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Netscape SuiteSpot
Internet UNIX AlphaServer 800

DIGITAL HiTest Notes

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Preface

This document provides an overview of DIGITAL HiTest Suites and detailed technical information about interoperability test results for the Netscape SuiteSpot Internet UNIX AlphaServer 800 HiTest Suite.

Audience

Primary users of this document are DIGITAL and Partners sales representatives and technical support personnel. Secondary audiences include product managers, customers, and the personnel responsible for installing, setting up, and operating a DIGITAL HiTest Suite.

Road Map

This document contains the following chapters:

1. Introduction – Provides a brief summary of the benefits of DIGITAL HiTest Suites and an overview of the Suite covered in this document.

2. Configuration Data – Includes tables of configuration data about the hardware and software components that define the Template, and special configuration rules if any.

3. System Installation and Setup – Presents useful information for installing and setting up this DIGITAL HiTest Suite.

4. Interoperability Tests and Results – Describes how the tests were set up (including database organization), what data and programs were placed on what disks, and how the tests were run.

5. System Limits and Characterization Data – Summarizes any system limitations or characterization data that were identified during testing.

6. Problems and Resolutions – Discusses any problems and resolutions that were discovered during testing.

Appendix A: Detailed Hardware Configuration – Contains more detailed information about the hardware and software components listed in the Configuration Data chapter.

Feedback and Ordering Information

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1
Introduction

DIGITAL HiTest Suite and Its Advantages

DIGITAL HiTest Suites are guidelines for configuring a set of prequalified computer systems. A HiTest Suite often contains all the hardware and software needed for a complete customer solution. DIGITAL HiTest Suites can be used as a basis for configuring systems that satisfy a wide set of customer requirements. Typically, Suites target specific markets such as Data Warehousing or Internet Service Providers (ISPs).

DIGITAL Product Management and Engineering select the components and design the configurations in each HiTest Suite to ensure high system reliability, application performance, and upgradability. A Suite's hardware and software components have been successfully tested for interoperability.

A HiTest Suite specifies allowed ranges of hardware and software components, as well as each component's part number, description, and revision information. These specifications are listed in the *DIGITAL HiTest Template*.

The components in a HiTest Suite are organized into two groups, the DIGITAL HiTest Foundation and the DIGITAL HiTest AppSet. The HiTest Foundation includes the hardware, operating system, middleware, and database software. The HiTest Foundation can be used as a base on which any customer-desired applications can be installed. The HiTest AppSet includes the software specific to one class of customer solutions.

Configuring a DIGITAL HiTest Suite is straightforward. Select components from the HiTest Template to configure a DIGITAL HiTest System. Any system configured as specified in the DIGITAL HiTest Template can be called a DIGITAL HiTest System.

The HiTest Suite is documented in the *DIGITAL HiTest Notes*. The HiTest Notes list the HiTest Foundation and HiTest AppSet components. HiTest Notes also describe the testing of the Suite and include configuration details, installation instructions, tuning parameters, problems encountered and their solutions, and system diagrams.

Some components listed in the HiTest Foundation or AppSet may be optional. If the minimum quantity is zero (0), then the component is optional. If the minimum quantity is one or more, then you must order at least the minimum quantity.

The maximum quantities represent the largest group of components that were tested for interoperability with all the other components in the Suite. Although it may be possible to place more than the specified maximum quantity of a component on a DIGITAL system, extensive interoperability testing was not done at that level and such a system would not be considered a DIGITAL HiTest System.

You can select any combination of components with quantities ranging from the minimum to the maximum specified. Occasionally, special configuration rules give further guidance or restrict configurations. These rules appear in the Configuration Data chapter of the HiTest Notes.

A customer can include the Suite-specified hardware and software they need and then layer on additional software. Other types of hardware, called *add-on hardware*, can also be added to a DIGITAL HiTest System. The add-on hardware is specified in the Configuration Data chapter of the HiTest Notes, and in the HiTest Systems Web Pages, available through the following URLs:

```
http://cosmo.tay.dec.com              (Intranet)
http://www.partner.digital.com:9003 (Internet)
```

Even though the customer may install application software that is not specified in the Suite, the customer and DIGITAL still experience the advantages of knowing that all of the Suite-based hardware and software interoperates correctly. Of course, the full benefit of configuring a system from a HiTest Suite is obtained when the system includes only specified HiTest Foundation and AppSet components.

Overview of This DIGITAL HiTest Suite

The Netscape SuiteSpot Internet UNIX AlphaServer 800 HiTest Suite consists of the following software components:

- Netscape SuiteSpot
- DIGITAL UNIX

This Suite will meet the needs of Internet Service Providers (ISPs) and Intranet users.

Netscape SuiteSpot, an integrated suite of Intranet and Internet Server software, lets you communicate, access, and share information throughout an organization.

2
Configuration Data

This chapter describes the tested DIGITAL HiTest Configuration Suite including the hardware, software, and firmware components, and their revision levels. Special configuration rules are explained if required.

Hardware and Software Components

Table 2-1 identifies the range of hardware and software components that can be configured using the Netscape SuiteSpot Internet UNIX AlphaServer 800 HiTest Suite. The ranges of hardware include 128 MB through 384 MB of memory, two through four 4.3 GB disks, and multiple Fast Ethernet and RAID controllers.

Table 2-2 lists the HiTest Suite System Management Console for DIGITAL UNIX HiTest systems.

Table 2-3 lists the revision levels of the components.

The HiTest Template (Table 2-1) consists of three categories:

- **AppSet Software** – Includes software specific to one class of customer solutions, in this case Internet Service Providers (ISPs).
- **Foundation Hardware** – Includes the base system, storage, and other hardware options.
- **Foundation Software** – Includes the operating system, middleware, and database software.

When ordering an item from a HiTest Template, select a quantity that is within the minimum/maximum range for the item. If the minimum quantity is zero (0), then the component is optional. If the minimum quantity is one or more, then order at least the minimum quantity, but not more than the maximum quantity. The maximum quantity represents the greatest number of components that were tested for interoperability with all the other components in the Suite.

For more details on the HiTest Suite hardware configuration, see Appendix A.

Table 2-1: Netscape SuiteSpot Internet UNIX AlphaServer 800 DIGITAL HiTest Template

Netscape SuiteSpot *HiTest AppSet* Internet DIGITAL UNIX HiTest Foundation				
For documentation and updates: http://cosmo.tay.dec.com *and* http://www.partner.digital.com:9003 *For hardcopy of this Suite's HiTest Notes, order* EK-HNSUF-HN.				
Line Item	**Description**	**Part Number**	**Tested Range**	
			Min	**Max**
AppSet Software				
1	**Netscape SuiteSpot**	**QB-50EAA-AA**	0	1
Foundation Hardware				
2	*Select just one base system:* **AlphaServer 800 5/400, DIGITAL UNIX, 128 MB Pedestal** **AlphaServer 800 5/400, DIGITAL UNIX, 128 MB Rack** *Hardware includes*: • CPU with 2 MB cache • S3 SVGA integrated Graphics • DE500-AA 10/100 Mbit Fast Ethernet • Qlogic ISP1020A FWSE SCSI-2 and cable • SCSI CD-ROM drive • RX23L-AB 1.44 MB Floppy drive • 2.1 GB hard disk *Software includes*: • DIGITAL UNIX V4.0B operating system • Unlimited user license • Server extension license • Internet AlphaServer System Software kit • ServerWORKS • StorageWorks • BMC Patrol Agent	 **PB81B-FC** **PB81P-FC**	1	1
3	**256 MB Memory Option**	**PB8MA-AE**	0	1
4	**PCI three-port RAID controller**	**KZPAC-CA**	0	1
5	**4.3 GB 7200 RPM Ultra Wide SCSI Disk** **NOTE:** *This part number replaces RZ1CB-VW, which was used for testing this HiTest suite. The RZ1CB-VW is the same disk as the RZ1CB-SB in a different package format.*	**RZ1CB-SB**	1	3
6	**4/8 GB DAT Tape Drive**	**TLZ09-LG**	1	1
7	*Select one of the following color monitors:* **15-in flat-square with 0.28 dot pitch** **17-in Trinitron aperture grille, 0.26 mm** **21-in Diamondtron aperture grille, 0.30 mm**	 **SN-VRCX5-WA** **SN-VRTX7-WA** **SN-VRCX1-WA**	1	1

Foundation Software				
NOTE: *Order the exact versions and revisions of the software shown below. Paper documentation can be ordered separately.*				
--	**DIGITAL UNIX for AlphaServer V4.0B**	Included with item 2	n/a	n/a
--	**ServerWORKS**	Included with item 2	n/a	n/a
	NOTE: *This HiTest Suite supports the use of a systems management console. When the system management option is included, this HiTest Template identifies the items required. When system management is to be provided through other means, this system management console option may be omitted without invalidating the HiTest Suite.*			
8	**System Management Console**	See Table below	0	1

Table 2-2: HiTest Suite System Management Console for DIGITAL UNIX HiTest Systems

HiTest Suite System Management Console **for DIGITAL UNIX HiTest Systems**				
Line Item	**Description**	**Part Number**	**Tested Range**	
			Min	**Max**
System Management Console Hardware				
1	**DIGITAL PWS 200I Personal Workstation for Windows NT** *Hardware includes*: • 200 MHz CPU with 256-Kbyte cache • 64 MB memory • Matrox Millenium 3D graphics • 10BaseT/10Base2 Ethernet • 2.0 GB UW disk • EIDE CD-ROM • 1.44 MB floppy drive • PS/2 style keyboard • Two-button PS/2 compatible mouse *Software includes*: • Windows NT 4.0 **NOTE:** *A functionally equivalent Intel system may be substituted without invalidating this HiTest Template.*	**SN-B3KAP-EL**	1	1
2	**21-inch color monitor**	**SN-VRCX1-WA**	1	1
3	**DECpacketprobe 90 (standalone model for Ethernet networks, includes power supply)** **NOTE:** *The DECpacketprobe 90 is used for traffic management on 10 Mbit Ethernet LANs. For each LAN segment to be monitored, one DECpacketprobe 90 is used. If the DECpacketprobe 90 is omitted, the clearVISN RMON Manager and licenses (items #9 through 11) may also be omitted.*	**DERMN-AA*** **DERMN-AD** **DERMN-AE** **DERMN-AI** **DERMN-AK** **DERMN-AT** **DERMN-AX** **DERMN-AZ** **DERMN-BJ**	0	*n*†

* AA = United States; AD = Denmark; AE = United Kingdom; AI = Italy, AK = Switzerland; AT = Israel; AX = Central Europe; AZ = Australia; BJ = India and South Africa

† One DECpacketprobe 90 is required for each LAN segment to be monitored; the maximum number of DECpacketprobe 90s that this template can support is equal to the number of segments in the LAN.

HiTest Suite System Management Console for DIGITAL UNIX HiTest Systems				
Line Item	**Description**	**Part Number**	**Tested Range**	
			Min	**Max**
System Management Console Software				
4	**Windows NT V4.0**	Included with item 1	1	1
5	**Windows NT Service Pack 3** For more information about Windows NT Service Pack 3, see http://www.microsoft.com.	–	1	1
6	**Exceed V5.1.3** For more information on Exceed V5.1.3, see http://hummingbird.com	–	1	1
7	**ServerWORKS Manager V2.2A**	Included with the AlphaServer	1	1
8	**StorageWorks Solution Command Console V1.1**	Included with StorageWorks Platform kit	1	1
9	**clearVISN V6.0 CD-ROM and documentation**	**QA-5FVAB-H8**	0	1
10	**clearVISN MultiChassis Manager V6.0 license**	**QM-MQDAA-AA**	0	1
11	**clearVISN RMON Manager V3.3 license**	**QM-218AA-AA**	0	1
12	**BMC PATROLWATCH for ServerWORKS**	Included with the AlphaServer	n/a	n/a
	NOTE: *The following line items are used with the System Management Console and are installed on the target AlphaServer system.*			
13	**Base UNIX systems management tools**	Included with DIGITAL UNIX	n/a	n/a
14	**BMC PATROL Agent**	Included with the AlphaServer	n/a	n/a
15	**BMC Operating System Knowledge Module**	**QB-5KLAA-WB**	0	1
16	**BMC Knowledge Module Middleware/Messaging Internet/Intranet**	**QB-5KWAA-WB**	0	1

The following table lists the revision levels of the components.

Table 2-3: Component Revision Levels

Hardware Component	Hardware	Firmware	Software
SRM console	n/a	V 3.0-10	n/a
4.3 GB disks (RZ1CB-SB)	n/a	0001	n/a
TLZ09	n/a	187	n/a
DECchip 21040-AA	A03/2.4	n/a	n/a
PALcode	n/a	n/a	V1.21-12
KZPAC	A01	V2.42	n/a
DEFPA	01/0	n/a	n/a
AlphaBIOS	n/a	5.28-0	n/a
Software Component		**Version/ Revision**	**Patch Level**
Netscape SuiteSpot, which consists of the following components:		–	–
Enterprise Server		2.01	n/a
News Server		2.01	n/a
Mail Server		2.02	n/a
Proxy Server		2.5	n/a
LiveWire		1.01	n/a
DIGITAL UNIX for AlphaServer*		4.0B	Patch Kit 1†
System Management Console Software*, which consists of the following components:			
Base UNIX System Management Tools		n/a	n/a
DIGITAL ServerWORKS		2.0	n/a
DIGITAL ServerWORKS Manager		2.2A	n/a
BMC PATROLWATCH for ServerWORKS		2.0	n/a
BMC Patrol Agent		3.0.15D	n/a
BMC Operating System Knowledge Module		2.0	n/a
BMC Knowledge Module Middleware/Messaging Internet/Intranet		1.0	n/a
Windows NT Server		4.0	Service Pack 3 (SP3)
Exceed		5.1.3	n/a
StorageWorks Solution Command Console		1.1	n/a
clearVISN		6.0	n/a

* The Management Console Software Components are included with DIGITAL UNIX.
† The standard release version of DIGITAL UNIX (0564). Patch Kit 1 was applied.

Special Configuration Rules

The special configuration rules for the Netscape SuiteSpot Internet UNIX AlphaServer 800 HiTest Suite are as follows:

- AdvsFS must be used for all file systems.
- When the minimum hardware configuration is used, the disk must be repartitioned as shown in Table 2-4.
- When the maximum hardware configuration is used, the disk must be repartitioned as shown in Table 2-5.

Partition Sizes and Uses for the Minimum Hardware Configuration

Table 2-4 shows the disk partitioning that is recommended for the minimum hardware configuration.

Table 2-4: Partition Sizes and Uses for the Minimum Hardware Configuration

Partition	Use	Size
rz0a	root partition (/)	650 MB
rz0b	swap	650 MB
rz0g	/usr	2.1 GB
rz0h	/var	750 MB

Partition Sizes and Uses for the Maximum Hardware Configuration

Table 2-5 shows the disk partitioning that is recommended for the maximum hardware configuration.

Table 2-5: Partition Sizes and Uses for the Maximum Hardware Configuration

Partition	Use	Size
rz0a	root partition (/)	650 MB
rz0b	swap	650 MB
rz1c	/usr	8.6 GB
–	/var (in /usr)	–

3
System Installation and Setup

This chapter presents information that is useful when installing and setting up a DIGITAL HiTest System configured from this DIGITAL HiTest Suite. System preparation includes installation of the hardware, operating system, and applications.

Hardware Installation

The hardware was installed and interconnected as shown in Appendix A.

Disk Storage Configuration

AdvsFS must be used for all file systems.

Repartition the disks as shown in Table 2-4 for the minimum configuration and Table 2-5 for the maximum configuration.

Operating System

Install the DIGITAL UNIX 4.0B operating system with all kernel options.

Install all DIGITAL UNIX subsets.

Swap Space

Set the swap mode to *lazy*.

Create one primary swap space on rz0b for both the minimum configuration and the maximum configuration.

Do not use secondary swap space for the minimum configuration or the maximum configuration.

Applications

This section describes the application installation procedure.

Netscape SuiteSpot Installation and Configuration

Follow these steps to install and configure Netscape SuiteSpot:

1. Follow the instructions provided with the Netscape products.
2. To mount the CD, use the following command:

   `mount -t cdfs -o rrip /dev/rz4c /mnt` (or other mount point).

3. Move to the appropriate directory:
    a. For the Enterprise server, the appropriate directory is `/mnt/decunix`.
    b. For the News and Mail servers the appropriate directory is `/mnt/osf1`.
4. Run ns-setup, answering the questions as prompted.
5. Take the defaults unless your location has other requirements (such as a default gateway or required static routes, or both.) See your network administrator for this information.

4
Interoperability Tests and Results

This chapter describes how the tests were set up (including database organization), what data and programs were placed on what disks, and how the tests were run.

This chapter describes:

- Test Environment
- Test Tools
- Test Configuration
- Test Process and Results

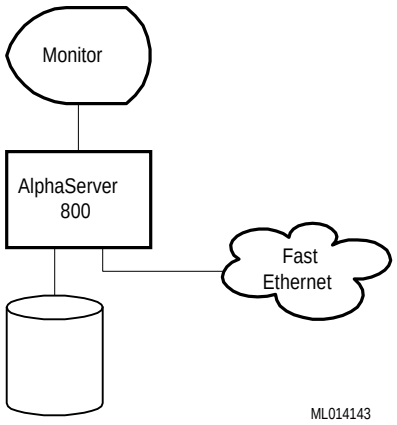
Overview of Results

Interoperability testing was performed successfully on the Netscape SuiteSpot Internet UNIX AlphaServer 800 HiTest Suite. The tests verified that the business processes functioned correctly.

Test Environment

Figure 4-1 shows the test environment for the Netscape SuiteSpot Internet UNIX AlphaServer 800 HiTest Suite.

Figure 4-1: Test Environment



Test Tools

The tools used for interoperability testing include the following:

- **WebTest** – The WebTest consists of two parts: WebServer, which creates Web pages on the server system; and WebClient, which reads those Web pages.

  The WebServer process creates verifiable pages.

  The WebClient process repeatedly reads and verifies all the pages created by WebServer. This test exercises at the protocol level and is browser independent.

- **NNTP** – The NNTP (News) test consists of two parts: nntpPost and nntpRead. Both parts use the NNTP protocol as specified in RFC977. All tests are executed on load generation systems and affect data stored on the server system.

  The nntpPost process creates verifiable news articles and sends them to the server. The message sizes and content vary according to a random distribution.

  The nntpRead process reads and verifies the news articles.

- **MailTest** – The MailTest consists of two parts: MailSender, which uses the SMTP protocol; and MailReceiver, which uses the POP3 protocol. The messages are sent to multiple accounts.

  The MailSender process creates verifiable mail messages and sends them to the server. The message sizes and content vary according to a random distribution.

  The MailReceiver process reads and verifies the mail messages.

Test Configuration

The test load was generated via 12 AlphaStation 600's running from an automated harness on an additional AlphaStation 600.

Network connections were Fast Ethernet (100BaseT) for all systems with additional Fast Ethernet connections for the maximum configuration.

Minimum Configuration

The minimum configuration includes the following:

- All software listed in Table 2-1
- An AlphaServer 800 with a single 400 MHz processor and 128 MB of RAM
- Network communication via a DE500-AA Fast Ethernet adapter
- Tape storage provided by a single TLZ09 mounted internally

Maximum Configuration

The maximum configuration includes the following:

- All software listed in Table 2-1
- An AlphaServer 800 with a single 400 MHz processor and 384 MB of memory
- One additional shelf, which was connected to the KZPAC-CA's
- Tape storage provided by a TLZ09 tape drive mounted internally

Test Process and Results

The following information describes the test results:

- **WebTest** – The WebTest was accomplished by connecting directly to a server. All processes ran successfully.
- **NNTP** – The NNTP testing consisted of the posting and reading of articles. In all cases, the posting and reading of articles occurred successfully. All processes ran successfully.
- **MailTest** – The MailTest consisted of sending and receiving of messages. In all cases, the sending and receiving of messages occurred successfully. All processes ran successfully.

Multiple WebTest, NNTP, and MailTest processes were started for both the minimum configuration and the maximum configuration.

5
System Limits and Characterization Data

This chapter describes any system limits that may have been determined as a result of the testing, along with information about the system characterization during testing. Areas covered include:

During an average of 12 hours of testing (per test), the system had the following performance characteristics:

- **Web Test** – Connected directly to the Web server without a browser, processed over one million pages. There was a total of 1.47 GB transferred with an average of 1 MB per second in the minimum configuration. The throughput was 2.95 MB per second in the maximum configuration.
- **Mail Testing** – Occurred in two steps: sending and receiving messages. The sender achieved a throughput of about 2830 messages per second in the minimum configuration. The sender achieved a throughput of about 3127 messages per second in the maximum configuration. The receivers achieved an average throughput of 16 messages per second with a total of over 47 MB being transferred in the minimum configuration. The receivers achieved an average throughput of 25 messages per second in the maximum configuration.
- **NNTP Testing** – Occurred in two steps: posting and reading articles. Both posting and reading of articles were successful. The reader achieved an average of 52,292 articles per minute with a total of over 2.5 GB in 1478 articles being read in the minimum configuration. The reader achieved an average of 73,941 articles per minute with 2705 articles being read in the maximum configuration. The posting achieved an average throughput of 56.4 articles posted per minute with over 136 MB in 1758 articles being posted in the minimum configuration. The posting achieved an average throughput of 142.06 articles per minute in 4897 articles in the maximum configuration.

6
Problems and Resolutions

This chapter describes any problems that may have been encountered during the testing that have not been fixed and eliminated. A resolution for each problem is given. The resolution provides the system manager or user with a fix or workaround for the problem.

The following problems were identified during testing:

Hardware

No problems were encountered.

Operating System

DIGITAL UNIX

Problem The root partition (/) fills when installing the DIGITAL UNIX Operating System.

Resolution To avoid this problem, follow the disk partitioning listed in Table 2-4 and Table 2-5 in Chapter 2.

Application

Netscape SuiteSpot

Problem The /usr partition fills when installing Netscape SuiteSpot.

Resolution To avoid this problem, follow the disk partitioning listed in Table 2-4 and Table 2-5 in Chapter 2.

A
Detailed Hardware Configuration

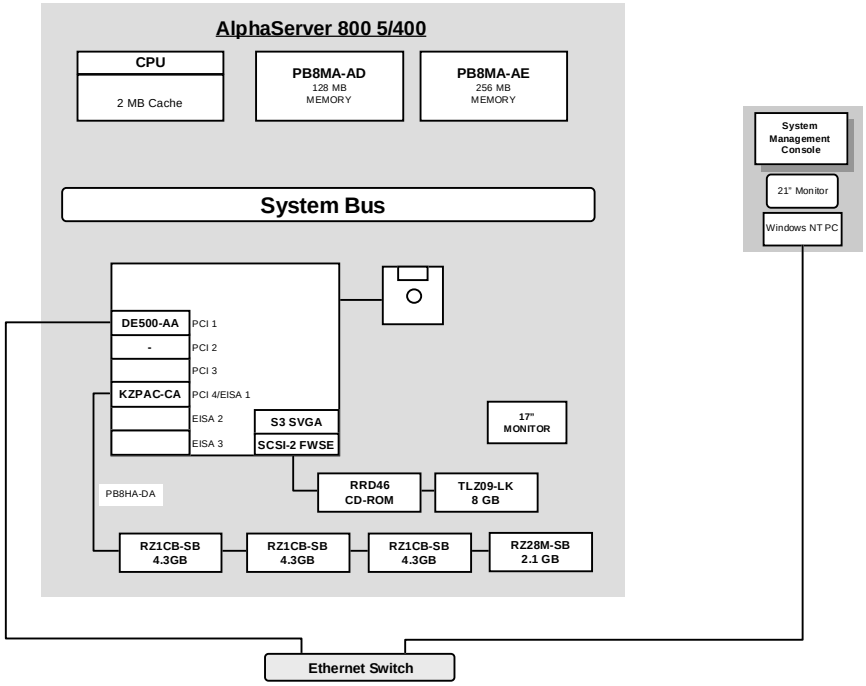
This appendix describes the minimum and maximum hardware configuration for the following:

- System Diagram
- AlphaServer 800 configurations, including:
  - System motherboard
  - PCI slot usage
- Disk architecture

System Diagram

Figure A-1 shows a diagram of the entire HiTest Suite.

Figure A-1: System Diagram



AlphaServer 800 Configurations

Figure A-2 and Table A-1 show the AlphaServer 800 system motherboard and describe the minimum and maximum hardware configurations used in this HiTest Template.

Figure A-2: AlphaServer 800 Motherboard

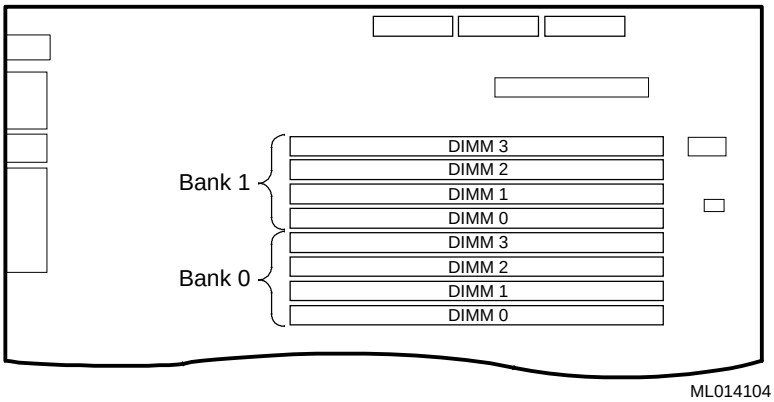


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Table A-1: AlphaServer 800 Usage (Minimum and Maximum Configurations)

Slot	Minimum Configuration Options	Maximum Configuration Options	Description
DIMM3	Open	32 MB	Memory
DIMM2	Open	32 MB	Memory
DIMM1	Open	32 MB	Memory
DIMM0	Open	32 MB	Memory
DIMM3	32 MB	64 MB	Memory
DIMM2	32 MB	64 MB	Memory
DIMM1	32 MB	64 MB	Memory
DIMM0	32 MB	64 MB	Memory

AlphaServer 800 PCI Slot Usage

Figure A-3 and Table A-2 show the PCI slot usage for the minimum and maximum configurations of this HiTest Template.

Figure A-3: AlphaServer 800 PCI Slot Usage

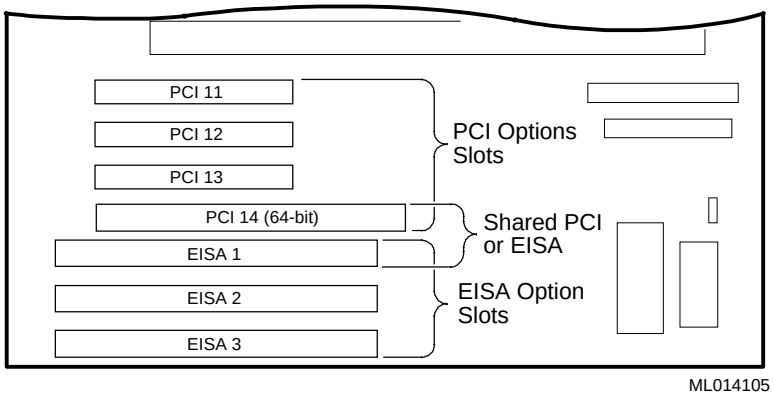

Table A-2: PCI Slot Usage (Minimum and Maximum Configurations)

Slot	Minimum Configuration Options	Maximum Configuration Options	Description
PCI11	DE500-AA	DE500-AA	100 MB Fast Ethernet adapter
PCI12	Open	DE500-AA	100 MB Fast Ethernet adapter
PCI13	Open	DE500-AA	100 MB Fast Ethernet adapter
PCI14	Open	KZPAC-CA	PCI RAID controller
EISA1	Open	Open	
EISA2	Open	Open	
EISA3	Open	Open	

Disk Architecture

Table A-3 lists the architecture of the disk subsystem for the minimum configuration of this HiTest System.

Table A-3: Disk Architecture for the Minimum Configuration

SCSI Bus	Logical Unit (LUN)	RAID Level	Member Drives
SCSI1	rz0	0	rz0

Table A-4 lists the architecture of the disk subsystem for the maximum configuration of this HiTest System.

Table A-4: Disk Architecture for the Maximum Configuration

SCSI Bus	Logical Unit (LUN)	RAID Level	Member Drives
SCSI1	re0	0	rz0
	re1	5	rz1, rz2, rz3