



Power Systems

Managing system management services





Power Systems

Managing system management services

Note

Before using this information and the product it supports, read the information in “Notices,” on page 19, “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 POWER6 processor and to all associated models.

© Copyright International Business Machines Corporation 2007, 2009.

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

Contents

Safety notices	v
Managing system management services.	1
What's new in Managing system management services	1
Starting system management services	1
Starting system management services with an HMC	1
Starting system management services without an HMC	2
Using system management services.	2
Menus and descriptions	2
Main menu and navigation	3
Selecting the language in system management services	4
Setting up a remote IPL	5
Selecting the BOOTP option	6
Selecting the iSCSI option	7
Configuring adapters	9
Selecting the speed, duplex option	9
Selecting the spanning tree enabled option	10
Selecting the Protocol option	10
Changing SCSI settings	10
Selecting the console	11
Selecting boot options	11
Selecting to install or boot a device	11
Selecting boot device order	13
Multiboot startup	16
Power-on self-test keys	17
Exiting system management services	17
Appendix. Notices.	19
Trademarks	20
Electronic emission notices	20
Class A Notices	20
Terms and conditions	24

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, a safety information booklet is included in the publications package shipped with the product. The booklet 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 in the booklet. You should also refer to the booklet any time you do not clearly understand any safety information in the U.S. English publications.

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

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)

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.

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.

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 2009

The following updates have been made to the content:

- Updated “Starting system management services with an HMC.”
- Added information regarding languages in “Selecting the language in system management services” on page 4.
- Added enhancements for the Speed, Duplex option in “Selecting the speed, duplex option” on page 9.

Starting system management services

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

Important: If you have an IBM Power 520 Express™, IBM Power 550 Express, IBM Power 570, or IBM Power 575 and were directed here from the installation instructions, you must set the altitude setting before returning to the installation instructions.

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.

Related information

Changing the altitude setting

Starting system management services with an HMC

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

If you have an HMC, complete one of the following tasks:

Requirement: The logical partition must be shut down.

- Using the HMC, activate the logical partition. (If a VTERM on the HMC is the firmware console for the logical partition that is being restarted, open the VTERM.)

Note: If you are not on the local HMC, you need to enable the HMC to open VTERM. To do enable VTERM, select **HMC Management** → **Remote virtual terminal** and select **Enable remote virtual terminal connections**.

- Using the HMC, change the logical partition profile properties.
 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 **Tasks** → **Operations** → **Activate**.
5. In the Activate Logical Partition window, click **Advanced**.
6. In the Keylock position field, select **Normal**, and in the Book mode field select **SMS**.
7. Click **OK**.
8. If you want 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.

Starting system management services without an HMC

Learn how to start system management services (SMS) without a Hardware Management Console (HMC) using the Advanced System Management Interface (ASMI), the control panel, or from the AIX operating system.

If you have are not using an HMC to start the system management services, complete one of the following tasks:

- If the ASMI is available on a network-attached console and the system is in standby state, complete the following steps:
 1. On the ASMI Welcome window, specify the ADMIN 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.
- 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.
 3. Press the numeric 1 key after the word **keyboard** is displayed and before the word **speaker** is displayed.
- If the ASMI is not available and the system has already booted the AIX operating system, complete the following steps:
 1. Reboot the operating system.
 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.
 3. Press the numeric 1 key after the word **keyboard** is displayed and before the word **speaker** is displayed.

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.

Table 1. SMS menus and descriptions

Menu or task	Description
Main menu	Describes the opening menu when first starting SMS.
Select language	You can change the language used by the SMS menus.
Setup remote IPL	You can enable and set up the remote startup capability of your server.
Adapter configuration	You can set the network speed, enable or disable spanning tree, and set the protocol.
Speed, duplex	You can set the interface speed at which the adapter runs and select half or full duplex.
Spanning tree enabled	You can enable or disable the spanning tree option.
Protocol	You can set the appropriate protocol for your network.
Ping test	You can test an adapter’s network connection to a remote system.
Advanced setup: BOOTP	You can view and modify the BOOTP values.
Change SCSI settings	You can view and change the addresses of the SCSI controllers attached to your system.
Select console	You can select which console to use to display the SMS menus.
Select boot options	You can view and set various options regarding the installation devices and boot devices. The Select boot options menu gives you the following options: Select Install or Boot Device, Select Boot Devices, or Multiboot Startup.
Normal mode boot or service mode boot	You can have your system perform a boot in the normal or service mode.
Hard drive	Displays a menu identifying the different types of hard drives installed on your system, for example, SCSI.
Set boot sequence	You can set the location of the device in the boot list. Options include: display current settings, restore default settings, multiboot startup, and exiting system management services.

Main menu and navigation

The main menu gives you access to selecting language, performing IPLs, and more.

After the SMS starts, the following menu 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

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, there are 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 there is more than one page of information to display, there are two additional navigation keys:

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 are given the option of choosing a menu item and pressing Enter (if applicable), or selecting a navigation key.

Selecting the language in system management services

You can choose from among 20 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 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, the Select Network Service menu is displayed.

Select Network Service

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

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: _

Related tasks

“Using system management services” on page 2

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

Selecting the BOOTP option

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

After you select **BOOTP** on the Select Network Service menu, the Network Parameters menu 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

-----
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 the following menu.

```
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 same series of menus takes you through setting up the IP parameters and the adapter configuration before you attempt the ping test.

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: BOOTP** option from the Network Parameters menu to view and change the BOOTP values. The values 5, 512, and 5 are the respective default values for the following options.

Advanced Setup: BOOTP

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

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 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 choose either of the first two options, the following menu is displayed. **Automatic discovery** saves only the default iSCSI parameters and **Enter Static Parameters** saves the user parameters.

iSCSI Discovery Selection

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

1. Enter Static 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: _

When you choose **Enter Static Parameters**, the following menu is displayed. Use this menu to set the initiator parameters. Select **Enter Target Parameters** to set the target parameters.

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. Select **Target Name** to set the target's name.

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: _

If you select **Set ISCSI Target Name** on the ISCSI Target Parameters menu, the following menu 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. Select **Initiator Name** on the iSCSI Initiator Parameters menu to set the initiator name. The following menu is displayed.

```
Enter Initiator 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: _
```

Configuring adapters

You can set the network speed, enable or disable the spanning tree, and set the protocol.

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

```
Adapter Configuration

Port 1 - 2 PORT Gigabit Et   Un-P1-T9   00096bfff616b
1. Speed, Duplex
2. Spanning Tree Enabled
3. 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 Adapter Configuration menu follows. The only option on this menu is **auto, auto**. With this option, the adapter sets its network parameters for optimum performance.

You can set the interface speed at which the adapter runs.

Adapter Configuration

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 spanning tree enabled option

When you select the **Spanning Tree Enabled** option, you can enable or disable the spanning tree.

If this option is enabled, because the network to which the system is being attached supports spanning trees, the firmware imposes a waiting period of up to 60 seconds before the adapter can communicate with the network. If this option is disabled, the network adapter can access the network immediately after the system is connected.

The spanning tree protocol is a link-management protocol that provides path redundancy while preventing duplicate loops in a network. The spanning tree option is enabled or disabled on the network switch. If the LAN adapter port being configured, by using the SMS adapter menus, is attached to a network switch that has the spanning tree protocol enabled, the spanning tree option on the **Adapter Configuration** menu remains enabled, which is the default. If the network switch does not support the spanning tree protocol, or it is disabled, the spanning tree option on the **Adapter Configuration** menu can be disabled. Leaving this option enabled does not affect the operation of the adapter. This setting potentially affects the ping test and NIM installation. If the spanning tree setting on the port is disabled, but it is enabled on the network switch to which it is attached, the ping test and NIM installation might fail even though the network and the adapter are operational.

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 menu. The firmware automatically returns to the menu on which the POST indicators (memory, keyboard, network, SCSI, speaker) display across the bottom of the menu. Press the numeric 1 key after the word **keyboard** is displayed and before the word **speaker** is displayed to return to the SMS main menu.

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 select to install or boot a device, configure a boot device order, or select a multiboot startup.

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]

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 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 **Select Install or Boot Device**, the following 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: _

If you select **Hard Drive**, a menu similar to the following 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@800000002000000d/pci@2/pci1069,b166@1/scsi@0
2. Un-P1-T12 /pci@800000002000000f/pci@2,2/pci1069,b166@1/scsi@0
3. Un-P1-T13 /pci@800000002000000f/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 devices of the requested type that are attached to that adapter. In the following example, all of the 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 /pci080000002000000d/pci02/
                               pci1069,b16601/scsi00
-----
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 retrieves 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)
  (loc=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.

Selecting 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 on a large system with many I/O adapters and devices, such as large disk arrays.

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. None
8. 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 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      Current   Device
Number      Position   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@80000000200000dd/pci@2/pci1069,b166@1/scsi@1/sd@5,0
DEVICES      : (Bootable)
DEVICES      : SCSI 73407 MB Harddisk Un-P1-T14 /pci@80000000200000dd/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: _

```

When you select the **Configure Boot Device Order** option, you can set the location of the device in the boot list.

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@80000000200000dd/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** option is not needed on POWER6™ processor-based systems because the function is handled by the Advanced System Management Interface (ASMI) or the Hardware Management Console (HMC).

In previous releases, the multiboot startup flag, if enabled, stopped the system at the SMS menus every time the system started. It allowed you to start the system from another device.

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 firmware supports up to five entries in the boot list.

Note: This is the preferred method of loading standalone AIX diagnostics from CD-ROM.

The default boot sequence is:

1. Diskette (if installed)
2. CD-ROM (if installed)
3. Hard file
4. Tape drive (if installed)
5. Network
 - a. Token ring
 - b. Ethernet

Numeric 6 key

The numeric 6 key works like the numeric 5 key, except that firmware uses the customized service mode boot list that was set up in AIX when AIX was first booted, or manually using the AIX service aids.

Note: This is the preferred method of loading online AIX diagnostics from the boot hard disk.

Exiting system management services

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

Appendix. Notices

This information was developed for products and services offered in the U.S.A.

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

The manufacturer 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 the manufacturer.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: THIS INFORMATION IS PROVIDED "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 states 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. The manufacturer 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 Web sites not owned by the manufacturer are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this product and use of those Web sites is at your own risk.

The manufacturer may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

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

All statements regarding the manufacturer's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

The manufacturer's prices shown are the manufacturer'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 the names and addresses used by an actual business enterprise 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 the manufacturer.

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

The manufacturer'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 the manufacturer's support websites for updated information and fixes applicable to the system and related software.

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.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.

Electronic emission notices

Class A Notices

The following Class A statements apply to the IBM servers that contain the POWER6 processor.

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

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

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A respecte 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 A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

European Community contact:
IBM Technical Regulations
Pascalstr. 100, Stuttgart, Germany 70569
Tele: 0049 (0)711 785 1176
Fax: 0049 (0)711 785 1283
E-mail: tjahn@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.

**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

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 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Please note that this equipment has obtained EMC registration for commercial use. In the event that it has been mistakenly sold or purchased, please exchange it for equipment certified for home use.

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 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 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 der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

EN 55022 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 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 A.

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

Verantwortlich für die Konformitätserklärung nach des EMVG ist die IBM Deutschland GmbH, 70548 Stuttgart.

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 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

Terms and conditions

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

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 the manufacturer.

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 the manufacturer.

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

The manufacturer 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 the manufacturer, 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.

THE MANUFACTURER MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THESE 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