L440GX+ Server Board

Quick Start Guide

Before You Begin

Installation Notes

Getting Help

Translations of this guide are available at:
Übersetzungen dieses Handbuchs sind erhältlich bei:
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이 설명서의 번역본은 다음 주소에서 얻을 수 있습니다.
您可在下列网址上查阅到本指南的译文:

http://support.intel.com/support/motherboards/server/l440gx/manual.htm

Order Number: 722078-003

Before You Begin

FCC/ Emissions Disclaimer

This equipment has been tested and verified to comply with Class B limits when configured into a compatible host computer, pursuant to Part 15 of the FCC Rules, CISPR 22, and EN55022. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

To ensure EMC compliance with your local regional rules and regulations, the final configuration of your end system product may require additional EMC compliance testing. For more information please contact your local Intel Representative.

Cautions and Warnings

WARNINGS

Pressing the power button does not turn off power to this board. Disconnect the server board from its power source and from any telecommunications links, networks, or modems before doing any of the procedures described in this guide. Failure to do this can result in personal injury or equipment damage. Some circuitry on the server board may continue to operate even though front panel power button is off.

This guide is for qualified technical personnel with experience installing and configuring server boards.

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

CAUTION

Electrostatic discharge (ESD) can damage server board components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Items Provided on the Bootable CD-ROM

L440GX+ Server Board Product Guide
Software drivers and utilities
Adaptec† SCSI Guide
Intel® Server Control 1.8.1 and user's guide
Intel® Columbus III Server Chassis Subassembly Product Guide
Intel® Astor II Server Chassis Subassembly Product Guide
To view the product guides, either boot to Windows† 95/Windows NT† and use Adobe† Acrobat†, or boot the CD-ROM and use the DOS reader provided.

Safety and Regulatory Requirements

See the *L440GX+ Server Board Product Guide* for all applicable safety standards, electromagnetic compatibility (EMC) regulations, and product certification markings.

Intended uses: This product was evaluated for use in computers that will be installed in offices, computer rooms, and similar locations. Other uses require further evaluation.

EMC testing: Before computer integration, make sure that the chassis, power supply, and other modules have passed EMC testing using a server board with a microprocessor from the same family (or higher) and operating at the same (or higher) speed as the microprocessor on this system board.

Battery warning sticker provided: Place the sticker inside the chassis in an easy-to-see location near the battery but not on the server board itself.

Server board diagram sticker provided: Place the sticker inside the chassis in an easy-to-see location, preferably oriented similarly to the server board.

I/O panel sticker provided: Place the sticker on the back of the chassis near the I/O shield, preferably oriented similarly to the I/O shield.

Minimum Hardware Requirements

To avoid integration difficulties and possible board damage, your system must contain the following minimum requirements. For a list of qualified memory and chassis components see
http://support.intel.com/support/motherboards/server/l440gx/compat.htm

Processor

Minimum of one 350 MHz or faster Pentium® II or Pentium III processor and a processor termination card.

Memory

Minimum of 32 MB of 100 MHz, 3.3 V, PC/100 compliant SDRAM on 168 pin gold DIMMs. Either 72 bit (ECC) or 64 bit (non-ECC).

Power Supply

Minimum of 300 W with 0.8 A +5 V standby current (in order to support Wake On LAN† (WOL)). If you choose not to use WOL, make sure the WOL Enable jumper (J5A2) is in the Disable position (pins 1-2).

Installation Notes

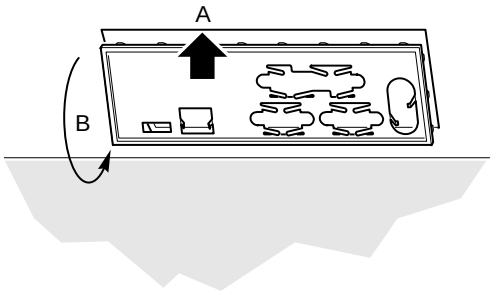
I/O Shield

NOTE

An ATX 2.01-compliant I/O shield is provided with the server board. The shield is required by Electromagnetic Interference (EMI) regulations. It minimizes EMI and ensures proper cooling of the server. If the shield does not fit the chassis, obtain a properly sized shield from the chassis supplier.

The shield fits the rectangular opening near the power supply in the back of the chassis. The shield has cutouts that match the external I/O connectors (e.g., keyboard and mouse).

1. Install the shield from inside the chassis. Orient the shield so that the cutouts align with the corresponding I/O connectors on the server board.
2. Position one edge so that the dotted groove (A) is outside the chassis wall, and the lip of the shield rests on the inner chassis wall.
3. Hold the shield in place, and push it into the opening until it is seated (B). Pressure holds the shield in place.



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Microprocessor

The L440GX+ server board supports up to two Pentium III processors (with 100 MHz system bus). If you are installing two processors, make sure they are the same speed, voltage, and stepping.

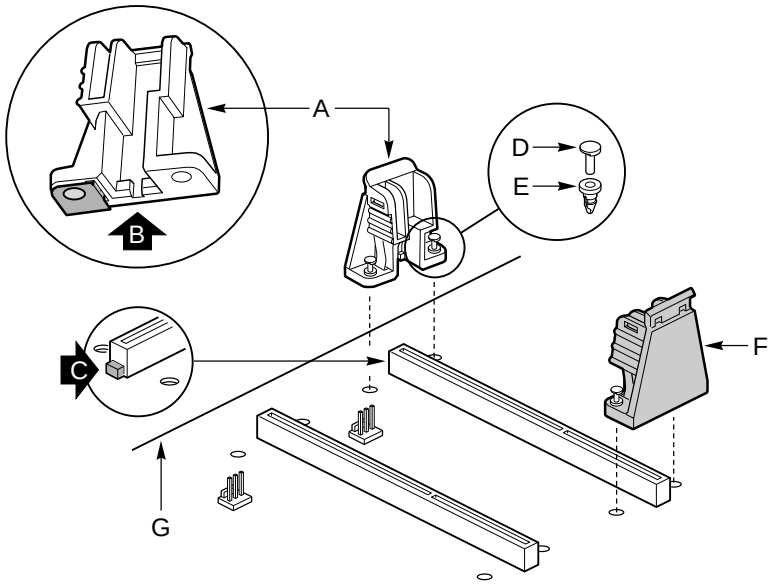
The processor cartridges are mounted with Grounded Retention Mechanisms (GRMs), which are provided with the L440GX+ server board.

NOTE

The processor Grounded Retention Mechanisms are not compatible with SECC type processor packaging. GRMs only support SECC2 type processors. If you plan to use SECC type processors, you must use the Universal Retention Mechanism (URM). URMs can be ordered through your distributor.

Installing the Grounded Retention Mechanisms

1. Install the GRMs in the server board before installing the board in the chassis.
2. Place the server board on a soft, nonconductive surface. If you place the board on a hard surface, the grommets and pins will not go through far enough to seat properly.



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3. The GRMs are color-coded white and black. The white GRM is installed closest to the edge of the server board (G).

4 Orient the white GRM (A) so the grommets (E) line up with the holes in the server board. The white GRM is slotted (B) to match the key (C) on the processor connector. Properly installed retention mechanisms are seated firmly (no movement) and flush with the server board.

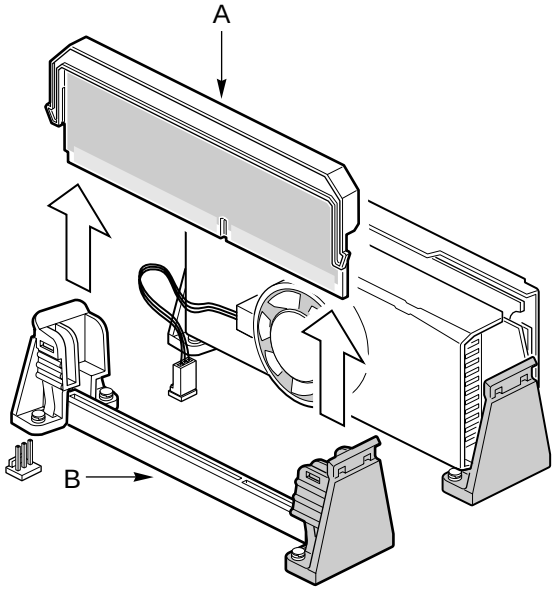
5 Press the pins (D) so they are flush with the grommets.

6 Repeat the procedure for the black GRMs (F).

Installing a Processor

1 Observe the safety and ESD precautions at the beginning of this document.

2 If your server has one processor and you are ADDING a second, then you must remove the termination card (A) from the secondary processor slot (B). See "Removing a Processor" on page 9.



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3 If your server has one processor and you are REPLACING it, leave the termination board intact in the secondary slot. Remove the processor you want to replace. See "Removing a Processor" on page 9.

4 If your server has two processors and you are REPLACING one or both, remove the appropriate one(s). See "Removing a Processor" on page 9.

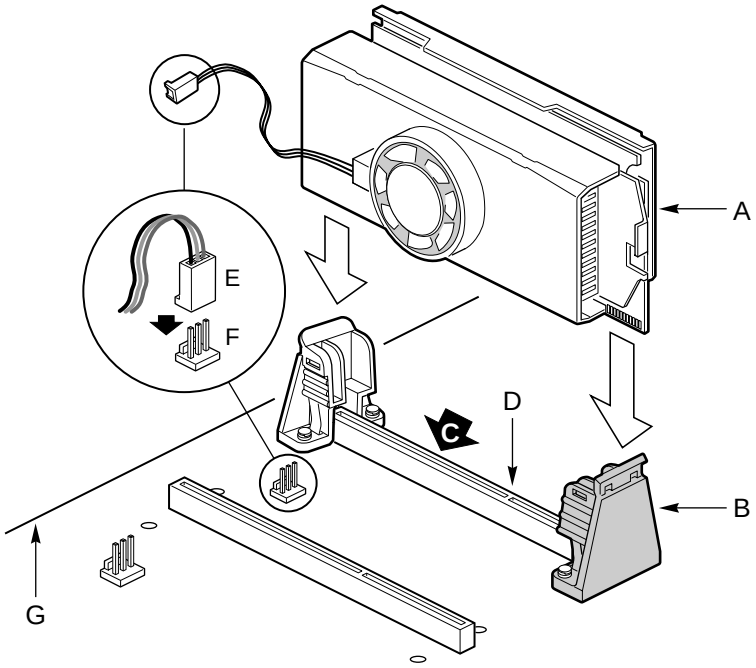
5 Remove the new processor (A) from its antistatic package and place it on a grounded, static free surface or nonconductive foam pad.

6 Attach the small end of the power cable to the fan connector on the S.E.C. cartridge.

7 Orient the processor so that the heat sink faces the I/O connectors. Slide the processor into the retention mechanism (B). Push down firmly, with even pressure on both sides of the top, until the processor is seated on the processor connector on the server board (C). The notch on the processor connector (D) corresponds to the key on the processor.

8 Attach the large end of the power cable (E) of the fan connector to the 3-pin fansink connector (F) on the server board. (G) indicates the edge of the server board.

9 After you have installed the processor, you must configure its speed in BIOS set-up.



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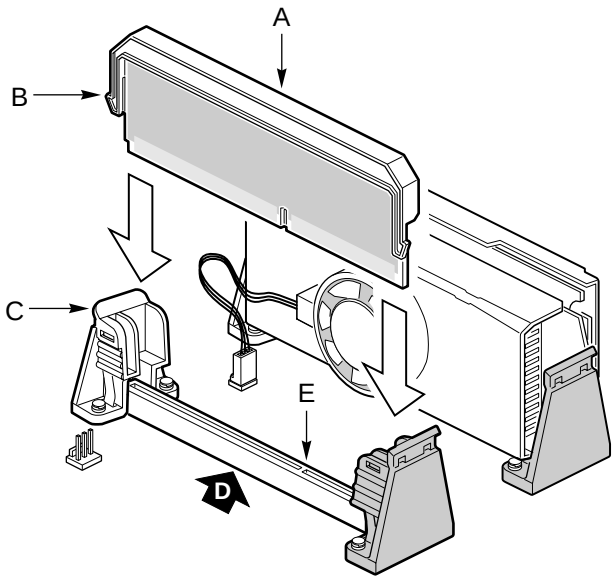
CAUTION, Single-Processor Configurations

If you install only one processor in a system, it must go in the slot labeled "Primary Processor" (closest to the DIMM sockets). With a single-processor configuration, you must install a termination board in the empty secondary processor slot to ensure proper operation of your system. A termination board is provided with the L440GX+ server board.



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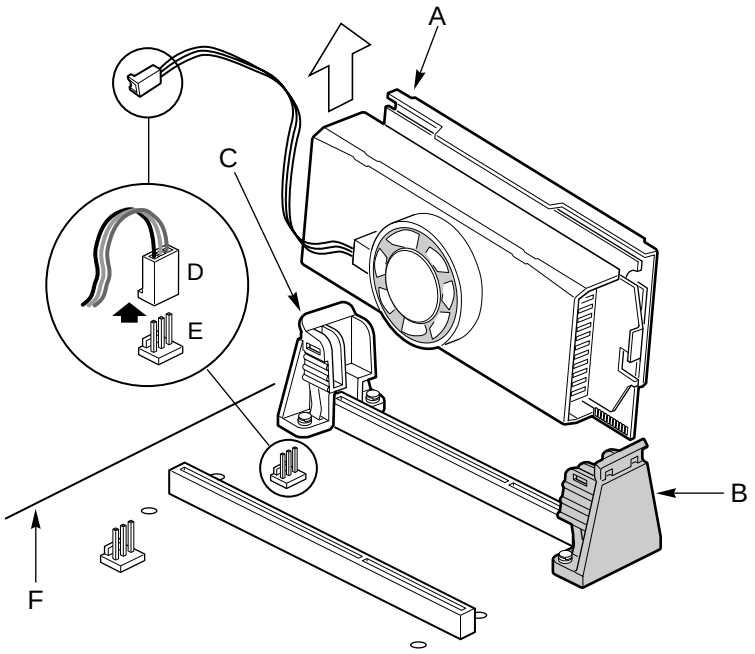
Removing a Processor

1 Observe the safety and ESD precautions at the beginning of this chapter and the additional cautions given here. If the processor has a fan heat sink, disconnect the processor connector from the fansink connector on the server board (D and E). (F) indicates the edge of the server board.

2 Remove the AC power cord from the power supply. Power is only "Off" if the power cord is removed from the power supply.



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3 We recommend you remove processors with the server board mounted in the chassis to provide support and prevent bending of the server board. Place the system on its side and remove the side cover (see your system or chassis documentation for instructions).

4 Orient the server board so the white grounded retention mechanisms are farthest away from you and the I/O connectors are to the left.

5 While pushing out on the tab of the white GRM (C) with your right thumb, grasp both sides of the processor (A) nearest the white GRM with your left hand and pull up, carefully rotating the processor out of the slot. Once the processor is free of the white GRM, you can remove it from the black GRM (B).

CAUTION

This is a difficult process. Push the tab of the retention mechanism out just far enough to free the processor. Pushing the tab too far can cause damage to the retention mechanism or server board.

6 Store the processor in an antistatic package.

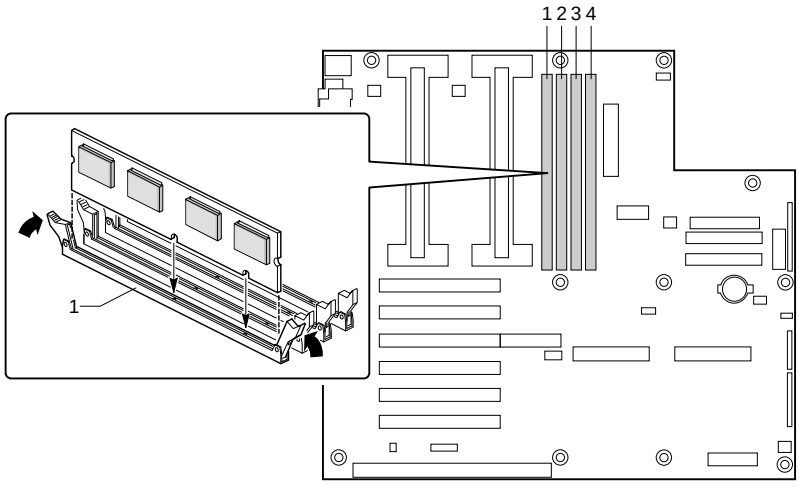
Memory

Only 100MHz PC/100-compliant SDRAM is supported by the server board.

- Install from 32 MB to 2 GB of unbuffered memory, using up to four single- or double-banked DIMMs, or
- Install from 32 MB to 2 GB of registered memory, using up to four single- or double-banked DIMMs

Installed DIMMs must be the same speed and either all registered or all unbuffered. For a list of supported memory, call your service representative or visit the Intel Support website:

http://support.intel.com/support/motherboards/server/l440gx/compat.htm



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Power Connectors

There are two power connectors on the L440GX+ server board. The main power connector is a 24 pin modified ATX connector (F in the server board components diagram on page 16). The Intel Astor II chassis uses all 24 pins. Any other chassis with an ATX power supply uses the bottom (closest to the center of the board) 20 pins. The Aux power connector (G in the server board components diagram on page 16) is provided so standard ATX power supplies can support a fully loaded server board.

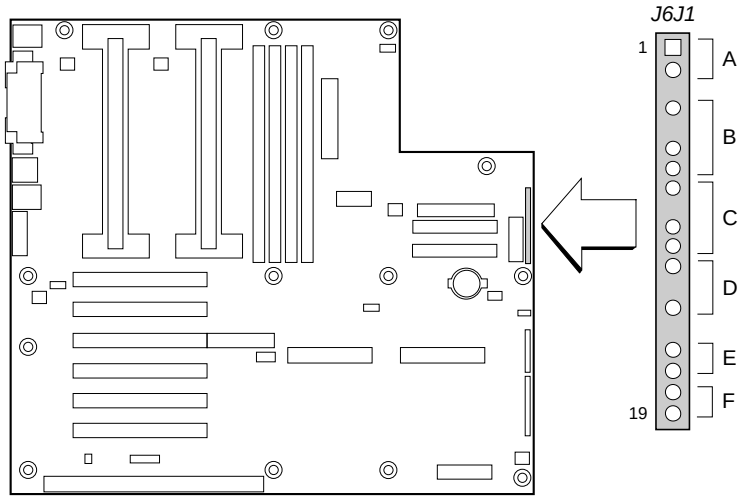
CAUTION, Correctly Connect Power

Failure to correctly connect the power supply connector during system integration may result in damage to the server board.

In order to use the Wake On LAN (WOL) capabilities of the L440GX+, your power supply must provide 0.8 A of +5 V Standby current. This powers the Baseboard Management Controller (BMC). If your power supply does not provide this current, you should disable Wake On LAN with the WOL jumper.

ATX (Front Panel) Controls and Indicators

The L440GX+ server board has connectors that meet the standard AT† interface for LED indicators and other functions. The connector block is at J6J1.



Connector	Pin	Signal
A. Power switch	1	Power switch
	2	GND
	3	N/C
B. Hard drive activity LED	4	Current limited +5V
	5	Key
	6	HD activity LED
	7	Current limited +5V
C. Speaker	8	GND
	9	N/C
	10	PIEZO_IN
	11	SPKR_HDR
D. Power LED	12	Current limited +5V
	13	N/C
	14	GND
	15	N/C
E. Reset switch	16	GND
	17	Reset switch
F. Sleep switch	18	GND
	19	Sleep switch

Fan Connectors

The server board has five 3-pin keyed fan connectors. Two are located next to the processor slots (one for each processor) for a tachometer or digital fan heat sink. The remaining three fan connectors attach to system fans equipped with sensors that indicate whether the fan is operating. The sensor pins for these fans are routed to the Baseboard Management Controller (BMC).

NOTE

Fan connectors FAN2A (H in the server board components diagram on page 16) and FAN2B (CC in the server board components diagram on page 16) should not be used at the same time. The fans will not operate correctly.

Fan Connectors

Pin	Signal Name
1	Ground
2	+12 V
3	Fan Sensor

Chassis Intrusion Connector

The server board supports chassis intrusion monitoring. The server board recognizes an open switch as a chassis open condition. If the Chassis intrusion detection jumper is disabled, the switch is bypassed, and the BMC does not monitor if the chassis has been opened.

SCSI Support

The server board has two SCSI connectors. The left one (closest to the PCI slots) supports Ultra2/LVD SCSI. The right one supports UltraWide SCSI.

Common Problems

The system does not boot or show video at power on.

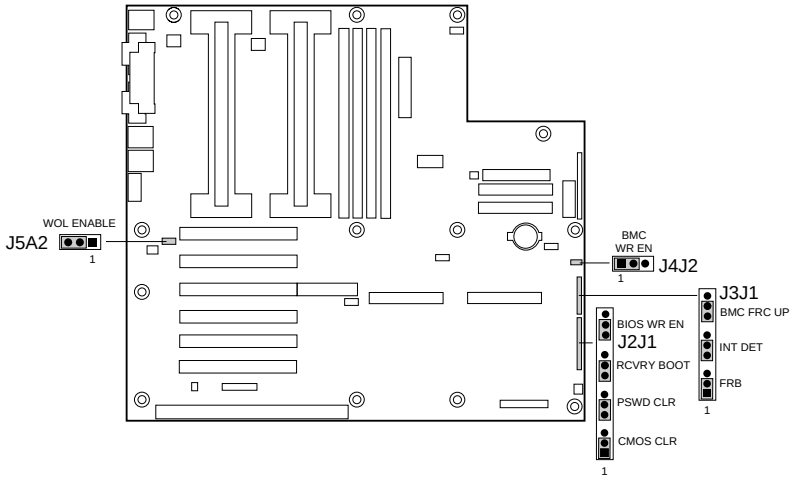
- If configuring with only one processor verify that the processor is in the Primary Processor slot and the termination card is in the Secondary Processor slot. (See the server board components diagram on page 16).
- Beep code 1-3-3-1 means you have unrecognized or bad memory. Remove DIMMs one at a time to isolate which one is causing problems.
- Your power supply must provide 0.8 A of +5 V Standby current to support WOL. If it does not provide this current, move the WOL Enable jumper (J5A2) to the disable position (pins 1-2).

The system sometimes works, but is exhibiting erratic behavior.

- This is typically the result of using a under-powered power supply. Make sure it's at least a 300 W power supply.

Jumpers

Nine 3-pin jumper blocks that control various configuration options, as shown in the figure below. Refer to the *L440GX+ Server Board Product Guide* for more information.



Jumper Block	Jumper Name	Pins (default in bold)	What it does at system reset
J5A2	WOL ENABLE	1-2, Disabled	Disables Wake On LAN. If your power supply does not provide 0.8 A of +5 V Standby current, you must move the WOL Enable jumper to this position.
		2-3, Enabled	Enables Wake On LAN.
J4J2	BMC WR EN	1-2, Protect	BMC boot block is write protected.
		2-3, Erase/Program	BMC boot block is erasable and programmable.
J3J1	FRB	1-2, Enable	FRB operation is enabled (system boots from processor 1 if processor 0 does not respond).
		2-3, Disable	FRB is disabled.
J3J1	INT DET	5-6, Enable	Switch installed on chassis indicates when cover has been removed.
		6-7, Disable	Chassis intrusion switch is bypassed.

continued

Jumper Block	Jumper Name	Pins (default in bold)	What it does at system reset
J3J1	BMC FRC UP	9-10, Normal	System boots normally.
		10-11, Program	System attempts to update BMC firmware.
J2J1	CMOS CLR	**1-2, Protect**	Preserves the contents of NVRAM.
		2-3, Erase	Replaces the contents of NVRAM with the manufacturing default settings.
J2J1	PSWD CLR	**5-6, Protect**	Maintains the current system password.
		6-7, Erase	Clears the password.
J2J1	RCVRY BOOT	**9-10, Normal**	System attempts to boot using the BIOS stored in flash memory.
		10-11, Recovery	BIOS attempts a recovery boot, loading BIOS code from a floppy diskette into the flash device. This is typically used when the BIOS code has been corrupted.
J2J1	BIOS WR EN	**13-14, Protect**	BIOS boot block is write-protected.
		14-15, Erase/Program	BIOS boot block is erasable and programmable.

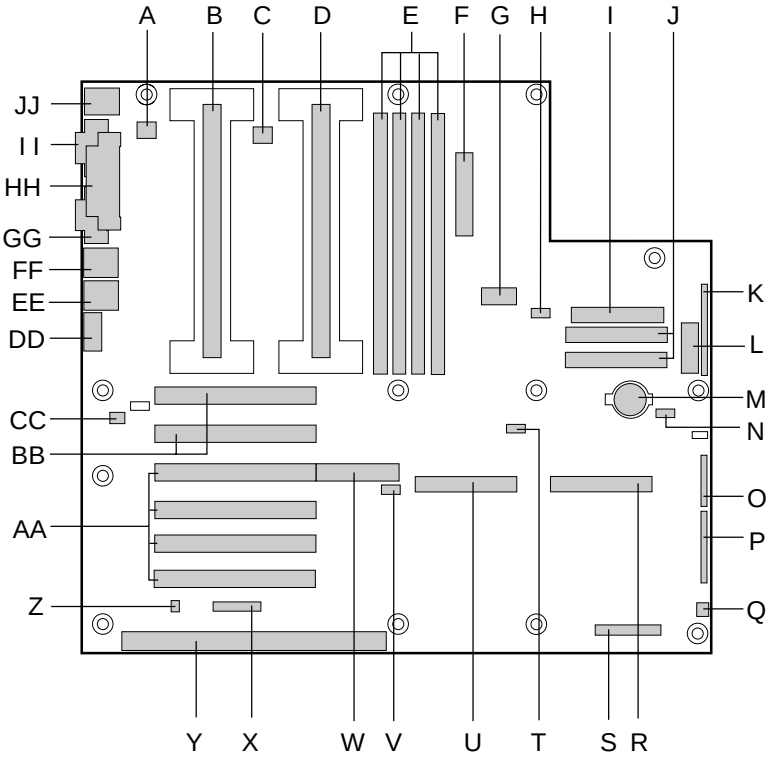
CAUTION

Moving either of the boot block write protect jumpers (J4J2-BMC WR EN or J2J1- BIOS WR EN) may cause irrevocable damage to the server board. Only move these jumpers when directed to by your customer service representative.

NOTE

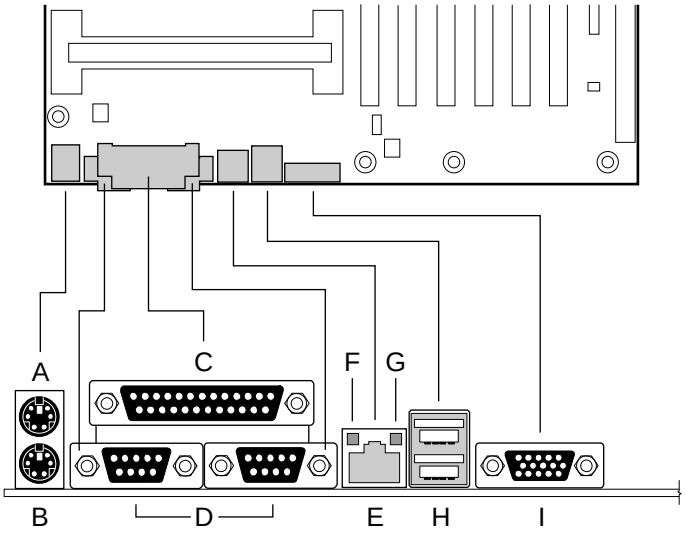
If you wish to use the WOL feature, your power supply must provide 0.8 A of +5 V Standby current. If it does not, your server board may not boot. Move the WOL Enable jumper to the Disabled position if your power supply does not provide the required current.

Server Board Components



A. Fansink connector 2
B. Secondary processor
C. Fansink connector 1
D. Primary processor
E. DIMM slots
F. Main power connector
G. ATX Aux power connector
H. Fan connector FAN2A
I. Floppy connector
J. IDE connectors
K. ATX front panel connector
L. Front panel connector, 16 pin
M. Battery
N. Isolated Server Management (ISOL) IMB connector
O. Jumper block
P. Jumper block
Q. Fan connector 1
R. Ultra wide SCSI connector
S. Server Monitor Module (SMM) connector
T. External Wake on LAN connector
U. Ultra2/LVD SCSI connector
V. Hard drive LED connector
W. Adaptec ARO-1130U2 connector/PCI slot 4
X. Intelligent Chassis Management Bus (ICMB) header
Y. ISA connector
Z. Chassis intrusion connector
AA. PCI connectors
BB. PCI-66 connectors
CC. Fan connector FAN2B
DD. Video connector
EE. USB connectors
FF. NIC connector
GG. Serial port connector (default COM1)
HH. Parallel port connector
II. Serial port connector (default COM2)
JJ. Mouse/keyboard connectors

Back Panel Connectors



A. Mouse connector
B. Keyboard connector
C. Parallel port connector
D. Serial port connectors
E. Network connector
F. Green NIC LED
G. Orange NIC LED
H. USB connectors
I. Video connector

NOTE

The COM1 serial port is located next to the Network Connector and COM2 serial port is located next to the keyboard/mouse connector.

NIC LED Color	If it's on	If it's blinking	If it's off
Orange	100 Mbps network connection.	NA	10 Mbps network connection.
Green	Linked to network, no network traffic.	Linked to network, sending or receiving data.	Not linked to network.

Getting Help

World Wide Web

http://support.intel.com/support/motherboards/server/l440gx

Telephone

Talk to a Customer Support Technician* (Intel reserves the right to change pricing for telephone support at any time without notice).

In U.S.: **1-900-555-5800** (M–F, 7:00 *am*–5:00 *pm*, Th 7:00 *am*–3:00 *pm*, PST). Calls billed at U.S. $2.50 per minute.

In U.S. and Canada: **1-800-404-2284** (M–F, 7:00 *am*–5:00 *pm*, Th 7:00 *am*–3:00 *pm*, PST). Credit card calls billed at U.S. $25 per incident.

In Europe:

English language: +44-131-458-6847
French language: +44-131-458-6848
German language: +44-131-458-6954
Italian language: +44-131-458-6951

(M, Th, F, 8:00 *am*–5:00 *pm,* T–W, 8:00 *am*–4:00 *pm*, UK time)
Credit card calls billed at U.S. $25 per incident (levied in local currency at the applicable credit card exchange rate plus applicable VAT).

In Asia-Pacific region (Singapore local time, Oct–April: M–F, 6:00 *am*–4:00 *pm*; April–Oct: M–F, 5:00 *am*–4:00 *pm*).
Credit card calls billed at U.S. $25 per incident.

Australia (Sydney): +1-800-649-931
Hong Kong: +852-2-844-4456
Korea: +822-767-2595
PRC: +852-2-844-4456
Singapore: +65-831-1311
Taiwan: +886-2-718-9915

Rest of the world: Call the North American Service Center at **+1-916-377-7000** (M–F, 7:00 *am*–5:00 *pm*, U.S. pacific standard time).
Credit card calls billed at U.S. $25 per incident.

* Or contact your local dealer or distributor.

Technical Training & Support

If you are registered in the Intel Processor Dealer Program (North America), the Genuine Intel Dealer Program (Asia-Pacific Region), or the Intel Processor Integrator Program (Europe/Latin America), you are eligible for technical training and support.

In U.S. and Canada: **1-800-538-3373**, ext. 442 (M–F, 5:00 *am*–5:00 *pm*, PST)

In Europe: contact your distributor or fax your details to European Literature on **+44 (0) 1793 513142**.

In Asia: **+65-831-1379** (M–F, 8:30 a*m*–5:30 *pm*, Singapore local time) or via e-mail: **APAC_gid@ccm.isin.intel.com**

L440GX+ 服务器母板

快速入门指南

Translations of this guide are available at:
Übersetzungen dieses Handbuchs sind erhältlich bei:
Versiones traducidas de esta guía se encuentran disponibles en:
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欲取得本指南的翻譯版本，請造訪下列網址：
이 설명서의 번역본은 다음 주소에서 얻을 수 있습니다.
您可在下列网址上查阅到本指南的译文:

http://support.intel.com/support/motherboards/server/l440gx/manual.htm

开始之前

FCC / 辐射免责声明

本设备已在配置到兼容主机时经过测试和验证，符合 FCC 条例第 15 部分、CISPR 22 和 EN55022 关于 B 级设备的限制。这些限制旨在提供合理的保护措施，以防止在住宅区安装设备而产生有害干扰。本设备产生、使用并可能辐射无线电频能，如果未按要求安装使用本设备，可能会对无线电通讯造成有害干扰。然而，正确的安装和使用并不保证个别设备安装后不会产生干扰。如果本设备确实对无线电或电视接收产生有害干扰（通过关闭和打开本设备可以确定有无这种干扰现象发生），用户可以使用以下一种或几种方法来消除干扰现象：

- 改变接收天线的方向或位置
- 增加设备与接收器之间的距离
- 将设备和接收器分别接在电路不同的电源插座中
- 向经销商或有经验的无线电 / 电视技术人员咨询

要确保 EMC 符合您当地的规定和规章，您的最终系统产品的最后配置可能需要额外符合 EMC 的测试。关于详细信息，请与当地的 Intel 代表联系。

注意和警告

警告

按下电源按钮并不能关闭此母板的电源。在进行本指南所述的任何操作之前，请将服务器母板的电源以及所有电信链路、网络或调制解调器断开。否则会引起人身伤害或设备的损坏。即使在前面板电源按钮已关闭之后，服务器母板上的某些电路仍可能继续工作。

本指南仅供有服务器母板安装与配置经验的技术人员使用。

请认真阅读并遵守本指南以及随机箱、电源系统和附件模块附送的资料中所包含的全部警告、注意事项和声明。如果机箱和电源系统提供的说明与本指南所述的说明或附件模块的说明不一致，请与供应商的技术支持联系以决定采用何种方法才能保证您的计算机符合安全和规章要求。

注意

静电释放 (ESD) 会损坏服务器母板的元件。只应在有静电释放保护的工作台进行本指南所述操作。如果没有这样的工作台，您可以戴上防静电腕带，并将其连在计算机机箱的金属部分以获得一定的 ESD 保护。

可启动 CD-ROM 上提供的项目

L440GX+ 服务器母板产品指南
软件驱动程序和实用程序
Adaptec† SCSI 指南
Intel® 服务器控制 1.8.1 版及其用户指南
《Intel® Columbus III 服务器机箱部件产品指南》
《Intel® Astor II 服务器机箱部件产品指南》

如要阅读这些产品指南，可以启动 Windows† 95/Windows NT†，并使用 Adobe† Acrobat†，或启动 CD-ROM 并使用所提供的 DOS 阅读程序。

安全和规章要求

有关所有适用的安全标准、电磁兼容性 (EMC) 规章和产品认证标志，请参阅《L440GX+ 服务器母板产品指南》。

指定用法：本产品已通过鉴定，用于安装在办公室、计算机房以及类似场所的计算机上。其它应用有待于进一步的鉴定。

EMC 测试：在组装计算机之前，请先确认机箱、电源系统及其它模块在与服务器母板及微处理器组合下均已通过 EMC 测试，且测试所用的微处理器必须与本母板上的处理器为同一系列（或更高）的产品、并以相同（或更快）速度来测试。

提供的电池警告贴签：将贴签置于机箱内靠近电池且容易看到的地方，但不要贴在服务器母板上。

提供的服务器母板示意图贴签：将该贴签置于机箱内容易看到的地方，最好与服务器母板的方向相同。

提供的 I/O 面板贴签：将该贴签置于机箱后部，靠近 I/O 防护板的地方，最好与 I/O 防护板的方向相同。

基本硬件要求

为避免造成组装困难及可能导致的母板损坏，您的系统必须满足以下基本要求。关于合格内存和机箱部件的清单，请参阅
http://support.intel.com/support/motherboards/server/l440gx/compat.htm

处理器
至少一个 350 MHz 或更快的 Pentium® II 或 Pentium III 处理器和一个处理器终接卡。
内存
在 168 引脚的镀金 DIMM 上，至少配备 32 MB 的 100 MHz、3.3V、PC/100 兼容的 SDRAM。72 位 (ECC) 或 64 位（非 ECC）均可。
电源系统
至少配备 300 W、0.8 A、+5 V 的备用电流以支持 Wake On LAN† (WOL)。如果您决定不使用 WOL 功能，请务必将 WOL 启用跳线 (J5A2) 置于“禁用”位置（引脚 1-2）。

安装说明

I/O 防护板

注释

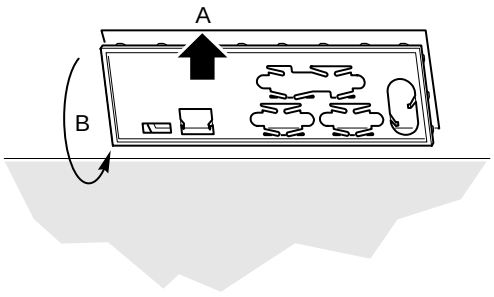
服务器母板提供一个符合 ATX 2.01 标准的 I/O 防护板。电磁干扰 (EMI) 规章要求安装防护板。它可最大限度地减少 EMI 并确保对服务器进行适当降温。如果本防护板与机箱不匹配，请与机箱供应商联系以获得大小合适的防护板。

防护板与机箱后部电源系统附近的矩形开口相吻合。防护板上的切口与外部 I/O 连接头（如键盘或鼠标）相匹配。

1 从机箱内部安装防护板。调整好防护板的方向，以使切口与服务器母板上相应的 I/O 连接头对准。

2 将一边对好位置，使虚线凹槽 (A) 位于机箱壁的外侧，而防护板的凸缘位于机箱壁内侧。

3 握住防护板，然后将其推入开口处直至固定到位 (B)。适当掌握压力，将防护板压紧到位。



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微处理器

L440GX+ 服务器母板最多支持两个 Pentium III 处理器（带 100 MHz 系统总线）。如果您同时安装两个处理器，请确保它们具有相同的速度、电压和步进。

处理器盒以一个接地固定装置 (GRM) 安装在母板上，L440GX+ 服务器母板附带此固定装置。

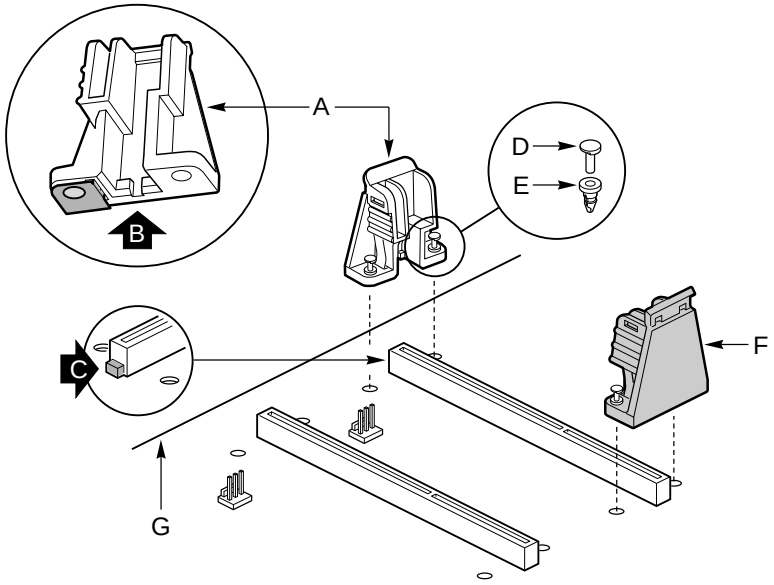
注释

处理器接地固定装置与 SECC 类型的处理器包装不兼容。GRM 只支持 SECC2 类型的处理器。如果您计划使用 SECC 类型的处理器，必须使用“通用固定装置”(URM)。URM 可通过分销商订购。

安装接地固定装置

1 将母板安装到机箱之前先在服务器母板中安装 GRM。

2 将服务器母板放置在一个柔软且不导电的表面上。如果将母板放置在较硬的表面上，护孔螺钉和引脚将不能更深入地穿过母板，安置到位。



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3 GRM 分白色和黑色两种。白色 GRM 安装在最靠近服务器母板的边缘 (G)位置。

4 调整白色 GRM (A) 的方向，以便护孔螺钉 (E) 与服务器母板中的孔眼对齐。白色 GRM 有开槽 (B) 与处理器连接器上的栓 (C) 匹配。恰当安装的固定装置应定位牢固（不会移动）并与服务器母板齐平。

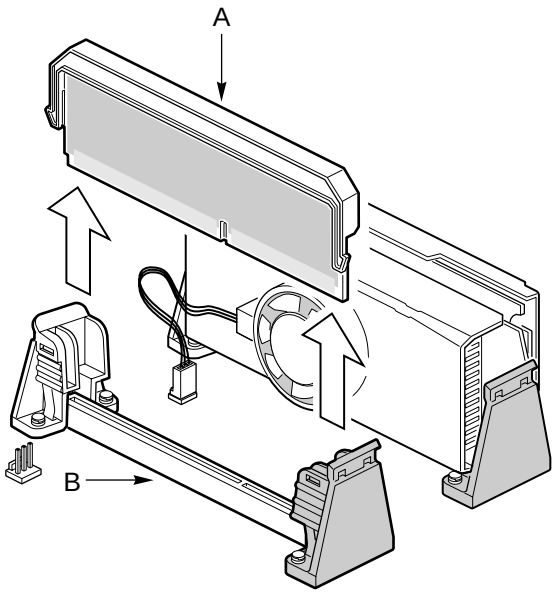
5 按下螺栓 (D)，使之与护孔螺钉齐平。

6 对黑色 GRM (F) 重复以上过程。

安装处理器

1 请遵守本文档开始所述的安全与 ESD 注意事项。

2 如果您的服务器只有一个处理器而您要添加第二个，则必须从次处理器插槽 (B) 卸下终接卡 (A)。参见第 9 页的“拆除处理器”。



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3 如果您的服务器有一个处理器，而您要更换它，应保留次插槽中的终接卡。拆除要更换的处理器。参见第 9 页的“拆除处理器”。

4 如果您的服务器有两个处理器，而您正在替换其中一个或两个处理器，则拆除相应处理器即可。参见第 9 页的“拆除处理器”。

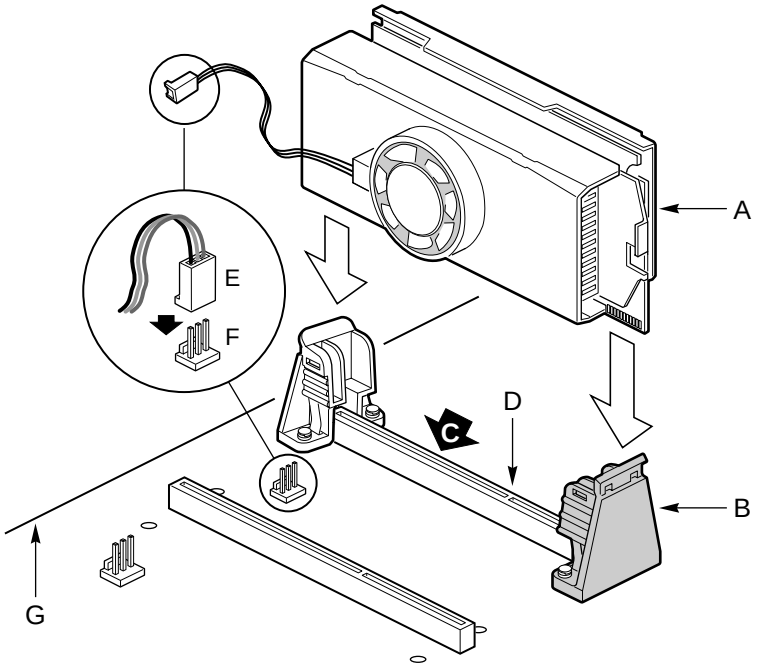
5 从防静电包装中取出新处理器 (A)，放在接地的无静电表面或不导电的泡沫垫板上。

6 将电源线较小的一端连接到单边接触盒上的风扇连接头。

7 调整处理器方向，让散热器正对 I/O 连接头。将处理器滑入固定装置 (B) 中。从顶端两侧平均用力向下按，直到处理器卡紧在服务器母板 (C) 上的处理器接头上。处理器槽上的凹口 (D) 对应处理器上的销。

8 将风扇连接头的电源线较大一端 (E) 连接到服务器母板上的 3 引脚风扇散热器连接头 (F)。(G) 表示服务器母板的边缘。

9 安装完处理器后，必须在 BIOS 设置程序中配置处理器速度。



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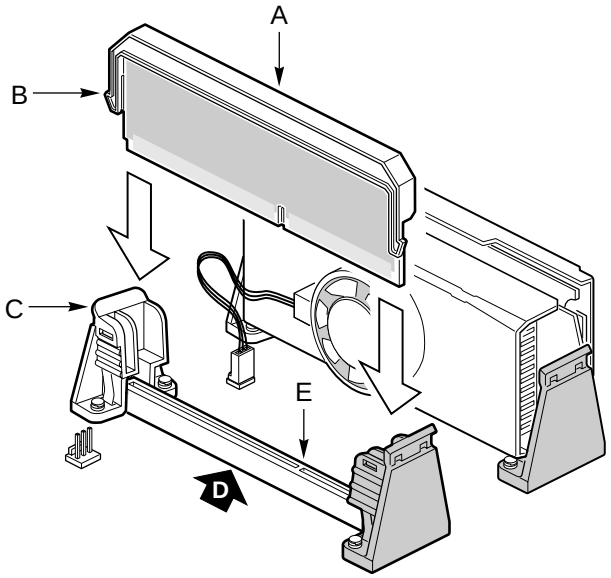
注意，单处理器配置

如果系统中只安装一个处理器，它必须装入标有“主处理器”的插槽（最靠近 DIMM 插座）中。对于单处理器配置，您必须在空的次处理器插槽中安装一个终接板以确保系统正确运行。L440GX+ 服务器母板附带一块终接板。



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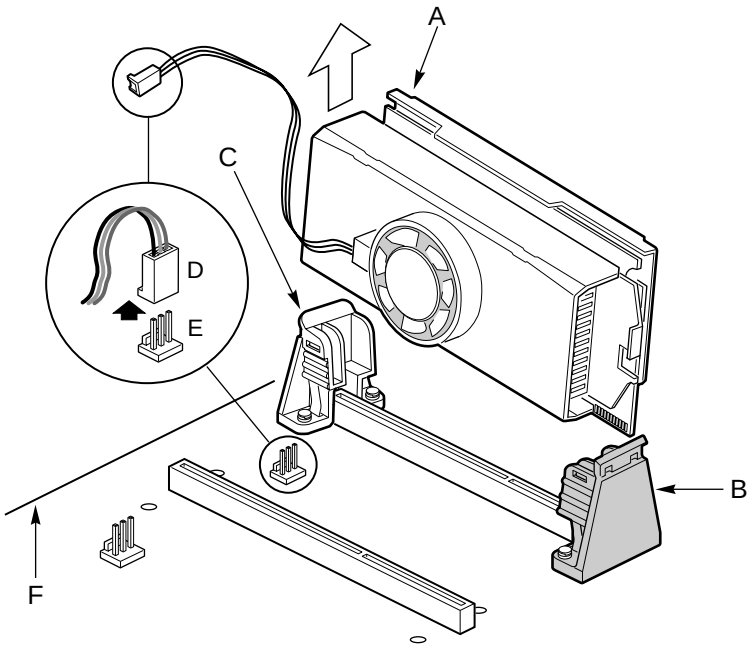
拆除处理器

1 请阅读并遵守本章开始所述的安全与 ESD 注意事项，以及这里另外提及的注意事项。如果处理器配有风扇散热器，将处理器连接头与服务器母板上的风扇连接头断开（D 和 E）。(F) 指示服务器母板的边缘。

2 从电源系统上拔下交流电源线。仅当从电源系统上拔下电源线时电源才关闭。



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3 建议您在服务器母板固定在机箱中时拆除处理器，这样可提供支撑并防止服务器母板弯曲。将系统侧放，卸下侧盖（详细说明请参见系统或机箱文档）。

4 调整服务器母板方向，使白色接地固定装置离您最远而且 I/O 连接头位于左侧。

5 用右拇指向外推白色接地固定装置 (C) 的突出边沿，同时用左手握住最靠近白色接地固定装置的处理器 (A) 的两侧向上提，同时小心地将处理器旋转出插槽。一旦处理器脱离白色接地固定装置，就可从黑色接地固定装置 (B) 中卸下该处理器。

⚠ 注意

此过程比较困难。将固定装置的突出边沿向外推，直到可拔出处理器。将突出边沿推得太远可能损坏固定装置或服务器母板。

6 将处理器存储在防静电包装中。

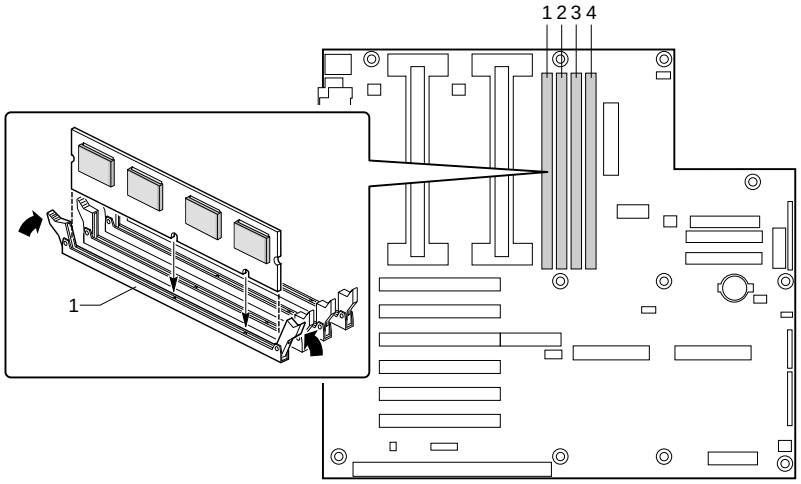
内存

本服务器母板仅支持 100MHz、符合 PC/100 标准的 SDRAM。

- 可安装 32 MB 到 2 GB 的非缓冲内存，使用多达 4 个单组或双组 DIMM，或者
- 可安装 32 MB 到 2 GB 的寄存式内存，最多可使用 4 个单排或双排的 DIMM。

安装的 DIMM 必须具有相同的速度，并全部为寄存式内存或全部为非缓冲内存。有关所支持的内存清单，请与您的服务代表联系，或访问 Intel 在万维网上的支持站点。

http://support.intel.com/support/motherboards/server/l440gx/compat.htm



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电源连接头

L440GX+ 服务器母板共有两个电源连接头。主电源连接头是经修改的 24 引脚 ATX 连接头（第 16 页上的服务器母板元件图中的 F）。
Intel Astor II 机箱使用所有 24 个引脚。带有 ATX 电源系统的所有其它机箱使用底部的（最靠近母板的中心）20 个引脚。提供了辅助电源连接头（第 16 页上服务器母板元件图中的 G），以便标准 ATX 电源系统可以支持满负荷的服务器母板。

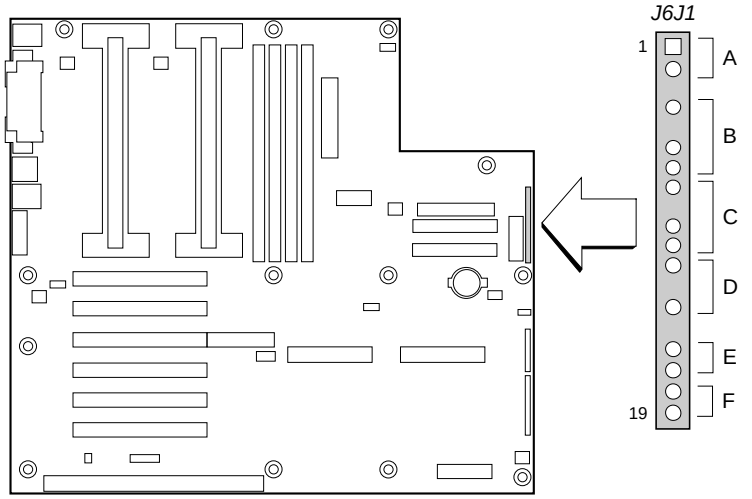
⚠ 注意，正确连接电源

在系统组装时使用不正确的电源系统连接头可能会导致服务器母板损坏。

为了使用 L440GX+ 的 Wake On LAN (WOL) 功能，您的电源系统必须提供 +5 V、0.8 A 的备用电流。该电源用于“基板管理控制器”（简称 BMC）。如果您的电源系统不能提供这一电流，您应该通过 WOL 跳线禁用 Wake On LAN。

ATX（前面板）控制器和指示灯

L440GX+ 服务器母板配备的连接头符合用于 LED 指示灯和其它功能的标准 AT† 接口。连接头块位于 J6J1。



连接头	引脚	信号
A. 电源开关	1	电源开关
	2	接地
	3	N/C
B. 硬盘驱动器活动指示灯	4	限定电流 +5V
	5	键
	6	硬盘驱动器活动指示灯
	7	限定电流 +5V
C. 扬声器	8	接地
	9	N/C
	10	PIEZO_IN
	11	SPKR_HDR
D. 电源指示灯	12	限定电流 +5V
	13	N/C
	14	接地
	15	N/C
E. 复位开关	16	接地
	17	复位开关
F. 睡眠开关	18	接地
	19	睡眠开关

风扇连接头

服务器母板配备有五个 3 引脚、单向插入风扇连接头。其中两个连接头位于处理器插座旁边（每个处理器一个），用于转速计或数字风扇散热器。其余三个风扇连接头与系统风扇相连，装有指示风扇是否工作的传感器。风扇的传感器引脚连接到基板管理控制器 (BMC) 上。

注释

风扇连接头 FAN2A（第 16 页上服务器母板元件图中的 H）和 FAN2B（第 16 页上服务器母板元件图中的 CC）不应同时使用。否则，风扇无法正常运转。

风扇连接头	
引脚	信号名称
1	接地
2	+12 V
3	风扇传感器

开启机箱连接头

服务器母板支持开启机箱监视功能。服务器母板将开启开关认知为机箱开启信号。如果开启机箱检测跳线处于禁用位置，则开关将被旁路，而 BMC 无法检测出机箱是否打开。

SCSI 支持

服务器母板有两个 SCSI 连接头。左边的一个（最靠近 PCI 插槽）支持 Ultra2/LVD SCSI。右边的一个支持 UltraWide SCSI。

常见问题

系统接通电源后无法启动或无视频显示？

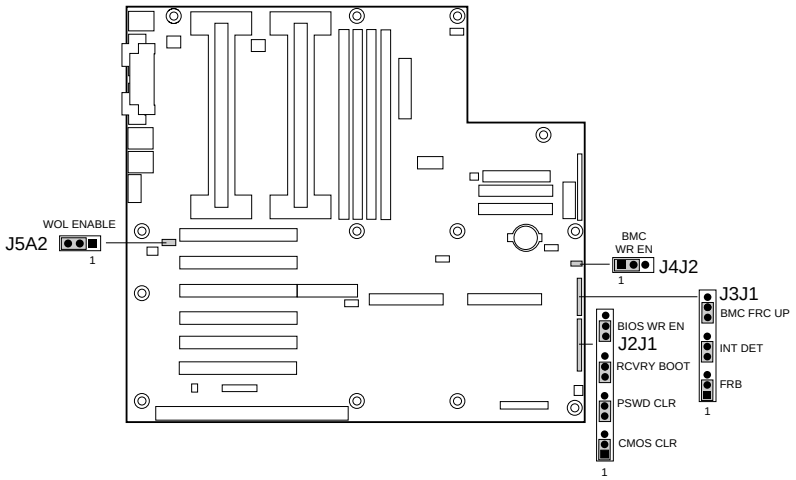
- 如果仅配置使用一个处理器，验证该处理器在主处理器插槽内而终接卡在次处理器插槽内。（参见第 16 页的服务器母板元件图）。
- 蜂鸣音代码 1-3-3-1 意味着您具有未识别的或损坏的内存。一次拆除一个 DIMM 以便查出哪一个出现问题。
- 您的电源系统必须能提供 +5 V、0.8 A 的备用电流用以支持 WOL。如果电源系统不提供这一电流，请将 WOL 启用跳线 (J5A2) 移至禁用位置（引脚 1-2）。

系统有时工作，但运行时有错误发生：

- 这通常是由于使用的电源系统功率不足。确保所用电源系统的功率至少为 300 W。

跳线

如下图所示，九个 3 引脚跳线块可控制不同的配置选项。有关进一步信息，请参阅《L440GX+ 服务器母板产品指南》。



跳线块	跳线名称	引脚（粗体为默认设置）	在系统复位时的动作
J5A2	WOL 启用	1-2，禁用	禁用 Wake On LAN。如果您的电源系统不能提供 +5 V、0.8 A 的备用电流，则必须将 WOL 启用跳线置于此位置。
		2-3，启用	启用 Wake On LAN。
J4J2	BMC WR EN	1-2，保护	BMC 启动块受到写保护。
		2-3，擦除 / 编程	BMC 启动块可擦除并可编程。
J3J1	FRB	1-2，启用	启用 FRB 操作（如果处理器 0 不响应，系统通过处理器 1 启动）。
		2-3，禁用	禁用 FRB。
J3J1	INT DET	5-6，启用	机箱盖打开时，机箱上安装的开关会指示出来。
		6-7，禁用	开启机箱开关旁路。

续后

跳线 块	跳线 名称	引脚 （粗体为默认设置）	在系统复位时的动作
J3J1	BMC FRC UP	9-10，正常 10-11，编程	系统正常启动。 系统试图更新 BMC 固件。
J2J1	CMOS CLR	**1-2，保护** 2-3，擦除	保留 NVRAM 中的内容。 用出厂时默认设置替代 NVRAM 的内容。
J2J1	PSWD CLR	**5-6，保护** 6-7，擦除	维持当前的系统口令。 清除口令。
J2J1	RCVRY BOOT	**9-10，正常** 10-11，恢复	系统尝试通过存储在快闪内存中的 BIOS 进行启动。 BIOS 尝试恢复启动，将 BIOS 代码从软盘装载入快闪设备。这种情况通常用于 BIOS 代码遭到破坏时。
J2J1	BIOS WR EN	**13-14，保护** 14-15，擦除 / 编程	BIOS 启动块受到写保护。 BIOS 启动块可被擦除或可编程。

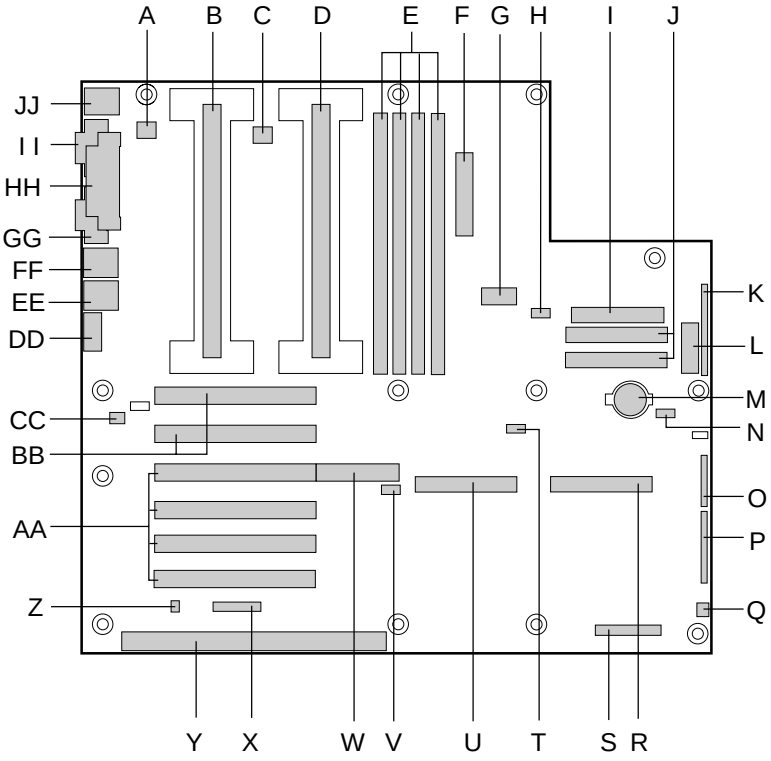
注意

移动任何一个启动块写保护跳线（J4J2-BMC WR EN 或 J2J1- BIOS WR EN）都可能对服务器母板造成无法恢复的损坏。您只有在客户服务代表的指导下，才能移动这些跳线。

注释

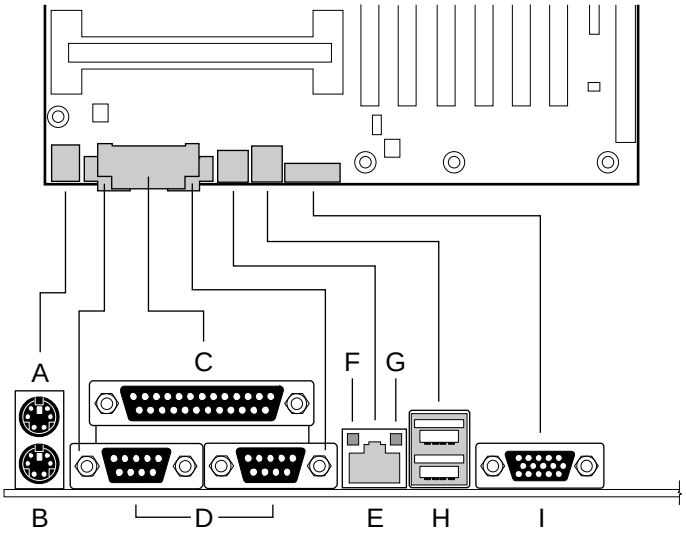
如果您希望使用 WOL 功能，您的电源系统必须提供 +5 V、0.8 A 的备用电流。否则，您的服务器母板可能无法启动。如果您的电源系统无法提供所需电流，请将 WOL 启用跳线移至“禁用”位置。

服务器母板元件



A. 风扇散热连接头 2
B. 次处理器
C. 风扇散热连接头 1
D. 主处理器
E. DIMM 插槽
F. 主电源连接头
G. ATX 辅助电源连接头
H. 风扇连接头 FAN2A
I. 软盘连接头
J. IDE 连接头
K. ATX 前面板连接头
L. 前面板连接头，16 引脚
M. 电池
N. 单独服务器管理 (ISOL) IMB 连接头
O. 跳线块
P. 跳线块
Q. 风扇连接头 1
R. 超宽 SCSI 连接头
S. 服务器监视器模块 (SMM) 连接头
T. 外部 Wake on LAN 连接头
U. Ultra2/LVD SCSI 连接头
V. 硬盘驱动器指示灯连接头
W. Adaptec ARO-1130U2 连接头 / PCI 插槽 4
X. 智能机箱管理总线 (ICMB) 接头
Y. ISA 连接头
Z. 开启机箱连接头
AA. PCI 连接头
BB. PCI-66 连接头
CC. 风扇连接头 FAN2B
DD. 视频连接头
EE. USB 连接头
FF. NIC 网卡连接头
GG. 串行端口连接头（默认 COM1）
HH. 并行端口连接头
II. 串行端口连接头（默认 COM2）
JJ. 鼠标 / 键盘连接头

后面板连接头



A. 鼠标连接头
B. 键盘连接头
C. 并行端口连接头
D. 串行端口连接头
E. 网络连接头
F. 绿色 NIC 指示灯
G. 橙色 NIC 指示灯
H. USB 连接头
I. 视频连接头

注释

COM1 串行端口位于网络连接头旁，而 COM2 串行端口则位于键盘 / 鼠标连接头旁。

NIC 指示灯颜色	指示灯亮	指示灯闪烁	指示灯熄灭
橙色	100 Mbps 网络连接。	不适用	10 Mbps 网络连接。
绿色	与网络相连，但无网络通讯。	与网络相连，正在接收或发送数据。	没有连接到网络。

获得帮助

万维网

http://support.intel.com/support/motherboards/server/l440gx

电话

与客户支持技术人员*交谈（Intel 保留改变电话支持费用的权利，恕不先行通知）。

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法语：　　+44-131-458-6848
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韩国：　　+822-767-2595
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新加坡：　　+65-831-1311
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