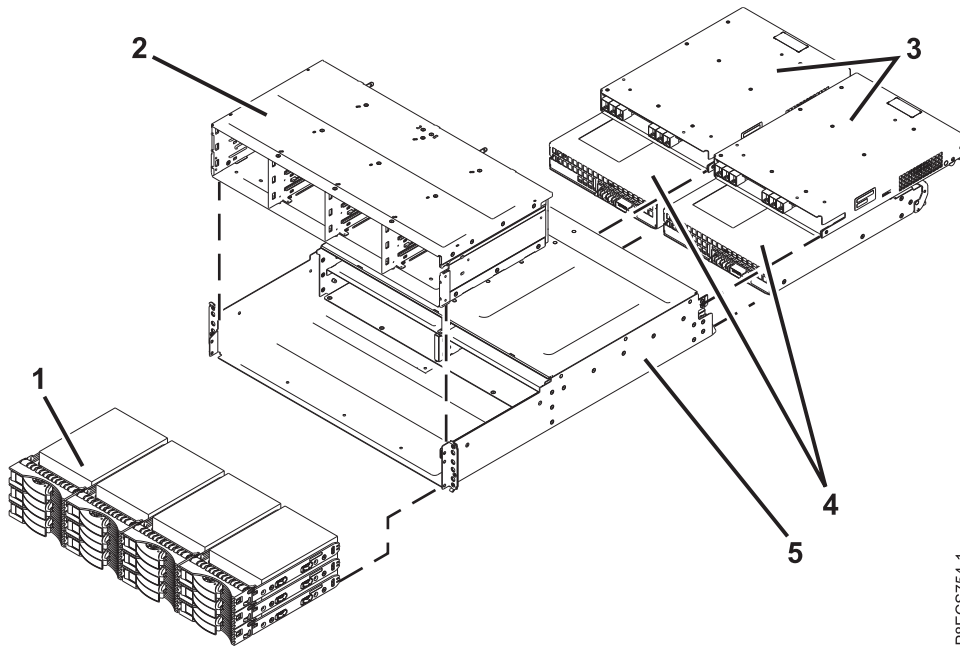


Table 59. 5147-024 or ESLS storage enclosure final assembly part numbers

Index	CCIN	Part number	Units	Description
1		00RY309	1	Rail kit (left slide rail assembly)
2			2	Attaching screw for the left slide rail assembly
3		00RY309	1	Rail kit (right slide rail assembly)
4			2	Attaching screw for the right slide rail assembly
5		00Y2512	1	Right bezel
6		01YK724	1	Left bezel (5147-024)
6		01DH721	1	Left bezel (ESLS)



## ESLL storage enclosure assembly

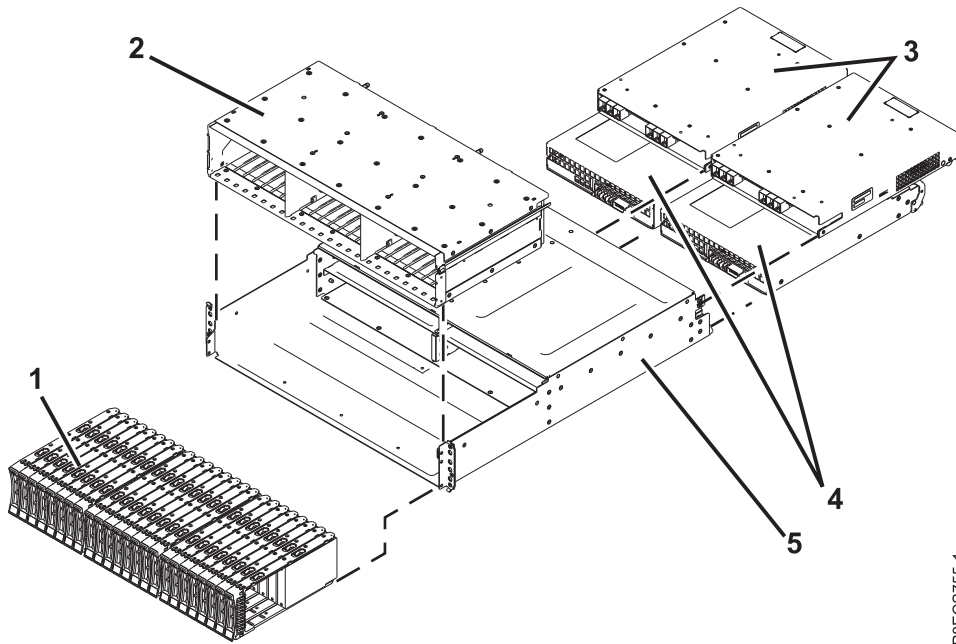


P8ECS754-1

Table 60. ESLL storage enclosure assembly part numbers

Index	CCIN	Part number	Units	Description
1			1 – 12	Large form factor drive. See Disk drive and solid-state drive system parts.
2		64P8446	1	Midplane assembly
3		01DH720	2	Enclosure Services Manager (ESM)
4		01AC404	2	Power supply
5			1	Enclosure chassis

## 5147-024 or ESLS storage enclosure assembly



P8ECS755-1

Table 61. 5147-024 or ESLS storage enclosure assembly part numbers

Index	CCIN	Part number	Units	Description
1			1 – 24	Small form factor drive. See Disk drive and solid-state drive system parts.
2		64P8447	1	Midplane assembly
3		01DH720	2	Enclosure Services Manager (ESM) - ESLS
3		01JC767	2	Enclosure Services Manager (ESM) - 5147-024
4		01AC404	2	Power supply
5			1	Enclosure chassis

Table 62. Cables

Description	Part number
3-meter SAS X12 narrow connector cable	01AF504
4.5-meter optical SAS X12 narrow connector cable	78P4918
10-meter optical SAS X12 narrow connector cable	78P4919
1.5-meter SAS YO12 narrow connector cable	01AF502
3-meter SAS YO12 narrow connector cable	01AF503
4.5-meter optical SAS YO12 narrow connector cable	78P4920
10-meter optical SAS YO12 narrow connector cable	78P4921
.6 meter SAS AA12 narrow connector cable	01AF505
1.5-meter SAS AA12 narrow connector cable	01AF506

Table 62. Cables (continued)

Description	Part number
3-meter SAS AA12 narrow connector cable	01AF507
4.5-meter optical SAS AA12 narrow connector cable	78P4917

Table 63. Miscellaneous parts

Description	Part number	
External cables and cords	See Planning for cables.	
Cable configuration	See Enclosures and expansion units.	
Disk drive filler (ESLL)	42R7992	
Disk drive filler (5147-024 or ESLS)	45W8680	

## Disk drive and solid-state drive system parts

Disk drive and solid-state drive system parts information.

**Note:** All the drives in this section are designed to comply with RoHS requirement.

Table 64. System unit disk drive parts

CCIN	Part number	Description
59FD	00FX874	139 GB 15K (528 block size) small form factor SAS disk drive (IBM i)
59FD	00FX876	146 GB 15K (528 block size) small form factor SAS disk drive (AIX and Linux)
59E0	00E9906	283 GB 15K (528 block size) small form factor SAS disk drive (IBM i)
59E1	00E9966	283 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
59FC	00FX875	283 GB 10K (528 block size) small form factor SAS disk drive (IBM i)
5B41	01LU575	283 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
59E0	00E9912	300 GB 15K (528 block size) small form factor SAS disk drive (AIX and Linux)
59E1	00E9972	300 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
59FC	00FX877	300 GB 10K (528 block size) small form factor SAS disk drive (AIX and Linux)
59D0	00E9894	571 GB 10K (528 block size) small form factor SAS disk drive (IBM i)
59D3	00E9951	571 GB 10K (4K block size) small form factor SAS disk drive (IBM i)
59E4	00E9908	571 GB 15K (528 block size) small form factor SAS disk drive (IBM i)
59E5	00E9968	571 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
5B47	01LU584	571 GB 15K (4K block size) small form factor SAS disk drive (IBM i)

Table 64. System unit disk drive parts (continued)

CCIN	Part number	Description
59D0	00E9900	600 GB 10K (528 block size) small form factor SAS disk drive (AIX and Linux)
59D3	00E9959	600 GB 10K (4K block size) small form factor SAS disk drive (AIX and Linux)
59E4	00E9914	600 GB 15K (528 block size) small form factor SAS disk drive (AIX and Linux)
59E5	00E9974	600 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
5B47	01LU588	600 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
59D8	00E9923	1.14 TB 10K (528 block size) small form factor SAS disk drive (IBM i)
59DB	00E9953	1.14 TB 10K (4K block size) small form factor SAS disk drive (IBM i)
59D8	00E9924	1.2 TB 10K (528 block size) small form factor SAS disk drive (AIX and Linux)
59DB	00E9961	1.2 TB 10K (4K block size) small form factor SAS disk drive (AIX and Linux)
59DE	00E9954	1.71 TB 10K (4K block size) small form factor SAS disk drive (IBM i)
59DE	00E9962	1.8 TB 10K (4K block size) small form factor SAS disk drive (AIX and Linux)

Table 65. System unit solid-state drive parts

CCIN	Part number	Description
59BB	00LY175	177 GB (4K block size) 1.8 inch solid-state SAS drive (AIX and Linux)
59BC	00LY181	177 GB (528 block size) 1.8 inch solid-state SAS drive (AIX and Linux)
5B32	00LY169	387 GB (528 block size) 1.8 inch small form factor solid-state SAS drive
5B30	00LY388	387 GB (4K block size) 1.8 inch small form factor solid-state SAS drive
59E6	00E8670	387 GB (528 block size) small form factor solid-state SAS drive
59E9	00LY161	387 GB (4K block size) small form factor solid-state SAS drive
5B13	00LY333	387 GB (4K block size) small form factor solid-state SAS drive
5B19	00LY324	387 GB (528 block size) small form factor solid-state SAS drive
5B33	00LY381	775 GB (528 block size) 1.8 inch small form factor solid-state SAS drive
5B31	00LY389	775 GB (4K block size) 1.8 inch small form factor solid-state SAS drive
59EA	00E8671	775 GB (528 block size) small form factor solid-state SAS drive

Table 65. System unit solid-state drive parts (continued)

CCIN	Part number	Description
59EB	00LY162	775 GB (4K block size) small form factor solid-state SAS drive
5B14	00LY334	775 GB (4K block size) small form factor solid-state SAS drive
5B1A	00LY325	775 GB (528 block size) small form factor solid-state SAS drive
5B15	00LY335	1551 GB (4K block size) small form factor solid-state SAS drive
5B20	00LY374	1860 GB (4K block size) small form factor read intensive solid-state SAS drive <b>Note:</b> Replacement of the read intensive solid-state drive (SSD) might not be covered by the system's level of service entitlement, depending on the terms and conditions of the system. For more information about read intensive SSDs, see Read intensive SSDs.
5B2C	00LY561	3720 GB (4K block size) 2.5 inch read intensive solid-state SAS drive <b>Note:</b> Replacement of the read intensive solid-state drive (SSD) might not be covered by the system's level of service entitlement, depending on the terms and conditions of the system. For more information about read intensive SSDs, see Read intensive SSDs.
5B2D	00LY555	3720 GB (4K block size) 2.5 inch read intensive solid-state SAS drive <b>Note:</b> Replacement of the read intensive solid-state drive (SSD) might not be covered by the system's level of service entitlement, depending on the terms and conditions of the system. For more information about read intensive SSDs, see Read intensive SSDs.

Table 66. 5887 disk drive parts

CCIN	Part number	Description
19B0	00E6171	139 GB 15K (528 block size) small form factor SAS disk drive (IBM i)
19B0	00E6173	146 GB 15K (512 block size) small form factor SAS disk drive (AIX and Linux)
19B7	00E6170	283 GB 10K (528 block size) small form factor SAS disk drive (IBM i)
19B1	74Y6497	283 GB 15K (528 block size) small form factor SAS disk drive (IBM i)
59C9	00E8681	283 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
19B7	00E6172	300 GB 10K (512 block size) small form factor SAS disk drive (AIX and Linux)
19B1	74Y6498	300 GB 15K (512 block size) small form factor SAS disk drive (AIX and Linux)
59C9	00E8687	300 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
19B3	74Y4899	571 GB 10K (528 block size) small form factor SAS disk drive (IBM i)
59D2	00E9935	571 GB 10K (4K block size) small form factor SAS disk drive (IBM i)
59CF	00E8660	571 GB 15K (528 block size) small form factor SAS disk drive (IBM i)
59CC	00E8683	571 GB 15K (4K block size) small form factor SAS disk drive (IBM i)

Table 66. 5887 disk drive parts (continued)

CCIN	Part number	Description
5B47	01LU584	571 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
19B3	74Y4901	600 GB 10K (512 block size) small form factor SAS disk drive (AIX and Linux)
59D2	00E9943	600 GB 10K (4K block size) small form factor SAS disk drive (AIX and Linux)
59CF	00E8665	600 GB 15K (512 block size) small form factor SAS disk drive (AIX and Linux)
59CC	00E8689	600 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
5B47	01LU588	600 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
19B4	74Y9285	857 GB 10K (528 block size) small form factor SAS disk drive (IBM i)
19B4	74Y9286	900 GB 10K (512 block size) small form factor SAS disk drive (AIX and Linux)
59CD	00E8623	1.14 TB 10K (528 block size) small form factor SAS disk drive (IBM i)
59DA	00E9937	1.14 TB 10K (4K block size) small form factor SAS disk drive (IBM i)
59CD	00E8631	1.2 TB 10K (512 block size) small form factor SAS disk drive (AIX and Linux)
59DA	00E9945	1.2 TB (4K block size) 10K small form factor SAS disk drive (AIX and Linux)
59DD	00E9938	1.71 TB 10K (4K block size) small form factor SAS disk drive (IBM i)
59DD	00E9946	1.8 TB 10K (4K block size) small form factor SAS disk drive (AIX and Linux)
59DD	00LY426	1.8 TB 10K (4K block size) small form factor SAS disk drive <b>Note:</b> This drive is supported only on the IBM Elastic Storage Server.

Table 67. 5887 solid-state drive parts

CCIN	Part number	Description
58B9	00E8673	387 GB (528 block size) small form factor solid-state SAS drive
58B9	00LY195	400 GB (512 block size) small form factor solid-state SAS drive <b>Note:</b> This drive is supported only on the IBM Elastic Storage Server.
59E8	00E8710	387 GB (4K block size) small form factor solid-state SAS drive
5B10	00LY336	387 GB (4K block size) small form factor solid-state SAS drive
5B16	00LY327	387 GB (528 block size) small form factor solid-state SAS drive
6600	00LY330	400 GB (512 block size) small form factor solid-state SAS drive <b>Note:</b> This drive is supported only on the IBM Elastic Storage Server.
6600	00LY268	400 GB (512 block size) small form factor solid-state SAS drive <b>Note:</b> This drive is supported only on the IBM Elastic Storage Server.
59C2	00E8709	775 GB (528 block size) small form factor solid-state SAS drive
59C2	00LY199	800 GB (512 block size) small form factor solid-state SAS drive <b>Note:</b> This drive is supported only on the IBM Elastic Storage Server.
6600	00LY331	800 GB (512 block size) small form factor solid-state SAS drive <b>Note:</b> This drive is supported only on the IBM Elastic Storage Server.
6600	00LY270	800 GB (512 block size) small form factor solid-state SAS drive <b>Note:</b> This drive is supported only on the IBM Elastic Storage Server.

Table 67. 5887 solid-state drive parts (continued)

CCIN	Part number	Description
59C3	00E8713	775 GB (4K block size) small form factor solid-state SAS drive
5B11	00LY337	775 GB (4K block size) small form factor solid-state SAS drive
5B17	00LY328	775 GB (528 block size) small form factor solid-state SAS drive
5B12	00LY338	1551 GB (4K block size) small form factor solid-state SAS drive
5B21	00LY373	1860 GB (4K block size) small form factor read intensive solid-state SAS drive <b>Note:</b> Replacement of the read intensive solid-state drive (SSD) might not be covered by the system's level of service entitlement, depending on the terms and conditions of the system. For more information about read intensive SSDs, see Read intensive SSDs.

Table 68. 5147-024 solid-state drive parts

CCIN	Part number	Description
6600	01LU847	3.8 TB (528 block size) small form factor read intensive solid-state SAS drive <b>Note:</b> Replacement of the read intensive solid-state drive (SSD) might not be covered by the system's level of service entitlement, depending on the terms and conditions of the system. For more information about read intensive SSDs, see Read intensive SSDs.
6600	01LU850	15.6 TB (528 block size) small form factor read intensive solid-state SAS drive <b>Note:</b> Replacement of the read intensive solid-state drive (SSD) might not be covered by the system's level of service entitlement, depending on the terms and conditions of the system. For more information about read intensive SSDs, see Read intensive SSDs.

Table 69. ESLS disk drive parts

CCIN	Part number	Description
59C9	00E8681	283 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
19B1	74Y6498	300 GB 15K (512 block size) small form factor SAS disk drive (AIX and Linux)
59C9	00E8687	300 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
59D2	00E9935	571 GB 10K (4K block size) small form factor SAS disk drive (IBM i)
59CC	00E8683	571 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
5B47	01LU584	571 GB 15K (4K block size) small form factor SAS disk drive (IBM i)
19B3	74Y4901	600 GB 10K (512 block size) small form factor SAS disk drive (AIX and Linux)
59D2	00E9943	600 GB 10K (4K block size) small form factor SAS disk drive (AIX and Linux)
59CC	00E8689	600 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
5B47	01LU588	600 GB 15K (4K block size) small form factor SAS disk drive (AIX and Linux)
59DA	00E9937	1.14 TB 10K (4K block size) small form factor SAS disk drive (IBM i)
59DA	00E9945	1.2 TB (4K block size) 10K small form factor SAS disk drive (AIX and Linux)

Table 69. ESLS disk drive parts (continued)

CCIN	Part number	Description
59DD	00E9938	1.71 TB 10K (4K block size) small form factor SAS disk drive (IBM i)
59DD	00E9946	1.8 TB 10K (4K block size) small form factor SAS disk drive (AIX and Linux)

Table 70. ESLS solid-state drive parts

CCIN	Part number	Description
5B16	00LY327	387 GB (528 block size) small form factor solid-state SAS drive
59E8	00E8710	387 GB (4K block size) small form factor solid-state SAS drive
5B10	00LY336	387 GB (4K block size) small form factor solid-state SAS drive
5B17	00LY328	775 GB (528 block size) small form factor solid-state SAS drive
59C3	00E8713	775 GB (4K block size) small form factor solid-state SAS drive
5B11	00LY337	775 GB (4K block size) small form factor solid-state SAS drive
5B12	00LY338	1551 GB (4K block size) small form factor solid-state SAS drive
5B21	00LY373	1860 GB (4K block size) small form factor read intensive solid-state SAS drive <b>Note:</b> Replacement of the read intensive solid-state drive (SSD) might not be covered by the system's level of service entitlement, depending on the terms and conditions of the system. For more information about read intensive SSDs, see Read intensive SSDs.

Table 71. ESLL disk drive parts

CCIN	Part number	Description
5B1D, 5B48	00LY299	4 TB 7.2K (4K block size) large form factor SAS disk drive (AIX and Linux)
5B1E, 5B49	00LY301	8 TB 7.2K (4K block size) large form factor SAS disk drive (AIX and Linux)

## Keyboard parts

Keyboard parts information.

Table 72. Keyboard parts

Description	Part number
Keyboard, Arabic	10N9442
Keyboard, Belgium, and UK	10N9427
Keyboard, Brazilian Portuguese	10N9421
Keyboard, Bulgaria	10N9430
Keyboard, China	10N9424
Keyboard, Czechoslovakian	10N9439
Keyboard, Danish	10N9429
Keyboard, Dutch	10N9433



Table 72. Keyboard parts (continued)

<b>Description</b>	<b>Part number</b>
Keyboard, French	10N9415
Keyboard, French Canadian	10N9425
Keyboard, German/Austrian	10N9417
Keyboard, Greek	10N9435
Keyboard, Hebrew	10N9436
Keyboard, Hungarian	10N9422
Keyboard, Italian	10N9416
Keyboard, Japanese	10N9420
Keyboard, Korea	10N9423
Keyboard, Latin American (Spanish)	10N9441
Keyboard, Norwegian	10N9432
Keyboard, Portuguese	10N9434
Keyboard, Polish	10N9437
Keyboard, Russian	10N9444
Keyboard, Slovak	10N9438
Keyboard, Slovenia	10N9445
Keyboard, Spanish	10N9419
Keyboard, Sweden, and Finland	10N9428
Keyboard, Swiss, French, and German	10N9431
Keyboard, Thailand	10N9443
Keyboard, Turkish	10N9440
Keyboard, UK English	10N9418
Keyboard, US English	10N9414
Keyboard, US or Europe	10N9446



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## Accessibility features for IBM Power Systems servers

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

### Overview

The IBM Power Systems servers include the following major accessibility features:

- Keyboard-only operation
- Operations that use a screen reader

The IBM Power Systems servers use the latest W3C Standard, WAI-ARIA 1.0 ([www.w3.org/TR/wai-aria/](http://www.w3.org/TR/wai-aria/)), to ensure compliance with US Section 508 ([www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/section-508-standards](http://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/section-508-standards)) and Web Content Accessibility Guidelines (WCAG) 2.0 ([www.w3.org/TR/WCAG20/](http://www.w3.org/TR/WCAG20/)). To take advantage of accessibility features, use the latest release of your screen reader and the latest web browser that is supported by the IBM Power Systems servers.

The IBM Power Systems servers online product documentation in IBM Knowledge Center is enabled for accessibility. The accessibility features of IBM Knowledge Center are described in the Accessibility section of the IBM Knowledge Center help ([www.ibm.com/support/knowledgcenter/doc/kc\\_help.html#accessibility](http://www.ibm.com/support/knowledgcenter/doc/kc_help.html#accessibility)).

## Keyboard navigation

This product uses standard navigation keys.

## Interface information

The IBM Power Systems servers user interfaces do not have content that flashes 2 - 55 times per second.

The IBM Power Systems servers web user interface relies on cascading style sheets to render content properly and to provide a usable experience. The application provides an equivalent way for low-vision users to use system display settings, including high-contrast mode. You can control font size by using the device or web browser settings.

The IBM Power Systems servers web user interface includes WAI-ARIA navigational landmarks that you can use to quickly navigate to functional areas in the application.

## Vendor software

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## Related accessibility information

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TTY service  
800-IBM-3383 (800-426-3383)  
(within North America)

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When attaching a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices supplied with the monitor.

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The following Class A statements apply to the IBM servers that contain the POWER8 processor and its features unless designated as electromagnetic compatibility (EMC) Class B in the feature information.

## Federal Communications Commission (FCC) Statement

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

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

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

## Industry Canada Compliance Statement

CAN ICES-3 (A)/NMB-3(A)

## European Community Compliance Statement

This product is in conformity with the protection requirements of EU Council Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

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## Japan Electronics and Information Technology Industries Association Statement

This statement explains the Japan JIS C 61000-3-2 product wattage compliance.

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

高調波電流規格 JIS C 61000-3-2 適合品

This statement explains the JEITA statement for products greater than 20 A, single phase.

高調波電流規格 JIS C 61000-3-2 準用品

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- 回路分類 : 6 (単相、PFC回路付)
- 換算係数 : 0

This statement explains the JEITA statement for products greater than 20 A per phase, three-phase.

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- 回路分類 : 5 (3相、PFC回路付)
- 換算係数 : 0

**Electromagnetic Interference (EMI) Statement - People's Republic of China**

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**Electromagnetic Interference (EMI) Statement - Taiwan**

警告使用者：

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

The following is a summary of the EMI Taiwan statement above.

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

**IBM Taiwan Contact Information:**

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



## **Electromagnetic Interference (EMI) Statement - Korea**

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

## **Germany Compliance Statement**

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

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 / EN 55032 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung von IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung von IBM gesteckt/eingebaut werden.

EN 55022 / EN 55032 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:  
"Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

### **Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten**

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2014/30/EU in der Bundesrepublik Deutschland.

### **Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC Richtlinie 2014/30/EU) für Geräte der Klasse A**

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

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:  
International Business Machines Corp.  
New Orchard Road  
Armonk, New York 10504  
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:  
IBM Deutschland GmbH  
Technical Relations Europe, Abteilung M456  
IBM-Allee 1, 71139 Ehningen, Germany  
Tel: +49 (0) 800 225 5426  
email: HalloIBM@de.ibm.com

Generelle Informationen:

**Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 / EN 55032 Klasse A.**

## Electromagnetic Interference (EMI) Statement - Russia

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

### Class B Notices

The following Class B statements apply to features designated as electromagnetic compatibility (EMC) Class B in the feature installation information.

### Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM-authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM-authorized dealers. IBM is not responsible for any radio or television interference caused by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate this equipment.

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

### Industry Canada Compliance Statement

CAN ICES-3 (B)/NMB-3(B)

### European Community Compliance Statement

This product is in conformity with the protection requirements of EU Council Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

European Community contact:  
IBM Deutschland GmbH  
Technical Regulations, Abteilung M456  
IBM-Allee 1, 71139 Ehningen, Germany  
Tel: +49 800 225 5426  
email: halloibm@de.ibm.com

## VCCI Statement - Japan

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。 VCCI-B

## Japan Electronics and Information Technology Industries Association Statement

This statement explains the Japan JIS C 61000-3-2 product wattage compliance.

(一社) 電子情報技術産業協会 高調波電流抑制対策実施  
要領に基づく定格入力電力値 : Knowledge Centerの各製品の  
仕様ページ参照

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

高調波電流規格 JIS C 61000-3-2 適合品

This statement explains the JEITA statement for products greater than 20 A, single phase.

高調波電流規格 JIS C 61000-3-2 準用品

本装置は、「高圧又は特別高圧で受電する需要家の高調波抑制対策ガイドライン」対象機器（高調波発生機器）です。

- 回路分類 : 6 (単相、PFC回路付)
- 換算係数 : 0

This statement explains the JEITA statement for products greater than 20 A per phase, three-phase.

高調波電流規格 JIS C 61000-3-2 準用品

本装置は、「高圧又は特別高圧で受電する需要家の高調波抑制対策ガイドライン」対象機器（高調波発生機器）です。

- 回路分類 : 5 (3相、PFC回路付)
- 換算係数 : 0

### IBM Taiwan Contact Information

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

### Germany Compliance Statement

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

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022/ EN 55032 Klasse B ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung von IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung von IBM gesteckt/eingebaut werden.

**Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten**

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2014/30/EU in der Bundesrepublik Deutschland.

**Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC Richtlinie 2014/30/EU) für Geräte der Klasse B**

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

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:  
International Business Machines Corp.  
New Orchard Road  
Armonk, New York 10504

Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

IBM Deutschland GmbH  
Technical Relations Europe, Abteilung M456  
IBM-Allee 1, 71139 Ehningen, Germany  
Tel: +49 (0) 800 225 5426  
email: HalloIBM@de.ibm.com

Generelle Informationen:

**Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022/ EN 55032 Klasse B.**

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