

HP Documentation

HP 3000 Model 9x9KS Owner's Guide (A2375-90003)
HP 3000 Model 9x9KS System Upgrade (A2375-90010)
HP 3000/9x9KS and HP9000/Kxx0 System Memory Upgrade Guide (A2375-90009)

Determine System Memory Size

Reboot the system, at the Boot Console Interface prompt (PDC>), type *ma* to get the main menu. Then type *in* to get the information menu. Then type *me* to get the memory information. The memory status table provides the size of the cards installed in each slot and the system memory size.

Determine the PDC Revision

At the Boot Console Interface prompt (PDC>), type *in* to get the information menu. Then type *fv* to get the current processor dependent code (PDC) revision number.

System Shutdown

Perform an orderly shutdown of the MPE 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.

Open the Unit

Remove the front bezel by gently pulling the grill forward and lifting up while pressing up on the locking tabs located on the bottom corners.

Remove Metal Cover (Memory Bulkhead)

The memory carriers are shielded by a metal cover located on the left side of the front of the system. Remove the six captive screws using a Torx-10 driver.

Remove the Memory Carrier(s)

Attach the ESD Wrist Strap using the instructions on the 3M package. Gently pull out on the white memory carrier ring to unseat the carrier from the system backplane. Pull the carrier(s) out of the system, and place the carrier(s) on an antistatic mat. The system will have one or two carriers. The carrier on the bottom is carrier 0 (it must be present). The carrier on top is carrier 1.

Installation Procedure for Single Carrier Systems

1. Remove the memory sets (DIMMs) currently installed in the carrier. Push down the ejector handle(s) to eject the DIMMs.
2. Organize all the DIMMs into the following four groups: 512MB sets, 256MB sets, 128MB & 64MB sets, and 32MB sets.
3. For each group, partition the sets (e.g. two DIMMs) into as many like pairs (e.g. four DIMMs) as possible.
4. Install the pairs of sets (4 DIMMs) using the following guidelines. Start with the largest size cards first and work down to the smallest size (e.g. 256MB, 128MB, 64/32 MB, 16MB). Install the quads in the lowest numbered available slots to the highest numbered slots (e.g. 0A & 0B, 1A & 1B, 2A & 2B, 3A & 3B, ...).
5. Install the remaining sets (2 DIMMs) using the same guidelines. Start with the largest size cards first and work down to the smallest size. Install the sets in the lowest numbered available slots to the highest numbered slots.

Install DIMM into a Connector on the Carrier

Open the white ejector lever (press the ejector lever into the down position). Some systems will have a black ejector lever on the other side of the connector. If the black lever is present, press it into the down position. In order to install the DIMM correctly, the notched end (e.g. the side of the card where the card does **not** go straight up from the gold fingers) must be oriented toward the white ejector lever. Insert the DIMM into the connector. Line up the middle of the DIMM (see the semicircle cutout in the middle of the gold fingers) with the middle section of the connector. With the DIMM positioned correctly, **firmly and evenly** press or seat the card 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 lever(s) into the up position.

Installation Procedure for Dual Carrier Systems

1. Remove the memory sets (DIMMs) currently installed in the carriers. Push down the ejector handle(s) to eject the DIMMs.
2. Organize all the DIMMs into the following four groups: 512MB sets, 256MB sets, 128MB & 64MB sets, and 32MB sets.
3. For each group, partition the sets (e.g. two DIMMs) into as many like pairs (e.g. four DIMMs) as possible.
4. Install the pairs of sets (4 DIMMs) using the following guidelines. Start with the largest size cards first and work down to the smallest size (e.g. 256MB, 128MB, 64/32 MB, 16MB). Alternate installing the quads between memory carriers (e.g. install the first quad in carrier 0, the second quad in carrier 1, the third quad in carrier 0, ...). Install the quads in the lowest numbered available slots to the highest numbered slots (e.g. 0A & 0B, 1A & 1B, 2A & 2B, ...). Within a mixed group of 128MB and 64MB sets, install the 128MB sets first.
5. Install the remaining sets (2 DIMMs) using the following guidelines. Start with the largest size cards first and work down to the smallest size. Install the set in the carrier with the most available slots. If the same number of slots are available in both carriers then alternate installing sets between carriers. Install the sets in the lowest numbered available slots to the highest numbered slots.

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.

System Reassembly

Place the memory carriers back into their respective slots. Take care to align the carrier with the top and bottom metal rails. Gently push the carrier into the mating connector on the system backplane. Place the metal cover back in place and secure it with the six screws. Place the front bezel back on the front of the system unit. Reconnect the power cords.

Verify the New System Memory

Power up the peripherals first, then power up the system. The system memory is automatically configured to the system by the software. If there is a problem with the installed memory, then the boot process could be halted, or the system could log warning messages and display hex codes on the LCD on the front of the system and at the bottom of the console. See the memory error codes on the next page.

Verify or diagnose the new system memory. Reboot the system and stop the system at the Boot Console Interface prompt (PDC>). Type *ma* to get the main menu. Then type *in* to get the information menu. Then type *me* to get the memory information. The memory status table provides the size of the cards installed in each slot and the system memory size.

If the system has errors or the memory status table does not reflect the expected configuration then the possible error sources are the DIMMs are not seated properly, the DIMMs are not sequenced correctly, the DIMMs are not paired, or the incorrect value matching of paired DIMMs. If errors exist or the table does not reflect the expected configuration, then repeat the installation procedure but take special care to seat the DIMMs properly and in the correct pair sizes and sequence.

Memory Error Codes and Warning Messages

If the memory is installed incorrectly or faulty then certain memory error codes may appear on the front panel LCD and the console display. The Error Code Table is shown on the next page.

Newport Digital

Memory Error Codes

<u>Code</u>	<u>Description</u>	<u>Possible Cause</u>
7301	DIMM 0 bytes are not equal	DIMM pair not same size
7302	DIMM 1 bytes are not equal	DIMM pair not same size
7303	DIMM 0 data <> DIMM 1 data	DIMM pair not same size
7304	Unknown sizing compare fault	DIMM pair not same size
7305	Multi-bit error occurred during size	Failed DIMM pair
7306	Address test failed on bank	Failed DIMM pair
7307	ECC test failed on bank	Failed DIMM pair
7308	Single bit memory error caused HPMC	Failed DIMM pair
7401	No memory DIMMs installed	Poor seating of DIMM pair
7500	No RAM found	No DIMM pairs installed or they are not seated
7501	Not enough good memory to run OS	Incorrect memory configuration or insufficient amount
7502	Not enough good memory to run Boot Console Handler	Incorrect memory configuration or insufficient amount
7702	Memory not tested, initialized only	Fast Boot is Enabled
7703	DIMM loading warning	-
7704	RAM bus warning	Incorrect memory configuration
7705	Good memory required to run OS is greater than memory size	Incorrect memory configuration or insufficient amount
7FX Y	X = Extender Card number Y = DIMM pair number	

Actions

For failure codes 7301-7308, the front panel LCD displays two codes. The first code displayed is the fault code, and the second code displayed identifies the memory carrier (X) and the DIMM (Y) pair (7FX Y).

The actions to take are as follows:

- [1] Verify memory configuration using PDC me command
- [2] Verify equal DIMM pair sizes
- [3] Verify proper DIMM sequence
- [4] Reseat DIMMs
- [5] Call Newport Digital if the problem persists.

For error 7702, the action to take is to turn FastBoot off. This will allow the system to test the memory on boot up.