ALPHAbook™ 1

Firmware Update Procedures

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Preface

Purpose of This Guide

This guide is intended for all managers of the ALPHAbook 1 systems.

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

Purpose and Responsibility of the Firmware Update Utility

The Firmware Update Utility has been developed to allow the owners of existing and new ALPHAbook 1 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 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
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.

Table 1 shows the compatibility between the firmware revisions and revisions of OpenVMS and DIGITAL UNIX.

Table 1 ALPHAbook 1

SRM Firmware	OpenVMS	DIGITAL UNIX
v4.7	6.2-1h2,6.2-1h3	-
v4.8	6.2-1h2,6.2-1h3, 7.0, 7.1	-
v4.9	6.2-1h2,6.2-1h3, 7.0, 7.1	-
v5.0	6.2-1h2,6.2-1h3, 7.0, 7.1	4.0x
v5.1	6.2-1h2,6.2-1h3, 7.0, 7.1	4.0x
v5.2	6.2-1h2,6.2-1h3, 7.0, 7.1	4.0x
v5.3	6.2-1h2,6.2-1h3, 7.0, 7.1	4.0x
v5.4	6.2-1h2,6.2-1h3, 7.0, 7.1, 7.2	4.0x

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 this information about these subjects in the *ALPHAbook 1 User Guide* document that came with your 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

ALPHAbook 1 Firmware Update Procedure

This chapter explains how to update the ALPHAbook 1 firmware. Topics are as follows:

- Upgrading an OpenVMS system from a CD

1.1 Updating System Firmware

1.1.1 System Firmware

The ALPHABook 1 system contains two flashEPROMs, one with DROM (Diagnostic ROM) and SRM console firmware for the OpenVMS operating systems. See Table 1 for compatible firmware and operating system versions.

1.1.2 Update Utility

Use the update utility to update the DROM and SRM firmware. The update utility contains three images: the update utility itself, the SRM image, and the DROM image.

1.2 Updating an OpenVMS System

Update an OpenVMSsystem as described in the following sections.

1.2.1 Step 1: Turn the System On

The following information is displayed (example):

```
ff.fe.fd.fc.fb.fa.f9.f8.f7.f6.f5.
ef.df.ee.ed.ec.eb.....ea.f4.e9.e8.e7.e6.e5.
ALPHAbook 1 Console v5.4-1, built on Sep 3 1997 at 13:26:13
>>>
```

1.2.2 Step 2: Determine the Device ID of the CD-ROM Drive

At the console prompt (>>>), enter the show device command.

```
>>>show device

dka0.0.0.6.0             DKA0          IBM DVAS-2810  S1B0
dka400.4.0.6.0           DKA400  TOSHIBA CD-ROM XM-4101TA  0064
dva0.0.0.0.1             DVA0
eoa0.0.0.1.1             EOA0          08-00-2B-38-67-6B
pka0.7.0.6.0             PKA0         SCSI Bus ID 7
```

In the example, the CD-ROM drive has a device ID of DKA400.

1.2.3 Step 3: 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.

1.2.4 Step 4: Boot the Firmware Utility Disk

Please see chapter 3, section 3.1, for new features introduced with this version, of the update utility.

Boot the system from the update utility disk, using the device ID determined in step 2.

The following is an example of booting the ALPHAbook 1 update utility.

```
>>> b -fl 0,A0 dka400
Bootfile: [alphabook1]ab1_v5_4.exe
bootstrap code read in
base = 200000, image_start = 0, image_bytes = 7ee00
initializing HWRPB at 2000
initializing page table at 1f2000
initializing machine state
setting affinity to the primary CPU
jumping to bootstrap code
ff.fe.fd.fc.fb.fa.f9.f8.f7.f6.f5.
ef.df.ee.ed.ec.eb.....ea.f4.e9.e8.e7.e5.
ALPHAbook 1 Console v5.4-1, built on Sep 3 1997 at 13:26:13
>>>(boot pmem:180000 -flags 0)
bootstrap code read in
base = 180000, image_start = 0, image_bytes = 800000
initializing HWRPB at 2000
initializing page table at 792000
initializing machine state
setting affinity to the primary CPU
jumping to bootstrap code

       ***  ALPHAbook 1 -- Firmware Update v5.4  ***

Update
VERIfy
List
Show
DUmp
VERBose
NVerbose
DEbug
NDebug
?
Apu->
```

1.2.5 Step 5: Update the System

Enter `update` to update the system firmware:

```
Apu-> update
APU-I ARE YOU READY TO PROGRAM (SRM) ROM DEVICE ? (Y/N ) y
APU-I ERASING (SRM) ROM DEVICE
APU-I PROGRAMMING (SRM) ROM DEVICE
APU-I VERIFY LOADED (SRM) ROM IMAGE
APU-I VERIFY LOADED (SRM) ROM IMAGE DONE
APU-I PROGRAMMING (SRM) ROM COMPLETED
Apu->
```

1.2.6 Step 6: Verify ROM Update was successful

```
Apu-> verify
SRM ROM verify successful
```

1.2.7 Step 7: Exit from the Firmware Update Utility

Cycle power on the system.

2

Network and InfoServer Upgrades

This chapter explains how to perform network updates:

- MOP network upgrades
- BOOTP network upgrades
- InfoServer upgrades

2.1 MOP Network Upgrade

Note

You can use a DIGITAL UNIX system to copy the file from the Firmware Update Utility CD-ROM, but MOP is not supported under DIGITAL UNIX.

The ALPHAbook 1 system to be updated (target system) must be powered on and at the console prompt (>>>).

Table 2–1 lists the steps required to update the firmware on your ALPHAbook 1 system from the network.

Table 2–1 Updating System Firmware

Step	Description
1	Place the Firmware Update Utility compact disc into the CD drive on the host system.
2	If the host is a VMS, ULTRIX, or DIGITAL UNIX system, copy the update file from the Firmware Update Utility compact disc.
3	Set up the host system.
4	Enter a network boot command from the target system.
5	Refer to Section 1.2, steps 5-7 to complete update procedure.

2.1.1 Step 1: 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.

2.1.2 Step 2a: VMS File Copy Instructions

If your host system is VMS, copy the file from the Firmware Update Utility compact disc by entering the following commands at the VMS $ prompt.

```
$ mount dka400: update_v53
$ copy dka400:[SYS0.SYSEXE]ab1_v5_4.sys mom$load:
```

2.1.3 Step 2b: ULTRIX or DIGITAL UNIX File Copy Instructions

If your host system is ULTRIX or DIGITAL UNIX, copy the file from the Firmware Update Utility compact disc by entering the following commands at the ULTRIX or DIGITAL UNIX # prompt.

```
# mount -rt cdfs -o noversion /dev/rz4c /mnt
# cp /mnt/ALPHABOOK1/AB1_v5_4.EXE /usr/lib/mop/filename
```

2.1.4 Step 3: Set Up Host

Execute the following when updating an ALPHAbook 1 using a VMS host. You must use NCP to define the characteristics of the host and target system. You will need OPER privileges.

```
$ MCR NCP set circ CIRC_NAME state off
$ MCR NCP set circ CIRC_NAME serv enabled
$ MCR NCP set circ CIRC_NAME state on
```

Note

CIRC_NAME is the logical name of the circuit used by the network.

Execute the following only when updating an ALPHAbook 1 system using an ULTRIX host. Please note that MOP is not supported under DIGITAL UNIX.

Make sure the mop_mom process is running. If `ps aux | grep mop` does not show a `mop_mom` process, then you must start one by issuing the following command as a superuser:

```
# mop_mom
```

2.1.5 Step 4: Boot the Firmware Update Utility

To start the Firmware Update Utility, enter the `boot` command at the console prompt on the target system. The following command starts a boot process:

```
>>> boot eoa0 -fi filename
```

Note

The filename must be entered exactly as displayed by the ULTRIX host.

After the boot process completes, the Firmware Update Utility menu is displayed. Note the Update Utility prompt (APU->). The following is an example of booting the ALPHAbook 1 update utility.

```
bootstrap code read in
base = 200000, image_start = 0, image_bytes = 7ee00
initializing HWRPB at 2000
initializing page table at 1f2000
initializing machine state
setting affinity to the primary CPU
jumping to bootstrap code
ff.fe.fd.fc.fb.fa.f9.f8.f7.f6.f5.
ef.df.ee.ed.ec.eb.....ea.f4.e9.e8.e7.e5.
ALPHAbook 1 Console v5.4-1, built on Jan 11 1997 at 13:26:13
>>(boot pmem:180000 -flags 0)
bootstrap code read in
base = 180000, image_start = 0, image_bytes = 800000
initializing HWRPB at 2000
initializing page table at 792000
initializing machine state
setting affinity to the primary CPU
jumping to bootstrap code

       ***  ALPHAbook 1 -- Firmware Update v5.4  ***

Update
VERIfy
List
Show
DUmp
VERBose
NVerbose
DEbug
NDebug
?
Apu->
```

2.1.6 Step 5: Perform Update

To complete the update procedure of your system, refer to Section 1.2, steps 5-7.

2.2 BOOTP Network Upgrade

2.2.1 Step 1: Mount the Firmware Update Utility CD-ROM

```
# mount -rt cdfs -o noversion /dev/rz4c /mnt
```

2.2.2 Step 2: Modify or Create the Client Database in the /etc/bootptab File

```
<host_name>:ht:<hw_type>:ha=<hw_address>:bf=AB1_v5_4.EXE:ip=<ip_address>
```

where:

- host_name is the system name in /etc/hosts.
- hw_type is the hardware type. Proteon is ht = 4. Ethernet is ht = 1. Regular token-ring (IEEE 802) is ht = 6.
- hw_address is the hardware address: use the console command show device.
- ip_address is the corresponding Internet protocol address of the system name in /etc/hosts.

The following is an example of a bootptab file:

```
bigsox:ht=1:ha=08002b236423:bf=/mnt/ALPHABOOK1/AB1_v5_4.EXE;1:ip=16.182.0.87
```

2.2.3 Step 3: Invoke bootpd and tftpd daemons

- Modify the /etc/inetd.conf file. Uncommon the tftp and bootps process. It should look like the following example:

```
tftp   dgram udp wait root    /usr/sbin/tftpd   tftpd /mnt
bootps dgram upd wait root    /usr/sbin/bootpd  bootpd
```

- Find the process /usr/sbin/inetd daemon:

```
# ps aux | grep ine
# kill process#
```

- Restart the inetd daemon:

```
# /usr/sbin/inetd
```

Note

The bootpd and tftp daemon will be removed if the system is rebooted. Refer to the manual pages: bootpd(8) or tftpd(8) for more information.

2.2.4 Step 4: Enter the Following Command

Prior to entering the >>> boot eoa0 command, the user must perform the generic bootp setup as described in Section 3.2, SRM Firmware Limitations.

2.2.5 Step 5: Perform Update and System Initialization

To complete the update procedure of your system, refer to Section 1.2, steps 5-7.

2.3 InfoServer Upgrade

Be certain to:

- Insert the compact disc into a CD-ROM reader that is connected to the InfoServer.
- The InfoServer kernel must be at a minimum revision of 2.2 and MOP must be enabled on the InfoServer.

2.3.1 Step 1: Enter the Following Command

To perform an upgrade using the InfoServer, enter the following command line. The filename **must** be in uppercase.

```
>>> boot eoa0 -fi AB1_V5_4.


bootstrap code read in
base = 200000, image_start = 0, image_bytes = 7ee00
initializing HWRPB at 2000
initializing page table at 1f2000
initializing machine state
setting affinity to the primary CPU
jumping to bootstrap code
ff.fe.fd.fc.fb.fa.f9.f8.f7.f6.f5.
ef.df.ee.ed.ec.eb.....ea.f4.e9.e8.e7.e5.
ALPHAbook 1 Console v5.4-1, built on Jan 9 1998 at 11:35:13
>>>(boot pmem:180000 -flags 0)
bootstrap code read in
base = 180000, image_start = 0, image_bytes = 800000
initializing HWRPB at 2000
initializing page table at 792000
initializing machine state
setting affinity to the primary CPU
jumping to bootstrap code

       ***  ALPHAbook 1 -- Firmware Update v5.4  ***

Update
VERIfy
List
Show
DUmp
VERBose
NVerbose
DEbug
NDebug
?
Apu->
```

2.3.2 Step 2: Perform Update and System Initialization

To complete the update procedure of your system, refer to Section 1.2, steps 5-7.

3
ALPHAbook 1 Firmware Information

This section describes any new features and/or limitations of the present firmware upgrade.

3.1 New Features

- Added SRM2ctrl env var

3.2 SRM Firmware Limitations

- Should a boot file ‘‘pathname’’ be necessary for either MOP or TCP/IP booting, you should enclose the pathname in quotes. for example:

```
>>>boot eoa0 -file "/dir1/dir2/filename"
```