DIGITAL Alpha XL™

Firmware Update Procedures

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Contents

Preface v

1 DIGITAL Alpha XL Firmware Update Procedure

1.1 Updating System Firmware 1–1
1.1.1 System Firmware 1–1
1.1.2 Update Utility 1–1
1.1.3 Flash Enable Jumper 1–1
1.2 Updating from the NT/ARC Firmware 1–1
1.2.1 Step 1: Shutdown Windows NT and Powerup system. 1–1
1.2.2 Step 2: Load the Firmware Update Utility Compact Disc 1–1
1.2.3 Step 3: Go to the Supplementary Menu 1–1
1.2.4 Step 4: Go to the Install New Firmware selection 1–1
1.2.5 Step 5: Perform Update 1–1
1.2.6 Step 6: Power-cycle the System 1–2
1.3 Updating AlphaBIOS 1–2
1.4 Bug Fixes and New Features 1–2
1.4.1 ARC V4.49 bug fixes/additions 1–2
1.4.2 AlphaBIOS 5.22 bug fixes/additions 1–2
1.4.3 AlphaBIOS 5.24 bug fixes/additions 1–3
1.4.4 ARC V4.53 bug fixes/additions 1–3
1.4.5 AlphaBIOS V5.30 bug fixes/additions 1–3
1.4.6 ARC V4.56 bug fixes/additions 1–3
1.4.7 AlphaBIOS V5.64 bug fixes/additions 1–3
1.4.8 ARC V4.57 bug fixes/additions 1–3
1.4.9 AlphaBIOS V5.65 bug fixes/additions 1–4
1.4.10 AlphaBIOS V5.66 bug fixes/additions 1–4

Tables

1 DIGITAL Alpha XL Series vi

Preface

Purpose of This Guide

This guide is intended for all managers of the DIGITAL Alpha XL series of systems.

This guide describes how to update the system's firmware using the loadable Firmware Update Utility.

Purpose and Responsibility of the Loadable Firmware Update Utility

The Loadable Firmware Update Utility has been developed to allow the owners of existing and new DIGITAL Alpha XL systems to maintain firmware on their systems. Firmware provides a number of basic functions on your system, including operating system bootstrap, configuration identification, testing and some basic input/output operations.

To assist the owner, who's responsibility it is to perform the update, a simple and user friendly interface is provided as part of the Loadable Firmware Update Utility. This program should be executed as directed by the release notes whenever new software is purchased or as directed by Digital Equipment Corporation.

Conventions

The following conventions are used in this guide:

Convention	Description
RZ2x	RZ2x refers to any of the RZ-series fixed disk drives, including the RZ24L, RZ25, and RZ26.
Return	A key name in a box indicates that you press a named key on the keyboard.
Ctrl/x	A sequence such as Ctrl/x indicates that you must hold down the key labeled Ctrl while you press another key.
`show config`	This typeface denotes commands and command output. Commands are not case-sensitive except where specifically indicated.
italics	Italicized letters indicate a variable value that you must provide. For example, `>>> set` *`variable`* Return
Caution	Cautions provide information to prevent damage to equipment or software.
Warning	Warnings contain information to prevent personal injury.

Firmware and Operating System Revisions

Notes

Systems that have shipped recently may have firmware revisions at a higher level than is in this kit. The higher level firmware revisions support the revisions of the operating systems that are currently shipping. Some files on the CD-ROM are from previous firmware releases. Systems should not be loaded with older firmware than is presently installed.

The system firmware on this CD has a unique revision and is independent of the revision of this firmware kit.

Tables 1 shows the compatibility between the firmware revisions and revisions of Windows NT.

Table 1 DIGITAL Alpha XL Series

Model	NT Firmware	Windows NT
233/266	4.57	3.51/4.0
300/366	5.66	3.51/4.0

Associated Documentation

These firmware release notes do not describe how to use the console firmware commands nor do they list their error codes. You can find information about these subjects in the associated documentation you received with your DIGITAL Alpha XL system.

Reader Comments

DIGITAL welcomes your comments on this or any other manual. You can send your comments to DIGITAL at the following address:

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1

DIGITAL Alpha XL Firmware Update Procedure

This chapter explains how to update the DIGITAL Alpha XL firmware from a CD. Section 1.1 through Section 1.2.6 covers Models 233/266. Section 1.3 covers Models 300/366.

1.1 Updating System Firmware

1.1.1 System Firmware

The DIGITAL Alpha XL Series systems contain two flash ROMs with NT/ARC firmware for the Windows NT operating system. See Table 1 for compatible firmware and operating system versions.

1.1.2 Update Utility

Use the update utility to update your NT/ARC firmware. The update utility contains two images: the update utility itself and the NT/ARC firmware image.

1.1.3 Flash Enable Jumper

Before you can update your system firmware, the flash ROM enable jumper must be in the write-enabled position. This is the default position. See the DIGITAL Alpha XL Series User Information Documents for details.

1.2 Updating from the NT/ARC Firmware

This section describes how to update a Model 233/266 system from the NT/ARC firmware.

1.2.1 Step 1: Shutdown Windows NT and Powerup system.

1.2.2 Step 2: Load the Firmware Update Utility Compact Disc

1. Remove any compact disc that may already be loaded into the CD drive.
2. Load the Firmware Update compact disc into the drive.

1.2.3 Step 3: Go to the Supplementary Menu

This menu selection is the last choice in the `Boot Menu`.

1.2.4 Step 4: Go to the Install New Firmware selection

When selected, the CD-ROM will be checked for the firmware update utility. This command will timeout if the proper media is not present.

1.2.5 Step 5: Perform Update

At the prompt, press `Y` to confirm that you wish to update the firmware in the flash ROM. Do not turn off the machine until the firmware update is complete.

1.2.6 Step 6: Power-cycle the System

Power-cycle the system, and the new version of NT/ARC firmware will come up.

1.3 Updating AlphaBIOS

This section describes how to update a Model 300/366 system from the AlphaBIOS firmware.

As new versions of Windows NT are released, it might be necessary to upgrade AlphaBIOS to the latest version. Additionally, as improvements are made to AlphaBIOS, it might be desirable to upgrade to take advantage of new AlphaBIOS features.

To upgrade from an earlier version of AlphaBIOS:

1. Insert the diskette or CD-ROM containing the AlphaBIOS upgrade.
2. Run the AlphaBIOS Setup program by restarting your system and pressing `F2` when the boot screen is displayed.
3. At the main AlphaBIOS Setup screen, select `Upgrade AlphaBIOS` and press `Enter`.

This menu option is used to upgrade to later versions of AlphaBIOS. When you choose this option, the existing AlphaBIOS searches for an updated AlphaBIOS image file, first on CD-ROM, and then on diskette. Once the image file has been found, the current and upgrade image versions are displayed, and you are prompted to continue with the upgrade.

4. Press `F10` to continue with the upgrade, or `ESC` to cancel.
5. After the upgrade is complete, press `enter` to execute the new firmware, or `ESC` to continue running the older version.

The new firmware executes once the system is reset.

1.4 Bug Fixes and New Features

1.4.1 ARC V4.49 bug fixes/additions

ARC V4.49 contains the following bug fixes/additions:

- Add boot support for the KZPSA.
- Add support for larger configuration in the firmware.
- Add support for delay spin up drives.
- Fix crash problem seen with SCSI network devices.

1.4.2 AlphaBIOS 5.22 bug fixes/additions

AlphaBIOS 5.22 contains the following bug fixes/additions:

- AlphaBIOS 5.22 fixes a problem that caused sound card's '.wav' playback to "break up" under NT. In addition, AlphaBIOS 5.2 series firmware releases most of it's memory when the OS is loaded giving the NT user more memory to run applications.

1.4.3 AlphaBIOS 5.24 bug fixes/additions

AlphaBIOS 5.24 contains bug fixes related to manfacturing and support issues.

1.4.4 ARC V4.53 bug fixes/additions

ARC V4.53 contains the following bug fixes/additions:

- Fix TGA8 problem with machine booting different colors.
- Save correct SCSI ID when saved in ARC.
- Change QLOGIC and NCR display strings.

1.4.5 AlphaBIOS V5.30 bug fixes/additions

AlphaBIOS V5.30 contains bug fixes related to manfacturing and support issues.

1.4.6 ARC V4.56 bug fixes/additions

ARC V4.56 contains the following bug fixes/additions:

- CDROM root directory cannot be accessed
- Update symbios driver
- Removed NTFS boot support
- Switch secondary processors to firmware stacks when they return to firmware.

1.4.7 AlphaBIOS V5.64 bug fixes/additions

AlphaBIOS V5.64 contains the following bug fixes/additions:

- Enhance formatting of unpartitioned disks
- Change express setup to limit primary partition size to 4095 Mb
- Adjust NVRAM updating dialog box
- CDROM root directory cannot be accessed
- Add support to perform system reset from FwRestart( ).
- Force secondary CPU's to switch to FW stack upon return to firmware. Map FW stack pages as Firmware Permanent
- Corrected quadword checksum routine to handle buffer lengths not evenly divisible by 8 bytes.
- Add NT rebranding support
- Add IDE configuration support for CY693U
- Add PCI reset AlphaServer 800
- Fix hard disk express format on disk already containing multiple partitions

1.4.8 ARC V4.57 bug fixes/additions

ARC V4.57 contains the following bug fixes/additions:

- In conjunction with Microsoft's efforts to meet Y2K compliance (requiring firmware to understand years up to 2035), we have changed maximum year to 2050.
- The number of parameters that can be passed to an arcapp was increased from 8 to 16, and parameter checking was added to ensure that this limit is not exceeded.

- DEFAULT_OS_FILENAME was updated.
- Changes were made to allow the DMA window to be enlarged as needed.
- QLogic was fixed so that NT HCT CD audio certification would pass.
- AlphaServer 2100 Platforms (AlphaServer 2100 4/xxx, AlphaServer 2100 5/xxx, AlphaServer 2100a 4/xxx, AlphaServer 2100a 5/xxx) were modified to allow Peer-to-Peer DMA.

1.4.9 AlphaBIOS V5.65 bug fixes/additions

AlphaBIOS V5.65 contains the following bug fixes/additions:

- Removal of 16bit I/O restriction for Device ROMs
- Allow memory test above 512MB
- Modify QLogic Adapter support to allow Microsoft's HCT CD audio cert to pass
- Change maximum arguments from 8 to 16
- Improve handling of network errors during AlphaBIOS update

1.4.10 AlphaBIOS V5.66 bug fixes/additions

AlphaBIOS V5.66 contains the following bug fixes/additions:

- Support was added under Advanced CMOS Settings to select buffer size mode used by HAL. Choices are Legacy, Dynamic, and Server.
- Changes were made to reduce boot time.
- Changes were made to improve the configuration of QLOgic and AdvanSys disk controllers.
- SCSI BIOS emulation was added to CIA-based systems.
- Support for ATAPI devices was improved via the incorporation of a new driver.
- A change was made to limit AlphaBIOS use of pool to 8Mb.
- Return values for VenPrint( ) and VenWPrint ( ) (in the ADK) were corrected to return the byte count of characters printed.
- Improvements were made to the AlphaBIOS network update feature to prevent crashes and checksum errors, and to improve performance.
- Support for new hardware types was added.