



# **AlphaServer 2100**

---

## **MS45x Memory Module Installation**

EK-MS45X-IN. B01

November 1994

---

This document illustrates how to install the MS450-BA/CA and MS451-CA memory modules in an AlphaServer 2100, 2100 RM, or 2100 CAB system.

---

April 1994

Revised, November 1994

---

Digital Equipment Corporation makes no representations that the use of its products in the manner described in this publication will not infringe on existing or future patent rights, nor do the descriptions contained in this publication imply the granting of licenses to make, use, or sell equipment or software in accordance with the description.

Copyright © Digital Equipment Corporation, 1994. All Rights Reserved.

The following are trademarks of Digital Equipment Corporation: AlphaServer, Digital, and the DIGITAL logo.

All other trademarks and registered trademarks are the property of their respective holders.

S2741

## MS45x Memory Module

### Description

---

Memory Type	DRAM
Maximum modules per system	4
Minimum modules per system	1
Operating environment	Class B
Error detection and correction	EDC logic

---

The AlphaServer 2100 system supports the following memory module variants:

---

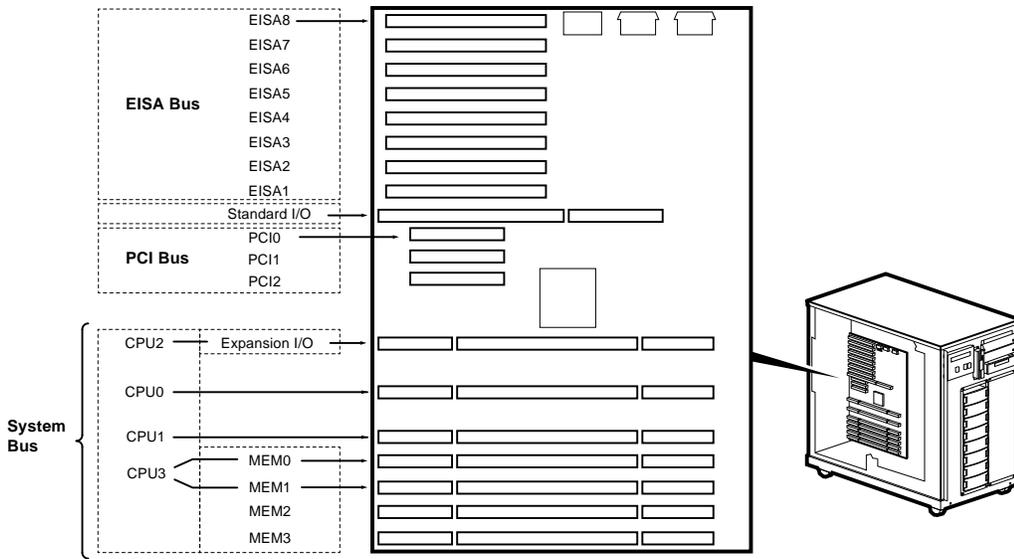
<b>Option</b>	<b>Order Number</b>	<b>DRAM Type</b>	<b>Number of Banks</b>	<b>Capacity</b>
MS450-BA	B2021-BA	1M × 4	2	64 MB
MS450-CA	B2021-CA	1M × 4	4	128 MB
MS451-CA	B2022-CA	4M × 4	4	512 MB

---

### Configuration Information

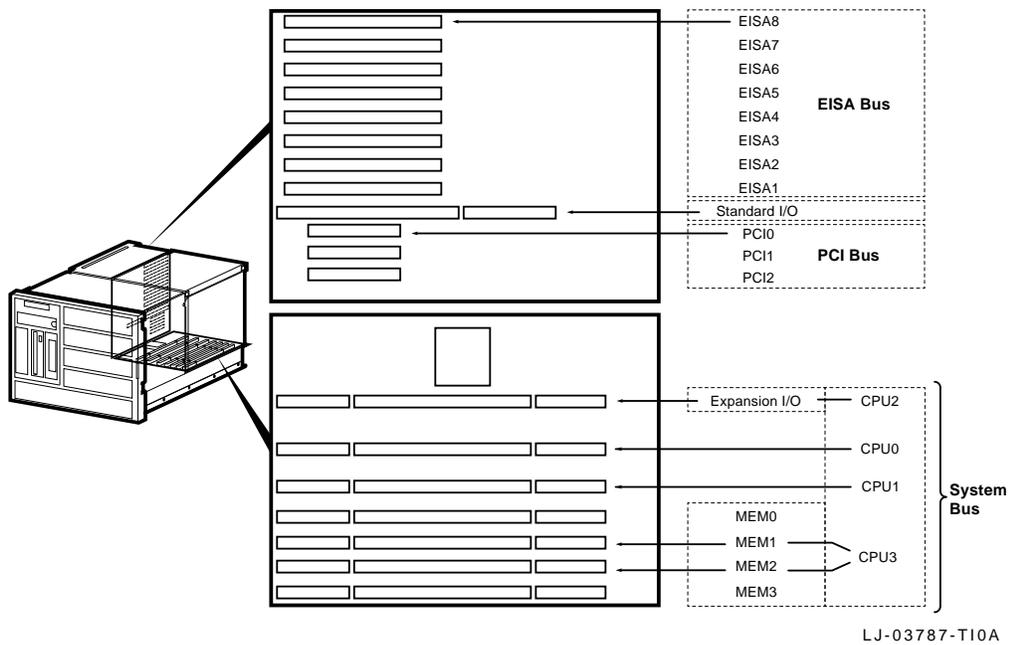
Up to four memory modules can be installed in the bottom four system bus slots in a AlphaServer 2100 system. Two of the slots however, have a dual function. They can be used for memory or to house a CPU module in a system with three or four CPUs. A system that contains a CPU module in the MEM1 slot supports only two memory modules, because CPU modules occupy two memory slots. Figures 1 and 2 show the various configurations of the system bus.

**Figure 1: System Bus Configurations AlphaServer 2100**



MA045693

**Figure 2: System Bus Configurations AlphaServer 2100 RM and 2100 CAB**



**Note**

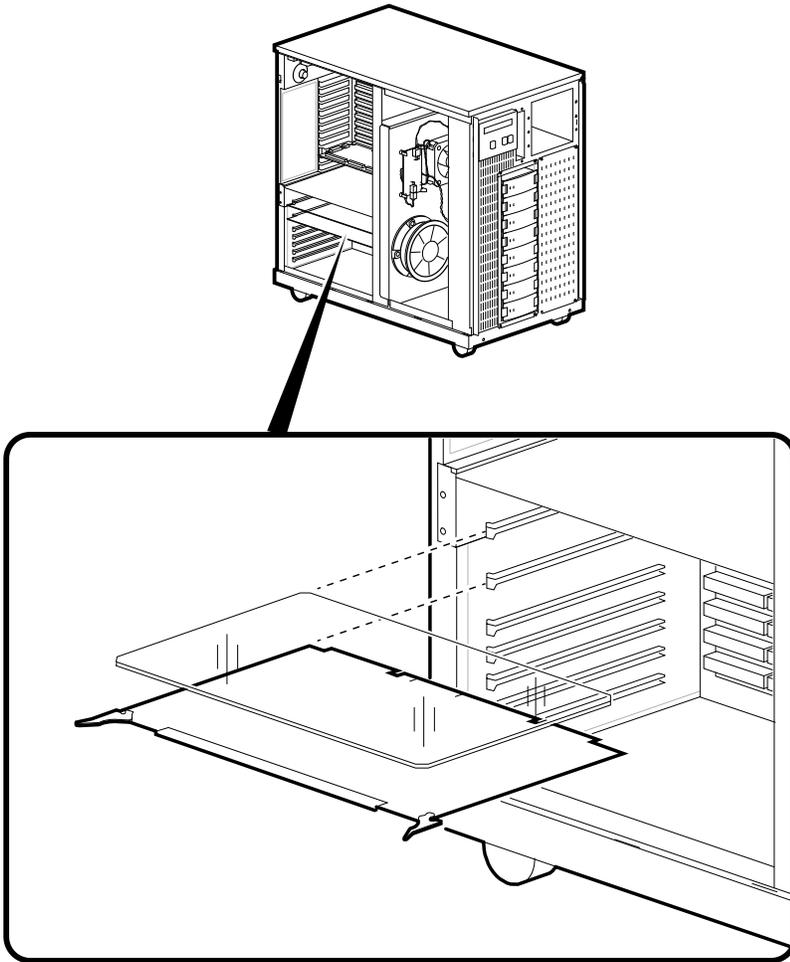
Install memory modules in an AlphaServer 2100 RM or 2100 CAB system with the components facing toward the right side of the system enclosure.

## MS45x Memory Module

### Assuring Proper Airflow

System bus slots that are not populated with a printed circuit board (PCB) must contain a plexiglass module to maintain proper airflow in the system cabinet. Figure 3 shows the installation of a plexiglass module (PN 74-48265-01).

**Figure 3: Installing a Plexiglass Module**



MA042293B

## Installation

---

### Caution

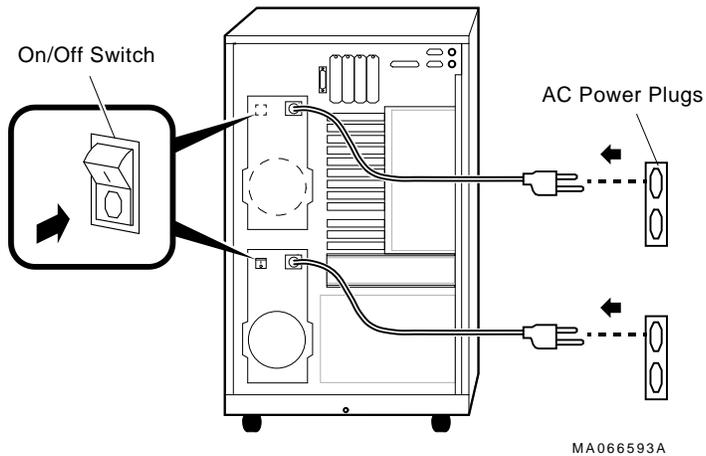
---

The MS45x module is static sensitive. Use an antistatic mat and wrist strap when handling the module.

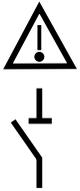
---

Before installing the memory module, shut down the system power as illustrated in Figure 4.

**Figure 4: System Power Shutdown**



## MS45x Memory Module



**Caution:** Before opening or removing system panels:

1. Perform an orderly shutdown of the operating system.
2. Set the DC power switch on the operator control panel (OCP) to Off (O).
3. Shut off the AC power by setting the AC On/Off switch on each power supply to Off (O). (Note that some systems do not have an AC On/Off switch.)
4. Unplug the AC power cord for each power supply.

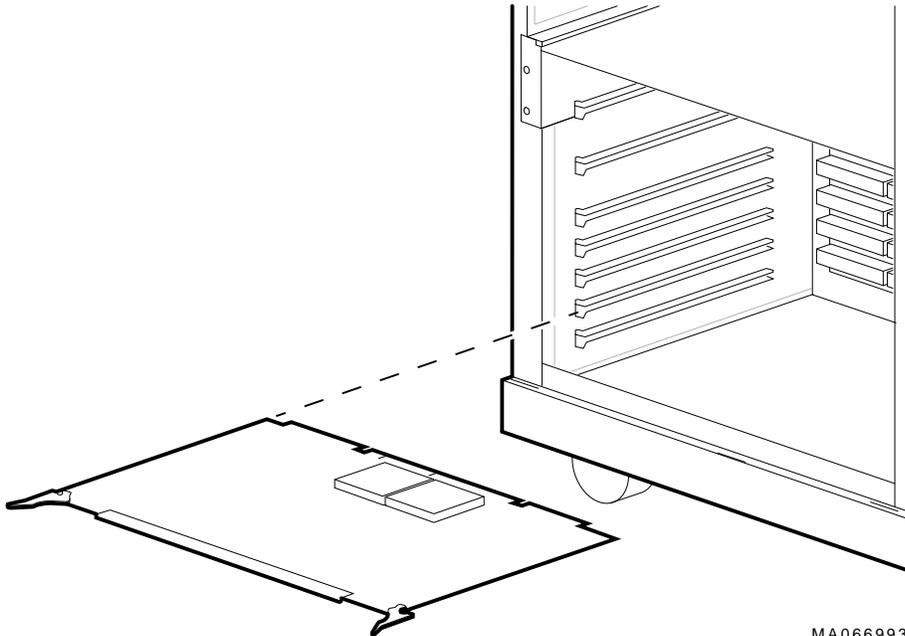


**Warning:** CPU and memory modules have parts that operate at high temperatures. Wait 2 minutes after power is removed before handling these modules

## MS45x Memory Module

Figure 5 shows a memory module being installed in the MEM2 slot of the AlphaServer 2100 system. When you install a memory module in an AlphaServer 2100 RM or 2100 CAB system, place the module with the components facing toward the right side of the system enclosure.

**Figure 5: Installing a Memory Module**



MA066993