

# Installing Red Hat Enterprise Linux on IBM Power System IC922 (9183-22X) servers with a USB device

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Quick Start Guide for installing Linux® on IBM® Power® System IC922 (9183-22X) servers

Version 1.0.0

This guide helps you install Red Hat Enterprise Linux on an IBM Power System IC922 (9183-22X) server.

## Note:

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## About this task

### Overview

Use this information to install Red Hat® Enterprise Linux 7.x on a non-virtualized or bare metal IBM Power System IC922 (9183-22X) server.

For a list of supported distributions, see [Supported Linux distributions for POWER8® and POWER9™ Linux on Power systems](#).

## Procedure

### 1. Creating a bootable USB device

Use one of the following USB devices:

- Standalone USB DVD drive
- 2.0 or 3.0 USB flash drive

Download Red Hat Enterprise Linux 7.x LE ALT at <https://access.redhat.com/products/red-hat-enterprise-linux/#addl-arch>. Take the link for **Downloads for Red Hat Enterprise Linux for Power, little endian**. Log into your Red Hat account (if you have not already done so). Select **Red Hat Enterprise Linux for Power 9** from the Product Variant list. Look for the Red Hat Enterprise Linux for Power 9 (v. 7.x for ppc64le) ISO file. The downloaded ISO file will include **rhel-alt.....iso** rather than **rhel....iso** in the path name.

To create the bootable USB device, follow the instructions in the Red Hat Customer Portal at [https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Enterprise\\_Linux/7/html/Installation\\_Guide/sect-making-usb-media.html](https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/7/html/Installation_Guide/sect-making-usb-media.html)

### 2. Completing the prerequisites and booting your firmware

Before you power on the system, ensure that you have the following items:

- Ethernet cable
- VGA monitor. The VGA resolution must be set to 1024x768-60Hz.
- USB Keyboard
- Power cords and outlet for your system.
- Bootable USB device

**Note:** You can also connect to the firmware using a serial connection.

- a. Attach the USB to serial (RS232) adapter cable to the IPMI serial 9-pin D-shell connector on the Power system.
- b. Attach USB connection to USB port on either PC or notebook.
- c. Open a terminal emulator program such as PuTTY or minicom.
- d. Set the communications to use the following options:
  - 115200 baud rate
  - Data bits of 8
  - Parity of None
  - Stop bits of 1

Complete these steps:

- If your system belongs in a rack, install your system into that rack. For instructions, see IBM Power Systems information at <https://www.ibm.com/support/knowledgecenter/POWER9/p9hdx/POWER9welcome.htm>.
- Connect an Ethernet cable to the embedded Ethernet port next to the serial port on the back of your system. Connect the other end to your network.
- Connect your VGA monitor to the VGA port on back of system and your USB keyboard to an available USB port.
- Connect the power cords to the system and plug them into the outlets.

At this point, your firmware is booting. Wait for the green LED on the power button to start flashing, indicating that it is ready to use. If your system does not have a green LED indicator light, then wait 1 to 2 minutes.

### 3. Configuring the IP address

**Note:** You cannot use IPMITool to connect to your system and you must use either keyboard and monitor or a serial connection to the BMC. For more information, see [Managing BMC-based systems](#).

To set up or enable your network connection to the BMC firmware, use the Petitboot bootloader interface. Follow these steps:

- a. Power on your server using the power button on the front of your system. Your system will power on to the Petitboot bootloader menu. This process usually takes about 1 - 2 minutes to complete, but **may take 5 - 10 minutes** on the first boot or after a firmware update. Do not walk away from your system! When Petitboot loads, your monitor will become active and you will need to push any key in order to interrupt the boot process.
- b. At the Petitboot bootloader main menu, select Exit to Shell.
- c. Run `ipmitool lan print 1`. If this command returns an IP address, verify that is correct and continue. To set a static IP address, follow these steps:
  - 1) Set the mode to static by running this command: `ipmitool lan set 1 ipsrc static`
  - 2) Set your IP address by running this command: `ipmitool lan set 1 ipaddr ip_address` where `ip_address` is the static IP address that you are assigning to this system.
  - 3) Set your netmask by running this command: `ipmitool lan set 1 netmask netmask_address` where `netmask_address` is the netmask for the system.
  - 4) Set your gateway server by running this command: `ipmitool lan set 1 defgw ipaddr gateway_server` where `gateway_server` is the gateway for this system.
  - 5) Confirm the IP address by running the command `ipmitool lan print 1` again.

**Note:** This network interface is not active until after you perform the following steps.

- d. To reset your firmware, run the following command: `ipmitool raw 0x06 0x40`.
- e. You should be able to ping the BMC now. If your ping does not return successfully within a reasonable amount of time (2 - 3 minutes), try these additional steps:
  - 1) Power your system off with this command from the petitboot shell: `poweroff`

- 2) Unplug the power cords from the back of the system. Wait 30 seconds and then apply power to boot BMC.

#### 4. Powering on your server

**Note:** After your system powers on, the Petitboot interface loads. If you do not interrupt the boot process by pressing any key within 10 seconds, Petitboot automatically boots the first option.

To power on your server from a PC or notebook that is running Linux, follow these steps:

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- Default user name: root
- Default password: OpenBmc (where, OpenBmc is using a zero and not a capital O)

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- a. Connect an Ethernet cable from the BMC port to a PC or notebook. Or you can also make sure your PC or notebook is on the same network as the BMC firmware.
- b. Open a terminal program on your PC or notebook.
- c. Log in to the BMC by running the following commands.

```
ssh root@<BMC server_ip_address>
root@<BMC server password>
```

where *BMC server\_ip\_address* is the IP address of the BMC and *BMC server password* is the password to authenticate.

- d. To power on your server, run the following command:

```
$ root@witherspoon:~# obmcutil poweron
```

- e. Connect to OS console and use the default password OpenBmc.

```
ssh -p 2200 root@<BMC server_ip_address>
root@
```

where *BMC server\_ip\_address* is the IP address of the BMC and BMC server password is the password to authenticate.

#### 5. Configuring Petitboot

After the system powers on, the Petitboot bootloader scans local boot devices and network interfaces to find boot options that are available to the system.

- a. Insert your bootable USB device into the front USB port. Petitboot displays the following option:

**Note:** Select Rescan devices if the USB device does not appear. If your device is not detected, you may have to try a different type.

- b. Record the UUID of the USB device. For example, the UUID of the USB device in the following example is 2015-10-30-11-05-03-00.

```
[USB: sdb1 / 2015-10-30-11-05-03-00]
  Rescue a Red Hat Enterprise Linux system (64-bit kernel)
  Test this media & install Red Hat Enterprise Linux 7.x (64-bit kernel)
  * Install Red Hat Enterprise Linux 7.x (64-bit kernel)
```

- c. Select **Install Red Hat Enterprise Linux 7.x (64-bit kernel)** and press e (Edit) to open the **Petitboot Option Editor** window.

- d. Move the cursor to the Boot arguments section and add the following information:

```
inst.text inst.stage2=hd:UUID=your_UUID
```

where *your\_UUID* is the UUID that you recorded.

```
Petitboot Option Editor
```

