

Power Systems

Changing consoles

IBM

Power Systems

Changing consoles

IBM

Note

Before using this information and the product it supports, read the information in “Notices” on page 11, “Safety notices” on page v, the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

This edition applies to IBM Power Systems™ servers that contain the POWER9 processor and to all associated models.

© Copyright IBM Corporation 2018.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Safety notices	v
Changing consoles	1
Concepts for changing your console configuration	1
Changing the console by powering off the managed system	1
Changing the console when the managed system is powered on	3
Completing a console change when the logical partition is powered on	3
Completing a console change by using the command line when the logical partition is powered on	3
Changing a console by using the HMC when the logical partition is powered on	6
Changing hardware for one or more consoles	7
Changing hardware for one or more consoles by using the HMC	8
Troubleshooting the new console	8
Related information for Changing consoles	9
Accessing Operations Console information in the IBM i Knowledge Center	9
Notices	11
Accessibility features for IBM Power Systems servers	12
Privacy policy considerations	13
Trademarks	14
Electronic emission notices	14
Class A Notices	14
Class B Notices	18
Terms and conditions	21

Safety notices

Safety notices may be printed throughout this guide:

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

World Trade safety information

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

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

German safety information

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

Laser safety information

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

Laser compliance

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

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

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

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

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

DANGER:

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

To Disconnect:

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

To Connect:

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

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

(R001 part 1 of 2):

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

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



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

(R001 part 2 of 2):

CAUTION:

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



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

CAUTION:

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

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

(R002)

(L001)



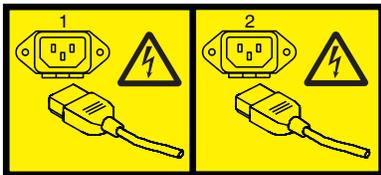
DANGER: Hazardous voltage, current, or energy levels are present inside any component that has this label attached. Do not open any cover or barrier that contains this label. (L001)

(L002)



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

(L003)



or



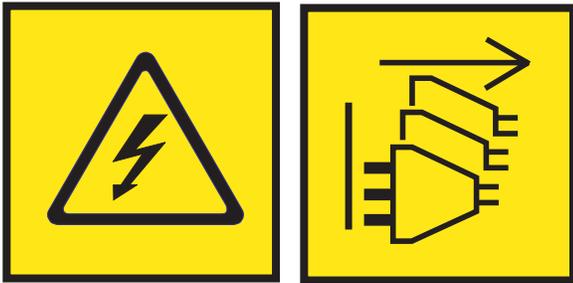
or



or



or



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

(L007)



CAUTION: A hot surface nearby. (L007)

(L008)



CAUTION: Hazardous moving parts nearby. (L008)

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

CAUTION:

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

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

(C026)

CAUTION:

Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Although shining light into one end and looking into the other end of a disconnected optical fiber to verify the continuity of optic fibers 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)

CAUTION:

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

Do Not:

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

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

CAUTION:

Regarding IBM provided VENDOR LIFT TOOL:

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

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

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

The equipment is suitable for installation in the following:

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

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

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

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

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

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

Changing consoles

You can change the console that you are using to manage the IBM i operating system for certain systems management functions.

Note: You might need to perform an initial program load (IPL) on the system or logical partition, and manually delete the existing IBM i console device and controller resource for the following changes:

- Changing the 24x80 display model to a 27x132 display model.
- Changing the system or logical partition from a single byte to a double-byte or from a double-byte to a single byte

Changing consoles requires careful attention to the procedures to avoid unwanted results. The procedure that you need to follow depends on whether your managed system is powered off or powered on.

Concepts for changing your console configuration

If your business demands require capabilities that your current console does not provide, you can change your console.

Changing consoles can provide greater control over the management of your system or systems. Console options for your IBM model include the Hardware Management Console (HMC) and Operations Console (LAN). You might want to change your console if you are performing any of the following tasks:

Upgrading to a processor-based system

If you are upgrading POWER7[®] or POWER8[®] processor-based system to a POWER9[™] processor-based system, you must update the HMC machine code level to work with a POWER9 processor-based system. After the update, the HMC can continue to manage the POWER8 or POWER7 processor-based systems.

Adding management features

You can connect multiple consoles to your systems to increase the management control over systems.

Servicing the system

You must connect a console to your system so that a service provider can access service functions to repair a problem.

Changing the console by powering off the managed system

You can change the console that manages the IBM i operating system by powering off the managed system.

Before you begin

To perform this procedure, you must have a working console or another workstation that can use system service tools (SST).

Before you begin, deallocate the LAN adapter if you are not using a local console on a network (LAN) configuration, even as a backup, or if you are not using the service tools server. After the LAN adapter is deallocated, you can move it or use it for another purpose. You must use a workstation other than a local console on a network (LAN) because the steps to deallocate the adapter causes the console to disconnect.

Important: You must change the console tag to a value other than Operations Console (LAN). Otherwise, the adapter is reallocated the next time that you start the server.

To deallocate the LAN adapter that is associated with a local console on a network (LAN), complete the following steps by using the SST:

1. Access service tools by using SST.
2. Select **Work with service tools user IDs and devices**.
3. Select **Configure service tools LAN adapter**.
4. Press F6 to clear the old values, and then F7 to store the new values.
5. Press F3 or F12 to exit.

About this task

To change the console, complete the following steps:

Procedure

1. Using the current console or another workstation, shut down the IBM i logical partition.
2. If the current console is the Operations Console, disconnect the connection by using the following steps:
 - a. Select the configuration name (under **System i Connection**). The Operations Console uses this name to refer to a specific server.
 - b. From the **Connections** menu, select **Disconnect**.
 - c. Wait for the status to display **Disconnected**.
3. Remove any hardware or cables that are associated with the previous console, and then add or move any hardware or cables that are needed for the new console. For more information, see “Accessing Operations Console information in the IBM i Knowledge Center” on page 9.
4. Select the option that best fits your situation. More than one option might apply.
 - If the new console is not an Operations Console, then power on the console device and start a connection now.
 - If you are changing the current console to Operations Console, create an Operations Console connection by following the instructions in Setting up Operations Console.
 - If you currently have a configured connection for Operations Console and you are not using it as a backup console, complete the following steps to delete the configuration:
 - a. Select the configuration name (under **System i Connection**).
 - b. Click **Delete** on the **Connection** menu.
 - c. Click **Yes** to confirm the deletion.
5. Change the console device setting for the IBM i logical partition profile by using the HMC.
 - a. In the contents area, select the logical partition that you are working with.
 - b. Select **Actions > Profiles > Manage Profiles**.
 - c. Select the logical partition profile that you want to change.
 - d. Select **Actions > Edit**.
 - e. Click **Tagged I/O**, and then click **Select** under the console heading.
 - f. Select the resource if it is an input/output adapter (IOA), or change from I/O device to logical port to use the host Ethernet adapter.
 - g. Click **OK > OK > Close**.
6. Activate the IBM i logical partition profile to allow the new setting to take effect by using the HMC.
 - a. In the contents area, select the logical partition that you are working with.
 - b. Select **Actions > Activate**.
 - c. Select the logical partition profile that you want to activate and click **OK**.

Results

The new console is available after the initial program load (IPL) of the logical partition is complete, or after the console activation method completes. If you experience problems, see [Troubleshooting the new console when the system is managed by an HMC](#).

Changing the console when the managed system is powered on

You can use the system service tools to change the console that manages IBM i while the managed system is powered on.

Related concepts:

“[Accessing Operations Console information in the IBM i Knowledge Center](#)” on page 9

Learn how to access information about the Operations Console information for IBM i in the IBM i Knowledge Center.

Completing a console change when the logical partition is powered on

After making all of the necessary hardware changes, complete the console change when the logical partition is powered on. You can use the command line or the Hardware Management Console (HMC) user interface to change the console. This procedure does not require an IPL.

Before you begin

Before you begin, ensure that the current configuration is per the following requirements:

- You have met the hardware requirements for the new console. For more information, see “[Accessing Operations Console information in the IBM i Knowledge Center](#)” on page 9.
- The HMC is set up and configured. For instructions, see [Installing and configuring the Hardware Management Console \(http://www.ibm.com/support/knowledgecenter/POWER9/p9hai/p9hai_kickoff.htm\)](http://www.ibm.com/support/knowledgecenter/POWER9/p9hai/p9hai_kickoff.htm).
- An IBM i logical partition is configured, installed, and activated.
- You have a current backup of the system or logical partition (including operating systems, licensed programs, and data).

Completing a console change by using the command line when the logical partition is powered on

After making the necessary hardware changes, use this information to complete the console change by using the command line, when the logical partition powered on. This procedure does not require an IPL.

Before you begin

Before you begin, ensure that the current configuration meets the following requirements:

- The QAUTOCFG system value is set to On. Use the WRKSYSVAL QAUTOCFG (Work with System Value command) to verify.
- If you want to access the HMC command line by using a local terminal connection, start an xterm shell on the HMC. To start the shell, open a terminal by right-clicking the background and selecting **Terminals > rshterm**.
- If you want to access the HMC command line by using a remote terminal connection such as PuTTY, first set up secure script processing between SSH clients and the HMC. Then, start your remote terminal by specifying the name of the HMC that is managing the logical partition with which you want to work.

About this task

The following procedure contains examples within the steps to help you complete a console change. In these examples, the system that is named *sysname* with logical partition identification number *1* is changing from the HMC to Operations Console (LAN) by using an embedded Ethernet port. These are variables for the actual system name and logical partition ID number. In the following instructions, replace *sysname* with your system name and replace *1* with your logical partition identification number.

To make a console change by using the command line and without powering off the logical partition, complete the following steps:

Procedure

1. List the current I/O configuration for the logical partition and locate the device that you want to make the system console device. If you do not know the resource that is being used for the console, continue with step 1a. If you already know which resource is being used for the console, continue with step 1c. Otherwise, complete step 1b to list the currently tagged resource for the console.

- a. Type the following command on the HMC command line:

```
lssyscfg -r sys -F name
```

This command returns a list of managed systems. Select the system for which you want to change the console and use the system name as the *sysname* value in the next steps.

- b. Type the following command on the HMC command line:

```
lshwres -m sysname -r io --rsubtype taggedio --filter lpar_ids=1 -F console_slot
```

This command returns none, hmc, or an 8-character hexadecimal string that represents the dynamic reconfiguration connector (DRC) index of the current console adapter.

- c. Complete either of the following steps to determine the resource ID. The step that you select depends on whether you have an input/output adapter (IOA) or are using a host Ethernet adapter (also referred to as the Integrated Virtual Ethernet) logical port.

- To list the IOAs that are owned by the logical partition, type the following command on the HMC command line:

```
lshwres -m sysname -r io --rsubtype slot --filter lpar_ids=1 -F drc_index,drc_name,description
```

The system returns data in the following format:

```
21010003,U1234.001.123456A-P1-T12,PCI RAID Controller ...
```

```
21010004,U1234.001.123456A-P1-C2,PCI 10/100/1000Mbps Ethernet UTP 2-port
```

```
21010005,U1234.001.123456A-P1-C3,PCI 2-Line WAN w/Modem
```

The location of resource DRC 21030003 is listed as P1-T12 and not P1-C n (where n is a slot number). The T n designation represents embedded resources. If you designate an actual adapter, the location is a value similar to P1-C2. This enables you to get the DRC index of the IOA, which becomes the new console device.

- To list the logical ports that are owned by the logical partition, type the following on the HMC command line:

```
lshwres -m sysname -r hea --rsubtype logical --level port --filter lpar_ids=1 -F drc_index,drc_name
```

The system returns data in the following format:

```
23e01000,Port 17
```

```
23e01100,Port 18
```

23e00000,Port 1

23e00100,Port 2

- d. Identify the DRC index of the console IOA or the logical port of the host Ethernet adapter that you want. In the previous output example, the first entry is a logical port of the host Ethernet adapter with a DRC index of 23e01000. This is the first logical port for physical port T1 (top connector).
2. Change the **console** tag of the logical partition to the device that you want to become the next console device.
 - a. Complete one of the following steps to change the console type:
 - Change your console to the HMC.
To set the new **console** tag to the HMC 5250 console, type the following command:

```
chhwres -m sysname -r io --rsubtype taggedio --id 1 -o s -a console_slot=hmc
```
 - Change your console to Operations Console (LAN).
To set the new **console** tag to an IOA with a DRC index of 21010004 (the DRC index can be obtained using step 1c on page 4), type the following command:

```
chhwres -m sysname -r io --rsubtype taggedio --id 1 -o s -a console_slot=21010004
```
 - Change your console to Operations Console (LAN) by using a logical port of the host Ethernet adapter.
To set the new **console** tag to a logical port of the host Ethernet adapter with a DRC index of 23e01000 (the DRC index can be obtained using step 1c on page 4), type the following command:

```
chhwres -m sysname -r io --rsubtype taggedio --id 1 -o s -a console_slot=23e01000
```
 - b. To verify your changes, repeat step 1c on page 4.

Notes:

- To clear the **console** tag, type the following command:

```
chhwres -m sysname -r io --rsubtype taggedio --id 1 -o s -a console_slot=none
```
 - To clear the **Operations Console** tag, type the following command:

```
chhwres -m sysname -r io --rsubtype taggedio --id 1 -o s -a op_console_slot=none
```
 - If specifying none in the previous command results in an error message, try entering eight zeros (00000000) instead.
3. Search for the console device by performing the following sequence of console service functions against the logical partition: **65+21+21**. Perform this sequence of three console service functions within 45 seconds for each function to start a new search for the console device.
 - a. To perform function **65** (remote DST off), type the following command:

```
chsysstate -m sysname -r lpar --id 1 -o remotdstoff
```
 - b. To perform function **21** (force DST), type the following command:

```
chsysstate -m sysname -r lpar --id 1 -o dston
```
 - c. Repeat step 3b.
 4. Connect with the newly selected console device, and monitor the system reference codes (SRCs) for the logical partition. It might take up to 3 minutes for the console adapter change to be completed.

Note: To monitor the SRCs for the logical partition, type the following to list the last 10 SRCs:

```
lsrefcode -m sysname -r lpar -n 10 --filter "lpar_ids=1"
```

SRCs are listed in order from newest to oldest. To list a different number, replace 10 in the command with the number of SRCs that you want returned.

5. Update the logical partition profile on the HMC to match the dynamic console change:
 - a. In the navigation area, click **Systems Management > Servers**.

- b. In the navigation area, select the managed system.
- c. In the contents area, select the logical partition that you want to change.
- d. Select **Actions > Profiles > Manage Profiles**.
- e. Select the logical partition profile that you want to change.
- f. Click **Actions > Edit**.
- g. Click **Tagged I/O**, and then click **Select** in the **Console** area.
- h. Select the resource if it is an IOA, or switch from **I/O device** to **Logical Port** to use a host Ethernet adapter logical port.
- i. Click **OK**.
- j. Click **OK > Close**.

Changing a console by using the HMC when the logical partition is powered on

After making the necessary hardware changes, use this information to change the console with the logical partition powered on. This procedure does not require an initial program load (IPL).

About this task

The following procedure contains examples within the steps to help you change a console. In these examples, the system that is named *sysname* with logical partition identification number *1* is changing from the HMC to Operations Console (LAN) by using an embedded Ethernet port. These are variables for your actual system name and logical partition ID number. In the following instructions, replace *sysname* with your system name and replace *1* with your logical partition identification number.

To change a console without powering off the logical partition, complete the following steps:

Procedure



1. In the navigation area, click the **Resources** icon , and then select **All Systems**.
2. Select the managed system.
3. Select the logical partition for which you want to change the console.
4. Click **Actions > View Partition Properties**.
5. In the Properties pane, click **Advanced**.
6. Click **Tagged I/O Settings**. The Tagged I/O Device Details window opens.
7. From the **Consoles** list, select the console that you want to change to.
8. Click **Save**.
9. Search for the console device by performing the following sequence of console service functions against the logical partition: **65+21+21**.
10. Perform this sequence of three console service functions within 45 seconds for each function to start a new search for the console device.
11. Click **Serviceability**. The Control Panel Functions panel is displayed.
12. Click **(65) Disable Remote Service**.
13. Click **OK**.
14. Click **(21) Activate Dedicated Service Tool**.
15. Click **OK**.
16. Repeat steps 14 and 15 once.
17. Try to connect with the newly selected console device, and monitor the system reference codes (SRCs) for the logical partition. It can take a few minutes for the console adapter change to be completed.

Note: To monitor the SRCs for the logical partition, click **Reference Code History**.

Note: SRCs are listed in order from newest to oldest. To list a different number, replace 10 in the command with the number of SRCs that you want returned.

18. Update the logical partition profile on the HMC to match the dynamic console change:



- a. In the navigation area, click the **Resources** icon , and then select **All Systems**.
- b. Select the managed system.
- c. Select the logical partition that you want to change.
- d. Click **Actions > Profiles > Manage Profiles**.
- e. Select the logical partition profile that you want to change.
- f. Click **Actions > Edit**.
- g. Click **Tagged I/O**, and then click **Select** in the **Console** area.
- h. Select the resource if it is an IOA, or switch from **I/O device** to **Logical Port** to use a host Ethernet adapter logical port.
- i. Click **OK**.
- j. Click **OK > Close**.

Changing hardware for one or more consoles

Learn how to change multiple hardware consoles, such as moving two or more adapters, while the logical partition and managed system remain powered on.

Before you begin

This procedure requires a workstation other than the current console device to make a console change. If you do not have another workstation available, you must shut down the IBM i logical partition.

You must also use the Hardware Management Console (HMC) to install, add, or remove the console resource unless you plan to power off the managed system. If you must power off the managed system, complete the steps in the “Changing the console by powering off the managed system” on page 1 topic.

Before you begin, plan to deallocate the LAN adapter if you are not using a local console on a network (LAN) configuration, even as a backup, or if you are not using the service tools server. After the LAN adapter is deallocated, you can move it or use it for another purpose. You must also use a workstation other than a local console on a network (LAN) because the steps to deallocate the adapter can cause the console to disconnect.

Important: You must change the console tag to a value other than Operations Console (LAN). Otherwise, the adapter is reallocated the next time that you start the server.

To deallocate the LAN adapter that is associated with a local console on a network (LAN), use the system service tools (SST).

To unlock the SST option, complete the following steps:

1. Access service tools by using SST.
2. Select **Work with service tools user IDs and devices**.
3. Select **Configure service tools LAN adapter**.
4. Press F6 to clear the old values, and then F7 to store the new values.
5. Press F3 to exit.

Related concepts:

“Accessing Operations Console information in the IBM i Knowledge Center” on page 9
Learn how to access information about the Operations Console information for IBM i in the IBM i Knowledge Center.

Changing hardware for one or more consoles by using the HMC

Learn how to change multiple hardware consoles, such as moving two or more adapters, by using an Hardware Management Console (HMC) while the logical partition and the managed system remain powered on.

About this task

To exchange adapters by using the HMC, complete the following steps:

Procedure

1. Select the managed system and logical partition where you want to exchange adapters:



- a. In the navigation area, click the **Resources** icon  , and then select **All Servers**.
 - b. Select the managed system.
 - c. Select the logical partition for which you want to change the hardware.
2. To remove an adapter, complete the following steps:
 - a. Click **Actions > View Partition Properties**.
 - b. Select **Physical I/O Adapters**.
 - c. Right-click the adapter and select **Remove Adapter** to remove it dynamically, and then click **OK**.
 - d. Click **Apply**.
 3. To add a new adapter after you have removed an adapter, complete the following steps:
 - a. Click **Actions > View Partition Properties**.
 - b. Select **Physical I/O Adapters**.
 - c. Right-click the adapter and select **Add** to add it dynamically, and then click **OK**.
 - d. Click **Apply**.
 4. Attach any necessary cables to the adapter.

Troubleshooting the new console

Learn how to troubleshoot the new console when the system is managed and not managed by a Hardware Management Console (HMC).

If you experience problems while changing consoles, attempt to resolve the problem by verifying the following options:

- Verify the console adapter based on the following options:
 - If your system is managed by the HMC, verify that the console adapter is correctly tagged in the partition profile. If you want to dynamically change the tag, use the HMC command prompt.
 - If your system is not managed by the HMC, verify that the adapter that is used by the console is located correctly based on the system model. For more information, see Operations Console hardware requirements.
- Verify that the console device is powered on and connected correctly.

- For Operations Console (LAN), verify that the PC is active on the network. If you did not configure the service host name by using your previous console, see Operations Console networking for configuring your console.

Related concepts:

“Accessing Operations Console information in the IBM i Knowledge Center”

Learn how to access information about the Operations Console information for IBM i in the IBM i Knowledge Center.

Related information:

 Operations Console hardware requirements

 Operations Console networking

Related information for Changing consoles

Find related information for Changing consoles.

Accessing Operations Console information in the IBM i Knowledge Center

Learn how to access information about the Operations Console information for IBM i in the IBM i Knowledge Center.

To access the Operations Console information in IBM i Knowledge Center, complete the following steps:

1. Go to IBM i Knowledge Center (http://www-01.ibm.com/support/knowledgecenter/ssw_ibm_i/welcome).
2. Select **Version 7.2** or **Version 7.3** depending on the version of the IBM i operating system that you have.
3. Expand **Connecting to your system > IBM i Access > IBM i Access Client Solutions > Console Advanced Topics**.
4. Navigate to the information depending on the task that you want to perform. For information about the navigation path, see Table 1.

Table 1. Operations Console menu options in the IBM i Knowledge Center

Operations Console task	Menu options
To set up Operations Console	Select Planning considerations for your Operations Console installation or upgrade .
To use service functions (65+21)	Select Managing Operations Console > Managing your local console on a network > Using the console service functions (65+21) .
To troubleshoot Operations Console	Select Troubleshooting Operations Console connection .
To access dedicated service tools (DST) and system service tools (SST) Note: The information for DST and SST is located under the Security topic in the IBM i Knowledge Center.	Select Security > Service tools > Managing service tools > Accessing service tools .
To unlock SST Note: The information for locking and unlocking service tools is located under the Systems management topic in the IBM i Knowledge Center.	Select Systems management > System values > Managing system values > Locking and unlocking security-related system values .

Notices

This information was developed for products and services offered in the US.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

*IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
US*

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you provide in any way it believes appropriate without incurring any obligation to you.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to actual people or business enterprises is entirely coincidental.

If you are viewing this information in softcopy, the photographs and color illustrations may not appear.

The drawings and specifications contained herein shall not be reproduced in whole or in part without the written permission of IBM.

IBM has prepared this information for use with the specific machines indicated. IBM makes no representations that it is suitable for any other purpose.

IBM's computer systems contain mechanisms designed to reduce the possibility of undetected data corruption or loss. This risk, however, cannot be eliminated. Users who experience unplanned outages, system failures, power fluctuations or outages, or component failures must verify the accuracy of operations performed and data saved or transmitted by the system at or near the time of the outage or failure. In addition, users must establish procedures to ensure that there is independent data verification before relying on such data in sensitive or critical operations. Users should periodically check IBM's support websites for updated information and fixes applicable to the system and related software.

Homologation statement

This product may not be certified in your country for connection by any means whatsoever to interfaces of public telecommunications networks. Further certification may be required by law prior to making any such connection. Contact an IBM representative or reseller for any questions.

Accessibility features for IBM Power Systems servers

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

Overview

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

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

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

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

Keyboard navigation

This product uses standard navigation keys.

Interface information

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

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

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

Vendor software

The IBM Power Systems servers include certain vendor software that is not covered under the IBM license agreement. IBM makes no representation about the accessibility features of these products. Contact the vendor for accessibility information about its products.

Related accessibility information

In addition to standard IBM help desk and support websites, IBM has a TTY telephone service for use by deaf or hard of hearing customers to access sales and support services:

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 (www.ibm.com/able).

Privacy policy considerations

IBM Software products, including software as a service solutions, (“Software Offerings”) may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user, or for other purposes. In many cases no personally identifiable information is collected by the Software Offerings. Some of our Software Offerings can help enable you to collect personally identifiable information. If this Software Offering uses cookies to collect personally identifiable information, specific information about this offering’s use of cookies is set forth below.

This Software Offering does not use cookies or other technologies to collect personally identifiable information.

If the configurations deployed for this Software Offering provide you as the customer the ability to collect personally identifiable information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for notice and consent.

For more information about the use of various technologies, including cookies, for these purposes, see IBM’s Privacy Policy at <http://www.ibm.com/privacy> and IBM’s Online Privacy Statement at <http://www.ibm.com/privacy/details> the section entitled “Cookies, Web Beacons and Other Technologies” and the “IBM Software Products and Software-as-a-Service Privacy Statement” at <http://www.ibm.com/software/info/product-privacy>.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at Copyright and trademark information at www.ibm.com/legal/copytrade.shtml.

Electronic emission notices

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

Class A Notices

The following Class A statements apply to the IBM servers that contain the POWER9 processor and its features unless designated as electromagnetic compatibility (EMC) Class B in the feature information.

Federal Communications Commission (FCC) Statement

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

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

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

Industry Canada Compliance Statement

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

European Community Compliance Statement

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

European Community contact:

IBM Deutschland GmbH

Technical Regulations, Abteilung M456

IBM-Allee 1, 71139 Ehningen, Germany

Tel: +49 800 225 5426

email: halloibm@de.ibm.com

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

VCCI Statement - Japan

この装置は、クラスA 情報技術装置です。この装置を家庭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。 VCCI-A

The following is a summary of the VCCI Japanese statement in the box above:

This is a Class A product based on the standard of the VCCI Council. If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Japan Electronics and Information Technology Industries Association Statement

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

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

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

高調波電流規格 JIS C 61000-3-2 適合品

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

高調波電流規格 JIS C 61000-3-2 準用品

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

- 回路分類：6（単相、PFC回路付）
- 換算係数：0

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

高調波電流規格 JIS C 61000-3-2 準用品

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

- 回路分類 : 5 (3相、PFC回路付)
- 換算係数 : 0

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

声 明

此为 A 级产品, 在生活环境中, 该产品可能会造成无线电干扰。在这种情况下, 可能需要用户对其干扰采取切实可行的措施。

Declaration: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may need to perform practical action.

Electromagnetic Interference (EMI) Statement - Taiwan

警告使用者：

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

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

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

IBM Taiwan Contact Information:

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

Electromagnetic Interference (EMI) Statement - Korea

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

Germany Compliance Statement

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

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

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

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

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

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

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

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

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

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

Generelle Informationen:

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

Electromagnetic Interference (EMI) Statement - Russia

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

Class B Notices

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

Federal Communications Commission (FCC) Statement

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

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

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

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

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

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

Industry Canada Compliance Statement

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

European Community Compliance Statement

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

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

VCCI Statement - Japan

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

取扱説明書に従って正しい取り扱いをして下さい。 VCCI-B

Japan Electronics and Information Technology Industries Association Statement

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

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

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

高調波電流規格 JIS C 61000-3-2 適合品

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

高調波電流規格 JIS C 61000-3-2 準用品

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

- 回路分類：6（単相、PFC回路付）
- 換算係数：0

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

高調波電流規格 JIS C 61000-3-2 準用品

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

- 回路分類 : 5 (3相、PFC回路付)
- 換算係数 : 0

IBM Taiwan Contact Information

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

Germany Compliance Statement

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

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

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

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

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

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

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

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

Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

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

Generelle Informationen:

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

Terms and conditions

Permissions for the use of these publications are granted subject to the following terms and conditions.

Applicability: These terms and conditions are in addition to any terms of use for the IBM website.

Personal Use: You may reproduce these publications for your personal, noncommercial use provided that all proprietary notices are preserved. You may not distribute, display or make derivative works of these publications, or any portion thereof, without the express consent of IBM.

Commercial Use: You may reproduce, distribute and display these publications solely within your enterprise provided that all proprietary notices are preserved. You may not make derivative works of these publications, or reproduce, distribute or display these publications or any portion thereof outside your enterprise, without the express consent of IBM.

Rights: Except as expressly granted in this permission, no other permissions, licenses or rights are granted, either express or implied, to the publications or any information, data, software or other intellectual property contained therein.

IBM reserves the right to withdraw the permissions granted herein whenever, in its discretion, the use of the publications is detrimental to its interest or, as determined by IBM, the above instructions are not being properly followed.

You may not download, export or re-export this information except in full compliance with all applicable laws and regulations, including all United States export laws and regulations.

IBM MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THE PUBLICATIONS ARE PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.



Printed in USA