



# Internet SuiteSpot Windows NT Prioris MX

---

## DIGITAL HiTest Notes

Part Number: EK-HISNM-HN. A01

**January 1998**

**Revision/Update Information:** This is a new document.

**Digital Equipment Corporation  
Maynard, Massachusetts**

---

**January 1998**

Digital Equipment Corporation makes no representations that the use of its products in the manner described in this publication will not infringe on existing or future patent rights, nor do the descriptions contained in this publication imply the granting of licenses to make, use, or sell equipment or software in accordance with the description.

Possession, use, or copying of the software described in this publication is authorized only pursuant to a valid written license from DIGITAL or an authorized sublicensor.

© Digital Equipment Corporation 1998. All rights reserved.

The following are trademarks of Digital Equipment Corporation: AlphaServer, DIGITAL, OpenVMS, ServerWORKS, StorageWorks, TruCluster, and the DIGITAL logo.

The following are third-party trademarks:

Netscape and Netscape Navigator are a registered trademarks of Netscape Communications Corporation  
Windows NT and Windows 95 are trademarks of Microsoft Corporation

All other trademarks are the property of their respective owners.

---

# Table of Contents

## 1 Introduction

DIGITAL HiTest Suite and Its Advantages..... 1-1  
Overview of This DIGITAL HiTest Suite ..... 1-2

## 2 Configuration Data

Hardware and Software Components .....2-1  
Special Configuration Rules .....2-5

## 3 System Installation and Setup

Hardware Installation ..... 3-1  
  System Firmware..... 3-1  
  Using the Quick Launch CD..... 3-1  
  RAID Configuration ..... 3-2  
  Prioris System Configuration Utility (SCU)..... 3-3  
  DAC960 Monitor Service and DAC960 Administrator Utility ..... 3-4  
Operating System Installation..... 3-4  
Installing the DC2114X.SYS Driver ..... 3-5  
Installing the DE500.SYS Driver ..... 3-6  
Applications ..... 3-7  
  Netscape Enterprise Server ..... 3-7  
  Netscape Mail Server..... 3-7  
  Netscape News Server ..... 3-8

## 4 Interoperability Tests and Results

Overview of Results ..... 4-1  
Test Environment ..... 4-2  
Test Tools ..... 4-2  
Test Configuration..... 4-3  
  Minimum Configuration ..... 4-3  
  Maximum Configuration ..... 4-4  
Test Process and Results..... 4-4

## Contents

### 5 System Limits and Characterization Data

### 6 Problems and Resolutions

Hardware.....	6-1
Operating System .....	6-1
Latest DC2114X.SYS Driver Not Installed .....	6-1
Application.....	6-1

### A Detailed Hardware Configuration

System Diagram .....	A-2
Prioris MX Configurations.....	A-3
System Motherboard.....	A-3
PCI Backplane Slot Usage (Minimum and Maximum Configurations).....	A-3
Memory Configuration .....	A-4
Storage Configuration.....	A-5
Minimum Configuration .....	A-5
Maximum Configuration.....	A-5

### Figures

Figure 3-1: Ethernet Controller Location .....	3-5
Figure 4-1: Test Environment.....	4-2
Figure A-1: System Diagram .....	A-2
Figure A-2: Prioris MX Motherboard.....	A-3
Figure A-3: SIMM Layout for Memory Banks 0 through 3 .....	A-4
Figure A-4: Storage Configuration.....	A-5

### Tables

Table 2-1: Internet SuiteSpot Windows NT Prioris MX DIGITAL HiTest Template .....	2-2
Table 2-2: System Management Station.....	2-3
Table 2-3: Component Revision Levels .....	2-4
Table 4-1: Disk Configuration for the Minimum Configuration .....	4-3
Table 4-2: Disk Configuration for the Maximum Configuration .....	4-4
Table A-1: Prioris MX Usage (Minimum and Maximum Configurations).....	A-3
Table A-2: PCI Slot Usage (Minimum and Maximum Configurations).....	A-4
Table A-3: Minimum Configuration .....	A-5
Table A-4: Maximum Configuration.....	A-5

---

# Preface

This document provides an overview of DIGITAL HiTest Suites and detailed technical information about interoperability test results for the Internet SuiteSpot Windows NT Prioris MX 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**

What our readers think of this or any other DIGITAL documentation is important to us. If you have any comments, we would appreciate hearing from you. Send your comments to: *reader-comments@digital.com*.

Please reference the document title and part number (EK-HISNM-HN. A01) in your correspondence about this document.

Copies of this and other DIGITAL documents can be ordered by calling 1-800-DIGITAL.

## 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) that undergo low to medium levels of traffic.

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.

## Introduction

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/cgi-bin/comet> (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 Internet SuiteSpot Windows NT Prioris MX HiTest Suite consists of the following software components:

- Netscape SuiteSpot, which includes these options:
  - Catalog Server
  - Certificate Server
  - Directory Server
  - Enterprise Server
  - LiveWire Pro
  - Mail Server
  - Media Server
  - News Server
  - Proxy Server
- Windows NT Server

This suite meets the needs of Internet Service Providers (ISPs) that experience low to medium levels of user traffic.

Netscape SuiteSpot is a flexible suite of integrated servers which enable business workgroups to communicate and collaborate, using open Internet technology. Prioris MX systems provide a robust network computing environment for Windows NT servers. A Prioris MX server running Internet SuiteSpot offers an excellent web server solution.

Prioris MX network-ready servers feature high-performance disk and network throughput, providing a platform for Netscape SuiteSpot that delivers application server performance at file and print server prices.

The advanced dual symmetric multiprocessing (SMP) architecture of the DIGITAL Prioris MX 6000 Series is ideally suited to meet the price and performance requirements of users who want to rapidly and economically configure a groupware server. Together with Netscape SuiteSpot, it serves as the best platform for both integrating with existing solutions and delivering a new generation of web applications.

---

## 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 Internet SuiteSpot Windows NT Prioris MX HiTest Suite. The hardware ranges from a smaller system with a single disk and 64 MB RAM to a larger system with 320 MB, several disks in a RAID configuration and tape backup.

Table 2-2 lists the Systems Management Station hardware and software.

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 web sites that experience low to medium levels of user traffic.
- **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: Internet SuiteSpot Windows NT Priors MX DIGITAL HiTest Template**

<b>Internet SuiteSpot <i>HiTest</i> AppSet</b>				
<b>Windows NT Priors MX HiTest Foundation</b>				
<i>For documentation and updates: <a href="http://cosmo.tay.dec.com">http://cosmo.tay.dec.com</a> and  <a href="http://www.partner.digital.com:9003/cgi-bin/comet">http://www.partner.digital.com:9003/cgi-bin/comet</a>                      For hardcopy of this Suite's HiTest Notes, order EK-HISNE-HN.</i>				
Line Item	Description	Part Number	HiTest Range	
			Min	Max
<b>AppSet Software</b>				
1	<b>Netscape SuiteSpot</b> Purchase from a Netscape reseller or contact Netscape at: <a href="http://home.netscape.com/comprod/server_central/">http://home.netscape.com/comprod/server_central/</a>	<b>Netscape</b>	1	1
<b>Foundation Hardware</b>				
2	<b>DIGITAL Priors MX 6200, 256 KB cache, 200 MHz</b> <i>Hardware includes:</i> <ul style="list-style-type: none"> <li>• Dual CPUs with 256 KB cache</li> <li>• 64 MB Memory</li> <li>• Mylex one channel PCI RAID</li> <li>• Integrated UltraSCSI controller</li> <li>• Integrated 10/100 Mbit Fast Ethernet</li> <li>• SCSI 12X CD-ROM drive</li> <li>• RX23L-AB 1.44 MB Floppy drive</li> </ul> <i>Software includes:</i> <ul style="list-style-type: none"> <li>• ServerWORKS CD-ROM</li> </ul>	<b>FR-B41WW-AC</b>	1	1
3	<b>Country kit (accessories, keyboard, documents, mouse, and power cord)</b>	<b>FR-PC94K-AA</b>	1	1
4	<b>128 MB 60ns Parity SIMMs (2 x 64 MB)</b>	<b>FR-PC77M-BM</b>	0	2
5	<b>4.3 GB Wide SSB disk drive</b>	<b>FR-CECBA-CA</b>	1	3
6	<b>9.1 GB UW SCSI disk drive</b>	<b>FR-CFCBA-CA</b>	0	1
7	<b>4/8 GB DAT SCSI tape drive</b>	<b>FR-PCXAT-AJ</b>	1	1
8	<b>Fast Ethernet Adapter</b>	<b>FR-DE500-BA</b>	0	1
9	<i>Select one high-resolution color monitor (the 17 inch is recommended):</i> <b>15" flat-square 0.28 dot pitch</b> <b>17" flat-square 0.28 dot pitch</b>	<b>FR-PCXBV-YW</b> <b>FR-PCXBV-FZ</b>	1	1
<b>Foundation Software</b>				
10	<b>Windows NT Server 4.0</b> Purchase from a Microsoft reseller or contact Microsoft at <a href="http://www.microsoft.com/ntserver/">http://www.microsoft.com/ntserver/</a>	<b>Microsoft</b>	1	1
11	<b>Windows NT Service Pack 3 (SP3)</b> Install Windows NT Service Pack 3 available from: <a href="ftp://ftp.microsoft.com/bussys/winnt">ftp://ftp.microsoft.com/bussys/winnt</a>	<b>Microsoft</b>	1	1
12	<b>System Management Station</b>	<b>See Table 2-2</b>	0	1

Table 2-2: System Management Station

Internet SuiteSpot HiTest AppSet System Management Station				
<i>For documentation and updates: <a href="http://cosmo.tay.dec.com">http://cosmo.tay.dec.com</a> and  <a href="http://www.partner.digital.com:9003/cgi-bin/comet/">http://www.partner.digital.com:9003/cgi-bin/comet/</a>  For hardcopy of this Suite's HiTest Notes, EK-HISNE-HN.</i>				
Line Item	Description	Part Number	HiTest Range	
			Min	Max
<b>System Management Station Hardware</b>				
<b>Note:</b> This HiTest Suite supports the use of a systems management station. When the management station option is included, this HiTest Template identifies the items required. When system management is to be provided through other means, this option may be omitted without invalidating the HiTest Suite.				
1	<b>Prioris XL 6200</b> <i>Hardware includes:</i> <ul style="list-style-type: none"> <li>• 200 MHz CPU, 256 KB cache</li> <li>• Integrated Fast Ethernet</li> <li>• 12X CD-ROM</li> <li>• One 2.1 GB wide SCSI disk drive</li> <li>• 1.44 MB diskette drive</li> <li>• 32 MB 60ns EDO DIMM memory</li> </ul> <i>Software includes:</i> <ul style="list-style-type: none"> <li>• ServerWORKS CD-ROM</li> </ul> <b>Note:</b> A functionally equivalent X86 system may be substituted without invalidating this HiTest Template.	FR-B60WW-XD	1	1
2	<b>Country Kit</b> <b>Note:</b> Non-North American orders should substitute the appropriate country kit.	FR-PC94K-AA	1	1
3	<b>32 MB 60ns EDO DIMM Memory</b>	FR-PCSMA-AC	1	1
4	<i>Select one high-resolution color monitor (the 17 inch is recommended):</i> <b>15" flat-square 0.28 dot pitch</b> <b>17" flat-square 0.28 dot pitch</b>	FR-PCXBV-YW FR-PCXBV-FZ	1	1
<b>System Management Station Software</b>				
5	<b>Windows NT Server V4.0</b> Purchase from a Microsoft reseller or contact Microsoft at <a href="http://www.microsoft.com/ntserver/">http://www.microsoft.com/ntserver/</a>	Microsoft	1	1
6	<b>Windows NT Service Pack 3 (SP3)</b> Install Windows NT Service Pack 3 available from <a href="ftp://ftp.microsoft.com/bussys/winnt">ftp://ftp.microsoft.com/bussys/winnt</a>	Microsoft	1	1
7	<b>System Management Server (SMS) V1.2</b> Purchase from a Microsoft reseller or contact Microsoft at <a href="http://www.microsoft.com/">http://www.microsoft.com/</a>	Microsoft	1	1
8	<b>SMS Service Pack 1 (SP1)</b> Install SMS Service Pack 1 available from <a href="ftp://ftp.microsoft.com/bussys/winnt">ftp://ftp.microsoft.com/bussys/winnt</a>	Microsoft	1	1
9	<b>SQL Server V6.5</b> Purchase from a Microsoft reseller or contact Microsoft at <a href="http://www.microsoft.com">http://www.microsoft.com</a>	Microsoft	1	1

## Configuration Data

**Table 2-3: Component Revision Levels**

Hardware Component	Hardware	Firmware	Software
Phoenix BIOS	–	4.05	–
DAC 960 BIOS	–	3.00.07	–
Prioris 6200 MP/2	1.05	–	–
Single Channel RAID Controller (FR-PCTAR-EA)	A03	3.50-0-18	–
4.3 GB disks (FR-CECBA-CA)	A01	0702	–
9.1 GB disk (FR-CFCBA-CA)	A02	LXTA	–
Fast Ethernet Adapter (FR-DE500-BA)	B01	1.1	–
4/8 GB DAT SCSI tape drive (FR-PCXAT-AJ)	A02	0172	–
Software Component	Version/Revision	Patch Level	
Windows NT Server	4.0	Service Pack 3 (SP3)	
Netscape SuiteSpot, which consists of these options:			
• Catalog Server	1.01	–	
• Certificate Server	1.01	–	
• Directory Server	1.02	–	
• Enterprise Server	2.01	–	
• LiveWire Pro	1.01	–	
• Mail Server	2.02	–	
• Media Server	1.0	–	
• News Server	2.01	–	
• Proxy Server	2.51	–	
System Management Server	1.2	Service Pack 1 (Build 786)	
ServerWORKS, which includes:			
• ServerWORKS Quick Launch CD	3.2	–	
• Prioris System Configuration Utility (SCU)	1.05	–	
• DAC960 Monitor Service	4.03	–	
• DAC960 Administrator	4.03	–	
• Mylex Disk Array Controller Configuration Utility	4.40	–	

## Special Configuration Rules

The *Prioris MX 6200 Server System Reference* (order number ER-B40WW-UA) provides detailed configuration information needed to properly install memory and PCI options.

It is possible to order more memory options than are supported by this DIGITAL HiTest Template. To comply with the HiTest Template, keep the total installed to 320 MB or less.

---

### Note

---

Service Packs must be reapplied after installing any new software.

---

The following configuration rules also apply:

- The CD-ROM drive should always be connected to the onboard Adaptec UltraSCSI controller to support the bootable ServerWORKS Quick Launch CD.
- The CD-ROM drive and the two half-height devices located in the upper bays can only be connected to the narrow SCSI bus.



---

## 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.

### System Firmware

To determine the firmware version of Phoenix BIOS on your system:

1. Choose Administrative Tools (Common) from the Programs menu.
2. Choose Windows NT Diagnostics and click the System tab.

If the version shown is prior to the version required by the HiTest Suite configuration, run the Phoenix BIOS upgrade utility (PHLASH.EXE). This utility is located in the BIOS update kit, which can be obtained from:

[http://www.windows.digital.com/~ftp/index/in\\_prioris\\_mx6.htm](http://www.windows.digital.com/~ftp/index/in_prioris_mx6.htm)

### Using the Quick Launch CD

Several of the procedures in this chapter use the Quick Launch CD or diskettes created from the Quick Launch CD.

The Quick Launch CD is used when you do configurations or installations while setting up your system. When you need to configure something that you are adding to your system, such as additional controllers or a new driver, you may prefer to create and use utility diskettes.

Use the following procedure to create utility diskettes to install and configure RAID or to install the drivers discussed in this chapter:

1. Insert the Quick Launch CD.  
Quick Launch automatically starts up.
2. Select Installations and Utilities from the Quick Launch menu.
3. Select the Conventional tab on the Installations and Utilities menu.
4. Insert a blank formatted floppy diskette.
5. Click the Microsoft icon and select Windows NT Server V4.0 from the drop-down list.
6. Click Continue, then select the MX6 server from the checklist which is displayed.

## System Installation and Setup

7. From the list of options to install, select one of the following:
  - To create a Mylex Disk Array Controller Configuration Utility diskette:  
"Mylex Configuration and Utilities"
  - To create a diskette to install the DC2114X.SYS driver:  
"Digital On-Board Ethernet DC21142/DC21143"
  - To create a diskette to install the DE500.SYS driver:  
"Digital PCI Ethernet, DE 500"
  - To create a diskette for the DAC960 Windows NT Monitor service, and the DAC960 Administrator utility:  
"Mylex EISA and PCI RAID Controller"
8. When prompted, press Enter to extract the files to the floppy.
9. Exit Quick Launch and remove the floppy diskette.

### RAID Configuration

See Table 4-1 and Table 4-2 for the minimum and maximum RAIDset configurations for this HiTest Template.

Configure and setup RAID Arrays using the Mylex Disk Array Controller Configuration Utility (DACCF.EXE) as follows:

1. Launch the Mylex Disk Array Controller Configuration Utility (DACCF.EXE).

If you are using the Quick Launch CD to setup the server, the Utility launches automatically.

If you do not want to setup the server:

  - a) Use Quick Launch to create a RAID configuration utility diskette. See the section Using the Quick Launch CD earlier in this chapter.
  - b) Reboot the server with the diskette in the floppy drive.
  - c) At the A:\ prompt, enter the following command to launch the utility:  

```
daccfg\daccf.exe
```
2. From the Main Menu, use the cursor keys to select the option "02 New Configuration" then press Enter.
3. In the New Configuration window, select option "1. Define Pack," and press Enter.
4. In the Pack Definition window, select option "1. Create Pack," and press Enter.
5. In the drive window, use the cursor keys to highlight the drives you want to add to the RAIDset (or pack), and press Enter to add each drive. Drives that are available to add to the pack are labeled RDY. Once they are added, they are labeled ONL.
6. After adding the drives to the RAIDset, press ESC to return to the Pack Definition window. If you have added all available drives, the cursor will automatically return to the Pack Definition window.
7. Select option "3. Arrange Pack" and press Enter.
8. In the drive selection window, select only the first drive of the RAIDset and press Enter.

9. Repeat these steps until all RAIDsets are arranged. The utility will return to the New Configuration window.
10. In the New Configuration Window, select option “2. Define System Drive,” and press Enter.
11. In the System Drive Definition window, select option “1. Create System Drive.”
12. In the RAID Level window, select the appropriate RAID level (RAID levels that are highlighted white are not available), and press Enter.
13. In the Enter Size window, accept the default (maximum) size for the RAIDset by pressing Enter.
14. When prompted “Do you want to create system drive?” Select Yes (default), and press Enter.
15. In the Main Menu, select option “05. Initialize System Drive,” and press Enter.
16. In the Initialize System Drive Window, select option “1. Select System Drive,” and press Enter.
17. Use cursor keys to move to displayed logical drives and press Enter to select highlighted drives (selected drives will be marked with a check mark).
18. Press ESC to return to the Initialize System Drive window.
19. Select option “2. Start Initialize,” and press Enter.
20. Follow the prompts to begin initialization.
21. Once initialization is complete (it may take anywhere from 40 minutes to several hours depending on the size of the RAIDset), press ESC until prompted “Do you really want to exit the configuration utility?” Select Yes.
22. If you ran the utility from the Quick Launch CD, the system reboots and continues with the installation process. If the utility was run from a diskette, remove the diskette and reboot the server.

### Prioris System Configuration Utility (SCU)

Even if PCI or EISA-based options are not present on the system, running SCU ensures that the NVRAM data is in a format compatible with Windows NT. Run the SCU any time you add, remove, or relocate ISA, PCI, or EISA expansion boards. You should also run the SCU if the main logic board has been changed or after adding memory to the CPU module.

---

#### Note

---

See the chapter titled Server Software and Utilities in the *Prioris MX 6200 Series Server System Reference* (Part Number: ER-B40WW-UA).

---

### DAC960 Monitor Service and DAC960 Administrator Utility

To install the DAC960 Monitor Service and DAC960 Administrator Utility on Windows NT, follow these steps:

1. Insert the Mylex EISA and PCI RAID Controller diskette created in Step 7 of Using the QuickLaunch CD.
2. Copy the file DACMON.EXE from the \nt directory on the diskette, to any directory on your local disk
3. Use the SRVCCFG.EXE utility found in the \nt directory on the diskette, to install DACMON.EXE as a Windows NT service. Use the following format:  

```
srvccfg <service name> <service label> <path>
```
4. To enable the DAC960 Monitor service to log events in the Windows NT Event Viewer, copy the file DACMSG.DLL from the \nt directory on the diskette, to the \winnt\system32\ directory on your system disk.
5. To install the DAC960 Administrator utility, copy the file DACADM.EXE in the \nt directory on the diskette, to a directory on your local drive.

### Operating System Installation

Perform the following steps to install the Windows NT Server:

1. Power up your system.
2. Insert the Quick Launch CD into the CD-ROM drive.
3. Boot the Quick Launch CD and choose the appropriate language.
4. Create the RAIDsets and initialize the logical drives using the Mylex Disk Array Controller Configuration Utility (DACCF.EXE), which is automatically launched by Quick Launch. The creation of RAIDsets is described in the section RAID Configuration earlier in this chapter.

For more information about configuring RAIDsets, see the chapter on Preparing the Array in the *DAC CF Utilities Installation Guide and User Manual*. To access an online copy of this manual, click User Documentation on the Quick Launch main menu.

5. Select Installation and Utilities from the Quick Launch menu.
6. Click the Express Installation tab.
7. Click the MS Windows icon and select "Windows NT 4.0" from the pop-up menu.
8. Fill in the appropriate information to begin the Windows NT Server installation.
9. Create a 100 MB partition when prompted by Quick Launch. (Quick Launch requires an MS-DOS partition of at least 35 MB to install Windows NT Server.)
10. Insert the Windows NT V4.0 CD-ROM when prompted.

The installation is completed using the information already gathered by Quick Launch.

11. Install Service Pack 3 for Windows NT 4.0.

---

#### Note

---

Service Packs must be reapplied after installing any new software.

---

## Installing the DC2114X.SYS Driver

---

### Caution

---

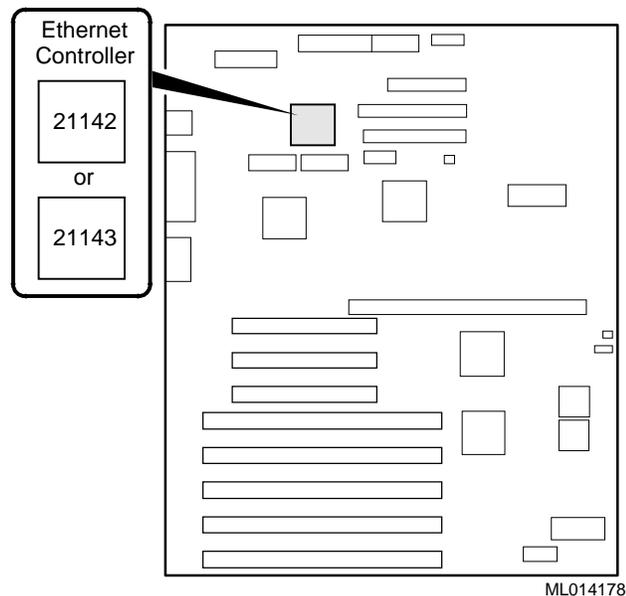
The installation of the DC2114X.SYS driver is a required procedure. If it is not completed, the network will hang.

---

Use the following procedure to install the DC2114X.SYS driver required by the DIGITAL Semiconductor 21143 10/100 Mbit Ethernet LAN controller. This procedure replaces the Version 4.03 driver installed by Windows NT Server with the required Version 4.12 driver.

1. Visually inspect the Prioris motherboard as shown in Figure 3-1 to determine which controller chip is installed.

**Figure 3-1: Ethernet Controller Location**



2. Install the Windows NT Server V4.0 operating system and Service Pack 3 as described in the section Operating System Installation earlier in this chapter.

---

### Note

---

If the Ethernet chip installed is a DC21143, the system will indicate that a DC21142 was detected.

---

3. If the controller chip in use is DC21142, it is only necessary to copy the new driver from `a:\winnt` to `winnt\system32\drivers` on the server.
4. If the controller chip is DC21143, create a diskette to install the DC2114X.SYS driver by following the procedure in the section Using the Quick Launch CD earlier in this chapter. Then follow these steps:
  - a. From the Control Panel, click Networks.
  - b. Click the Protocol tab, select TCP/IP, and click Properties.
  - c. From the IP Address tab, record the IP address, subnet mask, and gateway.

## System Installation and Setup

- d. Click the Adapters tab, select the currently installed network adapter, and remove it.
- e. Restart the server.
- f. From the Control Panel, click Networks and add an adapter using the Have Disk button.
- g. Insert the floppy diskette.
- h. At the a:\ prompt, enter the path `enter \winnt` when prompted.
- i. Select “DEC PCI Fast Ethernet DC21143” from the list.
- j. Re-enter TCI/IP information as needed.
- k. Restart the server.

### Installing the DE500.SYS Driver

During the Windows NT installation, the DE500 is detected as DECchip 21142, and uses the DE2114x.SYS driver. The new DE500 which uses the 21143 controller chip performs auto-sensing as well as auto-negotiation, so the proper driver should be used. The following procedure installs version 1.13 of the DE500.SYS driver, which replaces version 1.12.

1. Install the Windows NT Server V4.0 operating system and Windows NT Service Pack 3 as described in the section Operating System Installation earlier in this chapter.
2. Create a diskette to install the DE500.SYS driver and the DC2114X.SYS driver by following the procedure in the section Using the Quick Launch CD earlier in this chapter.
3. From the Control Panel, click Networks.
4. Click the Protocol tab, select TCP/IP, and click Properties.
5. From the IP Address tab, record the IP address, subnet mask, and gateway.

---

#### Note

---

Windows NT assigns a 2 to the embedded ethernet controller and a 1 to the DE500 PCI adapter. Since NT detects and installs the DEC211x.SYS driver for both adapter, they both appear as DECchip 21142 in the pop-up menu.

---

6. Click the Adapters tab, select adapter labeled with a 1 in the pop-up menu.
7. Click the Remove button.
8. Click OK and restart the server.
9. From the Network control panel, click the Adapters tab and add an adapter using the “Have Disk” button.
10. Insert the diskette created in step 2.
11. Accept the default location (A:).
12. Accept the default adapter “DEC DE500 Fast EtherWORKS PCI 10.100.”
13. Re-enter the TCP/IP information as needed.
14. Restart the server.

## Applications

Netscape SuiteSpot products tested by HiTest consist of:

- Netscape Enterprise Server
- Netscape Mail Server
- Netscape News Server

### Netscape Enterprise Server

To install and configure the Netscape Enterprise Server:

1. Prior to installing the web server:
  - a) From the program menu, choose User Manager for Domains.
  - b) Create a dedicated account under which the server will run.
2. Insert the Netscape Enterprise Server CD-ROM.
3. Install Netscape Navigator by invoking `\INTEL\GOLD301\G32e30.exe` from the CD drive. Enterprise Server will not install unless Netscape Navigator is installed first.
4. Invoke `\INTEL\ENTERPRISE\E32e201.exe` from the CD drive to begin the Enterprise Server installation.
5. When prompted, enter the dedicated user account name under which the server will start and run.
6. Take the default username (admin) for administering Enterprise Server, and accept the default port number.
7. Follow the prompts to complete the installation.

### Netscape Mail Server

Prior to installing Netscape Mail Server, complete the following procedure:

1. From the program menu, choose User Manager for Domains.
2. Create an NT global account that the mail server will run as; for example, Netscape MTA.
3. Make sure that the account has “User Cannot Change Password” and “Password Never Expires” checked.
4. Make sure the account has “User Must Change Password at Next Login” unchecked.
5. Assign “logon as a service” privilege to the mail server account.
6. Create a global group for the mail server account; for example, MailServer.
7. Make the mail server account a member of the “Administrators” group and the mail server group.
8. Set the mail server group as the “Primary Group” for the mail server account.
9. Remove the “Domain Users” group by clicking the Groups button, selecting Domain Users and clicking the Remove button.

To install the Netscape Mail Server:

1. Insert the Netscape Mail Server CD-ROM.
2. Invoke `\I386\Setup.exe` from the CD-ROM drive.

## System Installation and Setup

3. Follow the prompts to complete the installation.

---

### Note

---

The Netscape Mail Server installation takes at least 10 minutes to complete the "Creating Registry Entries" portion.

---

## Netscape News Server

Prior to installing Netscape News Server:

1. Stop the Netscape Enterprise Server service either by going into the Services control panel or running Netscape Administrator.
2. Stop the Netscape Mail Server service by going into the Services control panel.

To install the Netscape News Server:

1. Insert the Netscape News Server CD.
2. Invoke \I386\Ns\_setup.exe from the CD-ROM drive.
3. Install the News server on an NTFS file system. If installed on a FAT system, each article stored on the disk will consume more space.
4. Follow the prompts to complete the installation.

---

## 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

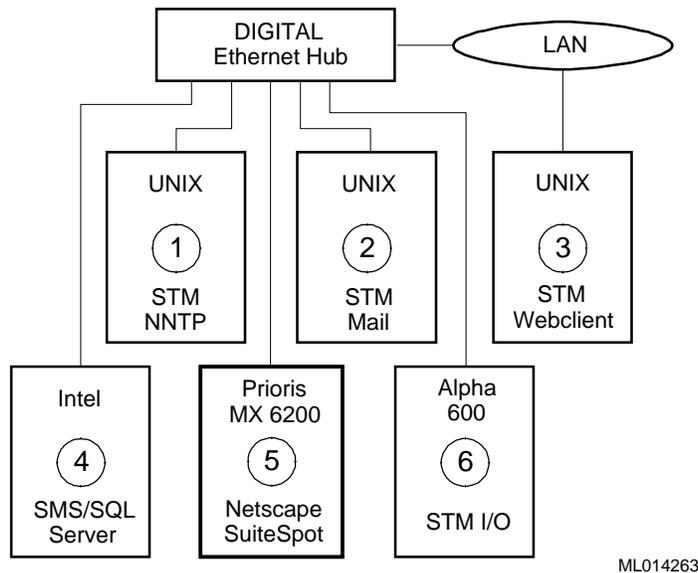
### Overview of Results

Interoperability testing was performed successfully on the Internet SuiteSpot Windows NT Prioris MX HiTest Suite. The tests verified that the business processes functioned correctly.

## Test Environment

Figure 4-1 shows the Internet SuiteSpot Windows NT Prioris MX test environment.

**Figure 4-1: Test Environment**



ML014263

- ❶ NNTP client reading and posting news messages
- ❷ Mail client sending and receiving mail
- ❸ Client making web page requests
- ❹ SMS Server polls/audits Prioris MX 6200
- ❺ Prioris MX 6200 Netscape SuiteSpot Server under test
- ❻ File share testing

## Test Tools

Interoperability testing was performed using the following tools:

- **STM NNTP, Version 1.1 (Internal Digital Equipment Corporation test tool)**

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.
- **STM MailTest, Version 1,1 (Internal Digital Equipment Corporation test tool)**

The MailTest consists of two parts: MailSender, which uses the Simple Mail Transfer Protocol (SMTP); and MailReceiver, which uses Post Office Protocol 3 (POP3). 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.

- STM Webclient, Version 1.1 (Internal Digital Equipment Corporation test tool)**  
 The STM Webclient tool generates web page accesses. The size of pages accessed ranges from 1–64 Kbytes. This tool performs data integrity checks on every page accessed.
- STM I/O Tool, Version 1.1-002 (Internal Digital Equipment Corporation test tool)**  
 STE\_IO.EXE generates and copies data to the file shares and performs data integrity checking on the data copied.

## Test Configuration

The test load was generated as follows:

- The average test duration was 40 hours.
- nntpPost client and nntpRead used a 1 second throttle time (in other words, posted and read messages at 1 second intervals).
- MailSend sent a maximum of 60 messages per minute.
- STM Webclient ran several processes, performing accesses to web pages every 0.01 seconds.
- STM I/O Tool was run continuously throughout the test.
- Windows NT Backup was used to perform data backup during the test.
- SMS performed routine tasks during the test.

## Minimum Configuration

The minimum configuration includes one disk connected to the integrated SCSI controller, as shown in Table 4-1.

**Table 4-1: Disk Configuration for the Minimum Configuration**

Quantity	Capacity	Disk Content/Data	Disk Controller	RAID Configuration
1	4.3 GB	Windows NT Server system and paging file Netscape SuiteSpot (application and data) File shares and log files	Integrated	–

## Interoperability Tests and Results

### Maximum Configuration

The maximum configuration includes one disk and a mirror set connected to the SCSI RAID controller (FR-PCTAR-EA), as shown in Table 4-2.

**Table 4-2: Disk Configuration for the Maximum Configuration**

Quantity	Capacity	Disk Content/Data	Disk Controller	RAID Configuration
1	9.1 GB	Windows NT Server system and paging file	FR-PCTAR-EA	JBOD
1	4.3 GB RAIDset (three 4.3 GB disk drives)	Netscape SuiteSpot (application and data) File shares and log files	FR-PCTAR-EA	RAID 5

### Test Process and Results

Interoperability testing of the Internet SuiteSpot Prioris MX systems was divided into the following sections:

- **Netscape Enterprise Server** – The web server served out over 6 million pages and the STM Webclient reported no HTTP or communication errors.
- **Netscape News Server** – 791 articles were posted with no errors.
- **Netscape Mail Server** – Over 230,00 articles were posted with no errors.
- **File Shares** – STM I/O tool reported no errors and found no data corruption.
- **Windows NT Backup** – Windows NT Backup performed the data backup and verification with no errors.

---

## 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.

**Network** – When operating a server that is expected to provide high-performance network services (such as the Web), the server should be on its own LAN segment, preferably with a high-speed interconnection such as Fast Ethernet. This can be achieved by the use of an Ethernet switch.

For purposes of comparison between HiTest platforms a rating unit was created. This unit is called an HTLLF. This template had an HTLLF of 1004.



---

## 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

#### Latest DC2114X.SYS Driver Not Installed

<b>Problem</b>	<p>The network hangs when using the V4.03 DC2114X.SYS driver installed with the Windows NT Server V4.0 operating system.</p> <p>The Prioris MX 6200 in this test was equipped with an Ethernet Adapter featuring the DC21143 controller chip. This chip requires version 4.12 of the DC2114X.SYS driver.</p> <p>When using either Quick Launch or standard Microsoft installation procedures, the newest version of the driver is not installed, even though it does exist on the Quick Launch CD. Furthermore, the DC21143 controller is detected by NT as type DC21142, making it necessary to verify by inspection exactly which chip is in use.</p>
<b>Resolution</b>	<p>Follow the procedure in Chapter 3 for Installing the DC2114X.SYS Driver.</p>

### Application

No problems were encountered.



# A

---

## Detailed Hardware Configuration

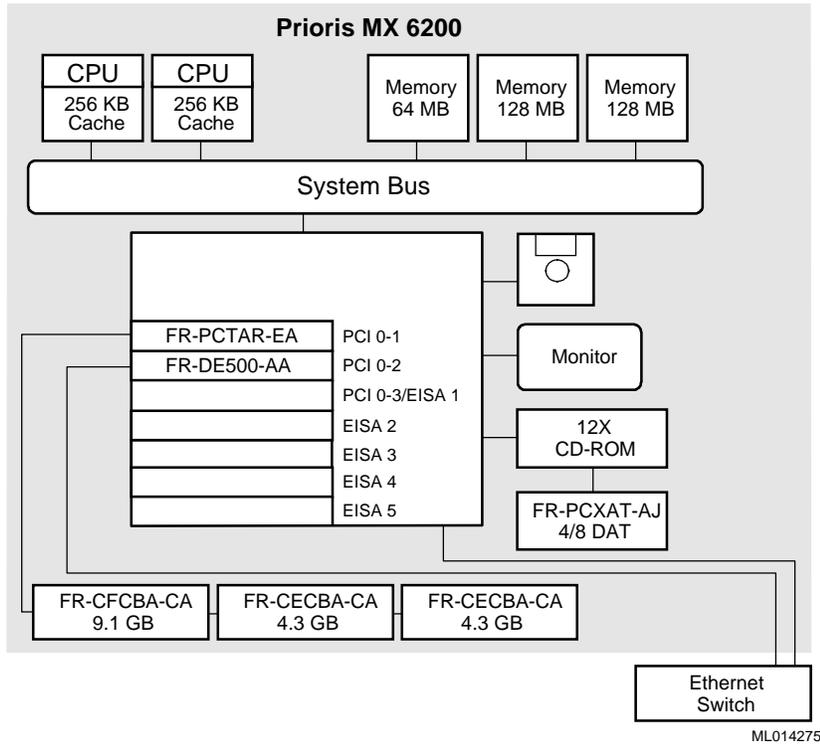
This appendix describes the minimum and maximum hardware configuration for the following:

- System Diagram
- Prioris MX configurations, including:
  - System motherboard
  - PCI backplane slot usage (minimum and maximum configurations)
  - Memory configuration
  - Storage configuration

## System Diagram

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

**Figure A-1: System Diagram**



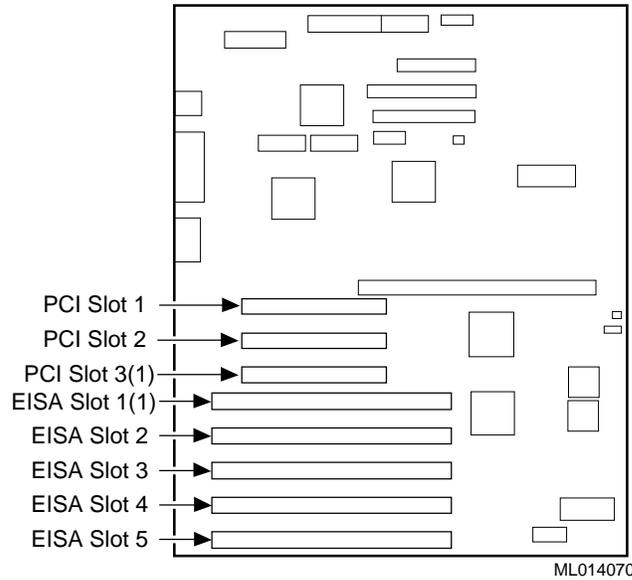
## Prioris MX Configurations

This section shows the Prioris MX system motherboard and describes the minimum and maximum hardware configurations used in this HiTest Template.

### System Motherboard

Figure A-2 shows the Prioris MX system motherboard.

**Figure A-2: Prioris MX Motherboard**



<sup>1</sup> PCI slot 3 and EISA slot 1 share an expansion slot at the rear of the server.

### PCI Backplane Slot Usage (Minimum and Maximum Configurations)

Table A-1 describes the minimum and maximum hardware configurations used in this HiTest Template.

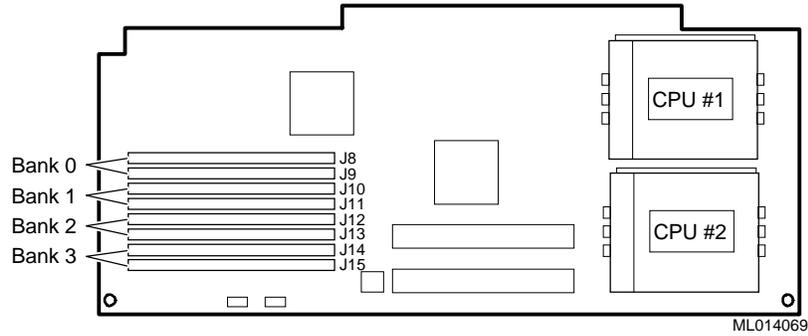
**Table A-1: Prioris MX Usage (Minimum and Maximum Configurations)**

Slot	Minimum Configuration Options	Maximum Configuration Options	Description
PCI slot 1	open	FR-PCTAR-EA	RAID controller
PCI slot 2	open	FR-DE500-AA	10/100 Fast Ethernet adapter
PCI slot 3/ EISA slot 1	open	open	–
EISA slot 2	open	open	–
EISA slot 3	open	open	–
EISA slot 4	open	open	–
EISA slot 5	open	open	–

## Memory Configuration

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: SIMM Layout for Memory Banks 0 through 3**



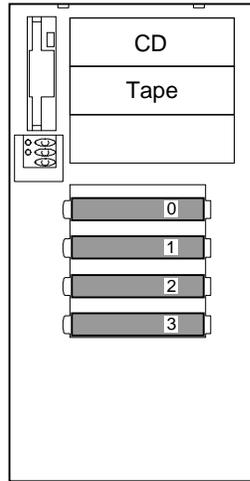
**Table A-2: PCI Slot Usage (Minimum and Maximum Configurations)**

Slots	Minimum Configuration Options	Maximum Configuration Options	Description
Bank 0-J8	32 MB SIMM	64 MB SIMM	1 of 2
Bank 0-J9	32 MB SIMM	64 MB SIMM	2 of 2
Bank 1-J10	open	64 MB SIMM	1 of 2
Bank 1-J11	open	64 MB SIMM	2 of 2
Bank 2-J12	open	32 MB SIMM	1 of 2
Bank 2-J13	open	32 MB SIMM	2 of 2
Bank 3-J14	open	open	–
Bank 3-J15	open	open	–

## Storage Configuration

Figure A-4 shows the storage configuration used in this HiTest Template. The callouts in this figure are described in Table A-3 and Table A-4.

**Figure A-4: Storage Configuration**



ML014157

## Minimum Configuration

Table A-3 lists the minimum slot configuration for this HiTest System.

**Table A-3: Minimum Configuration**

Slot	Option/ Part Number	Description
0	FR-CECBA-CA	Windows NT Server and paging Netscape SuiteSpot (application and data) File shares Log files
1	open	–
2	open	–
3	open	–

## Maximum Configuration

Table A-4 lists the maximum slot configuration for this HiTest System.

**Table A-4: Maximum Configuration**

Slot	Option/ Part Number	Description
0	FR-CFCBA-CA	Windows NT Server and paging
1	FR-CECBA-CA	RAIDset (RAID 5): Netscape SuiteSpot (application and data) File shares, and log files
2	FR-CECBA-CA	
3	FR-CECBA-CA	

