COMPAQ

AlphaServer ES40 Release Notes

Part Number: EK–ES240–RN. B01

June 1999

This document supplies the hardware release notes for the *Compaq AlphaServer* ES40 system and is intended for anyone operating, managing, or maintaining the system.

This document covers the hardware release notes for the *AlphaServer* ES40. Sections in this document include:

- SRM Console Resize
- Installing Disk Cages
- OpenVMS Configuration Restriction
- Tru64 UNIX Configuration Restriction
- Miscellaneous Errata

SRM Console Resize

The SRM console allocates enough memory for most configurations. If you installed options that require more memory than the SRM console has allocated, the console dynamically resizes itself to provide additional memory to support the new configuration. The following crash/reboot cycle can occur several times until the console has allocated enough memory. An abbreviated example of the output to a serial console screen is shown on the next page.

1. The console powers up.
2. Drivers try to allocate more "heap space" (space for more memory) but cannot.
3. The console displays a message similar to the following:

```
CPU0: insufficient dynamic memory for a request of 4592 bytes
Console heap space will be automatically increased in size by 64KB
```

4. The console takes an exception.
5. The console allocates more heap space and restarts with memory set to the required size.

After the console completes its final reinitialization, the console banner is displayed, followed by the P00>>> prompt. Enter the **show heap_expand** command to verify that the console has allocated more memory. You can then boot the operating system. No other action is required, and the crash/reboot cycle should not occur again.

If you subsequently change your configuration, enter the following command to reset the heap space to its default before you boot the system:

```
P00>>> set heap_expand none
```

Resizing may or may not occur again, depending on whether the console requires additional heap space.

```
initialized idle PCB
initializing semaphores
initializing heap
initial heap 200c0
memory low limit = 15e000
heap = 200c0, 17fc0
initializing driver structures
initializing idle process PID
initializing file system
initializing hardware
initializing timer data structures
lowering IPL
CPU 0 speed is 500 MHz
create dead_eater
create poll
create timer
create powerup
access NVRAM
Memory size 2048 MB
testing memory
......
probe I/O subsystem
probing hose 1, PCI
bus 0, slot 1 -- pka—NCR 53C895
bus 0, slot 3 -- mca—DEC PCI MC
bus 0, slot 4 -- mcb—DEC PCI MC
.
.
.
starting drivers
entering idle loop
initializing keyboard
starting console on CPU 1
initialized idle PCB
initializing idle process PID
lowering IPL
CPU 1 speed is 500 MHz
create powerup
.
.
.
Memory Testing and Configuration Status
  Array       Size       Base Address
---------  ----------  ----------------
    0        512Mb     0000000040000000
    1       1024Mb     0000000000000000
    2        256Mb     0000000060000000
    3        256Mb     0000000070000000

     2048 MB of System Memory
Testing the System
CPU0: insufficient dynamic memory for a request of 4592 bytes
Console heap space will be automatically increased in size by 64KB
   PID       bytes  name
-------- ---------- ----
00000000      27360 ????
00000001      23424 idle
00000002        800 dead_eater
00000003        800 poll
00000004        800 timer
00000005     499584 powerup
00000031     129536 pwrup_diag
00000013        896 ????
00000016       1056 ????
00000026        128 ????
00000017        512 ????
00000006       2880 tt_control
00000007        800 mscp_poll
00000008        800 dup_poll
```

```
00000012       2336 shell_0
0000000A      13920 ????
0000000D      13920 ????
00000010      13920 ????
0000000B       2336 shell_1
0000000E       2336 shell_2
00000011       2336 shell_3
00000029        128 ????
00000014        992 rx_ewa0
00000018        512 ????
0000001F        992 rx_eib0
0000001C        992 rx_eia0
0000001D        160 ????
00000025       1024 rx_eie0
00000021        992 rx_eic0
0000002C        160 ????
00000023        992 rx_eid0
0000002F        160 ????
00000024        128 ????
00000028        992 rx_eif0
00000027        160 ????
0000002B       1024 rx_eig0
0000002E        992 rx_eih0
0000002D        160 ????
0000002A        128 ????
00000030        128 ????
00000038       2080 ????
0000003D      22848 sh_cmdsub
00000040       5696 show
00000041        800 setmode

SYSFAULT CPU0 - pc = 0014faac
exception context saved starting at 001FD7B0
GPRs:
  0: 00000000 00048FF8  16: 00000000 0000001E
  1: 00000000 00150C80  17: 00000000 EFEFEFC8
  2: 00000000 001202D0  18: 00000000 001FD2F8
  3: 00000000 000011F0  19: 00000000 00000025
  4: 00000000 0010C7B8  20: 00000801 FC000000
  5: 00000000 00000020  21: 00000000 0008A8B0
  6: 00000000 00000000  22: 00000000 0010ACB8
  7: 00000000 00038340  23: 00000000 00000001
  8: 00000000 00000000  24: 00000000 00000000
  9: 00000000 00000000  25: 00000000 00000001
 10: 00000000 00000000  26: 00000000 0014FAAC
 11: 00000000 3FFFF520  27: 00000000 00150C90
 12: 00000000 001254D0  28: 00000000 00038518
 13: 00000000 0013BB20  29: 00000000 001FD8F0
 14: 00000000 0010C7C0  30: 00000000 001FD8F0
 15: 00000000 00000001
dump of active call frames:
PC  =  0014FAAC
PD  =  001202D0
FP  =  001FD8F0
SP  =  001FD7B0

.
.
.
initialized idle PCB
initializing semaphores
initializing heap
initial heap 200c0
memory low limit = 15e000
heap = 200c0, 17fc0
initializing driver structures
initializing idle process PID
initializing file system
initializing hardware
initializing timer data structures
```

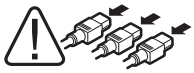
```
lowering IPL
CPU 0 speed is 500 MHz
create dead_eater
create poll
create timer
create powerup
access NVRAM
Memory size 2048 MB
testing memory
......
probe I/O subsystem
probing hose 1, PCI
bus 0, slot 1 -- pka—NCR 53C895
bus 0, slot 3 -- mca—DEC PCI MC
.
.
.
bus 0, slot 15 -- dqb—Acer Labs M1543C IDE
starting drivers
entering idle loop
initializing keyboard
starting console on CPU 1
initialized idle PCB
initializing idle process PID
lowering IPL
CPU 1 speed is 500 MHz
create powerup
.
.
.
Memory Testing and Configuration Status
  Array       Size       Base Address
---------  ----------  ----------------
    0        512Mb     0000000040000000
    1       1024Mb     0000000000000000
    2        256Mb     0000000060000000
    3        256Mb     0000000070000000

     2048 MB of System Memory
Testing the System
Testing the Disks (read only)
Testing the Network
Partition 0, Memory base: 000000000, size: 080000000
initializing GCT/FRU at offset 1dc000
AlphaServer ES40 Console V5.5-3059, built on May 14 1999 at 01:57:42

P00>>>show heap_expand
heap_expand               64KB
P00>>>
```

Installing Disk Cages

The following procedure replaces Section 5.15 (pages 5-38 to 5-40) of the *Compaq AlphaServer ES40 Owner's Guide.* Before starting this procedure, refer to the *Owner's Guide* for instructions on the following:

- Removing enclosure panels (Section 5.1)
- Removing covers from the system chassis (Section 5.2)

WARNING: To prevent injury, access is limited to persons who have appropriate technical training and experience. Such persons are expected to understand the hazards of working within this equipment and take measures to minimize danger to themselves or others.



WARNING: To prevent injury, unplug the power cord from each power supply before installing components.

NOTE: Install the first cage as the right cage in a pedestal or rackmount system or as the top cage in a tower system.

Shut down the operating system before starting the procedure.

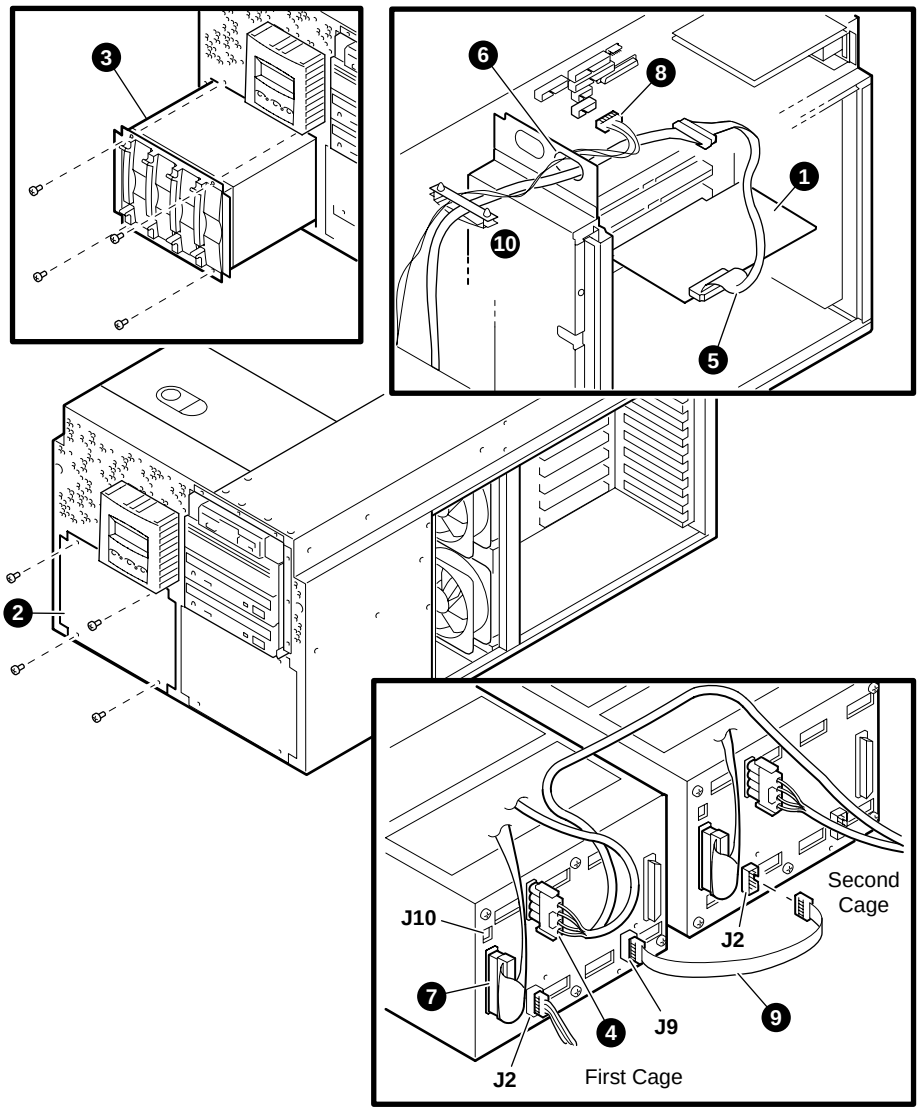
1. Remove enclosure panels and remove the cover from the PCI card cage as described in Sections 5.1 and 5.2 of the *Compaq AlphaServer ES40 Owner's Guide*.
2. Install the SCSI controller ❶ in the PCI backplane.
3. Unscrew the four screws securing the disk cage filler plate ❷ and set them aside. Discard the filler plate.
4. When installing the first disk cage, set the jumper (J10) to the off position (1 pin only).
5. When installing the second disk cage, set the jumper (J10) to the on position (across both pins).
6. Slide the cage ❸ part way into the system chassis.
7. Pull out the fans blocking access to the cabling.
8. Connect the power source cable ❹ to the storage backplane.
9. Plug one end of the 68-conductor SCSI cable ❺ (17-04867-01) into the SCSI controller ❶. Route it through the opening ❻ in the PCI cage. Snap open the cable management clip ❿, route the cable through, and close the clip. Plug the other end ❼ of the cable into the storage backplane.
10. When installing the first disk cage, plug the 16-position end ❽ of the 29-inch cable (17-04914-01) into the PCI backplane. Route the cable through the opening in the PCI cage and plug the 14-position end into the J2 connector on the storage cage.

    When installing a second cage, plug the end of the 6-inch cable ❾ (17-04960-01) marked "out" into the J9 connector on the back of the first cage, and plug the end marked "in" into the J2 connector on the second cage.

    NOTE: Cable 17-04914-01 and cable 17-04960-01 are mutually exclusive.
11. Slide the cage the rest of the way into the system chassis and replace the four screws set aside previously.
12. Replace the fans.
13. Replace the PCI card cage cover and enclosure covers.
14. Install hard drives as described in Section 5.6 of the *Compaq AlphaServer ES40 Owner's Guide*.

Verification — SRM Console

1. Turn on power to the system.
2. When the system powers up to the P00>>> prompt, enter the SRM **show device** command to determine the device name. For example, look for dq, dk, ew, and so on.


3
6
8
1
10
5
2
J10
Second
Cage
J2
7
4
J9
9
J2
First Cage
PK0299

OpenVMS Configuration Restriction

If you have a KZPAC RAID controller, it must be installed in a slot on PCI bus 1. It cannot be installed on PCI bus 0. See Section 5.12 of the *Compaq AlphaServer ES40 Owner's Guide* for PCI slot locations.

Tru64 UNIX Configuration Restriction

Multifunction PCI options cannot be installed in PCI bus 0, slot 1 or slot 2. Multifunction options currently include:

- KZPCM–DA dual Ultra SCSI differential/10/100 MB Ethernet combo
- DE504–BA PCI-based 10/100 Mbit quad channel Ethernet adapter

See Section 5.12 of the *Compaq AlphaServer ES40 Owner's Guide* for PCI slot locations.

Miscellaneous Errata

The bulleted text in Section 2.3.1 of the Compaq AlphaServer ES40 Owner's Guide should be amended to read as follows:

- To enter the SRM console from Windows NT, shut down the operating system from the Start menu and wait for the message indicating that you can power off the system. Next, press the Reset button, and then press the Halt button.

The "Fan 5, 6 failed" message in Table 7-2 of the *Compaq AlphaServer ES40 Owner's Guide* should be amended to read as follows:

Main fan (6) **and** redundant fan (5) failed.