KN7CE CPU INSTALLATION CARD

This card is a quick reference to two types of installation:

- **Case 1**: Install additional KN7CE CPU modules (E2062) in an AlphaServer 8200/8400 system (p. 1).

- **Case 2**: Upgrade an AlphaServer system from KN7CC (2056) or KN7CD (E2061) modules to KN7CE modules (p. 8).
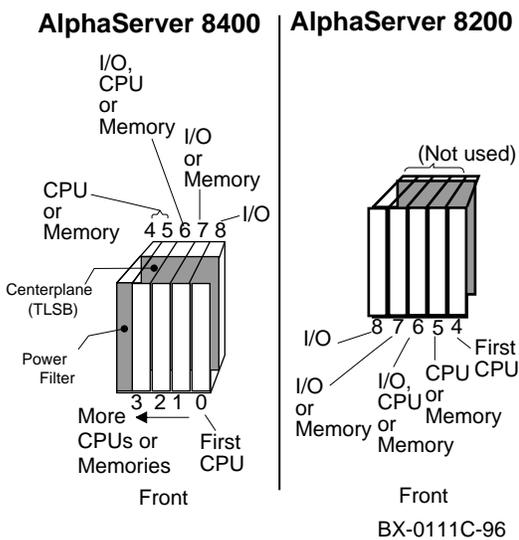
NOTE: Combinations of KN7CC, KN7CD, and KN7CE modules are not supported. All must be the same type.

For details on each step in the procedures outlined in this card, refer to the *AlphaServer 8200/8400 Service Manual* (EK–T8030–SV).

To upgrade from a VAX or DEC 7000 system, use the *AlphaServer 8400 Upgrade Manual* (EK–T8430–UI*).*

Case 1: Install Additional KN7CE CPU Modules

Note the configuration of CPU modules in the TLSB card cage. In an 8400, CPUs are installed beginning at slot 0, and so forth, until all CPUs are installed. In an 8200 CPUs begin at slot 4, and proceed with slot 5 until all CPUs are installed. (See figure on page 2.)

AlphaServer 8400 | **AlphaServer 8200**

I/O,
CPU
or
Memory

I/O
or
Memory

CPU
or
Memory

I/O

4 5 6 7 8

Centerplane
(TLSB)

Power
Filter

3 2 1 0

More
CPUs or
Memories

First
CPU

Front

(Not used)

I/O

8 7 6 5 4

First
CPU

I/O
or
Memory

I/O,
CPU
or
Memory

CPU
or
Memory

Front

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NOTE: All CPU modules must have the same version of
firmware. Results are unpredictable if processor modules
have different firmware revisions. The console software
must be V4.0 or greater.

1. Note the console firmware version of the system and
    determine the environment variables (do a **show ***).
    You will use this information to rebuild EEPROMs on
    the newly installed modules.
2. Turn off the system at the control panel. Wait for the
    yellow Fault LED to stop flashing. When the LED
    stops flashing, power has been removed from the
    TLSB backplane and you may safely proceed.
3. Open the cabinet door and ground yourself to the
    cabinet with the antistatic wrist strap.

4. Remove all modules at the point and to the right of where you want to install the new module.

   CAUTION: Modules must be inserted from left to right to avoid damaging EMI gaskets on the modules or damaging backplane pins.

5. Disconnect all CPU modules from the centerplane.

6. Inspect the KN7CE module to be installed to see that the EMI gasket does not extend beyond the endplate. Also inspect top and bottom. If the gasket has moved, slide it back in position.
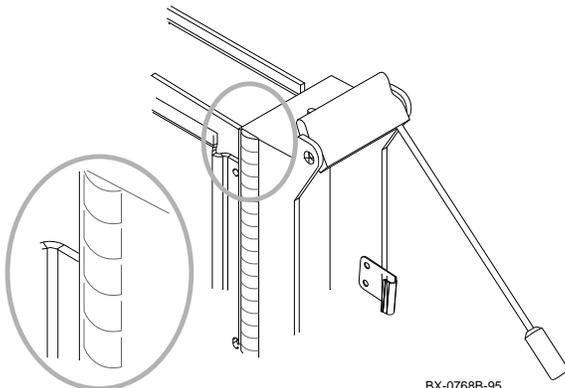
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7. Release the spring-loaded handles from the stops. To do this, push both handles toward the module endplate and away from the stops.

   Support the module with one hand and with the other hand grasp the endplate. Align the module with the card guide and the cover with the rail.

8. Starting from the leftmost backplane slot, slide the module into the card cage as far as it will easily go. A metal "key" at the bottom of the endplate fits into a small slot in a metal bar in the front of the enclosure to ensure proper alignment.

9. Push both handles at the same time until they touch the module endplate. You will feel the module make contact with the connectors. Release the handles gently so they spring back into the stops.

10. If there are no memory modules now in the machine, replace the memory module you removed in step 4 in the next higher-numbered slot. (Remove the terminator module for space needed to replace the memory module first.)

11. Power up the system and note the console version given in the last line of the self-test display.

12. If the new module console firmware is the same version as was on the system and no other CPU modules need to be installed, go to step 14. If you need to install another module, go to step 13.

    If the console firmware is a different version than that of the system:

    1. Run LFU to upgrade the firmware (page 7).

    2. Rebuild the EEPROM and the NVRAM (page 7).

    CAUTION: Determine the environment variables before you rebuild the EEPROM.

    If no other CPU modules need to be installed, go to step 14.

    CAUTION: If the LFU is a different version than the firmware version of the existing CPU(s), you must update the firmware on each existing CPU module as well as the firmware of any new modules.

13. If you need to install another KN7CE module, power down the system, disconnect the newly installed CPU module, and repeat steps 6 to 12 for each additional module.

    CAUTION: All CPU modules other than the one whose console version is being checked should be disconnected from the backplane.

14. When you have updated the console version of all the KN7CE CPU modules, power down the system and reconnect all the disconnected modules. Starting from the leftmost backplane slot and working to the rightmost slot, reinstall all KN7CE, memory, and I/O modules pulled out during the procedure. Check that terminator modules are installed in all unused slots.

15. Power up and verify the system (page 6).

16. Reset the environment variables. From the primary processor issue **set <envar>** commands to restore customized environment variables.

17. Close the cabinet door.

Verify the System

1. Power up the system. Power sequencing begins, and the system runs self-test.

2. Check the self-test display to make sure that the system recognizes the new modules. In Example 1 two dual-processor modules are in slots 0 and 1 (see ❶).

3. Check the ST lines to see that the KN7CE modules passed testing (see ❷).

Example 1

```
F  E  D  C  B  A  9  8  7  6  5  4  3  2   1   0  NODE #
                     A  A  M  .  .  .  M   P   P  TYP    ❶
                     o  o  +  .  .  .  +  ++  ++  ST1    ❷
                     .  .  .  .  .  .  .  EE  EB  BPD
                     o  +  +  .  .  .  +  ++  ++  ST2    ❷
                     .  .  .  .  .  .  .  EE  EB  BPD
                     +  +  +  .  .  .  +  ++  ++  ST3    ❷
                     .  .  .  .  .  .  .  EE  EB  BPD

                        .  +  +  +  +  +  +   +  C0 PCI +
   +  .  +  .  +  +  +  .  .  .  +  +  +  +      C1 XMI +

   +  .  +  .  +  +  +  .  .  .  +  +  +  +      C4 FBUS +
   +  .  +  .  +  +  +  .  .  .  +  +  +  +      C5 XMI +
   +  .  +  .  +  +  +  .  .  .  +  +  +  +      C6 XMI +
   +  .  +  .  +  +  +  .  .  .  +  +  +  +      C7 XMI +
                     .  . A1  .  .  . A0  .   .  ILV
                     . .512  .  .  .512  .   .  1GB
AlphaServer 8400 Console V4.0,SROM V3.1, Aug 2 1996 10:32:03
P00>>>
```

Running LFU

Boot LFU and enter the **update** command.

```
P00> boot boot-disk -fl 0,a0
UPD> update kn7ce*
Confirm update on:

kn7ce-ab1

[Y/(N)]y
WARNING: updates may take several minutes to complete for each
device.
                         DO NOT ABORT!
kn7ce-ab1    Updating to 2.1543...Verifying 2.1543...  PASSED.

UPD> exit

Initializing...
                [self-test display appears]
```

Building the EEPROM

Whenever you update the console firmware on a KN7CE module, you should build the EEPROM on that module.

Enter the **build -e** command.

*NOTE: You will lose the environment variable settings when doing a **build -e** command. To preserve a copy, attach a printer and do a **show *** before you perform the **build -e** command.*

```
P00>>> build -e kn7ce-ab0
Build EEPROM on kn7ce-ab0 ? [Y/N]> y


   EEPROM built on kn7ce-ab0
P00>>> init
```

Building the NVRAM
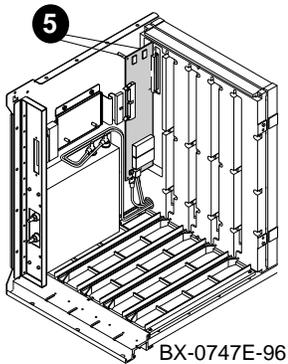
Enter the **build -n** command.

```
P00>>> build -n
Build NVR on kn7ce-ab0 ? [Y/N]> y


   NVR built on kn7ce-ab0
P00>>> init
```
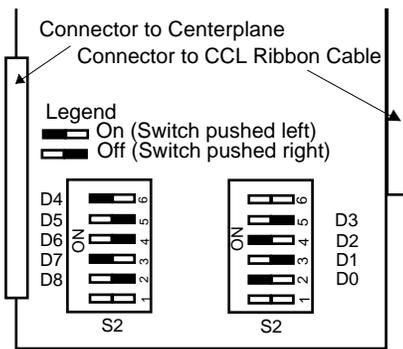
Case 2: Upgrade the System with KN7CE CPUs

To upgrade an AlphaServer 8200/8400 system with
KN7CE CPU modules, proceed as follows:

1. Determine the environment variables (do a **show ***).
   You will use this information to restore the
   environment variables following the upgrade.

2. Power down the system.

3. Open the cabinet door and ground yourself to the
   cabinet with the antistatic wrist strap.

4. Remove all CPU modules. Remove any memory
   modules from the front of the 8400 card cage.

5. Remove the KN7CC or KN7CD clock module.
   Install the KN7CE clock module (with DIP switches).
   First check the DIP switch settings to ensure proper
   settings for the bus for the KN7CE (see next page).

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DIP Switch Settings for KN7CE Clock Module

Connector to Centerplane
Connector to CCL Ribbon Cable

Legend
On (Switch pushed left)
Off (Switch pushed right)

D4
D5
D6
D7
D8

S2

D3
D2
D1
D0

S2

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6. On an AlphaServer 8200, install two E2034-AB terminator cards at the rear of the card cage, if they are not already present.

Clock Module (8200)
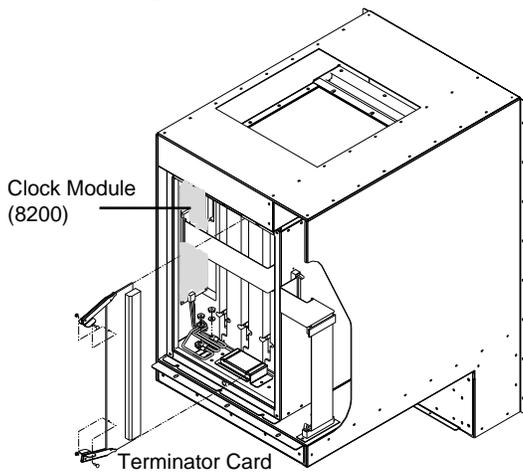
Terminator Card

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7. If necessary, remove the terminator or memory module from the slot where you will be installing a new KN7CE module.

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8. Inspect the KN7CE module to be installed to see that the EMI gasket does not extend beyond the endplate. Also inspect top and bottom. If the gasket has moved, slide it back in position.

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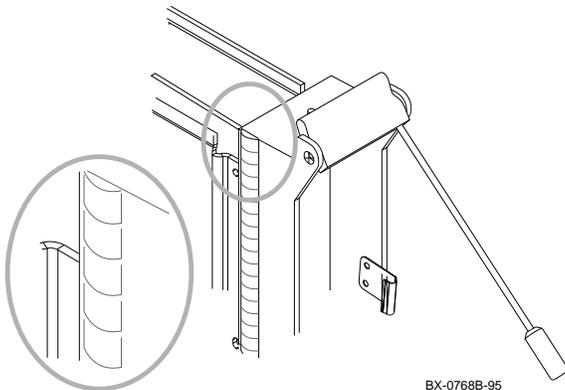
9. Release the spring-loaded handles from the stops. To do this, push both handles toward the module endplate and away from the stops.

10. Support the module with one hand and with the other hand, grasp the endplate. Align the module with the card guide and the cover with the rail.

11. Slide the module into the selected slot (slot 0 for the first CPU module on AlphaServer 8400) of the card cage as far as it will easily go. A metal "key" at the bottom of the endplate fits into a small slot in a metal bar in the front of the enclosure to ensure proper alignment.

12. Push both handles at the same time until they touch the module endplate. You will feel the module make contact with the connectors. Release the handles gently so they spring back into the stops.

13. If there are no memory modules now in the machine, replace the memory module you removed in step 7 in the next higher slot from where you inserted the new KN7CE module. (Remove the terminator module for space needed to replace the memory module first.)

14. Power up the system. Check the console display to ensure that the newly installed module passes self-test.

15. Note the console version given in the last line of the display and compare it with the LFU version. If the console version is different:

    - Run LFU to upgrade the firmware (page 7).
    - Rebuild the EEPROM and the NVRAM (page 7).

16. If another CPU module is to be installed, power down the system and disconnect the newly installed CPU module from the backplane by releasing its handles, and repeat steps 7 to 15 above. Else, go to step 17.

17. Power down the system and reconnect all the disconnected modules. Reinstall any memory modules pulled out during the procedure. Check that terminator modules are installed in all unused slots.

    CAUTION: Modules must be inserted from left to right to avoid damaging EMI gaskets on the modules.

18. Power up the system, and verify from the console display that all modules pass self-test.

19. Reset the environment variables. From the primary processor issue **set <envar>** commands to restore customized environment variables.

20. Close the cabinet door.