



hp AlphaServer & AlphaStation DS25 V7.3 Firmware Release Notes



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<u>1</u>	<u>Scope</u>	<u>5</u>
1.1	Audience	5
1.2	Golden Rules	5
1.3	References	5
1.4	hp Alpha Retain Trust Program	5
<u>2</u>	<u>Read Me First</u>	<u>6</u>
2.1	Changes this Release	6
2.2	Console and Operating System Revisions	6
<u>3</u>	<u>Firmware Update Procedure</u>	<u>7</u>
3.1	Update Firmware from CD	7
3.2	Other Update Firmware Options	7
3.3	Loadable Firmware Utility Commands	8
3.3.1	List	8
3.3.2	Update	8
3.3.3	Manual Update Mode	9
3.4	Firmware Recovery	10
3.4.1	Fail-Safe Boot Console	10
<u>4</u>	<u>Helpful Hints</u>	<u>10</u>
4.1	Show Bios & Run Bios Commands (Serial Mode Only)	10
4.1.1	Serial Terminal Setup for Run Bios	10
4.2	KVM Console Switch Limitations	10
4.2.1	Run Bios Command is Not Supported in Console Graphics Mode	10
4.3	User Defined Environment Variables	11
4.3.1	User_def1 - User_def2	11
4.4	SRM Environment Variable Notes	12
4.4.1	memory_test	12
4.4.2	cpu_enabled	12
4.4.3	Com1_Mode Settings	12
4.5	Clearing Error Flags in FRU Table	12
4.6	KGPSA Notes	12
4.6.1	Messages Similar to "retry ct pga0.0.0.2.6"	12
4.6.2	If a Fibre Channel Cable is Moved	13
<u>5</u>	<u>Known Anomalies and Restrictions</u>	<u>13</u>
5.1	Bootable DVD's are Not Supported	13
5.2	Halt Button, Crash Command with 3D Lab Oxygen VX1 Graphics Card	13
5.2.1	Tru64Unix Environment	13
5.2.2	OpenVMS Environment	13
5.3	Ctrl^P - Show Device - Continue Sequence	13
5.4	Illegal Memory Channel 2 Configurations	14



5.4.1	Memory Channel 2 – Supported SROM and Hardware Revisions	14
5.5	Serial Number Mismatch after Adding CPU's	14
5.6	Initialize System before Invoking LFU Command	14
5.7	Unplugging & Plugging In Power to a Power Supply	14
5.8	DE602-BA/DE602-BB Identification	14
5.9	KZPEA Notes	14
5.9.1	Powering Up Attached Storage	14
5.9.2	Missing BUS Termination Jumpers Can Hang Console	14
5.10	PBXGB-AA – Don't Use Switch Position Zero	15
5.11	Don't Hot Swap that Mouse or Keyboard	15
5.12	Fibre Channel KGPSA Driver Startup Messages	15
5.12.1	Nvram Read Failed Message Example	15
5.12.2	Known Issues	16
6	Firmware Changes History	17
6.1	V7.2 - June 2006	17
6.2	V7.1 – January 2006	17
6.3	V7.0 – June 2005	17
6.4	V6.9 – November 2004	18
6.5	V6.8 – August 2004	18
6.6	V6.7 – May 2004	18
6.7	V6.6 – November 2003	19
6.8	V6.5 – June 2003	19
6.9	V6.4-21 Interim Release – Feb. 2003	20
6.10	V6.4-18 – January 2003	20
6.11	V6.3-5 – October 2002	20
6.12	V6.3-3 – First Release – August 2002	21

1 Scope

The document lists significant changes in this firmware release and describes methods to update console firmware. This document does not describe console firmware internals or console architecture.

1.1 Audience

This document is intended for persons responsible for operating system installation/upgrades and for console firmware and console-supported I/O option firmware updates.

1.2 Golden Rules

Update all console firmware before installing or updating an operating system to ensure compatibility. The console subsystem for AlphaServer DS25 consists of SRM, FSB, RMC, SROM, and TIG firmware. Ensure firmware is updated to the latest revision level.

AlphaServer systems recently shipped may have a higher console firmware revision than the firmware revision listed in this release. A higher firmware revision normally indicates support for the installed operating system.

Please do not load firmware older than what is presently installed.

1.3 References

Owners Guide	Order Number: EK-DS250-UG.A01
Service Manual	Order Number: EK-DS250-SV.A01
Firmware Main Page	http://ftp.digital.com/pub/DEC/Alpha/firmware/readme.html
Alpha Systems Support	http://h20000.www2.hp.com/bizsupport/TechSupport/Home.jsp http://www1.itrc.hp.com/service/home/home.do

1.4 hp Alpha Retain Trust Program

The hp [Alpha Retain Trust Program](#) underscores HP's commitment to providing long-term business continuity for AlphaServer customers. The program eases the evolution of moving from the Alpha platform to Itanium® architecture-based HP systems by ensuring HP carries forward the trust you have placed in us. It is focused on showing you the business value of moving forward with HP as a company, and mitigating the risk associated with transitions to future HP technologies.



2 Read Me First

2.1 Changes this Release

Keyboard driver - a USB keyboard, attached to a USB-to-PS/2 adapter, can sometimes hang when attempting to login to OpenVMS for the first time.

Solution: Read the keyboard data and status registers immediately after enabling keyboard interrupts, to drain any interrupts from the device.

Kgpsa driver - the console will fail to login into the fibre-channel fabric switch, if the connection is moved from one switch port to another, on certain new Brocade fibre-channel switches.

Solution: When attempting to login to a fibre-channel switch port, use an SDID of zero and the switch will provide the new SDID to the host adapter.

Wwidmgr - the console supports a number of environmental variables to facilitate boot and crash dump to fibre-channel storage volumes. Presently there are four (4) WWIDx variables that define the world-wide-ID of a storage volume and eight (8) Nx variables that define the path to the storage volumes. The console uses these variables to define the volumes used for boot or crash dump devices.

Solution: Increase the number of Nx (16) and WWIDx (8) console environmental variables.

RMC firmware - when a power supply is replaced, the RMC would sometimes report that it is still bad.

Solution: Handle cases where an interrupt may be ignored.

Note: To update RMC firmware use LFU Manual mode described in section 3.3.3

I/O Option Firmware - no changes

2.2 Console and Operating System Revisions

The following table shows the revisions of the operating system, PALCode, and console firmware. Operating system versions are current at the time of this firmware release. This firmware release is also compatible with earlier operating system versions that support this platform. Newer firmware versions may be required for newer OS versions if noted in the OS release notes.

Table 2-1 Operating System and Firmware Revisions

Operating System	OpenVMS	V8.2	Tru64 UNIX	V5.1B
	Red Hat Linux (for Alpha)		V7.2	
PALCode	OpenVMS	V1.98-43	Tru64 UNIX	V1.92-33
Console Firmware	SRM	V7.3-2 *	FSB	V7.3-3 *
	RMC		V1.3	*
	SROM		V1.4-G	
	TIG		V2.6	

An asterisk * indicates firmware has changed since the previous release.

Table 2-2 PCI I/O Adapter Revision

No Changes This Release

Adapter	Fw Revision	Notes
CIPCA	4.20	
DEFEA/DEFPA	3.20	
DS-KGPSA-CA	DS3.93A0	LP8000 1Gb, 64-bit/33MHz PCI Fiber Channel Host Bus Adapter [HBA]
DS-KGPSA-DA	CS3.93A0	LP9002 2Gb, 64-bit/66MHz PCI Fibre Channel HBA (FCA2354)
DS-KGPSA-EA	HD191X6	LP9802 2Gb, 64-bit/133MHz PCI-X to Fibre Channel HBA (FCA2384)
DS-A5132-AA, DS-A5134-AA	TS1.91X6	LP10000 2Gb, 64-bit/133MHz PCI-X to Fibre Channel HBA (FCA2684)/ (FCA2684DC)
KZPCC	CQ 17	SMOR Utility revision 1.12
KZPDC	3.56	
KZPEC	2.58	HP Smart Array 6400A - first release in V7.1 CD
KZPSA	A12	

An asterisk * indicates firmware changed since previous release

3 Firmware Update Procedure

The Loadable Firmware Update [LFU] utility is used to update firmware. The LFU is invoked by Firmware booting the Alpha Systems Firmware CD. Please note that the SRM console **lfu** command cannot be used with the Alpha Systems Firmware CD to update console firmware.

3.1 Update Firmware from CD

1. Insert Firmware CD into the CD drive
2. Type **boot dqa0** - booting the CD invokes a program to determine system type and to display the default LFU bootfile for that system:
3. Press the **Enter** key after *Bootfile:* prompt to invoke the loadable firmware utility [LFU], which starts up in default mode to allow updating SRM, FSB, SROM and I/O option firmware. LFU default mode does not allow updating RMC or TIG firmware. If the RMC and/or TIG firmware has changed, type **exit** to leave then proceed to step 5.
4. Type **update** to update all firmware
5. Type **yes** to confirm updating firmware
6. Type **exit** to load the firmware into flash and to return to the SRM console.

Power cycle the system is required only if TIG firmware changed to a new version.

3.2 Other Update Firmware Options

The SRM console **lfu** command can do the following:

- Update console firmware and I/O option firmware from **floppy diskette**
- Update I/O Option firmware from with the **Alpha Systems Firmware CD**.



The SRM console lfu command *cannot* do the following:

- **Update SRM console firmware from the Alpha Systems Firmware CD.**

Recommended: Use the Alpha Systems Firmware CD and the console **boot** command to update all firmware.

3.3 Loadable Firmware Utility Commands

The Loadable Firmware Utility [LFU] is used to update console and I/O option firmware. The utility operates in a default mode or in a manual update mode. Default mode is the first time you see the LFU prompt. In default mode, the LFU can update only a select list of firmware which consists of SRM, FSB, SROM, and I/O option firmware. In manual update mode, the LFU can update SRM, FSB, SROM, RMC, TIG, and I/O option firmware. Note that RMC and TIG firmware can only be updated from manual mode.

3.3.1 List

Use the list command to display memory-loaded images and supported flash ROMs. Note that RMC and TIG firmware are listed only when in LFU manual mode.

```
UPD> list
```

Device	Current Revision	Filename	Update Revision
FSB	T7.0-2	fsb_fw	T7.0-2
SRM	T7.0-1	srn_fw	T7.0-1
pga0	HS1.90A4	FCA-2384_fw	HS1.90A4
pgb0	HS1.90A4	FCA-2384_fw	HS1.90A4
srom	V1.4-F	srom_fw	V1.4-F
		cipca_fw	A420
		dfxaa_fw	3.20
		FCA-2354_fw	CS3.92A2
		FCA-2684_fw	TS1.90A4
		kgpsa_8k_fw	DS3.92A2
		kzpcc_smor	1.12
		kzpcc_fw	CQ17
		kzpdw_fw	3.40
		kzpsa_fw	A12

```
UPD> exit
```

```
Do you want to do a manual update? [y/(n)] y
***** Loadable Firmware Update Utility *****
```

```
...
UPD> list
```

Device	Current Revision	Filename	Update Revision
...			
rnc	V1.2	rnc_fw	V1.2
tig	2.6	tig_fw	2.6
...			

```
UPD>
```

Notice the tig and rnc firmware revisions are displayed when in LFU manual update mode.

3.3.2 Update

The Loadable Firmware Utility has a default update mode and a manual update mode. Default mode, when the LFU is first invoked, can update all firmware except for the RMC and the TIG. In default mode just **type update**



after the UPD> prompt. To update RMC and TIG firmware, exit from default mode to manual update mode as shown below, then type update.

3.3.3 Manual Update Mode

UPD> **exit**

Do you want to do a manual update [y/(n)]? **YES**

UPD> **update**

Confirm update on:

FSB

SRM

rmc

srom

tig [Y/(N)] **y**

WARNING: updates may take several minutes to complete for each device.

DO NOT ABORT!

FSB	Updating to Vx.y-z...	Verifying Vx.y-z...	PASSED
SRM	Updating to Vx.y-z...	Verifying Vx.y-z...	PASSED.
rmc	Updating to Vx.y.	Verifying Vx.y...	PASSED.
srom	Updating to Vx.yy-F...	Verifying Vx.yy-F...	PASSED.
tig	Updating to 2.6...	Verifying 2.6...	PASSED. (note 1)

UPD> **exit**

Note: typing exit will leave the LFU, load update firmware into Flash ROM, and return to console prompt]

Note 1: Power cycle the system is required only if TIG firmware changed to a new version.

3.4 Firmware Recovery

3.4.1 Fail-Safe Boot Console

The fail-safe boot console [FSB] is a smaller version of the SRM console to help recover from possible console firmware corruption (e.g. checksum ROM error). The FSB contains only device support for the AlphaServer DS25 onboard I/O controllers and all SRM supported Ethernet controllers. It will not execute the power-up self-test script, but instead will instruct the user to use the LFU utility to recover the SRM console image.

The FSB can be invoked by one of two methods.

- The SROM will automatically start the FSB console when it detects corruption in the SRM console flashrom image
- Manually moving system motherboard jumper **J25** to **position 2-3** (default is position 1-2) then powering up the system. The SROM detects the jumper setting then loads the FSB image into memory. After updating firmware, power down and move jumper J25 back to default position 1-2.

System power-on invokes the SROM to load memory from the system flashrom with the FSB console. Invoking the FSB console therefore produces the SRM prompt `P00>>>`. From the SRM prompt, restore console firmware by booting the Alpha Firmware CD and doing a firmware update.

4 Helpful Hints

4.1 Show Bios & Run Bios Commands (Serial Mode Only)

Use the “**run bios**” command from a serial console only (not from a graphics console).

4.1.1 Serial Terminal Setup for Run Bios

The serial terminal should be at least a VT220 and setup with the following parameters:

- **9600 bauds, 8-bits, No Parity and One Stop-bit**

show bios - lists the location of controllers with a BIOS expansion ROM. Not all controllers have a BIOS expansion ROM. The show bios command will reset the I/O buses.

`P00>>> show bios <hose>` (where <hose> = 0 or 1, default is 0)

run bios - will invoke a BIOS expansion ROM on a supported PCI controller (e.g. KZPCC-CE). This command is commonly used to invoke functions or utilities in the device expansion ROM. For example, the KZPCC-CE uses the expansion ROM for its configuration utility.

`P00>>> show config` (to get controller name)

`P00>>> run bios [controller name]` e.g. `P00>>> run bios pka0`

The run bios command invokes the console to reset the PCI bus and to prompt the user to enter a control sequence (e.g. Ctrl^D) in order to enter the BIOS utility of the PCI option. The control sequence may differ depending on the PCI option. Refer to the documentation supplied with the PCI option.

4.2 KVM Console Switch Limitations

4.2.1 Run Bios Command is Not Supported in Console Graphics Mode

Invoking the SRM **run bios** command from a graphics console, connected to a KVM switch, is not supported and will result in unexpected keyboard behavior. As a workaround, use the **run bios** command from a serial console via a serial port connection



4.3 User Defined Environment Variables

4.3.1 User_def1 - User_def2

User_def1 and user_def2 were added (V7.0 release) to support the ability to have user defined non-volatile environment variables that are readable and writeable from the SRM console and from the Tru64 operating system.

Format	P00>>> set user_def<1 or 2> "<any character string within double quotes>"
Example from SRM	P00>>> set user_def1 "System_Asset_No: 123456 , System_Location: Green-Zone"
From Tru64 Unix *	<pre># consvar -g user_def1 user_def1 = System_Asset_No: 123456 , System_Location: Green-Zone # consvar -s user_def2 "System_Asset_No: 12341234 , System_Location: Rd-Zone" # consvar -g user_def2 user_def2 = System_Asset_No: 12341234 , System_Location: Red-Zone</pre>
	* Only certain EVs are accessible from Tru64 Unix



4.4 SRM Environment Variable Notes

4.4.1 memory_test

The **memory_test** environment variable allows the console to test a fixed amount of memory. **Please use the default value before booting an operating system.** The other values are for testing only.

P00>>> set memory_test <value>	full = test entire memory (default value)
P00>>> set memory_test full	partial = test only 128MB (not recommended for OS boot)
	none = test only 32MB (recommended for mfg use only)

4.4.2 cpu_enabled

The SRM environment variable **cpu_enabled** is set to a default mask value of **3** to enable all CPU's. Use the **init** command after changing the **cpu_enabled mask value**. Then press the **reset** button on the operator control panel [ocp] before booting an Operating System. This is to avoid seeing a CPU-timeout message on the CPU(s) that were disabled. For example changing **cpu_enabled**, on a two-cpu system, from 3 to 1 will disable **cpu1**, after typing **init**. Without resetting the system, OpenVMS may report the informational message: *"one CPU active and one CPU's in Timeout"*.

4.4.3 Com1_Mode Settings

When **com1_mode** is set to **firm_bypass** mode and external power is removed then later restored, the value of **com1_mode** will change to its default value of **through** mode. See the table below for **com1_mode** value combinations.

COM1_MODE	
Current-value	Value after external power is removed & restored
Through (default)	Through
Snoop	Snoop
Soft_bypass	Snoop
Firm_bypass	Through

4.5 Clearing Error Flags in FRU Table

Use the following command sequence to clear TDD/SDD error flags seen when you display the FRU table using the **P00>>> show fru** from the SRM console. Also use this command sequence after adding CPU's to the system to avoid a serial number mismatch report from the SRM **show error** command.

P00>>> show sys_serial_num	Record system serial number
P00>>> set sys_serial_num ""	Clear system serial number
P00>>> clear_error all	Clear errors
P00>>> set sys_serial_num snnnnnnnn	Restore system serial number
P00>>> init	Type init or press the RESET button

4.6 KGPSA Notes

4.6.1 Messages Similar to "retry ct pga0.0.0.2.6"

Messages similar to "retry ct pga0.0.0.2.6" may occur on systems that have KGPSA devices which are informational and do not represent an error. The messages result from rejected accesses to a busy fibre channel switch which is allowed and thus the access is retried.



4.6.2 If a Fibre Channel Cable is Moved

If a fibre cable is moved from one fibre channel port to another, the console will need to be initialized before devices can be accessed via the new switch.

5 Known Anomalies and Restrictions

5.1 Bootable DVD's are Not Supported

Bootable DVD's are not supported on all Alpha systems because of a limited memory size architectural restriction.

5.2 Halt Button, Crash Command with 3D Lab Oxygen VX1 Graphics Card

This anomalies, described below, exist only when the console is in graphics mode.

5.2.1 Tru64Unix Environment

Environment: Tru64Unix V5.1A, SRM console V6.2 or earlier, SRM console is set to “graphics” mode, SN-PBXGF-AB graphics card.

Symptom: Pressing the HALT button with Tru64Unix running does not initialize the graphics monitor to display the console P00>>> prompt. The graphics monitor appears in a “frozen X-Windows state”. Typing on the keyboard does not echo to the graphics monitor. Typing, “crash” at the keyboard, however, will create a crash file which is stored by the OS on the next restart of the operating system.

Solution: Update to V6.3 (or greater) console firmware and install Tru64Unix V5.1A Patch PK4 bl21, which contains new graphics driver (p3g.mod). Pressing the HALT button on the OCP, the monitor is initialized and the console displays SRM prompt. Typing **crash** will create the dump file and should return to the SRM prompt. If you don't get to the SRM prompt after the crash dump completes, press the HALT button IN and OUT to get the SRM prompt. Then boot the operating system.

Solution2: Update firmware to V6.3 or greater and update Tru64Unix to V5.1B

5.2.2 OpenVMS Environment

Environment: OpenVMS with X11 DW-Motif enabled, SRM console any version, SRM console set to graphics mode.

Symptom: Pressing the HALT button puts the graphics monitor to a frozen state. You must reset the system to get out of this state.

Solution1: Set console to serial mode

Solution2: Move the VX1 PCI graphics card to a slot in HOSE 0.

Solution3: Disable DW-MOTIF before pressing the HALT button

\$ STOP DECW\$SERVER_0

Login to OS

Press HALT Button, Release Halt Button to get to SRM console prompt

Type crash

Reset system then reboot OS

5.3 Ctrl^P - Show Device - Continue Sequence

Under OpenVMS, typing ctrl^p switches terminal control from OS program mode to console mode. Typing the continue command returns terminal control to OS program mode. You cannot return to OS program mode after using the “show device” command from the SRM console. The show device command restarts the console IO drivers which prevents returning to OS program mode.

5.4 Illegal Memory Channel 2 Configurations

Starting with SRM V6.2, the console displays an illegal configuration message when it detects unsupported hardware revisions of the Memory Channel 2 module. The correlation between hardware revision and SROM revision is shown below. The SRM console “show config” command displays only the SROM revision.

5.4.1 Memory Channel 2 – Supported SROM and Hardware Revisions

SROM Revision	Hardware Revision	Supported on DS25
0x24	D02	Yes
0x23	C03	No
0x22	C02	No

Illegal Configuration Message*:

“Illegal Configuration - Memory Channel 2 in bus <n> slot <n> - must be revision 24 (hardware rev D02) or higher”

* the message is displayed during system initialization when probing the PCI Bus

5.5 Serial Number Mismatch after Adding CPU's

When adding CPU's to a system, the SRM **show error** command may report a serial number mismatch. (e.g. GSB.CPU1 SYS_SERIAL_NUM Mismatch). See section 4.5. on how to clear this message.

5.6 Initialize System before Invoking LFU Command

After shutting down the Operating System to the SRM console, you must type the **init** command before typing the **lfu** command.

5.7 Unplugging & Plugging In Power to a Power Supply

After removing power from one of the power supplies, wait at least thirty seconds, after the green LEDs are off, before restoring power. This will ensure the correct status is displayed by the SRM *show power* command and RMC *env* command. If the status remains the same, press the RESET button the from the Operator's Control Panel if the system is at the console prompt. Also if you are at console mode while replacing power supplies, press the RESET button before booting an Operating System.

5.8 DE602-BA/DE602-BB Identification

The SRM **show config** command displays DE602-BA and/or DE602-BB Ethernet cards as a DE602-B* because both cards use the same Ethernet chip but have different PCI Bridge chips. Use the show config command to identify the 21154-BE PCI Bridge chip that is used only on the DE602-BB.

5.9 KZPEA Notes

5.9.1 Powering Up Attached Storage

KZPEA – When in console mode, use the **init** command *after* powering up a storage device attached to a KZPEA. The init command is not necessary when the storage device is powered up at the same time as the rest of the system or the storage device is powered up when the operating system is already running.

5.9.2 Missing BUS Termination Jumpers Can Hang Console

The KZPEA-DB must have bus termination jumpers installed or the console may hang when trying to probe the controller for information. The two bus termination jumpers are next to the internal connectors.



5.10 PBXGB-AA – Don't Use Switch Position Zero

The PBXGB-AA PowerStorm graphics card should be set to **position six** (1024x768 at 72Mhz). Graphics card may be shipped with the switch set to **position zero** (1280x1024 at 72Mhz). Tru64 Unix currently does not support this graphics card when set to (1280x1024 at 72Mhz).

5.11 Don't Hot Swap that Mouse or Keyboard

Do not hot swap a mouse or keyboard because it may cause electronic damage to the transceivers. Ensure power is off when swapping these components. Also removing a mouse after the system is in console mode will prevent any response from the keyboard (until the mouse is plugged back in).

5.12 Fibre Channel KGPSA Driver Startup Messages

When the console fibre channel driver starts, you may see the message "**pga0.0.0.2.4 - Nvram read failed**". This message indicates the KGPSA's NVRAM is either unformatted or is not working properly. The more likely reason is an unformatted NVRAM.

The console contains a portion of the NVRAM to indicate if the adapter should be initialized to a Fabric (Switch) topology or initialized to a Loop topology. By default, the console initializes the KGPSA to a Fabric topology.

The NVRAM is **automatically formatted** when the topology is set.

References: WWIDMGR USERS MANUAL

[http://ftp.digital.com/pub/DEC/Alpha/firmware/v*.*doc/wwidmgr.*](http://ftp.digital.com/pub/DEC/Alpha/firmware/v*.*/doc/wwidmgr.*)

5.12.1 Nvram Read Failed Message Example

```
P00>>>wwidmgr -show ada
```

item	adapter	WWN	Cur. Topo	Next Topo
pga0.0.0.8.1 - Nvram read failed.				
[0]	pga0.0.0.8.1	1000-0000-c920-05ab	FABRIC	UNAVAIL
pgb0.0.0.10.1 - Nvram read failed.				
[1]	pgb0.0.0.10.1	1000-0000-c921-0ce0	FABRIC	UNAVAIL
[9999] All of the above.				

```
LP00>>>wwidmgr -set adapter -item 9999 -topo fabric
```

```
pga0.0.0.8.1 - Nvram read failed.
```

```
Reformatting nvram
```

```
pgb0.0.0.10.1 - Nvram read failed.
```

```
Reformatting nvram
```

```
LP00>>>wwidmgr -show ada
```

item	adapter	WWN	Cur. Topo	Next Topo
[0]	pga0.0.0.8.1	1000-0000-c920-05ab	FABRIC	FABRIC



```
[ 1] pgb0.0.0.10.1 1000-0000-c921-0ce0 FABRIC FABRIC  
[9999] All of the above.  
LP00>>>init
```

5.12.2 Known Issues

5.12.2.1 MBX Not Ready

You may see a "*** MBX not ready ***" error when formatting the Nvram with the "**wwidmgr -set ada**" command. Reissuing this command should succeed:

```
P00>>>wwidmgr -set ada -item 9999 -topo fab  
pga0.0.0.6.1 - Nvram read failed.  
Reformatting nvram  
*** MBX not ready ***  
pgb0.0.0.1.2 - Nvram read failed.  
Reformatting nvram  
P00>>>wwidmgr -show ada  
item adapter WWN Cur. Topo Next Topo  
*** MBX not ready ***  
pga0.0.0.6.1 - Nvram format incorrect.  
[ 0] pga0.0.0.6.1 1000-0000-c920-a763 FABRIC UNAVAIL  
[ 1] pgb0.0.0.1.2 1000-0000-c920-c9fe FABRIC FABRIC  
[9999] All of the above.  
P00>>>wwidmgr -set ada -item 9999 -topo fab  
P00>>>wwidmgr -show ada  
item adapter WWN Cur. Topo Next Topo  
[ 0] pga0.0.0.6.1 1000-0000-c920-a763 FABRIC FABRIC  
[ 1] pgb0.0.0.1.2 1000-0000-c920-c9fe FABRIC FABRIC  
[9999] All of the above.
```

5.12.2.2 No Unit Number Specified

The command "**wwidmgr -quickset -item <n>**" MUST also have the "**-unit**" qualifier on the line. "If no unit number is specified, the console will generate one that is a hashed value of the WWID." This functionality is not working properly, and a **-unit** MUST be specified." Ref: Wwidmgr Users Guide.

6 Firmware Changes History

6.1 V7.2 - June 2006

Console Enhancements

- WWIDMGR change – do not attempt to get a UDID on a Fibre Channel SAN for SCSI Sequential Access or SCSI Media Changer type devices (i.e. tape drives, robot arm)
- Added new module naming for the following I/O devices seen under the “show config” command. These are RoHS-class devices and functionally identical to their counterparts.
New DE602-FA/TA (equivalent to –FR/TR) all are displayed as DE602-F*/T*
New DEGXA-SB/TB (equivalent to –SR/TR) all are displayed as DEGXA-S*/T*
- Added new part numbers in the FRU tree for RoHS¹-class Fans

New I/O Option Firmware

- KGPSA-CA (LP8000) - Firmware Revision 3.93A0
- KGPSA-DA (LP9002) - Firmware Revision 3.93A0
- KGPSA-EA (LP9802) - Firmware Revision 1.91X6
- DD-A5132-AA (LP1000) – Firmware Revision 1.91X6
- DD-A5134-AA (LP1000DC) – Firmware Revision 1.91X6

6.2 V7.1 – January 2006

Console Enhancements

- Memory timing register adjusted to improve DIMM reliability in elevated temperature environments.
- Kgpsa driver: faster retry on PLOGI frames
- Scsi driver: enhance page and field length checks for SCSI inquiry responses.
- aic78xx driver: increase the number of supported targets from 16 to 32

Bug Fixes

- OpenVMS PALCode – Fix a bug in the i-stream cache fill error handling code that could result in a very rare and unnecessary machine check with an A0 reason code.

Other

- See note on KVM console switch – restriction using “run bios” command

New I/O Option Firmware

- LP10000 – Firmware Revision 1.91A1
- LP9802 - Firmware Revision 1.91X1
- KZPDC - Firmware Revision 3.56
- KZPEC - Firmware Revision 2.58 (new option)

6.3 V7.0 – June 2005

Console Enhancements

- Two new SRM console environment variables [ev’s] for customer use. Ev’s “user_def1” and “user_def2” takes a string argument and accepts any characters within double quotes. The ev’s are nonvolatile and are

1.1.1

¹ Reduction of Hazardous Substance [RoHS]



accessible from the Tru64 operating system. The ev's are not accessible from OpenVMS.
Details in section: 4.3

- DEFPA – increase driver setup time in the data link layers.

Bug Fixes and Other

- KGPSA and WWIDMGR – increase the number of Nx EV's
- SmartArray 5300 – fixed serial emulation

6.4 V6.9 – November 2004

Bug Fixes and Other:

WWIDMGR Hang Symptom - A patch has been applied to the fibre-channel support to resolve a problem that causes the WWIDMGR utility to hang and never complete. The hang would occur with the first invocation of the WWIDMGR utility. Configurations where this problem has been seen are: EMC Symmetrix storage arrays utilizing Timefinder or SRDF business continuance volumes (BCV) that are in an “established” state, and possibly misconfigured or failing volumes. These volumes may respond to an inquiry from the host as being “not ready”. The “not ready” state is indicated by an invalid device id that was accepted as valid by the console. The console software has been modified to bypass volumes with invalid device ids and log the device id information to the console error log.

6.5 V6.8 – August 2004

Console Enhancements

- Console Recognition of the following Options
 - 3X-DAPBA-FB, 3X-DAPBA –FB/UB Asynchronous Transfer Mode Adapters
 - 3X-KPKON-AA Fault Management Control Module
- I/O Option Vendor-Name/Device-Name - New Firmware Revision
 - LP8000/KGPSA-B - DS3.92A2
 - LP9002 /FCA-2354 - CS3.92A2
 - LP9802/FCA-2384 - HS1.81A5

Bug Fixes and Other

Correct a problem in the fibre-channel driver that occasionally resulted in a boot, reboot or crash dump failure with an error message of "cb_open failure".

6.6 V6.7 – May 2004

Console Enhancements

Loadable Firmware Utility supports updating option firmware for the LP1000 (FCA-2684) Fibre Channel Card

Console Recognition of the Asynchronous Transfer Mode [ATM] Adapters - 3x-DAPBA-FA, 3X-DAPBA-UA, and 3X-DAPCA-UA

I/O Option Firmware Changes

KZPDC option firmware update to version 3.40 (was v2.94)

LP1000 option firmware added to V6.7 firmware CD



Bug Fixes and Other

Gigabit Ethernet driver:

Fix output of link state messages during a callback. Console log when OpenVMS is booting is now cleaner.

Fix link status after plugging into a live Ethernet network after the system has been powered up. Symptom: Link light would turn not on after plugging in a wire until a boot or an init command.

X86 - fix a double de-allocation of memory in the bios emulator. This prevents a stack trace on an OS shutdown if the boot bios are set to a controller not used to boot the operating system.

6.7 V6.6 – November 2003

Console Enhancements

- Console recognition for the following:
 - 3X-DEGXA-SA - PCI-X/PCI TO SINGLE-PORT MMF GIGABIT ENET SERVER NIC
 - 3X-DEGXA-TA - PCI-X/PCI TO SINGLE-PORT UTP GIGABIT ENET SERVER NIC
- KGPSA Behavior
 - Several changes to prevent "cb_open fail" and other boot failures
 - Serious faults will now cause the console to crash rather than hang in the debugger.
 - In some rare cases it may take up to a minute or more for the link to initialize. There is a two-minute timer to prevent the system from hanging.
 - There is a small period of time after the system is initialized where some fibre channel disks will not be displayed with a "show device" command. If the system boots during this period the message "waiting for poll to complete" followed by the device name will be displayed while waiting for the device.
- KGPSA Messages
 - The kgpsa will report the message "*open fibre*" followed by the *device name*, when it is not connected to a switch or to an arbitrated loop with Several kgpsa error messages have been expanded to include the device name
 - Several kgpsa error messages have been removed because they were reporting normal behavior

Bug Fixes and Other – none

I/O Option Firmware Changes:

- FCA-2384 (LP9802) Firmware revision changed to 1.00x8

6.8 V6.5 – June 2003

Console Enhancements

- Update test scripts to support testing gigabit Ethernet network devices (example ega0)

Bug Fixes

Memory Channel 2 driver - module configuration register was incorrectly being restored during a system warm restart.

Incorrect error DIMM reporting on a correctable ECC memory error.

Background: A correctable ECC memory error, the DIMM number and J number (memory connector slot) may be reported incorrectly. All other information, such as, C_STAT, C_ADDR, C_SYNDROME_0 and C_SYNDROME_1 are reported correctly.

In the example below, the line “*** Error - DIMM 1 (J14) Failed ***” is incorrect and should have been reported as
“*** Error - DIMM 5 (J47) Failed

EV6 Correctable Dcache Fill from Memory ECC Error on CPU 0

```
C_STAT          0000000000000003
C_ADDR          0000000000000000
C_SYNDROME_0    00000000000000E3
Syndrome = E3 (Correctable, Data Bit 24)
*** Error - DIMM 1 (J14) Failed ***
C_SYNDROME_1    0000000000000000
```

This bug was fixed in the V6.4-21 interim release.

Other

See known anomalies with VX1 Oxygen Graphics card in section 5.2

New firmware revision for I/O options:

Kgpsa Notes – see section 4.1

6.9 V6.4-21 Interim Release – Feb. 2003

Bug Fixes - Fix incorrect error DIMM reporting on a correctable ECC memory error

6.10 V6.4-18 – January 2003

Bug Fixes

- DEGPA corrected to re-establish the link during a console callback that attempts to perform I/O on the Gigabit Ethernet device.

Problem description: Console driver for Gigabit Ethernet failed to establish a link during a Tru64 Unix RIS installation, causing the installation to fail.

6.11 V6.3-5 – October 2002

Bugs fixed:

Problem description: OpenVMS and Tru64 Unix operating systems would possibly fail when installing the license, with an “insufficient license units” error.

The SRM console has been modified to request the correct number of license units for each system configuration.



25 license units for a 1-cpu system and 75 license units for a 2-cpu system.

Problem description: Console driver for the onboard Gigabit Ethernet device failed to establish a link during a Tru64 Unix RIS installation, causing the installation to fail.

The onboard Gigabit Ethernet device driver has been corrected to re-establish the link during a console callback that attempts to perform I/O on the Gigabit Ethernet device.

Problem description: RCM (Revision Configuration Management) reported incorrect memory controller configuration information for DS25.

The SRM console was modified to store the correct memory controller configuration information in the hardware configuration tree.

6.12 V6.3-3 – First Release – August 2002

V6.3-3 is the first official console firmware release for AlphaServer DS25. August 2002