

HP Documentation

HP 9000 S-Class Server Installation Guide
HP 9000 X-Class Server Installation Guide
HP Diagnostics Guide: S-Class, X-Class, and V-Class Servers (A3725-96009)

System Shutdown

Perform an orderly shutdown of the HP-UX operating system. Reference the Owner's Guide for detailed instructions.

Power Down

Turn off the system power after the console indicates that the system has been halted. Disconnect the system power cable and the power cord of any peripheral devices from the ac wall outlets.

Personal Grounding

To avoid electrostatic damage, ground yourself to the server by wearing an ESD wrist strap connected to a metal portion of the chassis. Set up a grounded work area by using a static dissipating mat grounded to the server chassis. Position the mat on top of the server.

Open the Unit

If the system only has one memory board (EMB) pair, then only the left side skin must be removed; otherwise, both the left and right side skins must be removed. The EMB pair is the memory board carriers that hold the ECC memory cards. The left side skin is on the side with the LCD and ON/OFF Key. The right side skin is opposite the left side skin. Remove the side skins by gently pulling the grill forward. Each skin has four retaining pins that must be unsnapped before the skin can be removed.

Remove EMI Panel (s)

The memory carriers (EMBs) and processor cards are shielded by metal covers located on the left and right sides of the system. On the left side, the PCI expansion chassis EMI panel is above the memory/processor EMI panel. On the right side, the PCI expansion chassis EMI panel is below the memory/processor EMI panel. For each panel, remove the four screws using a phillips screwdriver. Using the handle, pull the EMI panel away from the chassis.

Remove the Memory Carrier(s)

The memory carriers (EMBs) have specific slots. The EMBs must be installed as pairs. There are four EMB slots on the left side and four EMB slots on the right side. The EMB slots on the left side are labeled "MB0L", "MB1L", "MB4L", and "MB5L" (see the label etched in the sheet metal next to the card's power source). Notice the EMB slots are in the middle of the system. There are four processor slots labeled "PB0L", "PB1L", "PB4L", and "PB5L" above the memory slots, and there are four processor slots labeled "PB2L", "PB3L", "PB6L", and "PB7L" below the memory slots. Be especially careful when removing and installing memory carriers. Do not install a memory carrier in a processor slot. The connectors on the system backplane are different. **If a memory carrier is installed in a processor slot, you will mash the pins on the backplane connector!** Before removing a memory carrier from the system, unplug the 48V power cord from the main 48V bus bar by pressing on the edges of the white plug. Remove the memory carrier by pulling out on the white ejector handles. Slide the memory carrier out of the system and make a note of the orientation and location.

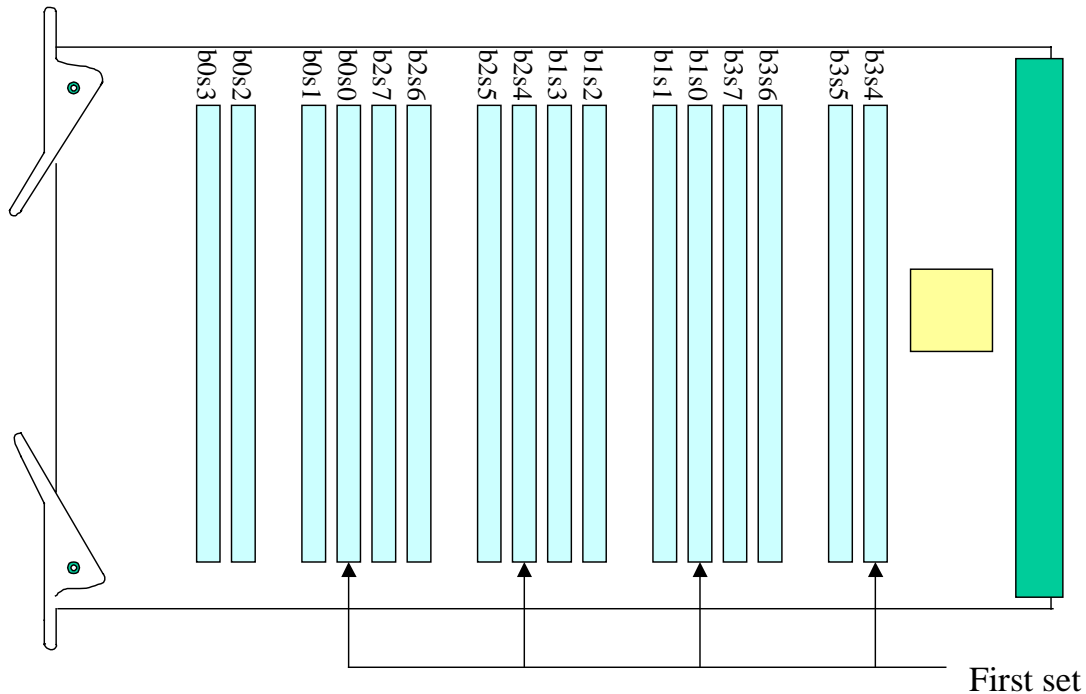
Installing the Memory Carrier(s)

The memory carriers (EMBs) must be installed in pairs. The system supports 1, 2, or 4 pairs. The pairs must be installed in specific slots. If only one pair is installed, then it must be installed in "MB0L" and "MB1L". If two pairs are installed, then the second pair must be installed in "MB6R" and "MB7R". If four pairs are installed, then third and fourth pairs must be installed in "MB4L", "MB5L", "MB2R", and "MB3R". Notice the cards installed in slots "MB0L", "MB1L", "MB2R", and "MB3R" are upside down (e.g. the components on the card are located below the physical card).

Organizing Memory Cards (DIMMs) for each Memory Carrier

Each memory carrier (EMB) contains 16 memory card (EPMB) slots. The memory cards or EPMBs will be called "DIMMs". The slots are grouped into 4 banks of 4 memory cards (DIMMs) each. The memory carrier indicates the bank and slot number (see figure). Note the silkscreen on the card does not show the 'b'. For example, bank 0 slot 3 is shown as "b0s3" but on the physical card it is "0s3".

Memory DIMM Slot Locations



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The 1 GB set consists of eight DIMMs. The set is divided between a memory carrier pair. Four DIMMs are installed into each of the memory carriers using the following installation sequence:

Installation Order	DIMM Slots
1st Set	Bank 0 Slot 0 "b0s0" Bank 2 Slot 4 "b2s4" Bank 1 Slot 0 "b1s0" Bank 3 Slot 4 "b3s4"
2nd Set	Bank 0 Slot 1 "b0s1" Bank 2 Slot 5 "b2s5" Bank 1 Slot 1 "b1s1" Bank 3 Slot 5 "b3s5"
3rd Set	Bank 0 Slot 2 "b0s2" Bank 2 Slot 6 "b2s6" Bank 1 Slot 2 "b1s2" Bank 3 Slot 6 "b3s6"
4th Set	Bank 0 Slot 3 "b0s3" Bank 2 Slot 7 "b2s7" Bank 1 Slot 3 "b1s3" Bank 3 Slot 7 "b3s7"

If more than one memory carrier pair is installed in the system, all of the memory carriers must have exactly the same number and size of DIMMs installed. For example, if your system has 4 memory carriers (e.g. 2 pairs) then you cannot add 1 GB to your system. You must add 2 GB to this configuration (1 GB for each pair).

Installing DIMMs into a Memory Carrier

1. Before the DIMMs can be installed in the memory carrier, the DC to DC power converter assembly must be removed. Unscrew the three phillips screws from the DC to DC power converter assembly. Gently pull up on the assembly. Set the assembly on the ESD mat.
2. Install the sets (4 DIMMs) using the DIMM sequence guidelines (see table above). For example, if this is the 2nd set (e.g. there are already four DIMMs in the carrier) then install the DIMMs in "0s1", "2s5", "1s1", and "3s5". Notice these slots are not consecutive slots. After you have located the correct slots, open the white ejector lever on each DIMM connector (press the ejector lever into the down position). In order to install the DIMM correctly, the DIMM must be oriented such that the two notches at the bottom of the DIMM line up with the raised section of the DIMM connector. There are two possible ways to position the DIMM in the connector but only one of the ways will allow you to seat the DIMM. After you get the DIMM position correctly, **firmly and evenly** press or seat the DIMM into the connector. **Do not "rocker" the DIMM into the connector!** This may damage the DIMM or the connector. When the DIMM is correctly seated, it will "snap" into the connector. At this point, press the ejector levers into the up position.

Verify DIMMs are Seated Correctly

After all the DIMMs have been installed, check to ensure that they are seated evenly and that all the DIMMs are the same height. An incorrectly seated DIMM may stick out above the other.

Install Memory Carriers

After all the memory carriers have been configured "identically", you are ready to put the memory carriers back into their respective slots. Since they are all configured identically, it does not matter which memory carrier goes in a specific slot. But if less than four pairs are installed, the memory carrier pairs must be installed in specific slots. If only one pair is installed, it must go in slots "MB0L" and "MB1L". If two pairs are installed, the second pair must go in slots "MB6R" and "MB7R". After the memory carrier is firmly pushed into the system backplane, plug the 48V power cord into its receptacle.

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System Reassembly

Attach the left lower EMI panel with four screws. If the right side was removed, then attach the right upper EMI panel with four screws. Install the skins by inserting the retaining pins in the receptacles, and push forward to snap in place. Reconnect the power cords.

Verify the New System Memory

Power up the system. The system memory is automatically configured to the system by the software. Verify that the system displays the expected new system memory. If there is a problem with the installed memory, then the test console when display warning messages and indicate which DIMMs have been deconfigured. If a DIMM is deconfigured, the memory system will automatically deconfigure additional DIMMs to make sure that the memory carriers have the same DIMM configuration.

If the system has deconfigured DIMMs, then the possible error sources are the DIMMs are not seated properly, the DIMMs are not sequenced correctly, the DIMMs are not paired, the incorrect value matching of paired DIMMs, or all the memory carriers are not configured identically. If errors exist, then repeat the installation procedure but take special care to seat the DIMMs properly and in the correct pair sizes and sequence.