Sun StorEdge™ Traffic Manager 4.6 Software Installation Guide

For Microsoft Windows 2000/2003 and Red Hat Enterprise Linux Operating Systems

Sun Microsystems, Inc.
www.sun.com

Part No. 819-0145-10
September 2004

Send comments about this document to: docfeedback@sun.com

Copyright 2004 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at http://www.sun.com/patents and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, Java, Sun StorEdge, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and in other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

U.S. Government Rights—Commercial use. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2004 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, Californie 95054, Etats-Unis. Tous droits réservés.

Sun Microsystems, Inc. a les droits de propriété intellectuels relatants à la technologie qui est décrit dans ce document. En particulier, et sans la limitation, ces droits de propriété intellectuels peuvent inclure un ou plus des brevets américains énumérés à http://www.sun.com/patents et un ou les brevets plus supplémentaires ou les applications de brevet en attente dans les Etats-Unis et dans les autres pays.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a.

Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, AnswerBook2, docs.sun.com, Java, Sun StorEdge, et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits protant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une license non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciées de Sun qui mettent en place l'interface d 'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.

Please
Recycle

Adobe PostScript

Contents

Preface v

1. Installing and Starting the Sun StorEdge Traffic Manager Software 1

About the Sun StorEdge Traffic Manager Software 1

Installing the Software on the Microsoft Windows Operating System 2

Preparing for the Installation 2

Verifying Hardware and Software Versions 2

Removing Previous Versions 2

▼ To Remove the Software From the Microsoft Windows Operating System 2

Downloading and Installing the Software 3

▼ To Download the Software 3

Installing the Software on the Linux Operating System 4

Preparing for the Installation 4

Verifying Hardware and Software Versions 4

Removing a Previous Version 4

▼ To Remove the Software From the Red Hat Linux Operating System 5

▼ To Prepare the Operating System 5

Preparing for the HBA Driver 6

Installing the Software 6

▼ To Download the Software 6
▼ To Build and Verify the Linux Kernel 8
▼ To Add LUNs Dynamically (for QLogic HBAs) 9
▼ To Remove LUNs Dynamically (for QLogic HBAs) 10
Starting the Sun StorEdge Traffic Manager Software 11
Starting the Software From the GUI 11
▼ To Start the GUI in the Microsoft Windows Operating System 11
▼ To Start the GUI in the Linux Operating System 11
Starting the Software From the CLI 11
▼ To Start the CLI in the Microsoft Windows Operating System 12
▼ To Start the CLI in the Red Hat Linux Operating System 12

2. Troubleshooting 13

Troubleshooting for Microsoft Windows Operating Systems 13
Troubleshooting on the Red Hat Linux Operating System 14

Preface

The *Sun StorEdge Traffic Manager 4.6 Software Installation Guide for Microsoft Windows and Red Hat Linux* provides instructions for installing, starting and uninstalling the Sun StorEdge Traffic Manager 4.6 software on Red Hat Linux Enterprise and Application Server 3.0 and Microsoft Windows 2000 and 2003 operating systems.

This guide is designed for use with the *Sun StorEdge Traffic Manager 4.6 Software User's Guide* and the documentation that came with your storage device. This guide is written for experienced system administrators of Red Hat Linux Enterprise and Application Server and Microsoft Windows 2000 Service Pack 4 and 2003 operating systems and related disk storage systems.

To obtain the *Sun StorEdge Traffic Manager 4.6 Software User's Guide*, click Help on any Sun StorEdge Traffic Manager page and select User's Guide.

Throughout this guide, *storage device* is used to designate the storage devices supported in this release. The supported devices are:

- Sun StorEdge T3B array
- Sun StorEdge 3510 FC array
- Sun StorEdge 6120 array
- Sun StorEdge 6130 array
- Sun StorEdge 6320 system
- Sun StorEdge 6910/6960 systems
- Sun StorEdge 6920 system
- Sun StorEdge 9900 series

Before You Read This Guide

Read the documentation that came with your storage device and have an experienced system administrator's knowledge of the specific operating environment in which you are installing the Sun StorEdge Traffic Manager software.

How This Guide Is Organized

This manual is organized as follows:

Chapter 1 provides an overview of the Sun StorEdge Traffic Manager software.

Chapter 2 describes how to install, uninstall, and start the Sun StorEdge Traffic Manager software.

Chapter 3 provides troubleshooting information.

Typographic Conventions

Typeface	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized	Read Chapter 6 in the *User's Guide.* These are called *class* options. You *must* be superuser to do this.
	Command-line variable; replace with a real name or value	To delete a file, type `rm` *filename.*

Related Documentation

Application	Title	Part Number
Late-breaking information	*Sun StorEdge Traffic Manager 4.6 Software Release Notes forMicrosoft Windows 2000 and 2003 and Red Hat Linux Operating Systems*	819-0147-10
Using	*Sun StorEdge Traffic Manager 4.6 Software User's Guide*	819-0146-10
Configuring the SAN	*Sun StorEdge SAN Foundation Software 4.4 Configuration Guide*	817-3672-10

Accessing Sun Documentation Online

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

`http://www.sun.com/documentation`

Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

`http://www.sun.com/service/contacting`

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

`http://www.sun.com/hwdocs/feedback`

Please include the title and part number of your document with your feedback:

Sun StorEdge Traffic Manager 4.6 Software Installation Guide for Microsoft Windows and Red Hat Linux, part number 819-0145-10.

CHAPTER 1

Installing and Starting the Sun StorEdge Traffic Manager Software

This chapter contains the following topics:

- "About the Sun StorEdge Traffic Manager Software" on page 1
- "Installing the Software on the Microsoft Windows Operating System" on page 2
- "Installing the Software on the Linux Operating System" on page 4
- "Starting the Sun StorEdge Traffic Manager Software" on page 11

About the Sun StorEdge Traffic Manager Software

The Sun StorEdge Traffic Manager software is a system for managing multiple paths to storage devices. The Sun StorEdge Traffic Manager system consists of a graphical user interface (GUI) application, a command line interface (CLI) application, and system device drivers for managing the multiple paths. If a failure occurs in one host data path, the Sun StorEdge Traffic Manager software automatically detects the failure and provides continuous access to data through an alternate data path.

Installing the Software on the Microsoft Windows Operating System

The following subsections describe how to prepare for installing the software, and how to install the software on the Microsoft Windows operating system.

Preparing for the Installation

The steps required for preparing your hardware for the Sun StorEdge Traffic Manager software include:

- "Verifying Hardware and Software Versions" on page 4
- "Removing Previous Versions" on page 2

Verifying Hardware and Software Versions

Before you install the software, verify that you have the correct versions of the hardware and supporting software. For the most up-to-date information, see:

`http://www.sun.com/storage/san/multiplatform_support.html`

Removing Previous Versions

If you have installed a previous version of the Sun StorEdge Traffic Manager, you must remove it before installing the new version.

You must shut down the Sun StorEdge arrays before you remove the software. If you do not, the operating system will see two paths to each LUN, which can result in data corruption.

▼ To Remove the Software From the Microsoft Windows Operating System

1. **Use the Microsoft Windows 2000 or 2003 Add/Remove program to remove the Sun StorEdge Traffic Manager.**
2. **Double-click Sun StorEdge Traffic Manager package to start the wizard, and follow the prompts.**

3. **After the Sun StorEdge Traffic Manager software is remove, you must reboot your computer.**

Downloading and Installing the Software

The following steps provide information on downloading and installing the software from the Sun Download Center (SDLC).

▼ To Download the Software

1. **Access the Sun Download Center (SDLC) at**
   `http://www.sun.com/software/download`
2. **Select the A-Z Index of All Products from the Browse by Category menu option.**
3. **Select Sun StorEdge Traffic Manager for your specific operating system.**

   Registration may be required in order to download the software.
4. **Follow the instructions displayed on the screen in order to download the software.**

   The software installation file is entitled `SunTrafficManager_V4.6.`*xxx*`.exe` (where *xxx* is the build version number) for Microsoft Windows 2000 and 2003 operating systems.
5. **Once the software has been downloaded, double click the `SunTrafficManager_V4.6.`*xxx*`.exe` file that was downloaded.**

   The Sun StorEdge Traffic Manager software InstallShield wizard is displayed.

Note – Installing the Sun StorEdge Traffic Manager software requires root access.

---

6. **Follow the prompts in the dialog boxes to complete the installation.**

   When the Sun StorEdge Traffic Manager software is installed, the Java™ runtime environment version 1.4.2 is automatically installed. This installation does not affect any other versions of the Java runtime environment already installed on your computer.

Note – If you are launching the Sun StorEdge Traffic Manager installation from a network location (network drive), and you want to install the Java™ runtime environment version 1.4.2, the system will reboot at the end of the Java runtime environment installation. To continue with the Sun StorEdge Traffic™ Manager 4.6 installation when the system comes back up, double click the executable.

---

7. **Reboot your computer.**

   You must reboot your computer before you can use the Sun StorEdge Traffic Manager software. Read the `readme.txt` file in the installation directory for late-breaking information about the software.

8. **If you get a warning message that the driver is not digitally certified by Microsoft, click YES on this dialog box to continue the installation.**

   Once the software has been installed, you are ready to start the software as described in “Starting the Sun StorEdge Traffic Manager Software” on page 11.

Installing the Software on the Linux Operating System

The following subsections describe how to prepare for installing the software, and how to install the software on the Red Hat Linux operating system.

Preparing for the Installation

The following subsections describe how to prepare for installing the software, and how to install the software on the Linux operating system. The steps required for installing the software include:

- “Verifying Hardware and Software Versions” on page 4
- “Removing a Previous Version” on page 4
- “Preparing for the HBA Driver” on page 6

Verifying Hardware and Software Versions

Before you install the software, verify that you have the correct versions of the hardware and supporting software. For the most up-to-date information, see:

`http://www.sun.com/storage/san/multiplatform_support.html`

Removing a Previous Version

If you have installed a previous version of the Sun StorEdge Traffic Manager, you must remove it before installing the new version.

▼ To Remove the Software From the Red Hat Linux Operating System

1. **Change directory to** `/usr/SunTrafficManager`**.**

```
# cd /usr/SunTrafficManager
```

2. **Remove the Sun StorEdge Traffic Manager software.**

```
# ./removesstm
```

3. **Change directory to the kernel source.**

```
# cd /usr/src/linux-version
```

4. **Reconfigure the kernel.**

```
# make xconfig
```

5. **Click on Save and Exit to save the changes and exit the menu.**

   This rewrites the previous configuration.

▼ To Prepare the Operating System

Sun StorEdge Traffic Manager software requires installation of both the kernel-header and kernel-source packages. These packages can be installed either during or after the Red Hat Enterprise Linux installation.

To install the packages during the installation of the Red Hat Enterprise Linux, operating system, select the Kernel Development package.

If Red Hat Enterprise is already installed, verify that the Kernel Development packages are installed.

```
# rpm -qa |grep kernel
```

If the kernel packages are not installed, locate the Red Hat Enterprise Linux distribution CDs and install the packages by typing the following commands:

```
# rpm -i kernel sources*
# rpm -i kernel headers
```

Preparing for the HBA Driver

Before installing a new version of the host bus adapter (HBA) driver, remove older versions, including both currently built drivers (located under the `/lib/modules` directory) and future driver builds specified by the kernel configuration.

In addition, you must install the HBA API. Refer to your HBA documentation for instructions.

Installing the Software

The following steps provide information on downloading and installing the software from the Sun Download Center (SDLC).

▼ To Download the Software

1. **Access the Sun Download Center (SDLC) at**
   `http://www.sun.com/software/download`
2. **Select the A-Z Index of All Products from the Browse by Category menu option.**
3. **Select Sun StorEdge Traffic Manager for your specific operating system.**

   Registration may be required in order to download the software.
4. **Follow the instructions displayed on the screen in order to download the software for your version of Red Hat Linux.**

   In the following examples, the software package name is:

   `SunTrafficMgr-4.6-x.x86_64.tgz`.

   Perform the following steps as `superuser`.

1. **Create a temporary directory.**

```
# mkdir /tmp/SSTM
```

2. **Change directory to the temporary directory.**

```
# cd /tmp/SSTM
```

3. **Copy or download the Sun StorEdge Traffic Manager installation package to the temporary directory.**

```
# cp SunTrafficMgr-4.6-x.x86_64.tgz .
```

4. **Extract the Sun StorEdge Traffic Manager installation files.**

```
# tar xvfz SunTrafficMgr-4.6-x.x86_64.tgz
```

5. **Install the Sun StorEdge Traffic Manager software.**

```
# ./installsstm
```

When the Sun StorEdge Traffic Manager software is installed, the Java™ runtime environment version 1.4.2 is automatically installed. This installation does not affect any other versions of the Java runtime environment already installed on your computer.

Note – When using the 64-bit Linux platform, the Java™ runtime environment version required is J2SE 5. It is not bundled with the software, and must be downloaded and installed from `http://java.sun.com/j2se/1.5.0`

---

6. **Remove the temporary directory.**

```
# cd /; rm -rf /tmp/SSTM
```

7. **Change directory to the kernel source**

```
# cd /usr/src/linux-<version>
```

8. **Reconfigure the kernel.**

```
# make xconfig
```

The Linux Kernel Configuration menu appears is displayed.

9. **Click on SCSI Support. Once the SCSI Support menu appears, enable the Sun StorEdge Traffic Manager software by setting the "SSTM multipath support" option to Y.**
10. **Click "Main Menu" and then "Save and Exit".**
11. **Build the Linux kernel.**

Refer to "To Build and Verify the Linux Kernel" on page 8 for details.

▼ To Build and Verify the Linux Kernel

If you have not built a Linux Kernel, read the following files before starting this procedure:

- `/usr/src/linux-`*version*`/README`
- `/usr/src/linux-`*version*`/Documentation/modules.txt`
- `/usr/src/linux-`*version*`/Documentation/initrd.txt`

1. **Change directory to the kernel source.**

```
# cd /usr/src/linux-version
```

2. **Build the kernel.**

```
# insmod loop; make clean dep bzImage modules modules_install
install
```

3. **(On Red Hat Linux 2.1 systems only) Build the boot kernel RAM disk image ().**

```
# mkinitrd -f /boot/initrd-kernel_vercustom.img kernel_vercustom
```

kernel_ver matches the kernel version number displayed with the `uname -r` command. The `custom` or `smp` suffix should be dropped.

4. **(On Red Hat Linux 2.1 systems only) Update the boot loader to start a new kernel build.**

   For example, if GRUB is the boot loader; type the following:

```
# vi /etc/grub.conf
```

   Copy the four lines from the `smp` section and paste those lines between the `splashimage` line and the `smp` line.

5. **(On Red Hat Linux 2.1 systems only) Change `smp` to `custom`. A display of that information looks like the following**:

```
splashimage=(hd0,0)/grub/splash.xpm.gz
title Red Hat Enterprise Linux ES (2.4.9-e.12custom)
root (hd0.0)
kernel/vmlinux-2.4.9-e.12custom ro root=/dev/sda3 console=ttyS1,
9600
initrd/initrd-2.4.9-e 12 custom.img
title Red Hat Enterprise Linux ES (2.4.9-e.12smp)
```

6. **Verify that the `vmlinux` and `intrd` files are located in `/boot` and have a recent date associated with the files.**

```
# ls -alt /boot
```

7. **Reboot the system.**
8. **Use the `uname -r` command to verify that the *kernel version*`custom` is set correctly.**
9. **The Sun StorEdge Traffic Manager software is installed.**

   Once the software has been installed, you are ready to start the software as described in the next section, "Starting the Sun StorEdge Traffic Manager Software".

▼ To Add LUNs Dynamically (for QLogic HBAs)

For each QLogic HBA installed in the system, do the following:

1. **Determine the host ID (H) associated with the HBA.**

```
# ls /proc/scsi/qla2300
```

   Each installed HBA has a numeric filename that is the host identifier.

2. **Rescan for all the LUNs on all the ports.**

```
# echo "scsi-qlascan" > /proc/scsi/qla2300/H
```

H is the host identifier associated with HBA.

3. **Determine the target ID (T) associated with the new LUN.**

```
# cat /proc/scsi/qla2300/H
```

This file lists the ID:LUN numbers recognized by the QLA driver. *T* is the target ID value.

4. **Add the LUN to HBA.**

```
# echo "scsi add-single-device H 0 T L" > /proc/scsi/scsi
```

H is the host identifier associated with the HBA; *T* is the target identifier obtained in Step 3; and *L* is the LUN identifier.

▼ To Remove LUNs Dynamically (for QLogic HBAs)

For each QLogic HBA installed in the system, do the following:

1. **Determine the Sun StorEdge Traffic Manager paths associated with the LUN to be removed.**

```
# sstm
```

2. **Locate the LUN to be removed and identify the path name. The path name should have the following format: *hHcCtTdL*.**

H is the host ID, *C* is the channel ID, *T* is the target ID, and *L* is the LUN ID

3. **Remove each path associated with the LUN.**

```
# echo "scsi remove-single device H C T L" > /proc/scsi/scsi
```

4. **For each HBA installed on the system, rescan for all ports**

```
# echo "scsi-qlascan" > /proc/scsi/qla2300/H
```

H is the host identifier associated with HBA.

Starting the Sun StorEdge Traffic Manager Software

This section describes how to start the Sun StorEdge Traffic Manager software from the graphical user interface (GUI) or the command line interface (CLI).

Starting the Software From the GUI

You can run the GUI in both the Microsoft Windows and Red Hat Linux operating systems. For information on using the GUI, click Help on the Sun StorEdge Traffic Manager window and select User's Guide from the pull-down menu.

▼ To Start the GUI in the Microsoft Windows Operating System

- **Choose Start > Programs > Sun StorEdge™ Traffic Manager > Traffic Manager.**

  The Sun StorEdge Traffic Manager GUI window is displayed. The Sun StorEdge Traffic Manager multipathing driver is started automatically at system boot or when supported devices are recognized.

▼ To Start the GUI in the Linux Operating System

1. **Open a terminal window and log in as** `superuser`**.**
2. **Type the following command**:

```
# trafficmgr
```

Starting the Software From the CLI

You can run the CLI in both the Microsoft Windows and Red Hat Linux operating systems.

For information on CLI commands refer to the Sun StorEdge Traffic Manager software, which can be accessed through the Help menu and selecting User's Guide from the pull-down menu.

To get a full list of available CLI options, type `sstm -?` at the prompt.

▼ To Start the CLI in the Microsoft Windows Operating System

1. **Ensure that you are in the** `storedge traffic manager` **folder or that the** `storedge traffic manager` **folder is in your path.**
2. **Type the following command**:

```
C:\program files\sun microsystems\storedge traffic manager> sstm
```

The Sun StorEdge Traffic Manager multipathing driver is started automatically at system boot or when supported devices are recognized

▼ To Start the CLI in the Red Hat Linux Operating System

1. **Open a terminal window and log in as** `superuser`**.**
2. **Type the following command**:

```
# sstm
```

CHAPTER 2

Troubleshooting

This chapter provides information on troubleshooting for the Microsoft Windows and Red Hat Linux operating systems

Troubleshooting for Microsoft Windows Operating Systems

TABLE 2-1 provides troubleshooting information for problems you might encounter using the Microsoft Windows 2000 or 2003 operating system.

TABLE 2-1 Troubleshooting Tips for the Microsoft Windows 2003 and 2000 Operating Systems

Problem	Solution
The host cannot see the storage devices. If you are running the Sun StorEdge™ Traffic Manager software, the message `No failover devices found` is displayed. No array icons appear in the window.	Check all cabling. If the physical connections appear correct, determine the link status on the Fibre Channel (FC) adapters by checking the LED indicators (if available) on the FC adapters or the FC switch.
The physical connection between the host and storage devices is correct, but the host does not see the array devices.	Check the Event Viewer. Look for messages logged by the driver named `jafo` for Microsoft Windows 2000 and 2003.
The Sun StorEdge™ Traffic Manager graphical user interface (GUI) does not start.	If previous versions of the software exist on the host, remove all the installed versions and then reinstall the new one.

TABLE 2-1 Troubleshooting Tips for the Microsoft Windows 2003 and 2000 Operating Systems *(Continued)*

Problem	Solution
The storage device partner pairs are connected to the device, but the Sun StorEdge™ Traffic Manager software does not display them.	Set the `mp_support` parameter from `none` to `MpxIO`. At the Telnet interface to the storage device array, type: `sys mp_support MpxIO`
The Microsoft Windows 2003 or 2000 operating system fails to boot.	The BIOS might be looking for a bootable image on the storage device array, and the array does not have one. Disable the BIOS on the host bus adapter (HBA) during the boot sequence, and then press `Alt-Q` This action is Qlogic specific. In the HBA setup, select the HBA and make sure BIOS is disabled in the HBA configuration menu.
You used to see all the existing LUNs on both storage device arrays in a partner pair over a single active path. Now you see two active paths for each storage device array, and each array's LUNs are visible only on that array's own path. You no longer see all the LUNs on a single path.	Set the `mp_support` parameter from `none` to `MpxIO`. At the Telnet interface to the storage device array, type: `sys mp_support MpxIO`

Troubleshooting on the Red Hat Linux Operating System

TABLE 2-2 provides troubleshooting information for problems you might encounter using the Red Hat Linux operating system.

TABLE 2-2 Troubleshooting Tips for the Red Hat Linux Operating System

Problem	Solution
The physical connection between the host and arrays is correct, but the host does not see the array devices.	Check the log file. Look for messages logged by the driver named `JAFO`.