AlphaServer 2000/2100 Read This First

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General AlphaServer 2000/2100 Information

Name Change

The DEC OSF/1 operating system has been renamed to Digital UNIX operating system. Documentation shipped under the old name is still valid.

Firmware Interfaces

On AlphaGeneration systems, control of the system hardware is provided by a console subsystem. The console subsystem contains firmware code (software code embedded in hardware) that offers service functions.

Because the AlphaServer 2000 and AlphaServer 2100 systems are designed to support multiple operating systems, there are two separate operator interfaces to the firmware: a command line interface called the SRM interface, and a menu interface called the ARC interface.

- The SRM interface is used for booting Digital UNIX and OpenVMS. The SRM interface is a UNIX style, command line interface, which will be familiar to users of traditional Digital systems. The SRM console is identified by the `P00>>>` prompt.
- The ARC interface is used for booting Windows NT, running the EISA Configuration Utility (ECU), and running setup applications such as the RAID Standalone Configuration Utility, which is used for mapping logical RAID units to their physical members. The ARC interface is a graphical user interface, which will be familiar to users of a menu-based interface.

Refer to the *AlphaServer 2000/2100 Firmware Reference Guide*, included in your system shipment, to learn more about the SRM and ARC console interfaces.

Firmware Revisions

Under certain circumstances, such as a CPU upgrade, you may need to update your system firmware. Updated firmware for Digital UNIX and OpenVMS operating systems is available on the Alpha Firmware CD, which is shipped quarterly. Updated firmware for Digital UNIX, OpenVMS, and Windows NT is also available from the Internet, as described in the section “AlphaServer On-Line Information.”

The current firmware version for the AlphaServer 2000 and AlphaServer 2100 systems is V4.1. This firmware resides on the Alpha Firmware CD, Version 3.3. Revision information can also be found in the console firmware release notes on the Alpha Firmware CD, V3.3. The release notes file is named alpha2100_v41_fw_relnote.ps (PostScript version) or .txt (ASCII version).

ECU Revisions

Each time you update the system's firmware, you must be certain that the version of the EISA Configuration Utility (ECU) you are using is compatible with the firmware level to which you are updating.

Your AlphaServer 2000 or AlphaServer 2100 system hardware came with an ECU kit (part no. QC-01YAA-HC), which includes the ECU license . Customers who already have the ECU and license, but need the latest revision of the ECU, can order a separate ECU kit, QA-01YAA-HC. Consult the table below.

Kit Number	Kit Contents	Comments
QC-01YAA-HC	• V1.8 ECU diskette for OpenVMS and Digital UNIX (AK-Q2CRH-CA) • V1.8 ECU diskette for Windows NT (AK-QF1GB-CA)	Shipped with new systems. Includes ECU license.
QA-01YAA-HC	• V1.8 ECU diskette for OpenVMS and Digital UNIX (AK-Q2CRH-CA) • V1.8 ECU diskette for Windows NT (AK-PYCJJ-CA)	Orderable by customers who purchased a system that included an ECU and license, but need the latest revision of the ECU.

Systems migrating to Windows NT. If you plan to migrate from Digital UNIX or OpenVMS to Windows NT, you must re-run the appropriate ECU. Failure to do so will cause the system to crash. The ECU program boots from the ARC interface.

VMS and UNIX systems configured with Q-Vision graphics adapter. Digital UNIX or OpenVMS systems configured with the EISA COMPAQ Q-Vision graphics adapter use IRQ-9 for the adapter. When you run the ECU, view the IRQ status of each module and ensure that no other adapter uses IRQ-9. Do not select `Save and exit` until you have verified that no other adapter is using IRQ-9.

Option Compatibility

It is critical to determine if each of the options you wish to add in the system is supported by the target operating system. Refer to the Microsoft Hardware Compatibility List for Windows NT Version 3.5 for options supported under Windows NT. Refer to the AlphaServer 2000 and AlphaServer 2100 Supported Options List for a list of options qualified for Digital UNIX, OpenVMS, and Windows NT. The lists are available from the Internet as follows:

- Via FTP on ftp.digital.com. Once connected, go to /pub/Digital/Alpha/systems.
- On the World Wide Web server at http://www.service.digital.com/alpha/server/.

RAID Configurations

If you purchased a StorageWorks RAID Array 200 Subsystem for your AlphaServer 2000 or AlphaServer 2100 system, you must run the RAID Standalone Configuration Utility before booting or building your operating system to configure the logical RAID sets. The default factory configuration may not be appropriate for every customer application.

The RAID standalone utility is provided on a diskette with the StorageWorks RAID subsystem kit. The program boots from the ARC interface. Refer to the *StorageWorks RAID Array 200 Subsystems Controller Installation and Standalone Configuration Utility User's Guide*, included in your StorageWorks RAID subsystem kit.

AlphaServer 2000 and AlphaServer 2100 systems configured with RAID and running ARC firmware V4.30 or higher require the RAID Standalone Configuration Utility V3.11. This includes firmware V2.15 for the EISA based controller and V2.19 for the PCI based controllers.

SCSI Bus Length Requirements

The SCSI buses on the AlphaServer 2000 and AlphaServer 2100 run at 10 MB/sec (Fast SCSI-II), and can therefore be a maximum length from end to end of 3 meters. If you are experiencing SCSI problems, ensure that a terminator is correctly placed on each end of the SCSI bus, that no disks or tapes in the middle of the bus are terminated, and that the end-to-end length of the SCSI bus is under 3 meters.

The internal SCSI bus (NCR810, PKAn devices) cannot run disks in the internal StorageWorks enclosure (removable hard disks) and also be extended to external disks without violating the 3 meter rule. If it is necessary to run external disks in this way, the port can be slowed down using the `set pka0_fast 0` command at the SRM console.

Serial-Line Support for ECU and Standalone Configuration Utility

The AlphaServer 2000 and AlphaServer 2100 systems now provide functionality to run the EISA Configuration Utility (ECU) and the RAID Standalone Configuration Utility from either a VGA-compatible graphics terminal or from a serial terminal (VT200 or higher, or equivalent). To use a serial terminal with the ECU or Standalone Configuration Utility:

1. Invoke the terminal setup utility as described in the documentation for your serial terminal and change settings as follows:

   - From the General menu, set the terminal mode to VTxxx mode, 8-bit controls.
   - From the Comm menu, set the character format to 8 bit, no parity, and set receive XOFF to 128 or greater.

2. Enter the following commands at the SRM console prompt to set the console terminal to receive input in serial mode.

```
P00>>> set console serial
P00>>> init
P00>>> show console
console        serial
```

This completes the terminal setup. You can now run the ECU and the RAID Standalone Configuration Utility. Refer to your system Owner's Guide for instructions on running the ECU. Refer to the *StorageWorks RAID Array 200 Subsystems Controller Installation and Standalone Configuration Utility User's Guide* for instructions on running the RAID standalone utility.

Note

On Digital UNIX and OpenVMS systems, you may have to reset the system time in order to run the ECU.

If your serial terminal does not have a dedicated ESC key or BACKSPACE key, use Ctrl/[to escape and Ctrl/H to backspace.

High-Performance Turbo Graphics Adapter Card (PBXGA)

If you purchased a turbo graphics adapter card for your AlphaServer 2000 or AlphaServer 2100 system, you need to set an environment variable so that the monitor will synchronize.

The correct setting, displayed with the `show` command, is:

```
P00>>> show tga_sync_green
tga_sync_green          0
```

The parameter is a bit mask, where the least significant bit (LSB) sets the vertical SYNC for the first TGA found, the second for the second found, and so on.

If your monitor does not synchronize, set the parameter as follows:

```
P00>>> set tga_sync_green 00
```

This command sets all turbo graphics adapters to synchronize on a separate vertical SYNC line, as required by some monitors. See your monitor documentation for all other information.

New Operator Control Panel Messages for Model 5/250

Several new messages have been added to the power-up/diagnostic display on the AlphaServer 2100 5/250 operator control panel. Power-up messages indicate the status of the system during the power-up sequence.

21164 TIMEOUT	An Alpha 21164 microprocessor IBOX time-out occurred.
3.3V/CLOCK FAIL	A voltage or clock failure occurred on the CPU module.
MEM_yy NVR ERROR	A checksum error occurred in the memory NVRAM.

AlphaServer On-Line Information

You can download files and information related to the AlphaServer 2000 and AlphaServer 2100 systems from several on-line locations. The information includes firmware updates, the latest configuration utilities, software patches, a list of supported options, hardware documentation, and more. There are no restrictions on accessing and downloading this information.

- On Internet, via FTP on ftp.digital.com. Once connected, go to /pub/Digital/Alpha/systems.
- On the World Wide Web server at http://www.service.digital.com/alpha/server/.
- Information related to Windows NT hardware support is available on CompuServe in the DEC4WNT forum in the Library Section [4], Hardware Support.

New SRM Console Commands

Two new commands have been added to the SRM console firmware:

- `set com1_baud` or `set com2_baud` allows you to change to default baud rate of the COM1 or COM2 port.
- `set tt_allow_login` enables or disables login to the SRM console firmware on alternative console ports.

These commands are described below.

set com1_baud or set com2_baud

Synopsis:

Change the baud rate of the of the COM1 or COM2 port, respectively.

set com1_baud [*baud_value*]
set com2_baud [*baud_value*]

Description:

The default baud rate for the AlphaServer 2000 and AlphaServer 2100 systems is 9600. The `set com1_baud` and `set com2_baud` commands let you set the baud rate on the respective ports to other values.

The baud rate values are 300, 600, 1200, 2400, 4800, 9600, and 19200.

Note

If you reset the baud rate, make sure that the new setting is compatible with the baud rate setting for the terminal.

Example:

In the following example, the baud rate on COM1 is set to 19200.

```
P00>>> set com1_baud 19200
```

set tt_allow_login

Synopsis:

Enables or disables login to the SRM console firmware on alternative console ports.

set tt_allow_login [0,1]

Description:

The 1 setting enables login on alternative console ports, and the 0 setting disables it. The default setting is 1.

If the console output device is set to "serial," `set tt_allow_login 1` allows you to log in on either a graphics terminal or through the COM2 port.

If the console output device is set to "graphics," `set tt_allow_login 1` allows you to log in through either the COM1 or COM2 console port.

If you disable login on alternative console ports, you must enter the `init` command for this setting to take effect. It is not necessary to enter the `init` command if you enable login.

Example:

In the following example, the system is set to display power-up output at a serial terminal connected through the COM1 port. Then the `set tt_allow_login` command is used to enable login through either a graphics terminal or the COM2 port.

```
P00>>> set console serial
P00>>> init
P00>>> set tt_allow_login 1
```

SRM Console Command Enhancements

- The default value for the pci_read_mult environment variable is set at the factory to OFF. The OFF setting may improve performance of I/O options. You can verify that pci_read_mult is set to OFF as follows:

  ```
  P00>>> show pci_read_mult
  pci_read_mult          off
  ```

- The `set console serial` command directs all output to the serial port. Output for the ARC console and the EISA Configuration Utility previously went to the VGA port if it was plugged in.

Using test Command After Shutting Down an Operating System

The `test` command is an SRM console command used to test an entire system, a subsystem, or a specific device. To use the `test` command after shutting down an operating system, you must initialize the system to a quiescent state. Enter the following commands at the SRM console:

```
P00>>> set auto_action haltP00>>> initP00>>> test
```

After testing is completed, set the auto_action environment variable to its previous value (usually, boot) and use the Reset button to reset the system. For more information on the `test` command, see your system documentation.

Digital UNIX Information

The following documents contain special instructions related to AlphaServer 2000 and AlphaServer 2100 systems that use the Digital UNIX operating system. Be sure to read the documents for the version of the operating system shipped with your system.

Digital UNIX Release Notes *DEC OSF/1 Release Notes*	V3.2C V3.2B	AA-PS2BF-TE AA-PS2BE-TE
Digital UNIX Installation Guide *DEC OSF/1 Installation Guide*	V3.2C V3.2B	AA-PS2DF-TE AA-PS2DE-TE

OpenVMS Information

Software patches for the OpenVMS operating system are available from the World Wide Web as follows:

http://www.service.digital.com/html/patch_service.html

Choose the “Contract Access” option if you have a valid software service contract with Digital or you wish to become a software contract customer. Choose the “Public Access” option if you do not have a software service contract.

OpenVMS Special Instructions

AlphaServer 2000 and AlphaServer 2100 systems using PATHWORKS for OpenVMS (LAN Manager) must install the PATHWORKS layered product kit V5.0A0ECO1 or later. Earlier versions of PATHWORKS will not work properly on AlphaServer 2000 and AlphaServer 2100 systems.

Windows NT Information

1. There is a problem with the SWXCR EISA backplane RAID Controller, shipped with some NT systems, which necessitates use of a separate system HAL (hardware application layer of the Alpha architecture).

   In order to run the SWXCR RAID controller in the AlphaServer 2100, you must install the new HAL (or re-install it in the case of an upgrade). The HAL is provided on diskette with your system shipment. Follow the installation instructions in the Windows NT release notes for the AlphaServer 2100 and 2000 (AA-QE5BC-TH), also provided in the shipment.

2. The installation procedure for Windows NT considers drives it cannot read as possibly infected by a virus. If there are any foreign or unformatted drives in your system, follow the procedure in the Windows NT release notes for the AlphaServer 2100 and 2000.