

Power Systems

*Installing the IBM Power S1122
(9824-22A) and IBM Power L1122
(9856-22H)*



Note

Before using this information and the product it supports, read the information in [“Safety notices”](#) on page v, [“Notices”](#) on page 63, the *IBM Systems Safety Notices* manuals, G229-1110 and G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

This edition applies to IBM Power Systems servers that contain the POWER11 processor and to all associated models.

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Safety notices

Safety notices may be printed throughout this guide:

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

World Trade safety information

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

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

German safety information

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

Laser safety information

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

Laser compliance

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



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

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard: If IBM supplied the power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product. Do not open or service any power supply assembly. Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.



- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords. For AC power, disconnect all power cords from their AC power source. For racks with a DC power distribution panel (PDP), disconnect the customer's DC power source to the PDP.
- When connecting power to the product ensure all power cables are properly connected. For racks with AC power, connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate. For racks with a DC power distribution panel (PDP), connect the customer's DC power source to the PDP. Ensure that the proper polarity is used when attaching the DC power and DC power return wiring.
- Connect any equipment that will be attached to this product to properly wired outlets.

- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Do not attempt to switch on power to the machine until all possible unsafe conditions are corrected.
- When performing a machine inspection: 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 attempt to switch power to the machine until all possible unsafe conditions are corrected. 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.
- 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 (compliance ID RACK-001 or 22U (compliance ID RR001) and above.
 - Ensure that the heaviest devices are installed in the bottom of the rack cabinet.

- Ensure that there are little-to-no empty U-levels between devices installed in the rack cabinet below the 32U (compliance ID RACK-001 or 22U (compliance ID RR001) level, unless the received configuration specifically allowed it.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- If the rack cabinet you are relocating was supplied with removable outriggers they must be reinstalled before the cabinet is relocated.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to the documentation that comes with your rack cabinet for the weight of a loaded rack cabinet.
- Verify that all door openings are at least 760 x 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)



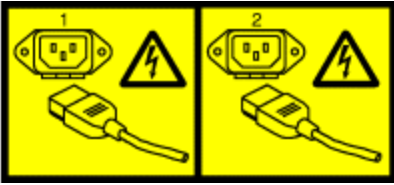
DANGER: Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack-mounted devices and do not use them to stabilize your body position (for example, when working from a ladder). Stability hazard:

- 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

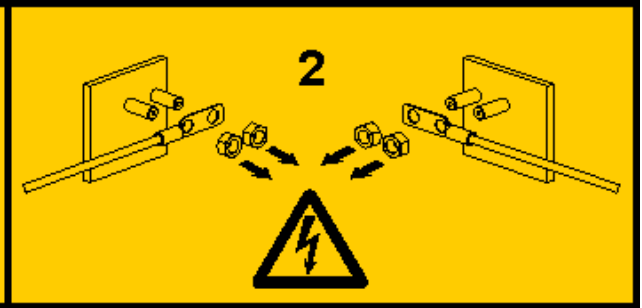
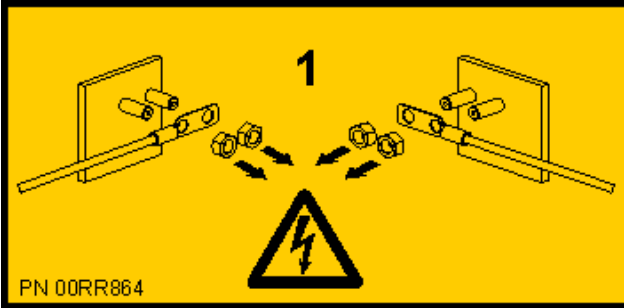


or



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)

(L018)



or



CAUTION: High levels of acoustical noise are (or could be under certain circumstances) present. Use approved hearing protection and/ or provide mitigation or limit exposure. (L018)

(L031)

**CAUTION:**

Enclosure Integrity.

- Access covers are intended only for occasional removal.
- Follow documented procedures when opening during live or temporary service.
- When service is complete, promptly reinstall all covers, lids, and/or doors for correct operation. (L031)

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)



CAUTION: This equipment is not suitable for use in locations where children are likely to be present. (C052)

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 intra-building ports of this equipment are suitable for connection to intra-building or unexposed wiring or cabling only. The intra-building 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.

Installing the IBM Power S1122 (9824-22A) and IBM Power L1122 (9856-22H) servers

Use this information to learn about installing the IBM Power S1122 (9824-22A) and IBM Power L1122 (9856-22H) servers.

Installing a rack-based server

Use this information to learn about installing a rack-based server.

Prerequisite for installing the rack-mounted server

Use the information to understand the prerequisites that are required for installing the server.

About this task

You might need to read the following documents before you begin to install the server:

Important: If you are installing a ENZO PCIe4 expansion drawer below the following IBM systems, ensure that you leave at least 1 EIA unit of open space between the system and the drawer, and install a single EIA unit rack filler in that space. This allows for proper servicing of the drawer.

1. NED24 NVMe expansion drawer
2. 9824-22A
3. 9824-42A
4. 9856-22H
5. 9856-42H
6. 9043-MRU

This ensures that the ENZO PCIe4 expansion drawer's cable management arm has enough clearance for service procedures.

- The latest version of this document is maintained online. See [Installing the IBM Power S1122 \(9824-22A\) and IBM Power L1122 \(9856-22H\)](http://www.ibm.com/docs/POWER11/p11jad/p11jad_roadmap.htm) (http://www.ibm.com/docs/POWER11/p11jad/p11jad_roadmap.htm).
- To plan your server installation, see [Planning for the system](http://www.ibm.com/docs/POWER11/p11jad/p11jad_kickoff.htm) (http://www.ibm.com/docs/POWER11/p11jad/p11jad_kickoff.htm).
- To download HMC updates and fixes, see the [Hardware Management Console Support and downloads](https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html) website (<https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html>).

Consider the following prerequisites before you install the server:

Procedure

1. Ensure that you have the following items before you start your installation:
 - Phillips screwdriver
 - Flat-head screwdriver
 - Rack with 2U of space
2. Ensure that you have one of the following consoles:
 - HMC at version 11 release 1.0, or later.
 - Graphic monitor with keyboard and mouse.
 - Teletype (tty) monitor with keyboard.

Completing inventory for your server

Use this information to complete inventory for your server.

About this task

To complete the inventory, complete the following steps:

Procedure

1. Verify that you received all the boxes you ordered.
2. Unpack the server components as needed.
3. Complete a parts inventory before you install each server component by following these steps:
 - a. Locate the inventory list for your server.
 - b. Ensure that you received all the parts that you ordered.

Note: Your order information is included with your product. You can also obtain the order information from your marketing representative or the IBM Business Partner.

Determining and marking the location in the rack

You might need to determine where to install the system unit into the rack.

About this task

To determine where to install the system unit into a rack, complete the following steps:

Procedure

1. Read the [Rack safety notices](http://www.ibm.com/docs/POWER11/p11hbf/p11hbf_racksafety.htm) (http://www.ibm.com/docs/POWER11/p11hbf/p11hbf_racksafety.htm).
2. Determine where to place the system unit in the rack. As you plan for installing the system unit in a rack, consider the following information:
 - Organize larger and heavier units into the lower part of the rack.
 - Plan to install system units into the lower part of the rack first.
 - Record the Electronic Industries Alliance (EIA) locations in your plan.

Note: This server is two EIA units high. An EIA unit is 44.45 mm (1.75 in.) in height. The rack contains three mounting holes for each EIA unit of height.

3. If necessary, remove the filler panels to allow access to the inside of the rack enclosure where you plan to place the unit.
4. Determine to place the system in the rack. Record the EIA location.

Note: An EIA unit on your rack consists of a grouping of three holes.

5. Facing the front of the rack and working from the right side of the rack, use tape, a marker, or pencil to mark the lowest two holes of the lowest EIA unit. Next, mark the lowest hole on the EIA unit directly above this EIA unit.
6. Repeat step “5” on page 2 for the corresponding holes located on the left side of the rack.
7. Go to the rear of the rack.
8. On the right side, find the EIA unit that corresponds to the bottom EIA unit marked on the front of the rack.
9. Mark the bottom hole in the EIA unit and the top hole in the EIA unit.
10. Mark the corresponding holes on the left side of the rack.

Attaching the mounting hardware to the rack

You might need to attach the mounting hardware to the rack. Use the procedure to complete this task. The information is intended to promote safety and reliable operation, and includes illustrations of the related hardware components and shows how these components relate to each other.

About this task



Attention: To avoid rail failure and potential danger to yourself and to the unit, ensure that you have the correct rails and fittings for your rack. If your rack has square support flange holes or screw-thread support flange holes, ensure that the rails and fittings match the support flange holes that are used on your rack. Do not install mismatched hardware by using washers or spacers. If you don't have the correct rails and fittings for your rack, contact your reseller.

To install the rack-mounting hardware into the rack, complete the following steps:

Procedure

1. Standing at the front of the rack, align the pins on end of the left rail (1) with the rear of the rack.

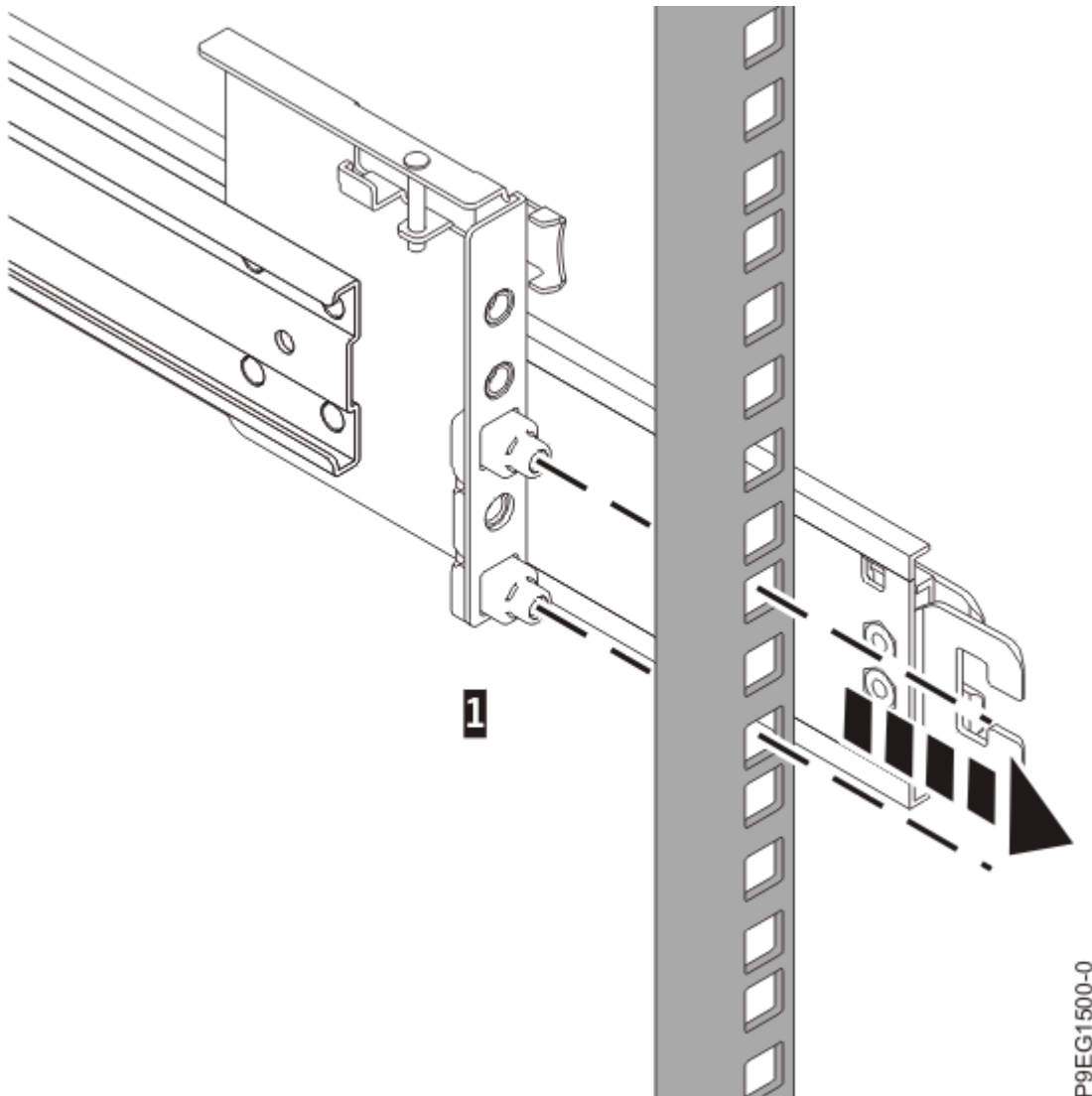
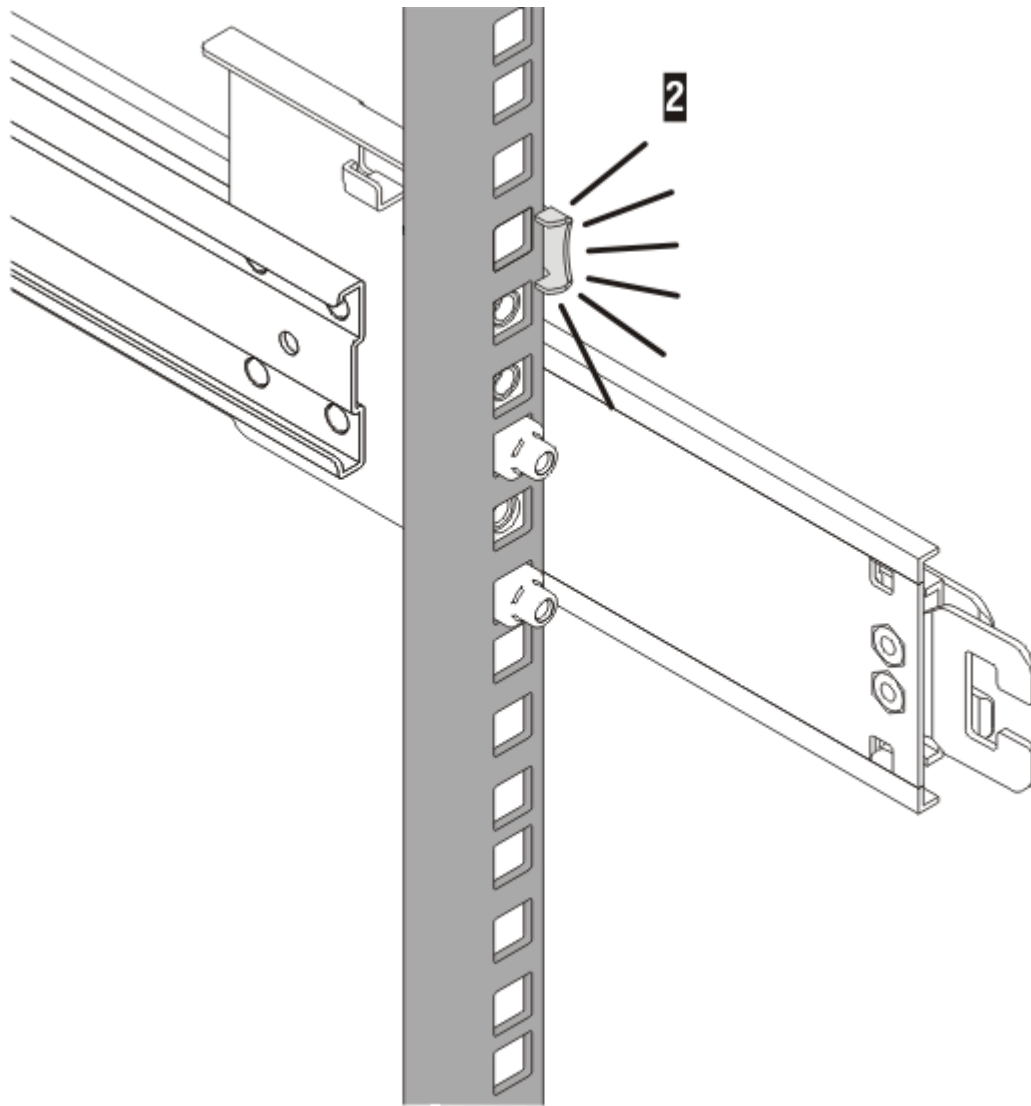


Figure 1. Aligning the end of the left rail to the rear of the rack

2. Push the rails into the rear rack flanges until they click into place (2).



P9EG1501-0

Figure 2. Pushing the rails into the rear rack flanges until they click into place

3. Standing at the front of the rack, swivel the rail retention bracket out **(3)** and pull the front of the rail toward the front of the rack, until the front rail pins are aligned with the correct rack flange holes at the front of the rack **(4)**. Secure the rail to the rack by installing one M5x10L screw and one washer (square hole rack) or one M5x10L screw (round hole rack) through the top hole in the rack flange and into the rack rail.

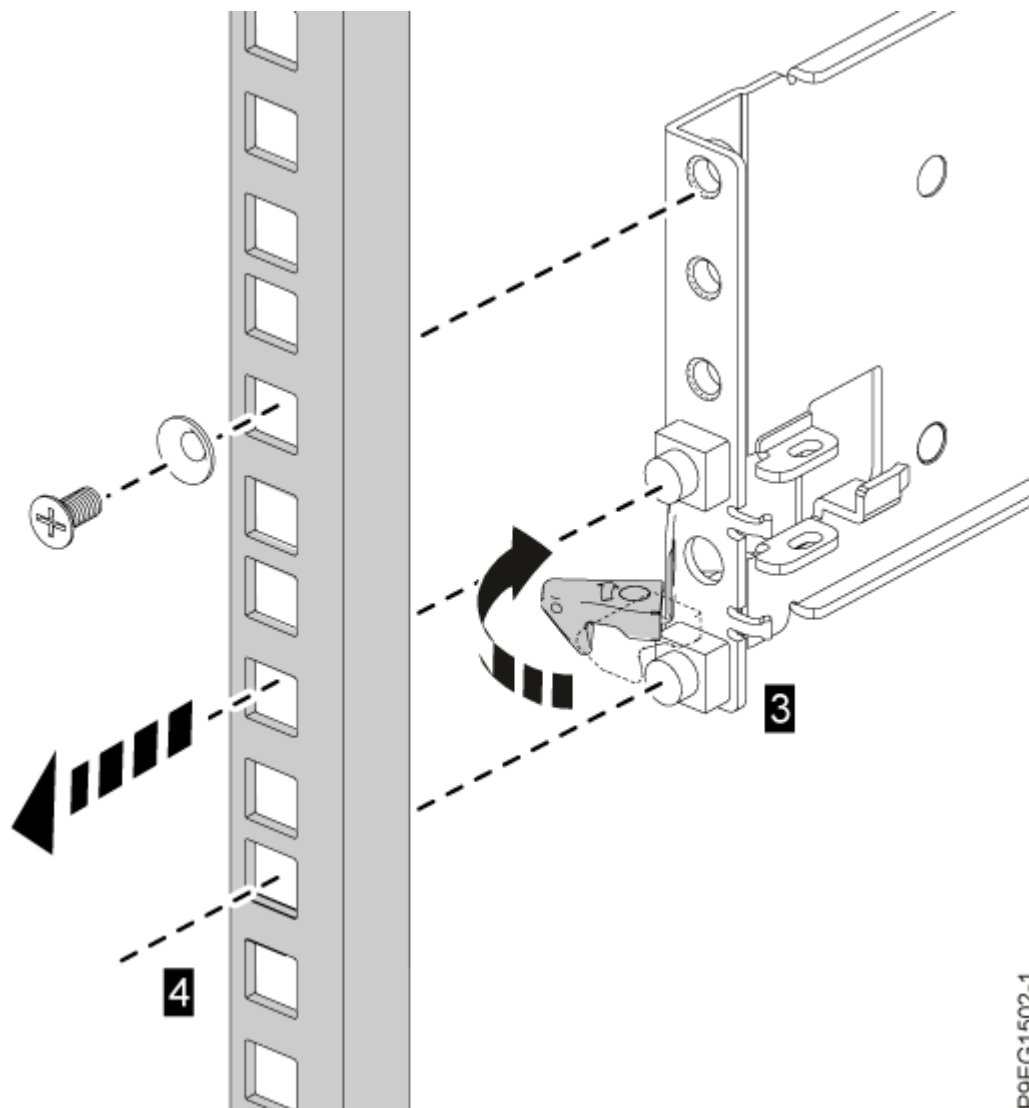


Figure 3. Swiveling the rail retention bracket and aligning the pins
4. Swivel the rail retention bracket so that it locks onto the rack flange (5).

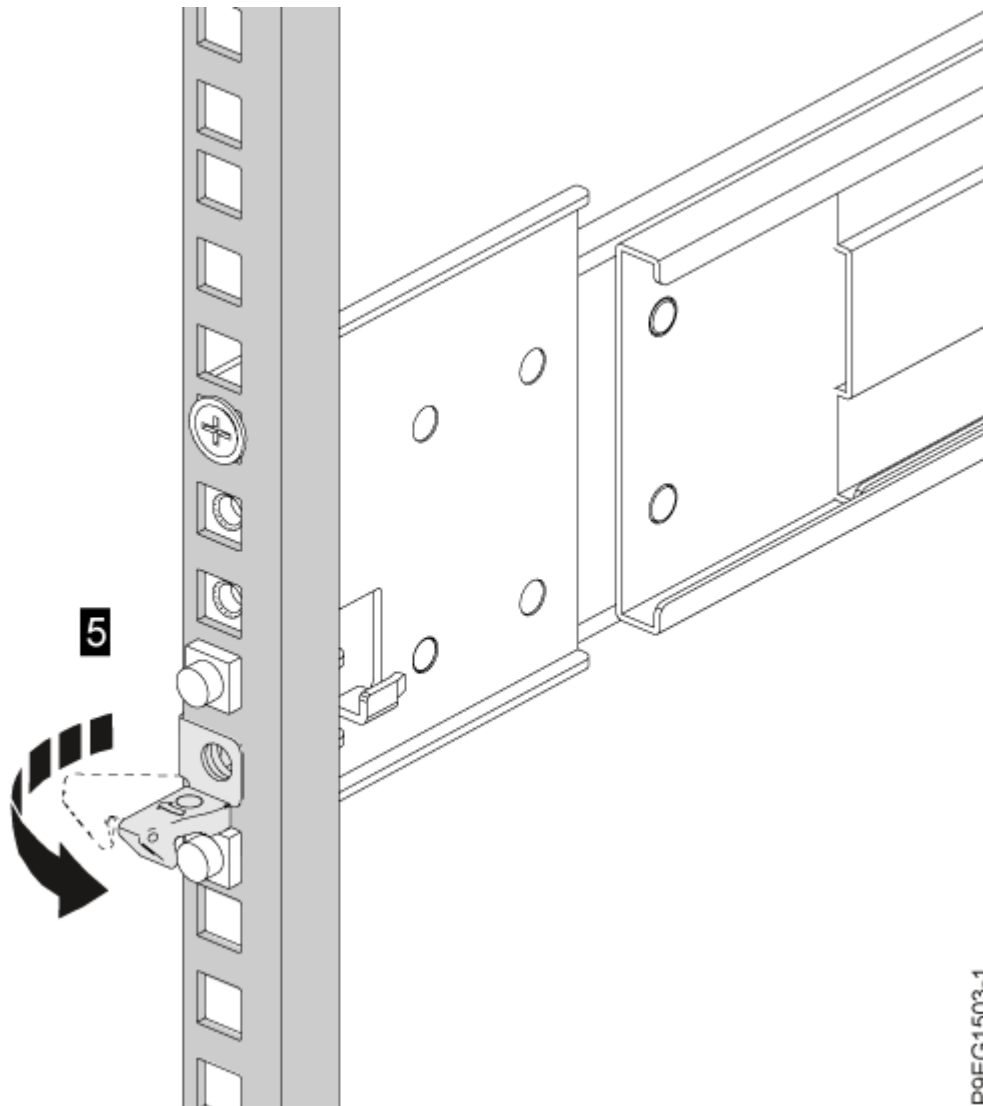


Figure 4. Locking the rail retention bracket onto the rack flange

5. Repeat these steps for the right rail.

Attaching the mounting hardware to the system

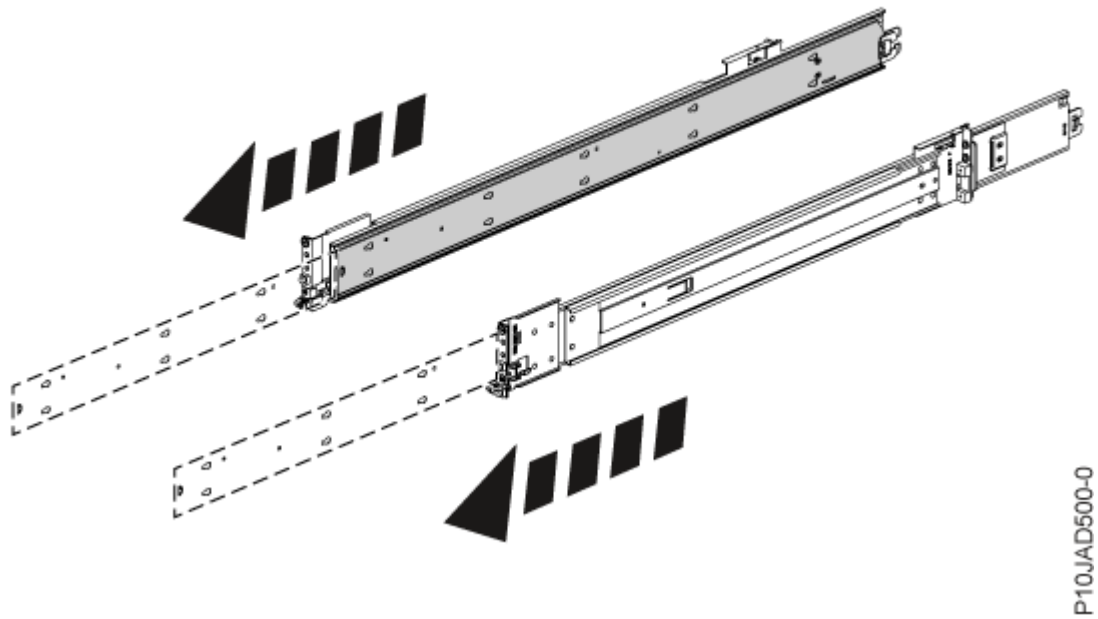
Attach the inner rails to each side of the system chassis.

About this task

Note: The system requires 2 EIA rack units (2U) of space.

Procedure

1. Each rail has two parts. To separate the rails, extend the inner rail and press the locking tab on the inner rail. Separate the inner rail from the outer rail. Do this for each rail.



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Figure 5. Extending the inner rail

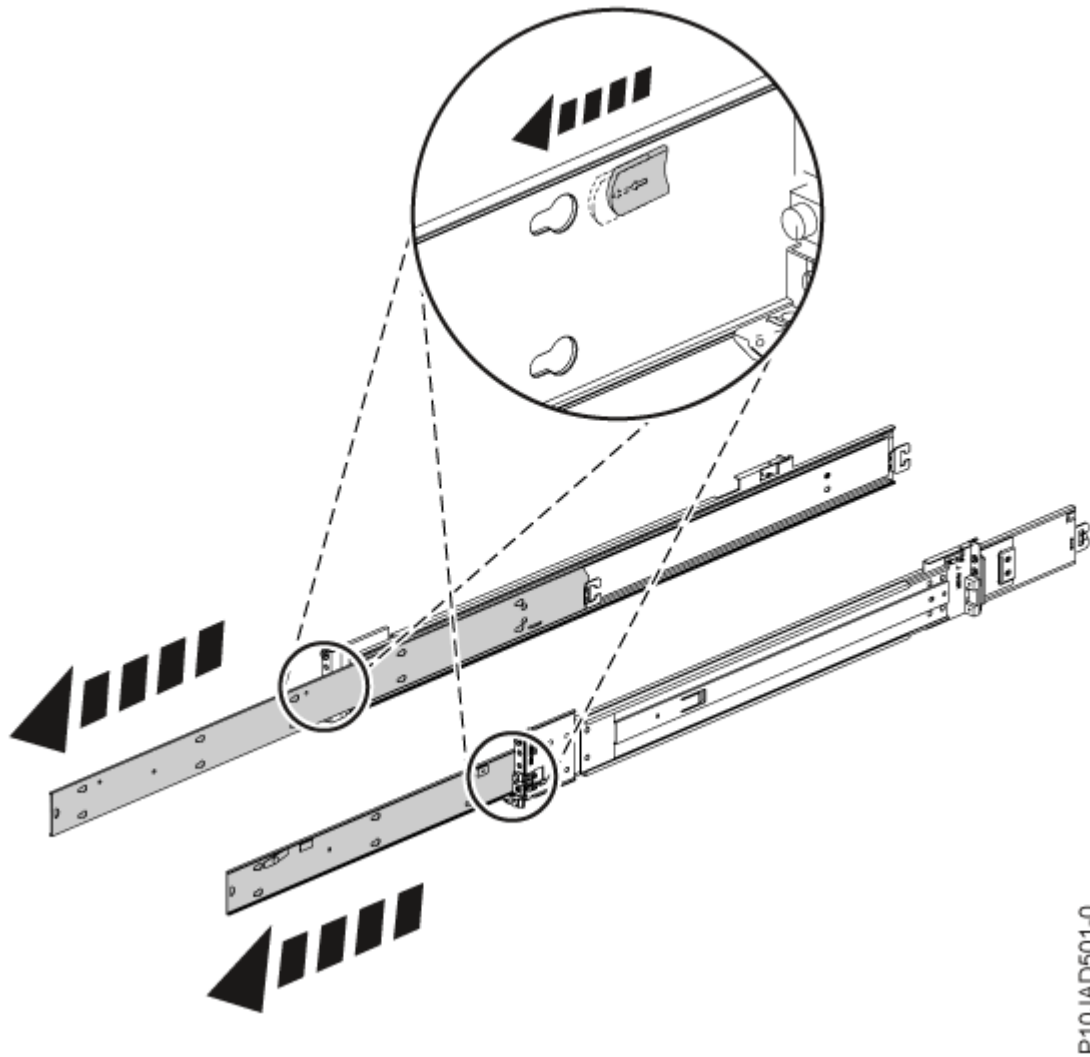


Figure 6. Pressing the locking tab on the inner rail

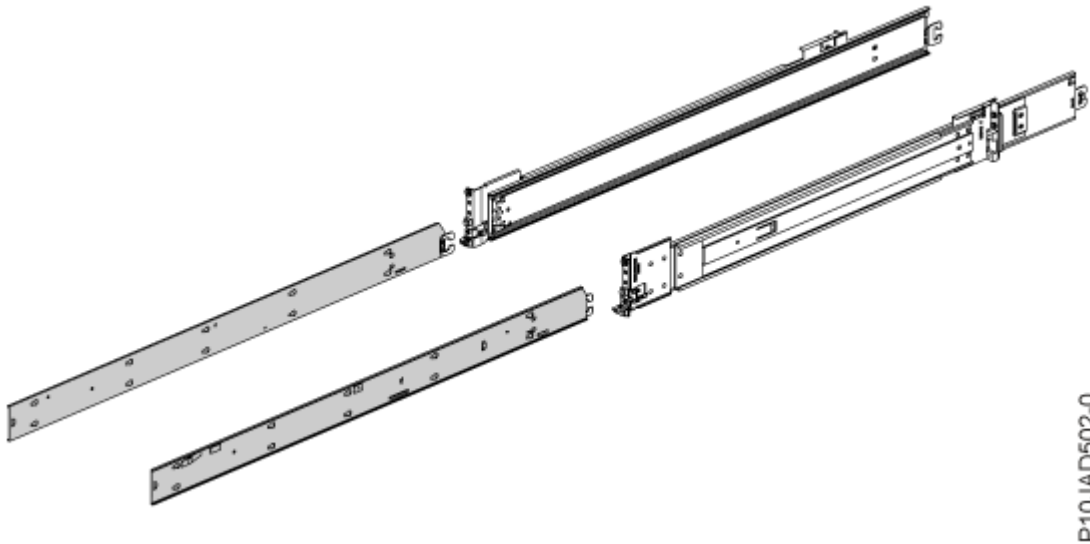


Figure 7. Separating the rails

2. Attach the inner rails to the system chassis. To attach the inner rails to the system chassis, perform the following tasks:

Note: Each inner rail is marked with either an **L** or an **R**, which designates the left inner rail and the right inner rail. The top front of the system is also labeled with an **L** or an **R**.

- a. On the right side of the system, align the metal tabs on the system chassis with the holes on the inner chassis slide rail. Slide the chassis slide rail toward the front of the rack until the chassis slide rail clicks into place.

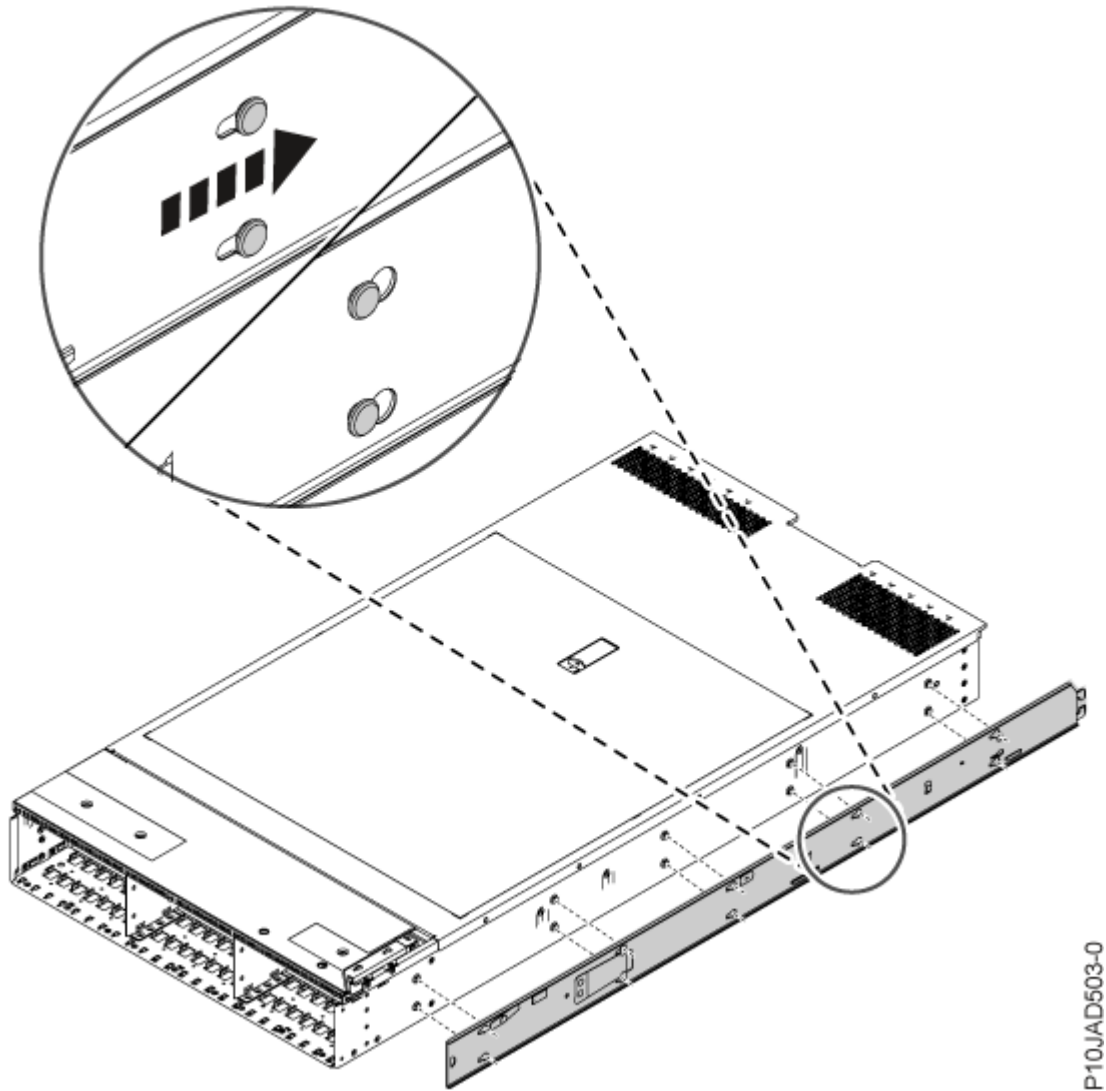
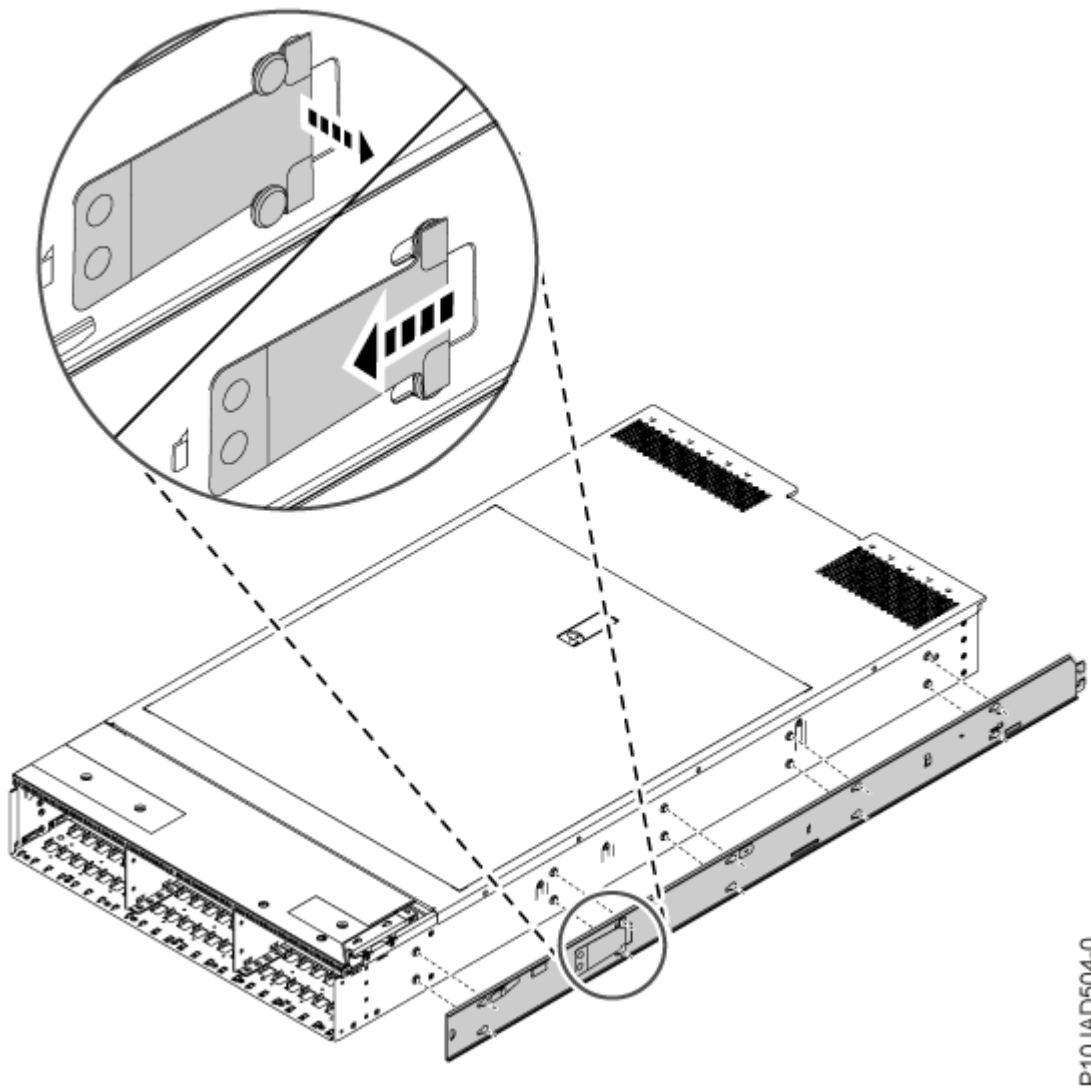


Figure 8. Aligning the pins and sliding the chassis slide rail toward the front of the rack



CAUTION: There is a retention latch on the side of the chassis rail. If you need to reposition the rail during installation, you must unlock the latch by lifting the latch and sliding it toward the rear of the system. **Do not** over-bend the latch.



P10JAD504-0

Figure 9. Lifting the retention latch and sliding it toward the rear of the system

- b. **Do not** install any screws to attach the inner chassis slide rail to the system chassis.
- c. Repeat this step for the left chassis slide rail.

Installing the system into the rack

Use the procedure to install the system into the rack.

About this task



Attention:

- Attach an electrostatic discharge (ESD) wrist strap to the front ESD jack, to the rear ESD jack, or to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
- When you use an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
- If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.



CAUTION: This system requires two people to install the system into the rack.

To install the system into the rack, complete the following steps:

Procedure

1. Locate the installation switches on each side of the server rails and verify that each switch is in the **locked** position. The locked position is shown as a white lock with a dark background.

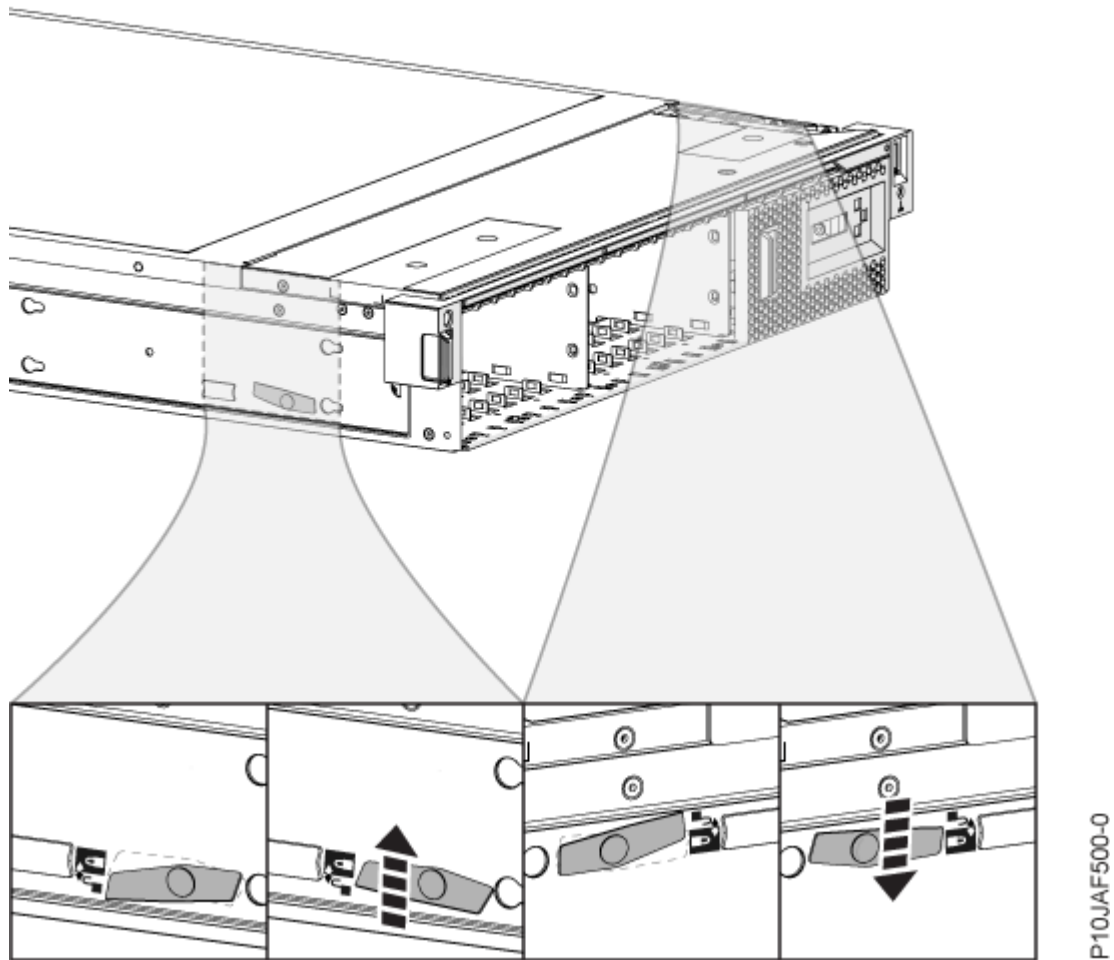


Figure 10. Verifying that the installation switches are in the locked position on each side of the server

2. Ensure that each bearing plate on the inside of the rack rails is pulled all the way forward and is clipped to its corresponding outer rack rail.

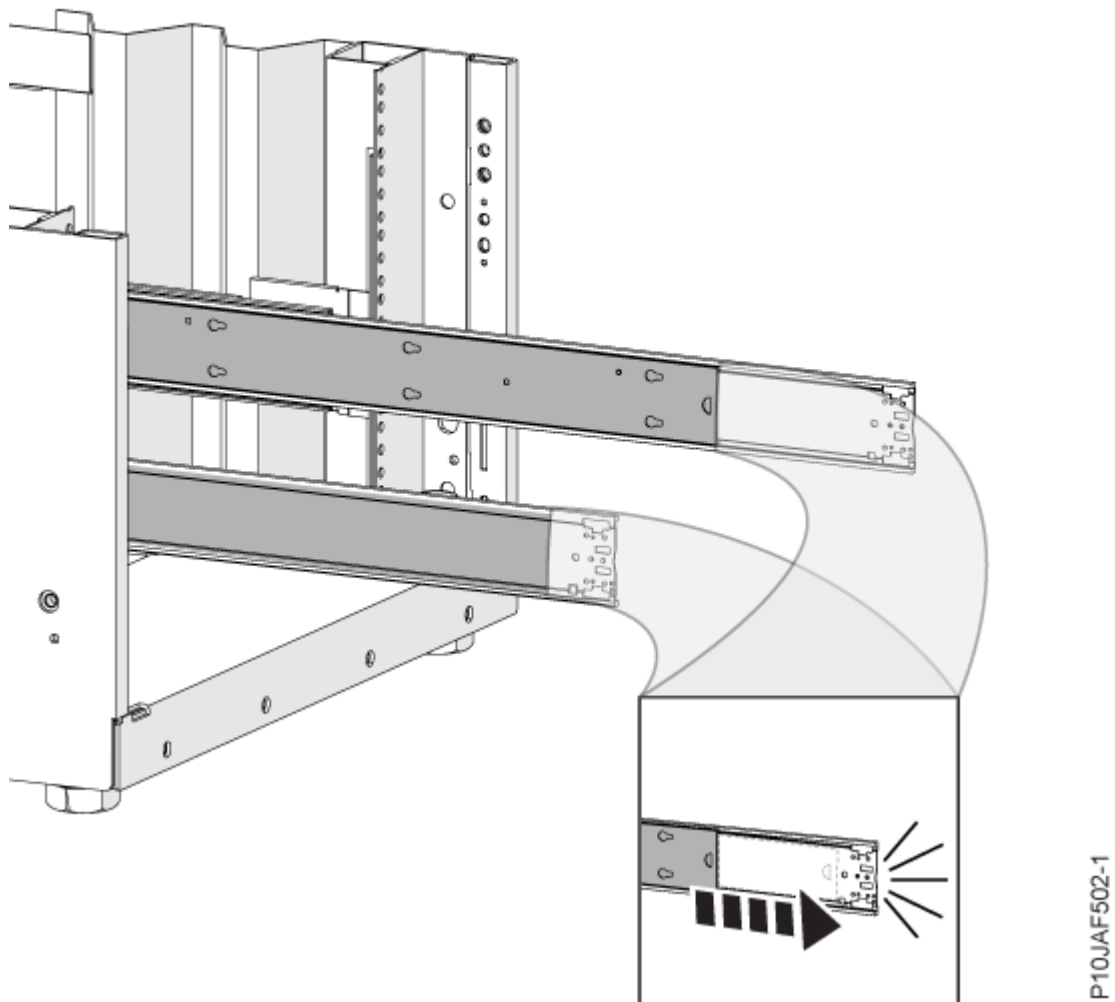
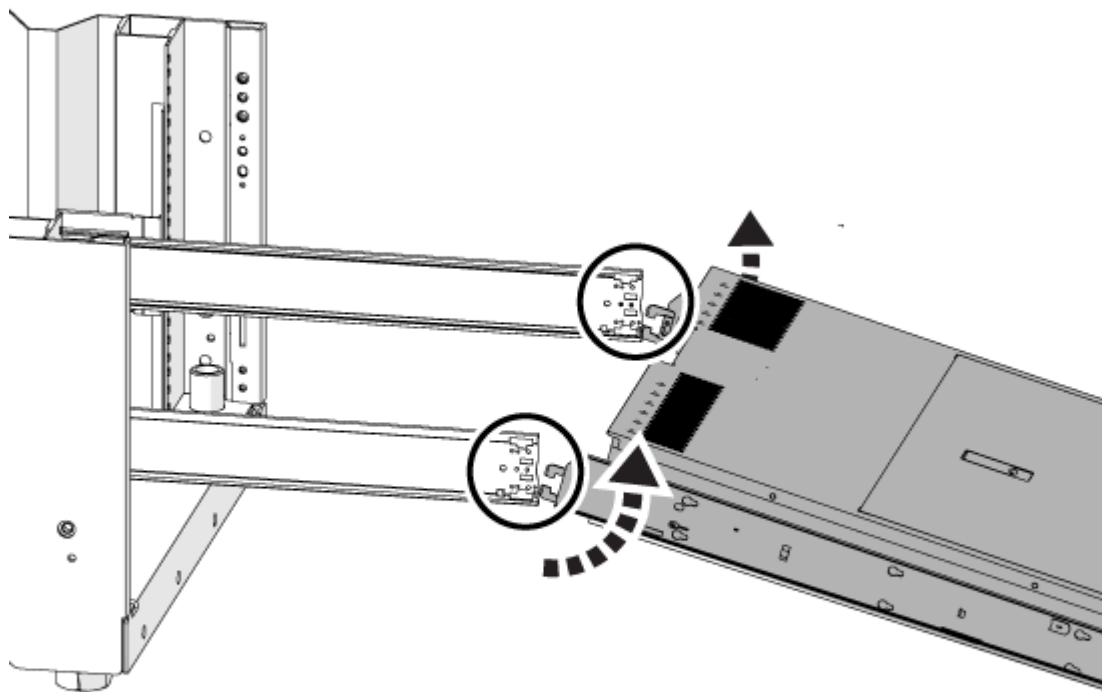


Figure 11. Ensuring that the bearing plates are clipped to the outer rack rails

3. With one person on each side, carefully lift the server and align each end of the lower portion of the server rails with the corresponding lower portion of the extended rack slide rails.
4. Tilt the server up so that the upper part of the server rails align with the upper part of the rack rails.



P10JAF503-0

Figure 12. Tilting the server and aligning the server rails with the rack rails

5. Push the server closer to the rack until the rear of the server meets the front of the rack.
6. Ensure that the installation switches on each side of the server rails are in the **locked** position.

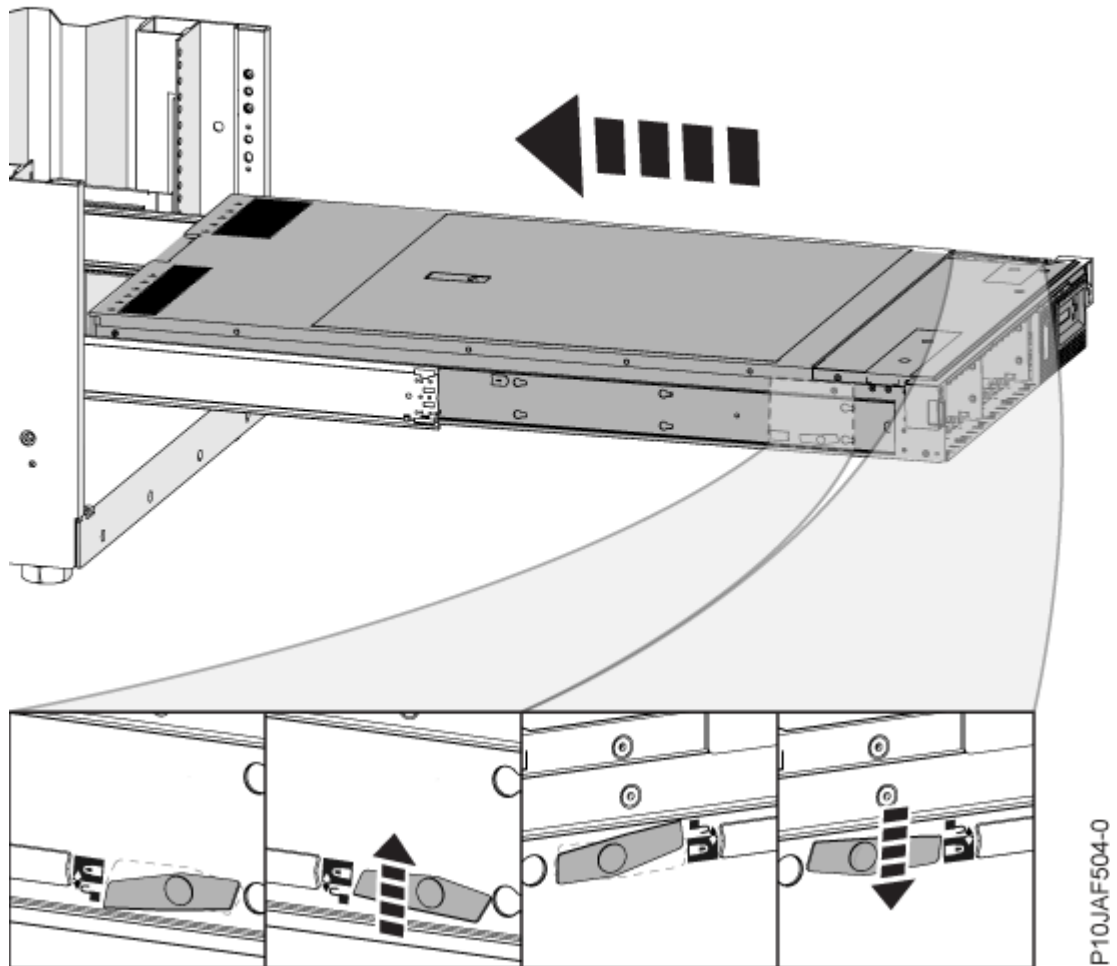


Figure 13. Ensuring that the installation switches on each side of the server rails are in the locked position before sliding the blue horizontal server switches and pushing the server into the rack

7. Slide the blue horizontal server switch on both rails and push the server all the way into the rack until it clicks into place.

Installing the cable-management arm

The cable-management arm is used to efficiently route cables so that you have proper access to the rear of the system. Use the procedure to install the cable-management arm.

About this task

To install the cable-management arm, complete the following steps:

Procedure

1. Ensure that you have the following parts.

Item Description

- A** Inner cable management arm tab
- B** Inner mounting bracket

Item Description

- C** Outer cable management arm tab
- D** Outer mounting bracket
- E** Extension tab
- F** Outer cable management arm tab

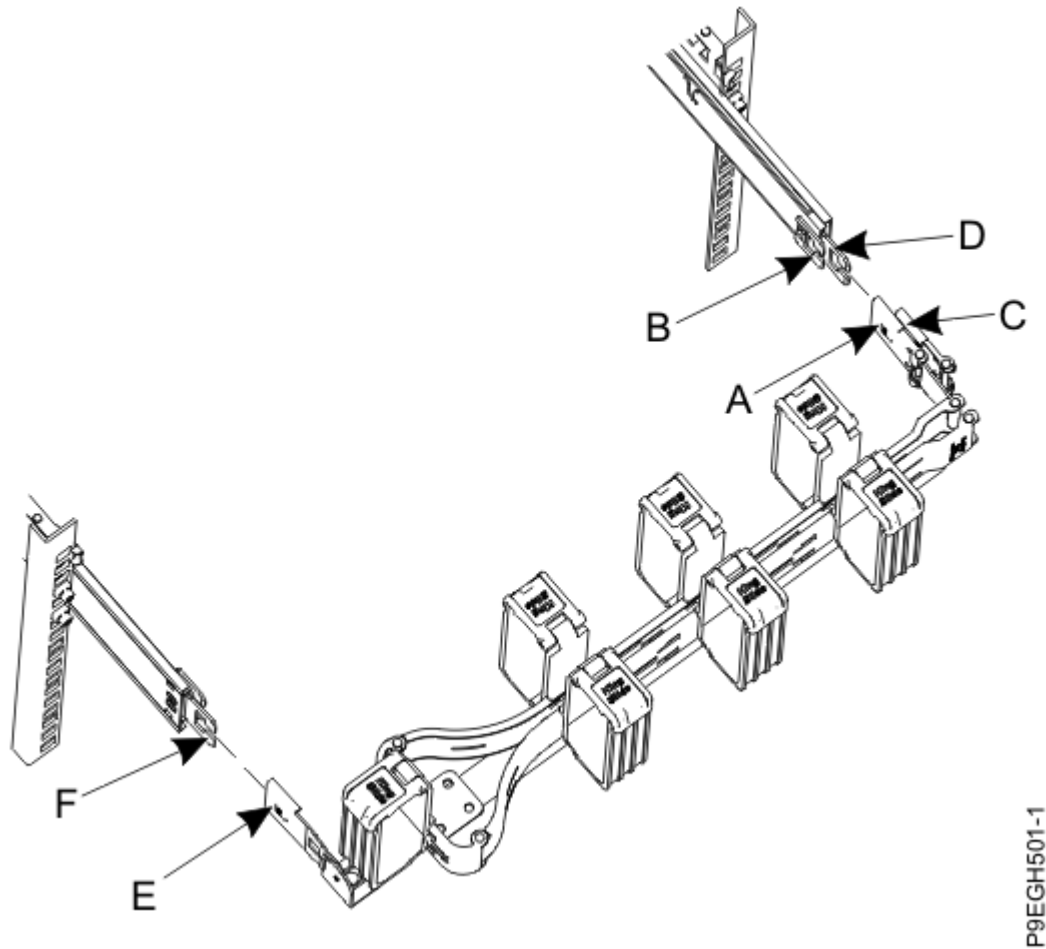


Figure 14. Relative positions of the parts of the cable-management arm before assembly

2. The cable-management arm can be installed on either side of the server. For this procedure, it is illustrated that you are installing it on the right side, while you are facing the server from the rear. If you want to install the cable management arm on the other side of the rack, you can press the button on the extension tab **(1)** so that it swivels in the opposite direction **(2)**.

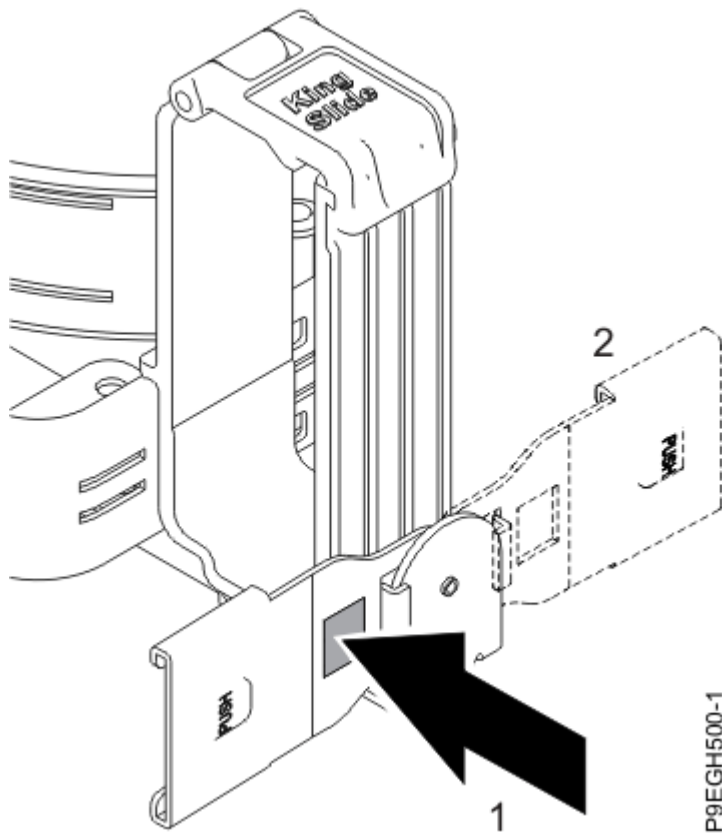


Figure 15. Swiveling the cable management arm extension tab

3. Insert the inner cable management arm tab (A) to the inner mounting bracket (B) until the outer mounting bracket (D) clicks into place.

Note: To avoid damage when the system is placed in the service position, ensure that the middle pin is between each arm.

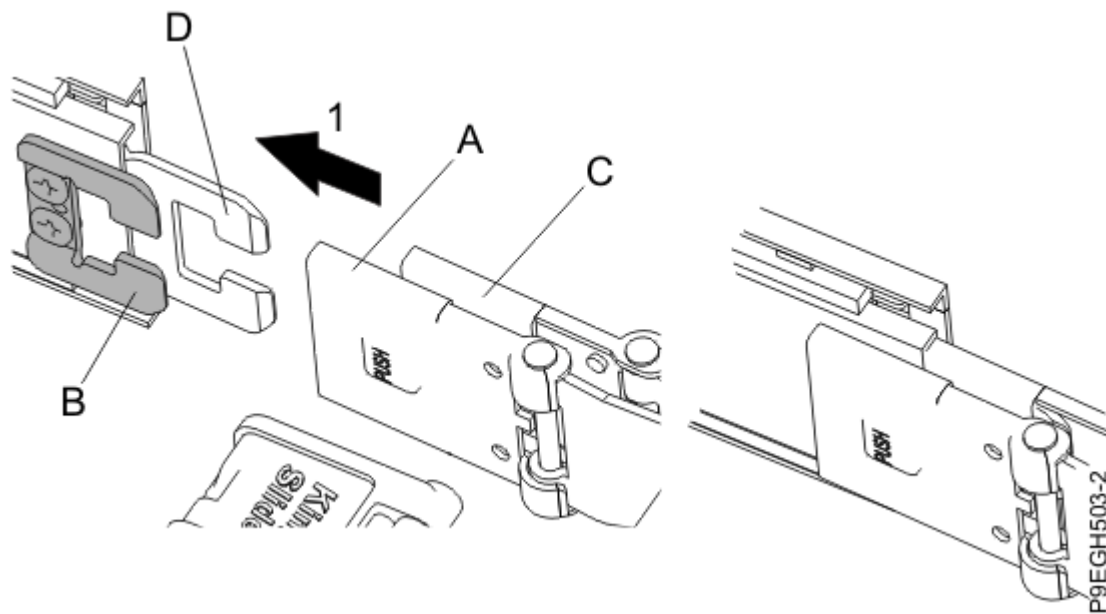


Figure 16. Inserting the mounting brackets

4. On the opposite side of the rack, insert the extension tab (E) to the outer cable management arm tab (F) until it clicks into place.

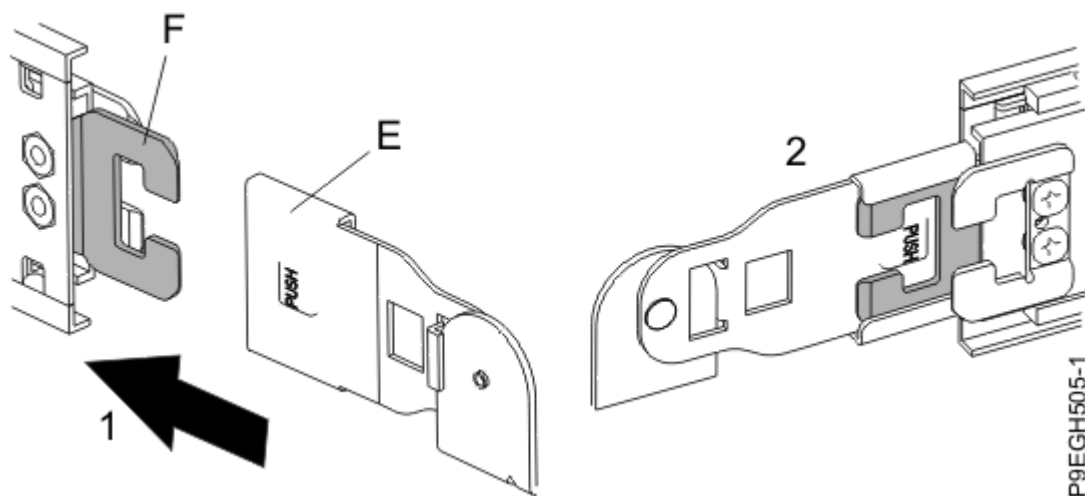


Figure 17. Attaching the extension tab to the cable management arm to the outer cable management arm tab

5. To route the cables through the cable management arm, press the latches on the cable management arm to open the baskets, route the cables through the arm, and then re-latch the baskets until they are fully seated.

Setting up a console

Learn more about setting up a console so that you can manage the system.

Accessing the eBMC so that you can manage the system

IBM® Power Systems servers use an enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the system event log files (SEL). The eBMC is a specialized service processor that monitors the physical state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

Accessing the eBMC by using an HMC

Learn how to access the eBMC by using an HMC.

About this task

To access the eBMC using the HMC, complete the steps in this procedure.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 11 Release 1.0, or later.

Procedure

1. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.
2. Connect each end of the power cables to the power supplies on the rear of the system, and connect the other ends to a power source.
3. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The eBMC displays the **Pending Authentication** state.
4. You are prompted to set the ID and password that your HMC will use to authenticate and manage the system (the default password is expired). This is the same ID and password that you will use to access the ASMI. To set the system password, select the eBMC, then select **Actions > Update System Password**.
5. Click **Finish**.

6. Select **System Actions** > **VMI configuration**. Select the network interface, then select **Modify**.

Note: You can choose either **T0** or **T1**.

7. Select **DHCP** and click **OK**.
8. Use the HMC to power on the system. To power on the system, complete the following steps:
 - a. In the navigation area, select **Resources** > **All Systems**.
 - b. In the contents area, select the managed system.
 - c. In the navigation area, select **System Actions** > **Operations** > **Power On**.

Accessing the eBMC without using an HMC

To access the eBMC without using the HMC, complete the steps in this procedure.

About this task

To access the eBMC without using an HMC, complete the following steps:

Procedure

1. Connect an Ethernet cable between the **ETHx** port on the rear of the system to a PC equipped with an Ethernet port.
2. If you haven't already done so, connect the power cables to the power supplies. The panel displays **01 N**.
3. Press the up arrow key to select **02** and press **Enter**.
4. Press **Enter** until a < (less than symbol) appears next to **N**. Press the **Up Arrow** key. The **N** changes to an **M**.
5. Press Enter twice. **02** displays on the control panel.
6. Press the Up Arrow key until it returns 30 and press Enter. The panel displays **30****.
7. Press the Up Arrow key. The panel now displays **3000**. Press **Enter**.
8. Record the information that displays. You will need this information for a later step.
9. Move to your Ethernet-equipped device. Open your device's network configuration panel and assign an IP that is the same as what you recorded in the previous step, but subtract 1. For instance, if you recorded 169.254.176.9, then assign your laptop 169.254.176.8. Use subnet mask **255.255.0.0** on the device. This will be the eBMC's default value.
10. Use your device to verify that you can connect using the address you used in the previous step, and then attach a web browser to that IP address and open the ASMI interface.
11. Use the ASMI interface to set a new admin password. The initial login is *admin/admin*.
12. Set a new password.
13. Configure ETHx as a static IP. To configure ETHx as a static IP, complete the following steps:

Note: You can choose either **T0** or **T1**. If you previously connected to T0, configure **Eth0**. If you previously connected to T1 on the HMC network, configure **Eth1**. You will need one available IP address for **ETH0** or **ETH1** on the eBMC interface.

- a. On the eBMC, select **Settings** > **Network** > **ETHx**.
 - b. Select **Add Static IPv4 Address**.
 - c. Enter your IP address, gateway, and subnet information.
 - d. Click **Add**.
14. Remove the current connection from the system to your PC and re-cable the system to the network. If you want to log back into eBMC interface, open a supported web browser. In the address bar, enter the IP address of the eBMC system that you want to connect to. For example, you can use the format **https://<eBMC IP>** in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password that is assigned to you. Click **Log in**.

Note: The default user ID is *admin* and the password is the one that you specified in a previous step.

Determining which console to use

Your console, monitor, or interface choices are guided by whether you create logical partitions, which operating system you install in your primary partition, and whether you install a Virtual I/O Server (VIOS) in one of your logical partitions.

Go to the instructions for the applicable console, interface, or terminal in the following table.

Table 1. Available console types				
Console type	Operating system	Logical partitions	Cable required	Setup instructions
ASMI (Access System Management Interface) by using the eBMC	AIX®, Linux®, or VIOS	Yes		Accessing the eBMC so that you can manage the system (http://www.ibm.com/docs/POWER11/p11jad/p11jad_accessing_the_ebmc.htm)
Hardware Management Console (HMC)	AIX, IBM i, Linux, or VIOS	Yes	Ethernet (or cross-over cable)	Cabling the server to the HMC(http://www.ibm.com/docs/POWER11/p11jad/p11jad_cable_hmc.htm)
Operations Console	IBM i	Yes Use your Operations Console to manage existing IBM i partitions.	Ethernet cable for LAN connection	“Accessing Operations Console” on page 20 Cabling the server and accessing Operations Console (http://www.ibm.com/docs/POWER11/p11jad/p11jad_cable_ops_kickoff.htm).

Cabling the server to the HMC

The Hardware Management Console (HMC) controls managed systems, including the management of logical partitions, the creation of a virtual environment, and the use of capacity on demand. Using service applications, the HMC can also communicate with managed systems to detect, consolidate, and forward information to IBM service for analysis.

Before you begin

If you have not installed and configured your HMC, do so now. For instructions, see [Installation and configuration tasks](http://www.ibm.com/docs/POWER11/p11hai/p11hai_taskflow.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_taskflow.htm).

To manage POWER11 processor-based systems, the HMC must be at version 11 release 1.0, or later. To view the HMC version and release, complete the following steps:

1. In the navigation area, click **Updates**.
2. In the work area, view and record the information that appears in the HMC Code Level section, including the HMC version, release, Service Pack, build level, and base versions.

To cable the server to the HMC, complete the following steps:

Procedure

1. If you want to directly attach your HMC to the managed system, connect **ETH0** on the HMC to the **T0** port on the managed system.
2. To learn how to connect an HMC to a private network so that it can manage more than one managed system, see [HMC network connections](http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm).

Notes:

- You can also have multiple systems that are attached to a switch that is then connected to the HMC. For instructions, see [HMC network connections](http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm).
- If you are using a switch, ensure that the speed in the switch is set to **Autodetection**. If the server is directly attached to the HMC, ensure the Ethernet adapter speed on the HMC is set to **Autodetection**. For information about how to set media speeds, see [Setting the media speed](http://www.ibm.com/docs/POWER11/p11hai/p11hai_lanmediaspeed_enh.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_lanmediaspeed_enh.htm).
- 3. If you are connecting a second HMC to your managed server, connect it to the Ethernet port that is labeled **T1** on the managed server.
- 4. Continue with [“Cabling the server and connecting expansion units”](#) on page 27.

Accessing Operations Console

You can use Operations Console to manage a server that is running the IBM i operating system.

Cabling the server and accessing the Operations Console if the system is not preinstalled with the IBM i operating system

Learn how to cable the server and access the Operations Console by using a LAN connection to manage your system using the IBM i operating system.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>)

To cable the server and to access the LAN Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the LAN console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

To set up the LAN console, complete the following steps:

1. Install IBM i Access Client Solutions (ACS) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see [IBM i Access - ACS Getting Started](https://www.ibm.com/support/pages/ibm-i-access-acs-getting-started#3.0) (<https://www.ibm.com/support/pages/ibm-i-access-acs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that

you are running the latest version of ACS. For more information, see [IBM i Access - Client Solutions 5733XJ1](https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1) (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into the **T0** port, which is usually the top or far-right port on the first Ethernet adapter. To determine the server adapter port that you must use, refer to the following table:

Table 2. LAN console slots	
Server	LAN console slot
9824-22A, 9824-42A, 9856-22H, or 9856-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the LAN console port. A cross-over cable is not needed. For more information, see [Adapter requirements](http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm) (http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm).

3. Configure the PC network. To configure the PC network using a Windows-based PC, complete the following steps:
 - a. Open Windows Control Panel and access the adapter settings. Select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - b. Ensure that only the Local Area Connection is enabled. If other adapters are enabled, disable them.
 - c. Right-click the adapter that you previously connected to the server and select **Properties**.
 - d. select **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the LAN console, record the IP information that is displayed.

- e. Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.
4. Disable any PC firewalls.

Note: All PC firewalls must be disabled for the initial connection.
5. On the PC, open a supported web browser. In the address bar, enter the IP address of the eBMC system to which you want to connect. For example, you can use the format `https://<eBMC IP>` in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password.

Note: The default user ID is *admin* and the password is the password that you created when you accessed the eBMC.

Click **Log in**.

6. Power on the server using the ASMI by completing the following steps:
 - a. In the navigation area, select **Operations > Server power operations**. The power state of the system displays.
 - b. Set the Server firmware start policy to **Standby** and save the settings.
 - c. Power on the server with the current settings by clicking the **Power on** button under **Operations**.
7. To configure IBM i settings on the server, complete the following steps:
 - a. Load the installation media.
 - b. Set the Server operating mode to **Manual**.
 - c. Set the IBM i partition boot mode to **D**.
 - d. Set the IBM i load source to the target load source slot.
 - e. Set the IBM i alternate restart device to the slot containing the installation media.
 - f. Set the IBM i console to the target Ethernet adapter port.

- g. Save the settings and select **Continue to OS Running**.

Note: You can identify physical part locations by using location codes. Illustrations are provided to help you map a logical location code to a physical location on the server or expansion unit. For more information, see [Part locations and location codes](http://www.ibm.com/docs/POWER11/p11ecs/p11ecs_locations.htm) (http://www.ibm.com/docs/POWER11/p11ecs/p11ecs_locations.htm).

- h. Once the system displays **C60041F6**, continue with next step.

Note: The system can take up to 30 minutes to complete this action. If **A6005008** displays on the control panel, this means that the system could not locate an available LAN console. This might indicate that the system is not preinstalled with IBM i, and you must set the console type to LAN.

8. Connect the LAN console by completing the following steps:

- a. Open IBM i Access Client Solutions (ACS).
- b. Under Management, click **System Configurations**.
- c. Select **Locate Console**.
- d. Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
- e. Confirm the selection by pressing Enter.
- f. When using IBM-purchased media on a D mode, sign in using user ID / password *QSECOFR* / *QSECOFR*.
- g. Press Enter for **Language feature 2924**.
- h. Confirm the selection by pressing Enter.
- i. The DST (Dedicated Service Tools) window opens. Type your user id and password and press Enter.

9. Install the IBM i operating system. To install the IBM i operating system, complete the following steps:

- a. Prepare the NVMe device. To prepare the NVMe device, complete the following steps:
 - i) On the Install Licensed Internal Code display, select **Work with Dedicated Service Tools (DST)**.
 - ii) In the Use Dedicated Service Tools (DST) window, select **Work with disk units**.
 - iii) In the Work with Disk Units window, select **Work with NVMe Devices**.
 - iv) In the Work with NVMe Devices window, select **Delete existing NVMe Namespaces**. Then press Enter to accept the warnings, and continue with the next step.
 - v) Select the NVMe device.
 - vi) If there are no namespaces listed, press **F12** and go to “9.a.ix” on page 22.
 - vii) Select the **4=Delete Namespace** option on each of the listed namespaces and follow the onscreen instructions.
 - viii) Press **F10** to confirm the delete of the namespaces.
 - ix) In the Work with NVMe Devices window, select **Create NVMe namespaces**.
 - x) Select the NVMe device.
 - xi) Enter the quantity and capacity of the namespaces you want on the NVMe device.
 - xii) Press **F10** to confirm the creation of the namespace.
 - xiii) Press **F12** to return to the Use Dedicated Service Tools (DST) window.
- b. Install Licensed Internal Code. To install Licensed Internal Code, complete the following steps:
 - i) In the Use Dedicated Service Tools (DST) window, select **Install Licensed Internal Code**.
 - ii) In the Select Load Source Device window, select the NVMe device and press **F10** to confirm.
 - iii) In the Install Licensed Internal Code window, select **Install Licensed Internal Code and Initialize System**.

- iv) Confirm the selection by pressing **F10**. The NVMe disk unit is zeroed, the Licensed Internal Code is installed, and the partition will then IPL to DST.

Note: Close your session.

- v) Under Access Client Solutions (ACS), clear the search field and then click **Search**. After a few seconds, a new IP connection displays. Select the connection and then select **Console**.
- vi) Sign in with user ID and password *QSECOFR* / *QSECOFR* and change the password.
- vii) If the system finds a new disk configuration, the Disk Configuration Attention Report displays. Press **F10** to accept this new configuration.
- viii) Sign on using user ID *QSECOFR* and the password that you created.

Note: The password is case-sensitive.

- c. Add units to the ASP (Auxiliary Storage Pool). To add units to the ASP, complete the following steps:

- i) In the Use Dedicated Service Tools (DST) menu, select **Work with disk units**.
- ii) In the Work with Disk Units window, select **Work with disk configuration** and then select **Work with NVMe devices**.
- iii) In the Work with NVMe Devices window, select **Create NVMe namespaces**.
- iv) Select the NVMe device that is not the NVMe device that contains the load source.
- v) Enter the same quantity and capacity of the namespaces that you specified.
- vi) Press **F10** to confirm the creation of the name space.
- vii) Press **F12** twice to return to the Work with Disk Units window.
- viii) In the Work with Disk Units window, select **Work with ASP configuration** then select **Work with ASP Configuration**.
- ix) In the Work with ASP Configuration window, select **Add units to ASPs**.
- x) In the Add units to ASPs window, select **Add units to existing ASPs**.
- xi) A list of disk units displays. In each of the Specify ASP columns for each of the NVMe disk units, type **1**.
- xii) Press **F10** to confirm **Add Units and Balance**.
- xiii) Press **F12** twice to return to the Work with Disk Configuration window.

- d. Start mirrored protection. To start mirrored protection, complete the following steps:

- i) In the Work with Disk Configuration window, select **Work with mirrored protection**.
- ii) In the Work with Mirrored Protection window, select **Start mirrored protection**.
- iii) Select **ASP 1**.
- iv) Confirm the start of mirrored protection. The partition updates the configuration and the system IPLs to DST.

- 10. To set a static IP address for the LAN console, complete the following steps:

- a. Sign in using the *QSECOFR* user ID and the password that you created in the previous step.

Note: The password is case-sensitive.

- b. At the DST Main Menu, select Option 3- **Use Dedicated Service Tools**.
- c. Select **Work with DST environment**.
- d. Select **System Devices**.
- e. Select **Configure service tools LAN adapter**.
- f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word `Default` and enter the IP address that you want to use.
- g. Press **F7** to store the information.

- h. Press F17 to **Deactivate and Activate**. This causes your session to disconnect. Then close the session.
11. To create a connection using a static IP, complete the following steps:
 - a. Either move the PC and LAN console port both to the network or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
 - b. Return to the ACS interface and select the System Configurations window.
 - c. Click **New**.
 - d. If you plan to use this connection to connect to other functions, type the system name that you plan to use in the General tab.
 - e. Click the **Console** tab.
 - f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
 - g. Click **OK** and close System Configurations window.
 - h. In the main ACS menu, from the System drop-down menu, click **System** and select the system that you created.
 - i. Under Console, click **5250 Console**. Sign in using your ID and password. Continue with your IPL.

Continue with [“Completing the server setup”](#) on page 27.

Accessing Operations Console if IBM i is preinstalled on your system

Learn how to access Operations Console if IBM i is preinstalled on your system.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](#) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>).

To cable the server and to access the Operations Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the Operations Console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

About this task

To set up the Operations Console, complete the following steps:

Procedure

1. Install [IBM i Access Client Solutions \(ACS\)](#) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see [IBM i Access - ACS Getting Started](#) (<https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that

you are running the latest version of ACS. For more information, see [IBM i Access - Client Solutions 5733XJ1](https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1) (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into the **T0** port, which is usually the top or far-right port on the first Ethernet adapter. To determine the server adapter port that you must use, refer to the following table:

Table 3. Server Operations Console LAN slots	
Server	Operations Console - LAN slot
9824-22A, 9824-42A, 9856-22H, or 9856-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the Operations Console port. A cross-over cable is not needed. For more information, see [Adapter requirements](http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm) (http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm).

3. Configure the PC network. To configure the PC network using a Windows-based PC, complete the following steps:
 - a. i) Open Windows Control Panel and access the adapter settings. Select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - ii) Ensure that only the Local Area Connection is enabled. If other adapters are enabled, disable them.
 - iii) Right-click the adapter that you previously connected to the server and select **Properties**.
 - iv) select **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the Operations Console, record the IP information that is displayed.
 - v) Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.

4. Disable any PC firewalls.

Note: All PC firewalls must be disabled for the initial connection.

5. On the PC, open a supported web browser. In the address bar, enter the IP address of the eBMC system to which you want to connect. For example, you can use the format `https://<eBMC IP>` in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password that is assigned to you. Note: Click **Log in**.

Note: Use the default user ID *admin* and the password that you set up when you accessed the eBMC for the first time.

6. Power on the server using the ASMI by completing the following steps:
 - a. In the navigation area, select **Operations > Server power operations**. The power state of the system displays.
 - b. Set the Server firmware start policy to **Standby** and save the settings.
 - c. Power on the server with the current settings by clicking the **Power on** button under **Operations**.
7. Set the console type to LAN. To chert the console type to LAN, complete the following steps:
 - a. Use the enterprise baseboard management controller (eBMC) to set the location of the Ethernet adapter port that the LAN console will use. In the eBMC interface, select **Server Power Operations > Settings > IBMi console**.
 - b. Set the IBMi console to the target Ethernet adapter port.
 - c. Save the settings and select **Continue to OS Running**.
 - d. When the system displays **C60041F6**, continue with the next step.

Note: The system can take up to 30 minutes to complete this action. If **A6005008** displays on the control panel, this means that the system could not locate an available Operations Console. This

might indicate that the system is not preinstalled with IBM i, and you must set the console type to LAN.

8. Connect the Operations Console by completing the following steps:

a. Connect the Operations Console by completing the following steps:

- i) Open IBM i Access Client Solutions (ACS).
- ii) Under Management, click **System Configurations**.
- iii) Select **Locate Console**.
- iv) Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
- v) In the Pending Authorization window, sign in with user ID and default password *QSECOFR* / *QSECOFR*. Change the password.
- vi) Accept the security certificate.

Note: If you do not accept the security certificate, the connection will not be completed.

A console window opens.

Note: If the window is blank at first but a cursor appears in the upper left corner of the window, the screen is waiting for the media to provide the information to be displayed.

9. To set a static IP address for the Operations Console, complete the following steps:

a. Sign in using the QSECOFR user ID and the password that you created in the previous step.

Note: The password is case-sensitive.

b. At the DST Main Menu **b**, select **Option 3- Use Dedicated Service Tools**.

c. Select **Option 5- Work with DST environment**.

d. Select **Option 2- System Devices**.

e. Select **Option 7- Configure service tools LAN adapter**.

f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word Default and enter the IP address that you want to use.

g. Press F7 to store the information.

h. Press F17 to **Deactivate and Activate**. This causes your session to disconnect. Then close the session.

10. To create a connection using a static IP, complete the following steps:

a. Either move both the PC and Operations Console port to the network, or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.

b. Return to the ACS interface and select the System Configurations window.

c. Click **New**.

d. If you plan to use this connection to connect to other functions, type the system name that you plan to use in the General tab.

e. Click the **Console** tab.

f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.

g. Click **OK** and close System Configurations window.

h. In the main ACS menu, click **System** and select the system that you created.

i. Under Console, click **5250 Console**. Sign in using your ID and password. Continue with your IPL.

Cabling the server and connecting expansion units

Learn how to cable the server and to connect expansion units.

About this task

To cable the server and to connect expansion units, complete the following steps:

Procedure

1. Complete the following steps:

a. Plug the power cord into the power supply.

Note: If present, remove and discard any plug that covers the ports on the rear of the system. The port covers ensure that you are reminded about resetting the Administrator password of your managed system after the initial program load (IPL) completes.

b. Plug the system power cords and the power cords for any other attached devices into the power source.

c. If your system uses a power distribution unit (PDU), complete the following steps:

i) Connect the system power cords from the server and I/O drawers to the PDU with an IEC 320 type receptacle.

ii) Attach the PDU input power cord and plug it into the power source.

iii) If your system uses two PDUs for redundancy, complete the following steps:

- If your system has two power supplies, attach one power supply to each of the two PDUs.
- If your system has four power supplies, plug E0 and E1 to **PDU A** and E2 and E3 to **PDU B**.

Note: Confirm that the system is in standby mode. The green power status indicator on the front control panel is flashing, and the dc out indicator lights on the power supplies are flashing. If none of the indicators are flashing, check the power cord connections.

2. For information about connecting enclosures and expansion units, see [Enclosures and expansion units \(http://www.ibm.com/docs/POWER11/p11ham/p11ham_kickoff.htm\)](http://www.ibm.com/docs/POWER11/p11ham/p11ham_kickoff.htm).

Completing the server setup

Learn about the tasks you must complete to set up your managed system.

Select from the following options:

- [“Completing the server setup by using an HMC” on page 27](#)
- [“Completing the server setup without using an HMC” on page 30](#)

Completing the server setup by using an HMC

Perform these tasks to complete the server setup by using a Hardware Management Console (HMC). You can also begin to use virtualization to consolidate multiple workloads onto fewer systems to increase server use, and to reduce cost.

Completing the server setup by using an HMC with DHCP

Perform these tasks to complete the server setup by using an HMC that uses a DHCP network configuration.

About this task

Note: Before you continue with this step, ensure that you have removed the orange system-to-rail locking clips on each slide rail and pushed the system into the rack.

IBM® Power Systems servers use an enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the

system event log files (SEL). The eBMC is a specialized service processor that monitors the physical state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

Important: Intelligent Platform Management Interface (IPMI) is disabled by default on your system. Inherent security vulnerabilities are associated with using the IPMI. Consider using Redfish APIs or the GUI to manage your system. You must enable the IPMI and authorize the user before you can use the service.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 11 Release 1, or later.

To access the eBMC by using your HMC, complete the following steps:

Procedure

1. Attach one end of the system power supply cable to a power source.

Note: Do not apply power at this time.

2. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.

Note: If you are managing a standalone system without an HMC by using DHCP, you can identify the IP addresses by using **Function 30: Service processor IP address and port location**. For more information, see [Function 30: Service processor IP address and port location](http://www.ibm.com/docs/POWER11/p11hb5/func30.htm) (<http://www.ibm.com/docs/POWER11/p11hb5/func30.htm>).

3. Connect each end of the power cables to the power supplies on the rear of the system, and connect the other ends to a power source.
4. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The server displays the **Pending Authentication** state.
5. You are prompted to set the HMC Access password that your HMC will use to authenticate and manage the system. This is the same password that you will use to access the ASMI as **admin**. To set the system password, select the server, then select **Actions > Set System Password**.

Note: The HMC Access password is also the eBMC ASMI admin password.

6. Click **Finish**.
7. Select **System Actions > VMI configuration**. Select the network interface, then select **Modify**.

Note: You can choose either **T0** or **T1**. If you previously connected to **T0**, configure **Eth0**. If you previously connected to **T1** on the HMC network, configure **Eth1**.

8. Select **DHCP** and click **OK**.

9. Use the HMC to power on the system.

- a. In the navigation area, select **Resources > All Systems**.
- b. In the content pane, select the managed system.
- c. In the navigation area, select **System Actions > Operations > Power On**.

10. Check the time of day.

- a. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
- b. In the navigation area, expand **System Configuration**.
- c. Select **Time of Day**. The content pane displays a form that shows the current date (day, month, and year) and time (hours, minutes, and seconds).

11. Check the firmware level of your managed system.

To check your managed system's firmware level, select **Actions > Update Firmware > System Firmware > View Current Levels**.

12. If necessary, update your managed system firmware. Select **Actions > Update Firmware > System Firmware > Update**.

What to do next

More system configuration information is available.

For information about IBM Power Reliability, Availability, and Serviceability for Power11 processor-based systems, see [Introduction to IBM Power Reliability, Availability, and Serviceability for Power11 processor-based systems using IBM PowerVM](https://www.ibm.com/downloads/documents/us-en/10a99803d9afd776) (https://www.ibm.com/downloads/documents/us-en/10a99803d9afd776).

For information about setting Runtime Processor Diagnostic Test Policies, see [Runtime Processor Diagnostic Test Policies](http://www.ibm.com/docs/POWER11/p11hby/RPD.htm) <http://www.ibm.com/docs/POWER11/p11hby/RPD.htm>.

Completing the server setup by using an HMC with a static network configuration

Perform these tasks to complete the server setup by using an HMC that uses a static network configuration.

Before you begin

To complete this procedure, you must have two static IPs to complete the connection and authentication process; one for the **HMC1** port and one for VMI. When you log in using your PC to set static IPs and to set the **admin** password, that is the password that you will use when you select **Connect Systems...** . This is because the client is using static IPs.

Procedure

1. Connect an Ethernet cable between the **T2 (ETH0)** port on the rear of the system to a PC equipped with an Ethernet port, assuming that **T3 (ETH1)** is connected to the HMC.
2. If you haven't already done so, connect the power cables to the power supplies. The panel displays **01 N**.
3. Press the up arrow key to select **02** and press Enter.
4. Press Enter again. **A <** (less than symbol) appears next to **N**. Press the Up Arrow key. The **N** changes to an **M**.
5. Press Enter.
6. Press Enter twice. **02** displays on the control panel.
7. Press the Up Arrow key until it returns **30** and press Enter.
8. Press enter again. The panel now displays 3000. Press Enter.
9. Record the information that displays. You will need this information for a later step.
10. Move to your Ethernet-equipped device. Open your device's network configuration panel and assign an IP that is the same as what you recorded in the previous step, but subtract 1. For instance, if you recorded 169.254.176.9, then assign your laptop 169.254.176.8. Use subnet mask **255.255.0.0** on the device. This will be the BMC's default value.
11. Use your device to verify that you can connect using the address you used in the previous step, and then attach a web browser to that IP and open ASMI.
12. Log in using the default user ID and password.

Note: The default user ID is admin and the default password is admin.

13. Use the ASMI interface to set a new admin password. The initial login is **admin/admin**.
14. Set a new password. Ensure that you enter an acceptable password before proceeding to the next step.
15. Configure ETH1 as a static IP. To configure ETH1 as a static IP, complete the following steps:

Note: You will need one available IP address for ETH1 on the BMC.

- a. on the BMC, select **Settings > Network > Eth1**.
- b. Select **Add Static IPv4 Address**.
- c. Enter your IP address, gateway, and subnet information.
- d. Click **Add**.

16. Using the IP address that you configured above, add the system to your HMC. To add a managed system so that it can be managed by your HMC, in the contents area, click **Connect Systems...** and complete the fields.

Note: In the **Connect Systems...** window, you must provide the static IP address for the server being added, and specify the username *admin* and the password that you set for **admin**. If you do not make these specifications, the server will be unable to connect to the HMC. If you attempt to authenticate using incorrect credentials too many times, the system will lock the **admin** password. If the **admin** password is locked, remote support must generate and send the ACF file so that you can reset the **admin** password before you continue.

Click **OK**.

17. Configure VMI. To configure VMI, select **Operations > VMI Settings**.
18. Type the VMI IP information and configure the IP type to be **Static**.
19. Use the HMC to power on the system.
 - a. In the navigation area, select **Resources > All Systems**.
 - b. In the content pane, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.
20. Check the firmware level of your managed system.

To check your managed system's firmware level, select **Actions > Update Firmware > System Firmware > View Current Levels**.
21. If necessary, update your managed system firmware. Select **Actions > Update Firmware > System Firmware > Update**.

Completing the server setup without using an HMC

If you do not have an Hardware Management Console (HMC), use this procedure to complete the server setup.

About this task

To complete the server setup without using a management console, complete the following steps:

Procedure

1. Attach the server to the rack using the shipping screws that were provided with your system.
2. To check the firmware level on the managed system and the time of day, complete the following steps:
 - a. Access the Advanced System Management Interface (ASMI). For instructions, see [Accessing the ASMI without an HMC \(www.ibm.com/docs/POWER11/p11hby/connect_asmi.htm\)](http://www.ibm.com/docs/POWER11/p11hby/connect_asmi.htm).
 - b. On the ASMI Welcome pane, note the existing level of server firmware in the upper-right corner under the copyright statement.
 - c. Update the date and time.

To automatically set the date and time, select **NTP**. Enter the NTP server address or addresses. Click **Save settings**.

To manually set the date and time, Select **Manual**. Enter the date and time. Click **Save settings**.
3. To start a system, complete the following steps:
 - a. Open the front door of the managed system.
 - b. Press the power button on the control panel.

The power-on light begins to flash faster.

 - a. The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.
 - b. Progress indicators appear on the control panel display while the system is being started.

- c. The power-on light on the control panel stops flashing and remains on, indicating that the system is powered on.

For instructions, see [Starting a system that is not managed by an HMC](http://www.ibm.com/docs/POWER11/p11haj/startsysnohmc.htm) (www.ibm.com/docs/POWER11/p11haj/startsysnohmc.htm).

4. Install an operating system and update the operating system.

- Install the AIX operating system. For instructions, see [Installing AIX](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installaix.htm) (http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installaix.htm).
- Install the Linux operating system. For instructions, see [Installing Linux](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installlinux.htm) (http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installlinux.htm).
- Install the VIOS operating system. For instructions, see [Installing VIOS](https://www.ibm.com/docs/POWER11/p11hb1/p11hb1_vios_install.htm) (https://www.ibm.com/docs/POWER11/p11hb1/p11hb1_vios_install.htm).
- Install the IBM i operating system. For instructions, see [Installing the IBM i operating system](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_ibmi.htm) (http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_ibmi.htm).

5. You have now completed the steps to install your server.

Installing a stand-alone server

Use this information to learn about setting up a stand-alone server.

Prerequisite for installing the stand-alone server

Use the information to understand the prerequisites that are required for setting up the preinstalled server.

About this task

You might need to read the following documents before you begin to install the server:

- The latest version of this document is maintained online. See [Installing the IBM Power S1122 \(9824-22A\) and IBM Power L1122 \(9856-22H\)](http://www.ibm.com/docs/POWER11/p11jad/p11jad_roadmap.htm) (http://www.ibm.com/docs/POWER11/p11jad/p11jad_roadmap.htm).
- To plan your server installation, see [Planning for the system](http://www.ibm.com/docs/POWER11/p11jad/p11jad_kickoff.htm) (http://www.ibm.com/docs/POWER11/p11jad/p11jad_kickoff.htm).
- To download HMC updates and fixes, see the [Hardware Management Console Support and downloads website](https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html) (<https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html>).

Consider the following prerequisites before you install the server:

Procedure

1. Ensure that you have the following items before you start your installation:

- Phillips screwdriver
- Flat-head screwdriver

2. Ensure that you have one of the following consoles:

- Hardware Management Console (HMC): To manage POWER11 processor-based systems, the HMC must be at version 11 release 1.0, or later.
- Graphic monitor with keyboard and mouse.
- Teletype (tty) monitor with keyboard.

Moving the server to the installation site

Learn how to move the stand-alone server to the installation site.

About this task

After you have unpacked your stand-alone server, move the server to the installation site.

Completing inventory for your stand-alone server

Use this information to complete inventory for your server.

About this task

To complete the inventory, complete the following steps:

Procedure

1. Verify that you received all the boxes you ordered.
2. Unpack the server components as needed.
3. Complete a parts inventory before you install each server component by following these steps:
 - a. Locate the inventory list for your server.
 - b. Ensure that you received all the parts that you ordered.

Note: Your order information is included with your product. You can also obtain the order information from your marketing representative or the IBM Business Partner.

Cabling the server and setting up a console

Your console, monitor, or interface choices are guided by whether you create logical partitions, which operating system you install in your primary partition, and whether you install a Virtual I/O Server (VIOS) in one of your logical partitions.

Accessing the eBMC so that you can manage the system

IBM® Power Systems servers use an enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the system event log files (SEL). The eBMC is a specialized service processor that monitors the physical state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

Accessing the eBMC by using an HMC

Learn how to access the eBMC by using an HMC.

About this task

To access the eBMC using the HMC, complete the steps in this procedure.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 11 Release 1.0, or later.

Procedure

1. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.
2. Connect each end of the power cables to the power supplies on the rear of the system, and connect the other ends to a power source.

3. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The eBMC displays the **Pending Authentication** state.
4. You are prompted to set the ID and password that your HMC will use to authenticate and manage the system (the default password is expired). This is the same ID and password that you will use to access the ASMI. To set the system password, select the eBMC, then select **Actions > Update System Password**.
5. Click **Finish**.
6. Select **System Actions > VMI configuration**. Select the network interface, then select **Modify**.
Note: You can choose either **T0** or **T1**.
7. Select **DHCP** and click **OK**.
8. Use the HMC to power on the system. To power on the system, complete the following steps:
 - a. In the navigation area, select **Resources > All Systems**.
 - b. In the contents area, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.

Accessing the eBMC without using an HMC

To access the eBMC without using the HMC, complete the steps in this procedure.

About this task

To access the eBMC without using an HMC, complete the following steps:

Procedure

1. Connect an Ethernet cable between the **ETHx** port on the rear of the system to a PC equipped with an Ethernet port.
2. If you haven't already done so, connect the power cables to the power supplies. The panel displays **01 N**.
3. Press the up arrow key to select **02** and press **Enter**.
4. Press **Enter** until a **<** (less than symbol) appears next to **N**. Press the **Up Arrow** key. The **N** changes to an **M**.
5. Press Enter twice. **02** displays on the control panel.
6. Press the Up Arrow key until it returns 30 and press Enter. The panel displays **30****.
7. Press the Up Arrow key. The panel now displays **3000**. Press **Enter**.
8. Record the information that displays. You will need this information for a later step.
9. Move to your Ethernet-equipped device. Open your device's network configuration panel and assign an IP that is the same as what you recorded in the previous step, but subtract 1. For instance, if you recorded 169.254.176.9, then assign your laptop 169.254.176.8. Use subnet mask **255.255.0.0** on the device. This will be the eBMC's default value.
10. Use your device to verify that you can connect using the address you used in the previous step, and then attach a web browser to that IP address and open the ASMI interface.
11. Use the ASMI interface to set a new admin password. The initial login is *admin/admin*.
12. Set a new password.
13. Configure ETHx as a static IP. To configure ETHx as a static IP, complete the following steps:
Note: You can choose either **T0** or **T1**. If you previously connected to T0, configure **Eth0**. If you previously connected to T1 on the HMC network, configure **Eth1**. You will need one available IP address for **ETH0** or **ETH1** on the eBMC interface.
 - a. On the eBMC, select **Settings > Network > ETHx**.
 - b. Select **Add Static IPv4 Address**.
 - c. Enter your IP address, gateway, and subnet information.

- d. Click **Add**.
14. Remove the current connection from the system to your PC and re-cable the system to the network. If you want to log back into eBMC interface, open a supported web browser. In the address bar, enter the IP address of the eBMC system that you want to connect to. For example, you can use the format **https://<eBMC IP>** in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password that is assigned to you. Click **Log in**.

Note: The default user ID is *admin* and the password is the one that you specified in a previous step.

Determining which console to use

Your console, monitor, or interface choices are guided by whether you create logical partitions, which operating system you install in your primary partition, and whether you install a Virtual I/O Server (VIOS) in one of your logical partitions.

Go to the instructions for the applicable console, interface, or terminal in the following table.

Table 4. Available console types				
Console type	Operating system	Logical partitions	Cable required	Setup instructions
ASMI (Access System Management Interface) by using the eBMC	AIX, Linux, or VIOS	Yes		Accessing the eBMC so that you can manage the system (http://www.ibm.com/docs/POWER11/p11jad/p11jad_accessing_the_ebmc.htm)
Hardware Management Console (HMC)	AIX, IBM i, Linux, or VIOS	Yes	Ethernet (or cross-over cable)	Cabling the server to the HMC (http://www.ibm.com/docs/POWER11/p11jad/p11jad_cabling_hm.htm)
Operations Console	IBM i	Yes Use your Operations Console to manage existing IBM i partitions.	Ethernet cable for LAN connection	“ Accessing Operations Console ” on page 20 Cabling the server and accessing Operations Console (http://www.ibm.com/docs/POWER11/p11jad/p11jad_cable_ops_kickoff.htm).

Cabling the server to the HMC

The Hardware Management Console (HMC) controls managed systems, including the management of logical partitions, the creation of a virtual environment, and the use of capacity on demand. Using service

applications, the HMC can also communicate with managed systems to detect, consolidate, and forward information to IBM service for analysis.

Before you begin

If you have not installed and configured your HMC, do so now. For instructions, see [Installation and configuration tasks](http://www.ibm.com/docs/POWER11/p11hai/p11hai_taskflow.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_taskflow.htm).

To manage POWER11 processor-based systems, the HMC must be at version 11 release 1.0, or later. To view the HMC version and release, complete the following steps:

1. In the navigation area, click **Updates**.
2. In the work area, view and record the information that appears in the HMC Code Level section, including the HMC version, release, Service Pack, build level, and base versions.

To cable the server to the HMC, complete the following steps:

Procedure

1. If you want to directly attach your HMC to the managed system, connect **ETH0** on the HMC to the **T0** port on the managed system.
2. To learn how to connect an HMC to a private network so that it can manage more than one managed system, see [HMC network connections](http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm).

Notes:

- You can also have multiple systems that are attached to a switch that is then connected to the HMC. For instructions, see [HMC network connections](http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm).
- If you are using a switch, ensure that the speed in the switch is set to **Autodetection**. If the server is directly attached to the HMC, ensure the Ethernet adapter speed on the HMC is set to **Autodetection**. For information about how to set media speeds, see [Setting the media speed](http://www.ibm.com/docs/POWER11/p11hai/p11hai_lanmediaspeed_enh.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_lanmediaspeed_enh.htm).
- 3. If you are connecting a second HMC to your managed server, connect it to the Ethernet port that is labeled **T1** on the managed server.
- 4. Continue with [“Cabling the server and connecting expansion units”](#) on page 27.

Accessing Operations Console

You can use Operations Console to manage a server that is running the IBM i operating system.

Cabling the server and accessing the Operations Console if the system is not preinstalled with the IBM i operating system

Learn how to cable the server and access the Operations Console by using a LAN connection to manage your system using the IBM i operating system.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>)

To cable the server and to access the LAN Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the LAN console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by

another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

To set up the LAN console, complete the following steps:

1. Install **IBM i Access Client Solutions (ACS)** (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see **IBM i Access - ACS Getting Started** (<https://www.ibm.com/support/pages/ibm-i-access-acs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that you are running the latest version of ACS. For more information, see **IBM i Access - Client Solutions 5733XJ1** (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into the **T0** port, which is usually the top or far-right port on the first Ethernet adapter. To determine the server adapter port that you must use, refer to the following table:

Table 5. LAN console slots	
Server	LAN console slot
9824-22A, 9824-42A, 9856-22H, or 9856-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the LAN console port. A cross-over cable is not needed. For more information, see **Adapter requirements** (http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm).

3. Configure the PC network. To configure the PC network using a Windows-based PC, complete the following steps:
 - a. Open Windows Control Panel and access the adapter settings. Select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - b. Ensure that only the Local Area Connection is enabled. If other adapters are enabled, disable them.
 - c. Right-click the adapter that you previously connected to the server and select **Properties**.
 - d. select **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the LAN console, record the IP information that is displayed.

- e. Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.
4. Disable any PC firewalls.

Note: All PC firewalls must be disabled for the initial connection.

5. On the PC, open a supported web browser. In the address bar, enter the IP address of the eBMC system to which you want to connect. For example, you can use the format `https://<eBMC IP>` in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password.

Note: The default user ID is *admin* and the password is the password that you created when you accessed the eBMC.

Click **Log in**.

6. Power on the server using the ASMI by completing the following steps:
 - a. In the navigation area, select **Operations > Server power operations**. The power state of the system displays.

- b. Set the Server firmware start policy to **Standby** and save the settings.
 - c. Power on the server with the current settings by clicking the **Power on** button under **Operations**.
7. To configure IBM i settings on the server, complete the following steps:
 - a. Load the installation media.
 - b. Set the Server operating mode to **Manual**.
 - c. Set the IBM i partition boot mode to **D**.
 - d. Set the IBM i load source to the target load source slot.
 - e. Set the IBM i alternate restart device to the slot containing the installation media.
 - f. Set the IBM i console to the target Ethernet adapter port.
 - g. Save the settings and select **Continue to OS Running**.

Note: You can identify physical part locations by using location codes. Illustrations are provided to help you map a logical location code to a physical location on the server or expansion unit. For more information, see [Part locations and location codes](http://www.ibm.com/docs/POWER11/p11ecs/p11ecs_locations.htm) (http://www.ibm.com/docs/POWER11/p11ecs/p11ecs_locations.htm).
 - h. Once the system displays **C60041F6**, continue with next step.

Note: The system can take up to 30 minutes to complete this action. If **A6005008** displays on the control panel, this means that the system could not locate an available LAN console. This might indicate that the system is not preinstalled with IBM i, and you must set the console type to LAN.
8. Connect the LAN console by completing the following steps:
 - a. Open IBM i Access Client Solutions (ACS).
 - b. Under Management, click **System Configurations**.
 - c. Select **Locate Console**.
 - d. Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
 - e. Confirm the selection by pressing Enter.
 - f. When using IBM-purchased media on a D mode, sign in using user ID / password *QSECOFR* / *QSECOFR*.
 - g. Press Enter for **Language feature 2924**.
 - h. Confirm the selection by pressing Enter.
 - i. The DST (Dedicated Service Tools) window opens. Type your user id and password and press Enter.
9. Install the IBM i operating system. To install the IBM i operating system, complete the following steps:
 - a. Prepare the NVMe device. To prepare the NVMe device, complete the following steps:
 - i) On the Install Licensed Internal Code display, select **Work with Dedicated Service Tools (DST)**.
 - ii) In the Use Dedicated Service Tools (DST) window, select **Work with disk units**.
 - iii) In the Work with Disk Units window, select **Work with NVMe Devices**.
 - iv) In the Work with NVMe Devices window, select **Delete existing NVMe Namespaces**. Then press Enter to accept the warnings, and continue with the next step.
 - v) Select the NVMe device.
 - vi) If there are no namespaces listed, press **F12** and go to “9.a.ix” on page 37.
 - vii) Select the **4=Delete Namespace** option on each of the listed namespaces and follow the onscreen instructions.
 - viii) Press **F10** to confirm the delete of the namespaces.
 - ix) In the Work with NVMe Devices window, select **Create NVMe namespaces**.

- x) Select the NVMe device.
 - xi) Enter the quantity and capacity of the namespaces you want on the NVMe device.
 - xii) Press **F10** to confirm the creation of the namespace.
 - xiii) Press **F12** to return to the Use Dedicated Service Tools (DST) window.
- b. Install Licensed Internal Code. To install Licensed Internal Code, complete the following steps:
- i) In the Use Dedicated Service Tools (DST) window, select **Install Licensed Internal Code**.
 - ii) In the Select Load Source Device window, select the NVMe device and press **F10** to confirm.
 - iii) In the Install Licensed Internal Code window, select **Install Licensed Internal Code and Initialize System**.
 - iv) Confirm the selection by pressing **F10**. The NVMe disk unit is zeroed, the Licensed Internal Code is installed, and the partition will then IPL to DST.
- Note:** Close your session.
- v) Under Access Client Solutions (ACS), clear the search field and then click **Search**. After a few seconds, a new IP connection displays. Select the connection and then select **Console**.
 - vi) Sign in with user ID and password *QSECOFR / QSECOFR* and change the password.
 - vii) If the system finds a new disk configuration, the Disk Configuration Attention Report displays. Press **F10** to accept this new configuration.
 - viii) Sign on using user ID *QSECOFR* and the password that you created.
- Note:** The password is case-sensitive.
- c. Add units to the ASP (Auxillary Storage Pool). To add units to the ASP, complete the following steps:
- i) In the Use Dedicated Service Tools (DST) menu, select **Work with disk units**.
 - ii) In the Work with Disk Units window, select **Work with disk configuration** and then select **Work with NVMe devices**.
 - iii) In the Work with NVMe Devices window, select **Create NVMe namespaces**.
 - iv) Select the NVMe device that is not the NVMe device that contains the load source.
 - v) Enter the same quantity and capacity of the namespaces that you specified.
 - vi) Press **F10** to confirm the creation of the name space.
 - vii) Press **F12** twice to return to the Work with Disk Units window.
 - viii) In the Work with Disk Units window, select **Work with ASP configuration** then select **Work with ASP Configuration**.
 - ix) In the Work with ASP Configuration window, select **Add units to ASPs**.
 - x) In the Add units to ASPs window, select **Add units to existing ASPs**.
 - xi) A list of disk units displays. In each of the Specify ASP columns for each of the NVMe disk units, type **1**.
 - xii) Press **F10** to confirm **Add Units and Balance**.
 - xiii) Press **F12** twice to return to the Work with Disk Configuration window.
- d. Start mirrored protection. To start mirrored protection, complete the following steps:
- i) In the Work with Disk Configuration window, select **Work with mirrored protection**.
 - ii) In the Work with Mirrored Protection window, select **Start mirrored protection**.
 - iii) Select **ASP 1**.
 - iv) Confirm the start of mirrored protection. The partition updates the configuration and the system IPLs to DST.
10. To set a static IP address for the LAN console, complete the following steps:
- a. Sign in using the *QSECOFR* user ID and the password that you created in the previous step.

Note: The password is case-sensitive.

- b. At the DST Main Menu, select Option 3- **Use Dedicated Service Tools**.
 - c. Select **Work with DST environment**.
 - d. Select **System Devices**.
 - e. Select **Configure service tools LAN adapter**.
 - f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word Default and enter the IP address that you want to use.
 - g. Press F7 to store the information.
 - h. Press F17 to **Deactivate and Activate**. This causes your session to disconnect. Then close the session.
11. To create a connection using a static IP, complete the following steps:
- a. Either move the PC and LAN console port both to the network or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
 - b. Return to the ACS interface and select the System Configurations window.
 - c. Click **New**.
 - d. If you plan to use this connection to connect to other functions, type the system name that you plan to use in the General tab.
 - e. Click the **Console** tab.
 - f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
 - g. Click **OK** and close System Configurations window.
 - h. In the main ACS menu, from the System drop-down menu, click **System** and select the system that you created.
 - i. Under Console, click **5250 Console**. Sign in using your ID and password. Continue with your IPL.

Continue with [“Completing the server setup” on page 27](#).

Accessing Operations Console if IBM i is preinstalled on your system

Learn how to access Operations Console if IBM i is preinstalled on your system.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions \(http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805\)](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805).

To cable the server and to access the Operations Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the Operations Console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

About this task

To set up the Operations Console, complete the following steps:

Procedure

1. Install IBM i Access Client Solutions (ACS) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see [IBM i Access - ACS Getting Started \(https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0\)](https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that you are running the latest version of ACS. For more information, see [IBM i Access - Client Solutions 5733XJ1 \(https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1\)](https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into the **T0** port, which is usually the top or far-right port on the first Ethernet adapter. To determine the server adapter port that you must use, refer to the following table:

Table 6. Server Operations Console LAN slots	
Server	Operations Console - LAN slot
9824-22A, 9824-42A, 9856-22H, or 9856-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the Operations Console port. A cross-over cable is not needed. For more information, see [Adapter requirements \(http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm\)](http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm).

3. Configure the PC network. To configure the PC network using a Windows-based PC, complete the following steps:
 - a. i) Open Windows Control Panel and access the adapter settings. Select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - ii) Ensure that only the Local Area Connection is enabled. If other adapters are enabled, disable them.
 - iii) Right-click the adapter that you previously connected to the server and select **Properties**.
 - iv) select **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the Operations Console, record the IP information that is displayed.

 - v) Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.

4. Disable any PC firewalls.

Note: All PC firewalls must be disabled for the initial connection.

5. On the PC, open a supported web browser. In the address bar, enter the IP address of the eBMC system to which you want to connect. For example, you can use the format `https://<eBMC IP>` in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password that is assigned to you. Note: Click **Log in**.

Note: Use the default user ID *admin* and the password that you set up when you accessed the eBMC for the first time.

6. Power on the server using the ASMI by completing the following steps:
 - a. In the navigation area, select **Operations > Server power operations**. The power state of the system displays.
 - b. Set the Server firmware start policy to **Standby** and save the settings.
 - c. Power on the server with the current settings by clicking the **Power on** button under **Operations**.
7. Set the console type to LAN. To change the console type to LAN, complete the following steps:

- a. Use the enterprise baseboard management controller (eBMC) to set the location of the Ethernet adapter port that the LAN console will use. In the eBMC interface, select **Server Power Operations > Settings > IBMi console**.
- b. Set the IBMi console to the target Ethernet adapter port.
- c. Save the settings and select **Continue to OS Running**.
- d. When the system displays **C60041F6**, continue with the next step.

Note: The system can take up to 30 minutes to complete this action. If **A6005008** displays on the control panel, this means that the system could not locate an available Operations Console. This might indicate that the system is not preinstalled with IBM i, and you must set the console type to LAN.

8. Connect the Operations Console by completing the following steps:

- a. Connect the Operations Console by completing the following steps:
 - i) Open IBM i Access Client Solutions (ACS).
 - ii) Under Management, click **System Configurations**.
 - iii) Select **Locate Console**.
 - iv) Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
 - v) In the Pending Authorization window, sign in with user ID and default password *QSECOFR* / *QSECOFR*. Change the password.
 - vi) Accept the security certificate.

Note: If you do not accept the security certificate, the connection will not be completed.

A console window opens.

Note: If the window is blank at first but a cursor appears in the upper left corner of the window, the screen is waiting for the media to provide the information to be displayed.

9. To set a static IP address for the Operations Console, complete the following steps:

- a. Sign in using the QSECOFR user ID and the password that you created in the previous step.

Note: The password is case-sensitive.
- b. At the DST Main Menu **b**, select **Option 3- Use Dedicated Service Tools**.
- c. Select **Option 5- Work with DST environment**.
- d. Select **Option 2- System Devices**.
- e. Select **Option 7- Configure service tools LAN adapter**.
- f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word **Default** and enter the IP address that you want to use.
- g. Press F7 to store the information.
- h. Press F17 to **Deactivate and Activate**. This causes your session to disconnect. Then close the session.

10. To create a connection using a static IP, complete the following steps:

- a. Either move both the PC and Operations Console port to the network, or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
- b. Return to the ACS interface and select the System Configurations window.
- c. Click **New**.
- d. If you plan to use this connection to connect to other functions, type the system name that you plan to use in the General tab.
- e. Click the **Console** tab.

- f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
- g. Click **OK** and close System Configurations window.
- h. In the main ACS menu, click **System** and select the system that you created.
- i. Under Console, click **5250 Console**. Sign in using your ID and password. Continue with your IPL.

Cabling the server and connecting expansion units

Learn how to cable the server and to connect expansion units.

About this task

To cable the server and to connect expansion units, complete the following steps:

Procedure

1. Ensure that you have cabled and set up a console. For more information, see [“Cabling the server and setting up a console” on page 32](#).
2. Complete the following steps:
 - a. Plug the power cord into the power supply.

Note: If present, remove and discard any plug that covers the ports on the rear of the system. The port covers ensure that you are reminded about resetting the Administrator password of your managed system after the initial program load (IPL) completes.
 - b. Plug the system power cords and the power cords for any other attached devices into the power source.
 - c. If your system uses a power distribution unit (PDU), complete the following steps:
 - i) Connect the system power cords from the server and I/O drawers to the PDU with an IEC 320 type receptacle.
 - ii) Attach the PDU input power cord and plug it into the power source.
 - iii) If your system uses two PDUs for redundancy, complete the following steps:
 - If your system has two power supplies, attach one power supply to each of the two PDUs.
 - If your system has four power supplies, plug E0 and E1 to **PDU A** and E2 and E3 to **PDU B**.
3. For information about connecting enclosures and expansion units, see [Enclosures and expansion units \(http://www.ibm.com/docs/POWER11/p11ham/p11ham_kickoff.htm\)](http://www.ibm.com/docs/POWER11/p11ham/p11ham_kickoff.htm).
4. Power on the managed system.

Completing the server setup

Learn about the tasks you must complete to set up your managed system.

Install the front door onto the front of the system chassis. To install the front door, complete the following tasks:

1. Align the door with the system chassis so that it is open 90 degrees.
2. Align the hinges on the door with the posts on the chassis.
3. Using your finger, push each hinge onto each pin, one at a time.

Completing the server setup by using an HMC

Perform these tasks to complete the server setup by using a Hardware Management Console (HMC). You can also begin to use virtualization to consolidate multiple workloads onto fewer systems to increase server use, and to reduce cost.

Completing the server setup by using an HMC with DHCP

Perform these tasks to complete the server setup by using an HMC that uses a DHCP network configuration.

About this task

Note: Before you continue with this step, ensure that you have removed the orange system-to-rail locking clips on each slide rail and pushed the system into the rack.

IBM® Power Systems servers use a enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the system event log files (SEL). The eBMC is a specialized service processor that monitors the physical state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

Important: Intelligent Platform Management Interface (IPMI) is disabled by default on your system. Inherent security vulnerabilities are associated with using the IPMI. Consider using Redfish APIs or the GUI to manage your system. You must enable the IPMI and authorize the user before you can use the service.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 11 Release 1, or later.

To access the eBMC by using your HMC, complete the following steps:

Procedure

1. Attach one end of the system power supply cable to a power source.

Note: Do not apply power at this time.

2. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.

Note: If you are managing a standalone system without an HMC by using DHCP, you can identify the IP addresses by using **Function 30: Service processor IP address and port location**. For more information, see [Function 30: Service processor IP address and port location](http://www.ibm.com/docs/POWER11/p11hb5/func30.htm) (<http://www.ibm.com/docs/POWER11/p11hb5/func30.htm>).

3. Connect each end of the power cables to the power supplies on the rear of the system, and connect the other ends to a power source.
4. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The server displays the **Pending Authentication** state.
5. You are prompted to set the HMC Access password that your HMC will use to authenticate and manage the system. This is the same password that you will use to access the ASMI as **admin**. To set the system password, select the server, then select **Actions > Set System Password**.

Note: The HMC Access password is also the eBMC ASMI admin password.

6. Click **Finish**.
7. Select **System Actions > VMI configuration**. Select the network interface, then select **Modify**.

Note: You can choose either **T0** or **T1**. If you previously connected to **T0**, configure **Eth0**. If you previously connected to **T1** on the HMC network, configure **Eth1**.

8. Select **DHCP** and click **OK**.
9. Use the HMC to power on the system.

- a. In the navigation area, select **Resources > All Systems**.
 - b. In the content pane, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.
10. Check the time of day.
- a. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
 - b. In the navigation area, expand **System Configuration**.
 - c. Select **Time of Day**. The content pane displays a form that shows the current date (day, month, and year) and time (hours, minutes, and seconds).
11. Check the firmware level of your managed system.
- To check your managed system's firmware level, select **Actions > Update Firmware > System Firmware > View Current Levels**.
12. If necessary, update your managed system firmware. Select **Actions > Update Firmware > System Firmware > Update**.

Completing the server setup by using an HMC with a static network configuration

Perform these tasks to complete the server setup by using an HMC that uses a static network configuration.

Before you begin

To complete this procedure, you must have two static IPs to complete the connection and authentication process; one for the **HMC1** port and one for VMI. When you log in using your PC to set static IPs and to set the **admin** password, that is the password that you will use when you select **Connect Systems...** . This is because the client is using static IPs.

Procedure

1. Connect an Ethernet cable between the **T2 (ETH0)** port on the rear of the system to a PC equipped with an Ethernet port, assuming that **T3 (ETH1)** is connected to the HMC.
 2. If you haven't already done so, connect the power cables to the power supplies. The panel displays **01 N**.
 3. Press the up arrow key to select **02** and press Enter.
 4. Press Enter again. **A <** (less than symbol) appears next to **N**. Press the Up Arrow key. The **N** changes to an **M**.
 5. Press Enter.
 6. Press Enter twice. **02** displays on the control panel.
 7. Press the Up Arrow key until it returns **30** and press Enter.
 8. Press enter again. The panel now displays 3000. Press Enter.
 9. Record the information that displays. You will need this information for a later step.
 10. Move to your Ethernet-equipped device. Open your device's network configuration panel and assign an IP that is the same as what you recorded in the previous step, but subtract 1. For instance, if you recorded 169.254.176.**9**, then assign your laptop 169.254.176.**8**. Use subnet mask **255.255.0.0** on the device. This will be the BMC's default value.
 11. Use your device to verify that you can connect using the address you used in the previous step, and then attach a web browser to that IP and open ASMI.
 12. Log in using the default user ID and password.
- Note:** The default user ID is admin and the default password is admin.
13. Use the ASMI interface to set a new admin password. The initial login is **admin/admin**.
 14. Set a new password. Ensure that you enter an acceptable password before proceeding to the next step.
 15. Configure ETH1 as a static IP. To configure ETH1 as a static IP, complete the following steps:

Note: You will need one available IP address for ETH1 on the BMC.

- a. on the BMC, select **Settings > Network > Eth1**.
 - b. Select **Add Static IPv4 Address**.
 - c. Enter your IP address, gateway, and subnet information.
 - d. Click **Add**.
16. Using the IP address that you configured above, add the system to your HMC. To add a managed system so that it can be managed by your HMC, in the contents area, click **Connect Systems...** and complete the fields.

Note: In the **Connect Systems...** window, you must provide the static IP address for the server being added, and specify the username *admin* and the password that you set for **admin**. If you do not make these specifications, the server will be unable to connect to the HMC. If you attempt to authenticate using incorrect credentials too many times, the system will lock the **admin** password. If the **admin** password is locked, remote support must generate and send the ACF file so that you can reset the **admin** password before you continue.

Click **OK**.

17. Configure VMI. To configure VMI, select **Operations > VMI Settings**.
18. Type the VMI IP information and configure the IP type to be **Static**.
19. Use the HMC to power on the system.
- a. In the navigation area, select **Resources > All Systems**.
 - b. In the content pane, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.
20. Check the firmware level of your managed system.
- To check your managed system's firmware level, select **Actions > Update Firmware > System Firmware > View Current Levels**.
21. If necessary, update your managed system firmware. Select **Actions > Update Firmware > System Firmware > Update**.

Completing the server setup without using an HMC

If you do not have an Hardware Management Console (HMC), use this procedure to complete the server setup.

About this task

To complete the server setup without using a management console, complete the following steps:

Procedure

1. To check the firmware level on the managed system and the time of day, complete the following steps:
 - a. Access the Advanced System Management Interface (ASMI). For instructions, see [Accessing the ASMI without an HMC \(www.ibm.com/docs/POWER11/p11hby/connect_asmi.htm\)](http://www.ibm.com/docs/POWER11/p11hby/connect_asmi.htm).
 - b. On the ASMI Welcome pane, note the existing level of server firmware in the upper-right corner under the copyright statement.
 - c. Update the date and time.

To automatically set the date and time, select **NTP**. Enter the NTP server address or addresses. Click **Save settings**.

To manually set the date and time, Select **Manual**. Enter the date and time. Click **Save settings**.
2. To start a system, complete the following steps:
 - a. Open the front door of the managed system.
 - b. Press the power button on the control panel.

The power-on light begins to flash faster.

- a. The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.
- b. Progress indicators appear on the control panel display while the system is being started.
- c. The power-on light on the control panel stops flashing and remains on, indicating that the system is powered on.

For instructions, see [Starting a system that is not managed by an HMC \(www.ibm.com/docs/POWER11/p11haj/startsysnohmc.htm\)](http://www.ibm.com/docs/POWER11/p11haj/startsysnohmc.htm).

3. Install an operating system and update the operating system.

- Install the AIX operating system. For instructions, see [Installing AIX \(http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installaix.htm\)](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installaix.htm).
- Install the Linux operating system. For instructions, see [Installing Linux \(http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installinux.htm\)](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installinux.htm).
- Install the VIOS operating system. For instructions, see [Installing VIOS \(https://www.ibm.com/docs/POWER11/p11hb1/p11hb1_vios_install.htm\)](https://www.ibm.com/docs/POWER11/p11hb1/p11hb1_vios_install.htm).
- Install the IBM i operating system. For instructions, see [Installing the IBM i operating system \(http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_ibmi.htm\)](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_ibmi.htm).

Setting up a preinstalled server

Learn how to set up a server that arrives preinstalled in a rack.

Prerequisite for installing the preinstalled server

Use the information to understand the prerequisites that are required for setting up the preinstalled server.

About this task

You might need to read the following documents before you begin to install the server:

- The latest version of this document is maintained online. See [Installing the IBM Power S1122 \(9824-22A\) and IBM Power L1122 \(9856-22H\) \(http://www.ibm.com/docs/POWER11/p11jad/p11jad_roadmap.htm\)](http://www.ibm.com/docs/POWER11/p11jad/p11jad_roadmap.htm).
- To plan your server installation, see [Planning for the system \(http://www.ibm.com/docs/POWER11/p11jad/p11jad_kickoff.htm\)](http://www.ibm.com/docs/POWER11/p11jad/p11jad_kickoff.htm).

Consider the following prerequisites before you install the server:

Procedure

1. Ensure that you have the following items before you start your installation:
 - Phillips screwdriver
 - Flat-head screwdriver
2. Ensure that you have one of the following consoles:
 - Hardware Management Console (HMC): To manage POWER11 processor-based systems, the HMC must be at version 11 release 1.0, or later.
 - Graphic monitor with keyboard and mouse.
 - Teletype (tty) monitor with keyboard.

Completing inventory for your preinstalled server

Use this information to complete inventory for your server.

About this task

To complete the inventory, complete the following steps:

Procedure

1. Verify that you received all the boxes you ordered.
2. Unpack the server components as needed.
3. Complete a parts inventory before you install each server component by following these steps:
 - a. Locate the inventory list for your server.
 - b. Ensure that you received all the parts that you ordered.

Note: Your order information is included with your product. You can also obtain the order information from your marketing representative or the IBM Business Partner.

Removing the shipping bracket and connecting power cords and power distribution unit (PDU) for your preinstalled server

Before you set up a console, you must remove the shipping bracket and connect power cords.

About this task



Attention:

- Attach an electrostatic discharge (ESD) wrist strap to the front ESD jack, to the rear ESD jack, or to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
- When you use an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
- If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.

To remove the shipping bracket and connect power cords, do the following:

Procedure

1. Remove the two thumbscrews that secure the shipping bracket to the chassis.
2. Cable the server.
 - a. Connect the system power cords from the server to the PDU with an IEC 320 type receptacle.
 - b. Attach the PDU input power cord and plug it into the power source.
3. Install the EIA covers on each side of the front of the system.

Setting up a console

Your console, monitor, or interface options are guided by how you want to use the system.

Accessing the eBMC so that you can manage the system

IBM® Power Systems servers use a enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the

system event log files (SEL). The eBMC is a specialized service processor that monitors the physical state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

Accessing the eBMC by using an HMC

Learn how to access the eBMC by using an HMC.

About this task

To access the eBMC using the HMC, complete the steps in this procedure.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 11 Release 1.0, or later.

Procedure

1. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.
2. Connect each end of the power cables to the power supplies on the rear of the system, and connect the other ends to a power source.
3. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The eBMC displays the **Pending Authentication** state.
4. You are prompted to set the ID and password that your HMC will use to authenticate and manage the system (the default password is expired). This is the same ID and password that you will use to access the ASMI. To set the system password, select the eBMC, then select **Actions > Update System Password**.
5. Click **Finish**.
6. Select **System Actions > VMI configuration**. Select the network interface, then select **Modify**.
Note: You can choose either **T0** or **T1**.
7. Select **DHCP** and click **OK**.
8. Use the HMC to power on the system. To power on the system, complete the following steps:
 - a. In the navigation area, select **Resources > All Systems**.
 - b. In the contents area, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.

Accessing the eBMC without using an HMC

To access the eBMC without using the HMC, complete the steps in this procedure.

About this task

To access the eBMC without using an HMC, complete the following steps:

Procedure

1. Connect an Ethernet cable between the **ETHx** port on the rear of the system to a PC equipped with an Ethernet port.
2. If you haven't already done so, connect the power cables to the power supplies. The panel displays **01 N**.
3. Press the up arrow key to select **02** and press **Enter**.
4. Press **Enter** until a **<** (less than symbol) appears next to **N**. Press the **Up Arrow** key. The **N** changes to an **M**.
5. Press Enter twice. **02** displays on the control panel.
6. Press the Up Arrow key until it returns 30 and press Enter. The panel displays **30****.

7. Press the Up Arrow key. The panel now displays **3000**. Press **Enter**.
8. Record the information that displays. You will need this information for a later step.
9. Move to your Ethernet-equipped device. Open your device's network configuration panel and assign an IP that is the same as what you recorded in the previous step, but subtract 1. For instance, if you recorded 169.254.176.9, then assign your laptop 169.254.176.8. Use subnet mask **255.255.0.0** on the device. This will be the eBMC's default value.
10. Use your device to verify that you can connect using the address you used in the previous step, and then attach a web browser to that IP address and open the ASMI interface.
11. Use the ASMI interface to set a new admin password. The initial login is *admin/admin*.
12. Set a new password.
13. Configure ETHx as a static IP. To configure ETHx as a static IP, complete the following steps:

Note: You can choose either **T0** or **T1**. If you previously connected to T0, configure **Eth0**. If you previously connected to T1 on the HMC network, configure **Eth1**. You will need one available IP address for **ETH0** or **ETH1** on the eBMC interface.

- a. On the eBMC, select **Settings > Network > ETHx**.
 - b. Select **Add Static IPv4 Address**.
 - c. Enter your IP address, gateway, and subnet information.
 - d. Click **Add**.
14. Remove the current connection from the system to your PC and re-cable the system to the network. If you want to log back into eBMC interface, open a supported web browser. In the address bar, enter the IP address of the eBMC system that you want to connect to. For example, you can use the format **https://<eBMC IP>** in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password that is assigned to you. Click **Log in**.

Note: The default user ID is *admin* and the password is the one that you specified in a previous step.

Determining which console to use

Your console, monitor, or interface choices are guided by whether you create logical partitions, which operating system you install in your primary partition, and whether you install a Virtual I/O Server (VIOS) in one of your logical partitions.

Go to the instructions for the applicable console, interface, or terminal in the following table.

Table 7. Available console types				
Console type	Operating system	Logical partitions	Cable required	Setup instructions
ASMI (Access System Management Interface) by using the eBMC	AIX, Linux, or VIOS	Yes		Accessing the eBMC so that you can manage the system (http://www.ibm.com/docs/POWER11/p11jad/p11jad_accessing_the_ebmc.htm)
Hardware Management Console (HMC)	AIX, IBM i, Linux, or VIOS	Yes	Ethernet (or cross-over cable)	Cabling the server to the HMC(http://www.ibm.com/docs/POWER11/p11jad/p11jad_cabling_hm.htm)

Table 7. Available console types (continued)

Console type	Operating system	Logical partitions	Cable required	Setup instructions
Operations Console	IBM i	Yes Use your Operations Console to manage existing IBM i partitions.	Ethernet cable for LAN connection	“Accessing Operations Console” on page 20 Cabling the server and accessing Operations Console (http://www.ibm.com/docs/POWER11/p11jad/p11jad_cable_ops_kickoff.htm).

Cabling the server to the HMC

The Hardware Management Console (HMC) controls managed systems, including the management of logical partitions, the creation of a virtual environment, and the use of capacity on demand. Using service applications, the HMC can also communicate with managed systems to detect, consolidate, and forward information to IBM service for analysis.

Before you begin

If you have not installed and configured your HMC, do so now. For instructions, see [Installation and configuration tasks](http://www.ibm.com/docs/POWER11/p11hai/p11hai_taskflow.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_taskflow.htm).

To manage POWER11 processor-based systems, the HMC must be at version 11 release 1.0, or later. To view the HMC version and release, complete the following steps:

1. In the navigation area, click **Updates**.
2. In the work area, view and record the information that appears in the HMC Code Level section, including the HMC version, release, Service Pack, build level, and base versions.

To cable the server to the HMC, complete the following steps:

Procedure

1. If you want to directly attach your HMC to the managed system, connect **ETH0** on the HMC to the **T0** port on the managed system.
2. To learn how to connect an HMC to a private network so that it can manage more than one managed system, see [HMC network connections](http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm).

Notes:

- You can also have multiple systems that are attached to a switch that is then connected to the HMC. For instructions, see [HMC network connections](http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_netconhmc.htm).
- If you are using a switch, ensure that the speed in the switch is set to **Autodetection**. If the server is directly attached to the HMC, ensure the Ethernet adapter speed on the HMC is set to **Autodetection**. For information about how to set media speeds, see [Setting the media speed](http://www.ibm.com/docs/POWER11/p11hai/p11hai_lanmediaspeed_enh.htm) (http://www.ibm.com/docs/POWER11/p11hai/p11hai_lanmediaspeed_enh.htm).
- 3. If you are connecting a second HMC to your managed server, connect it to the Ethernet port that is labeled **T1** on the managed server.
- 4. Continue with [“Cabling the server and connecting expansion units” on page 27](#).

Accessing Operations Console

You can use Operations Console to manage a server that is running the IBM i operating system.

Cabling the server and accessing the Operations Console if the system is not preinstalled with the IBM i operating system

Learn how to cable the server and access the Operations Console by using a LAN connection to manage your system using the IBM i operating system.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>)

To cable the server and to access the LAN Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the LAN console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

To set up the LAN console, complete the following steps:

1. Install [IBM i Access Client Solutions \(ACS\)](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see [IBM i Access - ACS Getting Started](https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0) (<https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that you are running the latest version of ACS. For more information, see [IBM i Access - Client Solutions 5733XJ1](https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1) (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into the **T0** port, which is usually the top or far-right port on the first Ethernet adapter. To determine the server adapter port that you must use, refer to the following table:

Table 8. LAN console slots	
Server	LAN console slot
9824-22A, 9824-42A, 9856-22H, or 9856-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the LAN console port. A cross-over cable is not needed. For more information, see [Adapter requirements](http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm) (http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm).

3. Configure the PC network. To configure the PC network using a Windows-based PC, complete the following steps:
 - a. Open Windows Control Panel and access the adapter settings. Select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - b. Ensure that only the Local Area Connection is enabled. If other adapters are enabled, disable them.

- c. Right-click the adapter that you previously connected to the server and select **Properties**.
 - d. select **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the LAN console, record the IP information that is displayed.
 - e. Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.
4. Disable any PC firewalls.
- Note:** All PC firewalls must be disabled for the initial connection.
5. On the PC, open a supported web browser. In the address bar, enter the IP address of the eBMC system to which you want to connect. For example, you can use the format `https://<eBMC IP>` in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password.
- Note:** The default user ID is *admin* and the password is the password that you created when you accessed the eBMC.
- Click **Log in**.
6. Power on the server using the ASMI by completing the following steps:
- a. In the navigation area, select **Operations > Server power operations**. The power state of the system displays.
 - b. Set the Server firmware start policy to **Standby** and save the settings.
 - c. Power on the server with the current settings by clicking the **Power on** button under **Operations**.
7. To configure IBM i settings on the server, complete the following steps:
- a. Load the installation media.
 - b. Set the Server operating mode to **Manual**.
 - c. Set the IBM i partition boot mode to **D**.
 - d. Set the IBM i load source to the target load source slot.
 - e. Set the IBM i alternate restart device to the slot containing the installation media.
 - f. Set the IBM i console to the target Ethernet adapter port.
 - g. Save the settings and select **Continue to OS Running**.

Note: You can identify physical part locations by using location codes. Illustrations are provided to help you map a logical location code to a physical location on the server or expansion unit. For more information, see [Part locations and location codes](http://www.ibm.com/docs/POWER11/p11ecs/p11ecs_locations.htm) (http://www.ibm.com/docs/POWER11/p11ecs/p11ecs_locations.htm).
 - h. Once the system displays **C60041F6**, continue with next step.

Note: The system can take up to 30 minutes to complete this action. If **A6005008** displays on the control panel, this means that the system could not locate an available LAN console. This might indicate that the system is not preinstalled with IBM i, and you must set the console type to LAN.
8. Connect the LAN console by completing the following steps:
- a. Open IBM i Access Client Solutions (ACS).
 - b. Under Management, click **System Configurations**.
 - c. Select **Locate Console**.
 - d. Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
 - e. Confirm the selection by pressing Enter.
 - f. When using IBM-purchased media on a D mode, sign in using user ID / password *QSECOFR / QSECOFR*.
 - g. Press Enter for **Language feature 2924**.

- h. Confirm the selection by pressing Enter.
 - i. The DST (Dedicated Service Tools) window opens. Type your user id and password and press Enter.
9. Install the IBM i operating system. To install the IBM i operating system, complete the following steps:
- a. Prepare the NVMe device. To prepare the NVMe device, complete the following steps:
 - i) On the Install Licensed Internal Code display, select **Work with Dedicated Service Tools (DST)**.
 - ii) In the Use Dedicated Service Tools (DST) window, select **Work with disk units**.
 - iii) In the Work with Disk Units window, select **Work with NVMe Devices**.
 - iv) In the Work with NVMe Devices window, select **Delete existing NVMe Namespaces**. Then press Enter to accept the warnings, and continue with the next step.
 - v) Select the NVMe device.
 - vi) If there are no namespaces listed, press **F12** and go to [“9.a.ix”](#) on page 53.
 - vii) Select the **4=Delete Namespace** option on each of the listed namespaces and follow the onscreen instructions.
 - viii) Press **F10** to confirm the delete of the namespaces.
 - ix) In the Work with NVMe Devices window, select **Create NVMe namespaces**.
 - x) Select the NVMe device.
 - xi) Enter the quantity and capacity of the namespaces you want on the NVMe device.
 - xii) Press **F10** to confirm the creation of the namespace.
 - xiii) Press **F12** to return to the Use Dedicated Service Tools (DST) window.
 - b. Install Licensed Internal Code. To install Licensed Internal Code, complete the following steps:
 - i) In the Use Dedicated Service Tools (DST) window, select **Install Licensed Internal Code**.
 - ii) In the Select Load Source Device window, select the NVMe device and press **F10** to confirm.
 - iii) In the Install Licensed Internal Code window, select **Install Licensed Internal Code and Initialize System**.
 - iv) Confirm the selection by pressing **F10**. The NVMe disk unit is zeroed, the Licensed Internal Code is installed, and the partition will then IPL to DST.

Note: Close your session.
 - v) Under Access Client Solutions (ACS), clear the search field and then click **Search**. After a few seconds, a new IP connection displays. Select the connection and then select **Console**.
 - vi) Sign in with user ID and password *QSECOFR* / *QSECOFR* and change the password.
 - vii) If the system finds a new disk configuration, the Disk Configuration Attention Report displays. Press **F10** to accept this new configuration.
 - viii) Sign on using user ID *QSECOFR* and the password that you created.

Note: The password is case-sensitive.
 - c. Add units to the ASP (Auxillary Storage Pool). To add units to the ASP, complete the following steps:
 - i) In the Use Dedicated Service Tools (DST) menu, select **Work with disk units**.
 - ii) In the Work with Disk Units window, select **Work with disk configuration** and then select **Work with NVMe devices**.
 - iii) In the Work with NVMe Devices window, select **Create NVMe namespaces**.
 - iv) Select the NVMe device that is not the NVMe device that contains the load source.
 - v) Enter the same quantity and capacity of the namespaces that you specified.

- vi) Press **F10** to confirm the creation of the name space.
 - vii) Press **F12** twice to return to the Work with Disk Units window.
 - viii) In the Work with Disk Units window, select **Work with ASP configuration** then select **Work with ASP Configuration**.
 - ix) In the Work with ASP Configuration window, select **Add units to ASPs**.
 - x) In the Add units to ASPs window, select **Add units to existing ASPs**.
 - xi) A list of disk units displays. In each of the Specify ASP columns for each of the NVMe disk units, type **1**.
 - xii) Press **F10** to confirm **Add Units and Balance**.
 - xiii) Press **F12** twice to return to the Work with Disk Configuration window.
 - d. Start mirrored protection. To start mirrored protection, complete the following steps:
 - i) In the Work with Disk Configuration window, select **Work with mirrored protection**.
 - ii) In the Work with Mirrored Protection window, select **Start mirrored protection**.
 - iii) Select **ASP 1**.
 - iv) Confirm the start of mirrored protection. The partition updates the configuration and the system IPLs to DST.
10. To set a static IP address for the LAN console, complete the following steps:
- a. Sign in using the QSECOFR user ID and the password that you created in the previous step.
 - Note:** The password is case-sensitive.
 - b. At the DST Main Menu, select Option 3- **Use Dedicated Service Tools**.
 - c. Select **Work with DST environment**.
 - d. Select **System Devices**.
 - e. Select **Configure service tools LAN adapter**.
 - f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word Default and enter the IP address that you want to use.
 - g. Press F7 to store the information.
 - h. Press F17 to **Deactivate and Activate**. This causes your session to disconnect. Then close the session.
11. To create a connection using a static IP, complete the following steps:
- a. Either move the PC and LAN console port both to the network or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
 - b. Return to the ACS interface and select the System Configurations window.
 - c. Click **New**.
 - d. If you plan to use this connection to connect to other functions, type the system name that you plan to use in the General tab.
 - e. Click the **Console** tab.
 - f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
 - g. Click **OK** and close System Configurations window.
 - h. In the main ACS menu, from the System drop-down menu, click **System** and select the system that you created.
 - i. Under Console, click **5250 Console**. Sign in using your ID and password. Continue with your IPL.

Continue with [“Completing the server setup” on page 27](#).

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>).

To cable the server and to access the Operations Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the Operations Console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

About this task

To set up the Operations Console, complete the following steps:

Procedure

1. Install IBM i Access Client Solutions (ACS) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see [IBM i Access - ACS Getting Started](https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0) (<https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that you are running the latest version of ACS. For more information, see [IBM i Access - Client Solutions 5733XJ1](https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1) (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into the **TO** port, which is usually the top or far-right port on the first Ethernet adapter. To determine the server adapter port that you must use, refer to the following table:

Table 9. Server Operations Console LAN slots	
Server	Operations Console - LAN slot
9824-22A, 9824-42A, 9856-22H, or 9856-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the Operations Console port. A cross-over cable is not needed. For more information, see [Adapter requirements](http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm) (http://www.ibm.com/docs/POWER11/p11hbx/hardwarereq_adapter.htm).

3. Configure the PC network. To configure the PC network using a Windows-based PC, complete the following steps:
 - a. i) Open Windows Control Panel and access the adapter settings. Select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - ii) Ensure that only the Local Area Connection is enabled. If other adapters are enabled, disable them.

iii) Right-click the adapter that you previously connected to the server and select **Properties**.

iv) select **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the Operations Console, record the IP information that is displayed.

v) Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.

4. Disable any PC firewalls.

Note: All PC firewalls must be disabled for the initial connection.

5. On the PC, open a supported web browser. In the address bar, enter the IP address of the eBMC system to which you want to connect. For example, you can use the format `https://<eBMC IP>` in the address bar of the web browser. From the ASMI logon window, select the language and enter the username and password that is assigned to you. Note: Click **Log in**.

Note: Use the default user ID *admin* and the password that you set up when you accessed the eBMC for the first time.

6. Power on the server using the ASMI by completing the following steps:

a. In the navigation area, select **Operations > Server power operations**. The power state of the system displays.

b. Set the Server firmware start policy to **Standby** and save the settings.

c. Power on the server with the current settings by clicking the **Power on** button under **Operations**.

7. Set the console type to LAN. To chert the console type to LAN, complete the following steps:

a. Use the enterprise baseboard management controller (eBMC) to set the location of the Ethernet adapter port that the LAN console will use. In the eBMC interface, select **Server Power Operations > Settings > IBMi console**.

b. Set the IBMi console to the target Ethernet adapter port.

c. Save the settings and select **Continue to OS Running**.

d. When the system displays **C60041F6**, continue with the next step.

Note: The system can take up to 30 minutes to complete this action. If **A6005008** displays on the control panel, this means that the system could not locate an available Operations Console. This might indicate that the system is not preinstalled with IBM i, and you must set the console type to LAN.

8. Connect the Operations Console by completing the following steps:

a. Connect the Operations Console by completing the following steps:

i) Open IBM i Access Client Solutions (ACS).

ii) Under Management, click **System Configurations**.

iii) Select **Locate Console**.

iv) Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.

v) In the Pending Authorization window, sign in with user ID and default password *QSECOFR / QSECOFR*. Change the password.

vi) Accept the security certificate.

Note: If you do not accept the security certificate, the connection will not be completed.

A console window opens.

Note: If the window is blank at first but a cursor appears in the upper left corner of the window, the screen is waiting for the media to provide the information to be displayed.

9. To set a static IP address for the Operations Console, complete the following steps:

a. Sign in using the QSECOFR user ID and the password that you created in the previous step.

Note: The password is case-sensitive.

- b. At the DST Main Menu **b**, select **Option 3- Use Dedicated Service Tools**.
 - c. Select **Option 5- Work with DST environment**.
 - d. Select **Option 2- System Devices**.
 - e. Select **Option 7- Configure service tools LAN adapter**.
 - f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word Default and enter the IP address that you want to use.
 - g. Press F7 to store the information.
 - h. Press F17 to **Deactivate and Activate**. This causes your session to disconnect. Then close the session.
10. To create a connection using a static IP, complete the following steps:
- a. Either move both the PC and Operations Console port to the network, or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
 - b. Return to the ACS interface and select the System Configurations window.
 - c. Click **New**.
 - d. If you plan to use this connection to connect to other functions, type the system name that you plan to use in the General tab.
 - e. Click the **Console** tab.
 - f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
 - g. Click **OK** and close System Configurations window.
 - h. In the main ACS menu, click **System** and select the system that you created.
 - i. Under Console, click **5250 Console**. Sign in using your ID and password. Continue with your IPL.

Completing the server setup

Learn about the tasks you must complete to set up your managed system.

Select from the following options:

- [“Completing the server setup by using an HMC” on page 57](#)
- [“Completing the server setup without using an HMC” on page 60](#)

Completing the server setup by using an HMC

Perform these tasks to complete the server setup by using a Hardware Management Console (HMC). You can also begin to use virtualization to consolidate multiple workloads onto fewer systems to increase server use, and to reduce cost.

Completing the server setup by using an HMC with DHCP

Perform these tasks to complete the server setup by using an HMC that uses a DHCP network configuration.

About this task

Note: Before you continue with this step, ensure that you have removed the orange system-to-rail locking clips on each slide rail and pushed the system into the rack.

IBM® Power Systems servers use an enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the system event log files (SEL). The eBMC is a specialized service processor that monitors the physical

state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

Important: Intelligent Platform Management Interface (IPMI) is disabled by default on your system. Inherent security vulnerabilities are associated with using the IPMI. Consider using Redfish APIs or the GUI to manage your system. You must enable the IPMI and authorize the user before you can use the service.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 11 Release 1, or later.

To access the eBMC by using your HMC, complete the following steps:

Procedure

1. Attach one end of the system power supply cable to a power source.

Note: Do not apply power at this time.

2. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.

Note: If you are managing a standalone system without an HMC by using DHCP, you can identify the IP addresses by using **Function 30: Service processor IP address and port location**. For more information, see [Function 30: Service processor IP address and port location](http://www.ibm.com/docs/POWER11/p11hb5/func30.htm) (<http://www.ibm.com/docs/POWER11/p11hb5/func30.htm>).

3. Connect each end of the power cables to the power supplies on the rear of the system, and connect the other ends to a power source.
4. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The server displays the **Pending Authentication** state.
5. You are prompted to set the HMC Access password that your HMC will use to authenticate and manage the system. This is the same password that you will use to access the ASMI as **admin**. To set the system password, select the server, then select **Actions > Set System Password**.

Note: The HMC Access password is also the eBMC ASMI admin password.

6. Click **Finish**.
7. Select **System Actions > VMI configuration**. Select the network interface, then select **Modify**.

Note: You can choose either **T0** or **T1**. If you previously connected to **T0**, configure **Eth0**. If you previously connected to **T1** on the HMC network, configure **Eth1**.

8. Select **DHCP** and click **OK**.
9. Use the HMC to power on the system.
 - a. In the navigation area, select **Resources > All Systems**.
 - b. In the content pane, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.
10. Check the time of day.

- a. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
- b. In the navigation area, expand **System Configuration**.
- c. Select **Time of Day**. The content pane displays a form that shows the current date (day, month, and year) and time (hours, minutes, and seconds).

11. Check the firmware level of your managed system.

To check your managed system's firmware level, select **Actions > Update Firmware > System Firmware > View Current Levels**.

12. If necessary, update your managed system firmware. Select **Actions > Update Firmware > System Firmware > Update**.

Completing the server setup by using an HMC with a static network configuration

Perform these tasks to complete the server setup by using an HMC that uses a static network configuration.

Before you begin

To complete this procedure, you must have two static IPs to complete the connection and authentication process; one for the **HMC1** port and one for VMI. When you log in using your PC to set static IPs and to set the **admin** password, that is the password that you will use when you select **Connect Systems...** . This is because the client is using static IPs.

Procedure

1. Connect an Ethernet cable between the **T2 (ETH0)** port on the rear of the system to a PC equipped with an Ethernet port, assuming that **T3 (ETH1)** is connected to the HMC.
2. If you haven't already done so, connect the power cables to the power supplies. The panel displays **01 N**.
3. Press the up arrow key to select **02** and press Enter.
4. Press Enter again. **A <** (less than symbol) appears next to **N**. Press the Up Arrow key. The **N** changes to an **M**.
5. Press Enter.
6. Press Enter twice. **02** displays on the control panel.
7. Press the Up Arrow key until it returns **30** and press Enter.
8. Press enter again. The panel now displays 3000. Press Enter.
9. Record the information that displays. You will need this information for a later step.
10. Move to your Ethernet-equipped device. Open your device's network configuration panel and assign an IP that is the same as what you recorded in the previous step, but subtract 1. For instance, if you recorded 169.254.176.9, then assign your laptop 169.254.176.8. Use subnet mask **255.255.0.0** on the device. This will be the BMC's default value.
11. Use your device to verify that you can connect using the address you used in the previous step, and then attach a web browser to that IP and open ASMI.
12. Log in using the default user ID and password.

Note: The default user ID is admin and the default password is admin.

13. Use the ASMI interface to set a new admin password. The initial login is **admin/admin**.
14. Set a new password. Ensure that you enter an acceptable password before proceeding to the next step.
15. Configure ETH1 as a static IP. To configure ETH1 as a static IP, complete the following steps:

Note: You will need one available IP address for ETH1 on the BMC.

- a. on the BMC, select **Settings > Network > Eth1**.
 - b. Select **Add Static IPv4 Address**.
 - c. Enter your IP address, gateway, and subnet information.
 - d. Click **Add**.
16. Using the IP address that you configured above, add the system to your HMC. To add a managed system so that it can be managed by your HMC, in the contents area, click **Connect Systems...** and complete the fields.

Note: In the **Connect Systems...** window, you must provide the static IP address for the server being added, and specify the username *admin* and the password that you set for **admin**. If you do not make these specifications, the server will be unable to connect to the HMC. If you attempt to authenticate using incorrect credentials too many times, the system will lock the **admin** password. If the **admin** password is locked, remote support must generate and send the ACF file so that you can reset the **admin** password before you continue.

Click **OK**.

17. Configure VMI. To configure VMI, select **Operations > VMI Settings**.

18. Type the VMI IP information and configure the IP type to be **Static**.

19. Use the HMC to power on the system.

a. In the navigation area, select **Resources > All Systems**.

b. In the content pane, select the managed system.

c. In the navigation area, select **System Actions > Operations > Power On**.

20. Check the firmware level of your managed system.

To check your managed system's firmware level, select **Actions > Update Firmware > System Firmware > View Current Levels**.

21. If necessary, update your managed system firmware. Select **Actions > Update Firmware > System Firmware > Update**.

Completing the server setup without using an HMC

If you do not have an Hardware Management Console (HMC), use this procedure to complete the server setup.

About this task

To complete the server setup without using a management console, complete the following steps:

Procedure

1. To check the firmware level on the managed system and the time of day, complete the following steps:

a. Access the Advanced System Management Interface (ASMI). For instructions, see [Accessing the ASMI without an HMC](http://www.ibm.com/docs/POWER11/p11hby/connect_asmi.htm) (www.ibm.com/docs/POWER11/p11hby/connect_asmi.htm).

b. On the ASMI Welcome pane, note the existing level of server firmware in the upper-right corner under the copyright statement.

c. Update the date and time.

To automatically set the date and time, select **NTP**. Enter the NTP server address or addresses. Click **Save settings**.

To manually set the date and time, Select **Manual**. Enter the date and time. Click **Save settings**.

2. To start a system, complete the following steps:

a. Open the front door of the managed system.

b. Press the power button on the control panel.

The power-on light begins to flash faster.

a. The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.

b. Progress indicators appear on the control panel display while the system is being started.

c. The power-on light on the control panel stops flashing and remains on, indicating that the system is powered on.

For instructions, see [Starting a system that is not managed by an HMC](http://www.ibm.com/docs/POWER11/p11haj/startsysnohmc.htm) (www.ibm.com/docs/POWER11/p11haj/startsysnohmc.htm).

3. Install an operating system and update the operating system.

• Install the AIX operating system. For instructions, see [Installing AIX](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installaix.htm) (http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installaix.htm).

• Install the Linux operating system. For instructions, see [Installing Linux](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installinux.htm) (http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_installinux.htm).

- Install the VIOS operating system. For instructions, see [Installing VIOS](https://www.ibm.com/docs/POWER11/p11hb1/p11hb1_vios_install.htm) (https://www.ibm.com/docs/POWER11/p11hb1/p11hb1_vios_install.htm).
 - Install the IBM i operating system. For instructions, see [Installing the IBM i operating system](http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_ibmi.htm) (http://www.ibm.com/docs/POWER11/p11hdx/p11hdx_ibmi.htm).
4. You have now completed the steps to install your server.

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Accessibility features for IBM Power 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 servers include the following major accessibility features:

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

The IBM Power servers use the latest W3C Standard, [WAI-ARIA 1.0](http://www.w3.org/TR/wai-aria/) (www.w3.org/TR/wai-aria/), to ensure compliance with [ICT Accessibility 508 Standards and 255 Guidelines](https://www.access-board.gov/ict/) (<https://www.access-board.gov/ict/>) and [Web Content Accessibility Guidelines \(WCAG\) 2.0](http://www.w3.org/TR/WCAG20/) (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 servers.

The IBM Power servers online product documentation in IBM Documentation is enabled for accessibility. For more information about IBM's commitment to accessibility, see the IBM accessibility website at [IBM Accessibility](https://www.ibm.com/able/) (<https://www.ibm.com/able/>).

Keyboard navigation

This product uses standard navigation keys.

Interface information

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

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

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

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

For more information about the commitment that IBM has to accessibility, see [IBM Accessibility](http://www.ibm.com/able) (www.ibm.com/able).

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

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This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

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International Business Machines Corp.
New Orchard Road

Armonk, New York 10504
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:
IBM Deutschland GmbH
Technical Relations Europe, Abteilung M456
IBM-Allee 1, 71139 Ehningen, Germany
Tel: +49 (0) 800 225 5426
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This statement applies to products less than or equal to 20 A per phase.

高調波電流規格 JIS C 61000-3-2 適合品

This statement applies to products greater than 20 A, single phase.

高調波電流規格 JIS C 61000-3-2 準用品

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

- 回路分類 : 6 (単相、P F C回路付)
- 換算係数 : 0

This statement applies to products greater than 20 A per phase, three-phase.

高調波電流規格 JIS C 61000-3-2 準用品

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

- 回路分類 : 5 (3相、P F C回路付)
- 換算係数 : 0

Japan Voluntary Control Council for Interference (VCCI) Notice

この装置は、クラス A 機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

V C C I - A

Korea Notice

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

People's Republic of China Notice

警告：在居住环境中，运行此设备可能会造成无线电干扰。

Russia Notice

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

Kingdom of Saudi Arabia Notice

قد يتسبب هذا المنتج في حدوث تداخل إذا تم استخدامه في المناطق السكنية.

ويجب تجنب هذا الاستخدام ما لم يتخذ المستخدم تدابير خاصة لتقليل الانبعاثات الكهرومغناطيسية لمنع التداخل مع استقبال البث الإذاعي والتلفزيوني.

تحذير: هذا الجهاز متوافق مع الفئة أ من SASO CISPR 32

في البيئة السكنية، قد يتسبب هذا الجهاز في حدوث تداخل لاسلكي.

Taiwan Notice

CNS 13438:

警告使用者：
此為甲類資訊技術設備，
於居住環境中使用時，可
能會造成射頻擾動，在此
種情況下，使用者會被要
求採取某些適當的對策。

CNS 15936:

警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

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

United States Federal Communications Commission (FCC) Notice

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

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM-authorized dealers. 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.

Responsible Party:

International Business Machines Corporation

New Orchard Road

Armonk, NY 10504

Contact for FCC compliance information only: fccinfo@us.ibm.com

United Kingdom Notice

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Class B Notices

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

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

Canada Notice

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

European Community and Morocco Notice

This product is in conformity with the protection requirements of Directive 2014/30/EU of the European Parliament and of the Council on the harmonization 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.

German Notice

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

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

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

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

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

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

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

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

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

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55032 Klasse B

Japan Electronics and Information Technology Industries Association (JEITA) Notice

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

This statement applies to products less than or equal to 20 A per phase.

高調波電流規格 JIS C 61000-3-2 適合品

This statement applies to products greater than 20 A, single phase.

高調波電流規格 JIS C 61000-3-2 準用品

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- ・回路分類 : 6 (単相、P F C回路付)
- ・換算係数 : 0

This statement applies to products greater than 20 A per phase, three-phase.

高調波電流規格 JIS C 61000-3-2 準用品

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

- 回路分類 : 5 (3相、PFC回路付)
- 換算係数 : 0

Japan Voluntary Control Council for Interference (VCCI) Notice

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

取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

Taiwan Notice

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

United States Federal Communications Commission (FCC) Notice

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 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.

Responsible Party:

International Business Machines Corporation
New Orchard Road

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