



SGI InfiniteStorage 4000 Series and 5000 Series SANtricity ES Storage Manager Installation Guide

(ISSM 10.83)

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The information in this document supports the SGI InfiniteStorage 4000 series and 5000 series storage systems (ISSM 10.83). Refer to the table below to match your specific SGI InfiniteStorage product with the model numbers used in this document.

SGI Model #	Netapp Model	Netapp Compliance Model	Notes
TP9600H	6091	1500	
TP9700F	6091	1500	
IS4500F	6091	1500	
TP9600F	3994 and 3992	4600	
IS4000H	3994	4600	
IS350	3992	4600	
IS220	1932 1333 DE1300	3600	
IS4100	4900	4600	FC HICs only
IS-DMODULE16-Z	FC4600	4600	
IS-DMODULE60	DE6900	6900	
IS4600	7091	1550	4Gb FC, 8Gb FC, HICs only
IS5012	2600	3650	FC and SAS HICs only
IS5024	2600	5350	
IS5060	2600	6600	
IS-DMODULE12 & IS2212 (JBOD)	DE1600	3650	
IS-DMODULE24 & IS2224 (JBOD)	DE5600	5350	
IS-DMODULE60-SAS	DE6600	6600	
IS5512	5400	3650	
IS5524	5400	5350	
IS5560	5400	6600	

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Manually Installing the Storage Manager Software on the Linux OS

Perform the tasks in this chapter to manually install the storage manager software on the Linux operating system (OS).

Preparing for Installation

A system restart is required only when you install the Redundant Dual Active Controller (RDAC) driver package. The Event Monitor software is installed automatically during client software installation.

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 driver package.

- 1** Make sure that you have root privileges, which are required to install the software.
- 2** If you have a previous version of the RDAC failover driver installed, uninstall it.
- 3** Insert the installation disc into the optical drive.
- 4** If necessary, mount the optical drive.

In the command that follows, the installation disc is mounted at `/mnt`.

NOTE The following mount point is shown here only as an example. You might need to modify this command for your operating system. For more information about mounting devices on your operating system, refer to the documentation that came with your operating system.

```
mount /dev/hda /mnt
```

- 5 Choose one of these actions based on how you want to install the storage management software:
 - **Install the software using the command line** – Go to “[Installing the Storage Manager Packages on the Linux OS Using the Command Line](#)” on page 1-2.
 - **Install the software using the installation package** – Go to “[Installing the Storage Manager Packages on the Linux OS Using the Installer](#)” on page 1-5.

Installing the Storage Manager Packages on the Linux OS Using the Command Line

Before you install the client software, you must install the runtime software. Installing the storage manager packages is required for both hosts and storage management stations. There are two install packages available, depending on whether your Linux server is 32-bit or 64-bit:

- 32-bit server – Install the *SMIA-Linux* package.
- 64-bit server – Install the *SMIA-LinuxX64* package.

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

- 1 To install the packages, type the following commands in the sequence shown, and press **Enter** after each command.

In the table that follows, *<mount-point>* is a placeholder for the mount point for the disc, and *<SM*-package>* is a placeholder for the package name of each storage manager package.

Package	Command
Runtime	<code>rpm -ivh /<mount-point>/install/native/<SMruntime-package>.rpm</code>
ESM	<code>rpm -ivh /<mount-point>/install/native/<SMesm-package>.rpm</code>
Client	<code>rpm -ivh /<mount-point>/install/native/<SMclient-package>.rpm</code>
Utilities	<code>rpm -ivh /<mount-point>/install/native/<SMutil-package>.rpm</code>
Agent	<code>rpm -ivh /<mount-point>/install/native/<SMagent-package>.rpm</code>

- 2 To install RDAC, you need to unzip the RDAC `tar.gz` file and untar the RDAC tar file by typing this command, and pressing **Enter**.

```
tar -zxvf <filename>
```

- 3 Go to the Linux RDAC directory.

```
cd linuxrdac
```

- 4 If you have a previous RDAC version, type this command, and press **Enter**.

```
Make uninstall
```

- 5 To remove the old driver modules in that directory, type this command, and press **Enter**:

```
make clean
```

- 6 To compile all driver modules and utilities in a multiple CPU server (SMP kernel), type this command, and press **Enter**:

```
make
```

- 7 To install the RDAC failover driver, type this command, and press **Enter**:

```
make install all
```

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 driver modules that are needed at boot.
- 8 Follow the instructions shown 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.
 - 9 Restart the system by using the new boot menu option.

- 10** To make sure that RDAC is installed correctly, type the following command and press **Enter**:

```
/sbin/lsmmod
```

Make sure that these driver stacks were loaded after restart:

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

- 11** To check the RDAC version, type the following and press **Enter**:

```
mppUtil -V
```

- 12** To make sure that the storage manager packages are installed correctly, type the following commands in the sequence shown, and press **Enter** after each command.

Package	Command
Runtime	<code>rpm -q SMruntime</code>
ESM	<code>rpm -q SMesm</code>
Client	<code>rpm -q SMclient</code>
Utilities	<code>rpm -q SMutil</code>
Agent	<code>rpm -q SMagent</code>

- 13** Was the installation for the selected package successful (no problems were reported)?

- **Yes** – The installation is complete.
- **No** – Repeat step 1 through step 12. If the problem persists, refer to the *Storage System Product Release Notes for Version 10.x*, or contact a Customer and Technical Support representative.

Installing the Storage Manager Packages on the Linux OS Using the Installer

Installing the storage manager packages is required for both hosts and storage management stations. There are two install packages available, depending on whether your Linux server is 32-bit or 64-bit:

- 32-bit server – Install the *SMIA-Linux* package.
- 64-bit server – Install the *SMIA-LinuxX64* package.

- 1 Go to the directory where the installation package *SMIA*.bin* is on the disc:

```
cd /<mount-point>/
```

- 2 Change the permissions on the file so that you can execute it:

```
chmod +x SMIA*.bin
```

- 3 Execute the command:

```
./SMIA*.bin
```

- 4 Choose Complete Install to install the whole package which includes the runtime, ESM, client, utilities, agent, and the RDAC failover driver. Follow the remaining instructions on the screen.

- 5 To install RDAC, you need to unzip the RDAC *tar.gz* file and untar the RDAC tar file by typing this command, and pressing **Enter**.

```
tar -zxvf <filename>
```

- 6 Go to the Linux RDAC directory.

```
cd linuxrdac
```

- 7 If you have a previous RDAC version, type this command, and press **Enter**.

```
Make uninstall
```

- 8 To remove the old driver modules in that directory, type this command, and press **Enter**:

```
make clean
```

- 9 To compile all driver modules and utilities in a multiple CPU server (SMP kernel), type this command, and press **Enter**:

```
make
```

10 To install the RDAC failover driver, type this command, and press **Enter**:

```
make install all
```

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 driver modules that are needed at boot.

11 Follow the instructions shown 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.

12 Restart the system by using the new boot menu option.

13 To make sure that RDAC is installed correctly, type the following command and press **Enter**:

```
/sbin/lsmoD
```

Make sure that these driver stacks were loaded after restart:

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

14 To check the RDAC version, type the following and press **Enter**:

```
mppUtil -V
```

15 To make sure that the storage manager packages are installed correctly, type the following commands in the sequence shown, and press **Enter** after each command.

Package	Command
Runtime	rpm -q SMruntime
ESM	rpm -q SMesm
Client	rpm -q SMclient
Utilities	rpm -q SMutil
Agent	rpm -q SMagent

- 16** Was the installation for the selected package successful (no problems were reported)?
- **Yes** – The installation is complete.
 - **No** – Repeat step 1 through step 15. If the problem persists, refer to the *Storage System Product Release Notes for Version 10.x*, or contact a Customer and Technical Support representative.

Manually Installing the Storage Manager Software on the Solaris OS

Perform the tasks in this chapter to manually install the storage manager software on the Solaris operating system (OS).

Preparing for Installation

A system restart is required only when you install the Redundant Dual Active Controller (RDAC) driver package. The Event Monitor software is installed automatically during client software installation.

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

Before you can install storage manager software, you must manually mount the optical drive. However, before you can successfully mount the optical drive, you must make sure that the vold process is not running.

NOTE If the optical drive auto-mounts, proceed with [“Installing the Storage Manager Packages on the Solaris OS Using the Command Line”](#) on page 2-3.

To manually mount the optical drive, perform these steps:

- 1 To make sure that the `vold` process is not running, type this command and press **Enter**.

```
pgrep vold
```

If a number appears, then the process is running.

- 2 To stop the `vold` process, type this command, and press **Enter**.

```
pkill vold
```

- 3 Make sure that you have root privileges, which are required to install the software.
- 4 Insert the installation disc into the optical drive.
- 5 If necessary, mount the optical drive.

In the command that follows, the installation disc is mounted at `/mnt`.

NOTE The following mount point is shown here only as an example. You might need to modify this command for your operating system. For more information about mounting devices on your operating system, refer to the documentation that came with your operating system.

```
mount -F hsfs -r /dev/c#t#d0s2 /mnt
```

The optical drive on Solaris is usually linked to the device `/dev/sr0`. You can determine the name of the device by entering the following command:

```
ls -al /dev/sr* | awk '{print "/" $11}'
```

- 6 Choose one of these actions based on how you want to install the storage management software:
 - **Install the software using the command line** – Go to [“Installing the Storage Manager Packages on the Solaris OS Using the Command Line”](#) on page 2-3.
 - **Install the software using the installation package** – Go to [“Installing the Storage Manager Packages on the Solaris OS Using the Installer”](#) on page 2-5.

Installing the Storage Manager Packages on the Solaris OS Using the Command Line

Before you install the client software, you must install the runtime software. Installing the storage manager packages is required for both hosts and storage management stations.

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

- 1 To install the packages, type the following commands in the sequence shown, and press **Enter** after each command.

In the table that follows, *<mount-point>* is a placeholder for the mount point for the disc, and *<SM*-package>* is a placeholder for the package name of each storage manager package.

Package	Command
Runtime	<code>pkgadd -d /<mount-point>/install/native/<SMruntime-package> .pkg</code>
ESM	<code>pkgadd -d /<mount-point>/install/native/<SMesm-package> .pkg</code>
Client	<code>pkgadd -d /<mount-point>/install/native/<SMclient-package> .pkg</code>
Utilities	<code>pkgadd -d /<mount-point>/install/native/<SMutil-package> .pkg</code>
Agent	<code>pkgadd -d /<mount-point>/install/native/<SMagent-package> .pkg</code>

- 2 Was the installation for the selected package successful (no problems were reported)?
 - **Yes** – Go to [“Restarting the System”](#) on page 2-4.
 - **No** – Repeat step 1. If the problem persists, refer to the *Storage System Product Release Notes for Version 10.x*, or contact a Customer and Technical Support representative.

Restarting the System

If you installed RDAC, you must restart the system.

- 1 If the package installation choices are still on the 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](#)” on page 2-4.
- 3 To turn off the system, type this command, and press **Enter**.

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

```
boot -r
```
- 5 Go to “[Checking the Installation on the Solaris OS](#)” on page 2-5.

Installing the Array Support Library for VERITAS Volume Manager DMP

This section includes the procedure for installing 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 press **Enter**.

In this command, `<asl-packagename>` is a placeholder for the name of the ASL package.

```
pkgadd -d /cdrom/install/dmp-support/<asl-packagename>.pkg
```

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

The following packages are available:

```
1  SMlsiasl          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 has completed, this message appears, and the command prompt appears again.

```
Installation of SMlsias1 was successful.
```

- 3 Was the installation for the selected package successful (no problems were reported)?
 - **Yes** – You have completed this procedure.
 - **No** – Repeat step 1 through step 2. If the problem persists, refer to the *Storage System Product Release Notes for Version 10.x*, or contact a Customer and Technical Support representative.

Checking the Installation on the Solaris OS

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

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

In this command, *<package-name>* is a placeholder for 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 problem persists, contact a Customer and Technical Support representative.
- 3 For each package that you installed, repeat step 1 through step 2.

Installing the Storage Manager Packages on the Solaris OS Using the Installer

Installing the storage manager packages is required for both hosts and storage management stations.

- 1 Go to the directory where the installation package `SMIA*.bin` is on the disc:

```
cd /<mount-point>/
```

- 2 Change the permissions on the file so that you can execute it:

```
chmod +x SMIA*.bin
```

- 3 Execute the command:

```
./SMIA*.bin
```

- 4** Choose Complete Install to install the whole package which includes the runtime, ESM, client, utilities, and agent. The RDAC failover driver is installed on the Solaris 8 OS and the Solaris 9 OS. RDAC is not installed on Solaris 10 which uses Multiplexed Input/Output (MPxIO) natively. If you want to install VERITAS Volume Manager DMP for your failover driver instead, go to [“Installing the Array Support Library for VERITAS Volume Manager DMP”](#) on page 2-4.

Follow the remaining instructions on the screen.

- 5** If you installed RDAC, you must restart the system. Go to [“Restarting the System”](#) on page 2-4.

Manually Installing the Storage Manager Software on the HP-UX OS

Perform the tasks in this chapter to manually install the storage manager software on the HP-UX operating system (OS).

Preparing for Installation

The Event Monitor software is installed automatically during client software installation.

To manually mount the optical drive, perform these steps:

- 1 Make sure that you have root privileges, which are required to install the software.
- 2 Insert the installation disc into the optical drive.
- 3 If necessary, mount the optical drive.

In the command that follows, the installation disc is mounted at `/mnt`.

NOTE The following mount point is shown here only as an example. You might need to modify this command for your operating system. For more information about mounting devices on your operating system, refer to the documentation that came with your operating system.

```
mount -o cdcase /dev/dsk/c#t#d0 /mnt
```

- 4 Choose one of these actions based on how you want to install the storage management software:
 - **Install the software using the command line** – Go to [“Installing the Storage Manager Packages on the HP-UX OS Using the Command Line”](#) on page 3-2.
 - **Install the software using the installation package** – Go to [“Installing the Storage Manager Packages on the HP-UX OS Using the Installer”](#) on page 3-3.

Installing the Storage Manager Packages on the HP-UX OS Using the Command Line

Before you install the client software, you must install the runtime software. Installing the storage manager packages is required for both hosts and storage management stations.

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

- 1 To install the packages, type the following commands in the sequence shown, and press **Enter** after each command.

In the table that follows, *<mount-point>* is a placeholder for the mount point for the disc, and *<SM*-package>* is a placeholder for the package name of each storage manager package.

Package	Command
Runtime	<code>swinstall -s /<mount-point>/install/native/<SMruntime-package>.depot</code>
ESM	<code>swinstall -s /<mount-point>/install/native/<SMesm-package>.depot</code>
Client	<code>swinstall -s /<mount-point>/install/native/<SMclient-package>.depot</code>
Utilities	<code>swinstall -s /<mount-point>/install/native/<SMutil-package>.depot</code>
Agent	<code>swinstall -s /<mount-point>/install/native/<SMagent-package>.depot</code>

- 2 Was the installation for the selected package successful (no problems were reported)?
 - **Yes** – Go to [“Checking the Installation on the HP-UX OS”](#) on page 3-2.
 - **No** – Repeat step 1. If the problem persists, refer to the *Storage System Product Release Notes for Version 10.x*, or contact a Customer and Technical Support representative.

Checking the Installation on the HP-UX OS

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

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

In this command, *<package-name>* is a placeholder for the name of a package that you installed.

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

- 2 Note any problem that is reported.
- 3 For each package that you installed, repeat step 1 through step 2.
- 4 Was the installation for the selected package successful (no problems were 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 problem persists, contact a Customer and Technical Support representative.
- 5 Perform 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 that are described in this chapter.
 - **Storage management software installation has completed on all systems** – You have completed this procedure.

Installing the Storage Manager Packages on the HP-UX OS Using the Installer

Installing the storage manager packages is required for both hosts and storage management stations.

- 1 Go to the directory where the installation package `SMIA*.bin` is on the disc:

```
cd /<mount-point>/
```

- 2 Change the permissions on the file so that you can execute it:

```
chmod +x SMIA*.bin
```

- 3 Execute the command:

```
./SMIA*.bin
```

- 4 Choose Complete Install to install the whole package which includes the runtime, ESM, client, utilities, and agent. The storage manager software does not install a failover driver because the HP-UX OS has its own failover driver. Follow the remaining instructions on the screen.

Manually Installing the Storage Manager Software on the HP-UX OS

Manually Installing the Storage Manager Software on the AIX OS

Perform the tasks in this chapter to manually install the storage manager software on the AIX operating system (OS).

Preparing for Installation

No restart is required during the software installation process. The Event Monitor software is installed automatically during client software installation.

To manually mount the optical drive, perform these steps:

- 1 Make sure that you have root privileges, which are required to install the software.
- 2 Insert the installation disc into the optical drive.
- 3 If necessary, mount the optical drive.

In the command that follows, the installation disc is mounted at `/mnt`.

NOTE The following mount point is shown here only as an example. You might need to modify this command for your operating system. For more information about mounting devices on your operating system, refer to the documentation that came with your operating system.

```
mount -rv cdrfs /dev/cd0 /mnt
```

- 4 Choose one of these actions based on how you want to install the storage management software:
 - **Install the software using the command line** – Go to [“Installing the Storage Manager Packages on the AIX OS Using the Command Line”](#) on page 4-2.
 - **Install the software using the installation package** – Go to [“Installing the Storage Manager Packages on the AIX OS Using the Installer”](#) on page 4-3.

Installing the Storage Manager Packages on the AIX OS Using the Command Line

Before you install the client software, you must install the runtime software. Installing the storage manager packages is required for both hosts and storage management stations.

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

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

In this command, *<installation-directory>* is a placeholder for the installation directory for the storage manager software.

```
cd /mnt/<installation-directory>/native
```

- 2 To install the packages, type the following commands in the sequence shown, and press **Enter** after each command.

In the table that follows, *<mount-point>* is a placeholder for the mount point for the disc, and *<SM*-package>* is a placeholder for the package name of each storage manager package.

Package	Command
Runtime	<code>installp -ad /<mount-point>/install/native/<SMruntime-package>.bff all</code>
ESM	<code>installp -ad /<mount-point>/install/native/<SMesm-package>.bff all</code>
Client	<code>installp -ad /<mount-point>/install/native/<SMclient-package>.bff all</code>
Utilities	<code>installp -ad /<mount-point>/install/native/<SMutil-package>.bff all</code>
Agent	<code>installp -ad /<mount-point>/install/native/<SMagent-package>.bff all</code>

- 3 To make sure that the storage manager packages installed correctly, type the following commands in the sequence shown, and press **Enter** after each command.

In the table that follows, *<SM*-package>* is the placeholder for the package name of each storage manager package.

Package	Command
Runtime	<code>lslpp -ah <SMruntime-package>.aix.rte</code>
ESM	<code>lslpp -ah <SMesm-package>.aix.rte</code>
Client	<code>lslpp -ah <SMclient-package>.aix.rte</code>
Utilities	<code>lslpp -ah <SMutil-package>.aix.rte</code>
Agent	<code>lslpp -ah <SMagent-package>.aix.rte</code>

- 4 Was the installation for the selected package successful (no problems were reported)?
 - **Yes** – The installation is complete.
 - **No** – Repeat step 1 through step 3. If the problem persists, refer to the *Storage System Product Release Notes for Version 10.x*, or contact a Customer and Technical Support representative.
 - **The installation was interrupted** – To install the applicable software package, type `installp -c <package-name>`, press **Enter**, and repeat step 3. In this command, *<package-name>* is a placeholder for the name of the package. Refer to the correct folder on the disc for the actual package name.

Installing the Storage Manager Packages on the AIX OS Using the Installer

Installing the storage manager packages is required for both hosts and storage management stations.

- 1 Go to the directory where the installation package `SMIA*.bin` is on the disc:

```
cd /<mount-point>/
```

- 2 Change the permissions on the file so that you can execute it:

```
chmod +x SMIA*.bin
```

- 3 Execute the command:

```
./SMIA*.bin
```

- 4** Choose Complete Install to install the whole package which includes the runtime, ESM, client, utilities, and agent. Follow the remaining instructions on the screen.

Post-Installation Configuration Tasks

Configure the storage management software using the following post-installation tasks. Complete these configuration tasks in order.

- 1 Manually add the storage array, if you did not select the **Automatic Discovery** option.

The **Automatic Discovery** option automatically discovers directly-managed storage arrays, known as in-band management, and host-managed storage arrays, known as out-of-band management, and adds the storage arrays to the management domain. You can manually add storage arrays by specifying the host controller IP address or the host name.

- 2 Name or rename the storage array.

Providing a storage array with a unique name helps you clearly distinguish one storage array from another.

- 3 Set a password.

Configuring each storage array with a password protects it from unauthorized access. You use the password when you activate any functions that change the state of the storage array.

- 4 Set up Simple Network Management Protocol (SNMP) and email alert notifications.

If a storage array component degrades, fails, or an adverse environmental condition occurs, the storage management software generates an alert notification. Alerts are sent as emails to the addresses that you specify, or are sent as SNMP messages to the network management stations that you specify.

- 5 Disable or enable Event Monitor, if applicable.

Disable Event Monitor if you do not want the host to send alert notifications. If you are running the storage management software on multiple hosts, disabling Event Monitor on all but one host prevents duplicate messages from being sent to the Major Event Log (MEL).

- 6 Configure network parameters for each iSCSI host port automatically, or specify the configuration information for each iSCSI host port.

- 7 Configure the host access by specifying which hosts should access volumes on the storage array.

8 Configure the volumes, the disk pools, and the volume groups.

Disk pools and volume groups are created from unconfigured capacity on the storage array. You can organize the capacity of disk pools and volume groups into volumes by using free capacity or unconfigured capacity. You specify the RAID level when you create your volumes and volume groups, but disk pools are automatically configured as RAID Level 6. You cannot change the RAID level of disk pools.

NOTE For information about disk pools, see *SANtricity online Help* or *SANtricity ES Storage Manager Concepts for Version 10.83* that is available with the other product documentation on the installation DVD.

9 Configure the hot spare drives for the volume groups. Disk pools do not use hot spare drives for data reconstruction of failed drives.

Use hot spare drives in a volume group that has a RAID level other than 0 to provide an additional layer of redundancy for your data. Hot spare drives take over data storage for a failed drive.

10 Configure the host to recognize the volumes, the disk pools, and the volume groups.

Register the volume with the host to make sure that the host recognizes the volume.

11 If the Snapshot Volume premium feature is enabled on your system, create the snapshot volumes.

12 If the Volume Copy premium feature is enabled on your system, create the volume copies.