

# ISP2150 2U Rack Server Platform

## Quick Start Guide

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

### **Before You Begin**

FCC Declaration of Conformity.....	4
Cautions and Warnings.....	6
Product Regulation Compliance.....	7
Safety Compliance.....	7
Electromagnetic Compatibility (EMC).....	7

### **ISP2150**

Opening and Closing the Front Bezel.....	8
Locking and Unlocking the Front Bezel.....	9
Attaching and Removing the Front Bezel.....	9

### **Installation**

Open the Cover.....	9
Installing a Microprocessor.....	10
Installing Memory.....	11
Installing a Hard Drive.....	13
Installing Add-in Cards.....	14
Installing a Slim-Line CD-ROM Drive.....	16
Removing a Diskette Drive.....	17
Re-Installing a Diskette Drive.....	17
Close the Cover.....	17
Installing the Front Bracket and Racking Your System.....	18
Installing the Front Bracket in a Cabinet.....	18
Installing the Front Bracket in a Center-Mount, Relay Rack.....	20
Installing the Rail Kit and Racking Your System (Optional Accessory).....	21

### **Technical Reference**

Front Panel Controls and Indicators.....	25
Back Panel Connectors.....	26
Jumpers.....	27
Server Board Components.....	29

<b>Getting Help</b> .....	30
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The *ISP2150 2U Rack Server Platform Product Guide* can be found at <http://channel.intel.com/isp/>

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## **Before You Begin**

### **FCC Declaration of Conformity**

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

For questions related to the EMC performance of this product, contact:

Intel Corporation  
5200 N.E. Elam Young Parkway  
Hillsboro, OR 97124  
1-800-628-8686

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

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

### ICES-003 (Canada)

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: “Appareils Numériques”, NMB-003 édictée par le Ministre Canadien des Communications.

(English translation of the notice above) This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Canadian Department of Communications.

### BSMI (Taiwan)

The following EMC Warning along with the BSMI ID number 3882B139 is located on the outside rear area of the product:

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

### VCCI (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

(English translation of the notice above.) This is a Class B product based on the standard of the Voluntary Control Council For Interference (VCCI) from Information Technology Equipment. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

When used near a radio or TV receiver, it may become the cause of radio interference.

Read the instructions for correct handling.

This equipment has been tested for radio frequency emissions and has been verified to meet CISPR 22 Class B.

## 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.*

## Product Regulation Compliance

See the *ISP2150 2U Rack Server Platform 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 may require further evaluation.

## Safety Compliance

USA:	UL 1950 – CSA 950-95
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
International:	IEC60 950
Australian / New Zealand:	AS/NZ 3260 (IEC60 950 including national AU deviations)

## Electromagnetic Compatibility (EMC)

USA:	FCC CFR 47 Part 15, Class B
Canada:	ICES-003 Class B
Europe:	EN55022, Class B EN55024 (Immunity) EN61000-3-2 Limit for Harmonic Current Emissions
International:	CISPR 22, Class B
Australian / New Zealand:	AS/NZ 3548, Class B limits (CISPR 22)
Japan:	VCCI Class B (CISPR 22 B limit)

## ISP2150

Congratulations on the purchase of your new Intel® ISP2150 system. This Quick Start introduces you to your new system, guides you through rack kit installation, and helps you get the system started.



The following procedures describe how operate the system's front bezel, which covers the front panel controls and indicators. For a description of the front panel features, refer to Front Panel Controls and Indicators.

### Opening and Closing the Front Bezel



With the bezel open you have access to all of your system's front panel functions and indicators. With the bezel closed you can protect critical functions and still view the system's indicators.

To open the bezel, do the following:

1. Stand in front of the chassis and grasp the edges of the bezel from each side.
2. Gently pull the bezel towards you until it begins to separate from the chassis.
3. As the bezel separates from the chassis, allow it to swing to its open position situated below the chassis.

To close the bezel, gently raise it upwards. The hinging mechanism will guide the bezel into the correct position where it will snap shut.

### **Locking and Unlocking the Front Bezel**

The bezel can be locked and unlocked to prevent unwanted access to the system.

To lock the bezel:

1. Remove the keys from inside the bezel (they should be taped to the inside).
2. Close the bezel and insert the key into the lock. Turn the lock counterclockwise until it stops (about a quarter turn). The bezel is now locked and cannot be opened.

To unlock the bezel, insert the key into the lock and turn the lock clockwise until it stops (about a quarter turn). The bezel is now unlocked and can be opened again.

### **Attaching and Removing the Front Bezel**

The front bezel can be installed or removed from the system.

To attach the bezel:

1. With the LED light tunnels located at the top of the bezel, push in the arms on either side of the bezel far enough so that the tabs on the ends of the arms can be inserted into the holes in the chassis.
2. Insert the tabs into the holes in the handles on the chassis. Make sure the tabs on each side of the bezel are completely in the holes in the handles.

To remove the bezel:

1. With the bezel opened, gently push the metal hinge arms located on each side of the bezel in towards the middle of the unit.
2. Push the arms far enough in so that the tabs on the end of the arms are completely out of the holes in the handles on the chassis. The bezel should now be able to be removed.
3. The bezel should now be able to open and close easily and completely.

### **Installation**

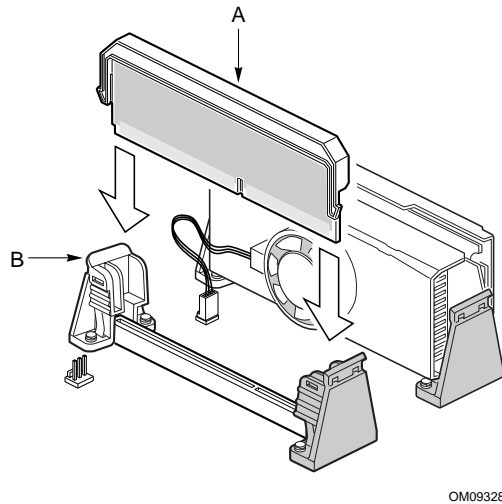
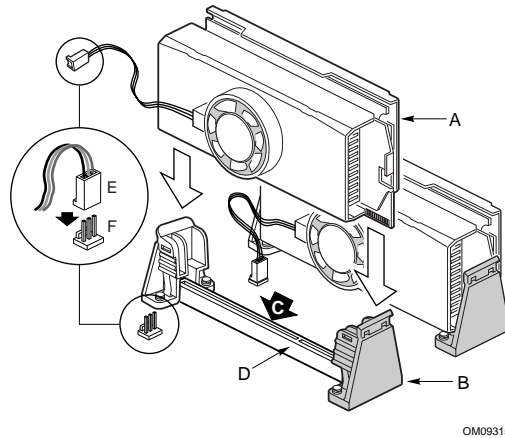
Follow these instructions to get your server to the point where you can load an operating system on it.

#### **Open the Cover**

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

## Installing 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. Remove the new processor from its anti-static package and place it on a grounded, static free surface or conductive foam pad.
2. Attach the small end of the power cable to the fan connector on the S.E.C. cartridge, then attach the large end (B) to the 3-pin connector on the server board.
3. Orient the processor so that the heat sink faces the I/O connectors. Slide the processor into the retention module. Push down firmly, with even pressure on both sides of the top, until the processor is seated.
4. To lock in the processor, push the latches inward on the retention module until they click into place. The latches must be secured for proper electrical connection of the processor.
5. After you have installed the processor, you must configure its speed in BIOS set-up.

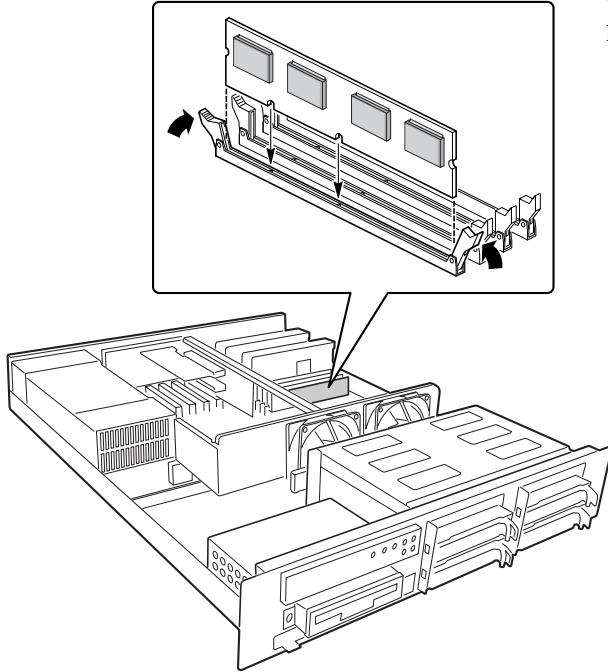


### **CAUTION, Single-Processor Configurations**

*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 (A) in the empty secondary connector (B) to ensure proper operation of your system. A termination board is provided with your system.*



## Installing Memory



The server only supports 100 MHz PC/100-compliant SDRAM.

- 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

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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>



**CAUTION**

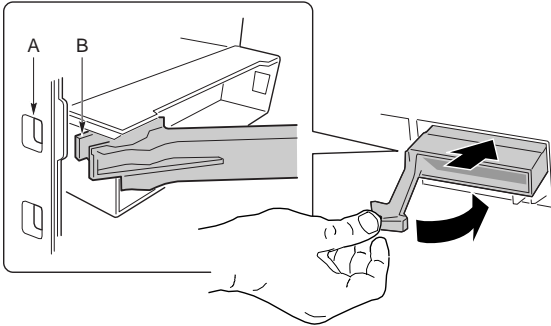
*Use extreme care when installing a DIMM. Applying too much pressure can damage the socket. DIMMs are keyed and can be inserted in only one way.*

*Mixing dissimilar metals may cause later memory failures resulting in data corruption. Only install DIMMs with gold-plated edge connectors in gold-plated sockets.*

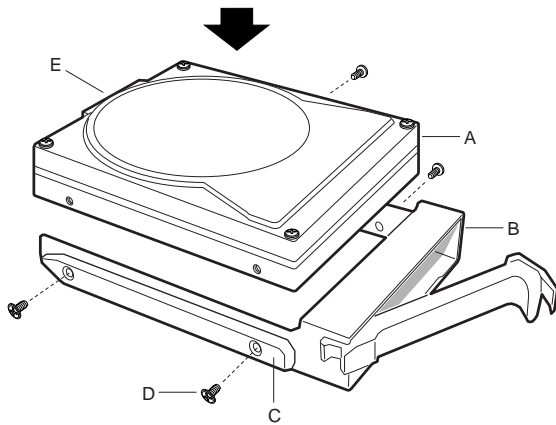
To install your memory:

1. Open your server.
2. Holding the DIMM only by its edges, remove it from its anti-static package.
3. Orient the DIMM so that the two notches in the bottom edge of the DIMM align with the keyed socket.
4. Insert the bottom edge of the DIMM into the socket, and press down firmly on the DIMM until it seats correctly.
5. Gently push the plastic ejector levers on the socket ends to the upright position.
6. Repeat the steps to install each DIMM.
7. Ensure that no cables are protruding from the server chassis and then close the server.
8. Connect all external cables and the power cord to the server.
9. Turn on the monitor and then the server.

## Installing a Hard Drive



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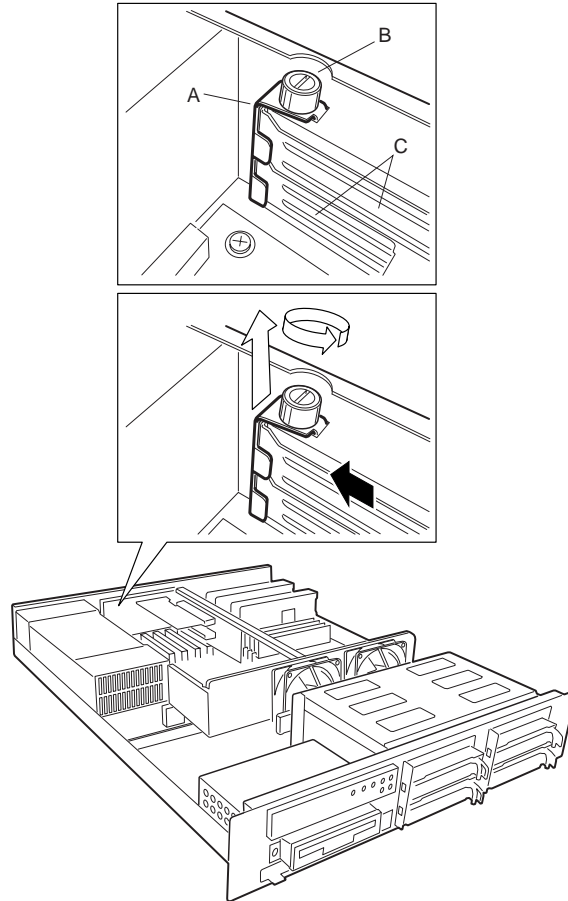


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Your server does not include a hard drive. You must purchase them separately and install them. The server has four hot-swappable SCSI hard drive bays.

1. Remove the drive carrier(s) from the drive bays by unclipping the retention lever on the right side of the handle. Pull the retention lever toward you until the tab end (B) of the lever is free of the housing slot (A). Pull the drive forward and out of the housing.
2. Remove the hard drive from its wrapper and place it on an anti-static surface.
3. Remove and save the four screws (D) from the drive carrier/drive slide track.
4. Align the drive holes to the holes in the drive carrier slide track (C), insert the screws that you previously removed, and attach the carrier (B) to the drive (A). Make sure that the connector end of the drive (E) is facing the back of the carrier and the drive top is facing upward before inserting the screws.
5. Slide the carrier/drive into the chassis with the retention mechanism extended in the open position, then push the arm towards the front of the chassis until the lever tab clicks into the chassis slot indicating that it is closed.

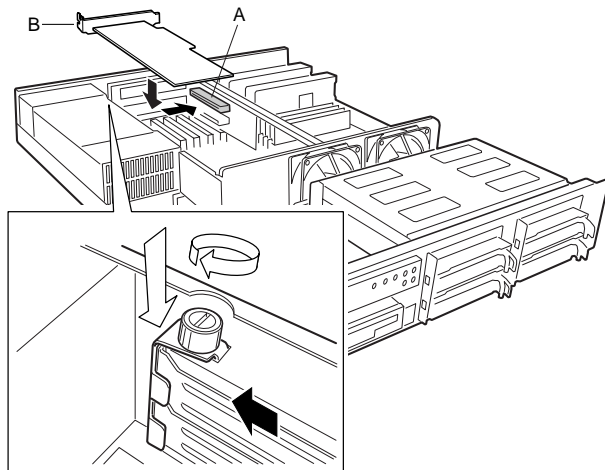
## Installing Add-in Cards



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.

1. Remove the expansion slot cover for the slot you wish to use. Remove the thumbscrew (B) holding the cover retention bracket (A) to the chassis. Remove the bracket from the chassis.
2. Remove the expansion slot cover (C) for the slot you wish to use.

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OM09326

3. Remove add-in board from its protective wrapper. Set jumpers or switches according to the manufacturer's instructions.
4. Hold board by its top edge or upper corners. Firmly press it into an open 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.



**NOTE**

*If you are installing a full-length PCI card, slide the card guide in front of the fans before installing the card.*

5. Align the rounded notch in the retaining bracket (B) with the threaded hole in the frame. The bracket fits the space that was occupied by the slot cover.

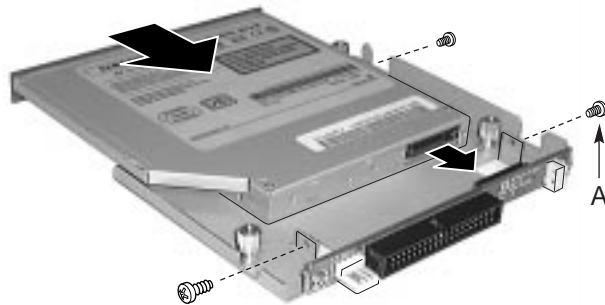


**NOTE**

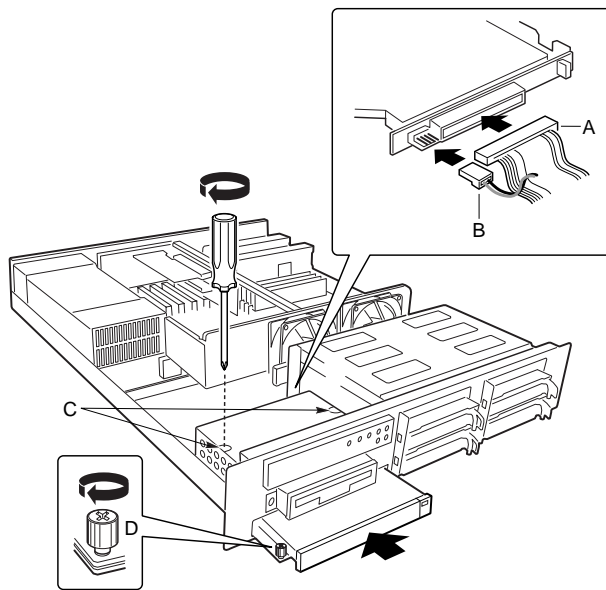
*If you are installing a full-length PCI card, slide the card guide back into place. The back edge of the card should be held in place by the rail of the card guide.*

6. Install the cover retention bracket and thumbscrew.

## Installing a Slim-Line CD-ROM Drive



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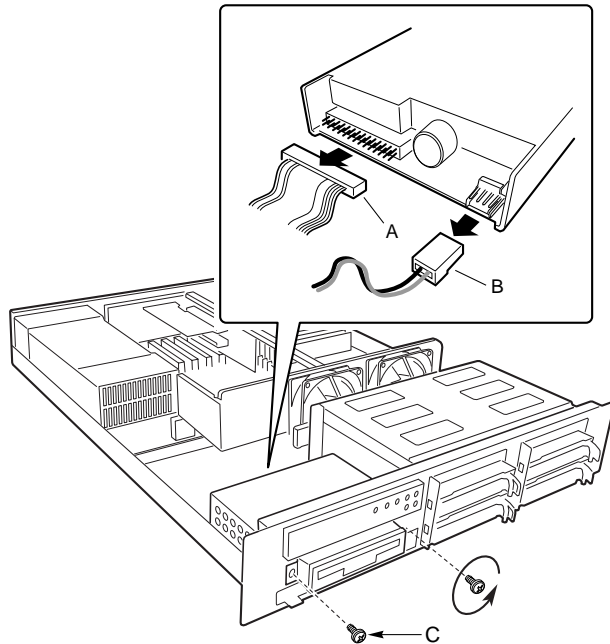


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Your server does not come with an integrated slim-line CD-ROM drive. You must purchase one separately and install it.

1. Remove the drive from its protective wrapper, and place it on an anti-static surface.
2. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
3. Attach the CD-ROM drive to the CD tray using the mounting screws (A) supplied with the system.
4. Remove the screws that hold the filler panel to the front of the chassis and slide out the panel.
5. Slide the slim-line CD tray into the CD-ROM bay. It is recommended that you first remove the diskette drive in the section "Removing the Diskette Drive".
6. Connect the CD-ROM IDE cable (A) and power (B) cables to the connector at the back of the CD tray.
7. Reinstall the diskette drive in the section "Re-Installing the Diskette Drive".
8. Insert the recessed retention screws (C) through the access holes in the top of the drive bay housing.
9. Insert the retention screw (D) on the front of the chassis.

## Removing a Diskette Drive



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1. Disconnect the power (B) and signal (A) cables from the diskette drive. The connectors are keyed for ease in reconnecting them to the drive.
2. Remove and save the screws (C) that secure the diskette drive carrier to the front of the chassis.
3. Slide the drive carrier out the front of the chassis.
4. Remove and save the screws from the sides of the drive carrier.
5. Pull the drive out of the carrier and place the drive in an anti-static protective wrapper if you are not reinstalling it.

## Re-Installing a Diskette Drive

1. Remove the 3.5-inch diskette drive from its protective wrapper, and place it component-side up on an anti-static surface.
2. Install the drive into the drive carrier and secure it with the screws that you removed.
3. Slide the drive carrier through the front of the chassis.
4. Secure the drive carrier to the front of the chassis with the screws you removed earlier.
5. Connect the signal and power cables to the drive according to the manufacturer's specifications.

## Close the Cover

1. Place the cover on the chassis and slide it forwards as far as possible. The sides and front of the cover fit inside the chassis.
2. Tighten the three screws on the rear of the chassis.

## Installing the Front Bracket and Racking Your System

The ISP2150 system comes with mounting bracket hardware that allows you to install it into cabinets and relay racks. The following procedures describe how to mount the ISP2150 system in each type of chassis.

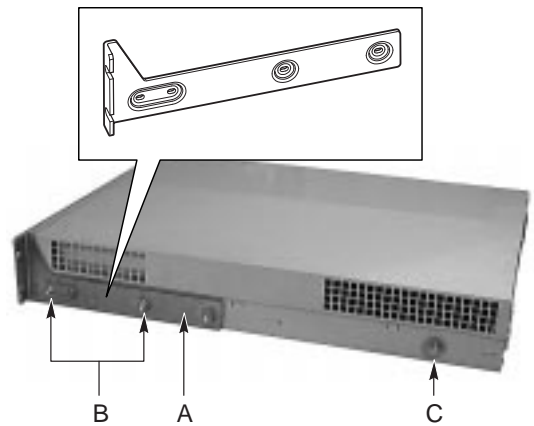


### CAUTION

*Some racks and cabinets may not support the installation of the system. Before installing the system, be sure to refer to the specifications provided by the manufacturer to insure proper mounting configurations and maximum specified loads for the rack or cabinet are not exceeded.*

## Installing the Front Bracket in a Cabinet

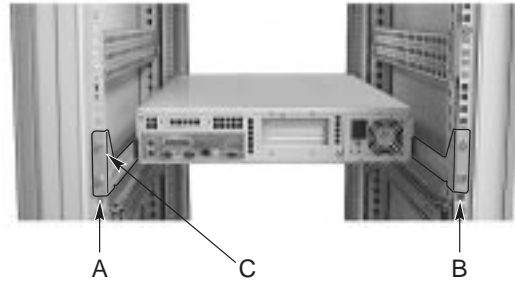
1. Attach the left and right front brackets to the system. Your system comes with left and right front brackets (A) and mounting bolts (B) to attach them to the system. Mount the brackets to the sides of the system with the bracket flange flush with the front panel.
2. Attach the rear support washer to the system. The system also comes with two support washers (C). Mount one on each side towards the rear panel of the system.



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3. Mount the back support bracket to the cabinet. Left (A) and right and left rear mounting brackets also come with the system. Mount the rear brackets in the desired position in the cabinet using the supplied mounting bolts (C) supplied by the cabinet manufacturer.



OM09336

4. Slide the system into the back support bracket. After attaching the rear brackets, slide the system into the rack using the support washers as rollers.

5. Mount the front bracket to the cabinet. To complete the installation, bolt the system's front brackets to the cabinet using the mounting bolts (A) supplied by the cabinet manufacturer.



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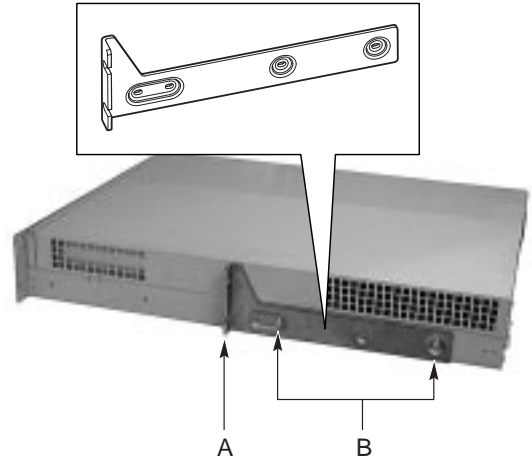
## Installing the Front Bracket in a Center-Mount, Relay Rack

1. Attach the left and right front brackets to the system. Your system comes with left and right front brackets (A) and mounting bolts (B) to attach them to the system. Mount the brackets mid-way down the sides of the system as shown in the figure.



### NOTE

*You can also mount the bracket so that the flange is flush with the front panel.*



2. Mount the bracket to the center channel of the relay rack. To complete the installation, bolt the system's front brackets to the cabinet using the mounting bolts (A) supplied by the cabinet manufacturer.

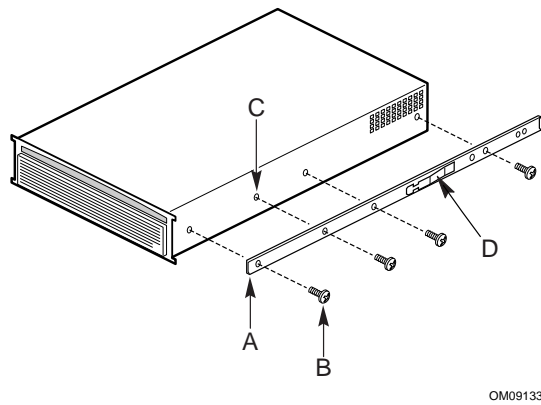
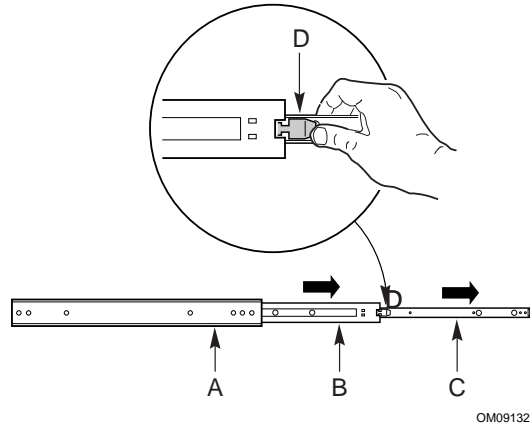


## Installing the Rail Kit and Racking Your System (Optional Accessory)

The rail kit that comes with your system allows you to install it into a four-post, network server cabinet (e.g. APC Netshelter). If the cabinet is not of this general type, you will have to purchase a separate rail kit that is specific to your cabinet.

Follow these steps to install the rail kit and place your system into the cabinet.

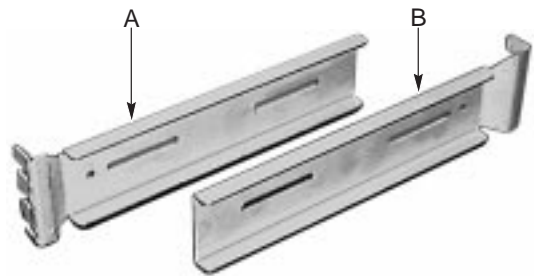
1. Assemble tools and miscellaneous parts. You will need a Phillips screwdriver and assorted lock washers and nuts.
2. Remove the inside piece (C) from both sides of the rail system. To remove an inside piece of the rail system, slide the part as far out as you can. This action reveals a brass colored finger tab (D) that when depressed allows you to completely separate the inside rail piece from the outer (A) and middle (B) rail pieces.
3. Align each inside rail (A) to a side of the chassis. Be sure that the flat end of the inside rail is toward the front of the chassis and that the brass colored finger tab (D) is facing outward. With the holes in the chassis (C) aligned with the holes in the rail, fasten the rail using the largest screws (B) supplied with the rail kit.



4. Here is a combination side and rear view of the chassis after the right inside rail has been attached.

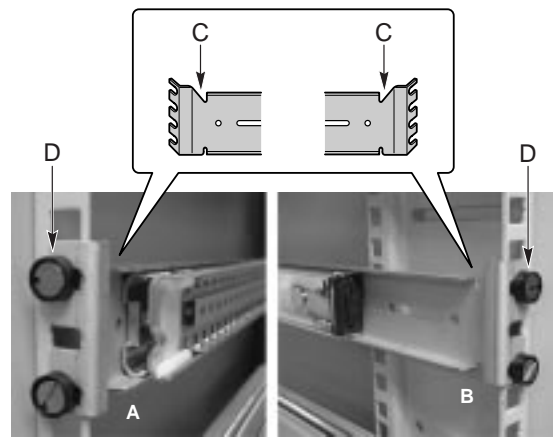


5. Locate the front and rear rail brackets for one side of the rail kit. One pair (A and B) exists for each side of the cabinet rack.



OM09145

6. Attach all four rail brackets to the cabinet rack. Be sure that the sharper angled side of each bracket is facing up (C). Use eight mounting screws (D) provided by the manufacturer of the cabinet rack. In the illustration to the right, the left photo (A) shows the left-front bracket attached to the cabinet, while the right photo (B) shows the left-rear bracket. (The photo shows the rails inside the brackets. You should not have the rails attached inside the brackets yet.)

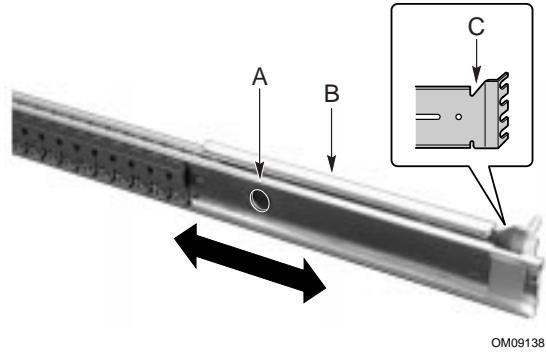


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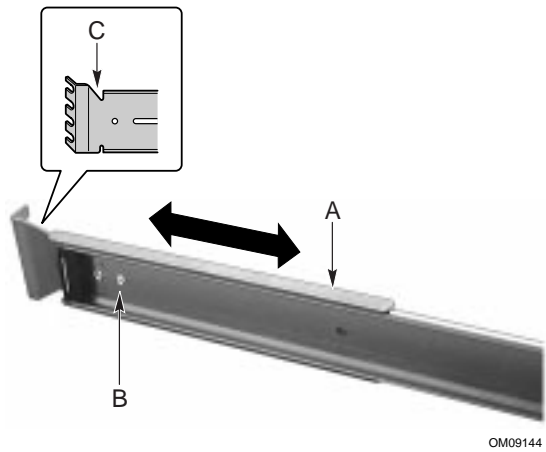
continued

- Attach the side rail system's outer pieces (total of two) to the rail brackets you installed in step six.

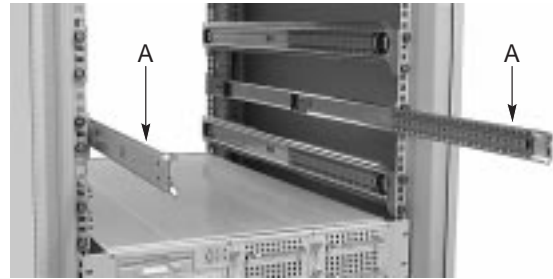
To attach the front part of an outer piece to a rail bracket, you must reveal the access hole (A) by sliding the innermost piece toward the back. Once you see the access hole, align it with the slot in the rail bracket such that you can secure the bolt. Do not tighten the nut and bolt until you have aligned the rear portion of the rail system (see the next step).



- To attach the rear part of the rail system to the rear rail bracket (A), slide the rail system within the rail brackets such that you can place a bolt through the rail's hole (B) and into the rail bracket's slot. Loosely tighten the bolt and nut. You should be able to slide the entire rail system back and forth in the rail brackets. When you have centered the rails in the bracket, tighten the fastening bolts and nuts.

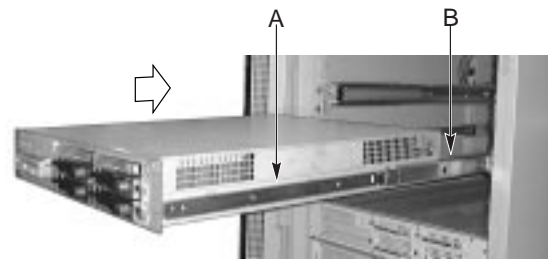


9. Extend the right and left rails (A) so they fully extend in front of the cabinet rack. The rail system is now ready to receive the chassis.



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10. Lift the chassis with its front facing you and carefully guide the inner rail (A), which is mounted to the chassis system, into the outer pieces (B) you attached in previous steps. Gently move the system evenly towards the rear of the cabinet. Be sure to depress the brass colored finger tabs located in the center of each inner side rail piece as you slide the chassis back.



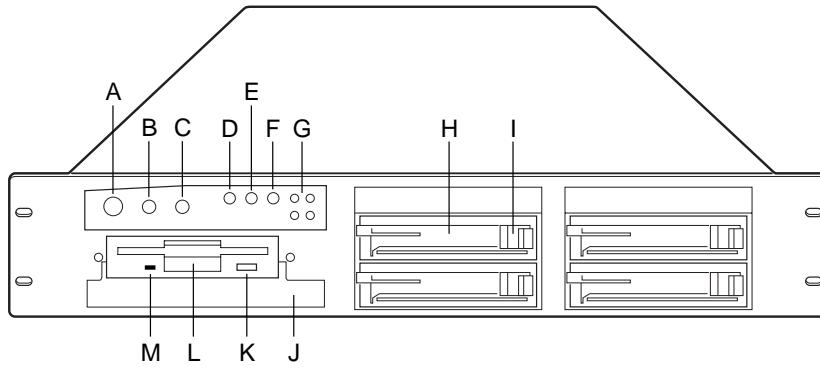
OM09143

11. With the chassis fully inserted into the cabinet rack, you can easily access both the front and rear of the system. The photo to the right shows the system from the rear fully inserted into the cabinet.



## Technical Reference

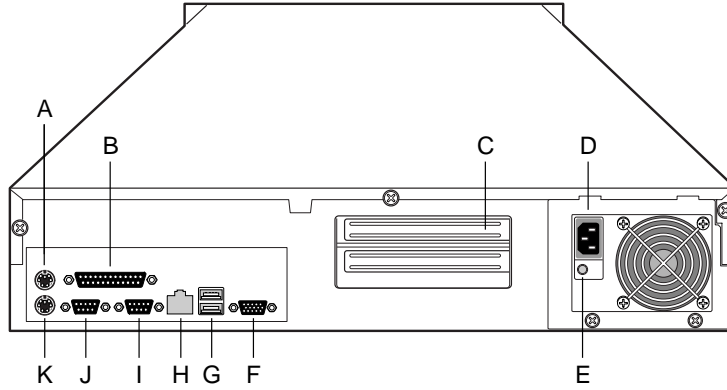
### Front Panel Controls and Indicators



OM09320

- A. Power button
- B. Sleep button
- C. Reset button
- D. Power LED
- E. NIC activity LED
- F. Fail LED
- G. Disk activity/fail LEDs
- H. Hard drive bay
- I. Hard drive eject lever
- J. CDROM drive bay
- K. Diskette eject button
- L. Diskette drive
- M. Diskette activity LED

## Back Panel Connectors



OM09321

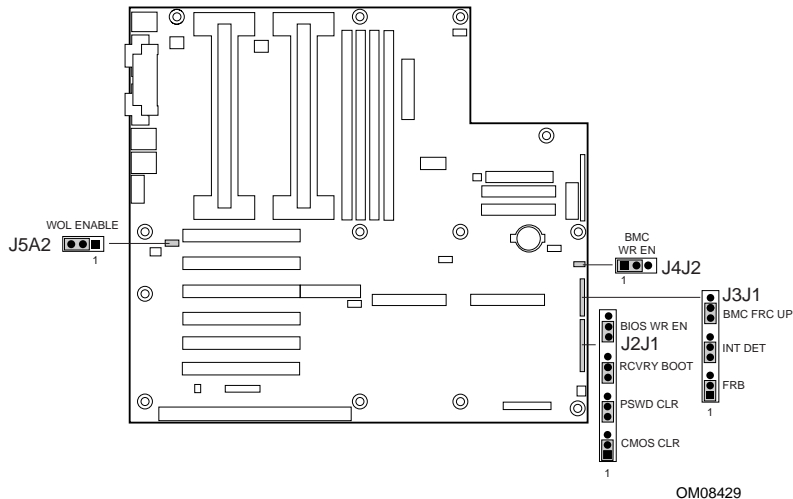
- A. Mouse connector
- B. Parallel port connector
- C. PCI expansion slots
- D. AC input power connector
- E. Power supply fault indicator
- F. Video connector
- G. USB connectors
- H. RJ45 network connector
- I. Serial port connector (Com 1)
- J. Serial port connector (Com 2)
- K. Keyboard connector

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.



## Jumpers

Nine 3-pin jumper blocks that control various configuration options, as shown in the figure below. Refer to the *ISP2150 2U Rack Server Platform 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 <sup>†</sup> . 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.
		<b>2-3, Enabled</b>	Enables Wake On LAN.
J4J2	BMC WR EN	<b>1-2, Protect</b>	BMC boot block is write protected.
		2-3, Erase/Program	BMC boot block is erasable and programmable.
J3J1	FRB	<b>1-2, Enable</b>	FRB operation is enabled (system boots from processor 1 if processor 0 does not respond).
		2-3, Disable	FRB is disabled.
J3J1	INT DET	<b>5-6, Enable</b>	Switch installed on chassis indicates when cover has been removed.
		6-7, Disable	Chassis intrusion switch is bypassed.
J3J1	BMC FRC UP	<b>9-10, Normal</b>	System boots normally.
		10-11, Program	System attempts to update BMC firmware.
J2J1	CMOS CLR	<b>1-2, Protect</b>	Preserves the contents of NVRAM.
		2-3, Erase	Replaces the contents of NVRAM with the manufacturing default settings.

continued

Jumper Block	Jumper Name	Pins (default in bold)	What it does at system reset
J2J1	PSWD CLR	<b>5-6, Protect</b>	Maintains the current system password.
		6-7, Erase	Clears the password.
J2J1	RCVRY BOOT	<b>9-10, Normal</b>	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	<b>13-14, Protect</b>	BIOS boot block is write-protected.
		14-15, Erase/Program	BIOS boot block is erasable and programmable.



#### CAUTION

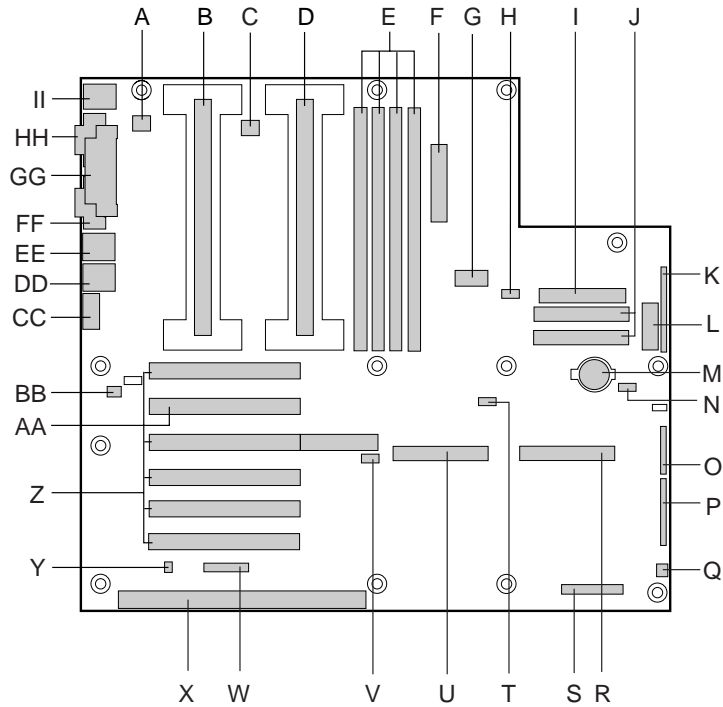
*Moving either of the boot block write protect jumpers (J4J2-BMC WR EN or J2J1- BIOS WR EN) may cause irrevocable damage to the server board. Only move these jumpers when directed to by your customer service representative.*



#### 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



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

## Getting Help

### World Wide Web

Support for this product may be found at the following URL:

この製品のサポートについては、以下の URL を参照してください。

可以在下面的 **URL** 中找到本产品的支持信息:

다음 URL에서 제품 지원 정보를 얻을 수도 있습니다.

Une assistance pour ce produit est disponible à l'adresse suivante:

Unterstützung zu diesem Produkt erhalten Sie unter der folgenden Webadresse:

È possibile ottenere supporto per questo prodotto al seguente indirizzo:

Podrá encontrar asistencia para este producto en la siguiente dirección URL:

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<http://www.intel.com/isp/>