AlphaServer DS10
V7.2 Console Firmware Release Notes

1   Scope

The document lists significant changes in this firmware release and describes methods to update console firmware and console-supported I/O options firmware. This document does not describe console firmware internals or console architecture.

1.1   Audience

The audience for this document is intended for individuals responsible for operating system installations and upgrades, for console firmware updates and for (console-supported) I/O options firmware updates.

1.2   Golden Rules on Updating Firmware

Update console firmware before installing or updating an operating system. After an operating system shutdown, always re-initialize the system before running the update utility.

1.3   Internet Access to Firmware

Internet access to console firmware and to AlphaBIOS/HAL and NT Drivers.

www.compaq.com/support/ (click on **Alpha Systems** under the "**Downloadable Drivers & Utilities**" menu).

http://www.compaq.com/support/files/alphant/index.html (Current version of BIOS, HAL and NT Drivers)

2   Read Me First

2.1   Console Changes This Release

Console Enhancements

- I/O Option Firmware changes

    o   DS-KGPSA-CA (LP8000) - Firmware Revision 3.93A0
    o   DS-KGPSA-DA (LP9002) - Firmware Revision 3.93A0
    o   DS-KGPSA-EA (LP9802) - Firmware Revision 1.91X6
- New module naming for the following I/O devices:

    DE602-FA => DE602-F*

    DEGXA-SB/TB => DEGXA-S*/T*

- WWIDMGR code 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)

2.2   Show Bios/Run Bios Console Commands

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

    P00>>> **show bios <hose> (use 0 or 1 for <hose> , default is 0)**

- **run bios** invokes the BIOS expansion ROM on a supported PCI controller (e.g. KZPCC-CE). This command is commonly used to invoke functions or utilities in the 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

When you enter the **run bios** command, the system first does a bus reset. You are then prompted to type a control sequence (e.g. Ctrl^D) to enter the PCI options' BIOS utility. The control sequence depends on the PCI option. Refer to the documentation supplied with the PCI option for information on running the utility.

See note on KVM Switch Limitations under the Known Anomalies and Restrictions Section.

2.3   Operating System/Console Firmware Revision Matrix

The following matrix shows the minimum operating system version required with this console firmware release.

Table 2-1 AlphaServer DS10 Operating System and Firmware Revision Matrix

Firmware CD V7.2	June 2006
Operating System	
OpenVMS	V7.1-2 + required patches
Tru64 Unix	V4.0F

Console Firmware	
SRM Version	V7.2
AlphaBIOS Version	V5.71

2.4 Known Anomalies and Restrictions

2.4.1 KVM Console Switch Limitations

2.4.1.1 Run Bios Command in Gaphics Mode not supported

Use of the SRM "run bios" command from the graphics console when connected through the KVM is not supported and will result in unexpected keyboard behavior. As a workaround, use the SRM "run bios" command from the serial console via serial port connection.

2.4.2 Halting VMS with 3D Labs Oxygen VX1 graphics card

If you have an Oxygen VX1 graphics card and the console is set to graphics mode, then when you halt your VMS system with the halt button, the graphic monitor will not reset. This will make the system appear as though it is hung, but it will still accept input from the keyboard. Typing "crash <ret>" will still work and get you back to the console prompt.

2.4.3 Reconfiguring fibre channel switches

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.

2.4.4 Messages from KGPSA devices

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

2.4.5 AlphaBIOS V5.70 requires HAL Revision G

**READ THIS
BEFORE
INSTALLING THE FIRMWARE**

AlphaBIOS 5.70 supports changes introduced in HAL Revision G for systems based on the Alpha 21264 CPU. You **must** install HAL Revision G on your system **before** attempting to install AlphaBIOS 5.70. Otherwise, the system will hang at boot time.

See the AlphaBIOS 5.70 Section of the AlphaBIOS release notes for additional details.

2.4.6 Console KGPSA Driver Start-up

When the console KGPSA driver starts, you may see the error message "pga0.0.0.2.4 - Nvram read failed". See the WWIDMGR USERS MANUAL for information about formatting the NVRAM.

3 Firmware Update Procedure

This chapter explains how to invoke the Loadable Firmware utility [LFU] to update AlphaServer firmware from the SRM or AlphaBIOS console. Firmware update information is also described in the Owners Guide.

AlphaServer systems recently shipped may have a higher firmware revision than the firmware revision listed in this release. *Do not load firmware that is older than what is presently installed.* A higher firmware revision usually indicates support for the currently shipping operating system. The revision number of the console firmware and the Alpha Firmware CD are mutually exclusive.

A system reset or re-initialization should be done after the operating system is shut down and before the update utility is run.

3.1 Update Firmware from the SRM Console

The following procedure shows how to update console and I/O option firmware. To update only I/O option firmware, select the option name after the update command e.g. UPD> update pka0. Type LIST to display available option names.

Insert Firmware CD into drive	>>> show device	Find the CD-ROM device ID e.g. dka500
Re-initialize the system	>>>init	
Boot the Alpha Firmware CD	>>> Boot dka500	Boot code determines the AlphaServer type
Press the Enter key after Bootfile:	Bootfile:	Press enter to use default firmware
Type update	UPD> update	Update console and i/o option firmware
Exit the LFU	UPD>exit	Exiting will initialize the system

Example updating firmware from the SRM console:

>>> show device
dka500.5.0.2000.1 DKA500 RRD47 1206

>>> **boot dka500** (Firmware CD is inserted in CD Drive)

block 0 of dka500.5.0.2000.1 is a valid boot block reading 989 blocks from dka500.5.0.2000.1
bootstrap code read in   base = 156000, image_start = 0, image_bytes = 7ba00
initializing HWRPB at 2000
initializing page table at 148000
initializing machine state
setting affinity to the primary CPU
jumping to bootstrap code

[Release notes are displayed]

Bootfile: [press Enter-key]

eb.....ea.e9.e8.e7.e6.

Checking dka500.5.0.1000.0 for the option firmware files…

***** Loadable Firmware Update Utility *****

Function   Description

Display   Displays the system's configuration table.
Exit   Done exit LFU (reset).
List   Lists the device, revision, firmware name,update rev
Update   Replaces current firmware with loadable data image.
Verify   Compares loadable and hardware images.
? or Help   Scrolls this function table.

UPD> **update**

answer **Yes** to all questions then exit

UPD> **exit**

End of Example

The firmware is now loaded into ROM. Typing exit will reset the AlphaServer system which invokes the new firmware.

3.2 Update Firmware from the AlphaBIOS Console

The following procedures show how to update console and I/O option firmware. To get to the AlphaBIOS console menu from Windows NT, shutdown the operating system then reset the system. To get to the AlphaBIOS console from the SRM console prompt >>> , type "**set os_type NT**" then reset the system or type >>> **alp** from the SRM console.

Insert Alpha Firmware CD into CD-ROM drive	
Select "Supplementary Menu"	to get to the "Install New Firmware" menu item
Select "Install New Firmware"	to invoke the LFU from the Alpha Firmware CD.
Type "**update**" after the UPD> prompt	to update console and i/o option firmware
Type "**exit**" after the firmware has updated	to reset the system

3.3 Loadable Firmware Utility [LFU] Commands

The Loadable Firmware Utility is the mechanism to update console and I/O option firmware. This section describes the most commonly used LFU commands. Type HELP at the LFU prompt (UPD>) to list all LFU commands.

3.3.1 Update Command

Use the update command to update console and/or I/O option firmware.

UPD> **update**   [update will updates both console(s) and I/O option firmware]
UPD> **update <option-name>** e.g. >>> update ccmab02

3.3.2 List Command

Use the list command to show a list of memory-loaded images and currently supported flash ROMs. In the following example three devices are installed in a system that can be firmware-updated.

UPD> list			
Device	Current Revision	Filename	Update Revision
Abios	5.68	abios_fw	5.70
Srm_fw	5.5	SRM	5.6
UPD>			

4 Firmware Change History

4.1 V7.1

Console Enhancements
- Changes to the AIC-78xx SCSI port driver increase the number of support targets from 16 to 32
- KGPSA driver changed to do faster retry on PLOGI frames
- Changes to SCSI driver code enhance page and field length checks for SCSI inquiry responses

Bug Fixes and Other
- Fix for long EVs (>128 characters) being copied to another EV and causing a console crash

4.2 V7.0

Console Enhancements
- Two new SRM console environment variables for customer use. The environment variables "user_def1" and "user_def2" take a string argument and accept any characters within double quotes. These environment variables are nonvolatile and are accessible from the Tru64 UNIX operating system. They are not accessible from OpenVMS.
- DEFPA – an increase driver setup time in the data link layers before the station ID has been included in this release. This increased setup time occurs only when the driver is first initialized or turned on.

Bug Fixes and Other
- KGPSA and WWIDMGR - increase the number of Nx environment variables from 4 to 8 to support up to 8 boot paths for fibre channel storage.

- Fix a serial emulation for the Smart Array 5300

4.3 V6.9

Console Enhancements
- None

Bug Fixes and Other
- WWIDMGR HANG

  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.