

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 49, 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 POWER7 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:

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

To Disconnect:

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

To Connect:

1. Turn off everything (unless instructed otherwise).
2. Attach all cables to the devices.
3. Attach the signal cables to the connectors.
4. Attach the power cords to the outlets.
5. Turn on the devices.

(D005)

## 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.



- Each rack cabinet might have more than one power cord. Be sure to disconnect all power cords in the rack cabinet 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.

#### 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.

(R001)

**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:

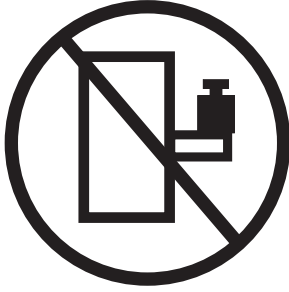
- Reduce the weight of the rack cabinet by removing equipment starting at the top of the rack cabinet. When possible, restore the rack cabinet to the configuration of the rack cabinet as you received it. If this configuration is not known, you must observe the following precautions:
  - Remove all devices in the 32U position and above.
  - Ensure that the heaviest devices are installed in the bottom of the rack cabinet.
  - Ensure that there are no empty U-levels between devices installed in the rack cabinet below the 32U level.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- 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)

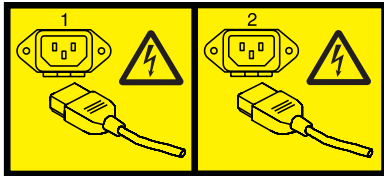
(L001)



(L002)



(L003)



or



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. (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)

## **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 metallically 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 metallically 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.

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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: U789C.001.10ABCDE-P3-C31 In this example, the enclosure type is 789C.

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.

Feature code (Utttt)	System
U78AB.L1C, U78AB.L1D, U78AB.L1S, U78AB.L1T, U78AB.L2C, U78AB.L2D, U78AB.L2S or U78AB.L2T	8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T
U5802.001	5802
U5877.001	5877
U5887.001	5887
UEDR1.001	EDR1 PCIe storage enclosure

### Locate the FRU

The string of characters following the enclosure serial number identifies the FRU location within the enclosure: U7879.001.10ABCDE-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.

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## What's new in parts, locations, and addresses

Read about new or significantly changed information in parts, locations, and addresses since the previous update of this topic collection.

### March 2013

The following updates are made to the content:

- Added information for 8246-L1D, 8246-L1T, 8246-L2D, and 8246-L2T locations.
- Added information for 8246-L1D, 8246-L1T, 8246-L2D, and 8246-L2T system parts.

### October 2012

The following updates are made to the content:

- Added information for 8246-L2C and 8246-L2S locations.
- Added information for 8246-L2C and 8246-L2S system parts.

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## 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.

### 8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T

The information provided in this topic defines specific sections of a location code string. Use this information to understand the meaning of a location code.

#### Using location codes

Use the following table to link to a specific topic that you need additional information about when reading your location code.

Location code topics	Description
"Location code overview"	Contains background information about the use of location codes.
"Physical location codes" on page 3	Provides a definition for physical location code.
"Logical location codes" on page 3	Provides a definition of what a logical location code is.
"Location code format" on page 3	Provides descriptive information of the <i>Un</i> value in the location code string. For example, U789C.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, U789C.001.10ABCDE-P3-C31-T2-L23. The system serial number is 10ABCDE in the previous example. 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 world 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 units and expansion units) use physical location codes to provide mapping of replaceable units. Location codes are produced by the server's firmware, which positions 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 unit type and model immediately follow the first character (*Utttt.mmm*). Match the unit type and model to a link, as shown in 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 lists the known conversions. For logical location codes with no conversion, contact your next level of support.

If the location code begins with *UTMPx*, the machine type, model, and serial number of the expansion I/O unit 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 that are 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:** Locations for units that are not in the preceding list are either not supported or have 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 has two logical location codes.

An example of a logical location code is:

U789C.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 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 *Un-A1*.

The first position, represented by *Un* (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 that follow 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
<i>Utttt.mmm.ssssss-A1</i>	<i>Uffff.ccc.ssssss-A1</i>
The leftmost code is always U.	The leftmost code is always U.
<i>tttt</i> represents the unit type of the enclosure (drawer or node).	<i>ffff</i> represents the feature code of the enclosure (drawer or node).
<i>mmm</i> represents the model of the enclosure.	<i>ccc</i> represents the sequence number of the enclosure.
<i>ssssss</i> represents the serial number for the enclosure.	<i>ssssss</i> represents the serial number of the enclosure.
<p><b>Note:</b> The <i>mmm</i> or <i>ccc</i> number might not be displayed on all location codes for all servers. If the <i>mmm</i> value is not displayed, the location code is displayed in one of the following forms:</p> <ul style="list-style-type: none"> <li><i>Utttt.ssssss-A1</i></li> <li><i>Uffff.ssssss-A1</i></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, helps you 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 *Un-A1*, the dash shows that the fan (A1) is contained in the base unit (or *Un*). 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: *Un-P1-C9* is a memory dual inline memory module (DIMM) (C9) that is plugged into a backplane (P1), which is inside the unit (*Un*).

*Table 1. Unit type and locations*

Unit type (Utttt.mmm)	Link to location information
U78AB.L1C, U78AB.L1D, U78AB.L1S, U78AB.L1T, U78AB.L2C, U78AB.L2D, U78AB.L2S or U78AB.L2T	8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T locations

## Location code labels

The prefixes in location code labels represent a physical part of the server. The following table describes the prefixes in location code labels.

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

*Table 2. Prefixes in a location code label 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, external cable	
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.



## 8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T 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

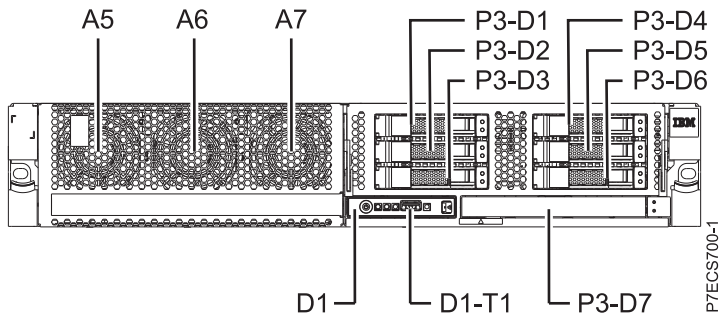


Figure 1. Front view of the base model with six small-form factor (SFF) bays

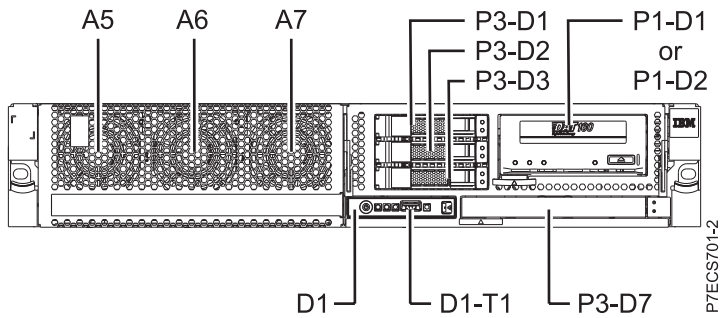
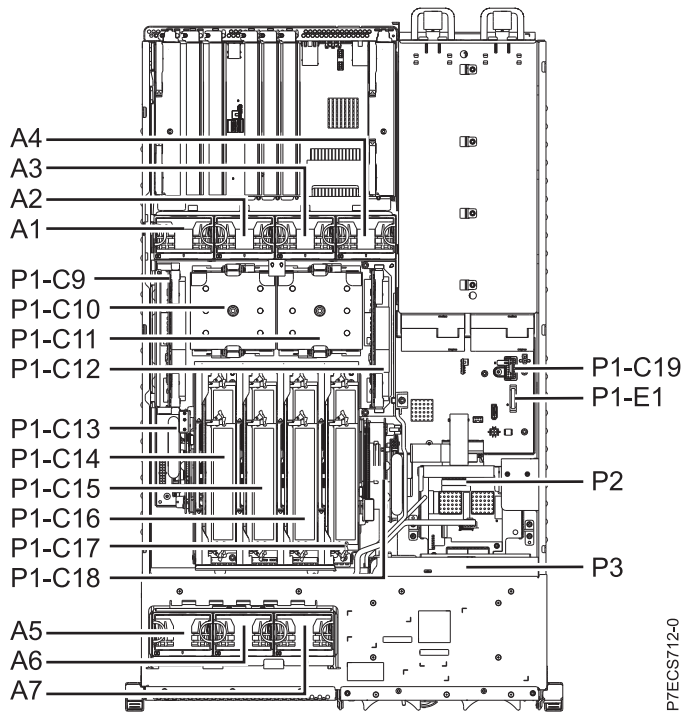
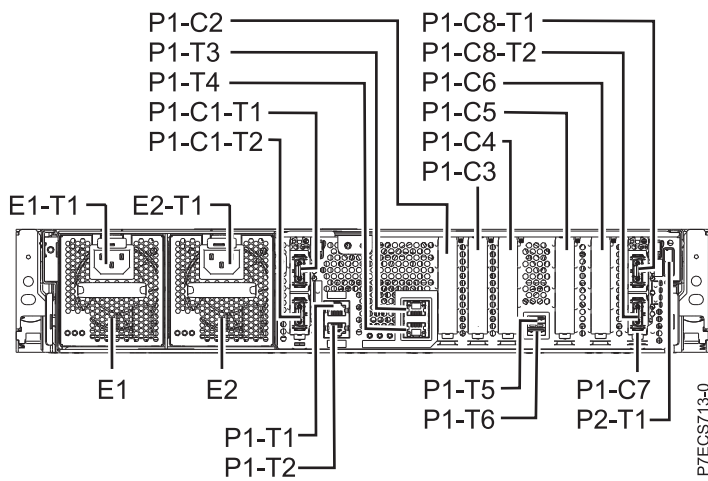


Figure 2. Front view of the model with three SFF bays (optional)



P7EC5712-0

Figure 3. Top view



P7EC5713-0

Figure 4. Rear view

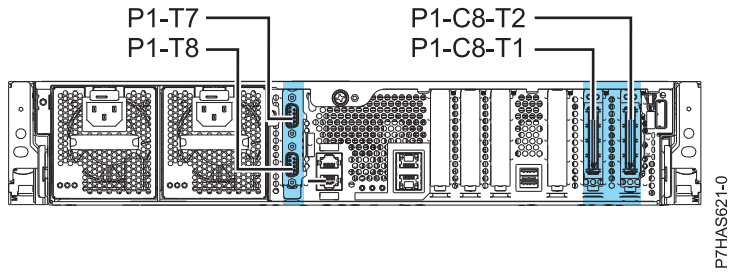


Figure 5. Rear view with feature code EJ0G (optional)

### Memory card locations

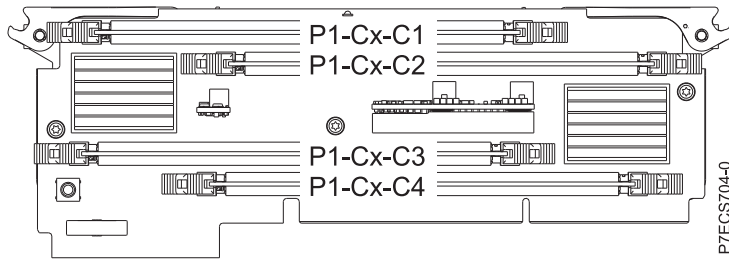


Figure 6. Memory card locations

### PCIe SAS RAID and SSD adapter locations

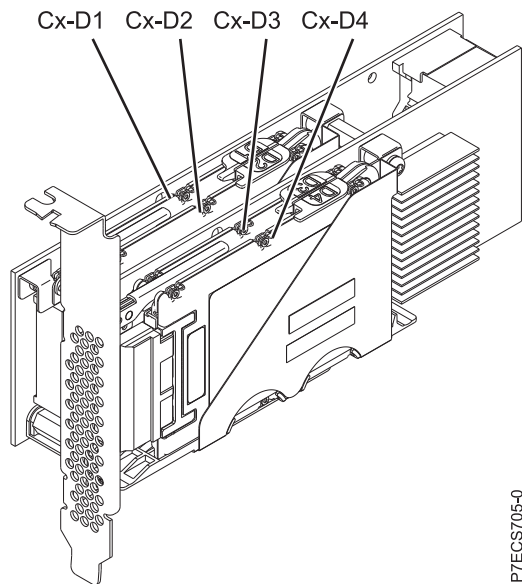


Figure 7. PCIe SAS RAID and SSD adapter locations

The following table provides location codes for parts in a server.

Table 3. FRU location table

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 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	
<b>Power supplies</b>			
Power supply 1	Un-E1	Yes	See Power supply.
Power supply 1 - Cord connector	Un-E1-T1	No	
Power supply 2	Un-E2	Yes	
Power supply 2 - Cord connector	Un-E2-T1	No	
<b>Backplanes</b>			
System backplane	Un-P1	Yes	See System backplane.
Time-of-day	Un-P1		
Time-of-day battery	Un-P1-E1		See Time-of-day battery.
Storage backplane interposer	Un-P2	Yes	
Disk drive backplane	Un-P3	Yes	See Disk drive backplane.
<b>Ports</b>			
System port 1	Un-P1-T1	No	
System port 2	Un-P1-T2	No	
HMC port 1	Un-P1-T3	No	
HMC port 2	Un-P1-T4	No	
USB port 1	Un-P1-T5	No	
USB port 2	Un-P1-T6	No	
SPCN port 1	Un-P1-T7	No	
SPCN port 2	Un-P1-T8	No	
<b>Processor and processor regulator</b>			
POWER7 <sup>®</sup> processor module 1	Un-P1-C11	Yes	See System processor module.
POWER7 processor module 2	Un-P1-C10	Yes	
POWER7 processor module 1 VRM	Un-P1-C12	Yes	See Voltage regulator module.
POWER7 processor module 2 VRM	Un-P1-C9	Yes	
<b>Adapters</b>			

Table 3. FRU location table (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
PCIe x8 G2 slot 1	Un-P1-C2	Yes	See PCI adapters.
PCIe x8 G2 slot 2	Un-P1-C3	Yes	
PCIe x8 G2 slot 3	Un-P1-C4	Yes	
PCIe x8 G2 slot 4	Un-P1-C5	Yes	
PCIe x8 G2 slot 5	Un-P1-C6	Yes	
PCIe x4 G2 slot 6	Un-P1-C7	Yes	
GX Dual-Port 12X Channel Attach adapter slot 1	Un-P1-C1	Yes	See GX++ channel adapters.
GX Dual-Port 12X Channel Attach adapter slot 1 card - port 1	Un-P1-C1-T1	Yes	
GX Dual-Port 12X Channel Attach adapter slot 1 card - port 2	Un-P1-C1-T2	Yes	
GX Dual-Port 12X Channel Attach adapter slot 2	Un-P1-C8	Yes	
GX Dual-Port 12X Channel Attach adapter slot 2 card - port 1	Un-P1-C8-T1	Yes	
GX Dual-Port 12X Channel Attach adapter slot 2 card - port 2	Un-P1-C8-T2	Yes	
System VPD card	Un-P1-C19		
Cache battery card	Un-P1-C13	Yes	See SAS RAID enablement and cache battery pack.
Battery on cache battery card	Un-P1-C13-E1	Yes	
RAID and cache storage controller	Un-P1-C18	Yes	
Battery on RAID and cache storage controller	Un-P1-C18-E1	Yes	
<b>Memory modules</b>			
Memory card 1	Un-P1-C17	Yes	See Memory modules.
Memory card 1 - DIMM 1	Un-P1-C17-C1	Yes	
Memory card 1 - DIMM 2	Un-P1-C17-C2	Yes	
Memory card 1 - DIMM 3	Un-P1-C17-C3	Yes	<b>Note:</b> The DIMM fault and identify LED is not visible when the system is in the service position.
Memory card 1 - DIMM 4	Un-P1-C17-C4	Yes	
Memory card 2	Un-P1-C16	Yes	
Memory card 2 - DIMM 1	Un-P1-C16-C1	Yes	
Memory card 2 - DIMM 2	Un-P1-C16-C2	Yes	

Table 3. FRU location table (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Memory card 2 - DIMM 3	Un-P1-C16-C3	Yes	<b>Note:</b> The DIMM fault and identify LED is not visible when the system is in the service position.
Memory card 2 - DIMM 4	Un-P1-C16-C4	Yes	
Memory card 3	Un-P1-C15	Yes	
Memory card 3 - DIMM 1	Un-P1-C15-C1	Yes	
Memory card 3 - DIMM 2	Un-P1-C15-C2	Yes	
Memory card 3 - DIMM 3	Un-P1-C15-C3	Yes	<b>Note:</b> The DIMM fault and identify LED is not visible when the system is in the service position.
Memory card 3 - DIMM 4	Un-P1-C15-C4	Yes	
Memory card 4	Un-P1-C14	Yes	
Memory card 4 - DIMM 1	Un-P1-C14-C1	Yes	
Memory card 4 - DIMM 2	Un-P1-C14-C2	Yes	
Memory card 4 - DIMM 3	Un-P1-C14-C3	Yes	<b>Note:</b> The DIMM fault and identify LED is not visible when the system is in the service position.
Memory card 4 - DIMM 4	Un-P1-C14-C4	Yes	
<b>Device physical locations</b>			
Tape drive (SAS)	Un-P1-D1	No	
Tape drive (USB)	Un-P1-D2	No	
Disk drive 1	Un-P3-D1	Yes	See Disk drives.
Disk drive 2	Un-P3-D2	Yes	
Disk drive 3	Un-P3-D3	Yes	
Disk drive 4	Un-P3-D4	Yes	
Disk drive 5	Un-P3-D5	Yes	
Disk drive 6	Un-P3-D6	Yes	
Solid-state disk drive (SSD) 1 on PCIe SAS RAID and SSD adapter	Un-P1-Cx-D1	No	
Solid-state disk drive 2 on PCIe SAS RAID and SSD adapter	Un-P1-Cx-D2	No	
Solid-state disk drive 3 on PCIe SAS RAID and SSD adapter	Un-P1-Cx-D3	No	
Solid-state disk drive 4 on PCIe SAS RAID and SSD adapter	Un-P1-Cx-D4	No	
DVD	Un-P3-D7	Yes	
SAS port	Un-P2-T1	No	
Embedded SAS controller	Un-P1-T9	No	

Table 3. FRU location table (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 and signal cables for the system.
Temperature sensor	Un-D1	No	
Control panel - USB port	Un-D1-T1	No	
<b>Server firmware</b>			
Server firmware	Um-Y1		

**Related reference:**

“8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T system parts” on page 32

Indexed drawings show system part numbers of each part.

## 5802 and 5877

The information provided in this topic defines specific sections of a location code string. Use this information to understand the meaning of a location code.

### 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 12	Contains background information on the use of location codes.
“Physical location codes” on page 12	Provides a definition for physical location code.
“Logical location codes” on page 12	Provides a definition for a logical location code.
“Location code format” on page 12	Provides descriptive information of the Un value in the location code string. For example U5886.001.
“Location code labels” on page 13	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, U7879.001.10ABCDE-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 14	Provides a definition for the worldwide unique identifier. This group of digits follows the resource code labels and always begins with the letter W.

## 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 (U5886). Refer to 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:

```
U7879.001.10ABCDE-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 *Un-A1*.

The first position, represented by *Un* (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
<i>Utttt.mmm.ssssss-A1</i>	<i>Uffff.ccc.ssssss-A1</i>
The leftmost code is always U.	The leftmost code is always U.
<i>tttt</i> represents the unit type of the enclosure (drawer or node).	<i>ffff</i> represents the feature code of the enclosure (drawer or node).
<i>mmm</i> represents the model of the enclosure.	<i>ccc</i> represents the sequence number of the enclosure .
<i>ssssss</i> represents the serial number for the enclosure.	<i>ssssss</i> represents the serial number of the enclosure.
<p><b>Note:</b> The <i>mmm</i> or <i>ccc</i> number might not be displayed on all location codes for all servers. If the <i>mmm</i> value is not displayed, the location code is displayed in one of the following forms:</p> <ul style="list-style-type: none"> <li>• <i>Utttt.ssssss-A1</i></li> <li>• <i>Uffff.ssssss-A1</i></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 *Un-A1*, the dash shows that the fan (A1) is contained in the base unit (or *Un*). Modules, adapters, cables, and devices are all parts that are plugged into another part. Their location codes will always show that they are plugged into another part as components of the server. Another example follows; *Un-P1-C9* is a memory DIMM, with memory DIMM (C9) plugged into a backplane (P1), which is inside the unit (*Un*).

Table 4. Unit type and locations

Unit type (Utttt.mmm)	Link to location information
U5802.001	Locations
U5877.001	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 5. 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

Table 5. Prefixes of location code labels for system units (continued)

Prefix	Description	Example
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.

## 5802 and 5877 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.

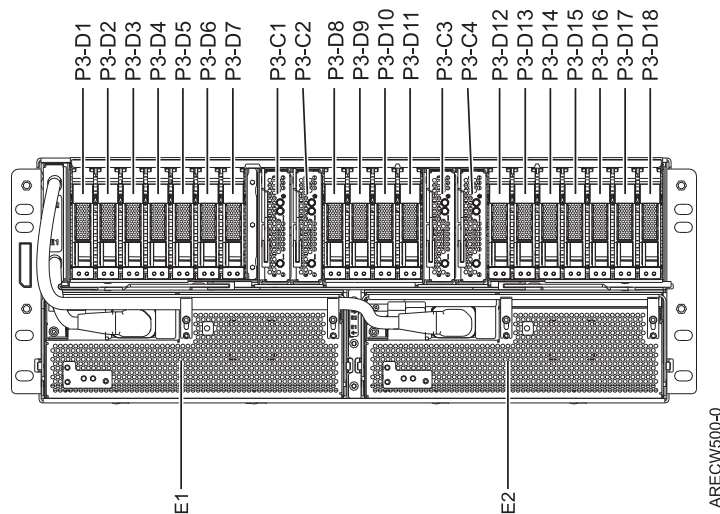


Figure 8. 5802 front view

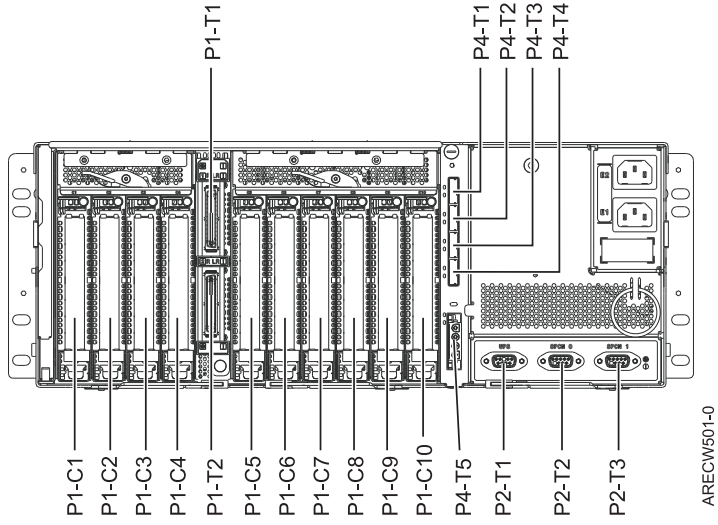


Figure 9. 5802 rear view

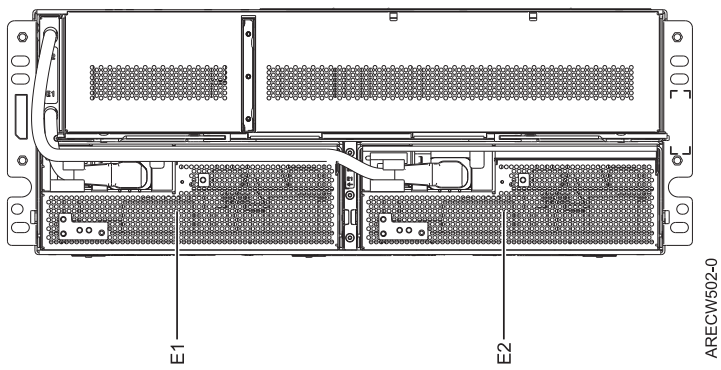


Figure 10. 5877 front view

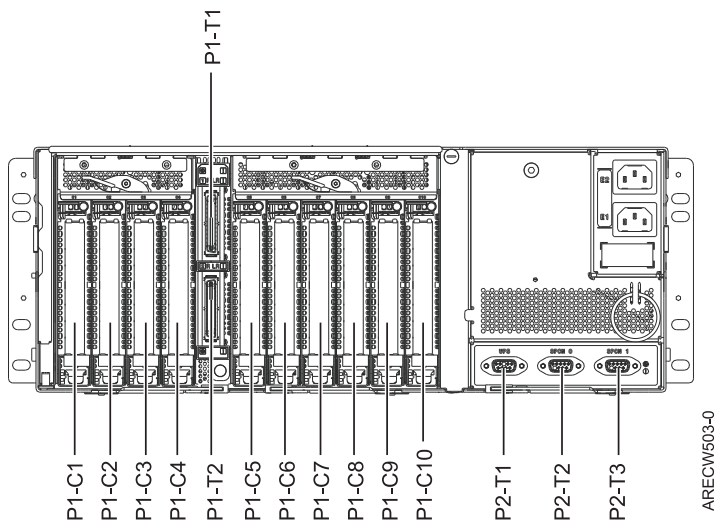


Figure 11. 5877 rear view

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

*Table 6. Bulk power assembly (BPA) locations, and failing components*

Failing item name	Symbolic FRU name	CCIN	Failing item removal and replacement procedures
OCA	Ux-E1	2C43	
OCA UPIC connector	Ux-E1-T1		
OCA UPIC connector	Ux-E1-T2		
OCA	Ux-E2	2C43	
OCA UPIC connector	Ux-E2-T1		
OCA UPIC connector	Ux-E2-T2		
<b>Fans</b>			
Fan	Ux-E1-A1		See Fan.
Fan	Ux-E1-A2		
Fan	Ux-E2-A1		
Fan	Ux-E2-A2		
<b>Backplane</b>			
System backplane	Ux-P1	50A2	
IOA	Ux-P1-C1		
IOA	Ux-P1-C2		
IOA	Ux-P1-C3		
IOA	Ux-P1-C4		
IOA	Ux-P1-C5		
IOA	Ux-P1-C6		
IOA	Ux-P1-C7		
IOA	Ux-P1-C8		
IOA	Ux-P1-C9		
IOA	Ux-P1-C10		
IB riser port	Ux-P1-T1		
IB riser port	Ux-P1-T2		
<b>EMC card</b>			
Enclosure management controller (EMC) card	Ux-P2	50A6	See EMC card.
UPS	Ux-P2-T1		
SPCN 9 pin D-shell	Ux-P2-T2		
SPCN 9 pin D-shell	Ux-P2-T3		
<b>Disk drives</b>			
Disk drive backplane	Ux-P3	50A9	See Disk drive backplane.
Port card 1	Ux-P3-C1	50A4	
Port card 2	Ux-P3-C2	50A4	
Port card 3	Ux-P3-C3	50A4	
Port card 4	Ux-P3-C4	50A4	

Table 6. Bulk power assembly (BPA) locations, and failing components (continued)

Failing item name	Symbolic FRU name	CCIN	Failing item removal and replacement procedures
Disk drive	Ux-P3-D1		See Disk drive.
Disk drive	Ux-P3-D2		
Disk drive	Ux-P3-D3		
Disk drive	Ux-P3-D4		
Disk drive	Ux-P3-D5		
Disk drive	Ux-P3-D6		
Disk drive	Ux-P3-D7		
Disk drive	Ux-P3-D8		
Disk drive	Ux-P3-D9		
Disk drive	Ux-P3-D10		
Disk drive	Ux-P3-D11		
Disk drive	Ux-P3-D12		
Disk drive	Ux-P3-D13		
Disk drive	Ux-P3-D14		
Disk drive	Ux-P3-D15		
Disk drive	Ux-P3-D16		
Disk drive	Ux-P3-D17		
Disk drive	Ux-P3-D18		
<b>SAS conduit</b>			
SAS conduit	Ux-P4	50A5	See SAS conduit card.
SAS connector	Ux-P4-T1		
SAS connector	Ux-P4-T2		
SAS connector	Ux-P4-T3		
SAS connector	Ux-P4-T4		
Media bay connector	Ux-P4-T5		
<b>Midplane</b>			
Midplane	Ux-P5	50AA	

**Related reference:**

“5802 and 5877 system parts” on page 39  
 Indexed drawings show system part numbers.

**5887**

The information provided in this topic defines specific sections of a location code string. Use this information to understand the meaning of a location code.

**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"	Contains background information on the use of location codes.
"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 19	Provides descriptive information of the <i>Un</i> value in the location code string. For example, U5887.001.
"Location code labels" on page 20	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, U7879.001.10ABCDE-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 20	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 (U5886). 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:

U7879.001.10ABCDE-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 ( $U_n$ ).

Table 7. Unit type and locations

Unit type (Utttt)	Link to location information
U5887.001	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 8. 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.

### 5887 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.



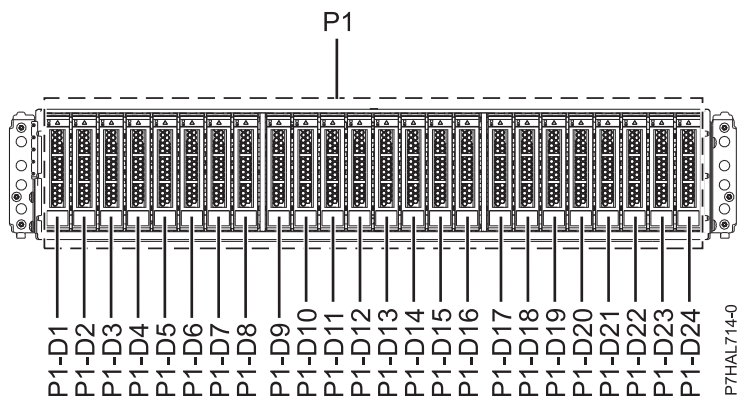


Figure 12. Front view

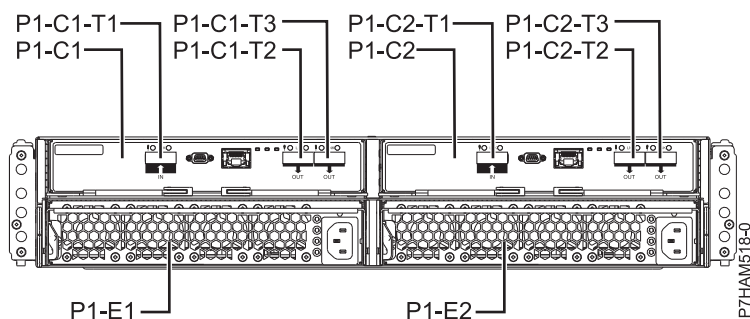


Figure 13. Rear view

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
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>			

Table 9. FRU locations and failing components (continued)

Failing item name	Physical location code	Identify LED	Failing item removal and replacement procedures
Midplane	Un-P1	Yes	See Removing and installing a midplane.
<b>Device physical locations</b>			
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 system parts  
 Indexed drawings show system part numbers.

**EDR1 PCIe storage enclosure**

The information provided in this topic defines specific sections of a location code string. Use this information to understand the meaning of a location code.

**Using location codes**

Use the following table to link to a specific topic that you need additional information about when reading your location code.

Location code topics	Description
"Location code overview"	Contains background information on the use of location codes.
"Physical location codes"	Provides a definition for physical location code.
"Logical location codes" on page 24	Provides a definition of what a logical location code is.
"Location code format" on page 24	Provides descriptive information of the <i>Un</i> value in the location code string. For example, U789C.001.
"Location code labels" on page 25	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, U789C.001.10ABCDE-P3-C31-T2-L23. The system serial number is 10ABCDE in the previous example. P3, C31, T2, and L23 all contain an alphabetic character that is identified in the Location code labels table.
"Worldwide unique identifier" on page 25	Provides a definition for the world 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 unit type and model immediately follow the first character (*Utttt.mmm*). Match the unit type and model to a link, as shown in 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 lists the known conversions. 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 that are 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:** Locations for units that are not in the preceding list are either not supported or have 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 has two logical location codes.

An example of a logical location code is:

U789C.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 that follow 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.
<b>Note:</b> The $mmm$ or $ccc$ number might not be displayed on all location codes for all servers. If the $mmm$ value is not displayed, the location code is displayed in one of the following forms:	
<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 helps you 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 (C9) that is plugged into a backplane (P1), which is inside the unit ( $U_n$ ).

## 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 10. 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, external cable	
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.

## EDR1 PCIe storage enclosure 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.

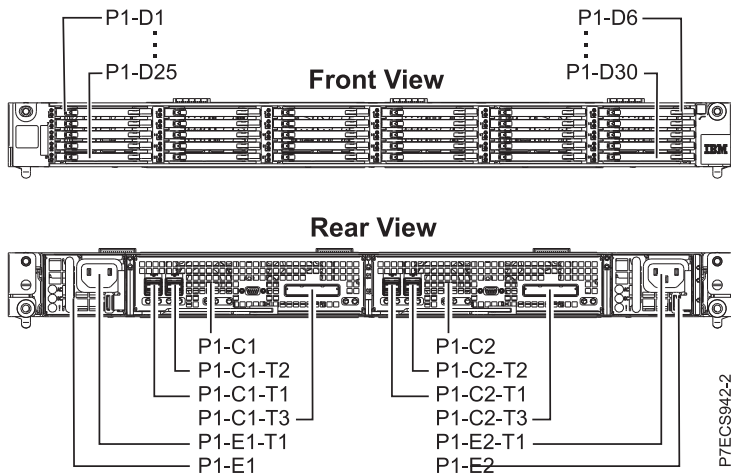


Figure 14. Front and rear view

The following table provides location codes for parts of a server.

Table 11. FRU locations and failing components

Failing item name	Physical location code	Fault and identify LED	Failing item removal and replacement procedures
System unit	Un	Yes	
<b>Midplane</b>			
Midplane	Un-P1	Yes (EDR1 PCIe storage enclosure)	For EDR1 PCIe storage enclosure, see Removing and installing a midplane.
<b>Enclosure RAID module assembly</b>			
Enclosure RAID module assembly (left)	Un-P1-C1		For EDR1 PCIe storage enclosure, see Removing and installing an enclosure RAID module assembly.
Enclosure RAID module assembly (right)	Un-P1-C2	Yes (EDR1 PCIe storage enclosure)	
<b>Fan assembly</b>			
Fan assembly (on left enclosure RAID module assembly)	Un-P1-C1-A1	Yes (EDR1 PCIe storage enclosure)	For EDR1 PCIe storage enclosure, see Removing and installing a fan assembly.
Fan assembly (on right enclosure RAID module assembly)	Un-P1-C2-A1	Yes (EDR1 PCIe storage enclosure)	
<b>Power supplies</b>			
Power supply (left)	Un-P1-E1	Yes (EDR1 PCIe storage enclosure)	For EDR1 PCIe storage enclosure, see Removing and installing a power supply.
Power supply (right)	Un-P1-E2	Yes (EDR1 PCIe storage enclosure)	
<b>Ports</b>			
SAS connector	Un-P1-C1-T1		
SAS connector	Un-P1-C1-T2		
SAS connector	Un-P1-C2-T1		
SAS connector	Un-P1-C2-T2		

Table 11. FRU locations and failing components (continued)

Failing item name	Physical location code	Fault and identify LED	Failing item removal and replacement procedures
PCIe x8 connector	Un-P1-C1-T3		For EDR1 PCIe storage enclosure, see Removing and installing a PCIe cable.
PCIe x8 connector	Un-P1-C2-T3		
<b>Device physical locations</b>			
Solid-state drive (SSD) 1	Un-P1-D1	Yes	For EDR1 PCIe storage enclosure, see Removing and installing a solid-state drive.
SSD 2	Un-P1-D2	Yes	
SSD 3	Un-P1-D3	Yes	
SSD 4	Un-P1-D4	Yes	
SSD 5	Un-P1-D5	Yes	
SSD 6	Un-P1-D6	Yes	
SSD 7	Un-P1-D7	Yes	
SSD 8	Un-P1-D8	Yes	
SSD 9	Un-P1-D9	Yes	
SSD 10	Un-P1-D10	Yes	
SSD 11	Un-P1-D11	Yes	
SSD 12	Un-P1-D12	Yes	
SSD 13	Un-P1-D13	Yes	
SSD 14	Un-P1-D14	Yes	
SSD 15	Un-P1-D15	Yes	
SSD 16	Un-P1-D16	Yes	
SSD 17	Un-P1-D17	Yes	
SSD 18	Un-P1-D18	Yes	
SSD 19	Un-P1-D19	Yes	
SSD 20	Un-P1-D20	Yes	
SSD 21	Un-P1-D21	Yes	
SSD 22	Un-P1-D22	Yes	
SSD 23	Un-P1-D23	Yes	
SSD 24	Un-P1-D24	Yes	
SSD 25	Un-P1-D25	Yes	
SSD 26	Un-P1-D26	Yes	
SSD 27	Un-P1-D27	Yes	
SSD 28	Un-P1-D28	Yes	
SSD 29	Un-P1-D29	Yes	
SSD 30	Un-P1-D30	Yes	

**Related reference:**

“EDR1 PCIe storage enclosure system parts” on page 45  
 Indexed drawings show system part numbers.

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**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 2 to find the physical location.

## 8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T addresses

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

Use the address to find the location for the system, and then go to “8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T” on page 2 to find additional location information.

Table 12. IOA and device address information

Position	Possible failing item	Direct select address (DSA) (BBBBcbb)	Unit address
Un-P1	Embedded SAS controller	02000000	Not applicable
Un-P1-C12	RAID card		
Un-P1-C13	Split disk drive card		
Un-P1	Integrated USB controller	02010000	Not applicable
Un-P1-C3	PCIe adapter	02030000	Not applicable
Un-P1-C4	PCIe adapter	02040000	Not applicable
Un-P1-C5	PCIe adapter	02050000	Not applicable
Un-P1-C6	PCIe adapter	02060000	Not applicable
Un-P1-C18	RAID card or split disk drive card	02020000	Not applicable
Un-P1-D1	Tape drive - SAS	02000000	
Un-P1-D2	Tape drive - USB	02010000	
Un-P3-D1	Disk drive 1	02000000 or 02020000	000400FF
Un-P3-D2	Disk drive 2	02000000 or 02020000	000500FF
Un-P3-D3	Disk drive 3	02000000 or 02020000	000600FF
Un-P3-D4	Disk drive 4	02000000 or 02020000	000700FF
Un -P3-D5	Disk drive 5	02000000 or 02020000	000800FF
Un-P2-D6	Disk drive 6	02000000 or 02020000	000900FF
Un-P3-D7	DVD	02000000	060000FF
Un-P1-Cx-D1	Disk drive 1 on PCIe SAS RAID and SSD adapter	020x0000	000000FF
Un-P1-Cx-D2	Disk drive 2 on PCIe SAS RAID and SSD adapter	020x0000	010000FF
Un-P1-Cx-D3	Disk drive 3 on PCIe SAS RAID and SSD adapter	020x0000	040000FF
Un-P1-Cx-D4	Disk drive 4 on PCIe SAS RAID and SSD adapter	020x0000	050000FF



## 5802 and 5877 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 “5802 and 5877” on page 11 to find additional location information.

*Table 13. IOA, and device address information*

Position	Possible failing item	DSA (BBBBcbb)	Unit address
Ux-P1-C1	PCIe adapter	aaaa-00-00	Not applicable
Ux-P1-C2	PCIe adapter	bbbb-00-00	Not applicable
Ux-P1-C3	PCIe adapter	cccc-00-00	Not applicable
Ux-P1-C4	PCIe adapter	dddd-00-00	Not applicable
Ux-P1-C5	PCIe adapter	eeee-00-00	Not applicable
Ux-P1-C6	PCIe adapter	ffff-00-00	Not applicable
Ux-P1-C7	PCIe adapter	gggg-00-00	Not applicable
Ux-P1-C8	PCIe adapter	hhhh-00-00	Not applicable
Ux-P1-C9	PCIe adapter	iiii-00-00	Not applicable
Ux-P1-C10	PCIe adapter	jjjj-00-00	Not applicable
Ux-P3-D1	DASD drive 1 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000600FF or 040600FF
Ux-P3-D2	DASD drive 2 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000700FF or 040700FF
Ux-P3-D3	DASD drive 3 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000800FF or 040800FF
Ux-P3-D4	DASD drive 4 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000900FF or 040900FF
Ux-P3-D5	DASD drive 5 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000A00FF or 040A00FF
Ux-P3-D6	DASD drive 6 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000B00FF or 040B00FF
Ux-P3-D7	DASD drive 7 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000C00FF or 040C00FF
Ux-P3-D8	DASD drive 8 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000D00FF or 040D00FF
Ux-P3-D9	DASD drive 9 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000E00FF or 040E00FF
Ux-P3-D10	DASD drive 10 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000600FF or 040600FF
Ux-P3-D11	DASD drive 11 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000700FF or 040700FF
Ux-P3-D12	DASD drive 12 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000800FF or 040800FF
Ux-P3-D13	DASD drive 13 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000900FF or 040900FF
Ux-P3-D14	DASD drive 14 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000A00FF or 040A00FF
Ux-P3-D15	DASD drive 15 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000B00FF or 040B00FF

Table 13. IOA, and device address information (continued)

Position	Possible failing item	DSA (BBBBcbb)	Unit address
Ux-P3-D16	DASD drive 16 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000C00FF or 040C00FF
Ux-P3-D17	DASD drive 17 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000D00FF or 040D00FF
Ux-P3-D18	DASD drive 18 (5802 only)	The disk unit has the same DSA as the storage IOA controlling it.	000E00FF or 040E00FF

## 5887 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” on page 17 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

## EDR1 PCIe storage enclosure addresses

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

Use the address to find the location for the system, and then go to “EDR1 PCIe storage enclosure” on page 22 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 15. Device address information

Physical location code	Unit address
Un-P1-D1	0x0000FF
Un-P1-D2	0x0100FF
Un-P1-D3	0x0200FF
Un-P1-D4	0x0300FF
Un-P1-D5	0x0400FF
Un-P1-D6	0x0500FF
Un-P1-D7	0x0600FF
Un-P1-D8	0x0700FF
Un-P1-D9	0x0800FF
Un-P1-D10	0x0900FF
Un-P1-D11	0x0A00FF
Un-P1-D12	0x0B00FF
Un-P1-D13	0x0C00FF
Un-P1-D14	0x0D00FF
Un-P1-D15	0x0E00FF
Un-P1-D16	0x0F00FF
Un-P1-D17	0x1000FF
Un-P1-D18	0x1100FF
Un-P1-D19	0x1200FF
Un-P1-D20	0x1300FF
Un-P1-D21	0x1400FF
Un-P1-D22	0x1500FF
Un-P1-D23	0x1600FF
Un-P1-D24	0x1700FF
Un-P1-D25	0x1800FF
Un-P1-D26	0x1900FF
Un-P1-D27	0x1A00FF
Un-P1-D28	0x1B00FF
Un-P1-D29	0x1C00FF
Un-P1-D30	0x1D00FF

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## System parts

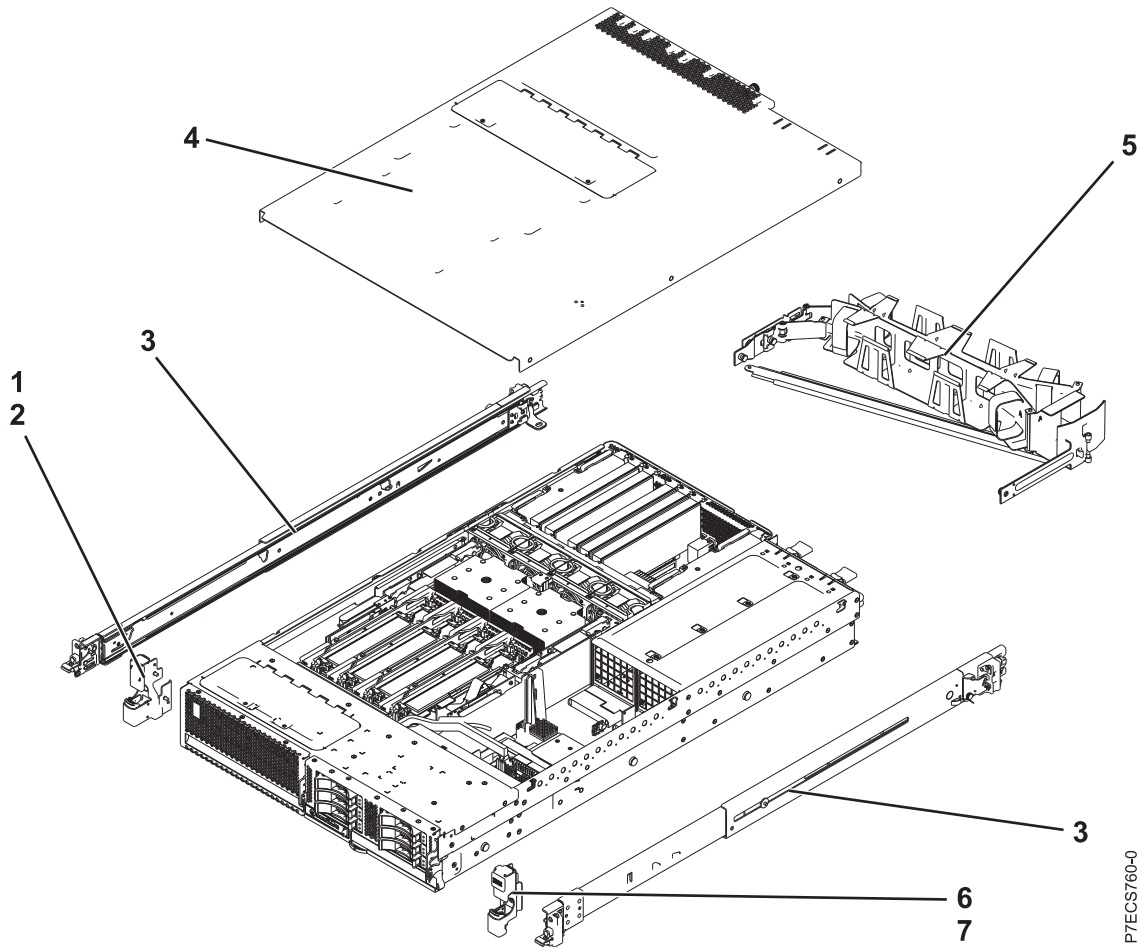
Use this information to locate and identify common hardware parts.

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 2 to help you identify location codes.

## 8246-L1C, 8246-L1D, 8246-L1S, 8246-L1T, 8246-L2C, 8246-L2D, 8246-L2S, or 8246-L2T system parts

Indexed drawings show system part numbers of each part.

### Rack final assembly

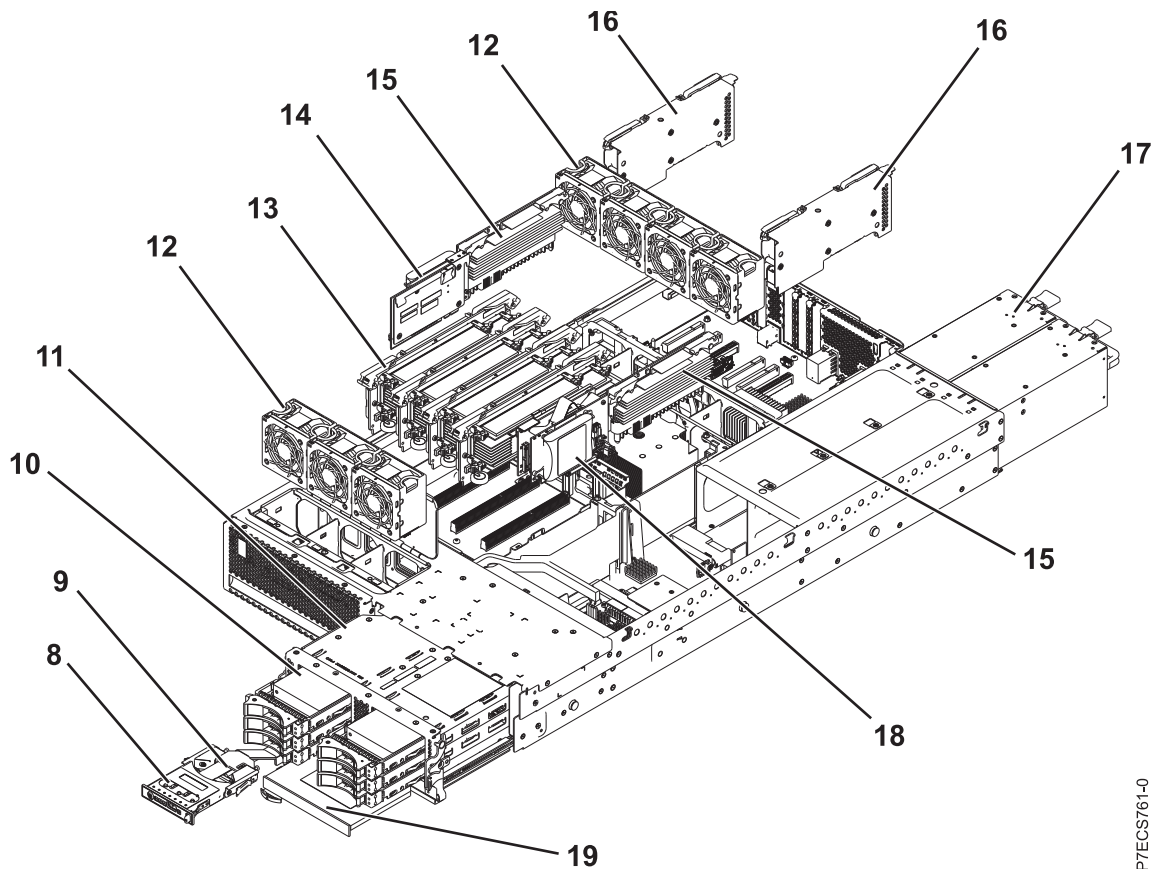


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Table 16. Rack assembly part numbers

Index number	CCIN	Part number	Units per assembly	Description
1		74Y5193	1	EIA bracket (left)
2		90P1959	2	Attaching screw for EIA bracket (left)
3		00E5669	1	Rail kit (includes two slides)
4		74Y9068	1	Top access cover assembly
5		74Y9063	1	Cable management arm assembly
6		74Y5194	1	EIA bracket (right)
7		90P1959	2	Attaching screw for EIA bracket (right)

## Rack assembly detail



P7ECS761-0

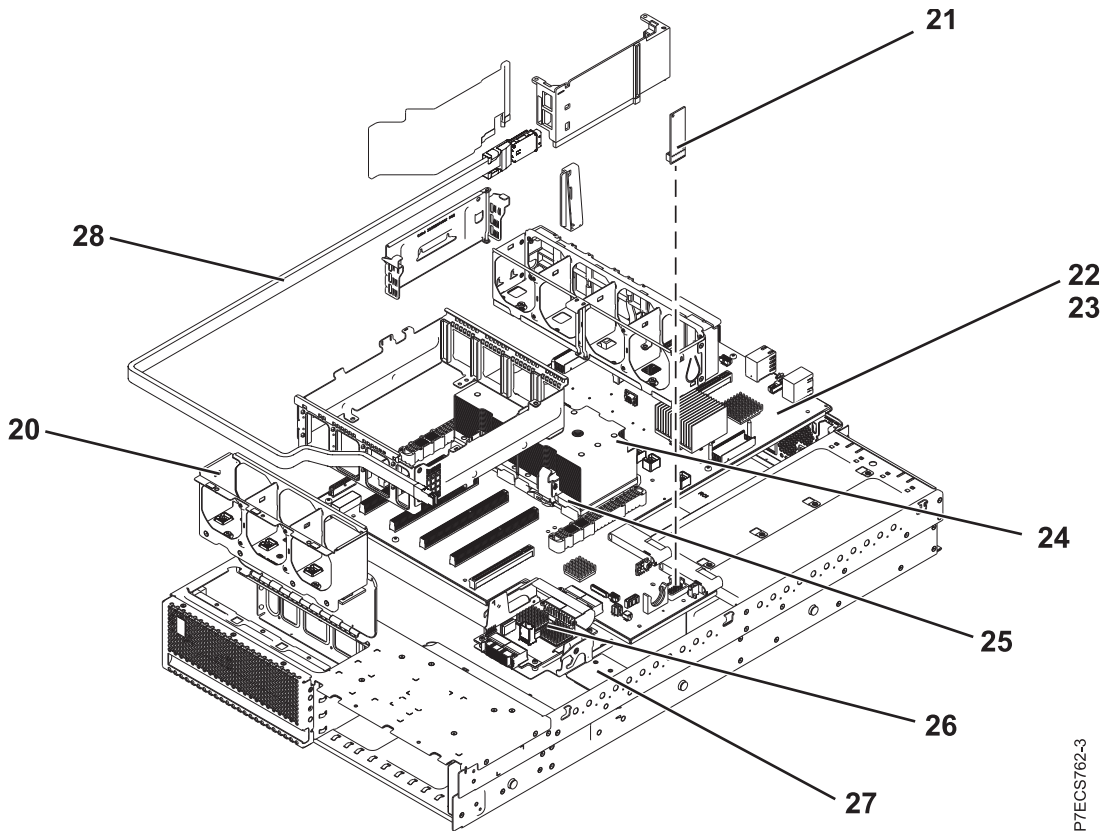
Table 17. Rack assembly part numbers

Index number	CCIN	Part number	Units per assembly	Description
8	2BCD	74Y3964	1	Control panel assembly
9		46K6257	1	Control panel cable
10			1 - 6 or 1 - 3	See Disk drive and solid-state drive system parts.
11	2BE7	74Y3355	1	Disk drive backplane (supports three disk drives and one tape or DVD drive)
11	2BD7	74Y3352	1	Disk drive and media backplane (supports six disk drives and one DVD drive)
12	6B1E	74Y5222	7	60 mm fan assembly
13	2BE3	00E0635	1 - 4	Memory card assembly
13	31F8	78P1011	1 - 32	2 GB, 1066 MHz DDR3 DIMM (8246-L1C, 8246-L1S, 8246-L2C, or 8246-L2S)
13	31F3	78P0554	1 - 32	4 GB, 1066 MHz DDR3 DIMM
13	31F4	78P0555	1 - 32	8 GB, 1066 MHz DDR3 DIMM (8246-L1C, 8246-L1S, 8246-L2C, or 8246-L2S)
13	31F5	78P0639	1 - 32	16 GB, 1066 MHz DDR3 DIMM (8246-L1C, 8246-L1S, 8246-L2C, or 8246-L2S)
13	31FA	78P1914	1 - 32	8 GB, 1066 MHz DDR3 DIMM (8246-L1D, 8246-L1T, 8246-L2D, or 8246-L2T)

Table 17. Rack assembly part numbers (continued)

Index number	CCIN	Part number	Units per assembly	Description
13	31FB	78P1915	1 - 32	16 GB, 1066 MHz DDR3 DIMM (8246-L1D, 8246-L1T, 8246-L2D, or 8246-L2T)
13	31F7	78P1539	1 - 32	32 GB, 1066 MHz DDR3 DIMM (8246-L1D, 8246-L1T, 8246-L2D, or 8246-L2T)
14	2BCF	74Y3345	1	Cache battery card
15	2B4E	00E7158	2	Processor VRM
16	2B4D	74Y4116	1	Double-wide GX adapter
16	2C1F	74Y3388	1 - 2	PCIe x8 GX adapter
16A		74Y3755	1	SPCN cable assembly
17	2B46	00E7187	1 - 2	Power supply assembly (8246-L1C, 8246-L1S, 8246-L2C, or 8246-L2S)
17	2BED	00E7237	1 - 2	Power supply assembly (8246-L1D, 8246-L1T, 8246-L2D, or 8246-L2T)
18	2B4C	00E0663	1	RAID enablement card
19			1	DVD drive. See Managing DVD drives

**Rack assembly detail, continued**



P7ECS762-3

Table 18. Rack assembly part numbers

Index number	CCIN	Part number	Units per assembly	Description
20		74Y3353	1	Fan cage assembly (front)
21	52E1	00E0652	1	System VPD card (8246-L1C, 8246-L1S, 8246-L2C, or 8246-L2S)
21	52F3	00E1896	1	System VPD card (8246-L1D, 8246-L1T, 8246-L2D, or 8246-L2T)
22	2B4B	00E1765	1	System backplane (contains one processor module) (8246-L1C or 8246-L1S)
22	2B4A	00E1768	1	System backplane (contains two processor modules) (8246-L2C or 8246-L2S)
22	2B2D	00E1750	1	System backplane (8246-L1D or 8246-L1T)
22	2B2C	00E1751	1	System backplane (8246-L2D or 8246-L2T)
23			5	Attaching screw for system backplane
24		74Y7421	1 - 2	Heat sink
25	545F	00J0199	2	8 core 3.3 GHz processor module (8246-L2C or 8246-L2S)
25	545E	00J0412	1 - 2	8 core 3.55 GHz processor module (8246-L1C, 8246-L1S, 8246-L2C, or 8246-L2S)
25	54AD	00E7468	1 - 2	8- core 4.22 GHz processor module (only 8246-L1D, 8246-L1T, 8246-L2D, or 8246-L2T)
25	54AF	00E7469	1 - 2	8- core 3.61 GHz processor module (only 8246-L2D or 8246-L2T)
25	54AC	00E7470	1 - 2	6 core 4.28 GHz processor module (only 8246-L1D or 8246-L1T)
25	54AB	00E7472	1 - 2	4 core 4.31 GHz processor module (only 8246-L1D or 8246-L1T)
26	2D1F	00E1088	1	Interposer card assembly (with RAID feature)
26	2D1E	00E0980	1	Interposer card assembly
27		74Y7205	1	Interlock switch
28		46K5849	1	Internal SAS port cable

Table 19. Cables

Feature code	Description	Part number
3124	3.7-meter cable	88G4771
3125	8-meter cable	88G4772
3652	1-meter SAS EE cable	44V4147
3653	3-meter SAS EE cable	44V4148
3654	6-meter SAS EE cable	44V4149
3661	3-meter SAS X cable	44V4154
3662	6-meter SAS X cable	44V4155
3663	15-meter SAS X cable	44V4156
3684	3-meter SAS AE cable	44V4163
3685	6-meter SAS AE cable	44V4164

Table 19. Cables (continued)

Feature code	Description	Part number
3686	1.5-meter SAS YI cable	44V4161
3687	3-meter SAS Y0 cable	44V4162
3691	1.5-meter SAS Y0 cable	44V4157
3692	3-meter SAS Y0 cable	44V4158
3693	6-meter SAS Y0 cable	44V4159
3694	15-meter SAS Y0 cable	44V4160
	USB internal cable for tape drive	46K7435
	Internal power cable for tape drive	46K7434
	SAS power and logic cable for tape drive	74Y6761

Table 20. Miscellaneous parts

CCIN	Description	Part number
	External cables and cords	See Planning for cables
	Removable media	See Managing devices
	PCI adapters	See Managing PCI adapters
58B2	1.8-inch 177 GB small form factor solid-state drive on PCIe SAS RAID and SSD adapter	74Y8234
	Cache battery pack for cache battery card and RAID and cache storage controller	74Y9340
	Cable configuration	See Enclosures and expansion units
	Time-of-day battery	74Y9628
	Keyboard parts	See Keyboard parts.

## Disk drive and solid-state drive IBM PowerLinux system parts

Disk drive and solid-state drive IBM PowerLinux system parts information.

Table 21. System unit disk drive and solid-state drive system parts

CCIN	Part number	Description
58B0	44V6821**	69 GB small form factor solid-state SAS drive
58B3	00E6051* 74Y5294**	177 GB small form factor solid-state SAS drive
58B8	74Y9524*	387 GB small form factor solid-state SAS drive
59E6	00E8670*	387 GB small form factor solid-state SAS drive
5B0E	00LY322*	387 GB (528 block size) small form factor solid-state SAS drive
59C0	00E8702*	775 GB small form factor solid-state SAS drive
59EA	00E8671*	775 GB small form factor solid-state SAS drive
5B0F	00LY323*	775 GB (528 block size) small form factor solid-state SAS drive
6600	42R8391**	73 GB 10K small form factor SAS disk drive
198B	00E6168* 44V4426**	73 GB 15K small form factor SAS disk drive



Table 21. System unit disk drive and solid-state drive system parts (continued)

CCIN	Part number	Description
169C	42R8392**	146 GB 10K small form factor SAS disk drive
198C	00E6169* 44V6845**	146 GB 15K small form factor SAS disk drive
198D	00E6167* 44V6833**	300 GB 10K small form factor SAS disk drive
19A1	74Y6496*	300 GB 15K small form factor SAS disk drive
59E0	00E9912*	300 GB 15K small form factor SAS disk drive
59E1	00E9972*	300 GB 15K small form factor SAS disk drive
19A3	74Y4900*	600 GB 10K small form factor SAS disk drive
59CE	00E8653*	600 GB 15K small form factor SAS disk drive
59E4	00E9914*	600 GB 15K small form factor SAS disk drive
59E5	00E9974*	600 GB 15K small form factor SAS disk drive
19A4	74Y9272*	900 GB 10K small form factor SAS disk drive
59C8	00E8614*	1.2 TB 10K small form factor SAS disk drive

\*Designed to comply with RoHS requirement

\*\*Not designed to comply with RoHS requirement

Table 22. 5887 disk drive and solid-state drive system parts

CCIN	Part number	Description
58B4	00E6053* 74Y5296**	177 GB small form factor solid-state SAS drive
58B9	74Y9526*	387 GB solid-state SAS drive
5B10	00LY336*	387 GB (4K block size) small form factor solid-state SAS drive
59C2	00E8709*	775 GB 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
5B16	00LY327*	387 GB (528 block size) small form factor solid-state SAS drive
5B17	00LY328*	775 GB (528 block size) small form factor solid-state SAS drive
19B0	00E6173* 46K4806**	146 GB 15K small form factor SAS disk drive
19B1	74Y6498*	300 GB 15K small form factor SAS disk drive
19B7	00E6172* 46K4812**	300 GB 10K small form factor SAS disk drive
59C9	00E8687*	300 GB 15K small form factor SAS disk drive
19B3	74Y4901*	600 GB 10K small form factor SAS disk drive
59CF	00E8665*	600 GB 15K small form factor SAS disk drive
59CC	00E8689*	600 GB 15K small form factor SAS disk drive
19B4	74Y9286*	900 GB 10K small form factor SAS disk drive

Table 22. 5887 disk drive and solid-state drive system parts (continued)

CCIN	Part number	Description
59CD	00E8631*	1.2 TB 10K small form factor SAS disk drive

\*Designed to comply with RoHS requirement

\*\*Not designed to comply with RoHS requirement

Table 23. EDR1 disk drive and solid-state drive system parts

CCIN	Part number	Description
58BB	00V5433*	1.8 inch 387 GB solid-state SAS drive
59BE	00E8692*	1.8 inch 387 GB solid-state SAS drive

\*Designed to comply with RoHS requirement

\*\*Not designed to comply with RoHS requirement

## Keyboard parts

Keyboard parts information.

Table 24. 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
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

Table 24. Keyboard parts (continued)

Description	Part number
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

## 5802 and 5877 system parts

Indexed drawings show system part numbers.

### Front assembly

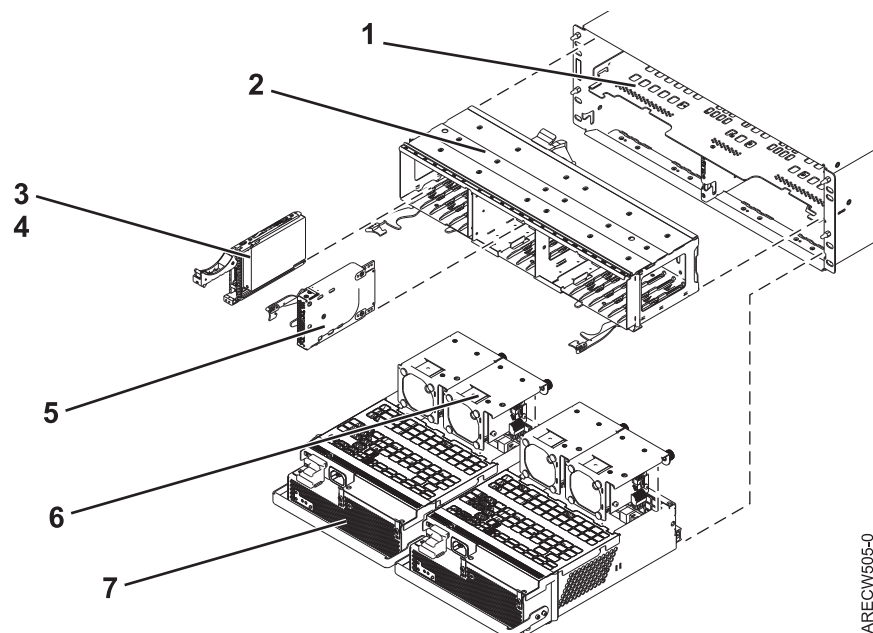


Table 25. Front assembly part numbers

Index number	CCIN	Part number	Units per assembly	Description
1			1	Chassis assembly
2		45D5215	1	Disk unit cage assembly (5802 only)
2		44V7924	1	Disk unit cage filler (5877 only)
3	58B0	44V6821**	0 - 18	69 GB small form factor solid-state SAS drive

Table 25. Front assembly part numbers (continued)

Index number	CCIN	Part number	Units per assembly	Description
3	58B3	00E6051* 74Y5294**	0 - 18	177 GB small form factor solid-state SAS drive
3	58B8	74Y9524*	0 - 18	387 GB small form factor solid-state SAS drive
3	59C0	00E8702*	0 - 18	775 GB small form factor solid-state SAS drive
3	6600	42R8391**	0 - 18	73 GB 10K small form factor SAS disk drive
3	198B	00E6168* 44V4426**	0 - 18	73 GB 15K small form factor SAS disk drive
3	169C	42R8392**	0 - 18	146 GB 10K small form factor SAS disk drive
3	198C	00E6169* 44V6845**	0 - 18	146 GB 15K small form factor SAS disk drive
3	19A1	74Y6496*	0 - 18	300 GB 15K small form factor SAS disk drive
3	198D	00E6167* 44V6833**	0 - 18	300 GB 10K small form factor SAS disk drive
3	19A3	74Y4900*	0 - 18	600 GB 10K small form factor SAS disk drive
3	19A4	74Y9272*	0 - 18	900 GB 10K small form factor SAS disk drive
3	59C8	00E8614*	0 - 18	1.2 TB 10K small form factor SAS disk drive
4		26K8680	0 - 18	Disk unit filler (5802 only)
5		45D6918	4	Port card assembly
6		42R8429	4	Fan assembly
7		44V6774	2	Power supply

\*Designed to comply with RoHS requirement

\*\*Not designed to comply with RoHS requirement

## Back assembly

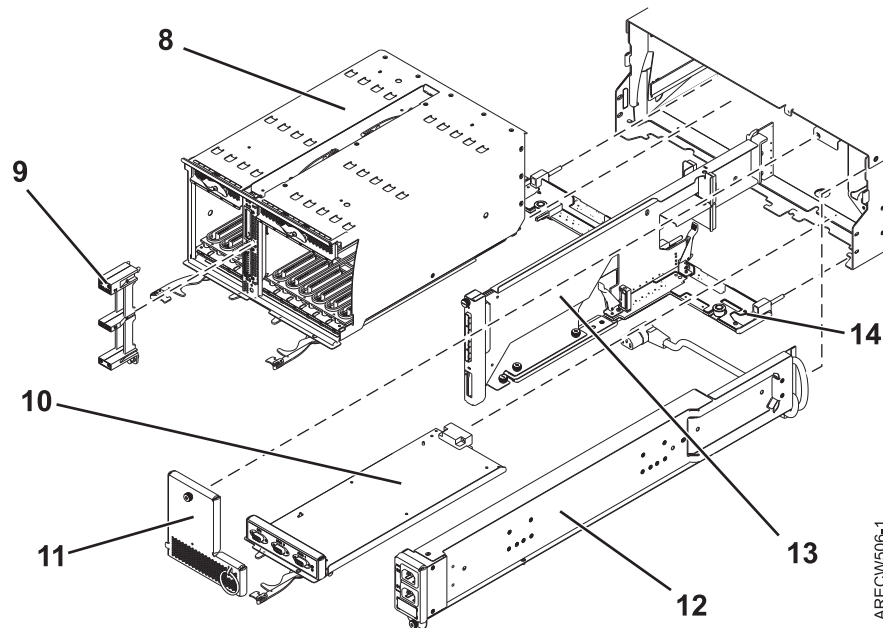


Table 26. Back assembly part numbers

Index number	CCIN	Part number	Units per assembly	Description
8		45D5321	1	PCI cage multcard assembly
9				Comes with PCI cage multcard assembly and is not a separate FRU
10		45D5229	1	EMC card assembly
11		44V5743	1	EMC filler bracket
12		44V5739	1	Power cable assembly
13		45D5008	1	SAS conduit card assembly (5802 only)
13		44V7286	1	SAS conduit card filler (5877 only)
14		45D5221	1	Midplane assembly

Table 27. Cables

CCIN	Description	Part number
	0.6 meter SAS AT cable (SAS adapter to 5802 SAS conduit card)	44V5132
	0.6 meter IB cable	45D4785
	1.5 meter IB cable	45D4786
	2.5 meter IB cable	45D4787
	3 meter IB cable	45D5271
	8 meter IB cable	45D4788

Table 28. Miscellaneous parts

CCIN	Description	Part number
	Cable management bracket (1 piece assembly)	74Y9541

Table 28. Miscellaneous parts (continued)

CCIN	Description	Part number
	Cable management bracket (3 piece assembly)	00E7992
	Generation 3 single wide blind swap cassette	44V4768
	External cables and cords	See Planning for cables.
	PCI adapters	See Managing PCI adapters.
	Cable configuration	See Enclosures and expansion units.

## 5887 system parts

Indexed drawings show system part numbers.

### Final assembly

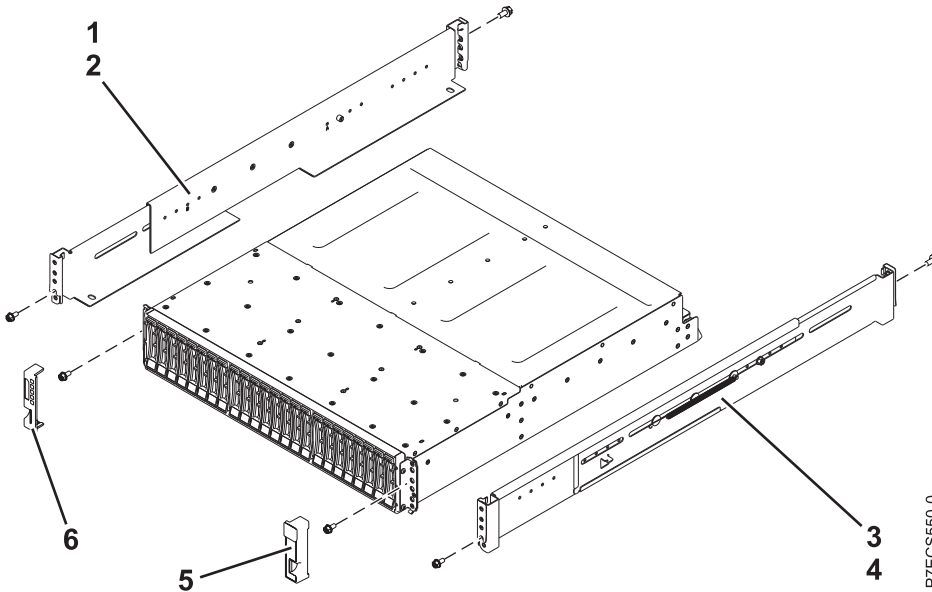


Table 29. Final assembly part numbers

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

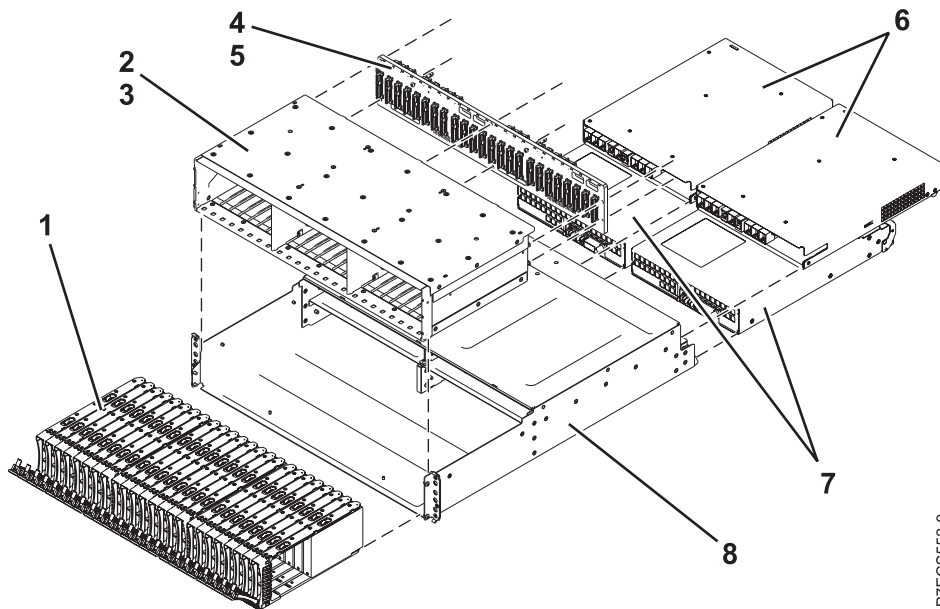


Table 30. System assembly part numbers

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 31. 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)
	44V4160	15 meter SAS YO cable (5887 in Mode 1 connected to a single I/O adapter)
	44V4161	1.5 meter SAS YI cable
	44V4162	3 meter SAS YI cable
	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 32. 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

## Disk drive and solid-state drive IBM PowerLinux system parts

Disk drive and solid-state drive IBM PowerLinux system parts information.

Table 33. System unit disk drive and solid-state drive system parts

CCIN	Part number	Description
58B0	44V6821**	69 GB small form factor solid-state SAS drive
58B3	00E6051* 74Y5294**	177 GB small form factor solid-state SAS drive
58B8	74Y9524*	387 GB small form factor solid-state SAS drive
59E6	00E8670*	387 GB small form factor solid-state SAS drive
5B0E	00LY322*	387 GB (528 block size) small form factor solid-state SAS drive
59C0	00E8702*	775 GB small form factor solid-state SAS drive
59EA	00E8671*	775 GB small form factor solid-state SAS drive
5B0F	00LY323*	775 GB (528 block size) small form factor solid-state SAS drive
6600	42R8391**	73 GB 10K small form factor SAS disk drive
198B	00E6168* 44V4426**	73 GB 15K small form factor SAS disk drive
169C	42R8392**	146 GB 10K small form factor SAS disk drive
198C	00E6169* 44V6845**	146 GB 15K small form factor SAS disk drive
198D	00E6167* 44V6833**	300 GB 10K small form factor SAS disk drive
19A1	74Y6496*	300 GB 15K small form factor SAS disk drive
59E0	00E9912*	300 GB 15K small form factor SAS disk drive
59E1	00E9972*	300 GB 15K small form factor SAS disk drive
19A3	74Y4900*	600 GB 10K small form factor SAS disk drive
59CE	00E8653*	600 GB 15K small form factor SAS disk drive
59E4	00E9914*	600 GB 15K small form factor SAS disk drive
59E5	00E9974*	600 GB 15K small form factor SAS disk drive
19A4	74Y9272*	900 GB 10K small form factor SAS disk drive
59C8	00E8614*	1.2 TB 10K small form factor SAS disk drive



\*Designed to comply with RoHS requirement

\*\*Not designed to comply with RoHS requirement

Table 34. 5887 disk drive and solid-state drive system parts

CCIN	Part number	Description
58B4	00E6053*	177 GB small form factor solid-state SAS drive
	74Y5296**	
58B9	74Y9526*	387 GB solid-state SAS drive
5B10	00LY336*	387 GB (4K block size) small form factor solid-state SAS drive
59C2	00E8709*	775 GB 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
5B16	00LY327*	387 GB (528 block size) small form factor solid-state SAS drive
5B17	00LY328*	775 GB (528 block size) small form factor solid-state SAS drive
19B0	00E6173*	146 GB 15K small form factor SAS disk drive
	46K4806**	
19B1	74Y6498*	300 GB 15K small form factor SAS disk drive
19B7	00E6172*	300 GB 10K small form factor SAS disk drive
	46K4812**	
59C9	00E8687*	300 GB 15K small form factor SAS disk drive
19B3	74Y4901*	600 GB 10K small form factor SAS disk drive
59CF	00E8665*	600 GB 15K small form factor SAS disk drive
59CC	00E8689*	600 GB 15K small form factor SAS disk drive
19B4	74Y9286*	900 GB 10K small form factor SAS disk drive
59CD	00E8631*	1.2 TB 10K small form factor SAS disk drive

\*Designed to comply with RoHS requirement

\*\*Not designed to comply with RoHS requirement

Table 35. EDR1 disk drive and solid-state drive system parts

CCIN	Part number	Description
58BB	00V5433*	1.8 inch 387 GB solid-state SAS drive
59BE	00E8692*	1.8 inch 387 GB solid-state SAS drive

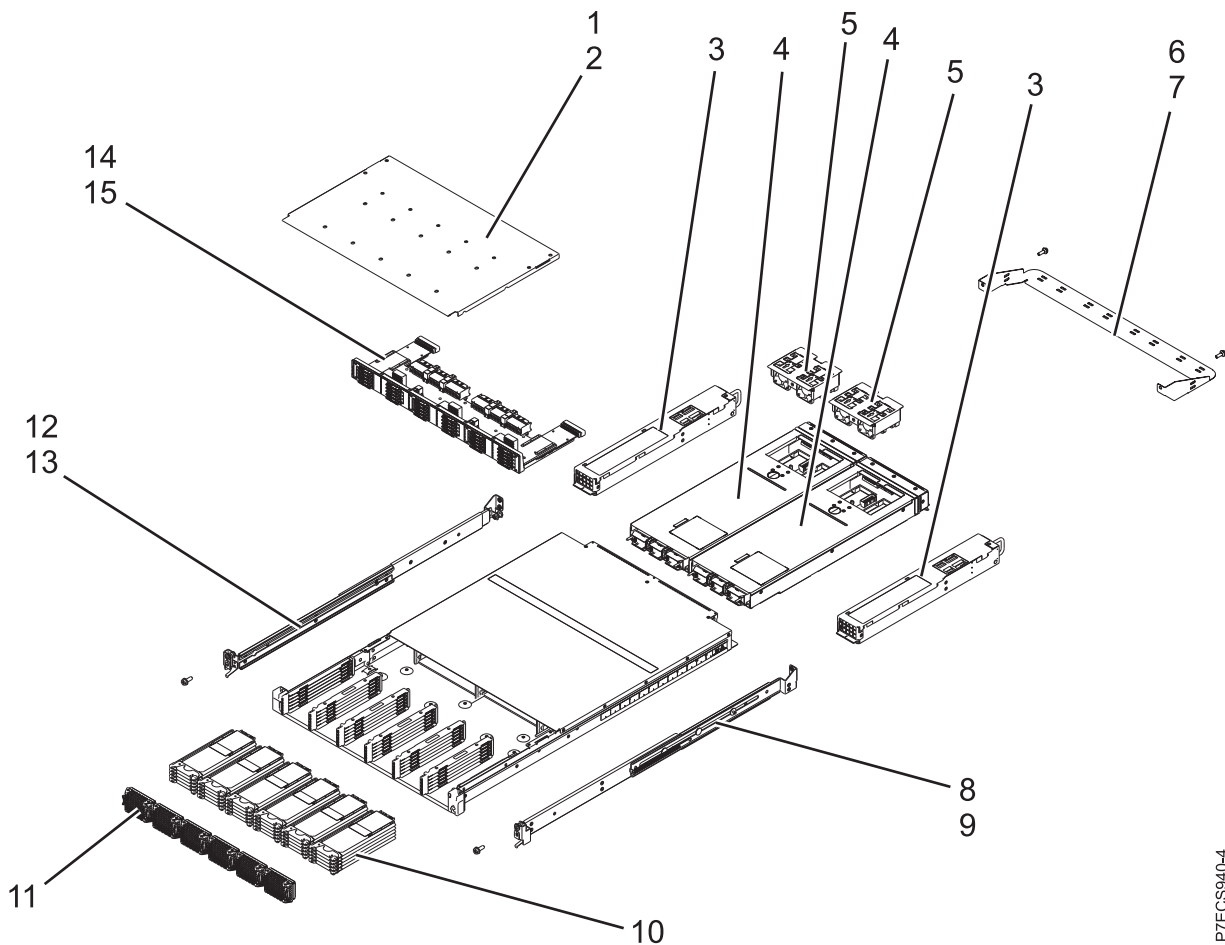
\*Designed to comply with RoHS requirement

\*\*Not designed to comply with RoHS requirement

## EDR1 PCIe storage enclosure system parts

Indexed drawings show system part numbers.

## System assembly



P7ECS940-4

Table 36. System assembly part numbers

Index number	CCIN	Part number	Units	Description
1		46K3617	1	Top access cover assembly
2		45D4772	17	Attaching screw for top access cover assembly (upper)
2		45D4772	10	Attaching screw for top access cover assembly (lower)
3		41T8211	2	Power supply
4	57C3	00E7704	2	Enclosure RAID module (ERM) for FC EDR1 PCIe storage enclosure
5		41T8234	2	Fan assembly
6		73Y9667	1	Cable management bracket for FC EDR1 PCIe storage enclosure
7		46C6380	2	Attaching screw for cable management bracket
8		41T8061	1	Slide rail assembly (right)
9		12J5289	2	Attaching screw for slide rail assembly (right)
10	58BB	00V5433	6 - 30	1.8 inch 387 GB solid-state drive (SSD)
10	59BE	00E8692	6 - 30	387 GB small form factor solid-state SAS drive

Table 36. System assembly part numbers (continued)

Index number	CCIN	Part number	Units	Description
10		41U7852	0 - 24	SSD filler assembly
11		41T8767	6	Bezel assembly
12		41T8062	1	Slide rail assembly (left)
13		12J5289	1	Attaching screw for slide rail assembly (left)
14		41T8962	1	Midplane assembly for FC EDR1 PCIe storage enclosure
15		46K4260	7	Attaching screw for midplane assembly

Table 37. Cables

Part number	Description
46K3769	PCIe 8x cable, 1.5 meter (4.9 feet)
46K3770	PCIe 8x cable, 3 meter (9.8 feet)
41U8581	PCIe cable, 8 meter (26.2 feet)

Table 38. Miscellaneous parts

Part number	Description
External cables and cords	See Planning for cables.
Cable configuration	See Enclosures and expansion units.
39M5377	Power cord
45W8836	Rail kit
45W8681	Disk drive filler
46K2851	Attaching screw for side SSD rails
41T8311	Service card



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## 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

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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**

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

### **Avis de conformité à la réglementation d'Industrie Canada**

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

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

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European Community contact:  
IBM Deutschland GmbH  
Technical Regulations, Department M372  
IBM-Allee 1, 71139 Ehningen, Germany  
Tele: +49 7032 15 2941  
email: lugi@de.ibm.com

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

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高調波ガイドライン適合品

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

### **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 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 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 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:

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

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

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

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

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

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

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:  
IBM Deutschland GmbH  
Technical Regulations, Abteilung M372  
IBM-Allee 1, 71139 Ehningen, Germany  
Tel: +49 7032 15 2941  
email: lugi@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 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**

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

### **Avis de conformité à la réglementation d'Industrie Canada**

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

### **European Community Compliance Statement**

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

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication equipment.

European Community contact:  
IBM Deutschland GmbH  
Technical Regulations, Department M372  
IBM-Allee 1, 71139 Ehningen, Germany  
Tele: +49 7032 15 2941  
email: lugi@de.ibm.com

### **VCCI Statement - Japan**

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取扱説明書に従って正しい取り扱いをして下さい。 VCCI-B

### **Japanese Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guideline (products less than or equal to 20 A per phase)**

高調波ガイドライン適合品

**Japanese Electronics and Information Technology Industries Association (JEITA)  
Confirmed Harmonics Guideline with Modifications (products greater than 20 A per  
phase)**

高調波ガイドライン準用品

**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**

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**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 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse B ein.

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

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

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

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IBM Deutschland GmbH

Technical Regulations, Abteilung M372

IBM-Allee 1, 71139 Ehningen, Germany

Tel: +49 7032 15 2941

email: lugi@de.ibm.com

Generelle Informationen:

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

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