

Power Systems

*Managing system management
services*

IBM

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services*

IBM

Note

Before using this information and the product it supports, read the information in “Safety notices” on page v, “Notices” on page 19, the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

This edition applies to IBM Power Systems servers that contain the POWER7 processor and to all associated models.

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Safety notices

Safety notices may be printed throughout this guide:

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

World Trade safety information

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

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

German safety information

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

Laser safety information

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

Laser compliance

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

DANGER

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

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

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

To Disconnect:

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

To Connect:

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

(D005)

DANGER

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

- Heavy equipment—personal injury or equipment damage might result if mishandled.
- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet.
- To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.
- Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices.



- Each rack cabinet might have more than one power cord. Be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.
- Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

CAUTION

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

(R001)

CAUTION:

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

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

(R002)

(L001)



(L002)



(L003)



or



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

CAUTION:

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

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

(C026)

CAUTION:

Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. (C027)

CAUTION:

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

CAUTION:

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following information: laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam. (C030)

CAUTION:

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

Do Not:

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

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

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

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

The equipment is suitable for installation in the following:

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

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

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

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

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

Managing system management services

Use the menus within system management services (SMS) to view information about your system or partition and to perform tasks, such as changing the boot list and setting the network parameters. These menus can be used for AIX® or Linux logical partitions, for the Virtual I/O Server (VIOS), and for the Integrated Virtualization Manager (IVM).

What's new in Managing system management services

Read about new or significantly changed information in Managing system management services since the previous update of this topic collection.

October 2013

- Added information about the new option ping test for the iSCSI Discovery Selection. Use this option to perform the ping test for client IP address, server IP address, gateway IP address or subnet mask.
 - Selecting the iSCSI option
- Updated a menu item in the **Select Device Type** in configuring the boot order menu.
 - Configuring boot device order

October 2012

- Added information about the new options for the Advanced Setup option to support multiple VLANs in a bridged network. Use this option to share the physical network link.
 - “Selecting the BOOTP or TFTP option” on page 6

May 2012

- Added information about the new option on the Boot Options menu that supports storage area network (SAN) zoning.
 - Selecting boot options
 - SAN zoning support

February 2010

- Added information for IBM Power Systems™ servers that contain the POWER7® processor.

Starting system management services

Learn how to start system management services (SMS) from a partitioned or nonpartitioned server.

Related concepts:

“Power-on self-test keys” on page 17

The power-on self-test (POST) keys can start services or initiate service mode boots used for configuring the system and diagnosing problems.

Starting system management services from a logically partitioned server

Learn how to start system management services (SMS) from a partitioned server using a Hardware Management Console (HMC).

If you have a logically partitioned system, complete the following tasks:

Requirement: The logical partition must be shut down, and you must set the partition to start in SMS mode to access SMS.

1. In the navigation area, select **Systems Management > Servers**.
2. In the navigation area, select the managed system that you want to work with.
3. In the contents area, select the logical partition that you want to work with.
4. Select **Configuration > Manage Profiles**.
5. In the Manage Profiles window, select the logical partition that you want to work with.
6. Select **Actions > Edit**.
7. Click on the **Settings** tab.
8. In the **Boot Modes** section, select **SMS**.
9. Click **OK**.
10. Restart the logical partition by selecting **Operations > Restart** in the HMC window. The SMS menus are displayed on the console.
11. If you do not already have a console for this session, select **Open a terminal window or console session**, and click **OK**.

The system starts and the SMS menus are shown on the session's console.

Starting system management services from a nonpartitioned server

Learn how to start system management services (SMS) menus using the Advanced System Management Interface (ASMI), the control panel, or from the AIX operating system.

Starting the SMS menus from the ASMI

If the ASMI is available on a network-attached console and the system is in standby, perform the following steps:

1. On the ASMI Welcome window, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **Power/Restart Control** and select **Power On/Off System**.
3. Click **Save settings** and continue system server firmware boot.
4. Look for the POST indicators **memory, keyboard, network, scsi, speaker**, which display across the bottom of the firmware console. For details, see "Power-on self-test keys" on page 17.
5. Press the numeric 1 key after the word **keyboard** is displayed and before the word **speaker** is displayed.
6. If requested, accept the firmware agreement
7. If requested, select a language. For details on the available languages, see Selecting the language in system management services.
8. If requested, enter a password. Enter the admin password that you set during initial system setup.

Starting the SMS menus when the ASMI is not available and the system is in standby

If the ASMI is not available and the system is in standby, complete the following steps:

1. Press the power button on the control panel.
2. Look for the POST indicators **memory, keyboard, network, scsi, speaker**, which display across the bottom of the firmware console. For details, see "Power-on self-test keys" on page 17.
3. Press the numeric 1 key after the word **keyboard** is displayed and before the word **speaker** is displayed.
4. If requested, accept the firmware agreement
5. If requested, select a language. For details on the available languages, see Selecting the language in system management services.
6. If requested, enter a password. Enter the admin password that you set during initial system setup.

Using system management services

Learn how the system management services (SMS) menus can help you manage your system.

Related tasks:

“Starting system management services” on page 1

Learn how to start system management services (SMS) from a partitioned or nonpartitioned server.

Menus and descriptions

There are many tasks that you can access using the system management services (SMS) menus.

If you have not performed the steps to start the system management services, see “Starting system management services” on page 1.

Notes:

- If the firmware console is a graphics terminal, you might need to enter the password for the service processor's admin user that was set using the Advanced System Management Interface (ASMI).
- In a partitioned server, SMS menus display only those devices that are assigned to the partition that is being booted. In a partition that uses all the resources in a server, SMS menus display all devices in the system.
- In some of the following example menus, *Un* is used in place of *Ufeature_code.model.serial number* for legibility.

The following table contains the titles of the menus or tasks that can be accessed using the SMS menus. Use it to access and review the specific task that you want. These titles and menu contents are subject to change. Do not rely on exact content, such as with scripting.

Table 1. SMS menus and descriptions

Menu or task	Description
Main menu	Displays the opening menu when first starting SMS.
Select language	Changes the language used by the SMS menus.
Setup remote IPL	Enables and sets up the remote startup capability of your server.
Adapter configuration	Sets both the network speed and the protocol.
Speed, duplex	Sets the interface speed at which the adapter runs and you can select half or full duplex.
Protocol	Sets the appropriate protocol for your network.
Ping test	Tests an adapter's network connection to a remote system.
Advanced setup: BOOTP	Changes the BOOTP values.
Change SCSI settings	Changes the addresses of the SCSI controllers attached to your system.
Select console	Selects which console to use to display the SMS menus.
Select boot options	Sets various options regarding the installation devices and boot devices. The Select boot options menu provides the following options: Select Install or Boot Device, Select Boot Devices, Multiboot Startup, and SAN Zoning Support.
Normal mode boot or service mode boot	Performs a boot in the normal or service mode.
Hard drive	Displays a menu that identifies the different types of bootable disk drives installed on your system, for example, SCSI.
Set boot sequence	Sets the location of the device in the boot list. The Set boot sequence menu provides the following options: display current settings, restore default settings, multiboot startup, and exiting system management services.

Main menu and navigation

From the main menu, you can select a language, set up remote IPLs, change SCSI settings, select a console, and select boot options.

After the SMS starts, a menu similar to the following example is displayed.

```
Main Menu
1. Select Language
2. Setup Remote IPL (Initial Program Load)
3. Change SCSI Settings
4. Select Console
5. Select Boot Options
6. Firmware Boot Side Options
7. Progress Indicator History
-----
Navigation keys:
                                     X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

On all menus except the main menu, you can use several navigation keys:

M Return to the main menu.

ESC Return to the previous menu.

X Exit the SMS and start the operating system.

If you enter X, you are asked to confirm your choice to exit the SMS menus and start the operating system.

When more than one page of information can be displayed, two additional navigation keys are available:

N Display the next page of the list.

P Display the previous page of the list.

Note: The lowercase navigation key has the same effect as the uppercase key that is shown on the menu. For example, **m** or **M** returns you to the main menu.

On each menu, you can choose a menu item and press Enter (if applicable), or select a navigation key.

Selecting the language in system management services

You can choose from among a range of language options in the system management services.

When you select the **Select Language** option, you can change the language used by the SMS menus.

Note: If you change the language by selecting the **Select Language** option, only the language used by the firmware SMS menus is changed, not the operating system language.

Note: If you are using an ASCII terminal, it must support the ISO-8859 character set to correctly display languages other than English.

The available languages include the following:

1. ISO8859-1 English (United States)
2. ISO8859-1 French

3. ISO8859-1 German
4. ISO8859-1 Italian
5. ISO8859-1 Spanish
6. ISO8859-1 Portuguese (Brazil)
7. BIG5 Chinese (Traditional)
8. GB2312 Chinese (Simplified)
9. EUC-JP Japanese
10. EUC-KR Korean
11. UTF-8 English (United States)
12. UTF-8 Spanish
13. UTF-8 French
14. UTF-8 German
15. UTF-8 Italian
16. UTF-8 Portuguese (Brazil)
17. UTF-8 Chinese (Traditional)
18. UTF-8 Chinese (Simplified UTF)
19. UTF-8 Japanese
20. UTF-8 Korean

Setting up a remote IPL

Learn how to set up a remote initial program load (IPL) using the (SMS) menus.

When you select the **Setup Remote IPL** option you can enable and set up the remote startup capability of your server or logical partition. A list of network interface card (NIC) adapters in the server is displayed. An example of this menu follows:

Attention: In a partitioned server, only those network adapters that have been assigned to the partition being booted are displayed in the NIC Adapters menu. In a single partition system, all network adapters in the system are listed in the adapter parameters menu.

An example of the NIC Adapters menu follows.

```

NIC Adapters

      Device                Slot                Hardware Address
1. Port 1 - 2 PORT Gigabit Et  Un-P1-T9          00096bff616b
2. Port 2 - 2 PORT Gigabit Et  Un-P1-T10         00096bff616a
3. 10/100/1000 Base-TX PCI-X   Un-CB1-C03-T1     000295e3814f

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _

```

When you select an adapter, menus similar to the following examples might be displayed.

Select Internet Protocol Version.

1. IPv4 - Address Format 123.231.111.222
2. IPv6 - Address Format 1234:5678:90ab:cdef:1234:5678:90ab:cdef

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type menu item number and press Enter or select Navigation key: _

Select Network Service

No alias : Port 1-IBM Host Ethernet Adapter: Un-P1-T6

1. BOOTP
2. ISCSI

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type menu item number and press Enter or select Navigation key: _

Note: The menus depend on the selections you have made. For example, if IPv6 is chosen, the network interface card (NIC) might be configured for Trivial File Transfer Protocol (TFTP) boot. If IPv4 is chosen, the NIC might be configured for BOOTP.

Related tasks:

“Using system management services” on page 3

Learn how the system management services (SMS) menus can help you manage your system.

Selecting the BOOTP or TFTP option

If you select **BOOTP** or **TFTP** option, the adapter is set up (and the network parameters are entered) as usual. The Network Parameters menu is displayed.

After you select the **BOOTP** or **TFTP** option on the Select Network Service menu, the Network Parameters menu is displayed. The menus and options change depending on whether IPv4 or IPv6 was selected on the Select Internet Protocol Version menu. A menu similar to the following example is displayed.

Network Parameters

Port 1 - 2 PORT Gigabit Et Un-P1-T9 00096bff616b

1. IP Parameters
2. Adapter Parameters
3. Ping Test
4. Advanced Setup: BOOTP/TFTP

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

Selecting the IP (Internet Protocol) parameters option displays a menu similar to the following example.

IP Parameters

```
Port 1 - 2 PORT Gigabit Et Un-P1-T9 00096bff616b
1. Client IP Address [9.8.38.50]
2. Server IP Address [9.8.38.51]
3. Gateway IP Address [9.8.38.1]
4. Subnet Mask [255.255.255.000]
```

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

To change IP parameters, type the number of the parameters for which you want to change the value. Entering IP parameters on this menu automatically updates the parameters on the ping test menu.

Select the **Ping Test** option from the Network Parameters menu to test the network connection of an adapter to a remote system. After you select the ping test option, the Ping Test menu is displayed. Perform a Ping test by selecting the configuration options.

Notes:

- After you start the ping test, it might take 60 seconds or longer to return a result.
- After the ping test passes or fails, the firmware stops and waits for a key to be pressed before continuing.

Select the **Advanced Setup** option from the Network Parameters menu to configure the BOOTP or TFTP boot parameters. For BOOTP, the values 5, 512, 5, 0 and 0 are the respective default values for the following options.

Advanced Setup: BOOTP/TFTP

```
Port 1-IBM 2 PORT 1000 Base-SX PCI-X Adapter: U788D.001.23A0034-P1-T7
```

```
1. Bootp Retries 5
2. Bootp Blocksize 512
3. TFTP Retries 5
4. VLAN Priority 0
5. VLAN ID 0
```

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

Select the **VLAN Priority** option from the Advanced Setup menu to set the VLAN priority, and select the **VLAN ID** option to set the VLAN ID.

Notes:

- The default setting of the **VLAN Priority** option is 0, but a decimal value in the range 0 - 7 can be set for the frame priority.
- An error message is displayed if a value greater than 7 is entered, in which case the default value is set back to the **VLAN Priority** option.
- The default value for the **VLAN ID** option is 0 and is reserved, because this frame does not belong to any VLAN.

- Values must be entered as a decimal numbers. Valid values for a **VLAN ID** must be in the range 1 - 4094. If the **VLAN ID** option is set to 0, VLAN tagging is disabled.
- An error message is displayed if a decimal value greater than 4094 is entered, in which case the default value is set back to the **VLAN ID** option.

Selecting the iSCSI option

If you select **iSCSI**, you can select which iSCSI alias to set up with network parameters. You also have the boot once option, in which the iSCSI parameters are not saved. When you finish using the iSCSI menus, you can choose any of the other menus or tasks that are listed in Using system management services.

```

iSCSI Alias Selection

No alias   : Port 1-IBM 2 PORT 1000 Base-SX PCI-X Adapter: Un-P1-T7

  1. iSCSI_DISK1
  2. iSCSI_DISK2

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: _

```

If you select an **iSCSI** alias, the iSCSI Discovery Selection menu is displayed.

```

iSCSI Discovery Selection

iscsi_disk1: Port 1-IBM 2 PORT 1000 Base-SX PCI-X Adapter: Un-P1-T7

  1. Enter Static Parameters.
  2. Ping Test.

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: _

```

When you select **Ping Test**, a menu similar to the following example is displayed.

```

iSCSI Ping Test Parameters

iscsi_disk1: Port 1-IBM 2 PORT 1000 Base-SX PCI-X Adapter: Un-P1-T7

Client IP Address
Server IP Address
Gateway IP Address
Subnet Mask

  1. Execute ping test

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: _

```

When you select **Enter Static Parameters**, the iSCSI Initiator Parameters menu is displayed.

ISCSI Initiator Parameters

iscsi_disk1: Port 1-IBM 2 PORT 1000 Base-SX PCI-X Adapter: Un-P1-T7

1. Client IP Address []
2. Gateway IP Address []
3. Subnet Mask []
4. Initiator Name.
5. Enter Target Parameters.

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type menu item number and press Enter or select Navigation key: _

Use the ISCSI Target Parameters menu to set the target parameters.

ISCSI Target Parameters

iscsi_disk1: Port 1-IBM 2 PORT 1000 Base-SX PCI-X Adapter: Un-P1-T7

1. Target IP Address []
2. ISCSI PORT [3260]
3. Target lun [0]
4. Set ISCSI Target Name

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type menu item number and press Enter or select Navigation key: _

Select **Target Name** to set the target's name. If you select **Set Initiator Name** on the ISCSI Initiator Parameters menu or **Set ISCSI Target Name** on the ISCSI Target Parameters menu, a menu similar to the following example is displayed.

Enter Target Name

iscsi_disk1: Port 1-IBM 2 PORT 1000 Base-SX PCI-X Adapter: Un-P1-T7

Must be at least 4 characters.
Press Backspace key to delete.
Press Enter key to save.
Press Esc key to exit without saving name.

1. Clear Current Name.
 2. Edit Current Name.
- []

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type menu item number and press Enter or select Navigation key: _

The initiator name is required if the adapter that you selected on the NIC Adapters menu for the iSCSI network is a network adapter (for example, Ethernet). If the selected adapter is a TCP/IP over Ethernet or TCP/IP offload engine adapter, then the initiator name is in the microcode on the adapter and does not have to be set by the user.

Configuring adapters

You can set the network speed and set the protocol.

When you select the **Adapter Configuration** option, you can set the network speed and set the protocol as shown in the following menu.

```
Adapter Configuration
Port 1 - 2 PORT Gigabit Et   Un-P1-T9   00096bff616b
1. Speed, Duplex
2. Protocol

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Selecting the speed, duplex option

When you select the **Speed, Duplex** option, the next Adapter Configuration menu is displayed.

An example of the Speed, Duplex menu follows. The options available on this menu depend on the capabilities of the chosen adapter. You can set the interface speed at which the adapter runs.

```
Speed, Duplex
Port 1 - 2 PORT Gigabit Et   Un-P1-T9   00096bff616b
1. auto, auto

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Selecting the protocol option

When you select the **Protocol** option, you can set the appropriate protocol for your network.

An example of the Protocol menu follows.

```
Protocol
Port 1 - 2 PORT Gigabit Et   Un-P1-T9   00096bff616b
1. Standard <===
2. IEEE802.3

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Changing SCSI settings

You can view and change the addresses of the SCSI controllers attached to your system.

When you select the **Change SCSI Settings** option, you can view and change the addresses of the SCSI controllers attached to your system.

SCSI Utilities

1. Hardware Spin Up Delay
2. Change SCSI Id

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

Selecting the console

You can select which console to use to display the SMS menus.

When you select the **Select Console** option, you can select which console to use to display the SMS menus. This selection is only for the SMS menus and does not affect the console used by the operating system.

Follow the instructions that are displayed on the console. The firmware automatically returns to the SMS main menu after the console is chosen.

Note: If you do not change the console to another device before removing the current console, you must reattach the current console to change your console selection.

Selecting boot options

You can install or boot a device, configure a boot device order, select the multiboot startup option, or select the storage area network (SAN) zoning support option.

Selecting to install or boot a device

Only for the next boot, select a device from which to boot the operating system or install the operating system. The boot list stored in nonvolatile random access memory (NVRAM) will not be changed.

Select the **Select Install/Boot a Device** option to view and set various options regarding the installation devices and boot devices.

1. Select Install/Boot a Device
2. Configure Boot Device Order
3. Multiboot Startup [OFF]
4. SAN Zoning Support

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

A menu similar to the following example is displayed.

Select Device Type

1. Diskette
2. Tape
3. CD/DVD
4. IDE
5. Hard Drive
6. Network
7. List All Devices

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

If you select **Hard Drive**, a menu similar to the following example is displayed.

Select Hard Drive Type

1. SCSI
2. SSA
3. SAN
4. SAS
5. SATA
6. USB
7. IDE
8. ISA
9. List All Devices

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

If you select **SCSI**, for example, all of the SCSI adapters that are in the system, or assigned to the logical partition, are displayed on the next menu. Depending on the devices that are installed in your system, a menu similar to the following is displayed.

Version EM310_024

SMS 1.6 (c) Copyright IBM Corp. 2000, 2005 All rights reserved.

Select Media Adapter

1. Un-P1-T14 /pci@80000002000000d/pci@2/pci1069,b166@1/scsi@0
2. Un-P1-T12 /pci@80000002000000f/pci@2,2/pci1069,b166@1/scsi@0
3. Un-P1-T13 /pci@80000002000000f/pci@2,2/pci1069,b166@1/scsi@1
4. List all devices

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

When you select an adapter, the next menu displays the bootable devices of the requested type that are attached to that adapter. In the following example, all of the bootable SCSI hard files that are attached to the first adapter are listed.


```

Version EM310_024
SMS 1.6 (c) Copyright IBM Corp. 2000, 2005 All rights reserved.
-----
Select   Device
Device   Current   Device
Number   Position   Name
-----
1         1         SCSI 73407 MB Harddisk Un-P1-T14 /pci@80000002000000d/pci@2/
                pci1069,b166@1/scsi@0
-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _

```

You can now select the appropriate device for this installation or boot.

When a device is selected for installing the operating system, or to boot from, the Select Task menu might be used to retrieve more information about the device, or to boot from that device in normal mode or service mode. The following is an example of this menu.

```

Select Task

SCSI 36401 MB Harddisk, part=2 (AIX 5.3.0)
  (1oc=U788D.001.06A0034-P1-T10-L1-L0)

1. Information
2. Normal Mode Boot
3. Service Mode Boot

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _

```

If you select either **Normal Mode Boot** or **Service Mode Boot**, the next menu asks, Are you sure? If you answer yes, the device is booted in the appropriate mode. If you answer no, the firmware returns to the Select Task menu.

Configuring boot device order

You can view and change the customized boot list.

To minimize the search time for bootable devices, these menus follow this hierarchy:

device type > bus type > adapter > devices attached to the adapter

By selecting **List All Devices** from the Select Device Type menu or the Select Media Type menu, you can view all of the potentially bootable devices at one time. Only bootable hard disks are listed.

The List All Devices function can take a long time, or may be incomplete on a large system with many I/O adapters and devices, such as large disk arrays. However, the following selection might reduce the overall time required to scan for all of the devices because the scan is restricted to the selected adapter.

device type (for example, hard disk) > interface type (for example, SCSI) > specific adapter

Select the **Select Boot Devices** option to view and change the customized boot list, which is the sequence of devices read at startup.

Configure Boot Device Order

1. Select 1st Boot Device
2. Select 2nd Boot Device
3. Select 3rd Boot Device
4. Select 4th Boot Device
5. Select 5th Boot Device
6. Display Current Setting
7. Restore Default Setting

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

When you select any of the options 1 - 5, the Select Device Type menu is displayed.

Select Device Type

1. Diskette
2. Tape
3. CD/DVD
4. IDE
5. Hard Drive
6. Network
7. List All Devices

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

By selecting **List All Devices** from the Select Device Type menu or the Select Media Type menu, you can view all of the potentially bootable devices at one time. Only bootable hard disks are listed. The List All Devices function can take a long time or may be incomplete on a large system with many I/O adapters and devices, such as large disk arrays. However, the following selection might reduce the overall time required to scan for all of the devices because the scan is restricted to the selected adapter: **device type (for example, hard disk) > interface type (for example, SCSI) > specific adapter.**

When you select a device type, such as option 5, a Select Media Type menu is displayed. The following is an example of that menu.

Select Media Type

1. SCSI
2. SSA
3. SAN
4. SAS
5. SATA
6. USB
7. IDE
8. ISA
9. None
10. List All Devices

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

When you select the media type, all adapters of that type are displayed on the Select Media Adapter menu. The following is an example of that menu for a SCSI media type.

Version EM310_024

SMS 1.6 (c) Copyright IBM Corp. 2000, 2005 All rights reserved.

Select Media Adapter

1. Un-P1-T14 /pci@80000002000000d/pci@2/pci1069,b166@1/scsi@0
2. Un-P1-T12 /pci@80000002000000f/pci@2,2/pci1069,b166@1/scsi@0
3. Un-P1-T13 /pci@80000002000000f/pci@2,2/pci1069,b166@1/scsi@1
4. None
5. List all devices

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

Then, you must select each adapter individually to see the bootable devices that are attached to it. If no bootable device is attached to the adapter, an error message is displayed. The following is an example of this menu for the first adapter in the previous example.

Version EM310_024

SMS 1.6 (c) Copyright IBM Corp. 2000, 2005 All rights reserved.

Select Device

Device Number	Current Position	Device Name
---------------	------------------	-------------

- | | | |
|----|------|---|
| 1 | 1 | SCSI 73407 MB Harddisk Un-P1-T14 /pci@80000002000000d/pci@2/pci1069,b166@1/scsi@0 |
| 2. | None | |

Navigation keys:

M = return to main menu

ESC key = return to previous screen

X = eXit System Management Services

Type the number of the menu item and press Enter or Select a Navigation key: _

When you select a device type, you can view detailed information about the device or set the device location in the boot list from the Select Task menu. (Note that only bootable disks are listed.) The following is an example of the menu for a hard disk.

```
Select Task

SCSI 36401 MB Harddisk Un-P1-T14 /pci@80000002000000d/pci@2/pci1069,b166@1/scsi@0
1. Information
2. Set Boot Sequence: Configure as 1st Boot Device

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Selecting **Information** displays a menu similar to the following for a hard disk.

```
Device Information
/pci@80000002000000d/pci@2/pci1069,b166@1/scsi@1/sd@5,0
      : (Bootable)
DEVICE      : SCSI 73407 MB Harddisk Un-P1-T14 /pci@80000002000000d/pci@2/
pci1069,b166@1/scsi@0
NAME        : sd
DEVICE-TYPE : block

Parent Information
IBM,FW-ADAPTER-NAME: Ultra-320
NAME        : scsi
DEVICE-TYPE : scsi-2

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Select the **Display Current Settings** to display the current setting of the customized boot list.

An example of this menu, with one device in the boot list, follows.

```
Current Boot Sequence

1. SCSI 73407 MB Harddisk Un-P1-T14 /pci@80000002000000d/pci@2/pci1069,b166@1/scsi@0
2. None
3. None
4. None
5. None

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Select the **Restore Default Settings** option to restore the boot list to the default boot list.

The default boot list varies depending on the devices that are installed in the system. The default boot list is as follows:

1. Primary diskette drive (if installed)
2. Optical drive (if installed)
3. Tape drive (if installed)
4. Hard disk drive (if installed)
5. Network adapter

Multiboot startup

The multiboot startup flag, if enabled, stops the system at the SMS menus every time the system starts. It allows you to start the system from another device.

SAN zoning support

By using the storage area network (SAN) zoning option, you can perform SAN zoning for all Fibre Channel adapters, which includes the virtual Fibre Channel adapters that are assigned to the partition being booted.

When an adapter is selected, the selected adapter is opened and remains open during the zoning activity, which ensures that the switch can determine the worldwide port number and worldwide node name of the adapter.

Select the **SAN Zoning Support** option. A menu similar to the following example is displayed.

```
PowerPC Firmware
Version ZL740_052
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Media Adapter

1.  U78AA.001.WIH0029-P1-C7-T1    /pci@800000002000000d/fibre-channel00

-----
Navigation keys:
M = return to main menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type the number of the menu item and press Enter or Select a Navigation key: _
```

When an adapter is selected, a menu similar to the following example is displayed.

```
-----
The selected adapter has been opened.
Zoning of attached disks may now be possible.
Press any key to close the adapter and return to the previous menu.
-----
```

Power-on self-test keys

The power-on self-test (POST) keys can start services or initiate service mode boots used for configuring the system and diagnosing problems.

After power is turned on and before the operating system is loaded, the system does a power-on self-test (POST). This test performs checks to ensure that the hardware is functioning correctly before the operating system is loaded. During the POST, a POST screen is displayed, and POST indicators appear on the firmware console (if one is connected).

The POST keys, if pressed after the keyboard POST indicator is displayed and before the last POST indicator speaker is displayed, cause the system to start services or to initiate service mode boots used for configuring the system and diagnosing problems.

Note: The program function keys (F1-F12) on a keyboard attached to the service processor are not used and are ignored. After the keyboard POST indicator is displayed, you must use the numeric number keys.

Numeric 1 key

The numeric 1 key, when pressed during POST, starts the system management services interface.

Numeric 5 key

The numeric 5 key, when pressed during POST, initiates a system boot in service mode using the default service mode boot list.

This mode attempts to boot from the first device of each type found in the list. It does not search for other bootable devices of that type if the first device is not bootable. Instead, it continues to the next device type in the list.

The default boot sequence is:

1. Diskette (if installed)
2. CD-ROM (if installed)
3. Tape drive (if installed)
4. Hard file
5. Network

Numeric 6 key

The numeric 6 key works like the numeric 5 key.

Exiting system management services

After you finish using the SMS menus, type x (for exit) to boot your system.

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

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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
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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
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International Business Machines Corp.
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Generelle Informationen:

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Federal Communications Commission (FCC) statement

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

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

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

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

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM-authorized dealers. IBM is not responsible for

any radio or television interference caused by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate this equipment.

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

Industry Canada Compliance Statement

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

Avis de conformité à la réglementation d'Industrie Canada

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

European Community Compliance Statement

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

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

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

VCCI Statement - Japan

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

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

高調波ガイドライン適合品

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

高調波ガイドライン準用品

IBM Taiwan Contact Information

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

Electromagnetic Interference (EMI) Statement - Korea

이 기기는 가정용(B급)으로 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Germany Compliance Statement

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

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

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 2004/108/EG in der Bundesrepublik Deutschland.

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

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

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:

International Business Machines Corp.

New Orchard Road

Armonk, New York 10504

Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

IBM Deutschland GmbH

Technical Regulations, Abteilung M372

IBM-Allee 1, 71139 Ehningen, Germany

Tel: +49 7032 15 2941

email: lugi@de.ibm.com

Generelle Informationen:

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

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