DEC 3000 Model 300 Series AXP

digital   **Adding Memory**

Introduction

Your DEC 3000 Model 300 series AXP system is configured at the factory with 32 to 256 megabytes of memory, depending on the configuration you ordered.
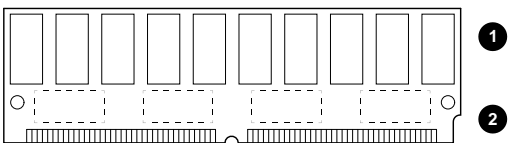
Memory can be ordered as:

a. A pair of 8-megabyte modules, part number MS16-BA

b. A pair of 32-megabyte modules, part number MS16-DA

A memory module is also known as a single inline memory module (SIMM).

Adding Memory Using 8-Megabyte SIMMs

To increase your system's memory capacity from a minimum of 32 megabytes to 48 or 64 megabytes, add two or four 8-megabyte SIMMs. The SIMMs are identified by counting ten chips on the top row ❶ and four chips on the bottom row ❷; 14 chips on one side of the module but only 10 chips on the other side of the module. Note the 8 megabyte chips on the top row are smaller than the 32-megabyte chips (shown on next panel).
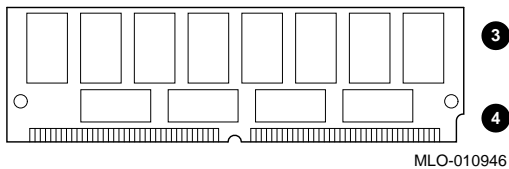

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Note: This card provides you with the necessary installation instructions for adding memory to your system.

Introduction (Cont.)

Adding Memory Using 32-Megabyte SIMMs

To increase your system's memory capacity from a minimum of 64 megabytes to 128 or 256 megabytes, add two or six 32-megabyte SIMMs. The SIMMs are identified by counting eight chips on top row ❸ and four chips on the bottom row ❹ ; 12 chips on each side of the module. Note the 32-megabyte chips on the top row are larger than the chips on the 8-megabyte module.

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Important:

Eight and 32-megabyte modules may be mixed, but specific configuration rules apply. See panel 5 for instructions.

Two Methods of Adding Memory

There are two methods for adding memory to your system.

a. You can add the memory yourself.

b. You can contract with your Digital service representative to add the memory.

If you choose to add the memory yourself, allow about 15 minutes from start to finish.

Refer to the *DEC 3000 Model 300 Series AXP Hardware Reference Guide,* part number EK-PELCN-OG, for more information.

1. Preparing Your System

a. Back up your system files.

b. Shut down all software following the instructions in your software documentation.

c. At the console prompt (>>>), enter this command:
```
>>> show mem
```

d. Record the number of megabytes. (See the following sample display line.)

```
DEC 3000 - M300 Memory: 32 Mbytes
```

e. At the console prompt (>>>), enter this command:
```
>>> set auto_action halt
```

f. Turn off (O) the monitor and all peripheral devices (printers, modems, and expansion boxes).
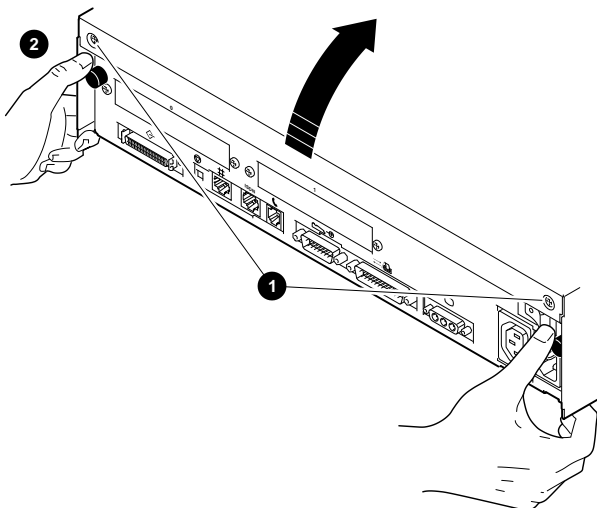
g. Turn off (O) the system unit.

WARNING: After you turn off the system unit and before you unplug the power cord, wait about one minute before opening the system unit. This allows time for the power supply capacitors to safely discharge.

Before opening the system unit:

• Disconnect the monitor and system power cords from the back of the system unit.

• Disconnect the monitor video cable, mouse/keyboard cable, and any network cables.

• Remove the monitor from the top of the system unit so that you can remove the system unit cover. Two people are required to move the monitor.

2. Opening the System Unit

a. Remove the two Phillips screws **❶** on the right and left back corners of the system unit cover.

b. Place the system unit so that the back of the unit extends over the edge of your table or desk.

c. Place your thumbs **❷** on top of the two black rubber caps on the back of the system unit, and at the same time, place your fingers under the cover's bottom edge. Press down with your thumbs, and at the same time, pull up with your fingers to raise the cover.

d. Pivot the cover on the tabs that run along the system unit's front edge.

e. Pull the system unit cover up and away until it releases from the tabs.
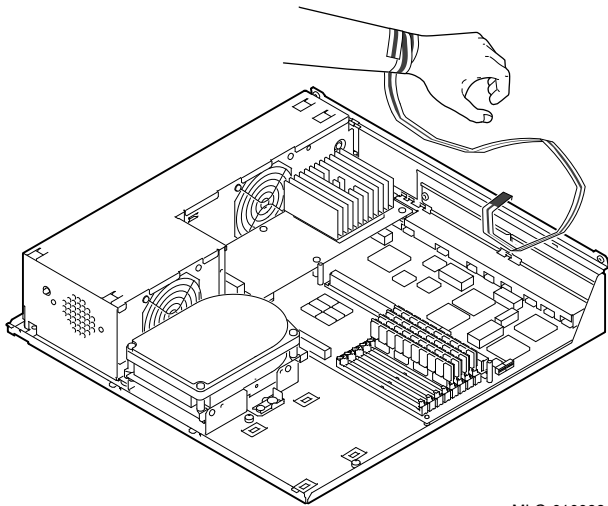
f. Place the cover aside.

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3. Attaching an Antistatic Wrist Strap

CAUTION: To avoid static discharge, do not touch anything inside the system unit until you put on the antistatic wrist strap that was shipped with your system.

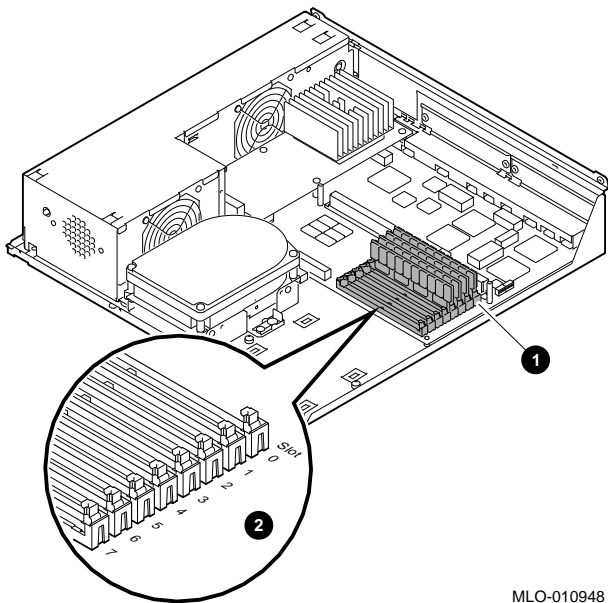Follow the instructions on the envelope that contains the wrist strap. Store the strap after using it.

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4. Locating the SIMMs

Important: When adding SIMMs, you must remember to add the modules so that they occupy consecutive connector positions.

SIMMs are added to the system module starting at slot 0 **❶**. Note the number and position of each slot in the detailed section of the illustration **❷**.

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Strict configuration rules must be followed when you mix 8- and 32-megabyte SIMMs in the same system. See panel 5 for instructions.
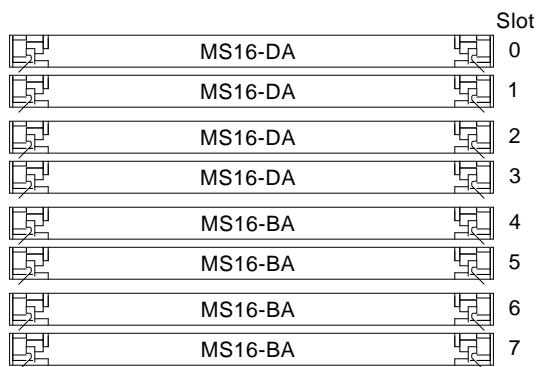
Note: If you remove a SIMM, you must comply with the configuration rules. See your *DEC 3000 Model 300 Series AXP Hardware Reference Guide,* part number EK-PELCN-OG, for removal instructions.

5. Mixing 8- and 32-Megabyte SIMMs

Configuration Rules

a. When mixing 8- and 32-megabyte SIMMs, always add the 32-megabyte SIMMs first.

b. Add 32-megabyte SIMMs in pairs, 64 to 256 megabytes in total.

c. Add 8-megabyte SIMMs in pairs, 16 to 64 megabytes in total.

d. Always add SIMMs in pairs, no individual modules.

e. Add SIMMs starting at slot 0.

f. No empty slots between pairs of SIMMs.

Example: For a system that requires 160 megabytes of memory, use the following:

Slot

MS16-DA	0
MS16-DA	1
MS16-DA	2
MS16-DA	3
MS16-BA	4
MS16-BA	5
MS16-BA	6
MS16-BA	7

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Add one 32-megabyte SIMM to slots 0, 1, 2 and 3; a total of 128 megabytes of memory in these slots.

Add one 8-megabyte SIMM to slots 4, 5, 6, and 7; a total of 32 megabytes of memory in these slots.
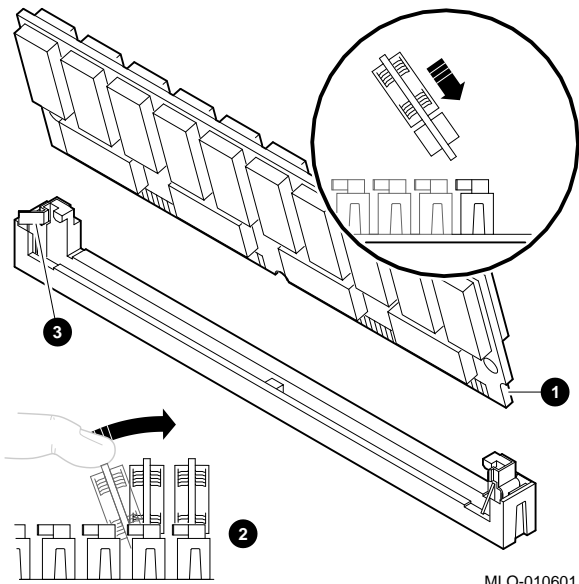
Total system memory = 160 megabytes.

6. Adding New SIMMs

Always handle SIMMs by their edges to avoid electrostatic damage and contamination of the module pins and connectors. Note that it may be necessary for you to remove a device before you add the last SIMM.

To add a new SIMM:

a.   Hold the SIMM *at an angle,* notch end ❶ away from the power supply, and the module pins facing down toward the slot on the system module.

b.   Firmly push the module *at an angle* into the connector, then stand the module upright ❷.

c.   Make sure that the SIMM snaps into the metal retainers at each end of the connector ❸.

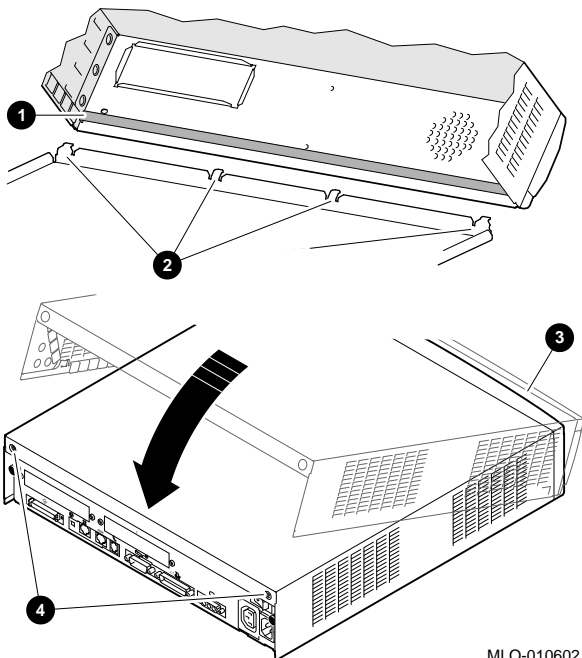d.   Continue adding modules, filling available connector slots in succession.

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7. Replacing the System Unit Cover

Firmly seat all SIMMs. If a SIMM does not make proper contact with the system module, your system cannot detect it.

To replace the cover, follow these steps:

a. Position the cover so that the lip on the front inside edge ❶ fits over the four tabs ❷ along the front edge of the system unit.

b. Maintain a slight pressure on the front of the cover ❸ as you lower it. Make sure the sides of the cover fit over the outside of the bottom enclosure.

c. Press down firmly on the edges of the cover.

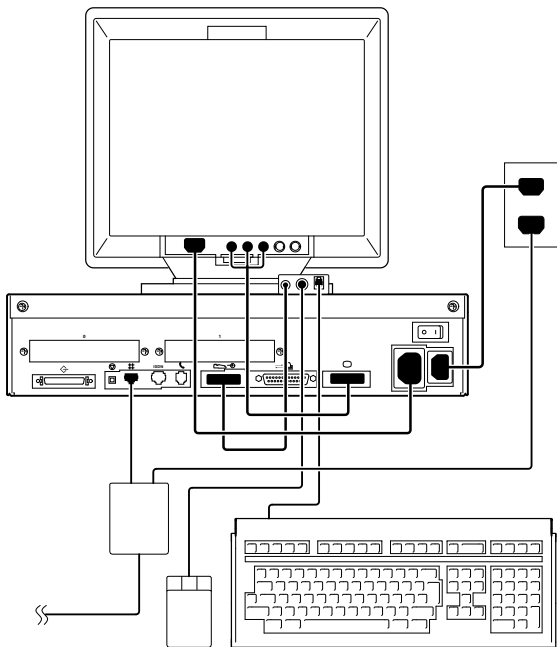d. Replace the two screws that hold the system unit cover in place ❹.

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8. Reconnecting Your System

Return your monitor to its former position. Connect the following components:

a. Monitor and system power cords to the system unit.

b. Monitor video and mouse/keyboard cables.

c. Network cable and optional adapter.

d. System power cord to a grounded outlet.

Turn on (|) the following components:

a. Peripheral devices, such as a printer, modem, or expansion box.

b. System unit and monitor.

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9. Restarting Your System

To verify that the installation of additional memory was successful, enter the following command:

```
>>> show mem
```

Status information identifying the bank number, memory size per bank, and the starting address of each bank is displayed. In the following example, 32-megabyte modules occupy slots 0, 1, 2 and 3; 8-megabyte modules occupy slots 4, 5, 6 and 7 for a total of 160 megabytes of memory.

```
DEC 3000 - M300 Memory: 160 Mbytes

Bank #    Memory Size      Start_Address

  0        032 Mbytes       0x00000000
  1        032 Mbytes       0x02000000
  2        032 Mbytes       0x04000000
  3        032 Mbytes       0x06000000
  4        008 Mbytes       0x08000000
  5        008 Mbytes       0x08800000
  6        008 Mbytes       0x09000000
  7        008 Mbytes       0x09800000
```

At the console prompt (>>>), enter the following command:

```
>>> set auto_action boot
```

If your system has OpenVMS AXP or DEC OSF/1 AXP operating system software already installed, enter B at the console prompt (>>>) and press the Return key. Your system automatically starts. If no operating system software is installed, refer to your software documentation.

For a listing of all console commands (with examples), refer to the *DEC 3000 Model 300 Series AXP Reference Guide,* part number EK-PELCN-OG.