

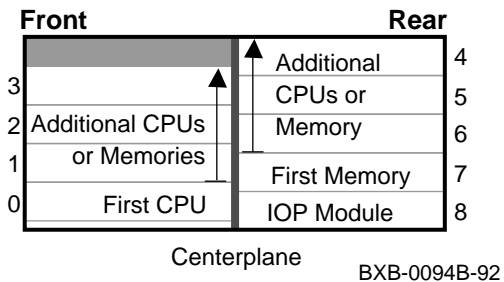


### KN7AA CPU INSTALLATION CARD

Use this card as a quick reference to install the KN7AA CPU module (E2040) in a DEC 7000 or 10000 system. Refer to the appropriate *System Service Manual* (EK-7002B-SV for DEC 7000 systems or EK-1002A-SV for DEC 10000 systems) for more information.

#### INSTALLATION GUIDELINES

1. Before turning off power, in console mode:
  - (1) Record the current environment variables;
  - (2) Run LFU to upgrade the system firmware.
2. Determine the new configuration for modules in the LSB card cage. The number of CPUs determines where the memory will be installed. The first CPU module is installed in slot 0, and the first memory module in slot 7. CPUs are then installed in slots 1 through 3 and then in the rear in open slots with the highest node ID numbers. Memory modules are installed next to filled slots, alternating between the front and back.



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## RECORDING SYSTEM INFORMATION AND UPDATING FIRMWARE

To get a printout of the current environment variables, enter **show \*** .

Before you add new modules to the system, run the Loadable Firmware Update (LFU) Utility to upgrade the firmware on existing modules. LFU is on the Alpha AXP (TM) Systems Firmware Update CD-ROM.

1. To boot LFU from the RRD42 compact disk drive, use the **show device** command to find the boot information and then boot LFU.

```
P00>>> show device
polling for units on kzmsa, slot 1, xmi0...
dka100.1.0.1.0      dka100      RRD42
P00>>> boot dka100.1.0.1.0 -flag 0,80
Bootfile: [DEC7000]AXP7000_Vnn.APB
          # Or [DEC10000]AXP7000_Vnn.APB
```

where *Vnn* is the LFU version number (such as V05). The correct file name for this version can be obtained from the Alpha AXP (TM) Systems Firmware Release Notes, released with this particular version of the CD-ROM.

To boot LFU from the InfoServer, enter the following:

```
P00>>> boot exa0 -file APB_015 -flag 0,80
Bootfile: [DEC7000]AXP7000_Vnn.APB
          # Or [DEC10000]AXP7000_Vnn.APB
```

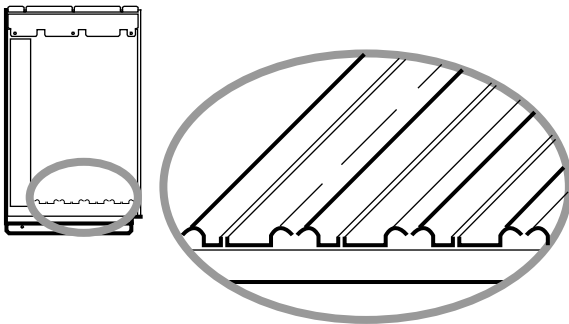
- a. Enter 3 to select Choose Service from the Function menu.
- b. Enter 1, to select Find Services from the Option menu.
- c. Enter the number of the service with the volume label name (Update).

2. LFU starts, displays a summary of its commands, and issues its prompt (Function?).
3. Use the **show \*** command to see the current revision of firmware and hardware for every module in the system that contains microcode.
4. Use the **list** command to display the inventory of update firmware on the CD-ROM.
5. Use the **update kn7aa\*** command to write new firmware to the CPU modules.
6. Now exit LFU by using the **exit** command.
7. After updating the console firmware in the FEPRoMs, you must rebuild the EEPROM to match the format of the new firmware. Issue the **build eeprom** command to each CPU.
8. The **build eeprom** command causes all settings to revert to default settings after a system reset. Enter the **initialize** command. Issue **show \*** and compare the results with the printout of the system environment variables.
9. Issue **set <envar>** commands to restore customized environment variables.  
For DEC 10000 systems issue **set system\_ variant 1**.

You are now ready to add new CPU modules.

### INSTALLING A KN7AA CPU MODULE

1. Turn the keyswitch to Disable and wait for the control panel yellow Fault LED to stop flashing. When the LED stops flashing, power has been removed from the LSB backplane and you may safely proceed.
2. Open the cabinet doors.
3. Put on an antistatic wrist strap. You must wear a wrist strap when you handle any modules.
4. Release the plate covering the LSB card cage by loosening the two screws at the top of the plate. The plate is hinged and is supported by a cable.
5. Remove the filler modules from the slots where modules will be installed.
6. On the module to be installed, pull out the two black restraining clips to the right and pull the two levers out until they are perpendicular to the front edge of the module.
7. Pick up the module to be installed. Align the bottom tracks of the module with the tracks in the card cage slot. Align the top ridge of the module with the track at the top of the card cage slot.



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8. Holding the module level, gently guide it into the card cage. If you encounter any resistance, check the alignment of the tracks and reinsert the module. When the module is inserted, the front of the module will be flush with the card cage. The module does not click when it is fully inserted.
9. Holding the two metal tabs, push both of them toward the edge of the module simultaneously. Check that the ends of the metal tabs are fitting into the guides of the cage slot.
10. Snap the black restraining clips across the levers to secure the module.
11. Check that filler modules are placed in all unused slots.
12. Close and secure the card cage cover by tightening the two screws.
13. Close the cabinet doors.

## VERIFYING THE SYSTEM

Power up the system by turning the keyswitch from Disable to Enable or Restart. Power sequencing begins, and the system runs self-test.

Check the self-test display to make sure that the system recognizes the new modules. One processor and one memory module were added, at nodes 1 and 6, respectively.

```

E D C B A 9 8 7 6 5 4 3 2 1 0 NODE #
A M M . . . . P P TYP ❶
O + + . . . . + + ST1
. . . . . . E B BPD
O + + . . . . + + ST2
. . . . . . E B BPD
+ + + . . . . + + ST3
. . . . . . E B BPD

. . + . . . + . + . + . . + C0 XMI +
+ . . + . . + . . + . - . + C1 XMI +
. . . . . . . . . . . . . C2
. . . . . . . . . . . . . C3

. A1 A0 . . . . . ILV
.128 128 . . . . . 256MB

```

```

Firmware Rev=V2.1-1625 SR0M Rev=V2.2-0 SYS SN=GA12345678 ❷
System configuration has changed since last saved configuration! ❸
P00>>>

```

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- ❶ The **P** indicates that processors are at nodes 0 and 1. The **M** indicates that memory modules are at nodes 6 and 7. The + signs on the ST lines indicate that the modules passed their self-tests.
- ❷ This line shows the firmware revision level and serial number as stored in the EEPROM of the boot processor.
- ❸ After adding modules, you need to issue the **set configuration** command to save the new system configuration. If you see this message:

```
kn7aa1: firmware revision mismatch V1.0-1234
the new CPUs may not be at the revision level
that you upgraded to using LFU. Run LFU
again to update the new CPUs; then rebuild the
EEPROMs.
```

### STORING INFORMATION IN EACH NEW CPU

1. Use the **update -e** command to copy the environment variables from the primary processor to other CPU modules.

```
P00>>> update -e kn7aa*
Updating kn7aa1's EEPROM done
```

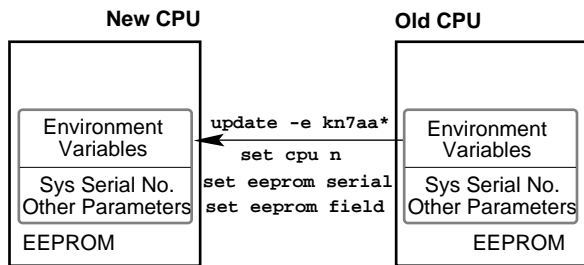
2. Use the **set cpu** command to connect the console terminal to each new CPU.

```
P00>>> set cpu 1
cpu set to 1
P01>>>
```

Do steps 3 and 4 for each new CPU.

3. Enter the system serial number, which is then stored in the EEPROM.

```
P01>>> set eeprom serial
System Serial Number> GA12345678
```



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4. Use the **set eeprom field** command to enter into the EEPROM the 8-digit LARS number and a message stating the date and reason for service.

```
P01>>> set eeprom field  
LARS #> 01234567  
Message>
```

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**Note**

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If a CPU module fails self-test, refer to the *Advanced Troubleshooting* manual for your system.

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