

SANtricity[®] Storage Manager

Installation Guide for Version 9.1x

ES1799-1-E1, First Edition



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Document Description

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Document Conventions

Definitions of Safety Notices



DANGER Indicates an imminently hazardous situation that will result in death or severe personal injury.



WARNING Indicates a potentially hazardous situation that could result in death or severe personal injury.



CAUTION Indicates a potentially hazardous situation that could result in moderate or minor personal injury.

Definitions of Informational Notices

CAUTION Indicates a potentially hazardous situation that could result in data loss (or other interruption) or equipment damage.

IMPORTANT Indicates information or criteria that is necessary to perform a procedure correctly.

NOTE Indicates a clarification of a concept or presents a maintenance tip.

Typographic Conventions

Italic indicates the title of documents, variables and placeholders in text, emphasized words, and new terms.

Bold indicates choices in procedures and other emphasized text.

`Monospace` indicates arguments, code examples, command-line text, command options, commands, directories, error messages, file names, folders, on-screen text, and user input.

Monospace italic indicates command variables in code, parameters, and placeholders and variables in code.

Monospace bold indicates keywords and values.

About This Document

This document describes the procedures for installing the SANtricity Storage Manager software in native operating system environments. It assumes that the user has a knowledge of basic storage area network (SAN) software and installation skills.

Intended Readers

This document is intended for system administrators and service personnel who are responsible for installing software on host operating systems. Readers must be familiar with operating systems, software installation, and storage management.

Related Publications

These documents contain additional information that might be relative to this document. You can find these documents on the SANtricity Storage Manager software installation CD.

- *SANtricity® Storage Manager Command Line Interface and Script Commands Programming Guide for Version 9.19*
- *SANtricity Storage Manager Command Line Interface and Script Commands Quick Reference for Version 9.19*
- *SANtricity Storage Manager Concepts Guide for Version 9.19*
- *SANtricity Storage Manager Firmware Upgrade Guide for Version 9.19*
- *Storage System Product Release Notes for Version 9.19*

Manually Installing the SANtricity Storage Manager Software for the Linux OS

This chapter includes procedures to manually install the applicable software packages of the SANtricity Storage Manager software on the Linux operating system (OS). In addition, this chapter includes steps to verify the installation.

Preparing for Installation

Before you install the client software, you must install the runtime software. A system restart is only required when installing the Redundant Dual Active Controller (RDAC) driver package. The event monitor software is installed automatically during client software installation.

In these procedures, you must enter commands to install the appropriate software packages. After each initial command, the software installation starts. When the installation is completed, a message indicates that the installation was successful. You are returned to the command prompt.

IMPORTANT If your current version of the storage management software is version 9.12 and you are upgrading to the Linux 2.6 Kernel, you must install an updated version of the RDAC package.

- 1 Make sure that you have root privileges, which are required to install the software.
- 2 Insert the installation CD into the CD-ROM drive and, if necessary, mount the CD-ROM drive.
- 3 Based on your operating system, choose one of these commands, and then press Enter:

```
cd /<mount-point>/<installation-folder>/native/32 bit (x86)
```

```
cd /<mount-point>/<installation-folder>/native/64 bit (ia64)
```
- 4 Go to [“Installing the SANtricity Storage Manager Software for the Linux OS”](#) on page 1-2.

Installing the SANtricity Storage Manager Software for the Linux OS

Depending on your storage array configuration, you must complete the installation of several software packages, which are described in these sections.

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Installing the SMruntime Package for the Linux OS

Installing the SMruntime package is necessary for both hosts and storage management stations.

- 1 If necessary, go to the directory on the CD that includes the package you want to install, as shown in [“Preparing for Installation”](#) on page 1-1.
- 2 To install the SMruntime package, type this command, and then press Enter. In this command, *<SMruntime-LINUX>* is the name of the SMruntime package.

```
rpm -ivh <SMruntime-LINUX>.rpm
```

- 3 To verify the installation of the SMruntime package, type this command, and then press Enter.

```
rpm -q SMruntime
```

- 4 Was the installation successful (no failure reported)?
 - **Yes** – Go to [“Installing the SMclient Package for the Linux OS”](#) on page 1-3.
 - **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMclient Package for the Linux OS

Installing the SMclient package is necessary only if the system is a storage management station or if the system is a host acting as a storage management station. If you are not installing SMclient, go to “[Installing the RDAC Package for the Linux OS](#)” on page 1-3.

- 1 If necessary, go to the directory on the CD that includes the package you want to install, as shown in “[Preparing for Installation](#)” on page 1-1.
- 2 To install the SMclient package, type this command, and then press Enter. In this command, *<SMclient-LINUX>* is the name of the SMclient package.

```
rpm -ivh <SMclient-LINUX>.rpm
```

- 3 To verify the installation of the SMclient package, type this command, and then press Enter.

```
rpm -q SMclient
```

- 4 Was the installation successful (no failure reported)?
 - **Yes** – Go to “[Installing the RDAC Package for the Linux OS](#).”
 - **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the RDAC Package for the Linux OS

Installing the RDAC package is necessary only if the system is a host. The RDAC package installs the failover driver. A system restart is required after installing the RDAC driver package. If you are not installing RDAC, go to “[Installing the SMutil Package for the Linux OS](#)” on page 1-6.

IMPORTANT For information on supported levels of HBA drivers, refer to the *Storage System Product Release Notes for Version 9.19*.

- 1 Before you install RDAC, make sure that the HBA driver is loaded. The HBA driver must be a non-failover driver. If there are mixed HBAs, make sure that only one supported model of HBA is connected to the storage array.
- 2 If necessary, go to the directory on the CD that includes the package you want to install, as shown in “[Preparing for Installation](#)” on page 1-1.

- 3 Unzip the RDAC tar.gz file by typing this command, and then pressing Enter.

```
gunzip filename
```

- 4 Uncompress the RDAC tar file by typing this command, and then pressing Enter.

```
tar -xvf filename
```

5 Go to the Linux RDAC directory.

6 To uninstall the previous version of the RDAC driver, type this command, and then press Enter.

```
make uninstall
```

7 To remove the old driver modules in that directory, type this command, and then press Enter.

```
make clean
```

8 To compile all driver modules and utilities in a multiple CPU server (SMP kernel), type this command, and then press Enter.

```
make
```

9 Type this command, and then press Enter.

```
make install
```

These actions result from running this command:

- The driver modules are copied to the kernel module tree.
- The new RAMdisk image (`mpp-`uname -r`.img`) is built, which includes the RDAC driver modules and all of the driver modules that are needed at boot.

10 Follow the instructions displayed at the end of the build process to add a new boot menu option that uses `/boot/mpp-`uname -r`.img` as the initial RAMdisk image.

After RDAC is installed, perform these steps:

NOTE You can also use the instructions that are included in the `readme.txt` file on the installation CD.

1 Restart the system using the new boot menu option.

2 Make sure that these driver stacks were loaded after restart:

- `scsi_mod`
- `sd_mod`
- `sg`
- `mppUpper`
- The physical HBA driver module
- `mppVhba`

3 Type this command, and then press Enter.

```
/sbin/lsmmod
```

- 4 To make sure that the RDAC driver discovered the available physical volumes and created virtual volumes for them, type this command, and then press Enter.

```
execute /opt/mpp/lsvdev
```

You can now send I/O to the volumes.

- 5 If you make any changes to the RDAC configuration file (`/etc/mpp.conf`) or the persistent binding file (`/var/mpp/devicemapping`), run the `mppUpdate` command to rebuild the RAMdisk image to include the new file. In this way, the new configuration file (or persistent binding file) can be used on the next system restart.
- 6 To dynamically reload the driver stack (`mppUpper`, physical HBA driver modules, `mppVhba`) without rebooting the system, perform these steps:

NOTE The use of the `modprobe` command with the RDAC driver stack or the use of the `rmmmod` command to remove all of the drivers in the RDAC driver stack, in order, is not recommended nor supported.

- a Type this command to unload the `mppVhba` driver, and then press Enter.

```
modprobe -r mppVhba
```

- b Type this command to unload the physical HBA driver, and then press Enter, where *physical-hba-driver-modules* are the names of the modules.

```
modprobe -r "physical-hba-driver-modules"
```

- c Type this command to unload the `mppUpper` driver, and then press Enter.

```
modprobe -r mppUpper
```

- d Type this command to reload the `mppUpper` driver, and then press Enter.

```
modprobe mppUpper
```

- e Type this command to reload the physical HBA driver, and then press Enter.

```
modprobe "physical-hba-driver-modules"
```

- f Type this command to reload the `mppVhba` driver, and then press Enter.

```
modprobe mppVhba
```

- 7 Restart the system whenever there is an occasion to unload the driver stack.
- 8 Disable the Auto Volume Transport (AVT).

The Linux OS SCSI device names might change when the host system reboots.

The `/etc/syslog.conf` file should have entries for `kern.debug`, `kern.notice`, `kern.info`, and `kern.warning` to capture all debug and error messages for the RDAC driver.

- 9 Use a utility, such as `devlabel`, to create user-defined device names that can map devices based on a unique identifier, called a UUID.
- 10 Was the installation for the selected package successful?
 - **Yes** – Go to “[Installing the SMutil Package for the Linux OS.](#)”
 - **No** – Repeat steps 1 through 9. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMutil Package for the Linux OS

Installing the SMutil package is necessary only if the system is a host. If you are not installing SMutil, go to “[Installing the SMagent Package for the Linux OS.](#)”

- 1 If necessary, go to the directory on the CD that includes the package you want to install, as shown in “[Preparing for Installation](#)” on page 1-1.
- 2 To install the SMutil package, type this command, and then press Enter. In this command, `<SMutil-LINUX>` is the name of the SMutil package.

```
rpm -ivh <SMutil-LINUX>.rpm
```

- 3 To verify the installation of the SMutil package, type this command, and then press Enter.

```
rpm -q SMutil
```

- 4 Was the installation successful (no failure reported)?
 - **Yes** – Go to “[Installing the SMagent Package for the Linux OS.](#)”
 - **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMagent Package for the Linux OS

Installing the SMagent package is necessary only if the system is a host and the storage array is managed by in-band management. If you are not installing SMagent, go to step 5.

- 1 If necessary, go to the directory on the CD that includes the package you want to install, as shown in “[Preparing for Installation](#)” on page 1-1.
- 2 To install the SMagent package, type this command, and then press Enter. In this command, `<SMagent-LINUX>` is the name of the SMagent package.

```
rpm -ivh <SMagent-LINUX>.rpm
```

- 3** To verify the installation of the SMagent package, type this command, and then press Enter.

```
rpm -q SMagent
```

- 4** Was the installation successful (no failure reported)?

- **Yes** – Go to step [5](#).
- **No** – Repeat steps [2](#) and [3](#). If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

- 5** Choose one of these actions:

- **Storage management software is required on other systems** – For each system that is used as a storage management station or host, perform the software removal and installation procedures that are described in this chapter.
- **Storage management software installation is completed on all systems** – The procedure is completed.

Manually Installing the SANtricity Storage Manager Software for the Linux OS

Manually Installing the SANtricity Storage Manager Software for the Solaris OS

This chapter includes procedures to manually install the applicable software packages of the SANtricity Storage Manager software on the Solaris OS. In addition, this chapter includes steps to verify the installation.

Preparing for Installation

Before you install the client software, you must install the runtime software. A system restart is only required when you install the Redundant Disk Array Controller (RDAC) driver package. The event monitor software is installed automatically during client software installation.

The storage array software supports using the storage array as a boot device. For assistance in setting up this configuration, contact a Customer and Technical Support representative.

IMPORTANT The VERITAS Volume Manager and RDAC are not supported on the same system. If you are using the VERITAS Volume Manager, you must use the VERITAS Volume Manager DMP for your failover driver.

In these procedures, you must enter commands to install the appropriate software packages. After each initial command, the software installation starts. When the installation is completed, a message indicates that the installation was successful. You are returned to the command prompt.

- 1 Make sure that you have root privileges, which are required to install the software.
- 2 Insert the installation CD, and, if necessary, mount the CD-ROM drive.

Installing the SANtricity Storage Manager Software for the Solaris OS

Depending on your storage array configuration, you must install several software installation packages using the procedures that are described in these sections.

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“Installing the SMagent Package for the Solaris OS”	page 2-6
“Installing the Array Support Library for VERITAS Volume Manager DMP”	page 2-7

Installing the SMruntime Package for the Solaris OS

Installing the SMruntime package is necessary for both hosts and storage management stations.

- 1 At the prompt, type this command, and then press Enter.

```
pkgadd -d <mount-point>/<CD-name>/<installation-folder>/native
```

A message shows information about packages that can be installed from the specified directory.

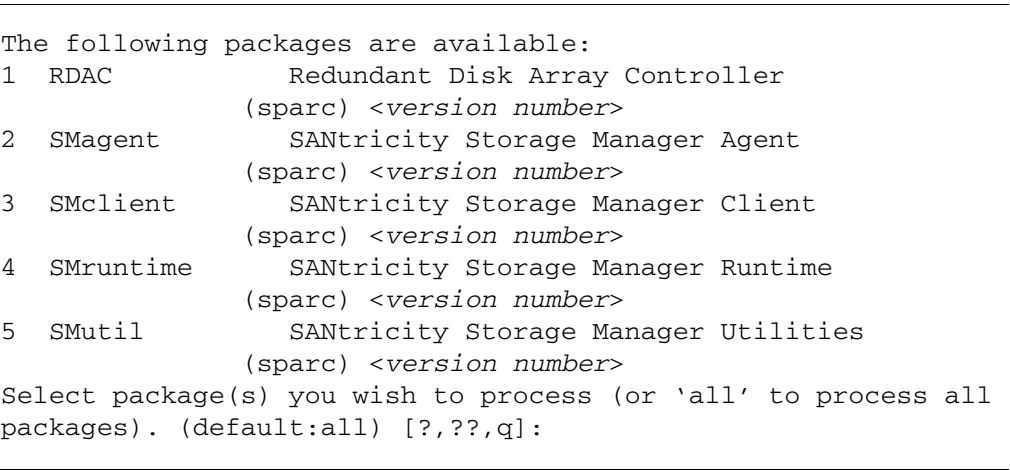


Figure 2-1 Package Information for the Solaris OS

- 2 Type the number that appears next to the SMruntime package, and then press Enter.

IMPORTANT If you select *all*, the software packages install in alphabetical order, and you might encounter installation errors. Make sure that you select the SMruntime package first.

The installation process starts.

After the package installation is completed, the next message is shown, and the command prompt appears again.

```
Installation of SMruntime was successful.
```

As shown in [Figure 2-1](#) on page 2-2, the message about the packages is shown again.

- 3 Was the installation for the selected package successful (no failure reported)?
 - **Yes** – Go to “[Installing the SMclient Package for the Solaris OS](#).”
 - **No** – Repeat steps 1 and 2. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMclient Package for the Solaris OS

Installing the SMclient package is necessary only if the system is a storage management station or if the system is a host acting as a storage management station. If you are not installing SMclient, go to “[Installing the RDAC Package for the Solaris OS](#)” on page 2-4.

- 1 Referring to the message that shows the information about packages, type the number that appears next to the SMclient package, and then press Enter.

IMPORTANT If you select *all*, the software packages install in alphabetical order and you might encounter installation errors. Make sure that you select the SMclient package.

The installation process starts.

- 2 To confirm, type *y*, and then press Enter.

This message is shown.

```
This package contains scripts which will be executed with
super-user permission during the process of installing this
package. Do you want to continue with the installation of
SMclient.
[y, n, ?]
```

- 3** To confirm, type `y`, and then press Enter.

The installation process continues. After the package installation is completed, the next message is shown, and the command prompt appears again.

```
Installation of SMclient was successful.
```

As shown in [Figure 2-1](#) on page 2-2, the message about the packages is shown again.

- 4** Was the installation for the selected package successful (no failure reported)?
- **Yes** – Go to [“Installing the RDAC Package for the Solaris OS.”](#)
 - **No** – Repeat steps 1 through 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the RDAC Package for the Solaris OS

CAUTION **Potential loss of configuration data** – The RDAC installation package attempts to configure any JNI (AMCC) HBA configuration file found in `/kernel/drv` for disk use. This attempt could include removal or modification of parameters and deletion of binding statements. Take precautions to protect any JNI HBA configuration file during an RDAC installation if this removal or modification is not desired.

Installing the RDAC package is necessary only if the system is a host. The RDAC package installs the failover driver. If you are not installing RDAC, go to [“Installing the SMutil Package for the Solaris OS”](#) on page 2-5.

IMPORTANT If you are using VERITAS Volume Manager DMP, do not install the RDAC package.

- 1** Referring to the message that shows information about packages, type the number that appears next to the RDAC package, and then press Enter.

IMPORTANT If you select *all*, the software packages install in alphabetical order, and you might encounter installation errors. Make sure that you select RDAC.

The installation process starts and the next message is shown.

```
This package contains scripts which will be executed with
super-user permission during the process of installing this
package. Do you want to continue with the installation of RDAC.
[y, n, ?]
```

- 2** To confirm, type *y*, and press Enter.

The installation process continues. After the package installation is completed, this message is shown, and the command prompt appears again.

```
Installation of RDAC was successful.
```

As shown in [Figure 2-1](#) on page 2-2, the message about the packages is shown again.

- 3** Was the installation for the selected package successful (no failure reported)?
- **Yes** – Go to [“Installing the SMutil Package for the Solaris OS.”](#)
 - **No** – Repeat steps 1 and 2. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMutil Package for the Solaris OS

Installing the SMutil package is necessary only if the system is a host. If you are not installing SMutil, go to [“Installing the SMagent Package for the Solaris OS”](#) on page 2-6.

- 1** Referring to the message that shows information about packages, type the number that appears next to the SMutil package, and then press Enter.

IMPORTANT If you select *all*, the software packages install in alphabetical order, and you might encounter installation errors. Make sure that you select the SMutil package.

The installation process starts.

- 2 Was the installation for the selected package successful (no failure reported)?
 - **Yes** – Go to “[Installing the SMagent Package for the Solaris OS.](#)”
 - **No** – Repeat step 1. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMagent Package for the Solaris OS

Installing the SMagent package is necessary only if the system is a host and the storage array is managed by in-band management. If you are not installing SMagent, go to “[Restarting the System](#)” on page 2-7.

- 1 Referring to the message about packages, type the number that appears next to the SMagent package, and then press Enter.

IMPORTANT If you select *all*, the software packages install in alphabetical order, and you might encounter installation errors. Make sure that you select the SMagent package.

The installation process starts, and this message is shown.

```
Do you want to continue with the installation of SMagent?  
[y, n, ?]
```

- 2 To confirm, type *y*, and then press Enter.

The installation process continues. After the package installation is completed, this message is shown, and the command prompt appears again.

```
Installation of SMagent was successful.
```

- 3 Was the installation for the selected package successful (no failure reported)?
 - **Yes** – Go to “[Restarting the System](#)” on page 2-7.
 - **No** – Repeat steps 1 through 2. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Restarting the System

After the installation of RDAC, you must restart the system.

IMPORTANT Restart a system only when you remove the RDAC driver package. The new client software recognizes existing storage array mappings and storage partition configurations.

- 1 If the package installation choices are still on screen, type `q` to exit the menu.
- 2 Did you install RDAC?
 - **Yes** – Go to step 3.
 - **No** – Go to “[Installing the Array Support Library for VERITAS Volume Manager DMP](#).”
- 3 To turn off the system, type this command, and then press Enter.

```
/etc/shutdown -y -i0 -g0
```
- 4 To restart the system, type this command, and then press Enter.

```
boot -r
```
- 5 Go to “[Installing the Array Support Library for VERITAS Volume Manager DMP](#).”

Installing the Array Support Library for VERITAS Volume Manager DMP

This section includes procedures to install the VERITAS Volume Manager DMP support libraries. Install the Array Support Library (ASL) so that the VERITAS Volume Manager DMP can perform failover and path management on the storage array.

- 1 At the command prompt, type this command, and then press Enter. In this command, *<volume-name>* is the volume name of the installation CD.

```
pkgadd -d /cdrom/<volume-name>/<installation-folder>/  
dmp_support
```

Information about packages that you can install from the specified directory is shown, similar to this example.

```
The following packages are available:  
1  SMstkasl          Array Support Library for VERITAS DMP  
    (sparc) <version number>  
Select package(s) you wish to process (or 'all' to process all  
packages). (default:all) [?,??,q]:
```

- 2 To start the installation, press Enter.

After the package installation is completed, this message is shown, and the command prompt appears again.

```
Installation of SMstkas1 was successful.
```

- 3 Was the installation successful (no failure reported)?

- **Yes** – The procedure is completed.
- **No** – Repeat steps 1 and 2. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Verifying the Installation for the Solaris OS

After you have completed installing the packages, make sure that they installed successfully.

- 1 At the command prompt, type this command, and then press Enter. In this command, *<package-name>* is the name of a package that you installed.

```
pkginfo -l <package-name>
```

- 2 From the `/opt/StorageManager` directory, review any error messages from the error message log, and correct the problem. If the failure persists, contact a Customer and Technical Support representative.
- 3 For each package that you installed, repeat steps 1 and 2.

Manually Installing the SANtricity Storage Manager Software for the HP-UX OS

This chapter includes procedures for manually installing the applicable software packages of the SANtricity Storage Manager software on the HP-UX OS. In addition, this chapter includes procedures for verifying the installation.

Preparing for Installation

Before you install the client software, you must install the runtime software. A system restart is only required when installing the Redundant Dual Active Controller (RDAC) driver package. The event monitor software is installed automatically during client software installation.

In these procedures, you must enter commands to install the appropriate software packages. After each initial command, the software installation starts. When the installation is completed, a message indicates that the installation was successful. You are returned to the command prompt.

- 1 Insert the installation CD into the CD-ROM drive and, if necessary, mount the CD-ROM drive.
- 2 Go to “[Installing the SANtricity Storage Manager Software for the HP-UX OS](#)” on page 3-2.

Installing the SANtricity Storage Manager Software for the HP-UX OS

Depending on your storage array configuration, you must prepare several software installation packages for installation and then install them using the procedures described in these sections.

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Installing the SMruntime Package for the HP-UX OS

Installing the SMruntime package is necessary for both hosts and storage management stations.

- 1 At the command prompt, type this command, and then press Enter.

```
swinstall -s <mount-point>/<installation-folder>/native/  
smruntime-hpux &
```

The installation window is shown with a selection box listing all of the storage management software packages.

NOTE The target directory must be the root directory of the host system.

- 2 From the selection box, select SMruntime.
- 3 Select Actions >> Mark for Install.
- 4 To start the installation, select Actions >> Install.

An Analysis window is shown to check the integrity of the file.

- 5 When the Analysis window is complete, click OK.

A dialog indicates the percentage of completion of the installation process. The process might take several minutes.

- 6 After the installation is completed, make sure that the Products Scheduled field shows the same number of packages that you noted in step 1.

If all of the packages were not successfully installed, use the procedure in “[Verifying the Installation for the HP-UX OS](#)” on page 3-6 to find the packages that did not install.

- 7 Click Done.
- 8 To close the window, select File >> Exit.
- 9 To continue selecting packages, leave the installation window open, and then go to “[Installing the SMclient Package for the HP-UX OS.](#)”

Installing the SMclient Package for the HP-UX OS

Installing the SMclient package is necessary only if the system is a storage management station or if the system is a host acting as a storage management station. If you are not installing SMclient, go to “[Installing the SMutil Package for the HP-UX OS](#)” on page 3-4.

- 1 At the command prompt, type this command, and then press Enter.

```
swinstall -s <mount-point>/<installation-folder>/native/  
smclient-hpux &
```

The installation window is shown with a selection box that lists all of the storage management software packages.

NOTE The target directory must be the root directory of the host system.

- 2 From the selection box, select SMclient.
- 3 Select Actions >> Mark for Install.
- 4 To start the installation, select Actions >> Install.

An Analysis window is shown to check the integrity of the file.

- 5 When the Analysis window is complete, click OK.

A dialog indicates the percentage of completion of the installation process. The process might take several minutes.

- 6 After the installation is complete, make sure that the Products Scheduled field shows the same number of packages that you noted in step 1.

If all of the packages were not successfully installed, use the procedure in “[Verifying the Installation for the HP-UX OS](#)” on page 3-6 to find the packages that did not install.

- 7 Click Done.
- 8 To close the window, select File >> Exit.

9 Based on your installation needs, choose one of these actions:

- **Continue with the installation process** – To continue selecting packages, leave the installation window open, and go to “[Installing the SMutil Package for the HP-UX OS.](#)”
- **You have completed selecting packages** – The procedure is completed.

Installing the SMutil Package for the HP-UX OS

Installing the SMutil package is necessary only if the system is a host. If you are not installing SMutil, go to “[Installing the SMagent Package for the HP-UX OS](#)” on page 3-5.

1 At the command prompt, type this command, and then press Enter.

```
swinstall -s <mount-point>/<installation-folder>/native/smutil-  
hpux &
```

The installation window is shown with a selection box that lists all of the storage management software packages.

NOTE The target directory must be the root directory of the host system.

2 From the selection box, select SMutil.

3 Select Actions >> Mark for Install.

4 To start the installation, select Actions >> Install.

An Analysis window is shown to check the integrity of the file.

5 When the Analysis window is complete, click OK.

A dialog indicates the percentage of completion of the installation process. The process might take several minutes.

6 After the installation is complete, make sure that the Products Scheduled field shows the same number of packages that you noted in step 1.

If all of the packages were not successfully installed, use the procedure in “[Verifying the Installation for the HP-UX OS](#)” on page 3-6 to find the packages that did not install.

7 Click Done.

8 To close the window, select File >> Exit.

9 Based on your installation needs, choose one of these actions:

- **Continue with the installation process** – To continue selecting packages, leave the installation window open, and go to “[Installing the SMagent Package for the HP-UX OS.](#)”
- **You have completed selecting packages** – The procedure is completed.

Installing the SMagent Package for the HP-UX OS

Installing the SMagent package is necessary only if the system is a host and the storage array is managed by in-band management.

1 At the prompt, type this command, and press Enter.

```
swinstall -s <mount-point>/<installation-folder>/native/  
smagent-hpux &
```

The installation window is shown with a selection box listing all of the storage management software packages.

NOTE The target directory must be the root directory of the host system.

2 From the selection box, select SMagent.

3 Select Actions >> Mark for Install.

4 To start the installation, select Actions >> Install.

An Analysis window is shown to check the integrity of the file.

5 When the Analysis window is complete, click OK.

A dialog indicates the percentage of completion of the installation process. The process might take several minutes.

6 After the installation is completed, make sure that the Products Scheduled field shows the same number of packages that you noted in step 1.

If all of the packages were not successfully installed, use the procedure in “[Verifying the Installation for the HP-UX OS](#)” on page 3-6 to find the packages that did not install.

7 Click Done.

8 To close the window, select File >> Exit.

Verifying the Installation for the HP-UX OS

After you have completed installing the packages, make sure that they installed successfully.

- 1 At the command prompt, type this command, and then press Enter. In this command, *<package-name>* is the name of a package that you installed.

```
swverify -v <package-name>
```

- 2 Note any failure reported.
- 3 For each package you installed, repeat steps 1 and 2.
- 4 Was the installation successful (no failures reported)?
 - **Yes** – Go to step 5.
 - **No** – From the `/opt/StorageManager` directory, review any error messages from the error message log, and correct the problem. If the failure persists, contact a Customer and Technical Support representative.
- 5 Choose one of these actions:
 - **Storage management software is required on other systems** – For each system that is used as a storage management station or host, perform the software installation procedures described in this chapter.
 - **Storage management software installation is completed on all systems** – The procedure is completed.

Manually Installing the SANtricity Storage Manager Software for the IRIX OS

This chapter includes procedures for manually installing the applicable software packages of the SANtricity Storage Manager software on the IRIX OS. In addition, this chapter includes procedures for verifying the installation.

Preparing for Installation

Before you install the client software, you must install the runtime software. A system restart is only required when installing the Redundant Dual Active Controller (RDAC) driver package. The event monitor software is installed automatically during client software installation.

In these procedures, you must enter commands to install the appropriate software packages. After each initial command, the software installation starts. When the installation is completed, a message indicates that the installation was successful. You are returned to the command prompt.

- 1 Make sure that you have root privileges, which are required to install the software.
- 2 Insert the installation CD and, if necessary, mount the CD-ROM drive.

Installing the SANtricity Storage Manager Software for the IRIX OS

This section includes procedures for installing the SANtricity Storage Manager version 9.1x software packages for the IRIX operating system.

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“Installing the SMclient Package for the IRIX OS”	page 4-2
“Installing the SMutil Package for the IRIX OS”	page 4-3
“Installing the SMagent Package for the IRIX OS”	page 4-3

Installing the SMruntime Package for the IRIX OS

Installing the SMruntime package is necessary for both hosts and storage management stations.

- 1 To install the SMruntime package, make sure that you are in this directory on the CD before you start:

```
<mount-point>/<installation-folder>/native/
```

- 2 Type this command, and then press Enter.

```
inst -f. -I SMruntime -a
```

- 3 To verify the installation of the SMruntime package, type this command, and then press Enter.

```
showprods -v SMruntime
```

- 4 Was the installation successful (no failure reported)?

- **Yes** – Go to [“Installing the SMclient Package for the IRIX OS.”](#)
- **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMclient Package for the IRIX OS

Installing the SMclient package is necessary only if the system is a storage management station or if the system is a host acting as a storage management station. If you are not installing SMclient, go to [“Installing the SMutil Package for the IRIX OS”](#) on page 4-3.

- 1 To install the SMclient package, make sure that you are in this directory on the CD before you start:

```
<mount-point>/<installation-folder>/native/
```

- 2 Type this command, and then press Enter.

```
inst -f. -I SMclient -a
```

- 3 To verify the installation of the SMclient package, type this command, and then press Enter.

```
showprods -v SMclient
```

- 4 Was the installation successful (no failure reported)?

- **Yes** – Go to [“Installing the SMutil Package for the IRIX OS.”](#)
- **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMutil Package for the IRIX OS

Installing the SMutil package is necessary only if the system is a host. If you are not installing SMutil, go to [“Installing the SMagent Package for the IRIX OS”](#) on page 4-3.

- 1 To install the SMutil package, make sure that you are in this directory on the CD before you start:

```
<mount-point>/<installation-folder>/native/
```

- 2 Type this command, and then press Enter.

```
inst -f. -I SMutil -a
```

- 3 To verify the installation of the SMutil package, type this command, and then press Enter.

```
showprods -v SMutil
```

- 4 Was the installation successful (no failure reported)?

- **Yes** – Go to [“Installing the SMagent Package for the IRIX OS”](#) on page 4-3.
- **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Installing the SMagent Package for the IRIX OS

Installing the SMagent package is necessary only if the system is a host and the storage array is managed by in-band management.

- 1 To install the SMagent package, make sure that you are in this directory on the CD before you start:

```
<mount-point>/<installation-folder>/native/
```

- 2 Type this command, and then press Enter.

```
inst -f. -I SMagent -a
```

- 3 To verify the installation of the SMagent package, type this command, and then press Enter.

```
showprods -v SMagent
```

- 4 Was the installation successful (no failure reported)?

- **Yes** – The procedure is completed.
- **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

Manually Installing the SANtricity Storage Manager Software for the IRIX OS

Manually Installing the SANtricity Storage Manager Software for the AIX OS

This chapter includes procedures to manually install the applicable software packages of the SANtricity Storage Manager software on the AIX OS. In addition, this chapter includes procedures to verify the installation.

Preparing for Installation

Before installing the client software, install the runtime software. No restart is required during the software installation process. The event monitor software is installed automatically during client software installation.

In these procedures, you enter commands to install the appropriate software packages. After each initial command, the software installation starts. When the installation is completed, a message indicates that the installation was successful. You are returned to the command prompt.

- 1 Make sure that you have root privileges, which are required to install the software.
- 2 Insert the installation CD into the CD-ROM drive and, if necessary, mount the CD-ROM drive.

Installing the SANtricity Storage Manager Software for the AIX OS

Depending on your storage array configuration, you must install several software installation packages using the procedures described in these sections.

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“Installing the SMclient Package for the AIX OS”	page 5-2
“Installing the SMutil Package for the AIX OS”	page 5-3
“Installing the SMagent Package for the AIX OS”	page 5-3

Installing the SMruntime Package for the AIX OS

Installing the SMruntime package is necessary for both hosts and storage management stations.

- 1 At the command prompt, type this command to change to the installation directory on the CD, and then press Enter.

```
cd /cdrom/<installation-folder>/native
```

- 2 To install the SMruntime package, type this command, and then press Enter.

```
installp -ad SMruntime-AIX.bff all
```

- 3 To verify the installation of the SMruntime package, type this command, and then press Enter.

```
lslpp -ah SMruntime.aix.rte
```

- 4 Was the installation successful (no failure reported)?

- **Yes** – Go to “[Installing the SMclient Package for the AIX OS.](#)”
- **No** – Repeat steps 2 and 3. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.
- **The installation was interrupted** – To install the applicable software package, type this command, press Enter, and then repeat the installation steps.

```
installp -C <package-name>
```

Installing the SMclient Package for the AIX OS

Installing the SMclient package is necessary only if the system is a storage management station or if the system is a host acting as a storage management station. If you are not installing SMclient, go to “[Installing the SMutil Package for the AIX OS](#)” on page 5-3.

- 1 To install the SMclient package, type this command, and then press Enter.

```
installp -ad SMclient-AIX.bff all
```

- 2 To verify the installation of the SMclient package, type this command, and then press Enter.

```
lslpp -ah SMclient.aix.rte
```

- 3 Was the installation successful (no failure reported)?

- **Yes** – Go to “[Installing the SMutil Package for the AIX OS](#)” on page 5-3.
- **No** – Repeat steps 1 and 2. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

- **The installation was interrupted** – To install the applicable software package, type this command, press Enter, and then repeat the installation steps.

```
installp -C <package-name>
```

Installing the SMutil Package for the AIX OS

Installing the SMutil package is necessary only if the system is a host. If you are not installing SMutil, go to [“Installing the SMagent Package for the AIX OS.”](#)

- 1 To install the SMutil package, type this command, and then press Enter.

```
installp -ad SMutil-AIX.bff all
```

- 2 To verify the installation of the SMutil package, type this command, and then press Enter.

```
lsllpp -ah SMutil.aix.rte
```

- 3 Was the installation successful (no failure reported)?

- **Yes** – Go to [“Installing the SMagent Package for the AIX OS.”](#)
- **No** – Repeat steps 1 and 2. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.
- **The installation was interrupted** – To install the applicable software package, type this command, press Enter, and then repeat the installation steps.

```
installp -C <package-name>
```

Installing the SMagent Package for the AIX OS

Installing the SMagent package is necessary only if the system is a host and the storage array is managed by in-band management.

- 1 To install the SMagent package, type this command, and then press Enter.

```
installp -ad SMagent-AIX.bff all
```

- 2 To verify the installation of the SMagent package, type this command, and then press Enter.

```
lsllpp -ah SMagent.aix.rte
```

- 3 Was the installation successful (no failure reported)?

- **Yes** – The procedure is completed.
- **No** – Repeat steps 1 and 2. If the failure persists, refer to the *Storage System Product Release Notes for Version 9.19*, or contact a Customer and Technical Support representative.

- **The installation was interrupted** – To install the applicable software package, type this command, press Enter, and then repeat the installation steps.

```
installp -C <package-name>
```

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