

StorNext[®] 2.8 File System and Storage Manager Installation Guide

ADVANCED DIGITAL INFORMATION CORPORATION

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ADIC USA 11431 Willows Road NE Redmond, Washington 98052-4952 Tel.: 1-800-336-1233 Fax: 1-425-881-2296

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Introduction

StorNext is data management software that enables customers to complete projects faster and confidently store more data at a lower cost. Used in the world's most demanding environments, StorNext is the standard for high performance shared workflow operations and multi-tier archives. StorNext consists of two components: StorNext File System (SNFS) a high performance data sharing software, and StorNext Storage Manager (SNSM) the intelligent, policy based data mover.

StorNext File System streamlines processes and facilitates faster job completion by enabling multiple business applications to work from a single, consolidated data set. Using SNFS, applications running on different operating systems (Windows, Linux, UNIX, and Mac OS X) can simultaneously access and modify files on a common, high speed SAN storage pool. This centralized storage solution eliminates slow LAN based file transfers between workstations and dramatically reduces delays caused by single client failures. With SNFS, any server can access files and pick up processing requirements of a failed system to continue operations.

StorNext Storage Manager enhances the StorNext solution by reducing the cost of long term data retention, without sacrificing accessibility. SNSM sits on top of SNFS and utilizes intelligent data movers to transparently locate data on multiple tiers of storage. This enables customers to store more files at a lower cost, without having to reconfigure applications to retrieve data from disparate locations. Instead, applications continue to access files normally and SNSM automatically handles data access – regardless of where the file resides. As data movement occurs, SNSM also performs a variety of data protection services to guarantee that data is safeguarded both onsite and offsite.

This guide describes how to install the StorNext product. The StorNext installation process includes steps for adding a file system, so you do not need to separately install the StorNext FS product, whose installation is described in a separate guide.

Who Should Read this Book

This guide is intended for system administrators and service personnel who want to install both the StorNext Storage Manager and StorNext File System. If you are installing only the StorNext File System, refer to the StorNext File System Installation Guide.

This book contains the following chapters.

- <u>Chapter 1: Introduction</u> Provides information on the audience for this guide, explains how the guide is organized, and introduces symbols and document conventions used in the guide.
- Chapter 2: Installing StorNext Provides instructions for installing StorNext on servers.
- <u>Chapter 3: Configuring StorNext</u> Describes how to configure StorNext after installing the software.
- <u>Chapter 4: Installing StorNext Client Software</u> Describes how to install and configure StorNext software on a client machine.
- <u>Chapter 5: Customer Assistance</u> Provides information on different types of customer assistance available for StorNext.

Explanation of Symbols

The following symbols indicate important information.

Symbol	Description	Definition	Consequence
	WARNING:	Advises you to take or avoid a specified action	Failure to take or avoid this action could result in physical harm to the user or hardware
	CAUTION:	Advises you to take or avoid a specified action	Failure to take or avoid this action could result in loss of data
R	NOTE:	Indicates important information that helps you make better use of the software	No hazardous or damaging consequences

Conventions

The conventions used throughout this book are listed below

Convention	Example
For all UNIX-based commands, the # prompt is implied, although it is not shown.	/usr/cvfs/bin/cvlabel -1 is the same as # /usr/cvfs/bin/cvlabel -1
Screen text, file names, program names, and commands are in Courier font.	mkdir -p <mount point=""></mount>

Site-specific variables are enclosed within brackets < > .	chmod 777 <mount point=""></mount>
Pressing Return or Enter after each command is assumed.	
A menu name with an arrow refers to a sequence of menus.	Programs > StorNext File System > Help

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Installing StorNext

You can install the StorNext software on a server. When you have successfully installed the StorNext software, use the Configuration Wizard to configure the software. (After initial configuration, you can use the StorNext GUI to change your configuration parameters.) You are then ready to use the StorNext software.

You can also run the StorNext software on a client machine by downloading the client files from the server and then installing them on your client. You can install client files on machines that use an SGI IRIX, Solaris, Linux, IBM AIX, HP-UX, or Windows (2000, 2003 Server, and XP) operating system. This chapter includes:

- Installation Requirements on page 5
- 2TB LUN Requirements on page 11.
- Using the Optional Pre-Installation Configuration on page 13
- Running the Pre-Installation Script on page 14

Installation Requirements

Before installing StorNext on any machine, verify that you meet the installation prerequisites described in this section. This section contains installation requirements for the following supported operating systems:

- <u>Windows Prerequisites</u> on page 6
- <u>Red Hat Linux Prerequisites</u> on page 6
- <u>SuSE Linux Prerequisites</u> on page 8
- Sun Solaris Prerequisites on page 9
- <u>HP-UX Prerequisites</u> on page 9
- IBM AIX Prerequisites on page 10
- SGI IRIX Prerequisites on page 10
- <u>RAM and Hard Disk Requirements</u> on page 11

Windows Prerequisites

Before installing StorNext on a Windows server, verify that the following installation prerequisites have been met.

A Windows machine that will be used as a StorNext server must meet these requirements.

- 512 MB of RAM minimum for the first two file systems. Each subsequent file system (up to eight total) either passive or active, must have an additional 256 MB of RAM minimum.
- StorNext requires 350 MB of hard disk space for binaries, documentation, configuration, and log files. If internal metadata is used, approximately 2.5 GB of additional hard disk space is required per 1M files.

In addition, each StorNext-supported Windows platform must meet these service pack requirements.

- Windows 2000 Service Pack 4
- Windows 2003 Server Enterprise Edition SP1
- Windows XP Service Pack 2

Red Hat Linux Prerequisites

Before installing StorNext on a Red Hat Linux machine, verify that the following installation prerequisites have been met.

- Kernel Requirements To run StorNext on Red Hat Linux, you must use the following kernels:
 - For Red Hat 3: 2.4.21 37.EL (Update 6); 2.4.21 40.EL (Update 7)
 - For Red Hat 4: 2.6.9 22 (Update 2); 2.6.9 34.EL (Update 3)

To verify the kernel information for Red Hat Enterprise Advanced Server, type: uname -a

The following is similar to what is shown:

Linux APU 2.4.21-27.EL # 1SMP <date><platform><compiler>

StorNext is distributed as a loadable kernel module. To build the kernel module, the Red Hat Linux software must be installed with the Linux kernel source and tools, including compilers.

To build and install the StorNext modules, a symbolic link must exist in the /usr/src directory that points to the kernel source for the running kernel.

Use this procedure to view the symbolic links.

1 Change to the /usr/src directory. Type:

```
cd /usr/src
```

2 To view the symbolic links type:

ls -l

For the Linux 2.4.21-27.EL kernel, the symbolic link is shown as:

linux-2.4 > linux-2.4.21-27.EL

- 3 Make sure the symbolic link is pointing to the correct kernel.
 - If the symbolic link shows a kernel in the specified range (2.4.21.EL to 2.4.27.EL,) continue with the next task.
 - If the symbolic link is either missing or pointing to the source of a different kernel, the StorNext modules will either not install or not function.
- Mapping LUNs Before installing StorNext, it is necessary to correctly map LUNs in the customer SAN.

A LUN is assigned to each device (target) that is visible locally and over the SAN. The process of LUN mapping depends on many factors, including the operating system on which StorNext is running on, the type of SCSI card installed on the machine, and the type of FC HBA installed on the machine.

For each HBA, check the vendor documentation to determine the operating system files that must be configured to correctly map LUNs to devices over the SAN. Configure the operating system file as indicated below:

• Edit the /etc/sysconfig/rawdevices file and use the rpm and insmod commands to install the specific Fibre Channel HBA driver.

For additional requirements, see 2TB LUN Requirements on page 11.

For assistance configuring the operating system file, contact ATAC. Refer to <u>Customer</u> <u>Assistance</u> on page 97.

- Multiple LUN support If your file system storage device uses non-zero SCSI Logical Unit Numbers (LUNs), configure the Red Hat Linux kernel to scan for all SCSI LUNs. By default, Red Hat Linux only scans for LUN 0. Use this procedure to configure the Linux kernel for multiple LUNs:
- 1 Change directories. Type:

cd /etc

2 In the /etc/modules.conf file, add the following line:

options scsi_mod max_scsi_luns=nLUNs

where nLUNs equals the number of LUNs required by your file system storage device.

For example:

```
alias parport_lowlevel parport_pc
alias scsi_hostadapter aic7xxx
alias eth0 eepro100
alias eth1 e1000
alias scsi_hostadapter1 gla2300
options scsi_mod
options scsi_mod max_scsi_luns=128
```

3 Create a new initial RAM disk file by using the mkinitrd command.

For example:

```
For IA64:
cd /boot/efi/efi/redhat
mkinitrd -f initrd-2.4.21-27.EL.img 2.4.21-27.EL
For x86:
cd /boot
```

- mkinitrd -f initrd-2.4.21-27.EL.img 2.4.21-27.EL
- 4 Reboot the machine.

SuSE Linux Prerequisites

Before installing StorNext on a SuSE Linux machine, verify that the following installation prerequisites have been met.

- Kernel Requirements Before installing StorNext on a SuSE Linux machine (either client or server), verify that the required kernels are loaded: 2.6.5 7.191 (SP2); 2.6.5-7.244-SMP (SP3)
- 1 Run the rpm command. Type:

```
rpm -qf /boot/vmlinuz
```

The command output should display one of these kernels:

- For uniprocessor systems:
 - k_delft-2.6.5-7.191
- · For multiprocessor systems:

```
k_smp-2.6.5-7.191
```

- 2 Do one of the following:
 - If the correct kernel is shown, continue with the installation.
 - If an incorrect kernel is shown, install the correct kernel and repeat Step 1.
- **Mapping LUNs** Before installing StorNext, it is necessary to correctly map LUNs in the customer SAN.

A LUN is assigned to each device (target) that is visible locally and over the SAN. The process of LUN mapping depends on many factors, including the operating system on which StorNext is running, the type of SCSI card installed on the machine, and the type of FC HBA installed on the machine.

For each HBA, check the vendor documentation to determine the operating system files that must be configured to correctly map LUNs to devices over the SAN. Configure the operating system file as indicated below:

• Edit the /etc/raw file and use the rpm and insmod commands to install the specific Fibre Channel HBA driver.

For additional requirements, see 2TB LUN Requirements on page 11.

For assistance configuring the operating system file, contact ATAC. Refer to <u>Customer</u> <u>Assistance</u> on page 97.

Sun Solaris Prerequisites

Before installing StorNext on a Solaris machine, verify that the following installation prerequisites have been met. StorNext supports Solaris 9 and 10 only.

• **Mapping LUNs** - Before installing StorNext, it is necessary to correctly map LUNs in the customer SAN.

A LUN is assigned to each device (target) that is visible locally and over the SAN. The process of LUN mapping depends on many factors, including the operating system on which StorNext is running, the type of SCSI card installed on the machine, and the type of FC HBA installed on the machine.

For each HBA, check the vendor documentation to determine the operating system files that must be configured to correctly map LUNs to devices over the SAN. Configure the operating system files as indicated below:

• Edit the sd.conf, st.conf, and the sgen.conf files and use the pkgadd command to install the specific Fibre Channel HBA driver.

For additional requirements, see 2TB LUN Requirements on page 11.

For assistance configuring the operating system files, contact ATAC. Refer to <u>Customer</u> <u>Assistance</u> on page 97.

HP-UX Prerequisites

Before installing StorNext on an HP-UX machine, verify that the following installation prerequisite has been met. StorNext supports HP-UX 11 iv2.

 Mapping LUNs - Before installing StorNext, it is necessary to correctly map Logical Unit Numbers (LUNs) in the customer SAN.

A LUN is assigned to each device (target) that is visible locally and over the SAN. The process of LUN mapping depends on many factors, including the operating system on which StorNext is running, the type of SCSI card installed on the machine, and the type of FC Host Bus Adaptor (HBA) installed on the machine.

For each HBA, check the vendor documentation to determine the operating system files that must be configured to correctly map LUNs to devices over the SAN.

For additional requirements, see <u>2TB LUN Requirements</u> on page 11.

For assistance configuring the operating system files, contact the ADIC Technical Assistance Center (ATAC). Refer to <u>Customer Assistance</u> on page 97.

• **64-bit Inodes** - StorNext supports only 64-bit inodes for installations of the software on the HP-UX operating system on IA64 and PA-RISC architectures.

IBM AIX Prerequisites

Before installing StorNext on an AIX machine, verify that the following installation prerequisite has been met. StorNext supports AIX 5.2 and 5.3 only.

• **Mapping LUNs** - Before installing StorNext, it is necessary to correctly map Logical Unit Numbers (LUNs) in the customer SAN.

A LUN is assigned to each device (target) that is visible locally and over the SAN. The process of LUN mapping depends on many factors, including the operating system on which StorNext is running, the type of SCSI card installed on the machine, and the type of FC Host Bus Adaptor (HBA) installed on the machine.

For each HBA, check the vendor documentation to determine the operating system files that must be configured to correctly map LUNs to devices over the SAN.

For additional requirements, see 2TB LUN Requirements on page 11.

For assistance configuring the operating system files, contact the ADIC Technical Assistance Center (ATAC). Refer to <u>Customer Assistance</u> on page 97.

SGI IRIX Prerequisites

Before installing StorNext on an IRIX machine, verify that the following installation prerequisites have been met.

- 64-bit Inodes StorNext supports only 64-bit inodes for software installations on the IRIX operating system.
- **Mapping LUNs** Before installing StorNext, it is necessary to correctly map LUNs in the customer SAN.

A LUN is assigned to each device (target) that is visible locally and over the SAN. The process of LUN mapping depends on many factors, including the operating system on which StorNext is running, the type of SCSI card installed on the machine, and the type of FC HBA installed on the machine.

For each HBA, check the vendor documentation to determine the operating system files that must be configured to correctly map LUNs to devices over the SAN. Configure the operating system file as indicated below:

• Edit the /var/sysgen/master.d/qlfc file.

For additional requirements, see 2TB LUN Requirements on page 11.

For assistance configuring the operating system file, contact ATAC. Refer to <u>Customer</u> <u>Assistance</u> on page 97.

RAM and Hard Disk Requirements

The following are requirements for each StorNext mount.

- Client Memory StorNext requires 512 MB of RAM minimum.
- Client Hard Disk StorNext requires 200 MB of hard disk space for binaries, documentation, configuration, and log files.
- Server Memory For the first two file systems, a minimum of 512 MB of RAM for each file system. Each subsequent file system (up to eight total) either passive or active, must have an additional 256 MB of RAM minimum.
- Server Hard Disk Depending on file system activity, StorNext binaries, documentation, configuration, and log files require up to 30 GB of local hard disk space. An additional 2GB of hard disk space is required per 1 million managed files.

2TB LUN Requirements

StorNext supports LUNs larger than 2TB. The level of support for this feature varies, depending on the operating system you are using:

- Full support for LUNs larger than 2TB
- Full support for LUNs larger than 2TB, with a specific label type required
- · Support for only the first 2TB for LUNs larger than 2TB
- No support for LUNs larger than 2TB

Label Types

The type of label you use determines whether your system supports LUNs larger than 2TB. Even if your operating system provides support for LUNs larger than 2TB, you cannot use this feature if you apply the incorrect label type.

There are three label types:

- VTOC
- EFI
- sVTOC (or short VTOC)

Generally speaking, the VTOC label is for LUNs less than 2TB, while the EFI and sVTOC labels are used for LUNs greater than 2TB. However, in many cases, EFI labels can also be used for LUNs less than 2TB.

The following table summarizes the operating system levels for the possible LUN sizes, the level of support, and the type of label you should use for the LUN size you want to use. Where there are multiple label types listed, the preferred label type is listed first.

Table 1	
---------	--

Support Level	Operating System	Label Type For LUNs Less Than 1TB	Label Type For LUNs Between 1-2TB	Label Type For LUNs Larger Than 2TB
Full support of	IBM AIX ^a	VTOC or EFI	VTOC or EFI	EFI or sVTOC
LUNs larger than 2TB	Linux 2.6 kernel	VTOC or EFI	VTOC or EFI	EFI or sVTOC
	Windows Server 2003 SP1	VTOC or EFI	VTOC or EFI	EFI or sVTOC
	Apple Xsan 1.3 on OS X Tiger	VTOC or EFI	VTOC or EFI	EFI or sVTOC
Full support of LUNs larger than 2TB, with specific label requirements	Solaris 10 Update 2	VTOC or EFI	EFI only	EFI only
Support for only	Apple Xsan 1.2	VTOC only	VTOC only	sVTOC only
the first 2TB of LUNs larger than 2TB	Apple Xsan 1.3 on OS X Panther	VTOC or EFI	VTOC or EFI	sVTOC or EFI
	HP-UX	VTOC or EFI	VTOC or EFI	sVTOC or EFI
	Windows XP or Windows 2000	VTOC or EFI	VTOC or EFI	sVTOC or EFI
No support for	SGI IRIX	VTOC only	VTOC only	Not supported
LUNs larger than 2TB	Linux 2.4 kernel	VTOC or EFI	VTOC or EFI	Not supported
	Solaris 9 with the "Big LUN" patch	VTOC or EFI	EFI only	Not supported
	Solaris 10 with no patches	VTOC or EFI	EFI only	Not supported
	Solaris 9 with no patches	VTOC only	Not supported	Not supported

a. AIX is limited to LUNs that are 2.2TB or smaller.

Using the Optional Pre-Installation Configuration

StorNext requires the tdlm and www user accounts to exist in the passwd file, and the adic group account to be in the group file. StorNext automatically creates these accounts during the installation process, but if you prefer you can create them manually before running the installation.

- If you want the system utility to create the accounts, skip this section and continue with <u>Running the Pre-Installation Script</u> on page 14.
- If you prefer to manually add these accounts, use this procedure. You must perform this procedure on each machine where the StorNext software is installed. After completing this procedure, continue with <u>Running the Pre-Installation Script</u> on page 14.
- 1 Add the following user accounts tdlm and www to your metadata server.

The following example shows sample values. You can specify any user ID or group ID you wish.

Username	UserID	GroupID	Login Shell	Home Directory
tdlm	100	100	/bin/sh	/usr/adic
www	101	100	/bin/sh	/usr/adic/www

2 Add the group account adic.

Group Name	GroupID	Members List
adic	100	root, tdlm, www

Running the Pre-Installation Script

StorNext includes a script called snPreInstall that you can run before installing the software. The output of this script indicates whether your system meets the minimum disk space requirements required for the installation.

If your local system does not have sufficient disk space for the software installation, the script will warn you so you can add more disk space before proceeding with the installation.



The snPreInstall script ignores all unmounted file systems. Only mounted local file systems are considered when the script runs and makes its calculations. Before running the snPreInstall script, be sure to mount all local file systems you want the script to consider.

Minimum disk space amounts (in MB) are provided for the following directories:

- Database
- Journal
- Mapping
- Metadata
- Backup

When you run the snPreInstall script, you must provide answers about your system configuration so the script can determine space requirements. You will be asked to do the following:

- Specify whether you are performing a StorNext upgrade or a new installation
- · Estimate the maximum number of additional directories (in millions) you anticipate
- · Estimate the approximate number of additional files (in millions) you anticipate
- Enter the number of copies for each file
- · Enter the number of versions you plan to keep for each file

Note If you are performing an upgrade, the file systems that currently contain existing TSM support directories will be reported. Additionally, you will be asked about other local file systems to include when calculating space requirements.

If you are performing a new installation, you will be asked whether all local file systems should be included when calculating space requirements.

When performing either an upgrade or new installation, you can eliminate from consideration file systems you do not want used for StorNext support directories.

Based on the information you provide about your system, the script will calculate space requirements. If the script says you have sufficient space, you can proceed with the installation. If you do not have sufficient space, you must add more disk space before installing the StorNext software.

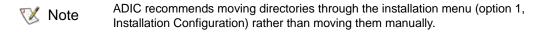
Script output might look similar to this:

```
Database dir space required: 1686 MB
Journal dir space required: 33 MB
Mapping dir space required: 3540 MB
Metadata dir space required: 4291 MB
Backup dir space required: 2791 MB (On a managed file system)
```

StorNext Support Directory Location Recommendations

The snPreInstall script also provides recommendations for StorNext support directory locations. The recommendations are made with the following considerations:

- 1 In descending order (from greatest to least,) the order of space required is Database, Metadata, Backup, Mapping, and Journal.
- 2 The Database and Journal should be on separate file systems for integrity reasons.
- 3 The Journal and Metadata should be on separate file systems for performance reasons. Both file systems will have lots of head movement during normal operation.
- 4 The Database and Metadata should be on separate file systems for performance reasons. Both file systems will have lots of head movement during normal operation.
- 5 The Mapping and Metadata should be on separate file systems for performance reasons (during mapping operations).
- 6 The Backup directory should be on the largest of the managed file systems.



Installing StorNext Software

Use this procedure to install StorNext software. The installation process loads both server and client files on your machine.

- 1 Designate one machine as the server.
- 2 Load the StorNext CD appropriate for your operating system.
- 3 Open the StorNext folder.
- 4 Launch the executable program install.stornext.

The StorNext Install Main Menu is shown.

Figure 1 StorNext Install Main Menu

Stornext Install 2.8.0 MAIN MENU

 Installation Configuration
 Install stornext
 Show Status
 Quit

Enter your choice <2>:

StorNext defaults to option 2) Install stornext.

5 Type 1 to display a list of parameters that can be modified.

The following menu is shown. By default, the software is installed into the directory containing the greatest amount of space (in this example, <*disk1*>).

	VALUE	DESCRIPTION
1)	/home/adic/perl	Perl installation directory
2)	/home/adic/docs	Docs installation directory
3)	/home/adic/PCL	Pcl installation directory
4)	/home/adic/database	Dbm installation directory
5)	/home/adic/SRVCLOG	Srvclog installation directory
6)	/home/adic/PSE	Pse installation directory
7)	/home/adic/MSM	Media Manager installation directory
8)	/home/adic/TSM	Tertiary Manager installation directory
9)	/home/adic/TCM	Trashcan Manager installation directory
10)	/home/adic/www	GUI installation directory
11)	/home/adic/apache	Web installation directory
12)	/usr/cvfs	Disk Manager installation directory
13)	/home/adic/database_meta	Metadumps directory
14)	/home/adic/mapping_dir	TSM mapping directory
15)	/home/adic/database_jnl	Database journal directory
16)	LTO	Default media type
17)	LTO	Backup media type

6 Type the parameter number to modify the default parameters.

If you do not need to modify the parameters, then skip this step and go to Step 8.



If you do not use LTO media in your library, you must change parameter numbers 16 and 17 to match the media type that is located in your library.

For mixed media or multiple libraries, you must change the parameter numbers to match the media type that you use as your primary backup.

For increased reliability, install the database journal directory (database_jnl) on a disk that is different from the one on which the database installation directory is stored.

To maximize performance, place all four of the following support directories on different file systems: database, database_jnl, metadumps, and mapping_dir. If this is not possible, ADIC recommends separating at least the first three support directories.

7 When you are satisfied with the parameter settings of the installation configuration, press ENTER to return to return to the **StorNext Install Main Menu** and continue the install.

```
Stornext INSTALL 2.8.0 MAIN MENU

1) Installation Configuration

2) Install stornext

3) Show Status

4) Quit

Enter your choice <2>:
```

- 8 Type 2 or press ENTER to install the StorNext software.
 - If you have set up your database and database journal to install on the same file system, the following warning is shown:

```
The /home/adic/database and /home/adic/database_jnl are
defined to be on the same file system. It is recommended that
they reside on different file systems. To change the values,
answer 'No' to return to the configuration menu.
Database journal directory => /home/adic/database_jnl
Dbm installation directory => /home/adic/database
Do you wish to keep these settings (quit, no or <yes>)?
```

- Select quit, no, or yes.
 - If you select quit, you will exit the StorNext Installation
 - If you select no, you will return to the StorNext Configuration Menu (Figure 2 on page 17)
 - If you select yes, you will proceed with the StorNext Install
- If you have set up your database and database journal to install on the separate file systems, the StorNext Status Install Menu (Figure 3 on page 19) is shown and lists fourteen steps of component-level status. As the installation progresses, the status menu updates and shows steps as Complete.

	Storn	ext Install 2.8.0	Status
1)	Install Pre-Install	2.8.0(9)	Complete
2)	Install perl	5.8.3_3.0.0(16)	Complete
3)	Install docs	2.8.0(7)	Complete
4)	Install PCL	1.1.0(3)	Complete
5)	Install database	5.9.25.50_4.1.0(2)	Working /
	unbundle software		Complete
	create database		Working
	start software		To do
6)	Install SRVCLOG	2.1.0(2)	To do
7)	Install PSE	1.1.0(3)	To do
8)	Install MSM	2.8.0(13)	To do
9)	Install TSM	2.8.0(11)	To do
10)	Install TCM	2.8.0(9)	To do
11)	Install www	2.8.0(8)	To do
12)	Install apache	2.0.54_3.0.0(17)	To do
13)	Install DSM	2.8.0(9)	To do
14)	Install Post-Install	2.8.0(9)	To do

After exiting the install.stornext utility, the following information is shown

When the installation has completed you will point your browser at the following address and port# to access the stornext home page:

```
http://snsan.adic.com:81
```

Please make a note of this information.

```
Note the machine name and port number from the above screen. You will need this information to access the StorNext GUI.
If your operating system requires a restart, you will be notified that you must reboot the machine.
```

- 9 When the installation process is complete, press ENTER to return to the **Install Main Menu** (Figure 1 on page 16).
- **10** Type 3 to review the screen that displays the component-level status of the StorNext installation (Figure 3 on page 19).
- **11** Type 4 to quit the installation process and exit the menu.

3

Configuring StorNext

After installing StorNext you must configure the software. A configuration wizard is provided to simplify and streamline the configuration process.

Use this procedure to configure the StorNext software.

1 Open a Web browser.



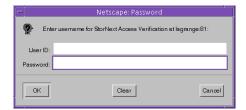
Supported browsers are:

- Internet Explorer 5.5 and later
- Netscape 7.x
- · Mozilla 1.0 and later
- FireFox 1.0 and later
- 2 Type the full address of the machine and its port number http://<machine name>:<port
 number> in the Address Field and press Enter. Use the name of the machine and port number
 that you copied when you installed the StorNext software.



Typically, the port number is 81. If port 81 is in use, use the next unused port number. (I.e., 82, 83, etc.)

The following screen appears.



3 In the User ID Field, type admin and press TAB.

4 In the **Password** Field, type admin and click **OK**.

😻 Note

For information on changing your password or setting up additional users, refer to the *StorNext System Administrator Guide*.

The initial StorNext GUI appears. You are prompted to start non-running components.

[Java5ci	ript Application]	×
?	The following components are not running [SNP5, SNSM]. Would you like to start these components now?	
	OKCancer	

5 Click **OK** to start the StorNext components.

The Configuration Wizard screen is shown and guides you through configuration of the StorNext software.



Before using the StorNext GUI, you should first complete the Configuration Wizard for licensing and configuring the software. If you access the GUI before completing the Configuration Wizard, file system failures will occur.

Using the Configuration Wizard

The Configuration Wizard provides step-by-step instructions for configuring the StorNext software. Text for the active step is shown in a different color, and is followed by the word **Completed** after the step is done. The Configuration Wizard opens every time the StorNext GUI is refreshed until all of the configuration steps are completed. You can also launch the wizard at any time from the StorNext home page by selecting **Configuration Wizard** from the **Config** menu.

Each configuration step contains its own wizard that provides step-by-step guidance. For each configuration step, you must continue through all the related screens until the step is complete. For example, you must complete all the screens associated with Step 1: Enter License before you can continue to Step 2: Add File System. When you are finished with a step, click **Done** to continue to the next step.

After you have completed a step, you can return to a previous step by clicking the step name. You can also clear all of your entries and restart the process from the very beginning by clicking **Reset**.

Figure 3 Configuration Wizard

Configuration	Wizard (CW) - Microsoft Internet Explorer
adic	Configuration Wizard Use this wizard to configure your StorNext product.
	Vou can return to a step by clicking on its name You can always return to the CW from the Config menu on the Home Page The reset button will start the CW from the beginning
Configurati Wizard	Step 1: Enter License Step 2: Add File System Step 3: Add Library Step 4: Add Tape Drive Step 5: Add Media Step 6: Add Storage Disks Step 7: Add Storage Dilcy Step 8: E-Mail Notification
StorN	ext
Don't S	now CW Again Reset Next Done

If you do not complete all of the Configuration Wizard's steps, the next time you access the StorNext home page the Configuration Wizard resumes where you left off so you can continue the configuration process.

If you click Cancel to proceed without continuing to the next step, a message reminds you that you have not finished all steps, and that the Configuration Wizard will appear again until you complete all configuration steps.

Microsof	t Internet Explorer 🛛 🔀
?	All steps have not been completed. The system may not work properly. Until all steps are completed, the CW will be launched every time the StorNext Home Page is loaded.
	OK Cancel

🕺 Νote	è
--------	---

If you do not want to use the Configuration Wizard, select **Don't Show CW Again** and click **Cancel**. The Configuration Wizard will not display again. However, you can perform the same tasks in the Configuration Wizard by accessing the Config menu from the StorNext Home Page. Click Next to begin using the Configuration Wizard.
 The Enter License - Introduction screen appears.

🏄 Enter License - Mi	crosoft Internet Explorer	_ 🗆 X
	Enter License - Introduction	<u>^</u>
adic	Click Next to enter a new StorNext license.	
	You do not currently have a license entered.	
License scooyvers		
StorNext		
	Back Next 🕨 🗶 Can	cel

Step 1: Entering a License

You must have a permanent or temporary license to configure or use StorNext. Use the Enter License wizard to enter a permanent license string, or proceed using the 30-day temporary license that comes with StorNext.

To obtain a permanent license, you must contact ATAC at <u>licenses@adic.com</u> and give them the following information:

- · The product serial number from the StorNext box or CD
- The number of client machines you want to support
- The StorNext server identification number. You can find this number on the Configuration Wizard's **Enter License String** screen.

Alternatively, you can obtain a license by going to <u>www.adic.com/swlicense</u> and providing the required information.

After ATAC receives the above information, an ATAC representative will send you a license string. Enter this license screen on the **Enter License String** screen to use StorNext with your permanent license.



If you use the temporary license, be sure to obtain a permanent license from ADIC before the 30-day temporary license expires.

1 On the Enter License - Introduction screen, click Next to continue.

The ADIC license agreement appears. You must accept the license agreement in order to continue with the licensing process.

Advanced Digital Information Corporation	-
Software License	
This License sets forth the terms and conditions under which ADIC agrees to grant and Licensee agrees to accept a license to use certain of ADIC's proprietary software and related documentation. Any software programs or related materials provided to Licensee by ADIC will be subject to the terms and conditions of this License.	
1. Definitions	
 <u>"Designated Computer(s)</u>"means that computer equipment, identified to ADIC in Exhibit A by serial number, upon which the Software is installed. 	
 "<u>Documentation</u>" means ADIC provided materials related to the Software, including, but not limited to operator and user manuals, training materials, guides, listings, specifications, or other written documentation. 	
 <u>"Release"</u> means a modification to the Software that does not change ADIC's base version number, but may add functionality. New Releases are provided to the Licensee at no charge when Licensee maintains a current Software Maintenance Agreement with ADIC. 	
 <u>"Software"</u> means only the current version of those software products specified in Exhibit A hereto, in object code form only, and the Documentation provided by ADIC in connection therewith or any portions thereof, and 	×
If you want to configure and use StorNext, you must accept the preceding agreement. Do you agree to accept all of the terms of the License Agreement?	
Accept Decline	

2 Read the license agreement and then click **Accept**.

The **Enter License String** screen appears. This screen summarizes the information you must send to <u>license@adic.com</u> in order to receive the license string you enter on this screen.

🚰 Enter License - M	licrosoft Internet Explorer	_ 🗆 🗙
	Enter License String	*
adic	Enter the license string for StorNext .	
	Please E-mail the following information to <u>license@adic.com</u> : Serial number from cd or box. Shumber of file system clients you wish to support	
The second second	 3) StorNext Server ID: 50DAD8B27E ADIC will E-mail you a licence key you will paste into the 	e
License 90GD56Y8HS	field below. If you wish you can use the temporary 30 day license a then when you recieve your licence re-run this page. 	nd
	License String	
	Generate 30 day temporary license	
StorNext		
	Back Next 🕨 🗶 Can	cel
		Y

- 3 Do one of the following:
 - Select **Generate 30 day temporary license** to proceed with the Configuration Wizard using a temporary 30-day license. Continue with step 4.
 - Enter a permanent license. Go to step 7.
- 4 After selecting Generate 30 day temporary license, click Next to continue.

The Complete Enter License screen appears.

🏄 Enter License - Mi	icrosoft Internet Explorer
adic	Complete Enter License Pour Sector Se
License socosyvers	License String: Temporary License
StorNext	Back Next X Cancel

5 On the **Complete Enter License** screen, click **Next** to complete the task or **Back** to make changes.

When you click **Next**, a message reminds you to contact ATAC within 30 days to receive your permanent license string.

Microsof	t Internet Explorer 🔀
?	A temporary license will be created. Please remember to call ATAC and receive your permanent license string within 30 days. This completes step 1 and allows you to proceed to step 2.
	OK Cancel

- 6 Click **OK** to close the message box. The Configuration Wizard screen (Figure 3 on page 23) shows a **Completed** status next to Step 1. Continue with <u>Step 2: Adding File Systems</u>
- 7 To enter a permanent license, type or copy and paste into the License String field the license string you received from ATAC.

If you receive your license string electronically, paste the license string into the /usr/adic/ DSM/config/license.dat file. Updating this file enables StorNext to automatically detect the license string when the Configuration Wizard runs.

If you receive your license string in a hard-copy document, type the license string, exactly as it is shown, in the **License String** Field.

Here is an example of a StorNext license file with the license string entered (below License Authorization String). This is an example only. Do not enter the license screen shown.

System: emerald # Identifier: 3FA781993 # Number Clients: 12 # Expiration Date: None # License: AAAAA/B2AAS/AJDQV/2DCKS/M7RA9/82XUR/CH3TL/9EES7/5ZEGV/ 6ALVD/TA # # License Authorization String: server 1 3FA781993 12 AAAAAB2AASAJDQV2DCKSM7RA982XURCH3TL9EES75ZEGV6ALVDTA emerald ADIC

8 Click Next to continue.

The Complete Enter License screen appears.

Enter License - Mi adic	crosoft Internet Explorer Complete Enter License You have completed the necessary steps to enter the licens	<u>- </u> _
	Please review your selections and click Next to apply them, click Back to make changes.	
License sogdseyehs	DSFHC3R4QFCA	
	I X	
StorNext		
	A Back Next X Cancel	

- 9 Review your selections. Click **Next** to complete the task or **Back** to make changes.
- **10** Do one of the following:
 - Click **Done** to continue. The **Configuration Wizard** screen (Figure 3 on page 23) is shown with a **Completed** status next to Step 1. Continue with <u>Step 2: Adding File Systems</u>.
 - Click Next to modify or enter another license. Repeat the Entering a License procedure. Go to Step 1: Entering a License.

Step 2: Adding File Systems

This procedure creates an empty file system. The number of file systems that can be added is only limited by the number of disks available for configuration.

The **File System - Introduction** screen displays both configured file systems and disks available for configuration.

🚈 Add New File Syste	em - Microsoft Internet Explorer	_ 🗆 🗙
Red New File System	File System - Introduction Add new file systems. The number of file systems you can is limited only by the availability of disks. Currently configured file systems: stafs1 stafs2 stafs1 stafs2 stafs2 stafs2 stafs2 stafs2 stafs2 stafs2 stafs3 stafs4 Jisks available for configuration [13]	add
	Back Done	

1 Click **Next** to add a file system.

The Add New File System screen appears.

🏄 Add New File Syst	em - Microsoft Internet Explorer	_ 🗆 🗵
	Add New File System	*
	Enter a name for the new file system. The name can be up 32 characters in length and can contain only letters, numb and the underscore character. The name identifies the file system for configuration.	ers
File System	snfs5	
	Click Browse to select a Mount Point. /stomext/snfs5 Browse	
	✓ Enable Data Migration	
Disk	Enable Trashcan	
StorNext		
	Back Next 🕨 🗶 Canc	el
		-

- Name field: The name of the file system.
- Mount Point field: The mount point (directory) for the file system. The mount point defaults to /stornext/snfs. If you create a new mount point (other than the default), the **Directory Browser** screen below appears.
 - 1a. Click **Browse** to navigate to an existing directory or create a new one.

The Directory Browser screen appears.

	Create	Directory	1	
		Directory		
-	— Directo dic	ry List —		
bi	in oot			
d	ev		-	

1b. In the Select Directory list, select a directory.

The selected directory (/stornext) is shown in the Current Directory Field.



1c. Click Create Directory to create the new mount point.

You are prompted to enter the new directory name. The new directory will reside as a sub-directory of the directory created in <u>Step 1 b</u>, above.

OK
Cancel

1d. Enter the name of the new directory and click OK.

The new directory is shown in the **Current Directory** Field.

🖉 Directory Browser - Microsoft Int 💻 🗖 🗙
Current Directory
/sandsm/dsm10
Create Directory
Select Directory Directory List
OK X Cancel

1e. Click **OK** to accept the new directory.

The new directory is shown in the Add New File System screen.

🚰 Add New File Syst	em - Microsoft Internet Explorer
	Add New File System
	Enter a name for the new file system. The name can be up to 32 characters in length and can contain only letters, numbers and the underscore character. The name identifies the file system for configuration.
File System	snfs5
	Click Browse to select a Mount Point. /sandsm/dsm10 Browse
	 Enable Data Migration Enable Trashcan
Disk StorNext	
	Back Next 🕨 🗶 Cancel
	V

- Enable Data Migration check box: Select this option (check the box) if you want this file system to be managed with automatic data movement between the primary disk storage and secondary storage (either disk or tape). If you do not enable this option, this file system remains unmanaged and does not move data to the tape library. Be sure to select this option if you intend to use the file system as a storage disk.
- Enable Trashcan check box: Select this option (check the box) if you want to be able to undelete files from the Trashcan. If you do not enable this option, files cannot be undeleted from the Trashcan.



The StorNext Trashcan feature should only be enabled on UNIX platforms. Enabling the Trashcan in a mixed UNIX/Windows environment causes file system failures due to conflicts with the Windows Recycle Bin.

Do not select either the Enable Trashcan or Enable Data Migration options if the file system will be used as a storage disk.

2 In the Add New File System screen, type valid values and click Next.

The Disk Settings screen appears.

🏄 Add New File Syst	em - Microsoft Internet Explorer
adic	■ Disk Settings Enter the block size, in bytes, to be used in the new file system. The block size is the minimum unit of data that will be accessed from the physical devices. The default value of 15304 is recommended for best overall efficiency. Values greater than 65536 are only recommended for special circumstances as filesystem performance and efficiency can be severely impacted. 16384
Disk	Enter the number of stripe groups for the file system. You must have enough physical disks available for your selection. Selecting values greater than one permit customizations to optimize performance and utilize special SNFS features like dedicated Metadata, Journal, and Data stripe groups.
StorNext	▲ Back Next ► X Cancel

- **Block size** field: The block size (in bytes) for the file system. The block size is the minimum unit of data that will be accessed from physical devices. The default value of 16384 bytes is the recommended setting for the best overall efficiency.
- Stripe group field: The number of stripe groups for the file system. Selecting a value greater than one (1) enables customization to optimize performance and use StorNext features such as dedicated Metadata, Journal and User Data stripe groups.



ADIC recommends that you specify at least three stripe groups: one for metadata, one for journals, and one for data.

3 In the **Disk Settings** screen, type valid values and click **Next**.

A message reminds you to select more than one stripe group if you want an alternate configuration other than the one that provides journal, metadata, and user date.

Microsoft	Internet Explorer
⚠	The stripe group will contain Journal, MetaData, and User Data . If an alternate configuration is preferred, please select more than one stripe group
	ОК

4 Click **OK** to continue.

The Customize Stripe Group screen appears.

🚰 Add New File System - Microsoft Internet Explorer	
Customize Stripe Group	<u> </u>
Enter a name for the stripe group.	
Select disks. //dev/sdaSNFS-VTOC "label" Size: 4.0 GB //dev/sdbSNFS-VTOC "disk001" Size: 183.7 G //dev/sdcSNFS-VTOC "spock05" Size: 183.7 G //dev/sdcSNFS-VTOC "spock05" Size: 183.7 G	GB
Label Type: VTOC CEFI Label Help	_
Enter the stripe breadth for the file system. This of kilobytes that is read from or written to each stripe. 64	
Disk Select if planning to use stripe group for meta of journal data. Meta Data IV Journal IV	data and/or
StorNext	
Back Next ►	X Cancel
l l l l l l l l l l l l l l l l l l l	12

- Name Field: The name of the stripe group.
- Select disks list: The disks available to assign to the stripe group. You must select at least one disk for each stripe group.
- Label Type: If you plan to create LUNs larger than 2TB, you must specify the EFI label type when configuring a file system.

VTOC labels were used for all operating systems in previous StorNext and Xsan releases, and are still required for the SGI IRIX operating system, Solaris releases prior to Solaris 10 Update 2, and LUNs less than 1TB.

EFI labels are required if you plan to create LUNs that are larger than 2TB. (For Solaris, EFI labels are also required for LUNs with a raw capacity greater than 1TB.) EFI labels will not work with the IRIX operating system.

The correct value is automatically selected when you reach the **Customize Stripe Groups** screen, so you can accept the default value unless you have a reason to change the label type.

For more information about 2TB LUN requirements, see 2TB LUN Requirements.

• Label Help: Click this link to display guidelines for determining whether to select VTOC or EFI labels. The matrix looks like this:

Key: VTOC:	VTOCI			
EFI:	EFI lab			
sVTOC:	'short' \	/TOC label on >:	2TB LUN	
Operating System	n	<1TB LUN	1-2TB LUN	>2TB LUN
	Fu	ll support of >2TB	LUNs	
Apple Xsan 1.3 on OS X Tig	ег	VTOC, EFI	VTOC, EFI	EFI, sVTOC
Linux 2.6		VTOC, EFI	VTOC, EFI	EFI, sVTOC
Windows Server 2003 SP1		VTOC, EFI	VTOC, EFI	EFI, sVTOC
••	ort of >21		label type restrict	
Solaris 10 Update 2		VTOC, EFI	EFI	EFI
	Restri	cted support of >2		
AIX	-	VTOC, EFI	VTOC, EFI	EFI, sVTOC (Note 1)
	Suppo	rt for first 2TB of >	-	
Apple Xsan 1.2		VTOC	VTOC	sVTOC
Apple Xsan 1.3 on OS X Par	ither	VTOC, EFI	VTOC, EFI	sVTOC, EFI
HP-UX		VTOC, EFI	VTOC, EFI	sVTOC, EFI
Windows (other)		VTOC, EFI	VTOC, EFI	sVTOC, EFI
IRIX	N	support of >2TB		
IRIX Linux 2.4		VTOC	VTOC	
		VTOC, EFI	VTOC, EFI	
Solaris 9 w/Big LUN Patch Solaris 10 vanilla		VTOC, EFI VTOC, EFI	EFI FFI	
Solaris 9 vanilla		VTOC, EFI		
Note 1: AIX appears to b DISCLAIMER: While every eff change and should be verified	fort has bee	n made to ensure the	e accuracy of this inf	ormation, it is subject to

• Stripe breadth drop-down menu: The stripe breadth for the file system. The stripe breadth is the number of kilobytes (KB) that is read from or written to each disk in the stripe. For a typical StorNext installation, 64KB is the recommended setting.

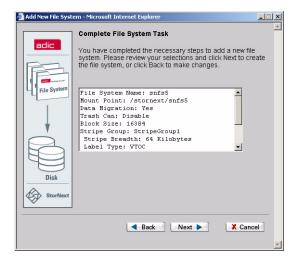
- Metadata, Journal, and User Data check boxes: Enable one or more of these options (check the boxes) to create a location for metadata, journaling or user data.
 - To enable metadata to be placed on the stripe group, select the Metadata check box.
 - To enable journaling to be placed on the stripe group, select the **Journal** check box.
 - To enable user data to be placed on the stripe group, select the **User Data** check box.



ADIC recommends that your User Data be on a different stripe group than Metadata and Journal.

- 5 If you selected multiple stripe groups on the **Customize Stripe Group** screen, repeat step 4 for each stripe group.
- 6 In the Customize Stripe Group screen, type valid values and click Next.

The Complete File System Task screen appears.



- 7 Review your selections. Click Next to complete the task or Back to make changes.
- 8 Once the status screen displays the successful addition of the file system, click Next.A message informs you that Step 2 is complete, and you can continue to step 3.

Microsoft	Internet Explorer
?	This completes Step 2 and allows you to proceed to Step 3.
	OK Cancel

- 9 Do one of the following:
 - Click Cancel to add more file systems. Repeat the Adding a File System procedure (<u>Step 1</u> on page 28).
 - Click **OK** to continue.

The **Configuration Wizard** screen (Figure 3 on page 23) is shown with a **Completed** status next to Step 2. Click **Next** to continue with <u>Step 3: Adding a Library</u>.

Step 3: Adding a Library

Use the procedure in this section to add libraries to StorNext. The StorNext Storage Manager (SNSM) component of StorNext supports three types of libraries: SCSI, Network (ACSLS or DAS), and Vault.

- SCSI button: Select SCSI if you have a SCSI or a fibre channel-attached library.
- Network button: Select Network if you have a network-attached library. There are two options
 from for a network-attached library, ACSLS or DAS. For more information on ACSLS and
 DAS, refer to the StorNext Release Notes.
- Vault button: Select Vault if your library stores media that has been moved from a robotic library. A Vault library is a library used only to store media and cannot be reconfigured after it has been designated as a vault.

Depending on the library type, refer to the appropriate procedure to add the library to StorNext.

- Adding a SCSI Library on page 36
- Adding an ACSLS Network Library on page 39
- Adding a DAS Network Library on page 41
- Adding a Vault Library on page 47

The Library Introduction screen shows the libraries that have been configured.

🎒 Add Library - Mici	rosoft Internet Explorer	
	Library Introduction	<u></u>
adic	Add one or more vault, network, or SCSI libraries.	
	Currently configured libraries:	
	scsi_archive1	
Scalar i2000	Skip to adding Storage Disks	
StorNext		
	Back Next Don	e

Do one of the following:

- Select "Skip to adding Storage Disks" and follow the procedure in <u>Step 6: Adding Secondary</u> <u>Storage Disks</u> on page 58. (You would want to skip the steps for adding a library, tape drives, and media if you plan to use only disk space for storage.)
- Click Next and follow the procedure in <u>Adding a SCSI Library</u> on page 36 to add a SCSI library.

- Click Next and follow the procedure in <u>Adding an ACSLS Network Library</u> on page 39 to add an ACSLS network library.
- Click Next and follow the procedure in <u>Adding a DAS Network Library</u> on page 41 to add a DAS network library.
- Click Next and follow the procedure in <u>Adding a Vault Library</u> on page 47 to add a vault library.

Adding a SCSI Library

After you click Next on the **Library Introduction** screen, the **Library Type** screen appears. If you have no SCSI devices configured, you are informed that no SCSI devices were detected.

🚈 Add Library - Mic	rosoft Internet Explorer	- 🗆 ×
adic	Library Type Select the type of library to add.	*
Scalar i2000	 C SCSI Network - Network Type - ▼ Vault 	
StorNext	📕 Back 📄 Next 🕨 🛛 🗶 Can	icel

1 Select the **SCSI** option and click **Next**.

The Library Name screen appears.

🎒 Add Library - I	Microsoft Internet Explorer	_ 🗆 🗙
	Library Name	×
adic	Enter a name for the new library. The name can be any combination of letters and numbers, but it cannot contain spaces.	
Scalar i200	scsi_archive2	
StorNe	xt	
	📕 Back 📄 Next 🕨 🗶 Can	el 🔍

2 Accept the default or type a name in the Library Name Field and click **Next**. The **Media Types** screen appears.

🏄 Add Library - Mic	rosoft Internet Explorer	_ 🗆 X
adic	Media Types Select one or more media types. Select only those types t located in the library.	o be
Scalar i2000	-Media Type List - ▲ AIT LTO 3590 3592 9840 9940	
	🗲 Back Next 🕨 🗶 Cane	cel 📃 💌

3 Select a media type from the list and click **Next**.

The SCSI Device screen appears.

🏄 Add Library - Mic	rosoft Internet Explorer	
Add Library - Mic	rosoft Internet Explorer SCSI Device Select the SCSI device for your library. //dev/sg8 (Scalar i2000) //dev/sg19 (Scalar i2000) //dev/sg5 (MSL6000 Series)	
StorNext	Back Next ► X Can	cel]

4 Select a SCSI device from the list and click **Next**.

The Complete Add Library Task screen appears.

🚰 Add Library - Mici	rosoft Internet Explorer	_ II ×
	Complete Add Library Task	<u>^</u>
adic	You have completed the necessary steps to add a library. Please review your selections and click Next to apply them, click Back to make changes.	, or
Scalar i2000	Library Type: SCSI Library Name: scsi archive2 Hedia Type(s): AlTU SCSI Device: /dev/sg16	
StorNext	Back Next Cance	

- 5 Review your selections. Click **Next** to complete the task or **Back** to make changes.
- 6 Once a status screen displays the successful addition of the library, click **Next**.

The Library Introduction Screen appears.

- 7 Do one of the following:
 - Click Done to finish the Adding a Library procedure and proceed to the next step. The Configuration Wizard screen (Figure 3 on page 23) is shown with a Completed status next to Step 3.
 - Add more libraries. Click **Next** to repeat the Adding a Library procedure (<u>Step 3: Adding a Library</u> on page 35).

Adding an ACSLS Network Library

After you click Next on the Library Introduction screen, the Library Type screen appears.

1 Select the Network option, choose ACSLS from the drop-down menu, and then click Next.

🏄 Add Library - Mici	osoft Internet Explorer	- 🗆 ×
adic	Library Type	4
	Select the type of library to add.	
Scalar i2000		
StorNext		
	Back Next Cance	

2 Enter the fields on the Library Name screen.

🎒 Add Library - Mici	osoft Internet Explorer	_ 🗆 🗙
	Library Name	<u> </u>
	Enter a name for the new library. The name can be any combination of letters and numbers, but it cannot contain spaces.	
	Enter the hostname or IP address of the ACSLS server.	
Scalar i2000		
StorNext		
	A Back Next Mext A Can	cel
		Y

- Enter Name field: The name of the library. This can be any name you choose.
- Enter Host Name field: The actual host name or IP address of the ACSLS server.
- **3** Type valid values for each field and click **Next**.

The Media Types screen appears.

🎒 Add Library - Mic	rosoft Internet Explorer	×
adic	Media Types Select one or more media types. Select only those types to be located in the library.	4
Scalar i2000	- Media Type List- LTO 3590 3592 9840 9940	
	Back Next Cancel	۲

4 Select a media type from the list and click **Next**.

The Complete Add Library Task screen appears.

🎒 Add Library - Mic	rosoft Internet Explorer	_ 🗆 🗙
adic	Complete Add Library Task	*
	You have completed the necessary steps to add a library. Please review your selections and click Next to apply them click Back to make changes.	
Scalar i2000	Library Type: Network Library Name: bugs ACSLS Server Name: sprout Media Type(s): LTO	
Scalar L2000	Back Next 🕨 🗶 Cand	cel
		7

- 5 Review your selections. Click **Next** to complete the task or **Back** to make changes.
- 6 Once a status screen displays the successful addition of the library, click Next.

The Library Introduction Screen appears.

- 7 Do one of the following:
 - Click Done to finish the Adding a Library procedure and proceed to the next step. The Configuration Wizard screen (Figure 3 on page 23) is shown with a Completed status next to Step 3.
 - Add more libraries; click **Next** to repeat the Adding a Library process (<u>Step 3: Adding a Library</u> on page 35).

Adding a DAS Network Library

The Library Introduction screen shows the libraries that have been configured.

🚈 Add Library - Mici	osoft Internet Explorer	
	Library Introduction	<u>^</u>
adic	Add one or more vault, network, or SCSI libraries.	
	Currently configured libraries:	
	scsi_archivei	
Scalar i2000	□ Skip to adding Storage Disks	
StorNext		
	Back Next Done	

1 Click **Next** to add a DAS network library.

The Library Type screen appears.

🏄 Add Library - Mic	rosoft Internet Explorer	_ 🗆 X
	Library Type	<u> </u>
adic	Select the type of library to add.	
	○ scsi	
	Network DAS	
	C Vault	
Scalar i2000		
StorNext		
	A Back Next A Ca	ncel
		Y

2 Click the **Network** option, select **DAS** from the drop-down list, and click **Next**.

The DAS Configuration screen appears.

🗿 Add Library - Mic	🗿 Add Library - Microsoft Internet Explorer 📃 🖂 🔀		
adic	DAS Configuration Screen Select parameters that match StorNext Configuration. Sele only those that apply. If none apply, press the "Next" butto		
Scalar i2000	☐ StorNext Server HA Failover Configuration ☐ Dual Aisle		
	🗨 Back Next 🕨 🗶 Canc	el]	

- **3** Do one of the following:
 - Select the **Failover** option, click **Next**, and go to <u>Adding a DAS Network Library with Failover</u> on page 43.
 - Select the **Dual Aisle** option, click **Next**, and go to <u>Adding a DAS Network Library with or</u> <u>without Dual Aisle Configuration</u> on page 45.
 - If your DAS Network library is not configured for either failover or dual aisle, click **Next**, and go to <u>Adding a Vault Library</u> on page 47.

😻 Note

If you select both the failover and dual aisle options, the library is set up as if only failover was selected. Refer to <u>Adding a DAS Network Library with</u> <u>Failover</u> on page 43.

For more information about failover or dual aisle configurations, contact ATAC. Refer to <u>Customer Assistance</u> on page 97.

Adding a DAS Network Library with Failover

3a. On the Library Name screen, enter valid values and click Next.

🚳 Add Library - Mici	osoft Internet Explorer	_ 🗆 🗙
	Library Name	<u>^</u>
adic	Enter a name for the new library. The name can be any combination of letters and numbers, but it cannot contain spaces.	
	Enter the hostname or IP address of the DAS server.	
	Enter the client name of this host that has been configured the library's network.	t on
l l l	gandalf	
Scalar i2000	Enter the standby server host name that has been configu on the library's network.	ired
	Enter the standby server client name that has been config on the library's network.	ured
StorNext		
	A Back Next	el
		Y

- Enter Name Field: The name of the library. This can be any name you choose.
- Enter DAS Server Name Field: The name of the DAS server.
- Enter DAS Client Name Field: The name of the DAS client configured on the library's network.

The Media Types screen appears.

🚈 Add Library - Mici	rosoft Internet Explorer
adic	Media Types Select a media type for each of the EIF ports in the list. Leave the media type set to None if the EIF port does not exist.
	01: None ¥ 02: None ¥ 03: None ¥ 07: None ¥ 08: None ¥
Scalar i2000	Back Next Cancel

3b. Use the drop-down lists to map the mail boxes (EIF ports) to specific media and click **Next**.

The Complete Add Library Task screen appears.

🎒 Add Library - Micr	osoft Internet Explorer
adic	Complete Add Library Task You have completed the necessary steps to add a library. Please review your selections and click Next to apply them, or
	Library Type: Network Library Type: Candlesick DAS Server Name: sprout Client Name: gandalf Standby Host Name: fudd Standby Client Name: bugs EIF Port (Media Type): 01 (LTO)
Scalar i2000	Back Next X Cancel

- 3c. Review your selections. Click **Next** to complete the task or **Back** to make changes.
- 3d. Once a status screen displays the successful addition of the library, click Next.

The Library Introduction Screen appears.

- 3e. Do one of the following:
 - Click Done to finish the Adding a Library procedure and continue to the next step. The Configuration Wizard screen (Figure 3 on page 23) is shown with a Completed status next to Step 3.
 - Add more libraries. Click **Next** and repeat the Adding a Library procedure (<u>Step 3:</u> Adding a Library on page 35).
- 3f. Click Next to continue.

Adding a DAS Network Library with or without Dual Aisle Configuration 3g. On the Library Name screen, enter valid values and click Next.

🗿 Add Library - Microsoft Internet Explorer 📃 🗾 🗙		- 🗆 🗵
	Library Name	4
	Enter a name for the new library. The name can be any combination of letters and numbers, but it cannot contain spaces.	
	Enter the hostname or IP address of the DAS server.	on
Scalar i2000	gandalf	
StorNext		_
	Back Next Cance	

- Enter Name Field: The name of the library. This can be any name you choose.
- Enter Host Name Field: The actual host name or IP address of the DAS server.
- Enter Client Name Field: The name of the client for the current configuration. It is queried by StorNext and automatically populated.

The Media Types Screen appears.

🚈 Add Library - Micr	osoft Internet Explorer
Add Library - Micr actic Scalar i2000 StorNext	oroff Internet Explorer Image: Constraint of the const
	A Back Next > X Cancel

3h. Use the drop-down lists to map the mail boxes (EIF ports) to specific media and click **Next**.

The Complete Add Library Task screen appears.

Add Library - Mic	rosoft Internet Explorer
	Complete Add Library Task
adic	You have completed the necessary steps to add a library. Please review your selections and click Next to apply them, or click Back to make changes.
Scalar i2000	Library Type: Network Library Name: candlestick DAS Server Name: sprout Client Name: gandalf Standby Host Name: fudd Standby Client Name: bugs EIF Port (Media Type): 01 (LTO)
StorNext	
Back Next Cancel	

- 3i. Review your selections. Click Next to complete the task or Back to make changes.
- 3j. Once a status screen displays the successful addition of the library, click Next.

The Library Introduction Screen appears.

- 4 Do one of the following:
 - Click Done to finish the Adding a Library procedure, and proceed to the next step. The Configuration Wizard screen (Figure 3 on page 23) is shown with a Completed status next to Step 3.
 - Add more libraries. Click **Next** to repeat the Adding a Library procedure (<u>Step 3: Adding</u> <u>a Library</u> on page 35).

Adding a Vault Library

The Library Introduction screen shows the libraries that have been configured.

ø	Add Library - Mici	osoft Internet Explorer	- 🗆 🗡
		Library Introduction	A
	adic	Add one or more vault, network, or SCSI libraries.	
		Currently configured libraries:	
		scsi_archive1	
	Scalar i2000	□ Skip to adding Storage Disks	
	StorNext		
		Back Next Do	ne

1 Click **Next** to add a vault library.

The Library Type screen appears.

🎒 Add Library - Mic	rosoft Internet Explorer	- 🗆 ×
adic	Library Type Select the type of library to add.	<u></u>
Scalar i2000	C SCSI C Network ACSLS	
	🗨 Back Next 🕨 🗶 Can	cel 🔽

2 Click the Vault option and click Next.

The Library Name screen appears.

🚰 Add Library - Microsoft Internet Explorer 📃 📃		
	Library Name	*
adic	Enter a name for the new library. The name can be any combination of letters and numbers, but it cannot contain spaces.	
Scalar i20	veulti	
Stork	lext	
	A Back Next Kanc	el 📃
1		114

3 Accept the defaults or type a name for the library and click **Next**.

The Complete Add Library Task screen appears.

Add Library - Mice	rosoft Internet Explorer	- 🗆 🗵
adic	Complete Add Library Task You have completed the necessary steps to add a library Please review your selections and click Next to apply them click Back to make changes.	n, or
Scalar i2000	Library Type: Vault Library Name: vault1	
StorNext	A Back Next 🕨 🗶 Cane	cel]

- 4 Review your selections. Click **Next** to complete the task or **Back** to make changes.
- 5 Once a status screen displays the successful addition of the library, click **Next**.

The Library Introduction Screen appears.

- 6 Do one of the following:
 - Add more libraries. Click Next to repeat the Adding a Library procedure (<u>Step 3: Adding a Library</u> on page 35).
 - Click **Done** to finish the Adding a Library procedure.

The **Configuration Wizard** screen (Figure 3 on page 23) is shown with a **Completed** status next to Step 3.

7 Click Next to continue with <u>Step 4: Adding a Tape Drive</u> on page 49.

Step 4: Adding a Tape Drive

Use this procedure to add tape drives to your libraries. You can add any number of connected tape drives to the StorNext system.

The **Tape Drive Introduction** screen lists the number of configured tape drives and hardware devices that are currently available for configuration.

🚈 Add Drive - Micro	soft Internet Explorer
	Tape Drive Introduction
adic	Add tape drives to a configured library. Please add all the tape drives necessary for your StorNext system.
	Tape Drive Information:
	Number of tape drives currently configured [1]
Drive	Hardware devices available for configuration [3]
StorNext	
Back Next Done	
	<u>_</u>

1 Click **Next** to add a tape drive.

The **Associated Library** screen appears.

🎒 Add Drive - Micro	soft Internet Explorer	_ 🗆 🗡
adic	Associated Library Select a configured library to associate with the drive or o you are adding.	≟ drives
Drive	Configured Libraries	
StorNext	🗨 Back 📄 Next 🕨 🗶 Can	icel

- Configured Libraries list: Select the configured library to associate with added tape drives.
- Fibre-Channel Attached Drives check box: Check this box if you have fibre channelattached tape drives. If you check this box, the Match Devices with Slots screen appears. Go to <u>Step 4</u> on page 51.
- Note For SCSI direct-attached tapes that are not fibre channel, it is not necessary to match the device with the correct slot because slot-to-drive matching is automatically performed. If StorNext cannot perform slot matching, the screen shown in <u>Step 4</u> on page 51 appears.

2 After selecting a configured library on the **Associated Library** screen, click **Next**.

The Hardware Devices screen appears.

🏄 Add Drive - Micro	soft Internet Explorer	×
	Hardware Devices	*
adic	Select one or more hardware devices from the list and add them as drives. The drive names are automatically generated in this form: <library>_dr1, <library>_dr2.</library></library>	
	Hardware Devices	
Drive	LTO>>/dev/sg4 LTO>>/dev/sg5 LTO>>/dev/sg6	
	Enable Compression	
StorNext		
	Back Next > X Cancel	
		Ψ.

- Hardware Devices list: The hardware devices to be added as drives. Drive names are automatically generated in this format: <library_drl>, <library_dr2>
- Enable Compression check box: Enable this option (check the box) to allow data compression on added tape drives.
- 3 After adding hardware devices, click **Next**. Go to <u>Step 5</u> on page 53
- 4 When you select the **Fibre-Channel Attached Drives** check box on the **Associated Library** screen, the **Matched Devices with Slots** screen appears. The information on this screen varies from configuration to configuration.

🎒 Add Drive -	ticrosoft Internet Explorer	
adic	Match Devices with Slots These devices have more than one possible slot. Select each de you want to configure and the matching hardware slot. Click Inse add the pair to the list. Be sure to select the correct slot for each device.	rt to
Drive	Device Slot LTO>>/dev/sq5 d25810 d25910 Type>>Device>>Slot	_
Stor	Show mapping help	ancel
		*



Before continuing with this procedure, you must know which devices match which slots.

- 3a. In the **Device** list, select a device to be configured.
- 3b. In the **Slot** list, select a slot with which to match the device.
- 3c. If you need help mapping the tape drive to a slot, click Show Mapping Help to display a list of device mappings.

	000091_ADIC)	
Drive Serial #	Slot	Device
AD1C000092	256	/dev/sg3
AD1C000093	257	/dev/sg4
ADIC000094	258	/dev/sg5
AD1C000095	259	/dev/sg6
	X Close	

- 3d. Click Insert to add the device/slot combination to the Type>>Device>>Slot list.
- 3e. For each device and slot, repeat Step 3a. and Step 3b..



te If you want to enable compression on some devices in the Type/Device/Slot list, but not others, you must complete this procedure twice: once to enable compression on selected devices, and a second time to specify devices without compression.

5 Click **Next** to continue.

The Complete Add Drive Task screen appears.

🎒 Add Drive - Micro	soft Internet Explorer	- 🗆 🗵
adic	Complete Add Drive Task You have completed the necessary steps to add a drive. Please review your selections and click Next to apply them click Back to make changes.	n, or
Drive	Associated Library: vault1 Tape Compression: ON Hardware Devices: vault1_dr2 : LTO>>/dev/sg6	
StorNext	🗨 Back 📄 Next 🕨 🗶 Canc	sel]

- 6 Review your selections. Click Next to complete the task or Back to make changes.
- 7 Once a status screen displays the successful addition of the tape drive, click Next.

The Tape Drive Introduction screen appears.

- 8 Do one of the following:
 - Add more tape drives. Click Next to repeat the Adding a Tape Drive procedure (<u>Step 1</u> on page 50).
 - Click **Done** to finish the Adding a Tape Drive procedure.

The **Configuration Wizard** screen (Figure 3 on page 23) is shown with a **Completed** status next to Step 4.

9 Click Next to continue with <u>Step 5: Adding Media</u> on page 53.

Step 5: Adding Media

Use this task to add media to a configured library.



Make sure there are no media in your tape drives before continuing with this procedure.

The **Add Media - Introduction** screen shows a list of libraries along with the number of media that each library can hold.





Make sure that only media you want StorNext to use is in the library. StorNext will use all available tapes and overwrite them.

1 Click **Next** to add media to a configured library.

The Associated Library screen appears.

🏄 Add Media - Micro	osoft Internet Explorer	- 🗆 🗡
adic	Associated Library Select a configured library to add media to. Configured Libraries	Ă
Backup Tape	voult1 scsi_archive1	
StorNext	🗲 Back 📄 Next 🕨 🗶 Can	cel

- 2 On the **Associated Library** screen, select a configured library to which you want to add media, and then click **Next**. If you select a vault, go to <u>Step 5</u> on page 56.
- 3 If you do not select a vault, the **Select Backup Media** screen appears.

Select Backup Media Select the type of supported media to use for system backups. Supported Media Types
Supported Media Types
Backup Tape
StorNext
Back Next Cancel

4 On the **Select Backup Media** screen, select a supported media type, enter the number of the imported media to use for the system backups, and click **Next**.

The Complete Add Media Task screen appears. Go to Step 10 on page 58.

🗿 Add Media - Micro	osoft Internet Explorer	1
adic	Complete Add Media Task You have completed the necessary steps to add media. Please review your selections and click Next to apply them, or click Back to make changes.	-
Backup Tape	Library: scsi_archive1	
StorNext	Back Next X Cancel	T

5 When you select a vault, the **Select Media Type** screen appears. Select the type of media you want to add to the vault.

🚈 Add Media - Micro	osoft Internet Explorer	<u>- </u>
	Select Media Type	4
adic	Select the type of media to add.	
	Media Types	
	3590 ▲ 9840 ↓ LTO AIT 9940 ▼	
Backup Tape		
StorNext		
	A Back Next A Canc	el
		Y

6 On the Select Media Type screen, select the type of media you want to add to the vault. The Add Media IDs screen appears.

🎒 Add Media	- Micro	osoft Internet Explorer	- 🗆 🗙
		Add Media IDs	<u> </u>
adic		Enter a media name or click New Media to create multiple labels for media. Only the selected media will be added to th Vault.	ie
		Media Name	
	~	New Media	
		- Entered Media Names - Select All	
Backup	Таре	Deselect All	
Sto	orNext		
			_
		A Back Next Mext K Cancel	
			-

- 7 On the Add Media IDs screen, do one of the following:
 - Select one or more previously entered media IDs from the list, and click **Next**. Go to <u>Step 10</u> on page 58.
 - Enter the name for the new media in the **Media Name** field. Go to <u>Step 9</u> on page 57.

• Add multiple media labels by clicking the **New Media** button.

After you click New Media, the Create New Media ID screen appears.

🗿 Generate New Media ID's - Microsoft Internet Explorer
adic Intelligent Storage" Create New Media ID
Enter a New Media Label Name
Enter the Number of Media IDs to Generate
Enter a Starting Value for the Media ID Pattern
OK X Cancel Apply

- 8 On the Create New Media ID screen, perform the following steps:
 - a. Enter the new media label name.
 - b. Enter the number of media IDs you want to generate for the label.
 - c. Enter a starting value for the new media ID.
 - d. If you want to create additional media IDs, click Apply and repeat steps a through c.
 - e. When you are finished creating media IDs, click OK.

The Add Media IDs screen is shown again.

9 On the Add Media IDs screen, select one or more media IDs from the list, and then click Next to continue.

The Complete Add Media Task screen appears.

🚰 Add Media - Micro	osoft Internet Explorer	_ 🗆 🗵
adic	Complete Add Media Task You have completed the necessary steps to add media. Please review your selections and click Next to apply then click Back to make changes.	n, or
Backup Tape	Library: vault1 Media Type: 3590 Number of Media: 1	
StorNext	🗨 Back 📄 Next 🕨 🛛 🗶 Can	cel]

- 10 On the **Complete Add Media Task** screen, click Next to finish adding the media, or **Back** to make changes. After the process completes successfully and the **Complete Add Media Task** screen is shown again, do one of the following:
 - Add more media. Click Next to repeat the Add Media procedure (Step 1 on page 54).
 - Click **Done** to finish the Adding Media procedure. The Configuration Wizard screen (Figure 3 on page 23) is shown with a Completed status next to Step 5. Continue with <u>Step 6: Adding</u> <u>Secondary Storage Disks</u>.

Step 6: Adding Secondary Storage Disks

StorNext allows you to specify a file system to use as a storage disk. Storage disks, when defined, become a media type available for use in storage policies as a destination target just like tape media types. This portion of the Configuration Wizard allows you to specify the name of the file system you want to use as a storage disk.

The **Storage Disk - Introduction** screen shows currently configured storage disks and their mount points.

- Microsoft Internet Explorer
Add Storage Disk - Introduction
Storage Disks are treated as a type of Media in the system. To create a Storage Disk, The disks you wish to use must be in a file system that is created and mounted.
Current Storage Disks Mount Point
No Storage Disks Configured
□ Skip To Add Policy Class
Back Next Cancel

- 1 Do one of the following:
 - Click **Next** to add a storage disk.
 - Select Skip to Add Policy Class and follow the procedure in <u>Step 7: Adding a Storage Policy</u> on page 61. (You would want to skip the steps for adding a storage disk if a suitable storage disk is already configured and its name appears in the list of Current Storage Disks.)

The Add Disk Media screen appears.

4	Add Storage Disk	- Microsoft Internet Explorer	
		Add Storage Disk Please select a name for the Storage Disk and the mount point for the file system used as disk media. Select a Directory for Storage Disk Files. The Copy Number is the default for this media that all policy classes will use. Storage Disk Name Storage_Disk_2	*
L		Select a filesystem mount point	
	\mathcal{L}	- Select Mount Point - 💌	
L	Disk	Click Browse to select a directory for Storage Disk files.	
L		Browse	
L			
	Disk	Copy # used for all policy classes	
L	<u> </u>		
	StorNext		
	\vee		
		A Back Next > X Can	cel
			-
1			

- 2 On the Add Storage Disk screen, perform the following steps:
 - 2a. At the Storage Disk Name field, enter the label for the storage disk.
 - 2b. Specify the mount point location for the file system you just named. First, select one of the available file systems. If there are no available file systems, you can use a non-managed file system (nfs or cvrfs). Click **Browse** to create a directory on the mounted file system.

When you enter a new location, the directory screen appears. Click **Create Directory** to create a new directory. Click **OK** to return to the Add Storage Disk screen.



- 2c. At the **Copy # used for all policy classes** field, specify which copy (1-4) policies will write to.
- 2d. Click Next to continue.

The Complete Add Storage Disk Task screen appears.

🎒 Add Storage Disk	- Microsoft Internet Explorer	- 🗆 🗙
	Complete Add Storage Disk Task You have completed the necessary steps to add a Storage : Please review your selections and click Next to apply them, click Back to make changes.	
Disk	Name: Storage_Disk_2 Directory: /stornext/snfs1/pc3/sprout Copy: 1	
Disk	🗲 Back 📄 Next 🕨 🗮 Car	
		-

3 Review the information you entered for the storage disk name, mount point, and copy number (1-4). Click **Next** to save your entries, or **Back** to change information.

The Add Storage Disk Introduction screen appears.

🚰 Add Storage Disk	- Microsoft Internet Explorer	- 🗆 🗵
	Add Storage Disk - Introduction	<u>^</u>
adic	Storage Disks are treated as a type of Media in the system. create a Storage Disk, The disks you wish to use must be in file system that is created and mounted.	To a
	Current Storage Disks Mount Point	
Disk	Storage_Disk_1 - /space:SDISK > Storage_Disk_2 - /stornext/snfs1:pc3/sprout	
	×	
Disk	□ Skip To Add Policy Class	
StorNext		
	Back Next Cancel]
		w.

- 4 On the Add Storage Disk Introduction screen, do one of the following:
 - Click **Next** to add another storage disk.
 - Click **Done** to continue with <u>Step 7: Adding a Storage Policy</u>.

Step 7: Adding a Storage Policy

Use this procedure to create policy classes that logically segregate and control data. Policy class parameters determine storage and truncation rules for files associated with the policy class. The **Storage Policy - Introduction** screen shows configured policy classes.

Add New Storage	Policy - Microsoft Internet Explorer	- 🗆 🗙
Add New Storage	Policy - Microsoft Internet Esplorer Storage Policy - Introduction Policy classes logically segregate and control data. Policy class parameters determine file migration and truncation r Each policy class is a collection of files located under one more relation points (directories). Configured policy classes:	ules.
	Back Done	

1 Click **Next** to add a storage policy.

The Policy Class and Directory screen appears.

i Add N	lew Storage	Policy - Microsoft Internet Explorer	- O ×
		Policy Class and Directory	<u>^</u>
-	adic	Select a policy class and associate it with a directory under a managed file system.	
		Policy Class Name: policyclass2	
	Disk	Click Browse to select a directory with files to be migrated to media.	
	↓ ▼	Browse	
		🖵 Enable Disk-To-Disk	
Ba	ckup Tape		
	> StorNext		
		A Back Next Can	cel
			¥

StorNext File System and Storage Manager Installation Guide

- 2 Enter the name of the policy class.
 - **Note** The policy class can be any combination of letters and numbers, but it must start with a letter and is limited to 16 characters. Do not include periods (.) when naming the policy class.
- 3 Enter the name of the directory that will contain files to be migrated to media.
 - 3a. Click Browse to navigate to an existing directory or create a directory.

The Directory Browser screen appears.



3b. In the Select Directory list, select a directory.

The selected directory is shown in the Current Directory Field.

Curr	ent 🛛	Director	У
stornex	t/snfs1		
Cre	ate D	irectory]
		irectory	_
Di	rector	y List —	
pc1			
pc2			
OK		XC	ancel

3c. Click Create Directory.

You are prompted to add a directory name.

Script Prompt:	OK
Create a new directory under "/stornext/snfs2/poof" Enter directory name	Cancel

3d. Enter the directory name and then click OK.

The directory appears.



3e. Click OK to continue. The Store, Truncate, and Relocate Times screen appears. Note that you need to enter the minimum relocation time only if you selected the Enable Disk-To-Disk option on the The Policy Class and Directory screen.

🎒 Add New Storage	Policy - Microsoft Internet Explorer	- 🗆 🗵
	Store, Truncate, and Relocate Times.	<u> </u>
adic	Enter the minumum store, truncation, and relocation time. The relocation time is only applicable to Disk-To-Disk	
Disk Disk Backup Tape	Minimum Store Time (Minutes): 5 Minimum Truncation Time (Days): 3 Minimum Relocation Time (Days):	
×		
	🗨 Back 📄 🛛 Next 🕨 🗶 Can	cel

• **Minimum Store Time (Minutes)**: The minimum amount of time a file must remain unaccessed before it is considered a candidate for storage.

- **Minimum Truncation Time (Days)**: The minimum number of days a file must remain unaccessed before it is considered a candidate for truncation.
- Minimum Relocation Time (Days): The minimum number of days a file must remain unaccessed on the primary affinity before it is considered a candidate for relocation to a secondary affinity.
- 4 If you selected the Enable Disk-To-Disk option on the Policy Class and Directory screen, the Relocation Policy Selection screen appears.

🚳 Add New S	torage Policy - Microsoft Internet Explorer	
adic	Relocation policy selection. This feature will support the migration of data from one affinity to another. Two affinities must already be configured to continue.	4
	Please Select The Affinity to move the data from.	
Disk	Please Select The Affinity to move the data to. —Affinity To— 💌	
Backup		
Str	rNext	_
	Back Next X Cancel	V

5 On the Relocation Policy Selection screen, specify the affinity from which to move data, and the destination affinity to which data is moved. Click **Next** to continue.

The Number of File Copies and Media Type screen appears.

🎒 Add New Storage	Policy - Microsoft Internet Explorer	_ 🗆 🗙
	Number of File Copies and Media Type.	4
	Enter the number of copies to store for each file, including primary copy file. The maximum number of copies is 4. You can also choose the media type to use for this Policy.	
Disk	File Copy 1 — Media Types — •	
Disk	File Copy 2 Media Types File Copy 3 Media Types	
↓	File Copy 4 - Media Types	
Backup Tape		
StorNext		
	A Back Next Next X Cance	el 🗌
		¥

- 6 On the Number of File Copies and Media Type screen, enter valid values and then click Next.
 - File Copy fields: The number of copies to store for each file. This value includes the primary copy file. The default value is one (1) and the maximum number of file copies is four (4). The copy number assigned to the storage disk determines which copy the storage disk is in.
 - Select Media Type list: The media type to use for this policy.

The Complete Storage Policy Task screen appears.

🎒 Add New Storage	Policy - Microsoft Internet Explorer	- 🗆 🗵
	Complete Storage Policy Task You have completed the necessary steps to add a new policy class. Please review your selections and click Next to create the policy class, or click Back to make changes.	*
Disk	Policy Class Name: policyclass3 Assoc Directory: /stornext/snfs1/pc3/sprout File Copies: 1 Media Type: SDISK Minimum Store Time: 5 min. Minumum Truncation Time: 3 days.	
StorNext	Back Next Cance	

- 7 Review your selections. Click **Next** to complete the task or **Back** to make any changes.
- 8 Once a status screen displays the successful addition of the storage policy, click **Next**.

The Storage Policy Introduction screen appears.

🚈 Add New Storage	Policy - Microsoft Internet Explorer	×
	Storage Policy - Introduction	<u>^</u>
	Policy classes logically segregate and control data. Policy class parameters determine file migration and truncation rules. Each policy class is a collection of files located under one or more relation points (directories).	
	Configured policy classes:	
Disk	policyclass1	
	<u>_</u>	
Backup Tape		
StorNext		
	· · · · · · · · · · · · · · · · · · ·	
	Back Next Done Done	
		-

- 9 Do one of the following:
 - Add more storage policies. Click Next and repeat the Adding a Storage Policy procedure (<u>Step 1</u> on page 61).
 - Click **Done** to finish the Adding a Storage Policy procedure.

The **Configuration Wizard** screen (Figure 3 on page 23) is shown with a **Completed** status next to Step 6.

10 Click Next to continue with <u>Step 8: E-mail Notification</u>.

Step 8: E-mail Notification

The E-mail Notification portion of the Configuration Wizard allows you to specify parties who should be contacted when system alerts occur. You can specify e-mail recipients, alert levels, and information about your e-mail configuration.



Before configuring e-mail notification, make sure your SMTP server is configured.

The Configure E-mail Notification Introduction screen appears.

🙆 E-mail Notificati	on - Microsoft Internet Explorer	
adic	 Configure E-mail Notification - Introduction This wizard helps configure e-mail notification You will need to configure an SMTP server and e-mail addresses 	^
e	Current SMTP server:	-
StorNext		
<	Back Next KC	ancel

1 On the **Configure E-mail Notification Introduction** screen, review your current e-mail settings (if any) and click Next to continue.

The Configure SMTP E-mail screen appears.

ø	E-mail Notification	n - Microsoft Internet Explorer									
	adic	Configure SMTP E-mail • Enter a SMTP Server. If validation is nessessary select Password and fill in Account and password fields. • If the Test box is checked and a valid e-mail is entered a test E-mail will be send on completion of the wizard.									
	e	SMTP Server: Image: C_Password Image									
	StorNext	Back Next ► X Ca	ncel								

- 2 On the **Configure SMTP E-mail** screen, enter the fields related to your e-mail system configuration:
 - **SMTP Server**: Enter the identification for the server that stores and processes your e-mail account information. This might be a valid server name or an IP address.
 - Authentication: If your e-mail provider requires a password upon sign on, select the **Password** option. Otherwise, select **None**.
 - Account: Enter a valid e-mail account for outgoing e-mail messages.
 - **Password**: Enter the e-mail account's sign-on password, if required.
 - **Sender Address**: Enter the e-mail address for the entity sending alert messages to recipients.
 - Send Test E-mail to: Enter an e-mail address to which you can send test messages in order to confirm successful configuration.
- 3 Click Next to continue.

The Configure E-mail Addresses screen appears.

E-mail Notificat	ion - Microsoft Internet Explorer Configure E-mail Addresses Service Tickets require an alert level. E-mail for Service Tickets will be sent for specified alert level and higher. Policy class e-mails require a policy class.
e	E-mail: Backups Service Tickets: -Select Alert Level- Constraints: -Select Policy Class- Add Delete Type Properties E-Mail Addresses
StorNext	Notify ATAC on Service Ticket
<	Back Next Done

- 4 On the **Configure E-mail Addresses** screen, add e-mail recipients by entering the following fields:
 - E-mail: Enter the e-mail address of the person who should receive e-mail alerts.
 - Backups: Select this option to receive e-mail after a backup has occurred on your system.
 - Service Tickets: Select this option to receive e-mail when a service ticket for your system is generated. Notifications for service tickets will be sent for events at the specified alert level and higher. You must specify an alert level.
 - **Policy Class**: Select this option to receive e-mail about policy class. You must specify an alert level.
 - **Notify ATAC on Service Ticket**: Select this option to automatically send ATAC a message when a service ticket is generated.
- 5 Click Add to add to the list of e-mail recipients the e-mail recipient whose information you just entered. Or, select a previously added e-mail recipient from the list and click Delete to remove that recipient.
- 6 Do one of the following:
 - Repeat steps 4 and 5 to add another e-mail recipient.
 - Click **Next** to continue.

The Complete E-mail Configuration screen appears.

ø	E-mail Notification	- Microsoft Internet Explorer	
	adic	Complete E-Mail Configuration You have completed the necessary steps For E-mail Notification. Please Review your selections and click Next to apply them, or click Back to make	1
		changes. SHTP Server Name: 121.12.123	
	e	Send Test E-Mail: No Add E-Hail: stan.dauff@adic.comBackup Remove E-Mail:	
		¥	
	StorNext		
		A Back Next San	icel
			-

- 7 Review your selections and do one of the following:
 - Click Back to change information you entered, or add or remove another e-mail recipient.
 - Click Next to continue.

The initial StorNext software configuration is complete. Use the StorNext GUI to access the software.

4

Installing StorNext Client Software

Once the StorNext software is configured, you can download StorNext client files from the server and install them on StorNext clients. To download client software from a StorNext server, use a supported Web browser. (For a list of supported Web browsers, see <u>Configuring StorNext</u>.)

StorNext client software allows one or more StorNext file systems to be mounted and enables the client to communicate with the StorNext server.

The following procedures provide instructions for installing the StorNext client software in Windows, SGI IRIX, Sun Solaris, Linux (SuSE or Red Hat), IBM AIX, and HP-UX environments.

Note If you used the optional pre-installation configuration, you must first perform the steps for adding a user account and a group account on each machine that you set up as a client. (To perform these steps, refer to <u>Using</u> the Optional Pre-Installation Configuration on page 13).

This chapter contains the following procedures:

- <u>Downloading the Client Software</u> on page 72
- Installing StorNext Client Software on Windows on page 77
- Installing StorNext Client Software on Red Hat Linux on page 91
- Installing StorNext Client Software on SuSE Linux on page 92
- Installing StorNext Client Software on Red Hat Linux on page 91
- Installing StorNext Client Software on Sun Solaris on page 93
- Installing StorNext Client Software on IBM AIX on page 95
- Installing StorNext Client Software on SGI IRIX on page 96

Downloading the Client Software

If the client machine can access a Web browser, use this procedure to download the client software.

1 On a StorNext client, launch a browser and enter the URL with the StorNext server name and port number. For example, <u>http://StorNextServer:81</u>.

The Enter Network Password window appears.

Enter Netw	vork Passwor	d	<u>?×</u>
? >	Please type yo	ur user name and password.	
8	Site:	spock	
	Realm	StorNext Access Verification	
	<u>U</u> ser Name <u>P</u> assword	<u> </u>	
	🔲 <u>S</u> ave this p	assword in your password list	
		OK Can	cel

2 Enter the User ID and password. The default value for both fields is admin, unless changed by your system administrator. Click **OK**.

The StorNext home page appears.

adic Int	telligent Storag	1e ⁷³⁴				Stor	lext					н	ome Help
	Config	Adı	min	Reports	Servic	e	Help						
Home	File Sv	stem Mor	nitor	S Refr	esh					Refresh Rate	No Refresh	•	^
SNFS	File Syste	Total Spa		ce Free Space (GB)	Total Files	# Store Candidates	#Trunc Candidates	# Connections		Status			
SNSM	snfs1	33.90	2.40	31.50	214	Refresh	Refresh	1	10 20	30 40 50	80 70 80 9C		-
	Library	/ Monitor		S Refre	esh						Refresh Ra	ate No Refr	esh 💌
		Library		Library Typ	pe	Library S	ate	Number of	Drives	Capacit		Fill Level	_
		scsi_archive	1	SCSI		Online		2		60		9	
		Drive Name		State	_	Status	_	Mounted	Media				
		csi_archive1 csi_archive1	-	Mounted Unmounte	-	Online	_	00000	_				
	S	_	_arz	,		,							
		Library vault1		Library Typ Vault	pe	Library S Online	ate	Number of	Drives	Capacity 500000		Fill Level	
		vaulti		1 v duit		lounne		lo.		100000		<u>اد</u>	
	Storag	e Disk Mo	onitor										
		Name		Space (GB	i)	Used Space	(GB)	State	9	Copy #	1	# Files	
	5	Storage_Disk	_1	27.44		0.59		Online		1		168	-
StorNext						X System	n Status			Stor	Next Ser	ver 🚺	Active
Basic Administ	ration Page - Al	lows the user t	o operate the	product from one	location							E Local intrane	et

3 From the Admin menu, select Download Client Software.

The Select Platform screen appears.

🥭 Do	wnload Client S	oftware - Microsoft Internet Explorer	
		Select Platform	<u> </u>
	adic	Download the SNFS client for a supported platform.	
F		If the client is already installed and the version of the client on the server is newer than the version on the client, the client installation will be upgraded.	
14	File System	Select the appropriate platform.	
	Disk StorNext	AIX HP-UX Irix Linux Solaris Windows	
		🔍 Back Next 🕨 🗶 Can	cel

4 Select the platform that corresponds to the operating system on the StorNext client and then click **Next**.

The **Download Client Software** screen appears. (Linux is shown as an example.)

The following client packages are available to download:

Operating System	Download File Name
IBM AIX 52	<pre>sn_dsm_aix52_client.tar</pre>
IBM AIX 53	<pre>sn_dsm_aix53_client.tar</pre>
HP-UX 11.23 IA64	<pre>sn_dsm_hpux_B.11.23ia64_client.tar</pre>
HP-UX 11.23 PA-RISC	<pre>sn_dsm_hpux_B.11.23pa-risc_client.tar</pre>
IRIX 6.5.xx	<pre>sn_dsm_irix65m_client.tar</pre>
Linux RedHat 9.0 (Intel 32 bit)	<pre>sn_dsm_linuxRH_9i386_client.tar</pre>
Linux RedHat AS 3.0 (Intel 32 bit)	<pre>sn_dsm_linuxRH_AS_3i386_client.tar</pre>
Linux RedHat AS 3.0 (Intel 64 bit)	<pre>sn_dsm_linuxRH_AS_3x86_64_client.tar</pre>
Linux RedHat AS 3.0 (Intel IA64)	<pre>sn_dsm_linuxRH_AS_3ia64_client.tar</pre>
Linux RedHat AS 4.0 (Intel 32 bit)	<pre>sn_dsm_linuxRH_AS_4i386_client.tar</pre>
Linux RedHat AS 4.0 (Intel 64 bit)	<pre>sn_dsm_linuxRH_AS_4x86_64_client.tar</pre>
Linux RedHat AS 4.0 (Intel IA64)	<pre>sn_dsm_linuxRH_AS_4ia64_client.tar</pre>
Linux SuSE ES 9.0 (Intel 32 bit)	<pre>sn_dsm_linuxSuSE_90i386_client.tar</pre>
Linux SuSE ES 9.0 (Intel 64 bit)	<pre>sn_dsm_linuxSuSE_90x86_64_client.tar</pre>
Linux SuSE ES 9.0 (Intel IA64)	<pre>sn_dsm_linuxSuSE_90ia64_client.tar</pre>
Solaris Sparc 510	<pre>sn_dsm_solaris510sparc64_client.tar</pre>
Solaris Sparc 59	<pre>sn_dsm_solaris59sparc64_client.tar</pre>
Windows 2000/XP/2003	sn_dsm_win2k_client.exe

5 Select the software package that corresponds to your system by clicking the link.



6 Save the file to a location on your local hard drive. Be sure to make a note of this location, because you will need to navigate to it when you're ready to install the client software.

7 After the file download is complete, on the **Download Client Software** screen click **Next** to continue.

The Install Client Software screen appears. (Linux is shown as an example.)

🖉 Download Client S	ioftware - Microsoft Internet Explorer	
Elis System Disk StorNext	Install Client Software Start the installation of the Linux client. In the Linux directory, locate the file that you noted in the last step. Extract the file using: tar st cfilename>' then run: ' Tym -ivh <client name="" package="">'</client> on the resulting file to install the client. When the client is installed, click Next.	4
	A Back Next K Can	cel

8 Follow the directions on the **Install Client Software** screen to install the software for your operating system. When finished, return to the **Install Client Software** screen and click **Next** to continue.

For all operating systems except Windows, the **Configure Client Software** screen appears. (Linux is shown as an example.)

🚰 Download Client Software - Microsoft Internet Explorer 📃 🗌 🗶				
adic	Configure Client Software Configure the Linux client.	*		
	Shift-click the link to download the configuration file for the client.			
E E E E E E	Client Configuration File			
File System	Save the file with the following location and name:			
	/usr/cvfs/config/fsnameservers			
↓ ↓	When the configuration file is downloaded, client installation and configuration is complete.			
Disk	Click Finish to close the window.			
StorNext				
	A Back Finish X Cano	el]		
		V		

- 9 Do one of the following:
 - If you are installing on a Windows operating system, proceed to <u>Step 10</u> on page 76.
 - For all other operating systems, right-click on the **Client Configuration File** link and save the file to the location specified on the **Configure Client Software** screen.

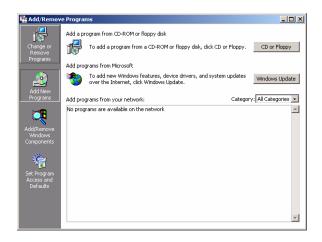
10 Click Finish.

Continue with the Installing Client Software procedure for your operating system.

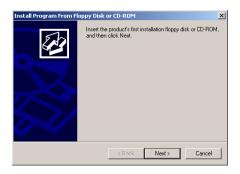
Installing StorNext Client Software on Windows

Use this procedure to install StorNext software on a Windows client.

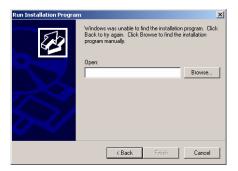
- 1 Open the Control Panel (Start > Settings > Control Panel).
- 2 Launch the Add/Remove Programs utility, and then click Add New Programs.



3 On the Add New Programs window, click CD or Floppy. The Install Program From Floppy Disk or CD screen appears.



4 Click Next. The Run Installation Program screen appears.



5 Click **Browse**. The Browse window appears.



- 6 In the Browse window's Files of type field, click the arrow to the right and select All Files.
- 7 Navigate to the location on your hard drive where you saved the executable file when you downloaded the StorNext client software from the Admin menu.

8 Select the executable file name (for example, sn_dsm_win2k_client.exe), and then click Open to launch the installation program.

The Windows Installation Wizard launches.

🛃 StorNext File System for V	Vindows - InstallShield Wizard	×
	Welcome to the InstallShield Wizard for StorNext File System 2.7.0.63 for Windows The InstallShield Wizard(TM) will help install StorNext File System 2.7.0 & 3 for Windows on your computer. To continue, click Next.	_
	<pre></pre>	-

9 Click **Next** to continue.

The InstallShield screen appears.

StorNext File System		×
	Welcome to the InstallShield Wizard for StorNext File System The InstallShield® Woard will install StorNext File System on your computer. To continue, click Next.	
	< Back. Next > Cancel	

10 Click Next to continue.

The License Agreement screen appears.

License Agreement	
Please read the following license agr	eement carefully.
Press the PAGE DOWN key to see the	he rest of the agreement.
AGREEMENT NOTICE TO END US LEGAL AGREEMENT. USE OF THE AGREEMENT (THE SOFTWARE) CONSTITUTES DO NOT AGREE TO THE TERMS' SOFTWARE AND THE ACCOMPAN AND	IN CORPORATION END USER LICENSE LENS: CAREFULLY READ THE FOLLOWING SOFTWARE PROVIDED WITH THIS YOUR ACCEPTANCE OF THESE TERMS, IF YOU OF THIS AGREEMENT, PROMPTLY RETURN THE YING MATERIAL (INCLUDING DOCUMENTATION WHERE YOU OBTAINED THEM FOR A FULL
tallShield	

Accept the License Agreement and click Next.The Select Destination screen appears.

Select folder where Setup will install files. Setup will install StorNext File System in the following folder. To install to this folder, click Next. To install to a different folder, click Browse and select another folder. Destination Folder.	hoose Destination Location	
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.		all files.
Destination Folder	Setup will install StorNext File Syst	em in the following folder.
		To install to a different folder, click Browse and select
DI D		
	Destination Folder	
	Destination Folder C:\SNFS	Browse
allShield		Browse

- **12** Do one of the following:
 - Accept the default destination and click Next.
 - Click Browse to select an installation destination directory and click Next.
 - The Select Components screen appears.

orNext File System		
StorNext File System Compon	nents	
Select any or all of the component	nts.	
🖌 Help Files		1247 K
Client Files		3620 K
Destination Folder		
Destination Folder		Browse
C:\SNFS	10104 /	Browse
C:\SNFS Space Required on C:	10184 K	Browse Disk Space
C:\SNFS	10184 K 31404713 K	

13 Accept the default settings and click Next.

The Select Program Folder screen appears.

elect Program Folder		
Please select a program folder.		
Setup will add program icons to the Progra name, or select one from the existing folder		
Program Folders:		
StorNext File System		
Existing Folders:		
Accessories Administrative Tools		^
Adobe CoreIDRAW Graphics Suite 12		
Intel Network Adapters Java Web Start		
Lavasoft Ad-Aware SE Personal		
Logitech Macromedia		-
Imacromedia		
	< Back Ne	xt> Cancel

14 Accept the default settings and click Next.

The Start Copying Files screen appears.

orNext File System	2
Start Copying Files Review settings before copying files.	
	opying the program files. If you want to review or are satisfied with the settings, click Next to begin
Current Settings:	
Target Directory: C:\SNFS	<u> </u>
Client Files Selected.	
Help Files Selected.	
Program Folder: StorNext File System	
1	
stallShield	
	< Back Next > Cancel

15 Review the settings to make sure they are satisfactory and click **Next**.

A progress window in shown. You are prompted whether you want to explore the StorNext Help Files during the rest of the installation.

View Sto	Next File System Help Folder	×
?	Would you like to be able to explore the StorNext File System Help Files during the rest of the installation? Answering Yes' will open a Windows Explorer Folder. Double click on the 'Index' icon to see the Table of Contents.	
	<u>Y</u> es <u>N</u> o	

16 Do one of the following:

- Click Yes to see the help files.
- Click No to go to Step 17 on page 83.

If you click Yes, a browser appears that lists the StorNext help files.

File Edit View Favor	ites Tools	Help		1
🔶 Back 🔹 🤿 👻 🗎 🌾	Search 9	🗄 Folders 🎯 📲 🎙	s×∽ ≣•	
Address 🗋 C:\SNFS\help				▼ @Go
Name 🛆	Size	Туре	Modified	
AuthenticationGU		File Folder	1/3/2006 2:38 PM	
ClientWorkstation		File Folder	1/3/2006 2:38 PM	
🗋 ComponentDrawi		File Folder	1/3/2006 2:38 PM	
FabricatedID_files		File Folder	1/3/2006 2:38 PM	
🗋 Images		File Folder	1/3/2006 2:38 PM	
index_files		File Folder	1/3/2006 2:38 PM	-
setup_files		File Folder	1/3/2006 2:38 PM	
StorNextUserMan		File Folder	1/3/2006 2:38 PM	
StorNextUsrMgmt		File Folder	1/3/2006 2:38 PM	
🗋 UnixFilePermissio		File Folder	1/3/2006 2:38 PM	
UnixNameService		File Folder	1/3/2006 2:38 PM	
UserMappingBack		File Folder	1/3/2006 2:38 PM	
WindowsActiveDir		File Folder	1/3/2006 2:38 PM	
🗋 WindowsDomains		File Folder	1/3/2006 2:38 PM	
WindowsSIDs_files		File Folder	1/3/2006 2:38 PM	
AuthenticationGU	15 KB	HTM File	12/30/2005 3:20 PM	
ClientWorkstation	9 KB	HTM File	12/30/2005 3:20 PM	
ComponentDrawi	2 KB	HTM File	12/30/2005 3:20 PM	
ComponentDrawi	364 KB	Microsoft Visio Draw	12/30/2005 3:20 PM	
🜒 cvadmin. 1. html	21 KB	HTML File	12/30/2005 3:20 PM	
🜒 cvadmin.htm	1 KB	HTM File	12/30/2005 3:20 PM	
💼 cvaffinity. 1 . html	5 KB	HTML File	12/30/2005 3:20 PM	
🜒 cvaffinity.htm	1 KB	HTM File	12/30/2005 3:20 PM	
🜒 cvapi.htm	3 KB	HTM File	12/30/2005 3:20 PM	-
9 object(s)			940 KB	My Computer

17 The installation wizard prompts you to select options to complete the installation.





On the Choose Options to Complete the Installation screen, do NOT select the option to Label my StorNext File System Disk Devices check box. During the initial installation of the SNFS software, the disks have already been labeled during server setup. If you re-label your operating system disk, you will have to completely rebuild your machine or restore it using an operating system backup.

18 Select or leave blank the Label my StorNext File System Disk Devices option, and then click Next.

The File System Name Service Locations screen appears.

StorNext File System			×
File System Name Service Locations			
Enter the Host Names or IP Addresses of the must be comma (,) separated. There should be			
1			
InstallShield			
	< Back	Next >	Cancel

19 Enter the computer name or IP address in the field and click **Next**. ADIC recommends entering the IP address rather than a computer name. You can also enter more than one IP address.

A confirmation screen appears.

StorNext File System Confirm File System	Name Services Ho	st List		
File System Name Se	rvices Host Names:			
Frodo				*
InstallShield				r F
		< Back	Next >	Cancel

20 Verify the computer name or IP address and click **Next** if correct or click **Back** if you need make changes.

A prompt appears.

Establish	StorNext File System Drive Mapping and Credentials?
?	Do you want to establish your disk drive mapping(s)? If you do not want to do this at this time, mappings can be established using the StorNext File System control panel applet later.
	Yes No

21 You are prompted to establish mapping and authentication credentials. Click Yes.

The **Client Properties** screen appears.

rive Mappings	FS Name Servers	Authentication Mount Optio	ns Syslog Level	Cache Parameters	
Map Drive					
Drive:	J:	Map			
File System:					
Select Drive					
Selected d	ive will be used for c	onfiguration in other tabs.			
Drive:	-]			
Unmap Drive					
		- Unmap			
 Disp	lay File System Critic	al Events to Desk Top			
	lay File System Critic ble SNFS Portmappi				

This screen enables you to modify StorNext FS client properties on the drives. It consists of six tabs in which to make changes. **Drive Mappings** is the first tab shown.

- Map Drive parameters:
 - Drive menu: Select a drive for the file system association.
 - File System menu: Enter a file system name for the mapping association or select one from the drop-down list.
 - Map button: Click Map to map StorNext FS to the selected drive letter.
- Select Drive parameter:
 - **Drive**: Select a file system drive mapping that will become the focus for the other configuration tabs.
- Unmap Drive parameter:
 - Unmap: Select a drive and click Unmap to remove the connection to the drive letter.
- Display File System Critical Events to Desk Top check box: Enable this option (check the box) to display StorNext FS critical event notifications to the Desktop via a Windows dialog box.
- **Disable SNFS portmapper** check box: Select this option (check the box) if you want to disable StorNext FS's portmapper feature.

- 22 Select a drive to map to from the Drive drop-down list.
- **23** In the **File System** drop-down list, select a file system to associate with the drive and click **Map**. The remaining information on the screen is automatically populated.
- 24 Review your settings and click FS Name Servers.

The FS Name Servers tab appears.

t Properties	?
Dervers Authentication Mount Options Syslog Level Cache Parameters	
	Eemove Move Lp

From this tab you can add, remove, or change the name of the Name Servers.

- FS Name Servers: Displays the list of SNFS Name Servers.
- Blank: Enter the name of a new FS Name Server.
- Add: Click this button to add a new FS name server to the FS Name Servers list.
- **Remove**: To remove a server, select one from the FS Name Servers list, click this button, and then click **OK**.
- Move Up: To move the server one place above the previous server on the list, select it from the FS Name Servers list, and click this button.
- Move Down: To move the server one place below the previous server on the list, select it from the FS Name Servers list, and click this button.

25 Make your changes or verify your servers are properly named and click **Authentication**.

The Authentication tab appears.

	Mount Options Syslog Level Cache Parameters
Windows User ADICVAgie ADICVAgie ADICVASISTIAU,USR ADICVEPODperator ADICVEPODperator ADICVARCHAIDGenator ADICVARCHAIDGenator ADICVARCHAIDGENAT ADICVARCHAIDGENATO ADI	Active Directory
	the only mapping method supported in a future release. dialog will be depreciated.

- 😻 Note
- The Authentication tab applies only to Windows clients part of StorNext file systems that are accessed by non-Windows clients such as UNIX or Linux clients. You needn't change any values on the Authentication tab if your StorNext installation is Windows only and you do not plan to add non-Windows clients. If you have a Windows-only installation, skip to <u>Step 26</u> on page 88.

This tab allows you to configure user authentication.

- Windows User Names: Select the Windows user name you would like to map. Then, select one of the following three methods:
 - Active Directory: Select this button to use the Lightweight Directory Access Protocol (LDAP) method for mapping. LDAP/RFC 2307 is used to obtain the Active Directory/ Services for UNIX (SFU) mapping for the selected Windows user name. Active Directory will be the only mapping method supported in a future StorNext release. This check box enables Active Directory only if the Windows client is part of an Active Directory domain.
 - PCNFSD Server: Select this button if your system uses Personal Computer Network File System Daemon (PCNFSD) authentication, and enter the IP address for the desired PCNFSD server.
 - **NIS Domain**: Select this button if your system uses NIS authentication, and enter the NIS domain and server names.

- File Creation Permissions check boxes: Select any combination of these check boxes to set the default UNIX R (Read) or W (Write) access permissions for files created by the selected user. These permission check boxes apply only to PCNFSD and NIS mapping methods, not to the Active Directory method. This is an optional step, so you needn't select any of the check boxes to authenticate user names.
 - **User**: Specifies read and/or write capabilities for the owner of the file. of the file.
 - Group: Specifies read and/or write capabilities for the file's group.
 - Everyone: Specifies read and/or write capabilities for all other users and groups.
- 26 Enter valid values and click Mount Options.

The Mount Options tab appears.

rNext File System Client Prop trive Mappings FS Name Servers		Parameters
Mount Retransmits	Debug Disable Buffer Cache Hard Reconnect Allow Diskless Mount Hard Mount Fast Falover Detection Read Only Delay Atime Updates Hand Mount Paged DirCache Paded DurCache Paded DurCache Protect Predectation	
QOS Token Hold Time	New File Name Case	
	ОК	Cancel Help

The mount options shown are associated with the initial disk drive mapping that you set for **Drive Mappings**.

Changing these options could adversely affect your system or performance, so exercise extreme caution when changing any of these values. You should not change the default values unless you have been instructed to do so by a Professional Services representative.

- Async I/O Threads: The number of threads created to be used as asynchronous I/O threads for user applications.
- System Threads: The number of threads created for use by the file system.
- Retransmissions: The number of attempts to be made for sending a message to the FSS.
- TimeOut (1/10 sec): The amount of time before a message to the FSS times out.
- Mount Retransmits: The number of times the driver will re-transmit a message to the FSS.

- **QOS Token Hold Time**: This parameter is only applicable when using the StorNext FS Quality of Service (QOS) feature for real-time I/O. This parameter determines the number of seconds that a client stripe group will hold on to a non-realtime I/O token during periods of inactivity.
- Debug: Check this box to place debug logs in the System Event log.
- Hard Reconnect: Check this box to endlessly attempt reconnects to the FSS.
- Hard Mount: Check this box to endlessly attempt to mount the file system.
- Read Only: Check this box to mount the file system in read-only mode.
- **Paged DirCache**: This option controls how the directory cache buffer is allocated. The default is to allocate the buffer from the Windows "non-paged" pool, which is a limited memory resource. For backward compatibility reasons the default for this option is unchecked, which causes the directory cache buffer to be allocated from the non-paged pool. Checking this box allocates the buffer from the paged pool. To reduce memory contention in the non-paged pool, this box should be checked
- I/O Timeout (60 sec): This option controls whether SNFS times out an I/O after 60 seconds. When this option is checked (the default), SNFS will attempt to cancel a request made to the disk driver if the I/O does not complete before the timeout expires. In this case, STATUS_TIMEOUT is returned to the application. When this option is unchecked, SNFS waits indefinitely for an I/O to complete.
- Disable Buffer Cache: Check this box to disable the system from buffering any files.
- Allow Diskless Mount: Check this box to allow the file system to be mounted and accessed without all disks being accessible in the stripe group.
- Fast Failover Detection: Check this box to enable a more aggressive detection of a file system failure.
- **Delay Atime Updates**: Check this box to have the file system delay the access time when reading a file to when the file is closed.
- Readonly Directories: Check this box to have all directories set to read-only mode.
- **Protect Preallocation**: This option disables the preallocation parts of the extapi (used by cvmkfile and cvcp) for users other than root/administrator. Enabling this option prevents unauthorized users from preallocating regions of the file system for a file and then searching the data. When this option is selected, only root/administrator can preallocate.
- File Name Case Insensitive Check this box to activate the New File Name Case area.
- New File Name Case area:
 - Preserve Case: Select this button to keep text as it is entered.
 - Convert to Lower: Select this button to convert all text to lower-case.
 - **Convert to Upper**: Select this button to convert all text to upper-case.

27 Review the options and click OK.



The tabs **Syslog Level** and **Cache Parameters** are not modified during the installation of StorNext. If you need to modify these parameters, contact ATAC. Refer to .<u>Customer Assistance</u> on page 97.

The Setup Finish screen appears.

StorNext File System	
	StorNext File System Setup The installation is completed.
	☐ View the Readme file.
	< Back Finish Cencel

28 Click Finish.

You are prompted to reboot your system, but do not reboot at this time.



- **29** Verify that the installation is complete by checking for both the cvfs.sys and cvfsfilter.sys files in the following directories:
 - For Windows 2000:

c:\%windir%\system32\drivers

• For Windows XP and 2003 Server:

c:\%windir%\system32\drivers

30 Restart the machine.

Installing StorNext Client Software on Red Hat Linux

Use this procedure to install the StorNext software on a Red Hat Linux client.

- 1 Log on as root.
- 2 Install the client software. Type:

tar xf <filename>
rpm -ivh <client package name>

Where <filename> is the name of the client installation program.

3 Enable the chkconfig levels to start automatically on reboot Type:

chkconfig --level 3456 cvfs on

- 4 Make sure the /usr/cvfs/config/fsnameservers file contains the name of the server machine.
- 5 Create the mount points for the file systems. Type:

mkdir -p <mount point>
chmod 777 <mount point>

6 Add the following line to the /etc/fstab file to enable automount after reboot.

<file system name> <mount point> cvfs verbose=yes 0 0

where *<file system name>* is the name of the file system and *<mount point>* is the mount point specified during the Add File System step of the StorNext software configuration. For more information, refer to <u>Step 2: Adding File Systems</u> on page 28.



To manually mount a file system, type this command: mount -t cvfs <file system name> <mount point>

Installing StorNext Client Software on SuSE Linux

Use this procedure to install StorNext software on a SuSE Linux client.

- 1 Log on as root.
- 2 Install the client software. Type:

```
tar xf <filename>
rpm -ivh <client package name>
```

Where <filename> is the name of the client installation program.

3 Enable the chkconfig levels to start automatically on reboot. Type:

```
chkconfig -s raw 235
chkconfig -s cvfs 345
```

- 4 Make sure the /usr/cvfs/config/fsnameservers file contains the name of the server machine.
- 5 Create the mount points for the file systems. Type:

```
mkdir -p <mount point>
chmod 777 <mount point>
```

6 Add the following line to the /etc/fstab file to enable automount after reboot.

<file system name> <mount point> cvfs verbose=yes 0 0

where *<file* system name> is the name of the file system and *<mount* point> is the mount point specified during the Add File System step of the StorNext software configuration. For more information, refer to <u>Step 2: Adding File Systems</u> on page 28.



To manually mount a file system, type this command: mount -t cvfs <file system name> <mount point>

Installing StorNext Client Software on Sun Solaris

Use this procedure to install StorNext software on a Solaris client.

- 1 Log on as root.
- 2 Install the client software. Type:

```
tar xf <filename>
pkgadd -d .
Select to add the package `ADICsnfs'
type y (yes, add the package)
type q (quit the pkgadd program)
```

Where <filename> is the name of the client installation program.

- 3 Make sure the /<usr>/cvfs/config/fsnameservers file contains the name of the StorNext server.
- 4 Create the mount points for the file systems.

mkdir -p <mount point>
chmod 777 <mount point>

5 Add the following line to the /etc/vfstab file to enable automount after reboot.

<file system name> - <mount point> cvfs - auto verbose=yes

where *<file system name>* is the name of the file system and *<mount point>* is the mount point specified during the Add File System step of the StorNext software configuration. For more information, refer to <u>Step 2: Adding File Systems</u> on page 28.



To manually mount a file system, type this command: mount -F cvfs <file system name> <mount point>

Installing StorNext Client Software on HP-UX

Use this procedure to install StorNext software on an HP-UX client.

- 1 Log on as root.
- 2 Install the client software. Type:

tar xf <filename>

swinstall -s <full path of depot file> -x mount_all_filesystems=false *

Where <filename> is the name of the client installation program. Make sure the /usr/cvfs/ config/fsnameservers file contains the name of the StorNext server.

3 Create the mount points for the file systems. Type:

mkdir -p <mount point>
chmod 777 <mount point>

4 Add the following line to the /etc/fstab file to enable automount after reboot. Type:

<mount point> <mount point> cvfs rw,fsname=<fsname> 0 0

where *system name* is the name of the file system and *mount point* is the mount point specified during the Add File System step of the StorNext software configuration. For more information, refer to <u>Step 2: Adding File Systems</u> on page 28.

5 Reboot the client to rebuild the UNIX kernel.



To manually mount a file system not listed in the fstab file, type the following command: mount -F cvfs <mount point> <mount point>

If listed in the fstab file, use the command mount -F cvfs <mount
point>

Installing StorNext Client Software on IBM AIX

Use this procedure to install StorNext software on an AIX client.

- 1 Log on as root.
- 2 Copy the .tar file to your hard drive.

For example:

cp sn_dsm_aix_client.tar <directory>

3 Install the client software.

```
tar xf <filename>
```

```
installp -ac -d filename all
```

Where <filename> is the name of the client installation program.

- 4 Make sure the /usr/cvfs/config/fsnameservers file contains the name of your server machine.
- 5 Create the mount points for the file systems.

```
mkdir -p <mount point>
chmod 777 <mount point>
```

6 Add the following line to /etc/filesystems to enable automount after reboot.

```
crfs -v cvfs -d <file system name> -a verbose=yes -a type=cvfs -A yes -
m <mount point>
```

where *system name* is the name of the file system and *mount point* is the mount point specified during the Add File System step of the StorNext software configuration. For more information, refer to <u>Step 2: Adding File Systems</u> on page 28.

Installing StorNext Client Software on SGI IRIX

Use this procedure to install StorNext software on an IRIX client.

- 1 Log on as root.
- 2 Install the client software. Type:

tar xf <filename> inst -f . Inst> go

Inst> quit

Where <filename> is the name of the client installation program.

3 Enable StorNext to start automatically on reboot. Type:

chkconfig cvfs on chkconfig verbose on

- 4 Make sure the /<usr>/cvfs/config/fsnameservers file contains the name of the StorNext server.
- 5 Create the mount points for the file systems. Type:

mkdir -p <mount point>

chmod 777 <mount point>

6 Add the following line to the /etc/fstab file to enable automount after reboot. Type:

<file system name> <mount point> cvfs verbose=yes 0 0

where *<file system name>* is the name of the file system and *<mount point>* is the mount point specified during the Add File System step of the StorNext software configuration. For more information, refer to <u>Step 2: Adding File Systems</u> on page 28.

7 Reboot the client to rebuild the UNIX kernel.

NoteTo manually mount a file system, type the following command:
mount -t cvfs <file system name> <mount point>

5

Customer Assistance

If you want more information about your product, go to the StorNext website or contact the ADIC Technical Assistance Center (ATAC).

StorNext Website

For the latest information and accessories for the StorNext, visit the product website at <u>www.adic.com/stornext</u>. The most recent versions of all documents are also located here.

ADIC Technical Assistance Center

If problems cannot be solved with the aid of this document or if training is desired, contact ATAC.

In the USA:	800-827-3822
In Europe and Japan:	00-800-9999-3822
For other contact numbers:	www.adic.com/contact
To open a Service Request online:	www.adic.com/techsup

ADIC Technical Assistance Center (ATAC)

The ADIC customer help desk.

Affinity

An association between a relation point in the file system and a stripe group. It allows the user to direct data to specific primary disks by writing to the affinities associated relation point.

Clean Media

The operation of logically removing old file versions from a piece of media. This is a database operation that removes knowledge of managed files that have been updated or removed. A piece of media that contains nothing but removed files will not be considered blank until it is cleaned.

Configuration Wizard

A tool for setting up a basic environment for the management of data, both on disk and on removable media (tape or disk). It appears the first time the administrator connects to the browser after installing StorNext.

Data Storage Manager (DSM)

One of several components that make up StorNext. The DSM corresponds to the StorNext File System.

Drive Pool

A grouping of drives for use in storing and retrieving data.

Fibre Channel (FC)

A high speed data transfer architecture.

File Transfer Protocol (FTP)

The protocol used on the Internet for sending files.

GUI

Graphical User Interface.

Managed Directory

A directory that has a policy class relationship.

Managed File System

A file system that enables automatic data movement managed by StorNext Storage Manager between the primary disk and secondary storage (either disk or tape).

MediaClass

A grouping of media used for storing or retrieving data.

Media Storage Manager (MSM)

The Media Storage Manager is responsible for controlling media and archives.

PolicyClass

A set of rules and criteria set up by SNSM that control the movement of data between primary disk to secondary storage (either disk or tape).

Quota

This variable enables or disables the enforcement of the file system quotas.

Recover

The process of bringing back to disk a managed file that was previously removed from the disk. This can only be done if the file had been successfully stored to media. Also, the file cannot not exist in the Trash can. (See Undelete) File recovery can be done regardless of whether the Trash can is enabled, up until the time the containing media is cleaned.

Relation Point/Relations

A mapping of a policy class to a directory in a managed file system.

Relocation

The process of moving a file from one affinity on a file system to another affinity on that file system.

Restore

The process of replacing a file system's contents after some sort of disaster. Also known as disaster recovery.

Retrieve

The process of retrieving data for a file from secondary storage (either disk or tape).

RHAS

Red Hat Advanced Server

RHEL

Red Hat Enterprise Linux

SCSI

Small Computer System Interface. The interface that is used to talk to most hardware devices such as tape and libraries.

StorNext

A scalable, high performance, data management solution that ensures the long-term safety and recoverability of data in SAN environments, while optimizing the use of storage resources. It consists of two components, the StorNext Storage Manager (SNSM) and the StorNext File System (SNFS).

Storage Area Network (SAN)

A SAN is a dedicated, high-performance network whose primary purpose is the transfer of data along FC or high-speed Ethernet connections between servers, interconnect devices, and storage peripherals.

StorNext File System (SNFS)

One of the two components that make up StorNext. SNFS is primarily used to provide Fibre Channel connections (but supports other types of connections) in a serverless environment which enables clients to access data and share files.

StorNext Storage Manager (SNSM)

One of two components that make up StorNext. One of two components that make up StorNext. SNSM provides archive functionality, including file migration and management services.

Store

The process of copying data for a file to secondary storage (either disk or tape).

Stripe Group

A set of similar storage devices that can be maintained as a group.

Tertiary Storage Manager (TSM)

The Tertiary Storage Manger is responsible for policy management and controlling data movement between primary disk and secondary storage (either disk or tape).

Trash can

A repository for files deleted from the file system but not yet permanently removed. Files in the trash can may be recovered or undeleted if necessary.

Truncation

The process of freeing data blocks stored to secondary storage (either disk or tape). The file name remains visible in the file system.

Undelete

The process of returning a file from the Trash can to its original location on disk. This can be done only if the Trash can is enabled.

Unmanaged File System

A file system that does not have archive capability controlled by SNSM.

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