

*hp AlphaServer GS1280/ES80/ES47  
V7.3a Console Firmware Release Notes*

*This document contains firmware enhancements and update  
procedures. Start with Read Me First.*

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Scope.....	4
Golden Rules .....	4
On-Line Technical Resources .....	4
hp Alpha Retain Trust Program .....	4
Read Me First .....	5
Firmware Changes This Release .....	5
Console Firmware, I/O Adapters and Operating System Revisions .....	5
Workarounds and Restrictions .....	7
Booting Firmware .....	7
Booting Firmware CD Restriction - CPU0 Required .....	7
Booting Firmware from DVD is Not Supported .....	7
XSR0M Mismatch .....	8
Server Management .....	9
MBM Set Time Command .....	9
WWIDMGR .....	11
Replacing Cabinet Fans .....	11
Procedures.....	12
Updating Firmware .....	12
From the SRM Console .....	12
From the MBM Console .....	12
Firmware Change History.....	15
V7.3 .....	15
V7.2A .....	15
V7.2 .....	16
V7.1 Do Not Use .....	17

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## Scope

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

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

## Golden Rules

Update all console firmware before installing or updating an operating system to ensure compatibility. 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.

It is not recommended to install firmware that is older than what is presently installed.

## On-Line Technical Resources

Firmware Web site:

<http://www.hp.com>

Click on Large Enterprise Business, then click on Server, click on HP Alphaservers then click on firmware

Technical Support:

<http://h20000.www2.hp.com/bizsupport/TechSupport/Home.jsp>

<http://www1.itrc.hp.com/service/home/home.do>

Technical Information:

[http://h18003.www1.hp.com/alphaserver/gs1280/gs1280\\_tech.html](http://h18003.www1.hp.com/alphaserver/gs1280/gs1280_tech.html)

## hp Alpha Retain Trust Program

The hp Alpha Retain Trust Program underscores HP's commitment to providing long-term business continuity for Alpha Systems 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.

## Read Me First

Reminder: DO NOT USE V7.1 Firmware because of issues with mbm fw. For more information refer to “V7.1 MBM Firmware Bug” on page 17.

### Firmware Changes This Release

- MBM/PBM firmware has changed in this release. The change affects ES47 and ES80 systems only. The change fixes a power switch sensor routine. The symptom is that a system may power-off if the power switch is *very slowly* moved from the ON position to the SECURE position. This symptom does not exist on GS1280 systems therefore updating firmware on GS1280 systems is not required.
- SRM Firmware - only the version number has changed.
- No other fimware has changed in this release.

### Console Firmware, I/O Adapters and Operating System Revisions

<b>TABLE 1. Console Firmware Revision</b>	
<b>Firmware Component</b>	<b>Revision</b>
SRM Console	<b>V7.3-11 *</b>
VMS PALCode	V2.11-25
UNIX PALCode	V2.08-19
CMM FW	V2.7-5
CMM FSL FW	V2.7-2
CMM FPGA FW	V114
MBM/PBM FW	<b>V2.7-7 *</b>
MBM/PBM FSL FW	V2.1-1
SROM FW	V1.0-9
XSROM FW	V1.0-31
12-Slot Hot Plug FPGA	V4.1-01
XShelf Hot Plug FPGA FW	V3.1-10
2P Hot Plug FPGA	V3.1-02
CPLD Lattice Part	V0.5
* indicates firmware changed in this release.	

<b>TABLE 2. PCI I/O Adapters Firmware Revision</b>			
<b>Adapter</b>	<b>Fw Revision</b>	<b>Adapter</b>	<b>Fw Revision</b>
CIPCA	4.20	DEFPA	3.20
FCA-2354	CS3.93A0	KZPDC	3.56
FCA-2384	HS1.91X6	KZPEC	<b>2.76</b>
FCA-2684/DC	TS1.91X6		

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**TABLE 3. Firmware and Operating System Revisions**

Release Type			Firmware Revision			Operating System	
CD Release	Interim Release	Release Date	SRM	MBM/PBM	CMM	OpenVMS	Tru64 UNIX
-----	V7.3A	9/2007	V7.3-11	V2.7-7	V2.7-5	V8.2	V5.1B
V7.3	-----	4/2007	V7.3-1	V2.7-6	V2.7-5	V8.2	V5.1B
-----	V7.2A	10/2007	V7.2-11	V2.7-5	V2.7-4	V8.2	V5.1B
V7.2	-----	6/2006	V7.2-1	V2.7-3	V2.7-4	V8.2	V5.1B
V7.1	-----	6/2006	V7.1-1111	V2.7-1	V2.7-3	V8.2	V5.1B
V7.0	-----	6/2005	V7.0-5	V2.6-4	V2.7-1	V8.2	V5.1B
V6.9	-----	12/2004	V6.9-15	V2.5-4	V2.6-0	V7.3-1 <sup>a</sup> with kit	V5.1B <sup>b</sup> with kit
V6.8	-----	10/2004	V6.8-3	V2.4-2	V2.5-4		

a. VMS73-1-EV7\_V0100 Update Kit

b. T64V51BB1A S0001 Update Kit

## Workarounds and Restrictions

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### Booting Firmware

#### Booting Firmware CD Restriction - CPU0 Required

Booting the firmware CD can only be done from CPU0 (for example, **P00>>> boot dqa0**). Booting the firmware CD from other than CPU0 is not supported and may result in a *kernel stack not valid* response (for example, **P002>>> boot dqa0** will not work).

#### Booting Firmware from DVD is Not Supported

Booting firmware is only supported from a bootable CD-ROM. Although booting firmware from a bootable DVD is not supported, you can boot a DVD as long as the size is under 2GB.

### KVM Console Switch Limitations

#### Cannot Use the Run Bios Command in Graphics Mode - Use Serial Mode

The SRM *run bios* command is not supported from a graphics console, connected to a KVM console switch, and will result in unexpected keyboard behaviour. Use the SRM *run bios* command from a serial console via the serial port connection.

### Cluster CI Connections Behavior

During system initialization, cluster CI connections may be temporarily close resulting in an *SCS Disconnect Request received - break VC* console message. The driver properly recovers and re-establishes the connection so there is no negative impact from this temporary closure.

### Multiple *Initializing Keyboard* Messages

Multiple instances of the *initializing keyboard* message can occur if there is more than one keyboard attached to the system (this is expected), or if the console's USB device driver is forced to reconfigure the bus. Each time the bus is reconfigured, an *initializing keyboard* message can be displayed. The multiple messages can be ignored.

### Configuring I/O Adapters using BIOS

When configuring I/O Adapters using BIOS, it is recommended that a serial mode console connection be used. If the console environmental variable is set to graphics there may be up to a 3 minute delay after pressing the escape key<ESC> to exit the BIOS and to return to the graphics mode prompt.

### Bootbios EV

When setting the *bootbios* console environment variable, on systems with more than eight KZPDC adapters, use the full device path name. (e.g. *set bootbios pya0.0.0.2.1* rather than *set bootbios pya0*).

### Init\_type EV

If the *init\_type* console environment variable is set to **hard**, there will be a hard reset of the partition on the *init* command. (For example, any memory dumps living in RAM at

the time will be overwritten by diagnostics) If it is set to *soft*, the console will merely be restarted at the beginning of the console code. The default setting for *init\_type* is *soft*, to optimize boot time.

**Boot\_Reset EV**

If the *boot\_reset* console environment variable is set to *on*, the system will be re-initialized (hard or soft, depending on *init\_type*) prior to booting. If it is set to *off*, the system will NOT be re-initialized prior to booting. The default setting for *boot\_reset* is *off* to optimize boot time.

**XSROM Mismatch**

If any CPU module has version V1.0-11 or later of XSROM, you must either upgrade all the other CPU modules or downgrade the modules with V1.0-11. You will not be able to boot to the console with mismatched XSROM versions except as explained below.

You can use either the update command from the MBM prompt or use the LFU to upgrade the XSROM from a previous version. If you have mismatched XSROM versions you must use the MBM update command or follow the procedure below to update using LFU:

- 1 **mbm> set cpu\_enabled 3**  
(The value 3 is a mask field to enable cpu0 and cpu1.)
- 2 **mbm> power on**  
(The system powers on with 2 cpus enabled.)
- 3 Run the current version of the LFU from the SRM prompt P00>>>
- 4 **LFU> update xsrom\***
- 5 **LFU> exit**  
(The system powers up again, still with 2 cpus enabled.)
- 6 **mbm> power off**
- 7 **mbm> clear cpu\_enabled**
- 8 **mbm> power on**  
(The system powers up with all cpus in normal manner.)

To load the XSROM from the backup copy on the MBM use the following command:

```
MBM> update xsromfw 10.253.0.1 -cabinet<x> -drawer <y> CMM<z>
```

where x and y are the cabinet and drawer number of the DUO to be updated, and z is the number of the DUO (0-3).

## Server Management

The following is a list of workaround and restrictions for server management firmware.

- After a firmware update, *partitions must be power cycled* in order for an FPGA, that was update with new firmware, to be used.
- While a firmware upgrade is in progress, *it is not recommended* to issue commands at the MBM prompt.
- Splitting a DUO into 2 hard partitions is not supported.
- The following messages can be ignored:
  - ~PGP-W-(partgroup) Can't assign local memory for IO7 on pid x
  - ~SMG-W-(smprot) No outstanding command for response nnn
  - putchar\_totelnet\_task: printed -1 out of n chars. This can be displayed during some error situations.
- MBM console command *set membership -auto* is used to define the expected system configuration. The following messages can appear when an SBB or a PCI drawer is added to the system without using the *set membership -auto* command.
  - ~GRP-W-(grp\_Probe) MBM/PBM cab:00 drw:2 is not in the member list.
  - ~GRP-W-(grp\_Probe) Use Set Membership -add -ca 0 -dr 2 MBM
- When changing cabinet and drawer numbers, you must make sure the (cabinet + drawer number) combination you set is unique across the system.
- Before booting the OS and setting the time, first set the time from the MBM> prompt to your desired reference date and time (e.g. local, UTC). This ensures that logs stored in the MBM have meaningful timestamps. This only needs to be done when you initially install the system.
- When using the MBM *connect* command, be aware that the buffered data that is printed out upon initial connection could be from a *previous* power-on or reset. Data is saved into a circular buffer until the user connects to the session, so it is possible to receive output from the system even though it was powered down some time ago.
- If cabinet and/or drawer thumb wheels are changed, you must turn the main power on and off at the system breaker or issue a *reset -micro -all* command in order to reset all of the micros. Make sure that all of the VAUX lights go out if you turn main power off from the system breaker.

## MBM Set Time Command

The MBM *set time* command is ideally used before the system is partitioned, and only the OS *set time* command is used afterwards. If the mbm set time command is used on systems with multiple partitions, then do the following. After applying the MBM set time command and booting the Operating System, **check and reset the time from the OS** if necessary. This will help MBM delta-time consistency across multiple partitions.

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## Workarounds and Restrictions

The recommended two part procedure to align MBM time to OS time and to clear MBM Delta time is as follows. Use this procedure before a system is partitioned.

### Align MBM base time to OS time

Display OS time, then set MBM Base Time to match OS time

**\$ show time**

**MBM> set time yyyy/mm/dd hh:mm:ss**

### Reset MBM Delta time

Show OS time, set time from the OS console, then verify that MBM Delta time has changed (cleared).

**\$ show time**

**\$ set time=mm-dd-yyyy:hh:mm:ss**

**MBM> show time**

End of Procedure

## WWIDMGR

WWIDMGR will not see any ports if the SCSI\_POLL console environment variable [EV] is set to the OFF. When SCSI\_POLL = OFF, the "**wwidmgr - show wwid**" command will not display any ports, and the "**wwidmgr -quickset uuidnn**" command will respond with the *uuid cannot be found*. The SCSI\_POLL EV is set to ON by default. Do not change this EV.

## Replacing Cabinet Fans

Symptom: Fans runs at higher than normal speed after replacing a cabinet fan.

Environment: Cabinet is powered down with only Vaux power applied.

Solution: Reset the micros after replacing a cabinet fan, in a cabinet with only Vaux power. Use the MBM command "**reset -micro -all**" to restore fans to their normal speed. Fans will run at higher speeds until this MBM command is applied or until Vaux power is cycled.

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## Procedures

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### Updating Firmware

Updating firmware is done from the Loadable Firmware Update Utility that is booted from the firmware update CD. It is recommended that firmware updates are done from CD via the SRM console, rather than from a tftp server via the MBM console.

### From the SRM Console

Initialize the SRM console, boot the firmare CD, then update firmware. Booting invokes the Loadable Firmware Utility to run. The procedure to update all firmware is as follows:

- Initialize the SRM console to ensure the system is in a quiescent state.  
P00>>> init
- Boot the firmware CD and press the ENTER key when prompted with the LFU filename.  
P00>>> boot dqa0
- Update all firmware from the LFU and answer **Yes** when prompted.  
UPD> **update** \*
- Exit the LFU which will reset the micros  
UPD> **exit**  
End of Procedure

### From the MBM Console

The primary method to update firmware from CD was previously shown. The alternate method to update firmware from the MBM console connected to a tftp server. The MBM *update* command uses TFTP between the MBM (requesting a firmware image) and the connected PC-based tftp server (which serves the firmware images). The individual firmare images are on the firmware CD and must be copied to the tftp server. The following sections describe how to implement this method of firmware updates.

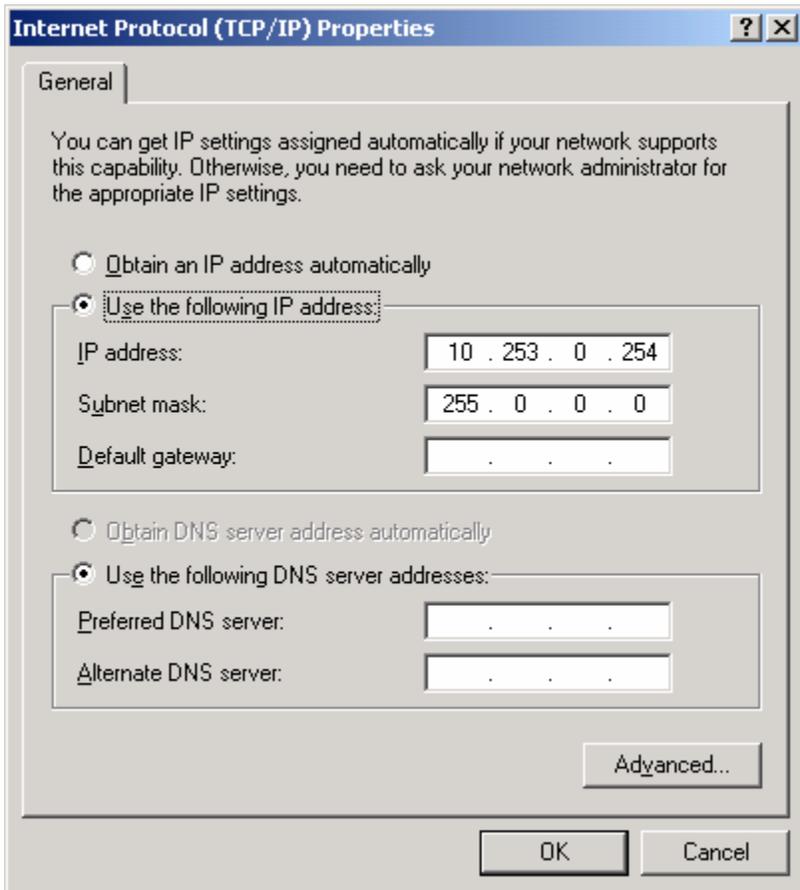
#### *Setting Up a PC-Based TFTP Server*

To setup a PC-based TFTP Server, the PC Ethernet network card must be connected to the Server Management hub. The network connection can be static (using the address “10.253.0.254”) or dynamic (using the dhcp protocol). To set up the PC network connection do the following from your PC:

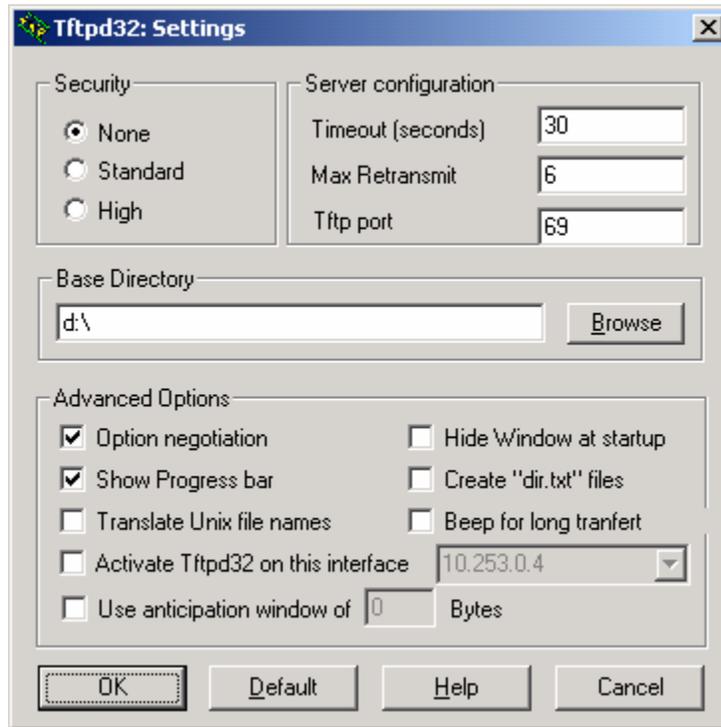
- Select *Start, Settings, Control Panel, Network and Dial Up Connections, Local Area Connection, Properties, Internet Protocol(TCP/IP), Properties*.

The remainder of this document has examples using the static address “10.253.0.254”.

If using DHCP, check *Obtain an IP Address automatically*.



Start the TFTP Server on the PC by invoking `tftpd32.exe`. A copy of `tftpd` can be downloaded from <ftp://ftp.hp.com/pub/alphaserver/firmware/other/utility/>. Download and unzip the file to a convenient directory on your local PC. Then change the settings to point the directory containing the files to be upgraded.



Click OK.

*MBM Update Command Examples*

```
MBM> update cmmfpga 10.253.0.254 -file fpga_v114.bin
```

```
MBM> update cmmfw 10.253.0.254 -file cmm3_v2_7_5.bin
```

```
MBM> update mbmfw 10.253.0.254 -file mbm_v2_7_7.bin
```

For systems with 12 slot PCI boxes (standard PCI box on 8P-SBB):

```
MBM> update pbmfpga 10.253.0.254 -file pf_v4_1_01.bin
```

For systems with Xshelf PCI boxes:

```
MBM> update xshfpga 10.253.0.254 -file xpf_v3_10.bin
```

For 2P Systems:

```
MBM> update mbmfpga 10.253.0.254 -file 2p_V3_1_02.bin
```

After updating the firmware you should cycle VAUX or issue the MBM command **reset -micro -all** to force the MBMs and PBMs to run the new firmware. Also, use the **show version** command to verify the new firmware revisions.

## Firmware Change History

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### V7.3

#### SRM Firmware Changes

- 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 that may be used for boot or crash dump devices.  
Solution: Increase the number of Nx (16) and WWIDx (8) console environmental variables.
- I/O Option Firmware - no changes

#### Server Management Changes

##### MBM Firmware

- New power supply EEPROMs requires writing on 8- byte boundaries. Solution: Write on 8-byte boundaries.
- If an MBM CLI receives a zero ration when request CPU frequency, the task may crash and lock up the MBM. Solution: Check all ratios for a zero value for frequency changes.
- Firmware version checks and updates would sometime show an error on MBMs with failing flash parts.  
Solution: The flash driver now performs *erase suspends* when a sector erasure exceeds a specific time limit to allow reads to occur.
- Symptom logging - the MBM could not read cabinet OCP with the cable disconnected, which causes the mbm to default to cabinet 0. The Symptom is now logged and reported via alerts after two attempts are made to read cabinet OCP.

CMM Firmware - Add a log message when PAL logout frames are throttled.

No other changes to any other firmware.

### V7.2A

#### MBM Firmware Change Only

Fix routing algorithm bug introduced in the V7.2 firmware release. As part of the V7.2 Firmware Release, a fix was made to prevent non routable partition configurations from

powering on. However, it has been determined that the modification also prevents some valid configurations from powering on as well.

## V7.2

### SRM Firmware Changes

- 1 New module naming has been added for the two I/O devices listed under the SRM **show config** command:
  - I/O device DE602-FA is displayed as DE602-F\*.
  - I/O device DEGXA-SB/TB is displayed as DEGXA-S\*/T\*
- 2 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 arms)

### Server Management Changes

- 1 CMM
  - Fix for whoami register value in 680 events; value was off by a nibble  
Fix wrong platform in CMM shared memory on ES47/ES80 displaying GS1280 in “show config” command.
- 2 MBM/PBM
  - Code change to only allow modifying partition attributes when powered off. This is to prevent invalid **Test 17** failures seen during *power on* of the system.
  - MBM “show duo” command now includes the J- number for slot identification, as marked on the DUO, for the RIMM being displayed.
  - Temperature and Voltage limits is included in the “show power –detail” command display output.
  - Fixed a problem where an MBM watchdog reset on a 2P drawer or PBM PCI drawer caused the drawer to lose power.
  - Fixed a problem where a non-routable partition message appeared but the partition powers on anyway.

V7.1 Do Not Use

V7.1 MBM Firmware Bug

If you have a V7.1 Firmware CD, please **do not use the V7.1 CD to upgrade GS1280 firmware**. If you have already upgraded to V7.1, please upgrade firmware to the most current firmware release as soon as possible. The most current release is available from <http://h18002.www1.hp.com/alphaserver/firmware/readmes/gs1280.html>

**Background** - V7.1 contained a GS1280 firmware bug that may cause a machine check crash. No other AlphaServer models are susceptible except GS1280. The MBM firmware bug affects partitions that are not rectangular (e.g. L-Shaped) and/or have CPU filler modules installed. V7.1A GS1280 firmware was an interim firmware release on March 2006. V7.2 firmware supersedes the V7.1A interim release.