ASMB-LE

Server Management Board

E1743

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Contents

Chapter 1:   Product introduction

Chapter 2:   Installation

Chapter 3:   Software support

Contents

Appendix: Reference information

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

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 manufacturer's 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 to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

> The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the server.

- When adding or removing devices to or from the server, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing server before you add a device.

- Before connecting or removing signal cables from the server, ensure that all power cables are unplugged.

- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.

- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.

- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing any component to the server, carefully read all the manuals that came with the package.

- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.

- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.

- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.

- Place the product on a stable surface.

- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About this guide

This user guide contains the information you need when installing and configuring the server management card.

How this guide is organized

This manual contains the following parts:

- **Chapter 1: Product introduction**

  This chapter describes the server management board features and the new technologies it supports.

- **Chapter 2: Installation**

  This chapter provides instructions on how to install the board to the server system and install the utilities that the board supports.

- **Chapter 3: Software support**

  This chapter tells you how to use the software applications that the server management board supports.

- **Appendix: Troubleshooting**

  The Appendix lists the common problems that you may encounter when installing or usingthe server management board or any of the bundled utilities.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**

   The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key.
	Example: <Enter> means that you must press the Enter or Return key.
<Key1+Key2+Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).
	Example: <Ctrl+Alt+D>
Command	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets.
	Example: At the DOS prompt, type the command line: **afudos /i[filename]** **afudos /iP5GD2.ROM**

ASMB-LE specifications summary

IPMI features	IPMI 1.5-compliant and supports: - Auto monitoring sensor and event logging - IPMI Host I/O interface - Receiving and logging of event messages - IPMB/I^{2}C system interface - System Watchdog Timer (ASR)
CPU	8-bit (80C32) 40 MHz
Chipset	Winbond 83910
External Bus Address Range	64 Kbyte (4-bank)
Internal RAM	256 bytes
External RAM	32 Kbytes
Flash ROM	128 Kbytes
Interrupt	I^{2}C, Timer, UART, RTC, LPC
Timers	16-bit system timer Watchdog timer Real Time Clock (RTC)
System Interface	Low Pin Count Supports Keyboard Controller Style (KCS), Server Management Interface Chip (SMIC), and Block Transfer (BT) interfaces
Serial/Modem Interface	Basic Mode and Terminal Mode
LAN Interface	IPMI 1.5 Shared LAN
Bus	Four I^{2}C bus One IPMB bus Two UART bus
Features	Remote power on/off Remote reboot Upgradeable firmware SNMP Trap DOS-based utility
Software support	ASUS Remote Console (ARC) ASUS Host Management Controller Utility (DOS-based)

Specifications are subject to change without notice.

This chapter describes the server management board features and the new technologies it supports.

Product introduction 1

1.1 Welcome!

Thank you for buying an ASUS® ASMB-LE server management board!

The ASUS ASMB-LE is an Intelligent Platform Management Interface (IPMI) 1.5-compliant board that allows you to monitor, control, and manage a remote server from the local or central server in your local area network (LAN).

With the proprietary ASUS Remote Console interface, ASMB-LE offers round-the-clock remote server monitoring through component sensors including CPU(s) temperature(s), system temperature, fan rotations, and power supply voltages. The ASMB-LE also records each remote server system event for accurate and efficient troubleshooting.

The ASMB-LE comes with a power management feature that allows you to power on/off or reset the remote server giving you full control of power in critical situations. The server management board also comes with a Field Replaceable Unit (FRU) information feature that gathers information on replaceable system components or modules such as the motherboard or backplane model name, serial number, manufacturer, etc. You can use the FRU information when reporting and/or replacing server system components.

Before you start installing the server management board check the items in your package with the list below.

1.2 Package contents

Check your server management board package for the following items.
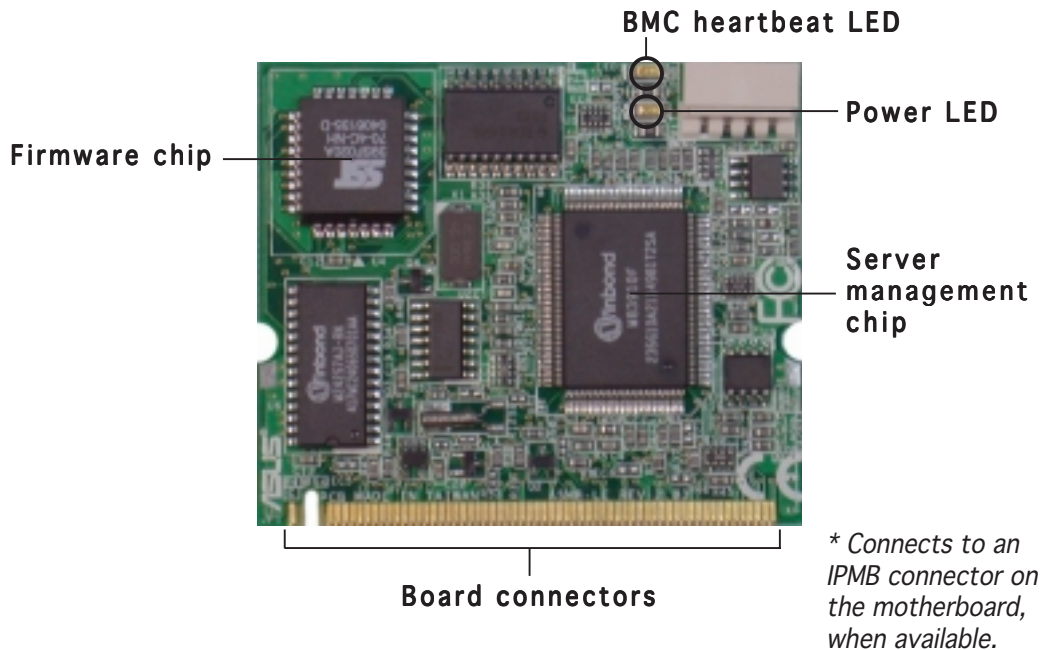
- ✓ ASUS ASMB-LE board
- ✓ Support CD
- ✓ User guide

<table>
<tr><td>🖋</td><td>If any of the above items is damaged or missing, contact your retailer.</td></tr>
</table>

1.3   Board layout

The ASUS ASMB-LE comes in a BMC package. The illustration below shows the major components of the server management board.

BMC heartbeat LED

Power LED

Firmware chip

Server management chip

Board connectors

* Connects to an IPMB connector on the motherboard, when available.

LED indicators

The ASMB-LE board comes with two LED indicators: BMC heartbeat LED and Power LED. Refer to the table below for the LED indications.

LED	Name	Status	Description
LED1	**BMC Heartbeat**	Blinking Off	ASMB-LE firmware is in execution. The ASMB-LE firmware is corrupted or the server system standby-power is off.
LED2	**Power**	On Off	The managed server system is on. The managed server system is off.

1.4   System requirements

Before you install the ASMB-LE board, check if your server system meets the following requirements:

• ASUS server motherboard with Baseboard Management Controller (BMC) socket*

• LAN (RJ-45) port for server management**

• Microsoft® Internet Explorer 5.5 or later

> *   Visit the ASUS website (www.asus.com) for an updated list of server motherboards that support the ASMB-LE board.
>
> **   Refer to the Appendix section for details.

1.5   Network setup

The ASMB-LE server management board installed on the remote host connects to a local/central server via direct LAN connection or through a network hub. Below are the supported server management configurations.

Direct LAN connection

RJ-45 cable

Remote host
with ASMB-LE

Local host with
ASUS Remote
Controller (ARC)
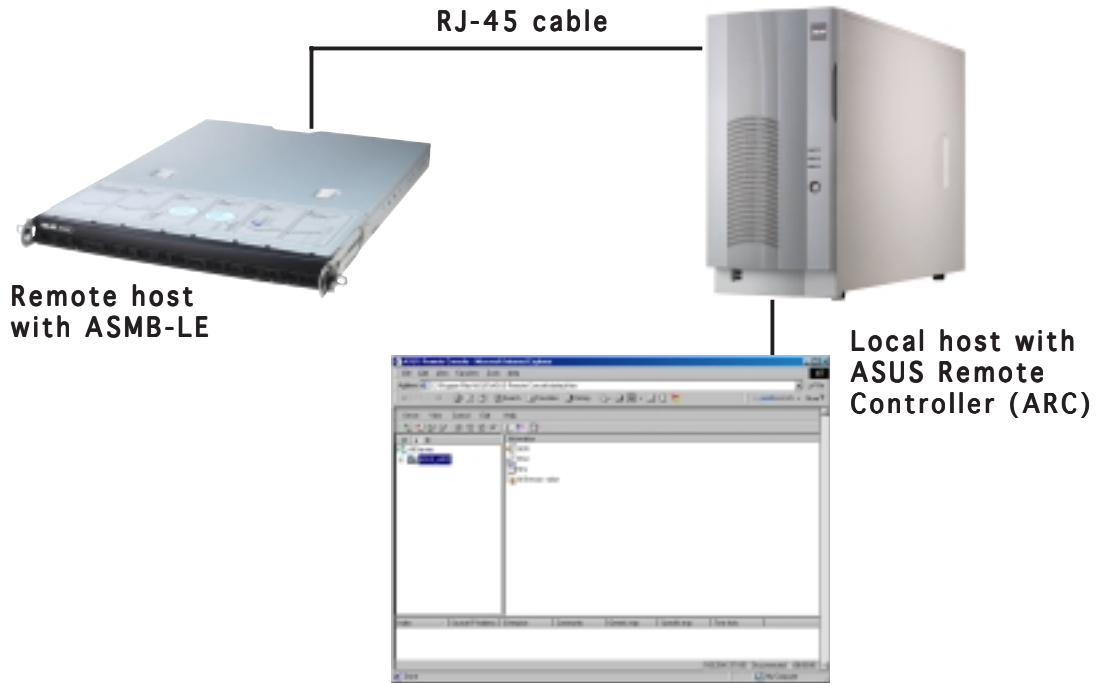
LAN connection through a network hub
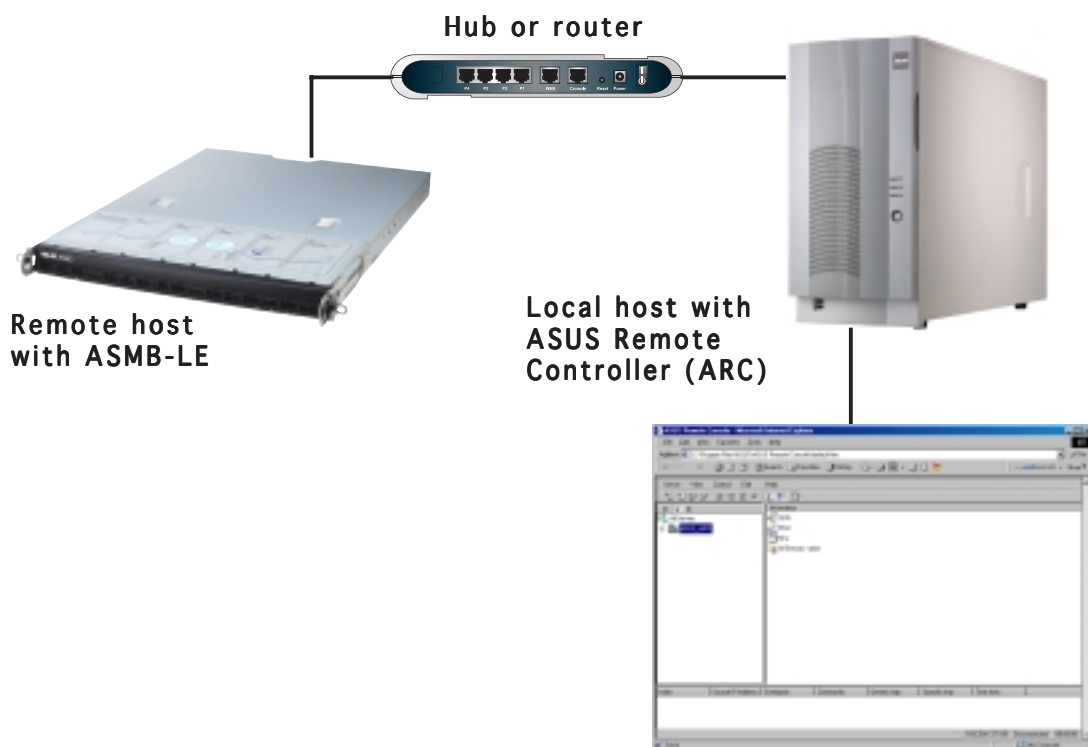
Hub or router

Remote host
with ASMB-LE

Local host with
ASUS Remote
Controller (ARC)

This chapter provides instructions on how to install the board to the server system and install the utilities that the board supports.

Installation

2

2.1 Before you proceed

Take note of the following precautions before you install the server management board to the server system.

> • Unplug the server system power cord from the wall socket before touching any component.
>
> • Use a grounded wrist strap or touch a safely grounded object or to a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
>
> • Hold components by the edges to avoid touching the ICs on them.
>
> • Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
>
> • **Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply.** Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.
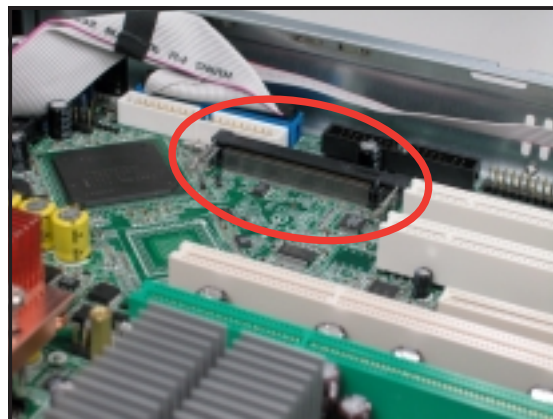
2.2 Hardware installation
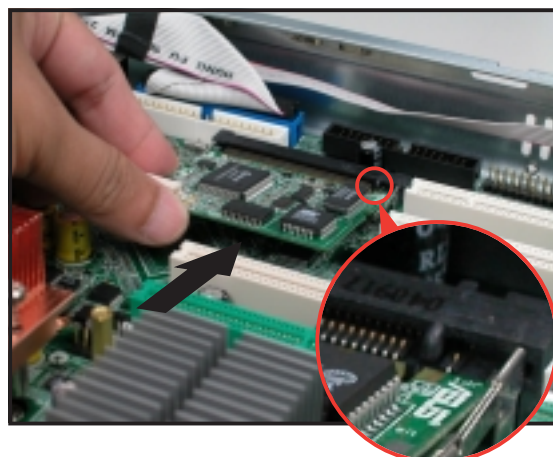
To install the server management board:

1. Remove the server system cover, then locate the Baseboard Management Controller (BMC) socket on the motherboard.
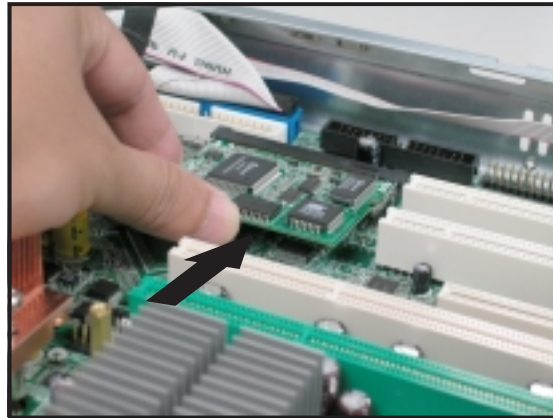
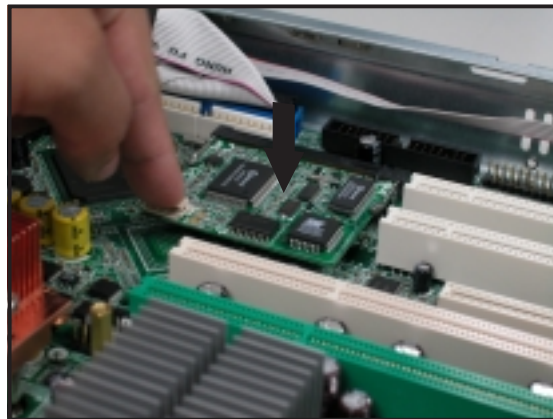   > Refer to the Appendix section for the location of the BMC socket on supported motherboards.

2. Position the board at a 30º-45º angle, then match the notch on the board with the break on the socket.

3. Carefully push the board to the socket until its connectors (golden fingers) are fully-inserted to the socket.

4. Press the board firmly until the BMC socket retaining clips snap back and secure the board in place.

When installed, the board appears as shown.

5. Re-install the server system cover, then connect the power plug to a grounded wall socket.

6. Insert the LAN cable plug to the LAN port for server management.

Refer to the Appendix for the location of the LAN port for server management on various server motherboards.

7. For direct LAN configuration, connect the other end of the LAN cable to the local/central server LAN port.

For connection to a network hub or router, connect the other end of the LAN cable to the network hub or router.

To uninstall the board:

1. Simultaneously press the BMC socket retaining clips outward until the board tilts up.
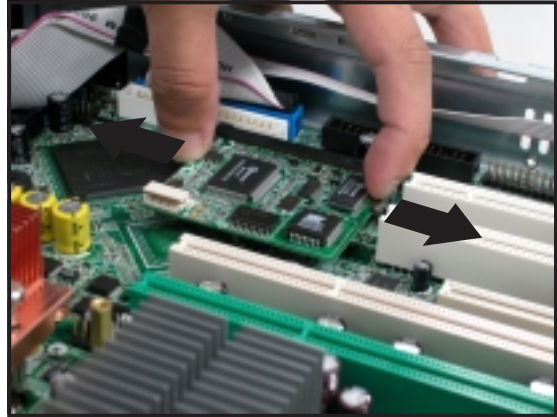
2. Carefully pull the board out from the BMC socket, then set aside.
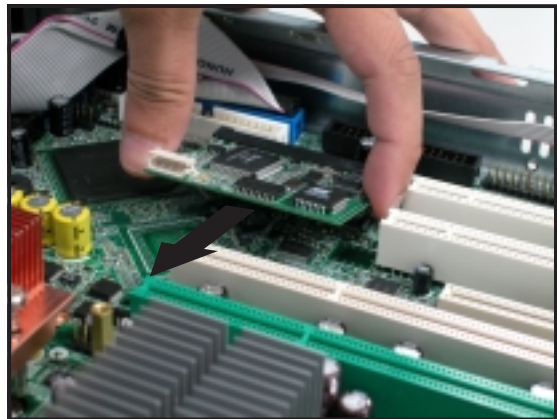
2.3   Network configuration

You must configure the network settings of both the remote server and the local/central server to establish communication and monitor or control the remote server. Prepare the support CD and a bootable floppy disk to configure the network settings.

2.3.1   Running the ASMC utility

The ASUS Server Management Card Utility allows you to know the MAC address of the server motherboard and to set the IP address. This utility is available from the support CD that came with the package.

To run the ASMC utility:

1. Restart the remote server, then place the support CD to the optical drive.

2. Press <1> (FreeDOS command prompt) when the screen prompts you to select from available boot options.

3. When the `A:>` prompt appears, type `X:` (where X is the drive letter of the optical drive).

4. When the `X:>` prompt appears, type `cd\asms\asmc\le\dostool`, then press <Enter>.

5. At the prompt, type `asmc ?`, then press <Enter> to display the ASMC Utility Help Menu. The screen appears as shown.

```
+-------------------------------------------------------+
|  ASUS Server Management Card Utility 1.00 Help Menu |
+-------------------------------------------------------+
Usage:
ASMC -flash -save filename
ASMC -flash -load filename
ASMC -i2c_read  bus_num dev_num offset
ASMC -i2c_write bus_num dev_num offset data

ASMC -sdr -save filename
ASMC -sdr -load filename
ASMC -kcs[smic/bt/pci_smic] NetFn command data....
ASMC -tco enable[disable]
ASMC -bmc_ip ip_addr[10.10.10.20]
ASMC -bmc_mac
ASMC -pet_ip_mac ip_addr[10.10.10.20] mac_addr[010203040506]
ASMC -bmc_info
```

Refer to the table on the next page for a description of the help menu options.

ASMC Help Menu options

Options	Description
-flash -save filename	Save the current firmware to a file
-flash -load filename	Update the ASMB-LE firmware
-i2c_read bus_num dev_num offset	Send the read I^{2}C command
-i2c_write bus_num dev_num offset data	Send the written I^{2}C command
-sdr -save filename	Save the SDR data to file
-sdr -load filename	Update the SDR data from file
-kcs[smic/bt/pci_smic] NetFn command data....	Send IPMI command
-tco enable[disable]	Enable or disable TCO mode
-bmc_ip ip_addr[10.10.10.20]	Write the BMC IP address
-bmc_mac	Auto-write the BMC MAC addresses
-pet_ip_mac ip_addr[10.10.10.20] mac_addr[010203040506]	Write the PET destination IP and MAC addresses
-bmc_info	Displays the BMC and PET IP and MAC addresses

2.3.2 Configuring the LAN controller

Before you can establish connection to the ASMB-LE board, you must configure the LAN port for server management being used by the remote server to connect to the local/central server.

To configure the LAN port of the remote server:

1.   On the prompt, type **asmc -tco enable**, then press <Enter>. The screen displays the auto-detected information including the motherboard name, vendor-device code, and the physical address (MAC) of the remote server.

```
A:\>asmc -tco enable
Detect MotherBoard        -> (PSCH-LR)
Detect KCS Interface
           Bus    Dev     Fun    Vendor-Device          MAC
======== ====== ======= ====== ============= ==================
PSCH-LR    01     01      00      8086 - 1075   00-11-2F-0F-A2-21

Please shutdown the system (Standby power) to enable TCO mode!

A:\>
```

2.   Shutdown the remote server, then disconnect the power plug from the electrical socket to enable the TCO mode.

3.   Restart the remote server from the support CD.

The TCO (Total Cost Ownership) interface for Intel® Fast Ethernet and Gigabit LAN controllers allows you to manage the remote server system even when its operating system is not fully functional.

4. Run the ASMC utility from the support CD following the instructions in the previous section.

5. Type **asmc -bmc_ip xxx.xxx.xxx.xxx**, then press <Enter> to assign any IP address to the remote server LAN port. The screen displays the request and response buffer. Write the remote server IP address in a piece of paper for reference.

```
A:\>asmc -bmc_ip 169.254.137.105
Detect MotherBoard        -> (PSCH-LR)
Detect KCS Interface
New BMC IP : 169.254.137.105

A:\>
```

When finished, the utility returns to the DOS prompt.

Make sure that the assigned IP address for both remote and local/central servers are in the same subnet. You can use the network settings utility in your OS to check.

6. Type **asmc -bmc_mac** on the prompt, then press <Enter>. The screen displays the physical address (MAC) of the remote server. Write the MAC address in a piece of paper for reference.

```
A:\>asmc -bmc_mac
Detect MotherBoard        -> (PSCH-LR)
Detect KCS Interface
         Bus    Dev    Fun   Vendor-Device       MAC
======== ====== ======= ====== ============== ==================
PSCH-LR    01     01     00    8086 - 1075   00-11-2F-0F-A2-21
New BMC MAC: 00 11 2F 0F A2 21

A:\>
```

7. Type **asmc -bmc_info** on the prompt, then press <Enter> to display the IP and MAC addresses of the BMC and PET.

```
A:\>asmc -bmc_mac
Detect MotherBoard        -> (PSCH-LR)
Detect KCS Interface
BMC IP : 169.254.137.105
BMC MAC: 00 11 2F 0F A2 21
PET IP : 169.254.137.106
PET MAC: 00 E0 18 9B BB 44

A:\>
```

8. Restart the remote server, enter the BIOS setup, then boot from the hard disk drive.

9. Adjust the local/central server network settings, if necessary.

2.3.3 Updating the ASMC-LE firmware

You can use the ASUS System Web-based Management (ASWM) application to update the ASMC-LE firmware. To do this:

1. Download the latest ASMB-LE firmware from the ASUS website (www.asus.com), then save the firmware file to the server.

2. Launch the ASWM application. If ASWM is not yet installed on your server system, use the support CD to install the application.

3. Click the **Configuration** link, then select **IPMI Flash** from the menu.
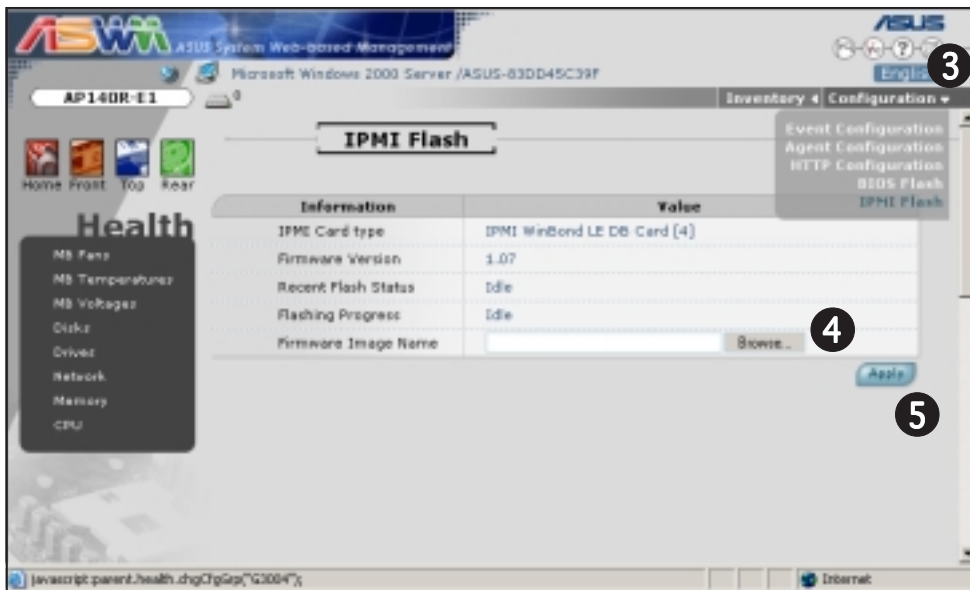
4. Click **Browse** to locate the latest firmware you downloaded earlier. When selected, the firmware path and filename appears in the **Firmware Image Name** field.

5. Click **Apply** to update the ASMC-LE firmware.

2.4 Software installation

You can monitor, control, or manage the remote server from the local/central server using the ASUS Remote Console (ARC). The ARC is a web-based application available from the support CD that came with the ASMB-LE package. You must install the ARC on the local/central server to access the remote server.

2.4.1 Installing the ARC

To install the ARC to the local/central server:

1. Place the support CD to the optical drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.

    If Autorun is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the ASSETUP.EXE to run the CD.

2. Click the **Management Software** tab, then click the item **Install ASUS IPMI Remote Console utility**.

3. Follow the installation wizard instructions to install the utility.
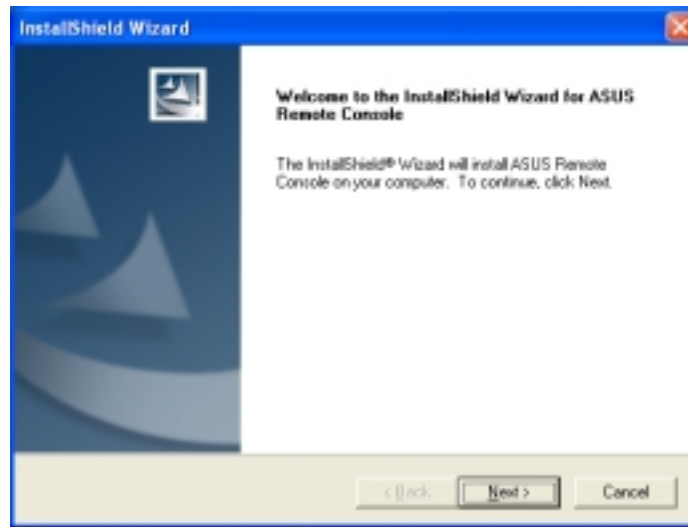
2.4.2   Launching ARC

To launch the ARC utility:

Click **Start** > **All Programs** > **ASUS Remote Console** > **ASUS Remote Console** from the Windows® desktop.
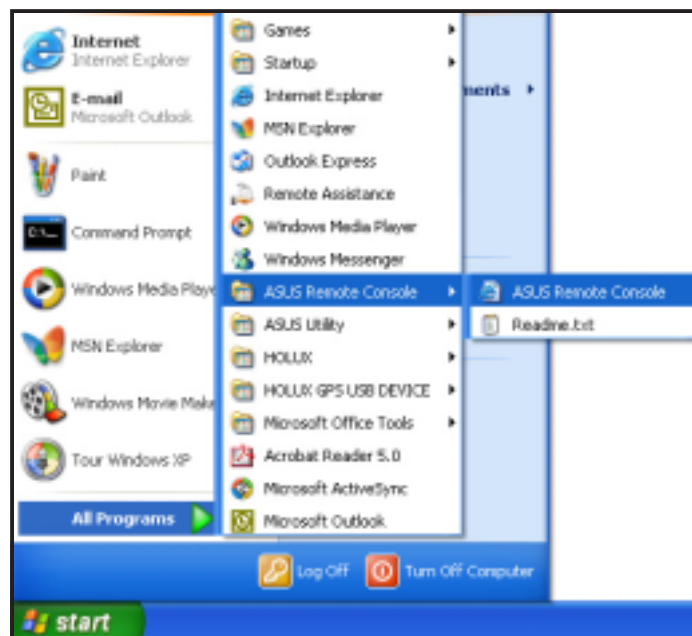
or

Double-click the ASUS Remote Console icon on the Windows® desktop.

This chapter tells you how to use the
software applications that the server
management board supports.

Software
support

3

3.1 ASUS Remote Console (ARC)

The ASUS Remote Console (ARC) is a web-based utility that allows you to monitor the remote host's hardware information including temperatures, fan rotations, voltages, and power. This application also lets you instantly power on/off or reset the remote server.
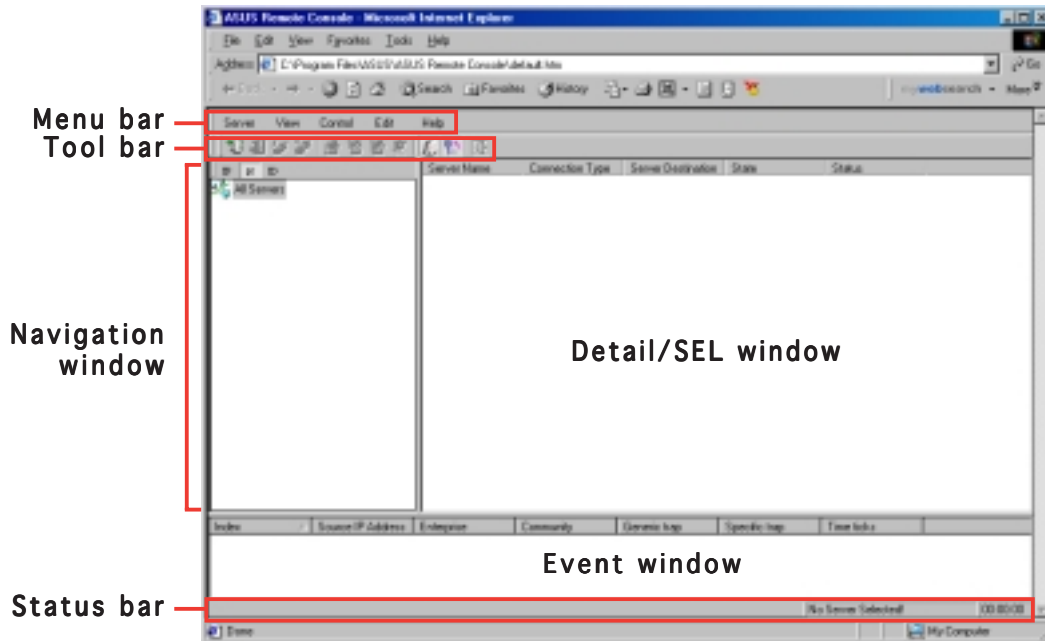
The ARC window is made up of six sections: **Menu** bar, **Tool** bar, **Navigation** window, **Detail/SEL** window, **Event** window, and **Status** bar.

3.1.1 ARC sections

Menu bar

The Menu bar contains all the commands for the ARC application. Click on a menu to display a list of available commands.

Menu	Available commands
Server	add, delete, connect, disconnect server or change the server settings
View	show or hide the tool bar, status bar, navigation, and PET windows
Control	turn on/off or reset the remote server
Edit	delete the System Event Log (SEL) or PET log
Help	view information about the ARC application

Tool bar

The Tool bar contains buttons corresponding to the most commonly used commands. The Tool bar offers faster access and execution of these commands. Move the mouse pointer over a button to display its function.

Navigation window

The Navigation window displays the directory of connected and disconnected remote server(s). For multiple monitoring, this window allows you to navigate through the remote servers. Click the **All Servers** root directory to display all connected and disconnected servers, then click on the server you want to monitor or control.
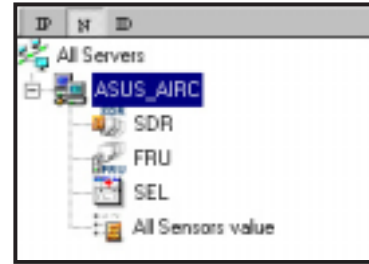
Click ⊞ before the server connection to display available remote server information including the Sensor Data Record (SDR), Field Replaceable Unit (FRU), and System Event Log (SEL).
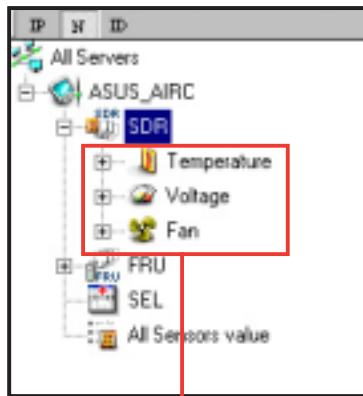
Sensor groups
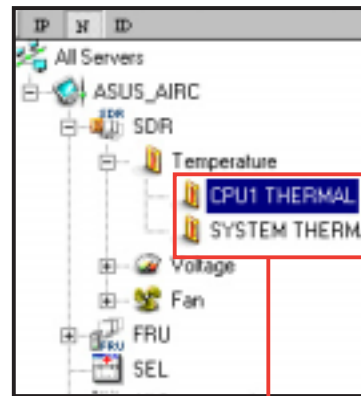
Sensors

Some remote server information (such as the SDR) contains several sensor groups such as **Temperature**, **Voltage**, **Fan**, and **Chassis Intrusion**. Click ⊞ before the remote server information to display the sensor groups.
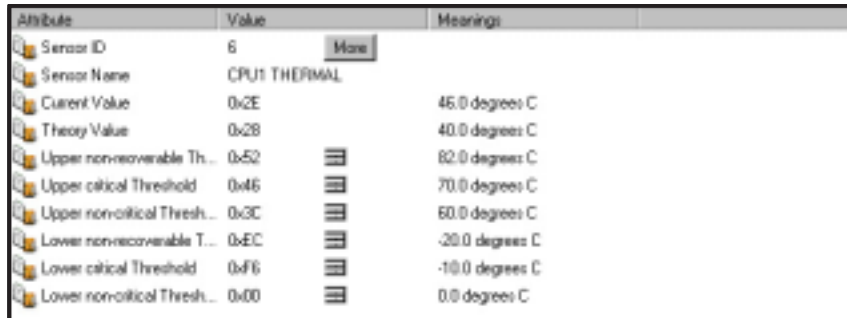
Click ⊞ before a sensor group to display individual sensors. For example, clicking ⊞ before the sensor group **Temperature** displays the CPU1 and system temperatures.

You can also change the server directory display by clicking the buttons on top of the window. For example, clicking the **IP** button displays the remote server IP address instead of the remote server name (**N**). Selecting **ID** displays the remote server ID instead of the server name or IP address.
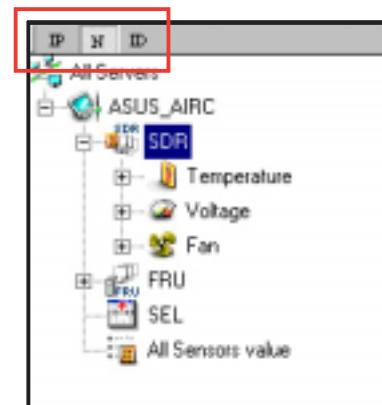
Detail/SEL window

The Detail/SEL window displays the detailed SDR and FRU information, and the System Event Log (SEL). The window provides the link for detailed sensor information or system events and allows you to adjust the sensor threshold values.

Attribute	Value		Meanings
Sensor ID	6	More	
Sensor Name	CPU1 THERMAL		
Current Value	0x2E		46.0 degrees C
Theory Value	0x28		40.0 degrees C
Upper non-recoverable Th...	0x52	≡	82.0 degrees C
Upper critical Threshold	0x46	≡	70.0 degrees C
Upper non-critical Thresh...	0x3C	≡	60.0 degrees C
Lower non-recoverable T...	0xEC	≡	-20.0 degrees C
Lower critical Threshold	0xF6	≡	-10.0 degrees C
Lower non-critical Thresh...	0x00	≡	0.0 degrees C

Event window

The Event window displays the Platform Event Trap (PET) received by the ARC. The PET information includes the event index, source IP address, enterprise, community, generic and specific traps, and time ticks. The PET information is a system management alert in SNMP Trap format and is used is used for IPMI alerting as well as alerts using the ASF specification.

Index	∧	Source IP Address	Enterprise	Community	Generic trap	Specific trap	Time ticks	

Status bar

The Status bar located at the bottom of the ARC window displays the connection status to the remote server, connection duration, IP address of the remote server, and the progress of SDR/SEL/FRU information download.

Get SDR from the server...	▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓	169.254.137.105	Connected	00:00:04

3.1.2 Connecting to the remote server

To connect to the remote server:

1. From the menu bar, click **Server**, then select **New**. An **Add new server connection** window appears.
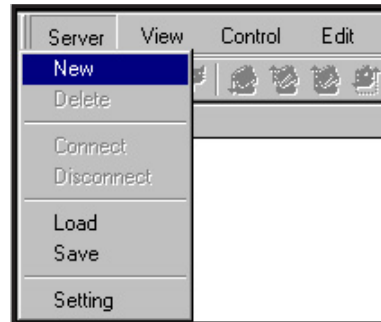
2. Type the remote server name and IP address on the fields. Click **Save Default** to set the remote server connection as the default. Otherwise, click **OK** to continue or **Cancel** to close the window.
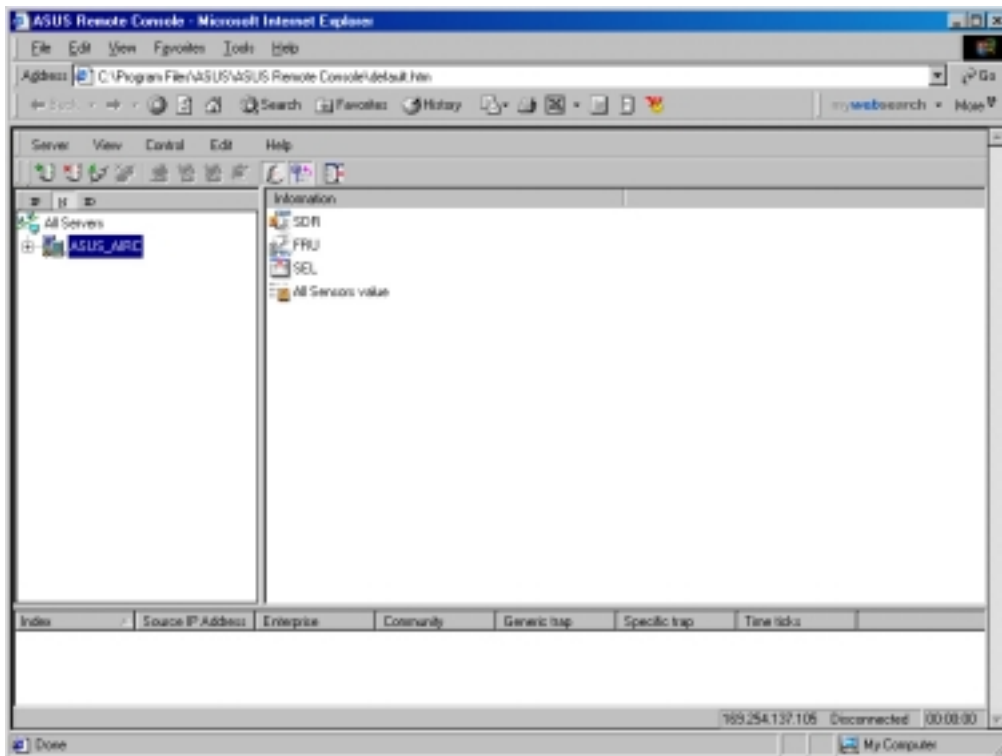
> The default server connection name and IP address are automatically displayed everytime you add a new server connection.

3. When prompted, select **IPMI Server**, then click **Continue**.
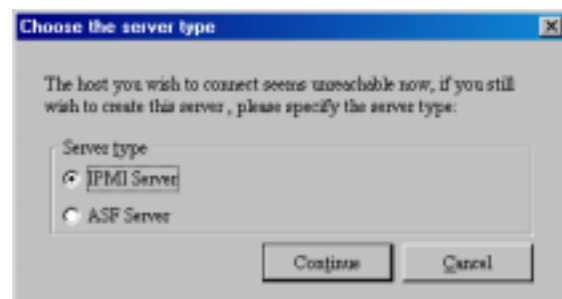
The navigation window displays the remote server. The available remote server information are displayed on the Detail/SEL window.

4. Click ⊞ before the remote server to display the remote server information, then select from the list. You can also double-click a remote server information from the Detail/SEL window.

5. When prompted, enter the default user name (adm) and password (asusadm).

6. Set the connection request level authentication and privilege, then click **OK**.
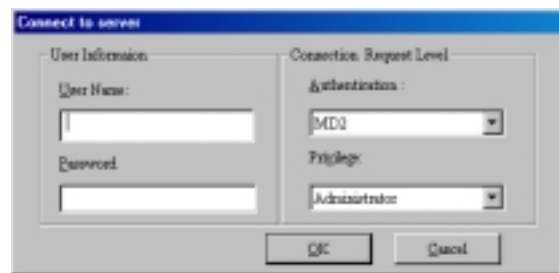
The default connection request level authentication is **MD2** (Message Digest Algorithm 2) with **Administrator** privileges. You may change these configuration according to your network settings or preference.

3.1.3 Retrieving sensor information

The Sensor Data Record (SDR) provides remote server system information through available sensors including CPU/system/power temperatures, voltages, fan speeds, chassis intrusion, etc. The SDR also provides information on the sensor location (e.g. CPU1, CPU2, FAN1), event generation, and access information.

To retrieve a sensor information:

1. From the navigation window, click ⊞ before the server name to display the remote server information.
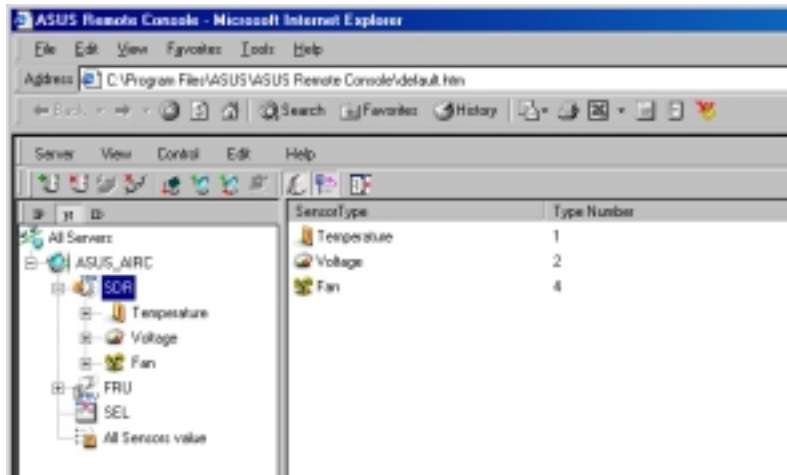
2. Click ⊞ before the **SDR** to display the sensor groups (e.g. Temperature), then click ⊞ before a sensor group to display the individual sensors. Select a sensor (e.g. CPU1 THERMAL) to display its values in the Detail/SEL window.
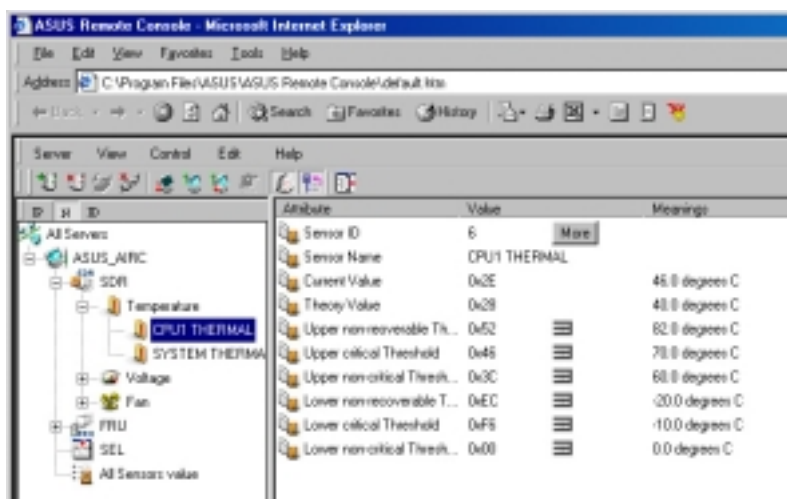
The Detail/SEL window displays the sensor data attributes, values, and meanings. From this window, you can adjust the sensor threshold values by clicking the up/down arrow button after each value.

3. Click **More**. A sensor window appears displaying additional information on the sensor.

   The **Information** tab displays basic sensor information including the sensor name, current status, current value, and sensor type.

   The tab also displays the sensor record ID and SDR version.
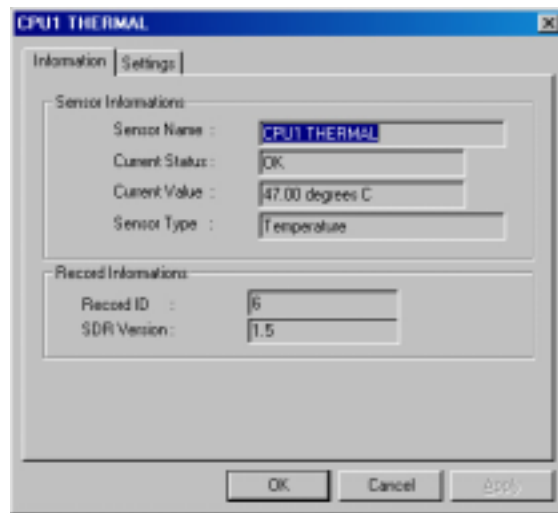
4. Click the **Settings** tab to adjust the sensor threshold values. Click on the up/down arrow button after each threshold value to adjust.

   Click **OK** to close the window.
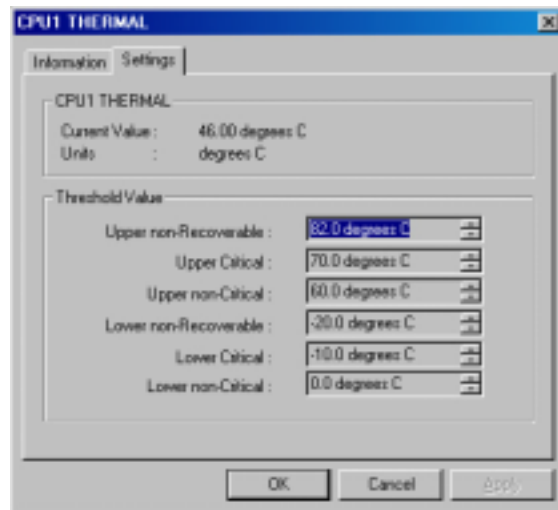
3.1.4 Displaying all remote server sensors

To display all remote server sensors in graphical format:

1. From the navigation window, click ⊞ before the server name to open the remote server information.

2. Click **All Sensors value**. All remote server sensors are displayed on the Information window in graphical format.

    The color bar represents the upper/lower threshold values of each sensor. The green pointer indicates the current value of the sensor.
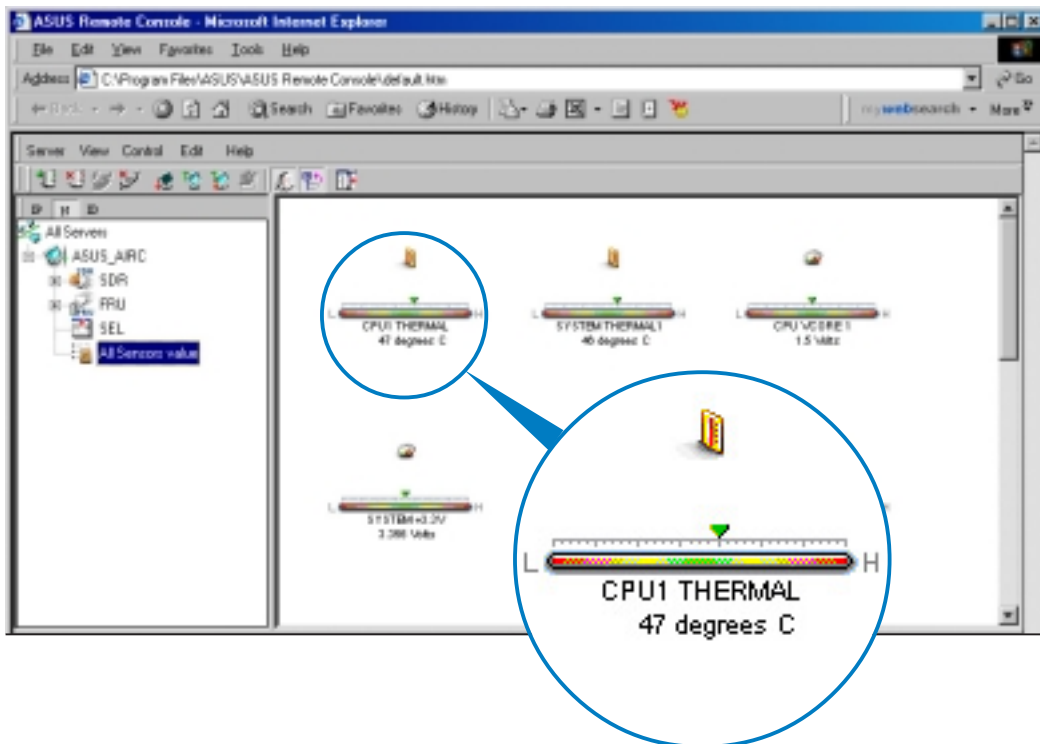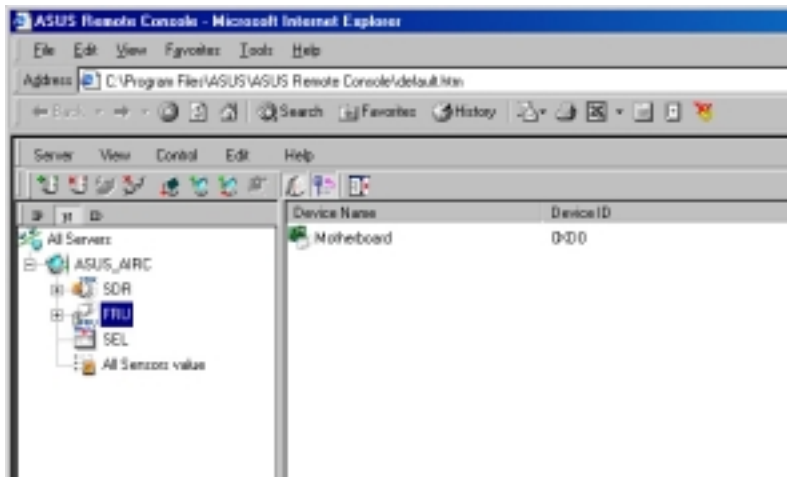
3.1.5 Displaying FRU information

The Field Replaceable Unit (FRU) information provides the manufacturer, product name, and/or serial number of various modules and components installed on the remote server. For example, the FRU feature can display the remote server motherboard name, model, and serial number. You can use this feature when retrieving information on a module or component installed on the remote server.

> The FRU information feature allows you to obtain component or module information even when the remote server is down or off.

To display the FRU information:

1.   From the navigation window, click ⊞ before the server name to open the remote server information.

2.   Click ⊞ before the **FRU** to display available FRU information, then click ⊞ before the module/component. Select a module or component from the list to display the FRU information in the Detail/SEL window.
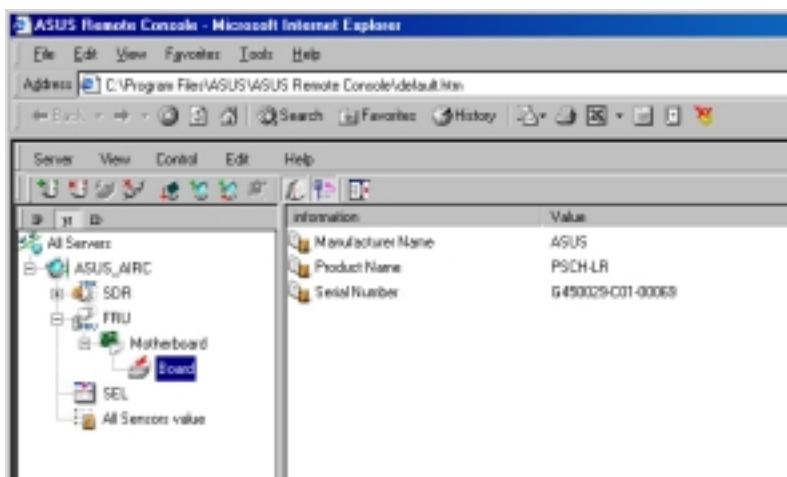
3.1.6 Displaying system event logs

The System Event Log (SEL) is a non-volatile storage area where all remote server system events are stored for real-time tracking or later retrieval. The ARC application can display system events for efficient remote server monitoring and troubleshooting.

To display the sytem events:

1. From the navigation window, click ⊞ before the server connection, then click **SEL**. The status bar displays the progress of the SEL download. When finished, the Detail/SEL window displays the system events in chronological order.
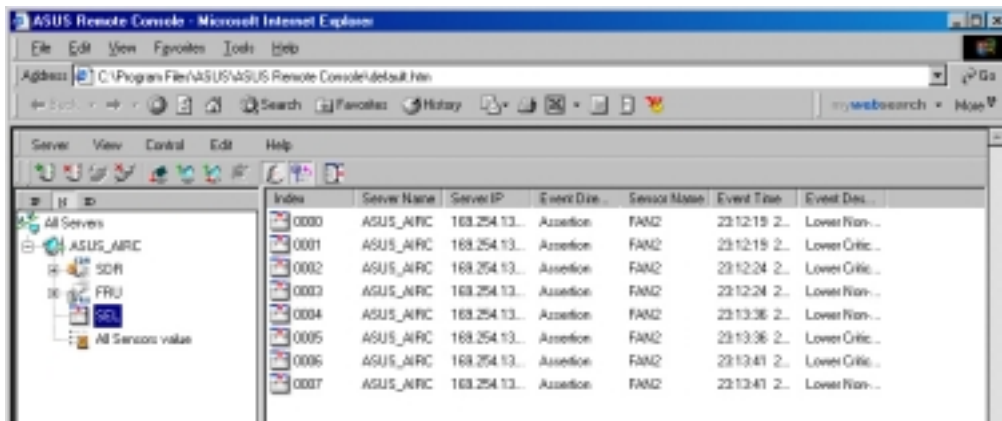
2. Double-click an event to display an **Event Information** window.

    This window displays the sensor type and record ID, event message, current and threshold values, and other system event information.
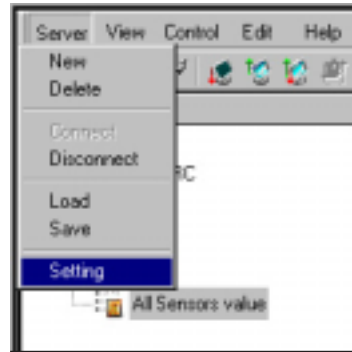
    3. Click OK to close the window.

3.1.7 Adjusting the monitoring settings

The ARC application allows you to adjust the remote server monitoring settings including SEL polling, SDR reading, ASF, and PET.
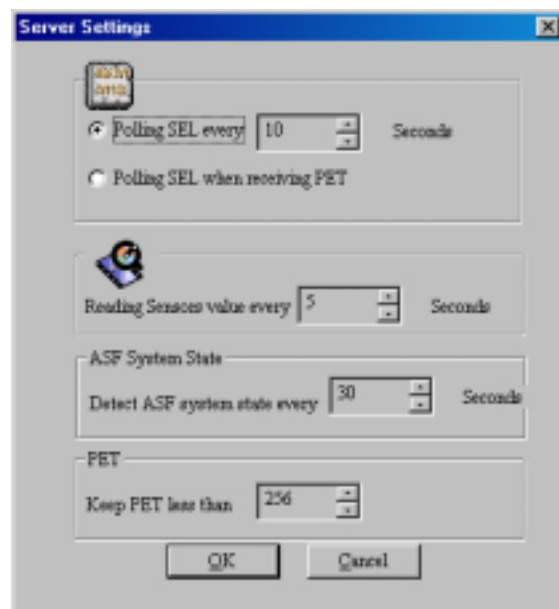
To adjust the monitoring settings:

1. Click **Server** on the menu bar, then select **Setting** from the drop-down menu. A **Server Setting** window appears.

2. Click on the up/down arrow button after each setting to adjust the value.

3. Click **OK** to save your changes and close the window.

    Otherwise, click **Cancel** to ignore your changes.

3.1.8 Controlling the remote server power

The ASMB-LE board through the ARC application allows you to power up, power down, or reset the remote server using the power menu.
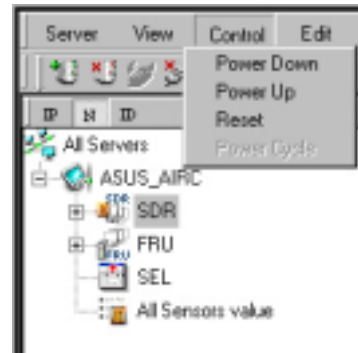
Before turning off or resetting the remote server, make sure that it is not being used and that no application is currently running to avoid data loss.
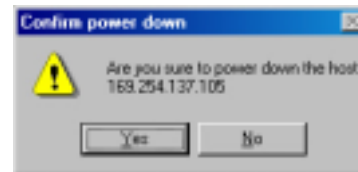
To power down the remote server:

1. Click **Control** on the menu bar, then select **Power down** from the drop-down menu.
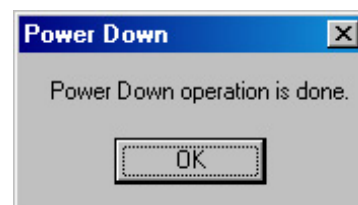
    OR

    Click the power down button on the tool bar.

2. Click **Yes** when the **Confirm power down** window appears.

3. The remote server is turned off. Click **OK** to close the window.

    Use the same instructions as reference when powering up or resetting the remote server.

3.1.9 Viewing PET information

The Platform Event Trap or PET is an SNMP trap used for system management alerts. When the ARC receives a PET, it displays a pop-up window notifying you of the alert and its source (IP address). Right-click the window to close.

> You need to install an SNMP service to the remote server to receive PET information.

Important notice for Windows® XP (Service Pack 2) users

If the remote server system is behind a firewall, you must create a UDP port to receive PET information.

To create a UDP port:

1. Double-click the **My Computer** icon from the Windows® desktop, then click the **My Network Places** link.
2. Click the **View network connections** link, then select the LAN connection the remote server system is using.
3. Right-click the LAN connection, then select **Properties** from the drop-down menu.
4. Click the **Advanced** tab, then click the **Settings** button.
5. On the **Services** tab, click the **Add** button to display a **Service Settings** window.
6. Type a name on the **Description of service field** (i.e. ASUS ARC).
7. Type the IP address of the local/central server, then set the **External** and **Internal Port number** to **162**.
8. Select **UDP**, then click **OK**. The created service is displayed in the Services list. Check the box before the service, then click **OK**.

You must also adjust the Internet Explorer settings to allow active contents to run in the local/central server. To do this:

1. From the **Internet Explorer** menu, click **Tools**, then select **Internet Options** from the drop-down menu.
2. Click the **Advanced** tab.
3. Enable the item "**Allow active content to run in files on My Computer**".
4. Click the **Apply** button, then click **OK** to close the window.

3.2   ASUS Host Management Controller Setup

The ASUS Host Management Controller Setup utility provides precise configuration and basic functions including System Event Log (SEL) generation and System Data Record (SDR) reading in DOS mode.

This utility also supplies configuration sequences for the type of host interface as well as direct real-time monitoring of system information including CPU temperature(s), fan speeds and system voltages.

3.2.1   Installing and launching the ASUS Host Management Controller Setup utility

To install the ASUS Host Management Controller Setup utility:

1.   Boot the server in DOS mode using the support CD.
2.   When the `A:>` prompt appears, type `X:` (where X is the drive letter of the optical drive).
3.   When the `X:>` prompt appears, type `cd\asms\asmc\le\dostool`, then press <Enter>.
4.   At the prompt, type `asmc`, then press <Enter> to display the ASMC Utility Help Menu. The screen appears as shown.
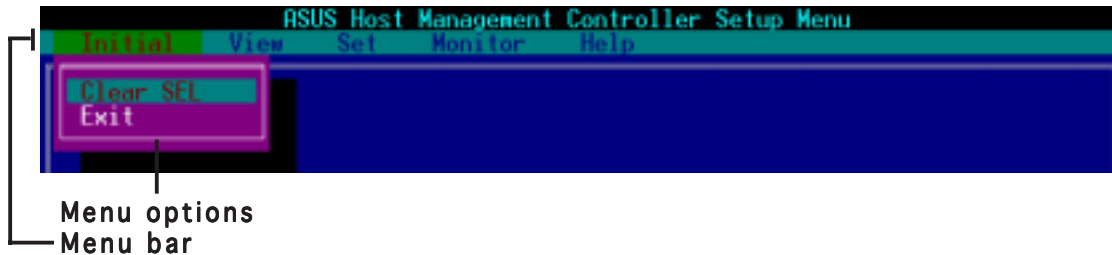
```
A:\>E:

E:\>cd\asms\asmc\le\dostool

E:\cd\asms\asmc\le\dostool>asmc
```

5.   The main utility screen appears. Press <Enter>.

3.2.2 Command fields

The utility menu bar has five commands: Initial, View, Set, Monitor and Help. You can select a command using the left or right arrow button on the keyboard. After selecting a command, use the down arrow key to display available options. Select a command, then press <Enter> to execute.


Menu options
Menu bar

3.2.3 Initial

The Initial command allows you to clear the SEL information or exit the utility.

Go to **Initial** command, then select **Clear SEL** to empty all System Event Log information for a refresh set of data records. Use the **Clear SEL** command when creating a new log that begins at an exact time for precise system monitoring.

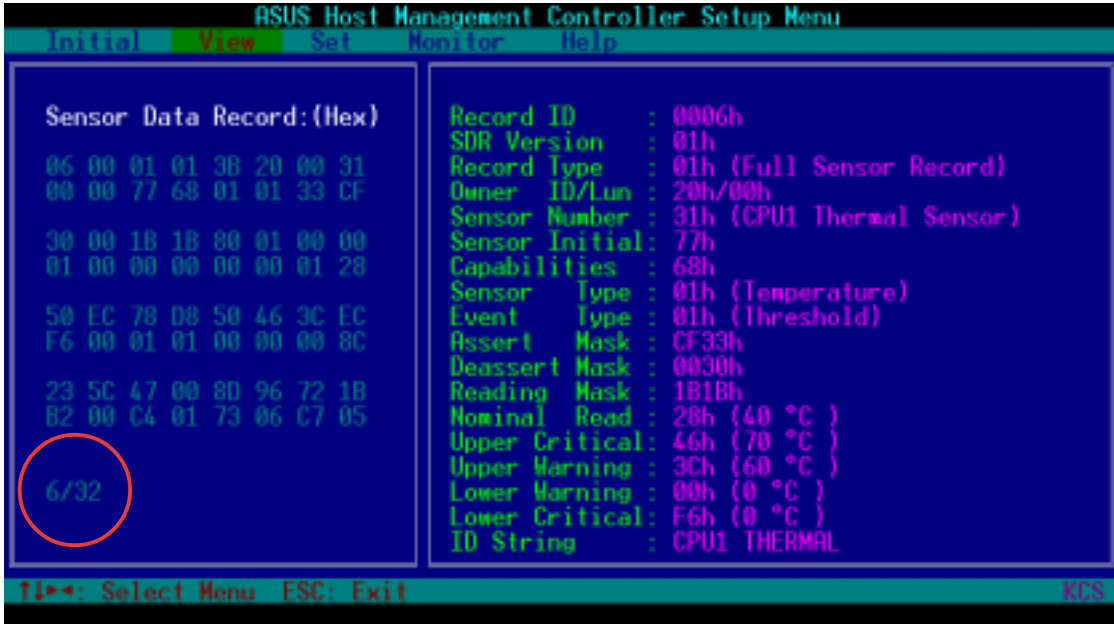Select **Exit** to close the utility and return to the DOS prompt.
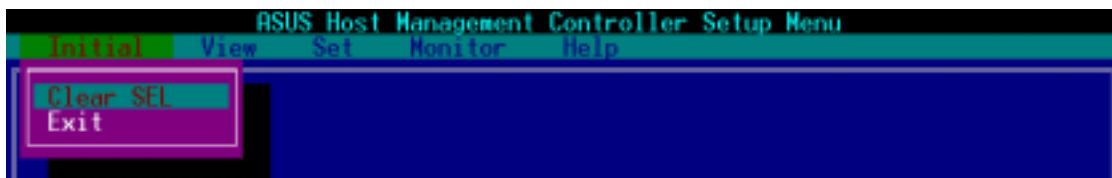
3.2.4 View

The **View** command displays the Baseboard Management Controller (BMC) data record including the **System Event Log** (SEL), the **System Data Record** (SDR), and general BMC information.
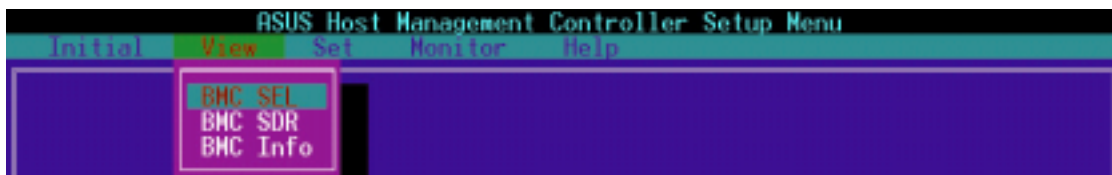
To view the System Data Record (SDR):

1. Select **BMC SDR** from the **View** command option, then press <Enter>. A complete list of data records appears on the left pane. The right pane displays the sensor data information.

    The number on the bottom left of the screen indicates the data record displayed in the right window pane over the total number of sensor data records in the remote host.

2. Use the down arrow key to display the next sensor data record.
3. Press <Esc> to return to the main screen.

To view the System Event Log (SEL):

1. Select **BMC SDR** from the **View** command option, then press <Enter>. A complete list of system event records appear on the left pane. The right pane displayes the SEL information.

    The number on the left bottom of the window shows the system event displayed in the right window pane over the total number of system events in the remote host.

2. Use the down arrow key to display the next sensor event.
3. Press <Esc> to return to the main screen.

To view the BMC information:

1.   Select **BMC Info** from the **View** command option, then press <Enter>. A list of BMC information appears on the left pane.

2.   Use the down arrow button to select a BMC information. The BMC information is displayed in the right pane.

```
          ASUS Host Management Controller Setup Menu
    Initial    View    Set    Monitor    Help

   IPMI Information
   SEL    Information       Device ID         : 20h
   SDR    Information       Device Revision   : 01h (Support SDR)
   BMC    Real Time Clock   Firmware Revision : 4.00
                            IPMI Version      : 1.5
                            Manufacturer ID   : 0013BD
                            Porduct ID        : 8101h
                            IPM Device Support:
                                Chassis Device          -> No Support
                                Bridge                  -> No Support
                                IPMB Event Gernerator   -> Support
                                IPMB Event Receiver     -> Support
                                FRU Inventory Device    -> Support
                                SEL Device              -> Support
                                SDR Repository Device   -> Support
                                Sensor Device           -> Support




   ↑↓►◄: Select Menu  ESC: Exit                              KCS
```

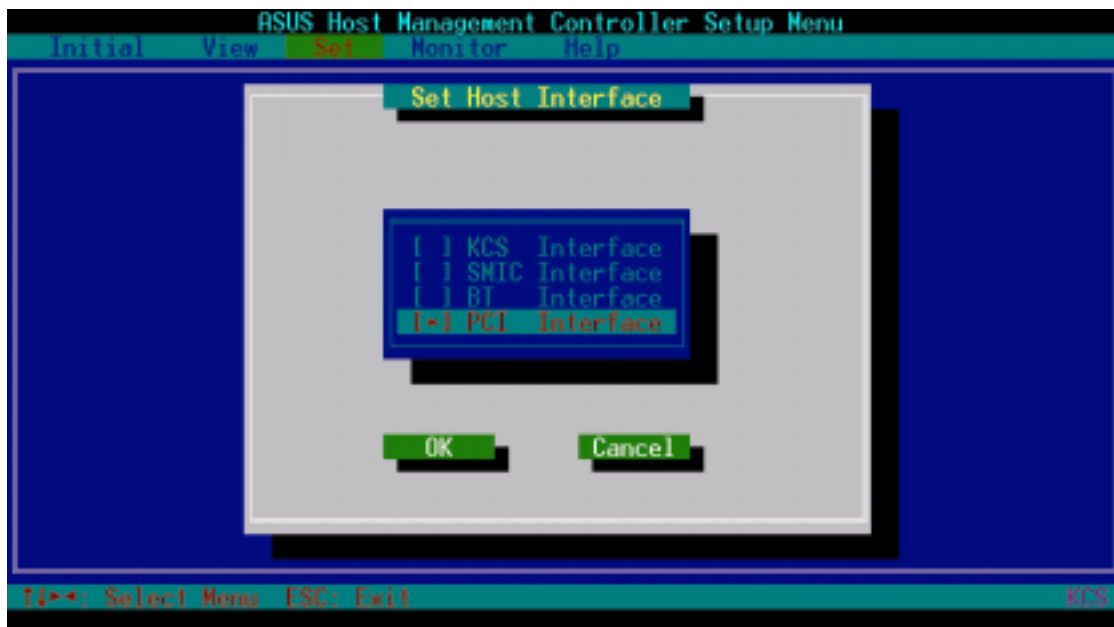3.   Press <Esc> to return to the main screen.

3.2.5 Set

The **Set** command controls the host interface type and the correct BMC time.
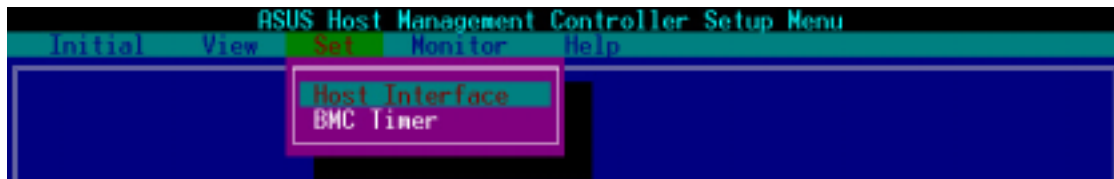
To select the host interface:

1. Select **Host Interface** from the **Set** command option, then press <Enter>. The screen displays the host interfaces supported by the server management board.

2. Use the down arrow button to select a host interface, then press <Enter>.

You can select from the following interfaces:

KCS Interface   - Keyboard Controller Style
SMIC Interface - Server Management Interface Chip
BF Interface   - Block Transfer
PCI Interface   - Peripheral Component Interconnect

3. When finished, press <Esc> to return to the main screen.

To set the BMC Timer:

1. Select **BMC Timer** from the **Set** command option, then press <Enter>.

2. Set the BMC IPMI timer to the current system time.

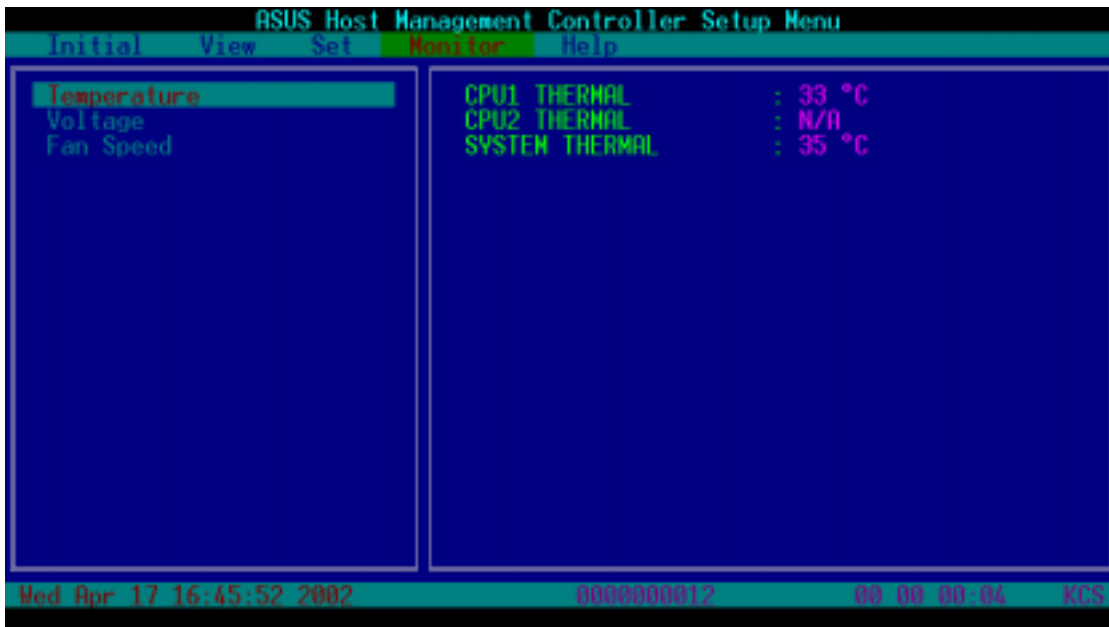3. When finished, press <Esc> to return to the main screen.

3.2.6   Monitor

The **Monitor** command displays real-time data on the remote server system and CPU temperatures, voltages, and fan speeds.

To display a remote server information:

1. Select a sensor from the **Monitor** command options, then press <Enter>. A list of server information appears on the left pane.

2. Use the down arrow button to select a monitor information. The selected monitor information details are displayed in the right pane.

3. Press <Esc> to return to the main screen.

3.2.7   Help

The **Help** command displays the available utility options, utility version, and copyright information.

The Appendix shows the location of the LAN port for server management on several motherboards and presents common problems that you may encounter when installing or using the server management board.

Reference information

*A*

A.1   LAN port for server management

The ASUS server motherboards that support the ASMB-LE comes with two LAN (RJ-45) ports: one for network connection and the other for server management. You must identify and use the LAN port for server management to connect the remote server to the local/central host (direct LAN connection) or to the network hub or router.

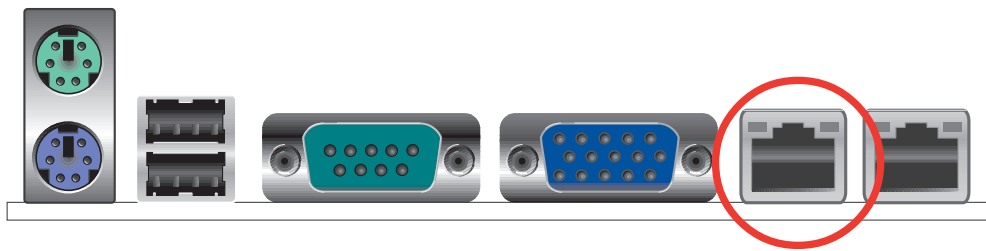Refer to the illustrations below to identify the LAN port for server management on different server motherboards.
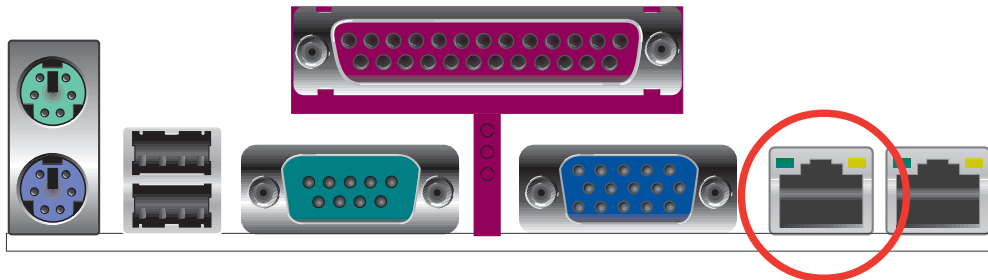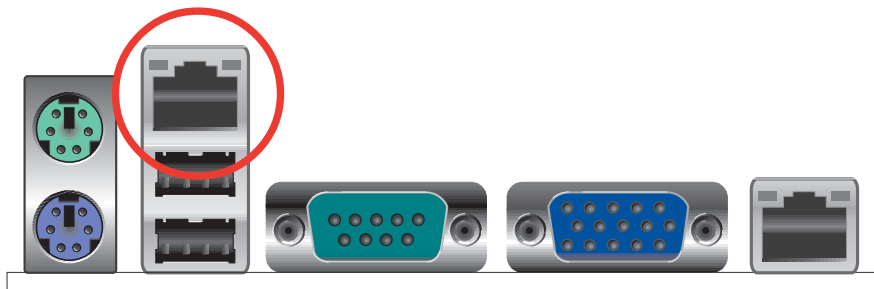
NCL-DS motherboard
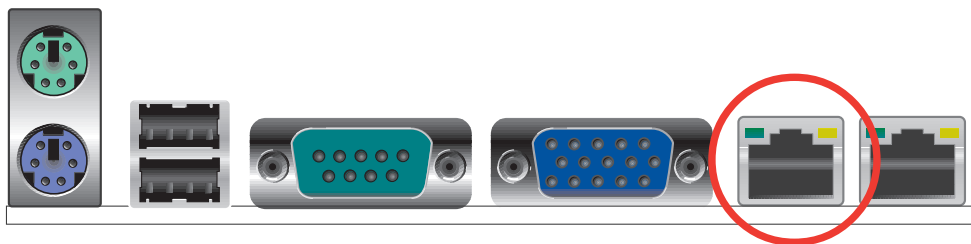
PCH-DR motherboard

NCCH-DR motherboard
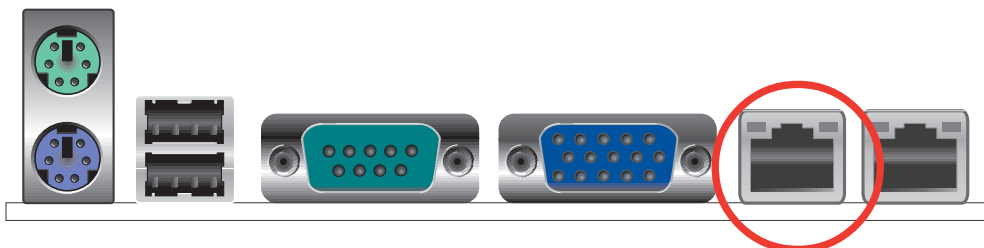
NCLV-D motherboard

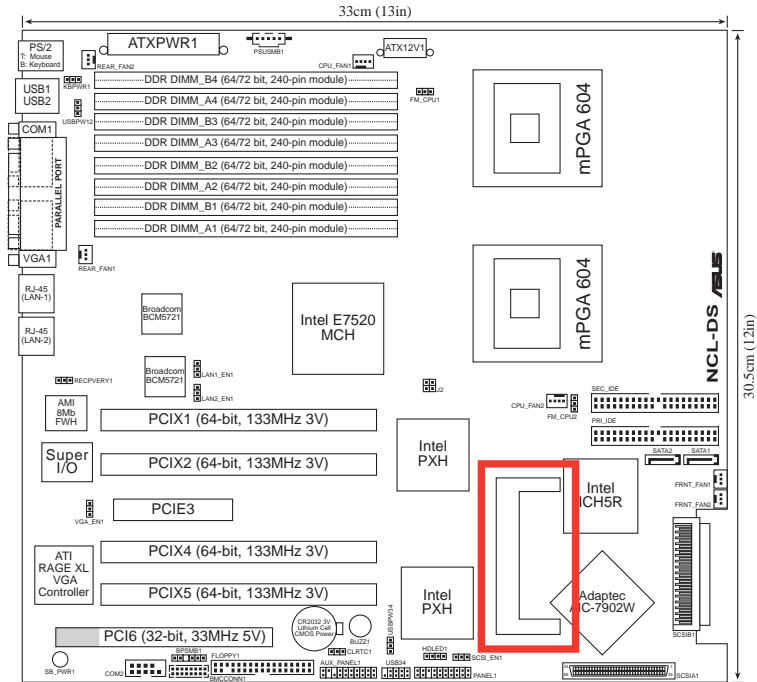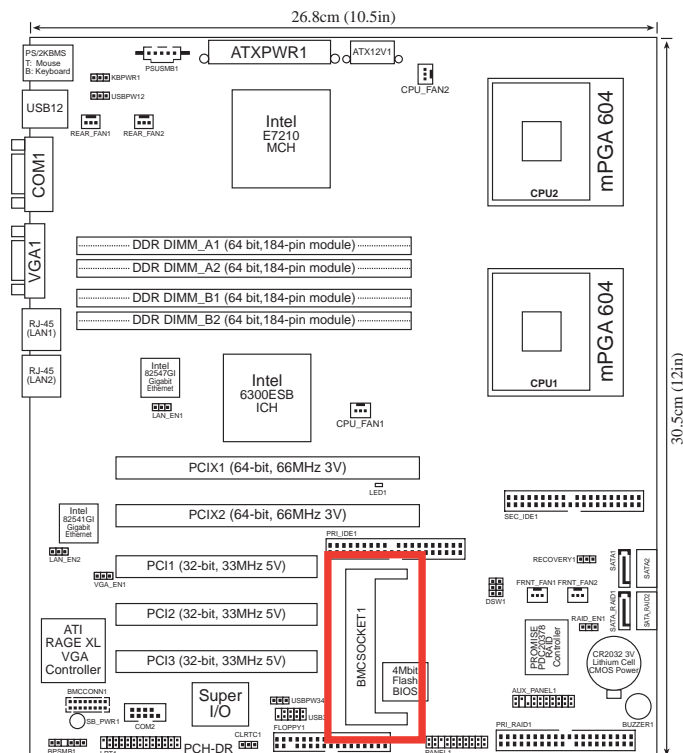## PSCH-SR motherboard

PSCH-LR motherboard

A.2 BMC socket

The ASUS server motherboards that support the ASMB-LE comes with a Baseboard Management Card (BMC) socket.

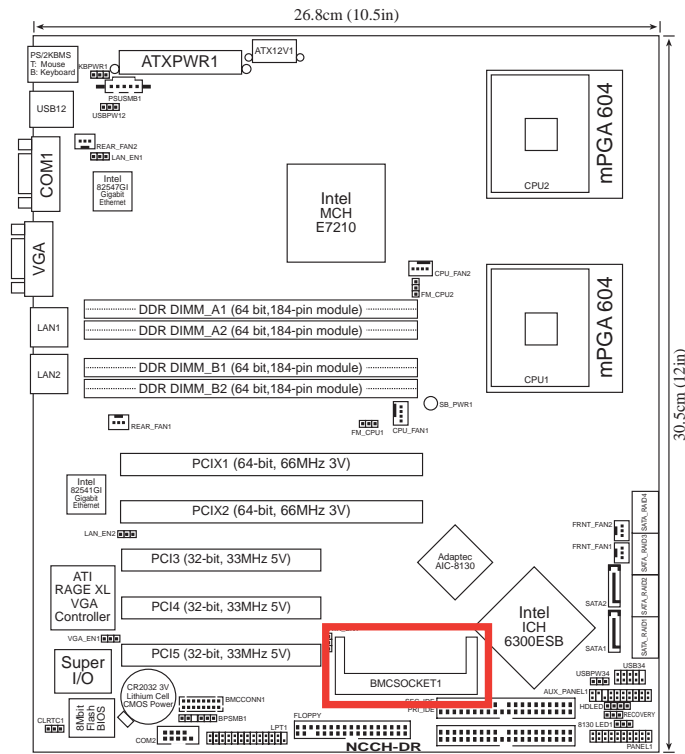Refer to the illustrations below to locate the BMC socket on different server motherboards.
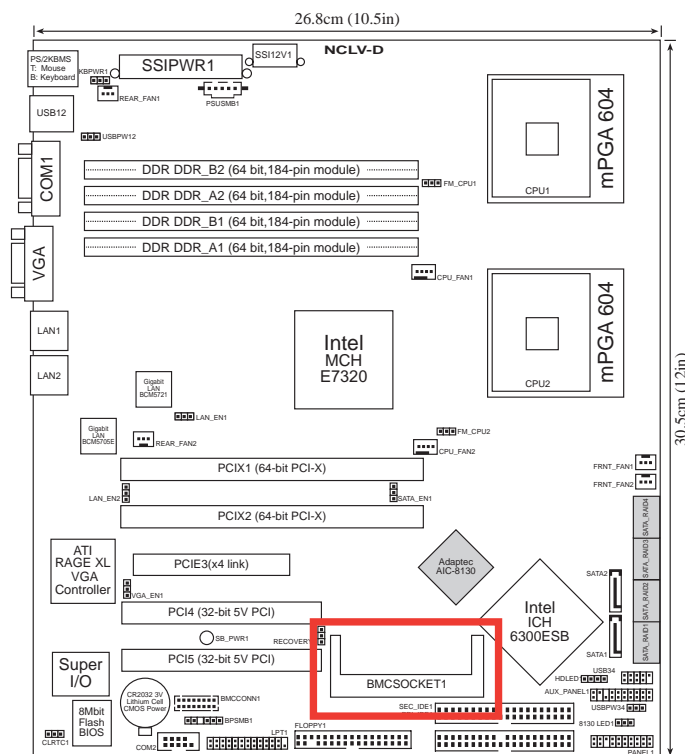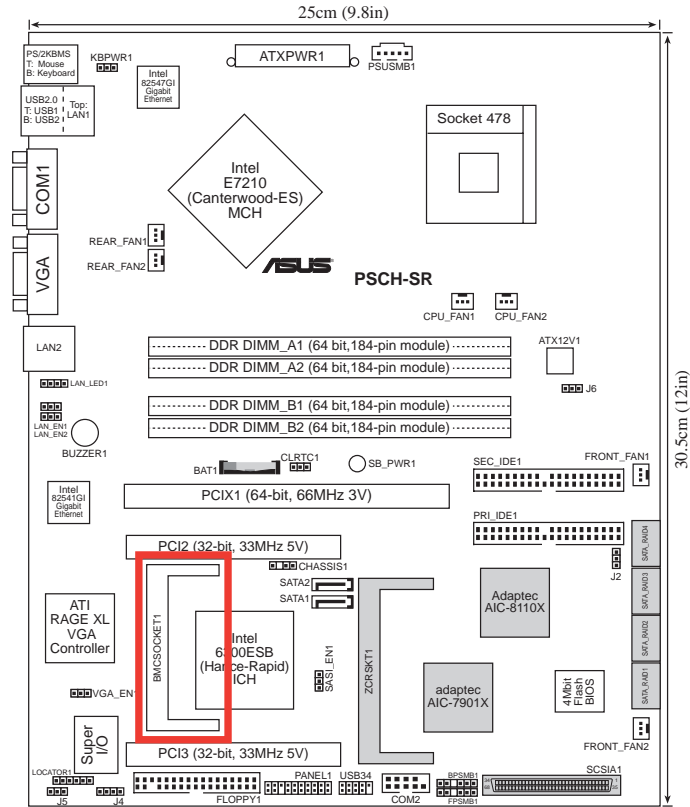
NCL-DS motherboard

PCH-DR motherboard
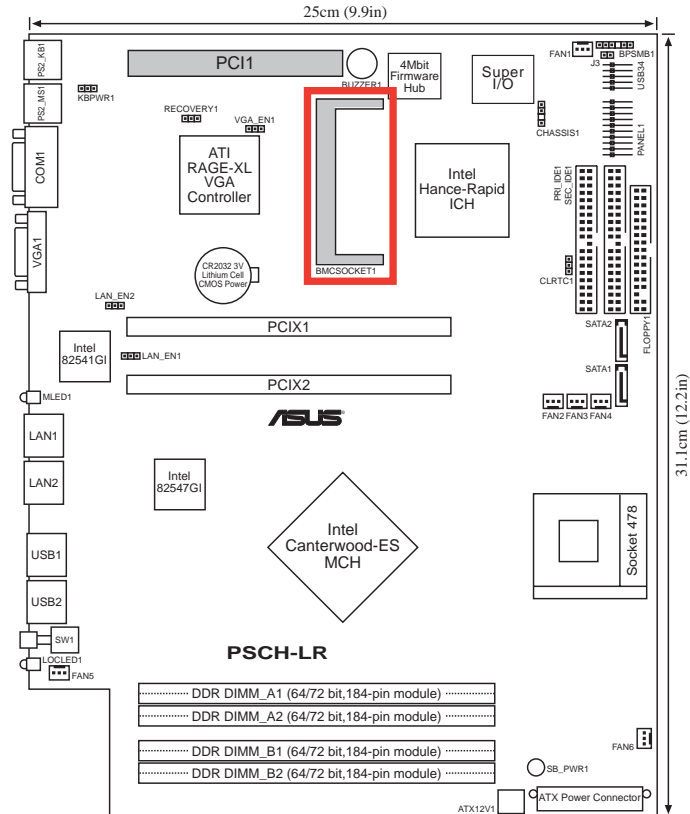
NCCH-DR motherboard

NCLV-D motherboard

PSCH-SR motherboard

PSCH-LR motherboard

A.3   Troubleshooting

This troubleshooting guide provides answers to some common problems which you may encounter while installing and/or using ASUS ASMB-LE. These problems requires simple troubleshooting that you can perform by yourself. Contact the Wireless LAN Technical Support if you encounter problems not mentioned in this section.

Problem	Solution
The local/central server cannot connect to the ASMB-LE board.	1. Check if the LAN cable is connected to the LAN port for server management. See page A-2 for details. 2. Check if the remote server LAN port is working properly. If you have not previously installed the LAN controller driver, install the same using the system support CD. 3. Make sure the IP address of both the remote and local/central servers are on the same subnet. 4. Set the remote server IP address and MAC address using the ASUS Host Management Controller Setup. See Chapter 2 for details.
The ARC cannot receive PET information from the remote server.	Set the remote server PET IP address and MAC address using the ASUS Server Management Card Utility. See Chapter 2 for details.
The ASMC utility cannot set the BMC MAC address or cannot enable TCO.	Copy the **nic.ini** file to the ASMC directory, then try again. The **nic.ini** file is available from the support CD.