

Power Systems

Managing the control panel functions



Note

Before using this information and the product it supports, read the information in [“Safety notices” on page v](#), [“Notices” on page 25](#), 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 POWER9™ processor and to all associated models.

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Contents

Safety notices.....	V
Managing the control panel functions.....	1
What's new in Managing the control panel functions.....	1
Control panel concepts.....	1
Physical control panel.....	1
Accessing the control panel functions by using the physical control panel.....	3
Putting the physical control panel in manual operating mode.....	3
Control panel function codes.....	4
Primary control panel functions.....	7
Function 01: Display selected IPL type, and system operating mode.....	7
Function 02: Select IPL type, system operating mode, and firmware mode.....	8
Function 03: Restart IPL.....	10
Function 04: Lamp test.....	11
Functions 05 - 06: Reserved.....	11
Function 08: Fast power off.....	11
Functions 09 - 10: Reserved.....	11
Function 11: SRC display (ASCII string).....	11
Function 12: SRC display (hex words 2 - 5).....	12
Function 13: SRC display (hex words 6 - 9).....	12
Functions 14 - 19: SRC display (callouts).....	12
Function 20: System type, model, feature code, and IPL type.....	13
Customer-extended control panel functions.....	13
Function 21: Service tool initiation.....	13
Function 22: Partition dump.....	14
Functions 23 - 24: Reserved.....	14
Functions 25 - 26.....	14
Functions 27 - 29: Reserved.....	14
Function 30: Service processor IP address and port location.....	14
Functions 31 - 33: Reserved.....	15
Function 34: Retry partition dump.....	15
Functions 35 - 40: Reserved.....	15
Function 41: Nondisruptive platform system dump.....	15
Function 42: Platform system dump.....	16
Function 43: Service processor dump.....	16
Function 44: Reserved.....	17
Function 45: Node identification LED.....	17
Function 46: Start an SMP guided installation.....	17
Function 47: Skip an SMP cable.....	17
Functions 48 - 54: Reserved.....	17
Function 55: View and change platform system dump data.....	17
Functions 56 - 62: Reserved.....	19
Function 63: Display system status SRCs.....	19
Function 64: Display diagnostic status SRCs.....	20
Function 65: Deactivate remote service.....	21
Function 66: Activate remote service.....	21
Function 67: Disk unit IOP reset/reload.....	21
Function 68: Concurrent maintenance – power off.....	21
Function 69: Concurrent maintenance – power on.....	21
Function 70: IOP dump.....	21

Function 71: Activate network boot.....	21
Function 72: Disable network boot.....	22
Function 73: Factory reset.....	22
Functions 74 - 99: Reserved.....	22
Values for IPL types and system operating modes.....	23
Flexible Service Processor (FSP) boot fail support.....	24
Notices.....	25
Accessibility features for IBM Power Systems servers.....	26
Privacy policy considerations	27
Trademarks.....	27
Electronic emission notices.....	27
Class A Notices.....	27
Class B Notices.....	31
Terms and conditions.....	33

Safety notices

Safety notices may be printed throughout this guide:

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

World Trade safety information

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

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

German safety information

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

Laser safety information

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

Laser compliance

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



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

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

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

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



DANGER:

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

To Disconnect:

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

To Connect:

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

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

(R001 part 1 of 2):



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

- Heavy equipment—personal injury or equipment damage might result if mishandled.
- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet if provided, unless the earthquake option is to be installed..
- To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.

- Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack mounted devices and do not use them to stabilize your body position (for example, when working from a ladder).



- Stability hazard:
 - The rack may tip over causing serious personal injury.
 - Before extending the rack to the installation position, read the installation instructions.
 - Do not put any load on the slide-rail mounted equipment mounted in the installation position.
 - Do not leave the slide-rail mounted equipment in the installation position.
- Each rack cabinet might have more than one power cord.
 - For AC powered racks, be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.
 - For racks with a DC power distribution panel (PDP), turn off the circuit breaker that controls the power to the system unit(s), or disconnect the customer's DC power source, when directed to disconnect power during servicing.
- Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (R001 part 1 of 2)

(R001 part 2 of 2):



CAUTION:

- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.
- *(For sliding drawers.)* Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack or if the rack is not bolted to the floor. 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 part 2 of 2)



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 little-to-no empty U-levels between devices installed in the rack cabinet below the 32U level, unless the received configuration specifically allowed it.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- If the rack cabinet you are relocating was supplied with removable outriggers they must be reinstalled before the cabinet is relocated.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to the documentation that comes with your rack cabinet for the weight of a loaded rack cabinet.
- Verify that all door openings are at least 760 x 2083 mm (30 x 82 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 or in an earthquake environment bolt the rack to the floor.
 - If you removed any devices from the rack cabinet, repopulate the rack cabinet from the lowest position to the highest position.
- If a long-distance relocation is required, restore the rack cabinet to the configuration of the rack cabinet as you received it. Pack the rack cabinet in the original packaging material, or equivalent. Also lower the leveling pads to raise the casters off of the pallet and bolt the rack cabinet to the pallet.

(R002)

(L001)



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

(L002)

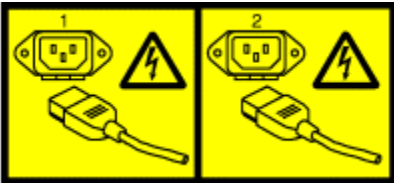


DANGER: Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack-mounted devices and do not use them to stabilize your body position (for example, when working from a ladder). Stability hazard:

- The rack may tip over causing serious personal injury.
- Before extending the rack to the installation position, read the installation instructions.
- Do not put any load on the slide-rail mounted equipment mounted in the installation position.
- Do not leave the slide-rail mounted equipment in the installation position.

(L002)

(L003)



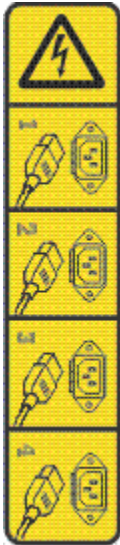
or



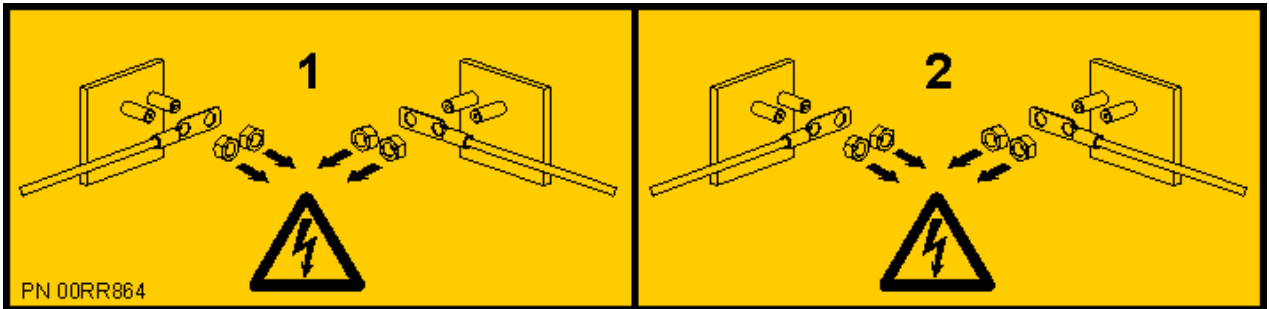
or




or




or



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


(L007)




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

(L008)




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


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


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

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

(C026)


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

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

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

- Laser radiation when open.
- Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam. (C030)


(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 degrees C (212 degrees F)
- Repair or disassemble

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

 **CAUTION:** Regarding IBM provided VENDOR LIFT TOOL:

- Operation of LIFT TOOL by authorized personnel only.

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

Freewheeling will cause uneven cable wrapping around winch drum, damage cable, and may cause serious injury.

- This TOOL must be maintained correctly for IBM Service personnel to use it. IBM shall inspect condition and verify maintenance history before operation. Personnel reserve the right not to use TOOL if inadequate. (C048)

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

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

The equipment is suitable for installation in the following:

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

The intrabuilding ports of this equipment are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intrabuilding ports of this equipment *must not* be 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.

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

Managing the control panel functions

Use the control panel functions to communicate with the server. Control panel functions range in complexity from functions that display status (such as initial program load (IPL)) to service functions that only service representatives must access.

What's new in Managing the control panel functions

Read about new or significantly changed information in Managing the control panel functions since the previous update of this topic collection.

November 2020

- Updated the [“Physical control panel” on page 1](#) topic.

September 2019

- Updated the [“Physical control panel” on page 1](#) topic to indicate the control panel differences.

August 2018

- Updated the [“Physical control panel” on page 1](#) topic to indicate the control panel differences.
- Added information about the following new function codes:
 - [“Function 45: Node identification LED” on page 17](#)
 - [“Function 46: Start an SMP guided installation” on page 17](#)
 - [“Function 47: Skip an SMP cable” on page 17](#)

February 2018

Updated the information about the physical control panel features.

Control panel concepts

Learn about the control panel functions, IPL modes and values, and other concepts.

Physical control panel

The physical control panel is your initial interface with the server. You can use the physical control panel to perform functions such as IPL, power on, and power off.

The control panel has the following two parts:

- base panel
- LCD panel

The base panel is a mandatory panel and it is used to power on and power off the system. The LCD panel is an optional panel and it is used for other functions. For the 9040-MR9 system, the base panel and the LCD panel are present in different units as shown in Figure 1. Both the base panel and the LCD panel can be installed and removed via concurrent maintenance. Whereas, for the 9080-M9S system, the base panel and the LCD panel are present in one single unit as shown in Figure 2. For the 5105-22E, 9008-22L, 9009-22A, 9009-22G, 9009-41A, 9009-41G, 9009-42A, 9009-42G, 9223-22H, 9223-22S, 9223-42H, or 9223-42S system, the base panel is fixed and the LCD panel is the hot plug.

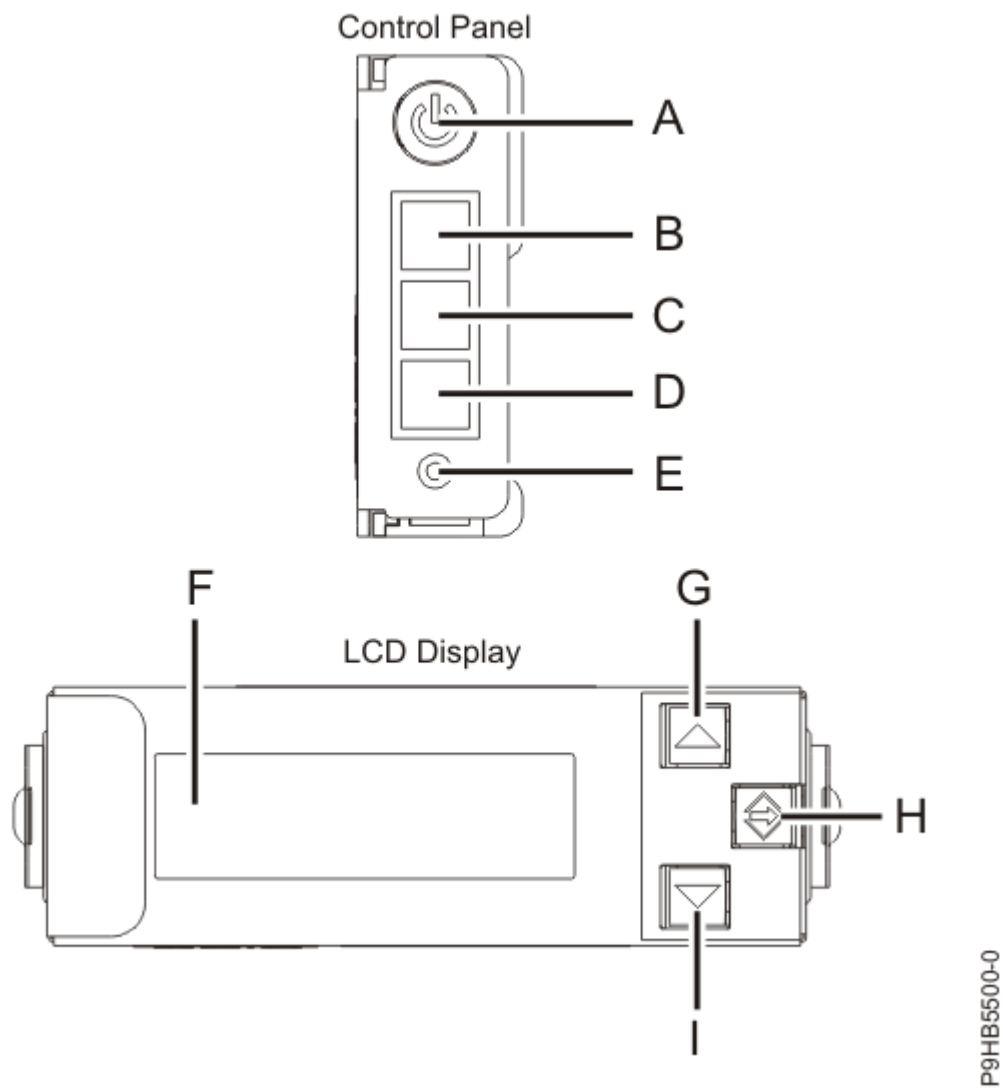


Figure 1. Control panel

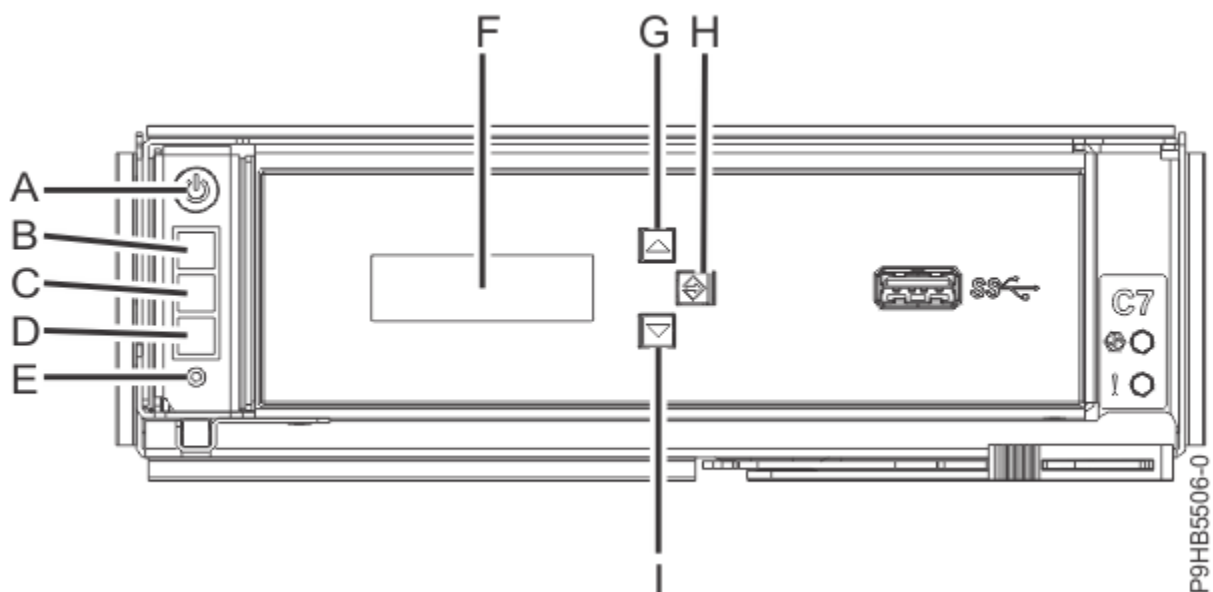


Figure 2. Control panel

- **A:** Power-on button
 - A constant light indicates full system power to the unit.
 - A flashing light indicates standby power to the unit.
 - The transition period is about 30-seconds from the time the power-on button is pressed to when the power LED goes from flashing to solid. During the transition period, the LED might flash faster.
- **B:** Enclosure identify light
 - A constant light indicates the identify state, which is used to identify a part.
 - No light indicates that the system is operating normally.
- **C:** Check log light
 - No light indicates that the system is operating normally.
 - A Constant light indicates that the system requires attention.
- **D:** Enclosure fault light
 - A constant light indicates a fault in the system unit.
 - No light indicates that the system is operating normally.
- **E:** Pinhole reset (PHR) button
- **F:** Function display
- **G:** Increment button
- **I:** Decrement button
- **H:** Enter button

Accessing the control panel functions by using the physical control panel

The control panel functions correspond to function numbers on the control panel.

About this task

To activate a control panel function, complete the following steps:

Procedure

1. Select a function number by pressing the Increment (↑) or Decrement (↓) button on the control panel.
2. Press Enter on the control panel to activate the function.

Putting the physical control panel in manual operating mode

You must first put the physical control panel in manual operating mode before you can select or activate certain functions.

About this task

To put the physical control panel in manual operating mode, complete the following steps:

Procedure

1. Use the Increment button (↑) to scroll to function 02.

```
0 2 _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _
```

2. Press Enter to start function 02.
3. Press Enter again to move to the second character on the function 02 menu.

The current system operating mode is displayed with a pointer, as shown in the following example:

```

0 2 _ _ B _ _ N < _ _ _ _ P _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

```

- Use the Increment button (↑) to scroll through the system operating modes, and select M for manual, as shown in the following example:

```

0 2 _ _ B _ _ M < _ _ _ _ P _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

```

- Press Enter to select the system operating mode.
- Press Enter again to exit function 02.

Results

The control panel is in manual operating mode.

Control panel function codes

Learn about function codes that are displayed on the control panel to indicate status and function options.

To display all functions, put the control panel in manual operating mode. For details, see [Putting the physical control panel in manual operating mode](#).

The following table includes descriptions of the primary and customer-extended control panel function codes.

<i>Table 1. Primary and customer-extended control panel (32-character) function codes</i>	
Function code	Function selected
01	Displays the current IPL parameters. This function is available in both normal and manual operating mode.
02	Used to select the IPL type, system operating mode, and firmware IPL mode. This function is available in both normal and manual operating mode.
03	Restarts an IPL of the system using the selected IPL parameters. This function is available only in manual operating mode and when the system power is on.
04	Performs a lamp test; all displays and indicators are lit. This function is available in both normal and manual operating mode.
05 - 06	Reserved.
08	Causes fast power off. This function is available only when the system is in manual operating mode and the system power is on.
09 - 10	Reserved.
11	Displays a system reference code (SRC) on the control panel using up to 32 ASCII characters, including non-hexadecimal characters. This function is available in both normal and manual operating mode when an SRC is available.
12	Displays an SRC on the control panel using up to four extended SRC data words. This function is available in both normal and manual operating mode when an SRC is available.

Table 1. Primary and customer-extended control panel (32-character) function codes (continued)

Function code	Function selected
<u>13</u>	Displays an SRC on the control panel using up to eight extended SRC data words. This function is available in both normal and manual operating mode when an SRC is available.
<u>14 - 19</u>	Displays an SRC on the control panel using callout data. These functions are available in both normal and manual operating mode when an SRC is available.
<u>20</u>	Displays the machine type and model, VPD card CCIN, and IPL types. This function is available in both normal and manual operating mode.
<u>21</u>	For System i models, it causes the Use Dedicated Service Tool (DST) display to appear on the system console. To exit the DST, select the Resume operating system display option. This function is available only in the manual operating mode and when activated by the IBM i operating system. Not applicable for System p servers.
<u>22</u>	Forces a partition dump. This function is available only in the manual operating mode and when activated by the operating system.
<u>23 - 24</u>	Reserved.
<u>25 - 26</u>	Use service switches 1 and 2 to enable or disable functions 50 through 99. These functions are available only in the manual operating mode.
<u>27 - 29</u>	Reserved.
<u>30</u>	Displays the service processor IP address and port location. This function is available only in the manual operating mode and in standby. Note: If IPv6 is displayed, then the service processor network ports are configured with IPv6 IP addresses. There aren't enough characters on the control panel to display the entire address.
<u>31 - 33</u>	Reserved.
<u>34</u>	Retries the partition dump. This function is available only in the manual operating mode and when activated by the firmware.
<u>35 - 40</u>	Reserved.
<u>41</u>	Initiates a non-disruptive platform system dump. This function is available only in the manual operating mode and when activated by the system processor.
<u>42</u>	Performs a platform dump. This function is available only in the manual operating mode and when activated by the system processor.
<u>43</u>	Performs a service processor dump. This function is available only in the manual operating mode.
<u>44</u>	Reserved.

Table 1. Primary and customer-extended control panel (32-character) function codes (continued)

Function code	Function selected
45	This function starts the node identification LED to flash. This function is available only in the manual operating mode and the system must be in the stand-by state.
46	This function starts an LED guided installation procedure for SMP cables. This function is available only in the manual operating mode and the system must be in the stand-by state.
47	This function skips an SMP cable during installation. This function code is activated only when the function code 46 is running.
48 - 54	Reserved.
55	Displays or changes the platform system dump collection policy, platform system dump hardware content, and platform system dump firmware content settings. This function is available only in the manual operating mode.
56 - 62	Reserved on systems that are running on system firmware level Ax710.
63	Displays up to the last 25 system status SRCs. This function is available only in the manual operating mode.
64	Displays up to the last 25 diagnostic status SRCs. This function is available only in the manual operating mode.
65	Deactivates a remote service session. This function is available only in the manual operating mode.
66	Activates a remote service session. This function is available only in the manual operating mode.
67	Initiates an I/O processor dump and a disk unit I/O reset/reload. This function is available only in the manual operating mode.
68	Powers off power domains to affect replacement of IOPs and IOAs when the system is powered on (concurrently). This function is available only in the manual operating mode.
69	Powers on power domains to affect replacement of IOPs and IOAs when the system is powered on (concurrently). This function is available only in the manual operating mode.
70	Initiates IOP dumps. This function is available only in the manual operating mode.
71	Activate network boot. This function is only available in manual operating mode, when PowerVM is the hypervisor and customer engineer (CE) function ranges have been enabled.
72	Disable network boot. This function is available only in manual operating mode when PowerVM is the hypervisor and customer engineer (CE) function ranges have been enabled.

<i>Table 1. Primary and customer-extended control panel (32-character) function codes (continued)</i>	
Function code	Function selected
<u>73</u>	Factory reset. This function is only available when the platform is powered off. This function is only available in manual operating mode and customer engineer (CE) function ranges have been enabled.
<u>74 - 99</u>	Reserved.

If you cannot find the function code in this chart, added features or devices might not have been available when this information was produced. Look on the control panel for supplemental unit function code information for the function code that you displayed.

Related tasks

Putting the physical control panel in manual operating mode

You must first put the physical control panel in manual operating mode before you can select or activate certain functions.

Primary control panel functions

The primary control panel functions, include displaying the selected IPL type, selecting the firmware mode, or restarting an IPL.

Function 01: Display selected IPL type, and system operating mode

This function allows you to display the current system operating mode, the firmware mode for the next IPL, and the operating system IPL mode (when enabled).

This function is available in both normal and manual operating mode.

This function displays the following information:

- The operating system (OS) IPL types (A, B, C, or D).
- The valid system operating modes (M or N).
- The firmware mode (P or T).
- HMC indicator (1 or 0)
- Hypervisor type (PVM (Power® Virtualization Manager) or OPAL (Open Power Abstraction Layer))

<i>Table 2. Function 01 on systems without OS IPL enabled</i>	
Function/Data	Action or description
0 1 _	Use the Increment or Decrement buttons to scroll to function 01.
0 1 _ _ A _ _ N _ _ _ _ PVM _ _ HMC=1 _ _ _ _ _ _ _ _ _ T _ _ _	Valid OS IPL Modes are A, B, C, and D. Valid system operating modes are M and N. Valid hypervisor types are PVM and OPAL. Valid firmware IPL modes are P and T. HMC indicators: Active (1), Inactive (0).
0 1 _	Use the Increment or Decrement buttons to scroll through the control panel functions.

Function 02: Select IPL type, system operating mode, and firmware mode

On systems that are running on system firmware level Ax710, you can select the IPL type and the logical key mode when the system is either powered on or powered off by using this function.

This function is available in both normal and manual operating mode.

For powered-on systems, function 02 is used to select the operating system (OS) IPL type, system operation mode, or firmware IPL mode. The following table shows an example of the function 02 IPL type, system operating mode, and firmware IPL mode selection sequence for a powered-on system.

Function/Data	Action or description
0 2 _	Use the Increment or Decrement buttons to scroll to function 02.
0 2 _ _ A < _ M _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ P _ _ _	Press Enter to start function 02. <ul style="list-style-type: none"> The current OS IPL type is displayed with a pointer. The current system operating mode is displayed. The current firmware mode is displayed.
0 2 _ _ B < _ M _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ P _ _ _	Use the Increment or Decrement buttons to scroll through the OS IPL types.
0 2 _ _ B _ _ M < _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ P _ _ _	Press Enter to select the OS IPL type. <ul style="list-style-type: none"> The current OS IPL type is displayed. The current system operating mode is displayed with a pointer. The current firmware mode is displayed.
0 2 _ _ B _ _ N < _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ P _ _ _	Use the Increment or Decrement buttons to scroll through the system operating modes.
0 2 _ _ B _ _ N _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ P < _ _	Press Enter to select the system operating mode. <ul style="list-style-type: none"> The current OS IPL type is displayed. The current system operating mode is displayed. The current firmware mode is displayed with a pointer.
0 2 _ _ B _ _ N _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ T < _ _	Use the Increment or Decrement buttons to scroll through the firmware IPL modes.
0 2 _	Press Enter to select the firmware IPL mode and exit function 02.
0 1 _	Use the Increment or Decrement buttons to scroll through the control panel functions.

For powered-off systems, function 02 is used to select the OS IPL type, system operating mode, and firmware IPL mode. The following table shows an example of the function 02 OS IPL type, system operating mode, and firmware IPL mode selection sequence for a powered-off system.

Table 4. Function 02: Select the IPL type, system operating mode, and firmware IPL mode on powered-off systems

Function/Data	Action or description
0 2 _	Use the Increment or Decrement buttons to scroll to function 02.
0 2 _ _ A < _ M _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ T _ _ _ _	Press Enter to start function 02. <ul style="list-style-type: none"> The current OS IPL type is displayed with a pointer. The current system operating mode is displayed. The current firmware IPL mode is displayed.
0 2 _ _ B < _ M _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ T _ _ _ _	Use the Increment or Decrement buttons to scroll through the OS IPL types.
0 2 _ _ B _ _ M < _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ T _ _ _ _	Press Enter to select the IPL type. <ul style="list-style-type: none"> The current IPL type is displayed. The current system operating mode is displayed with a pointer. The current firmware IPL mode is displayed.
0 2 _ _ B _ _ N < _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ T _ _ _ _	Use the Increment or Decrement buttons to scroll through the system operating modes.
0 2 _ _ B _ _ N _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ T _ _ _ _	Press Enter to select the system operating mode. <ul style="list-style-type: none"> The current IPL type is displayed. The current system operation mode is displayed. The current firmware IPL mode is displayed.
0 2 _ _ B _ _ N _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ P < _ _ _ _	Use the Increment or Decrement buttons to scroll through the firmware IPL modes.
0 2 _	Press Enter to select the firmware IPL mode and exit function 02.
0 1 _	Use the Increment or Decrement buttons to scroll through the control panel functions.

On systems that are running on system firmware level Ax720, or later, you can select the operating system IPL type, the system operating mode, and the firmware IPL mode by using this function.

Table 5. Function 02: Select the IPL type, the system operating mode, and the firmware IPL mode

Function/Data	Action or description
0 2 _	Use the Increment or Decrement button to scroll to function 02.

Table 5. Function 02: Select the IPL type, the system operating mode, and the firmware IPL mode (continued)

Function/Data	Action or description
<pre> 0 2 _ _ A < _ M _ _ _ _ _ P _ </pre>	<p>Press Enter to start function 02.</p> <ul style="list-style-type: none"> The current operating system IPL type is displayed with a pointer. The current system operating mode is displayed. The current firmware mode is displayed.
<pre> 0 2 _ _ B < _ M _ _ _ _ _ P _ </pre>	<p>Use the Increment or Decrement button to scroll through the operating system IPL types.</p>
<pre> 0 2 _ _ B _ _ M < _ _ _ _ _ P _ </pre>	<p>Press Enter to select the operating system IPL type.</p> <ul style="list-style-type: none"> The current operating system IPL type is displayed. The current system operating mode is displayed with a pointer. The current firmware mode is displayed.
<pre> 0 2 _ _ B _ _ N < _ _ _ _ _ P _ </pre>	<p>Use the Increment or Decrement button to scroll through the system operating modes.</p>
<pre> 0 2 _ _ B _ _ N _ _ _ _ _ P < _ </pre>	<p>Press Enter to select the system operating mode.</p> <ul style="list-style-type: none"> The current operating system IPL type is displayed. The current system operating mode is displayed. The current firmware mode is displayed with a pointer.
<pre> 0 2 _ _ B _ _ N _ _ _ _ _ T < _ </pre>	<p>Use the Increment or Decrement button to scroll through the firmware IPL modes.</p>
<pre> 0 2 _ </pre>	<p>Press Enter to select the firmware IPL mode and exit function 02.</p>
<pre> 0 1 _ </pre>	<p>Use the Increment or Decrement button to scroll through the control panel functions.</p>

Function 03: Restart IPL

This function restarts an IPL of the system by using the selected IPL parameters.

This function is available only in manual operating mode and when the system power is turned on.

When you select function 03 and press Enter, a confirm action SRC (A1008003) as well as the message **RESTART SERVER** is displayed. If you want to perform a restart IPL operation, select function 03 and press Enter again.

Notifications are not required prior to restarting the IPL.

Function 04: Lamp test

This function indicates whether any of the control panel indicators are not working correctly, and it also indicates whether the characters that are displayed in the Function/Data display on the control panel are valid.

This function is available in both the normal and manual operating modes.

When a lamp test is initiated, the firmware-controlled indicators in the central electronics complex (CEC) and the expansion units are turned on solid for 4 minutes and then restored to their previous states.

Use the following procedure to verify that the lights on the system control panel are working correctly.

1. Power on the system.
2. Press the Increment (↑) or Decrement (↓) buttons on the control panel to display function 04.

Press Enter on the control panel.

3. Do all of the lights and indicators on the system control panel turn on?

Yes	No
↓	Exchange the FRU with the faulty LED indicator. For example, replace the fan if the LED on a fan does not turn on.

4. Do all the expansion-unit control-panel lights come on?

Note: The expansion-unit control-panel lights will be lit for only about 25 seconds after function 04 is entered.

Yes	No
The lights on the system control panel are working correctly.	Exchange the control panel on the expansion unit.

Functions 05 - 06: Reserved

This function is reserved.

Function 08: Fast power off

This function allows you to power off the system when it is suspended. This function is available only when the system is in manual operating mode and when the system power is on.

When you select function 08 and press Enter, a confirm action SRC (A1008008) as well as the message **SHUTDOWN SERVER** is displayed. If you want to perform a fast power off (FPO) operation, select function 08 and press Enter again. After the fast power off, the system returns to its default display.

Attention: Because of the potential for causing a loss of data, do not use this function if you can shut down the system from the operating system.

Note: If you changed the system password at the most recent IPL, performing a fast power off might cause that new password information to be lost.

Functions 09 - 10: Reserved

These functions are reserved.

Function 11: SRC display (ASCII string)

This function displays a system reference code (SRC) on the control panel using up to 32 ASCII characters, including nonhexadecimal characters, and can be displayed in all display positions. This function serves as a diagnostic aid that helps you determine the source of a hardware or operating system problem.

This function is the default SRC display and is available in both normal and manual operating mode when an SRC is available.

Function 11, if enabled, represents the words of the SRC.

Record SRC information for error reporting.

Related information

[Using the control panel to collect reference codes and system information](#)

Function 12: SRC display (hex words 2 - 5)

This function displays a system reference code (SRC) on the control panel to serve as a diagnostic aid that helps you determine the source of a hardware or operating system problem.

This function is available in both normal and manual operating mode when an SRC is available.

The extended SRC data words are displayed depending on the number in the SRC. Extended SRC data words are displayed four words at a time. If any extended SRC data words exist, function 12 is scrollable. Unused words are presented as blanks in the required display.

Record SRC information for error reporting. For more information, see [Using the control panel to collect reference codes and system information](#).

Function 13: SRC display (hex words 6 - 9)

This function displays a system reference code (SRC) on the control panel to serve as a diagnostic aid that helps you determine the source of a hardware or operating system problem.

This function is available in both normal and manual operating mode when an SRC is available.

The extended SRC data words are displayed depending on the number in the SRC. Extended SRC data words are displayed four words at a time. If there are only one to four extended SRC data words, function 13 is not scrollable. If there are five to eight extended SRC data words, function 13 is scrollable. Unused words are presented as blanks in the required display.

Record SRC information for error reporting..

Related information

[Using the control panel to collect reference codes and system information](#)

Functions 14 - 19: SRC display (callouts)

These functions display a system reference code (SRC) on the control panel to serve as a diagnostic aid to help you determine the source of a hardware or operating system problem.

These functions are available in both normal and manual operating mode when an SRC is available.

Functions 14 - 19, if enabled, display field replaceable unit (FRU) and procedure callout data. This data is displayed following any present extended SRC data words. Multiple FRU and procedure callout data entries can be included with each SRC. One FRU or procedure callout data entry is displayed for each function number. Up to six different FRU or procedure callout data entries can be presented at the control panel using functions 14 - 19.

The following table shows an example of a function 14 FRU callout display selection sequence.

<i>Table 6. Function 14: FRU callout display selection sequence</i>	
Function/Data	Action or description
1 4 _	Use the Increment or Decrement buttons to scroll to function 14.
H _ -PARTNUM_ CCIN_ _ U970305010ABCDE- _ _ _	Press Enter to select function 14. The FRU callout data is displayed.
1 4 _	Pressing Enter toggles between function and data display.

The following table shows an example of a function 15 procedure callout display selection sequence.

<i>Table 7. Function 15: Procedure callout display selection sequence</i>	
Function/Data	Action or description
1 5 _	Use the Increment or Decrement buttons to scroll to function 15.
M_ -FSPSP04_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to select function 15. The procedure callout data is displayed.
1 5 _	Pressing Enter toggles between function and data display.

Record SRC information for error reporting.

Related information

[Using the control panel to collect reference codes and system information](#)

Function 20: System type, model, feature code, and IPL type

This function displays the machine type and model, the custom card identification number (CCIN) for the vital product data (VPD) card, and IPL types. This function is available in both normal and manual operating mode.

The machine type, model, CCIN for the VPD card, and IPL type are displayed in the following format:

```
p p p p - m m m _ _ _ _ c c c c
T T T T T T T T t t t t t t t t
```

The values are indicated as follows:

- Values for *p* indicate the machine type.
- Values for *m* indicate the machine model.
- Values for *c* indicate the system CCIN for the VPD card.
- Values for *T* indicate the CEC IPL type.
- Values for *t* indicate the FSP IPL type.

Record this information with the system reference code (SRC).

If you select this function and it has not been activated, the command is rejected.

Customer-extended control panel functions

The customer-extended control panel functions include partition dumps, service processor IP address and port location.

Function 21: Service tool initiation

For System i models, this function makes dedicated service tools (DST) available on the system console display. For System p servers, it is not applicable.

This function is available only in the manual operating mode and when activated by the operating system.

The Use dedicated service tools (DST) display is available on the primary or alternative console.

To exit the DST and return to the operating system, select the **Resume operating system display** option on the Use dedicated service tools (DST) display.

Function 22: Partition dump

This function initiates a dump of the operating system data in a logical partition.

This function is available only in the manual operating mode and when activated by the operating system.

You must perform two consecutive function 22 selections to initiate a partition dump. The following table shows an example of function 22.

<i>Table 8. Function 22: Initiate a partition dump</i>	
Function/Data	Action or description
2 2 _	Use the Increment or Decrement buttons to scroll to function 22.
2 2 _ _ _ _ 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to start function 22.
A 1 0 0 3 0 2 2 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Displays the partition dump verification system reference code (SRC).
2 2 _	Use the Increment or Decrement buttons to scroll to function 22.
2 2 _ _ _ _ 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to start function 22.

Functions 23 - 24: Reserved

These functions are reserved.

Functions 25 - 26

These functions are used to set the service function range (50 to 99). These functions are available only in the manual operating mode.

To set the service function range (50 to 99), first set function 25 to 00 and then set function 26 to 00.

Functions 27 - 29: Reserved

These functions are reserved.

Function 30: Service processor IP address and port location

This function displays the service processor IP address and port location. This function is available only in the manual operating mode and from power on standby.

Note: If IPv6 is displayed on the control panel, then the service processor's network ports are configured with IPv6 IP addresses. There are not enough characters on the control panel to display the entire address.

The following table shows an example of function 30.

<i>Table 9. Function 30: Service processor IP address and port location</i>	
Function/Data	Action or description
3 0 _	Use the Increment or Decrement buttons to scroll to function 30.

Table 9. Function 30: Service processor IP address and port location (continued)

Function/Data	Action or description
3 0 * * _	Press Enter to enter subfunction mode.
3 0 0 0 _	Use the Increment or Decrement buttons to select an IP address 00 = SP A: ETH0 (primary enclosure) 01 = SP A: ETH1 (primary enclosure) 02 = SP B: ETH0 (secondary enclosure) 03 = SP B: ETH1 (secondary enclosure)
S P _ A : _ E T H 0 : _ _ _ T 5 9 . 5 . 1 0 5 . 2 4 3 _ _ _ _ _	Press Enter to display the selected IP address.
3 0 * * _	Use the Increment or Decrement buttons to select subfunction exit.
3 0 _	Press Enter to exit subfunction mode.

Functions 31 - 33: Reserved

These functions are reserved.

Function 34: Retry partition dump

This function initiates a retry of the dump of the operating system data in a logical partition. This function is available only in the manual operating mode and when activated by the firmware.

Functions 35 - 40: Reserved

These functions are reserved.

Function 41: Nondisruptive platform system dump

This function initiates a nondisruptive platform system dump. This function is available only in the manual operating mode and when activated by the service processor.

You can use function 41 to dump the main storage data of IBM POWER® Hypervisor™. The following table shows an example of function 41.

Table 10. Function 41: Start a platform dump

Function/Data	Action or description
4 1 _	Use the Increment or Decrement buttons to scroll to function 41.
4 1 _ _ _ _ 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to start function 41.
A 1 0 0 3 0 4 1 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Displays the confirmation SRC.

Table 10. Function 41: Start a platform dump (continued)

Function/Data	Action or description
4 1 _	Use the Increment or Decrement buttons to scroll to function 41.
4 1 _ _ _ 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to start function 41.

Function 42: Platform system dump

This function initiates a platform system dump. This function is available only in the manual operating mode and when activated by the service processor.

You can use function 42 to dump the main storage and hardware data of IBM POWER Hypervisor™. You must perform two consecutive function 42 selections to initiate a platform system dump. The following table shows an example of function 42.

Table 11. Function 42: Start a platform system dump

Function/Data	Action or description
4 2 _	Use the Increment or Decrement buttons to scroll to function 42.
4 2 _ _ _ 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to start function 42.
A 1 0 0 3 0 4 2 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Displays the confirmation SRC.
4 2 _	Use the Increment or Decrement buttons to scroll to function 42.
4 2 _ _ _ 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to start function 42.

Function 43: Service processor dump

This function initiates a service processor dump. This function is available only in the manual operating mode.

You must perform two consecutive function 43 selections to initiate a service processor dump. The following table shows an example of function 43.

Table 12. Function 43: Start a service processor dump

Function/Data	Action or description
4 3 _	Use the Increment or Decrement buttons to scroll to function 43.
4 3 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to confirm.

Table 12. Function 43: Start a service processor dump (continued)

Function/Data	Action or description
A 1 0 0 3 0 4 3 _ _ _ _ _ _ _ _ _ _	Displays the confirmation system reference code (SRC).
4 3 _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to scroll to function 43.
4 3 0 0 _ _ _ _ _ _ _ _ _ _	Press Enter to confirm.

Function 44: Reserved

This function is reserved.

Function 45: Node identification LED

This function makes the node identification LED to flash. This function is available only in the manual operating mode and the system must be in the stand-by state. This function is available for 9080-M9S systems.

Function 46: Start an SMP guided installation

This function starts an LED guided installation procedure for SMP cables. This function is available only in the manual operating mode and the system must be in the stand-by state. This function is available for 9080-M9S systems.

Function 47: Skip an SMP cable

This function skips an SMP cable during installation. This function code can be activated only when the function code 46 is running. This function is available for 9080-M9S systems.

Functions 48 - 54: Reserved

These functions are reserved.

Function 55: View and change platform system dump data

This function allows you to view and change the platform dump data. This function is available only in the manual operating mode.

When you select function 55 and press Enter, you can view and change the platform system dump collection policy, platform system dump hardware content, and platform system dump firmware content settings.

The following table shows an example of how to view the platform system dump data.

Table 13. Function 55: View the platform system dump data

Function/Data	Action or description
5 5 _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to scroll to function 55.
5 5 * * _ _ _ _ _ _ _ _ _ _	Press Enter to enter subfunction mode.
5 5 0 0 _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to view the platform system dump variables.

Table 13. Function 55: View the platform system dump data (continued)

Function/Data	Action or description
5 5 0 0 _ xxyyzz_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to process the selected subfunction. xx = Collection policy yy = Hardware content zz = Firmware content
5 5 * * _	Use the Increment or Decrement buttons to select subfunction exit.
5 5 _	Press Enter to exit subfunction mode.

The following table shows an example of how to change the platform system dump data.

Table 14. Function 55: Change the platform system dump data

Function/Data	Action or description
5 5 _	Use the Increment or Decrement buttons to scroll to function 55.
5 5 * * _	Press Enter to enter subfunction mode.

Table 14. Function 55: Change the platform system dump data (continued)

Function/Data	Action or description
<pre>5 5 0 2 _</pre>	<p>Use the Increment or Decrement buttons to select to change the platform system dump variable.</p> <ul style="list-style-type: none"> 01 = Set platform system dump collection policy to <i>disable</i> 02 = Set platform system dump collection policy to <i>enable</i> 03 = N/A - will always display FF in Line 1 when selected 04 = Set platform system dump hardware content to <i>maximum</i> 05 = Set platform system dump hardware content to <i>automatic</i> 06 = N/A - will always display FF in Line 1 when selected 07 = N/A - will always display FF in Line 1 when selected 08 = Set platform system dump firmware content to <i>automatic</i> 09 = Set platform system dump firmware content to <i>maximum</i> 10 = Set platform system dump firmware content to <i>physical I/O</i> 11 = Set platform system dump firmware content to <i>virtual I/O</i> 12 = Set platform system dump firmware content to <i>HPS cluster</i> 13 = Set platform system dump firmware content to <i>Host Channel Adapter (HCA)</i>
<pre>5 5 0 2 _ 0 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _</pre>	<p>Press Enter to process the selected subfunction.</p> <ul style="list-style-type: none"> 00 = Accept FF = Reject
<pre>5 5 * * _</pre>	<p>Use the Increment or Decrement buttons to select subfunction exit.</p>
<pre>5 5 _</pre>	<p>Press Enter to exit subfunction mode.</p>

Functions 56 - 62: Reserved

Functions 56 - 62 are reserved on systems running system firmware level Ax810.

Function 63: Display system status SRCs

When you select function 63 and press Enter, you can display up to the last 25 system status SRCs. This function is available only in the manual operating mode.

The following table shows an example of how to display the last 25 system status SRCs.

Table 15. Function 63: Display system status SRCs

Function/Data	Action or description
6 3 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to scroll to function 63.
6 3 * * _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to enter subfunction mode.
6 3 1 8 _ _ _ _ _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to select the address offset. Note: Enter a subfunction between 00 and 18 to view the SRCs in sequential order. The most recent SRC displays at the highest possible subfunction number (18). If no system status SRCs exist, then only subfunction 00 is available and it will not display an SRC when selected.
C 1 0 0 1 0 3 4 _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to read the SRC data.
6 3 * * _ _ _ _ _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to select subfunction exit.
6 3 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to exit subfunction mode.

Function 64: Display diagnostic status SRCs

When you select function 64 and press Enter, you can display up to the last 25 diagnostic status SRCs. This function is available only in the manual operating mode.

The following table shows an example of how to display the diagnostic status SRCs.

Table 16. Function 63: Display diagnostic status SRCs

Function/Data	Action or description
6 4 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to scroll to function 64.
6 4 * * _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to enter subfunction mode.
6 4 0 2 _ _ _ _ _ _ _ _ _ _ _ _ _ _	Use the Increment or Decrement buttons to select the address offset. Note: Enter a subfunction between 00 and 18 to view the SRCs in sequential order. The most recent SRC displays at the highest possible subfunction number (18). If no diagnostic status SRCs exist, then only subfunction 00 is available and it will not display an SRC when selected.
D 1 2 3 4 5 6 7 _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to read the SRC data.

Table 16. Function 63: Display diagnostic status SRCs (continued)

Function/Data	Action or description
6 4 * * _	Use the Increment or Decrement buttons to select subfunction exit.
6 4 _	Press Enter to exit subfunction mode.

Function 65: Deactivate remote service

Use this function to deactivate a remote service session.

This function is available in manual operating mode when activated by the OS.

Function 66: Activate remote service

Use this function to activate a remote service session.

This function is available in manual operating mode when activated by the operating system.

Function 67: Disk unit IOP reset/reload

Use this function to initiate an I/O processor dump and reset/reload of an IOP that controls resources that are currently in a disk unit attention state. Examples of reference codes that indicate a disk unit attention state include A6000255 and A6000266.

This function is available in manual operating mode when activated by the operating system. This function is enabled only when the I/O processor of a displayed SRC supports a reset/reload function.

Function 68: Concurrent maintenance – power off

Use this function to power off the power domain that includes resources that are currently in a disk unit attention state. Examples of reference codes that indicate a disk unit attention state include A6000255 and A6000266.

This function is available in manual operating mode when activated by the operating system.

Function 69: Concurrent maintenance – power on

Use this function to power on the power domain that was powered off by using function 68.

This function is available in manual operating mode when activated by the operating system.

Function 70: IOP dump

Use this function to initiate an I/O processor dump and reset/reload of the IOP that was designated to control the load source device when the logical partition was activated.

Function 71: Activate network boot

When you enable function 71, the system attempts to network boot the first partition during the next initial program load (IPL). The boot happens using one of the first five discovered network devices, based on Peripheral Component Interconnect (PCI) discovery order. If the system does not have any partitions that are defined, the network boot fails. The active network boot function can be enabled when the system is powered off or running. This function is available only in manual operating mode, when PowerVM is the hypervisor and when the customer extended (CE) function ranges have been enabled.

The following table shows an example of how to activate network boot.

<i>Table 17. Function 71: Activate network boot</i>	
Function/Data	Action or description
7 1 _	Use the Increment or Decrement buttons to scroll to function 71.
7 1 _ _ _ _ _ 00 _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter.

Function 72: Disable network boot

You can use the function 72 to disable the network boot function that was activated by using function 71. The disable network boot function can be enabled when the system is powered off or running. However, the function takes effect on the next boot when the system is in PowerVM mode. During the boot, the platform will initialize normally. This function is available only in manual operating mode when PowerVM is the hypervisor and when customer extended (CE) function ranges have been enabled.

The following table shows an example of how to disable network boot.

<i>Table 18. Function 72: Disable network boot</i>	
Function/Data	Action or description
7 2 _	Use the Increment or Decrement buttons to scroll to function 72.
7 2 _ _ _ _ _ 00 _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter.

Function 73: Factory reset

Function 73 initiates a full reset of server firmware and service processor firmware settings, reverting the configuration of the entire system back to factory default settings. All the information about the partition, network settings, and other important customer settings will be reset, and then the service processor will be rebooted. This function is available only when the platform is powered off. This function is only available in manual operating mode and when customer extended (CE) function ranges have been enabled.

The following table shows an example of how to implement a factory reset.

<i>Table 19. Function 73: Factory reset</i>	
Function/Data	Action or description
7 3 _	Use the Increment or Decrement buttons to scroll to function 73.
A 1 7 0 8 0 0 B _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	Press Enter to acknowledge and continue with the factory reset.
7 3 _	Press Enter again to initiate the factory reset.

Functions 74 - 99: Reserved


These functions are reserved.

Values for IPL types and system operating modes

Learn about the valid initial program load (IPL) types, system operating modes, firmware IPL, and Hypervisor types that are used in control panel functions.

The following table shows the valid values for the IPL types and their descriptions.

Note: Operating system IPL types are displayed only when the operating system IPL mode has been enabled from the operating system.

<i>Table 20. Operating system IPL types</i>	
Initial program load (IPL) type	Action or description
A	IPL from disk using copy A of the system Licensed Internal Code.
B	IPL from disk using copy B of the system Licensed Internal Code.
C	Reserved for hardware service use only.  Attention: Incorrect use of this function can cause severe data loss.
D	IPL from media other than load-source disk. Alternate IPL for code installation support.

The following table shows the valid values for the operating mode.

<i>Table 21. System operating mode values</i>	
System operating mode	Action or description
Manual (M)	Allows you to perform an attended IPL and provides access to restricted control panel functions.
Normal (N)	Allows you to perform an unattended IPL.

The following table shows the valid values for firmware IPL types.

<i>Table 22. Firmware IPL types</i>	
IPL type	Action or description
P	IPL from disk using copy P of the system Licensed Internal Code.
T	IPL from disk using copy T of the system Licensed Internal Code.

The following table shows valid values for the Hypervisor types.

<i>Table 23. Hypervisor types</i>	
Hypervisor type	Action or description
PVM	Power Virtualization Manager
OPAL	Open Power Abstraction Layer

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Accessibility features for IBM Power Systems servers

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

Overview

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

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

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

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Keyboard navigation

This product uses standard navigation keys.

Interface information

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

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

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Armonk, New York 10504

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