

LB440GX 2U Rack Server Platform

Quick Start Guide

A Guide for Technically Qualified Assemblers of Intel® Identified Subassemblies/Products

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The *LB440GX 2U Rack Server Product Guide* can be found at <http://channel.intel.com/isp/>

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Order Number: 742713-003

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 server. Disconnect the server 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 in the server may continue to operate even though front panel power button is off.

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

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 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.

Safety and Regulatory Requirements

See the *LB440GX 2U Rack Server Product Guide* for all applicable safety standards, electromagnetic compatibility (EMC) regulations, and product certification markings.

Intended uses: This product was evaluated for use in computer rack cabinets within computer rooms and similar locations. Other uses require further evaluation.

Safety Compliance

USA:	UL 1950 – CSA 950-95, 3 rd Edition
Canada:	UL certified to CSA 950-95 for Canada (product bears the single UL mark for U.S. and Canada)
Europe:	German GS Mark – ERG to EN60950 2nd Edition, with amendments
International:	NEMKO to IEC950 2 nd Edition + Amd 1-4 NEMKO – EN60 950 2 nd Edition + Amd 1-4 NEMKO – EMKO-TSE (74-SEC) 207/94
Australian / New Zealand:	AS/NZ 3548, Class B limits (CISPR 22) AS/NZ 3260 (IEC 950 including national AU deviations)

Electromagnetic Compatibility (EMC)

USA:	FCC CFR 47 Part 15, Class B
Canada:	IC ICES-003 Class B
Europe:	EN55022, Class B EN50082-1 IEC 801-2 ESD Susceptibility IEC 801-3 Radiated Immunity IEC 801-4 Electrical Fast Transient EN61000-3-2 Limit for Harmonic Current Emissions
International:	CISPR 22, Class B
Japan:	VCCI Class B (CISPR 22 B limit)

Installation

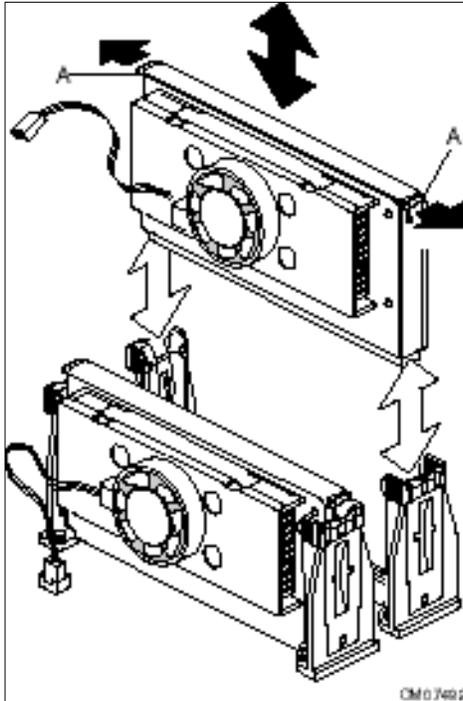
Follow these instructions to get your server to the point where you can load an operating system on it.

Open the Cover

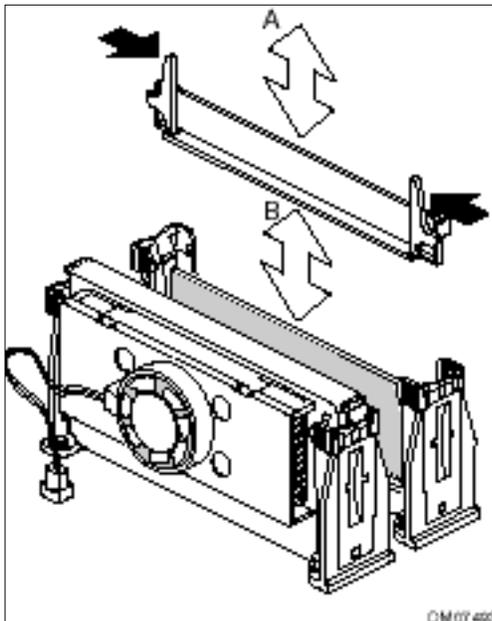
- 1 Loosen the three captive screws on the rear of the system.
- 2 Pull the cover back and remove it from the chassis.

Install a Microprocessor

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



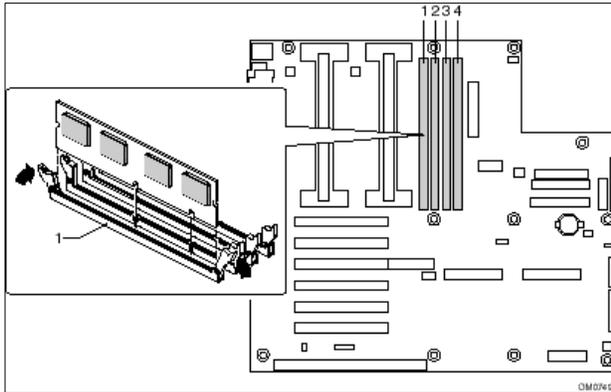
- 1 Press the processors into their slots. Make sure that the tabs (A) snap into place in the retention mechanism.
- 2 Connect the processor fan power cable(s) to both the processor(s) and the connector(s) on the server board. See the server board layout diagram for fan connector locations.



CAUTION, Single-Processor Configurations

If you install only one processor in a system, it must go in the primary connector (closest to the DIMM sockets). With a single-processor configuration, you must install a termination board and termination latch assembly in the empty secondary connector to ensure proper operation of your system. A termination board is provided with your system.

Install Memory



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

- 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:

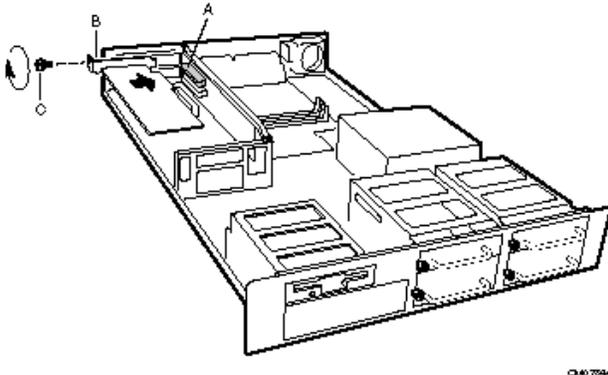
<http://support.intel.com/support/motherboards/server/1440gx/compat.htm>

Install a Hard Drive

Your server does not include a hard drive. You must purchase one separately and install it. The server has four hot-swappable hard drive bays. The two short bays will accommodate 1-inch high drives. The two tall bays will accommodate 1.6-inch high drives.

- 1 Loosen the captive thumb screw holding a drive carrier to the chassis. Remove the carrier from the chassis.
- 2 Remove the hard drive from its wrapper and place it on an antistatic surface.
- 3 Orient the drive so the connector is near the top surface of the drive, then place the drive carrier on top of the drive.
- 4 Using four screws of the correct size and length, attach the carrier to the drive.
- 5 Slide the carrier/drive into the chassis. Tighten the captive thumb screw.

Installing Add-in Cards



You can only add two PCI cards to this server. You must use the PCI slots on the riser card. Do not use any expansion slots on the server board. If you install only one card, you must use the bottom slot on the riser card.

- 1 Remove add-in board from its protective wrapper. Set jumpers or switches according to the manufacturer's instructions.
- 2 Hold board by its top edge or upper corners. Firmly press it into an expansion slot on the riser card. The tapered foot of the board retaining bracket must fit into the mating slot in the expansion slot frame. Install the board component side DOWN.
- 3 Align the rounded notch in the retaining bracket with the threaded hole in the frame. The bracket fits the space that was occupied by the slot cover.

Install a CD-ROM Drive

Your server does not come with an integrated CD-ROM drive. You must purchase one separately and install it.

- 1 Remove the drive from its protective wrapper, and place it on an antistatic surface.
- 2 Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
- 3 Remove the cover plate from the chassis.
- 4 Slide the drive into the chassis.
- 5 Using two screws, attach the drive to the chassis.
- 6 Connect power and data cables to the drive.

Close the Cover

- 1 Place the cover on the chassis and slide it forwards as far as possible.
- 2 Tighten the three captive thumb screws on the rear of the chassis.

Attach the Rack Rails

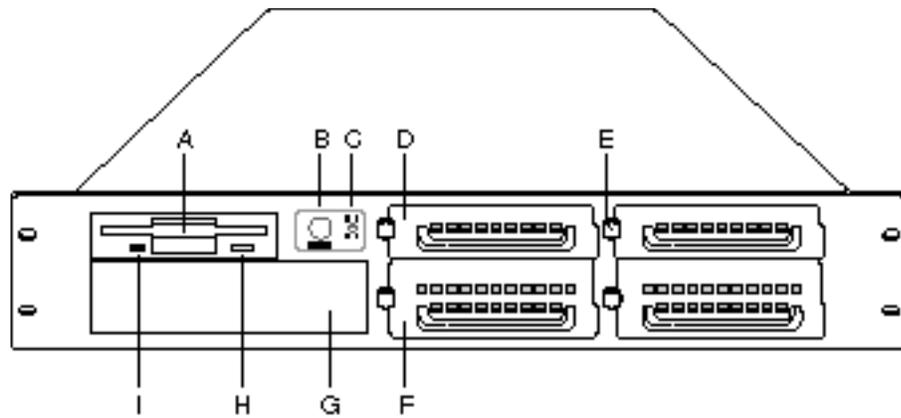
- 1 While facing the side of the server, orient the small bar of the rail so that the flat side faces the top and the right-angle end faces the front of the server.
- 2 Align the first hole in the right-angle end of the bar with the first threaded hole in the side of the chassis.
- 3 Insert a screw through the hole in the bar and into the chassis wall. Then loosely tighten the screw.
- 4 Align the rest of the holes in the bar with the remaining three threaded holes along the side of the chassis.
- 5 Insert three more screws through the bar and into the threaded holes in the chassis wall. Then tighten all four screws firmly.
- 6 Install the remaining rail on the other side of the chassis by repeating steps 1–6 above.

Install the Server in a Rack

Your server is now ready to be installed in a rack and powered up.

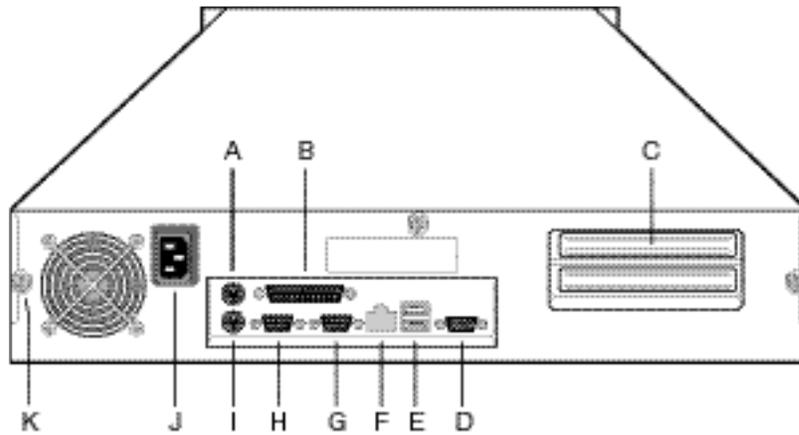
Technical Reference

Front Panel Controls and Indicators



- A. Diskette drive
- B. Power button
- C. Hard drive indicators
- D. Low profile (1-inch) hard drive bay
- E. Captive thumb screw
- F. Half-height (1.6-inch) hard drive bay
- G. Empty (5-1/4-inch) drive bay
- H. Diskette eject button
- I. Diskette activity LED

Back Panel Connectors



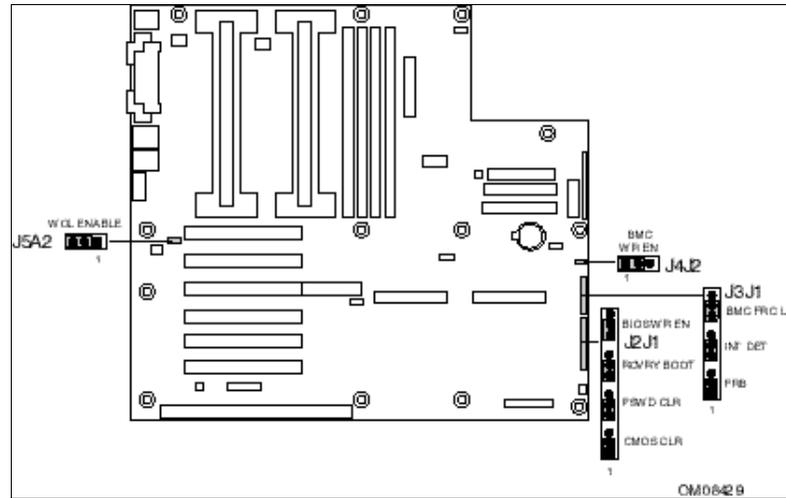
CMG7834

- A. Mouse connector
- B. Parallel port connector
- C. Expansion slots
- D. Video connector
- E. USB connectors
- F. Network connector
- G. Serial port connector
- H. Serial port connector
- I. Keyboard connector
- J. AC input power connector
- K. Thumbscrew

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.

Jumpers

Nine 3-pin jumper blocks that control various configuration options, as shown in the figure below. Refer to the *LB440GX 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.
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.

continued

Jumpers (continued)

Jumper Block	Jumper Name	Pins (default in bold)	What it does at system reset
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

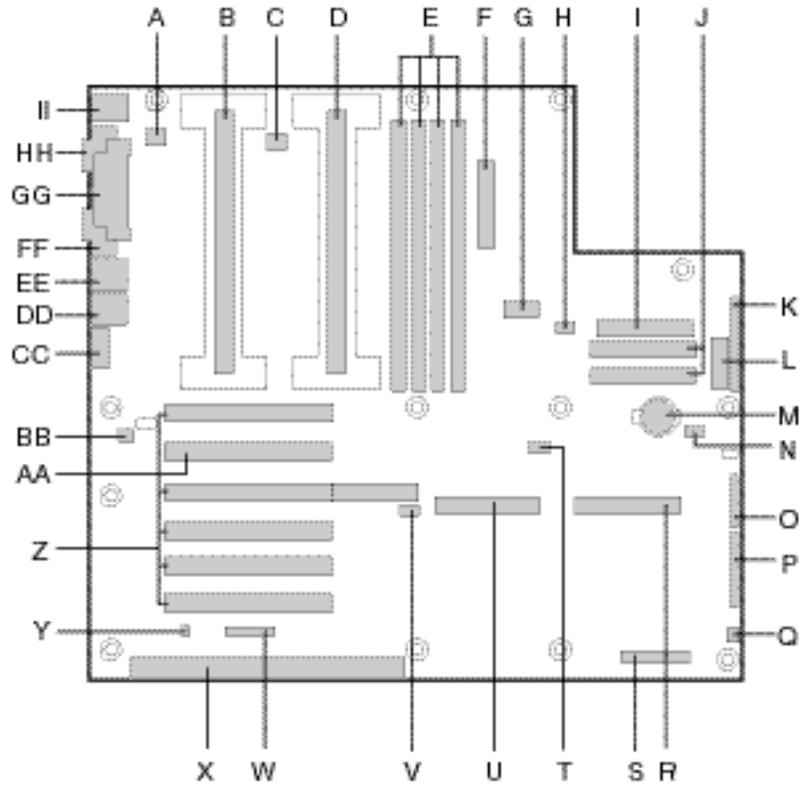
Moving either of the boot block write protect jumpers (J4J2-BMC WR EN or J2J1- BIOS WR EN) may cause irrevocable damage to the server board. Only move these jumpers when directed to by your customer service representative.



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



CM02561

- | | | | |
|----|---|-----|---|
| A. | Fansink connector 2 | T. | External Wake on LAN connector |
| B. | Secondary processor | U. | Ultra2/LVD SCSI connector |
| C. | Fansink connector 1 | V. | Hard drive LED connector |
| D. | Primary processor | W. | Intelligent Chassis Management Bus (ICMB) header |
| E. | DIMM slots | X. | ISA connector (do not install a card in this connector) |
| F. | Main power connector | Y. | Chassis intrusion connector |
| G. | ATX aux power connector | Z. | PCI connectors (do not install cards in these connectors) |
| H. | Fan connector FAN2A | AA. | Riser card connector |
| I. | Floppy connector | BB. | Fan connector FAN2B |
| J. | IDE connectors | CC. | Video connector |
| K. | ATX front panel connector | DD. | USB connectors |
| L. | Front panel connector, 16 pin | EE. | NIC connector |
| M. | Battery | FF. | Serial port connector |
| N. | Isolated Server Management (ISOL) IMB connector | GG. | Parallel port connector |
| O. | Jumper block | HH. | Serial port connector |
| P. | Jumper block | II. | Mouse/keyboard connectors |
| Q. | Fan connector 1 | | |
| R. | Ultra wide SCSI connector | | |
| S. | Server Monitor Module (SMM) connector | | |

