SANtricity™ Storage Manager

Configuration Guide for Tru64 UNIX

TM13932-E1, First Edition

Proprietary Rights Notice

Document Description

Document TM13932-E1, First Edition. April 2003
This document provides required general reference information and configuration material necessary to the installation and operation of the disk subsystem and connection through a Tru64 UNIX host system, and will remain the official reference source for all revisions and releases of this product until rescinded by an update.

Intended Readers

This book is intended for system administrators and service personnel who are responsible for installing, configuring, and maintaining the storage array network. Readers must be familiar with computer system operation, maintenance, and repair. In addition, they should understand disk array, RAID, network, and Fiber Channel technologies.

Disclaimer

License Restriction

Copyright Notice

Trademark Acknowledgments

Regulatory Compliance Statements

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

LSI Logic Corporation and Storage Technology Corporation are not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by LSI Logic Corporation and Storage Technology Corporation. It is the user's responsibility to correct interference caused by such unauthorized modification, substitution, or attachment.

Laser Products Statement

This equipment has been tested and found to comply with regulations for Class 1 laser product pursuant to 21 CFR, Section 1040-10. For outside the USA, this equipment has been tested and found compliant with Class 1 laser product requirements contained in European Normalization standard EN 60825-1 1994+A11. Class 1 levels of laser radiation are not considered to be hazardous and are considered safe based upon current medical knowledge. This class includes all lasers or laser systems which cannot emit levels of optical radiation above the exposure limits for the eye under any exposure conditions inherent in the design of the laser product.

LSI Logic Corporation and Storage Technology Corporation are not responsible for any damage or injury caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by LSI Logic Corporation and Storage Technology Corporation. It is the user's responsibility to correct interference caused by such unauthorized modification, substitution, or attachment.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classé A respecte toutes les exigences du Règlement sure le matèriel brouilleur du Canada.

この装置は、第一種情報装置（商工業地域において使用されるべき情報装置）で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）基準に適合しております。

従って、住宅地域またはその隣接した地域で使用すると、ラジオ、テレビジョン受信機等に受信障害を与えることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

警告使用者：　這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Revision Record		
Edition or Revision	**Date**	**Affected Pages or Remarks**
First Edition	April 2003	New Book.

Part Number: TM13932-E1

Configuration

System administrators can use the following configuration information to enable a Tru64 UNIX system to physically connect and supply network access to a disk subsystem. To manage the disk subsystem, configure volumes, or monitor performance, install the SANtricity Storage Manager software on a Windows 2000 workstation and connect it to the disk subsystem using the direct management method.

General Reference

This section contains information on basic configuration issues and hardware requirements, including operating system versions.

Operating System Requirements

Ensure this host system contains one of the following versions of the Tru64 UNIX operating system, and has been loaded with the latest patch levels:

- version 5.0
- version 5.0A
- version 5.1
- version 5.1A

Hardware Requirements

Refer to the following specifications to ensure this Tru64 UNIX system meets the system hardware requirements:

- 64-bit MIPS RISC R12000 (minimum 180 MHz)
- CDROM drive
- Mouse or similar pointing device
- 256 MB system memory (512 MB or more recommended)
- 256 MB system swap area (512 MB or more recommended)
- Ethernet network interface card

Fibre Channel Hardware Specifications

This section provides information about the available Fibre Channel equipment that is part of the tested hardware solution, including model numbers of supported host bus adapters and switches, tested driver and firmware levels, and specific hardware restrictions.

More information on host bus adapters and switches is available through the following sources:

- Operating system specific information sheets following the tables
- Any documentation that came with a particular host bus adapter or switch
- Vendor and manufacturer support web sites
- Technical support

Host Bus Adapter Information

The following contains information on supported 2-gigabit host bus adapters.

LSI Logic LSI44929O

This host bus adapter was tested with the following driver, firmware, and BIOS revisions:

- Driver: 1.00.00
- Firmware: 1.00.09
- BIOS: 2.00.03

From the following link, select MetaStor Driver Packages to download the correct LSI Logic HBA driver:

http://www.lsilogic.com/support/index_contd.html

LSI Logic LSI40919O

This host bus adapter was tested with the following driver, firmware, and BIOS revisions:

- Driver: 1.00.00
- Firmware: 1.00.09
- BIOS: 2.00.03

From the following link, select MetaStor Driver Packages to download the correct LSI Logic HBA driver:

http://www.lsilogic.com/support/index_contd.html

Fabric Switches

The following contains information on supported 2-gigabit fabric switches.

QLogic SANbox2-8

This 8-port switch was tested with the following driver firmware and software levels:

- Firmware: 01.40-20
- Switch management software: 1.03-46

This switch has the following restriction:

> The storage network may have poor fabric/switched performance if switch settings allow for interleaved data frames.

Brocade® SilkWorm® 2400

This 8-port switch was tested with the following driver firmware level:

- Firmware: 2.6.0f

This switch has the following restriction:

> The storage network may have poor fabric/switched performance if switch settings allow for interleaved data frames.

Brocade SilkWorm 2800

This 16-port switch was tested with the following driver firmware level:

- Firmware: 2.6.0f

This switch has the following restriction:

> The storage network may have poor fabric/switched performance if switch settings allow for interleaved data frames.

Brocade SilkWorm 3800

This 16-port switch was tested with the following driver firmware level:

- Firmware: 3.0.2h

This switch has the following restriction:

> The storage network may have poor fabric/switched performance if switch settings allow for interleaved data frames.

NVSRAM Configuration

This section contains information about the NVSRAM configuration and specific settings required to access the disk subsystem through a Tru64 UNIX host system.

Control Module and Array Module Controllers

The controllers in the control modules and array modules are not interchangeable. The following list of hardware has been tested with Tru64 UNIX. The list also provides a reference for the appropriate controllers to use in each model of control module and array module.

- **9176 control module** – 4774 controllers
- **D178 control module** – 4884 controllers
- **D280 control module** – 5884 controllers
- **D173-010 and D173-014 array modules** – 2772 controllers

NVSRAM Packages

NVSRAM files are downloadable packages that specify default settings for the disk subsystem controllers. You will install these files on the host system and download them to the disk subsystem controllers as necessary. Refer to the *SANtricity Storage Manager Installation Guide* for instructions on when and how to download these files.

CAUTION **Do *not* attempt to download NVSRAM packages unless instructed to do so in the *SANtricity Storage Manager Installation Guide* or by technical support**.

Inappropriate application of these files could cause serious problems with your disk subsystem.

Configuring NVSRAM for the Tru64 Host

To support data accessibility through the Tru64 host system, set the SANtricity Storage Manager Host Type to IRIX and run the modification script as described on page 6.

Scripts to Modify NVSRAM Configuration Files

To ensure proper operation of the disk subsystem when connected to a Tru64 UNIX host system, make the following modification to the NVSRAM.

Procedure

1. Start the storage management software.
2. In the Enterprise Management Window, select the disk subsystem for which you want to modify NVSRAM settings.
3. Select Tools >> Execute Script.

   The Script Editor window opens.
4. Type the following in the Script Editor window:

```
show controller[a] nvsrambyte[0x34];
show controller[b] nvsrambyte[0x34];
set controller[a] nvsrambyte[0x34]=0x31;
set controller[b] nvsrambyte[0x34]=0x31;
```

5. From the Script Editor text menu, select Tools >> Verify and Execute.

   The script executes and a Script Execution Complete message is displayed.
6. Close the Script Editor window.

   A dialog will open that asks to save the script.
7. Select “No”.
8. Exit the storage management software.
9. Turn off the power to the controllers, and then turn the power back on.

End Of Procedure