



# Solstice Backup™ 6.1

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## Installation Guide

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# Preface

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The *Solstice Backup 6.1 Installation Guide* provides instructions on how to install Solstice Backup™ software.

After you install the Solstice Backup software, refer to the *Solstice Backup 6.1 Administrator's Guide* and the program's online help for detailed instructions on how to configure, administer, and use the Solstice Backup software.

The information in this guide is intended for system administrators who are responsible for installing software and maintaining the servers and clients on a network. Operators who monitor the daily backups may also find this manual useful.

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## Before You Read This Book

In order to fully use the information in this document, you must have thorough knowledge of the topics discussed in these books:

- *Solstice Backup 6.1 Administrator's Guide*
- *Solstice Backup 6.1 Release Notes*

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## Using UNIX Commands

This document may not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one or more of the following for this information:

- *Solaris Handbook for Sun Peripherals*
- AnswerBook2™ online documentation for the Solaris™ operating environment
- Other software documentation that you received with your system

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## Typographic Conventions

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

---

## Shell Prompts

Shell	Prompt
C shell	<i>machine_name%</i>
C shell superuser	<i>machine_name#</i>
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#

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## Related Documentation

Application	Title	Part Number
Administration	<i>Solstice Backup 6.1 Administrator's Guide</i>	816-1412-10
Release Notes	<i>Solstice Backup 6.1 Release Notes</i>	816-1414-10

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## Introduction

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This chapter provides background information on Solstice Backup software and supported devices. It includes the following sections:

- [“About the Solstice Backup Product” on page 13](#)
- [“Supported Devices” on page 15](#)
- [“Enabler Codes” on page 15](#)

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## About the Solstice Backup Product

The Solstice Backup product is a suite of storage management software that provides backup, recovery, and other services to computers with a wide variety of operating systems and data types. Solstice Backup products allow you to backup your heterogeneous environment while giving you the flexibility to design an efficient manageable setup.

The Solstice Backup software is distributed in a media kit of CD-ROMs that contain the software and electronic documentation for several related Sun products.

The Solstice Backup product has these major components: the Solstice Backup server, storage node, and client.



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**Caution** – The terms *Solstice Backup 6.0* and *6.0.1* and *Solstice Backup 5.5* and *5.5.1* are used interchangeably.

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# Solstice Backup Server

The Solstice Backup server software provides control and scheduling for Solstice Backup operations. On the Solstice Backup server, you can:

- Enter the enabler licenses for the Solstice Backup server and all the functions the Solstice Backup server controls, such as autochanger modules, additional client connections, and Legato NetWorker<sup>®</sup> ClientPak licenses.
- Define the clients, devices, and media that the Solstice Backup server controls.
- Define the schedules for backups and other operations.
- Monitor the results of backups and other operations.
- Manage the client file indexes that track each client's data.
- Manage the media database that tracks the data contained on each volume.

# Solstice Backup Storage Node

You can back up data directly to devices attached to either a Solstice Backup server or to a Solstice Backup storage node. A storage node controls storage devices such as tape drivers, autochangers, and silos.

Storage nodes depend on the Solstice Backup server for the following functions:

- Control over which clients use the storage node's devices for backups
- License management
- Management of the client file indexes that track each client's data
- Management of the media database that tracks the data contained on each volume

Solstice Backup storage nodes and the Solstice Backup server can use different operating systems. For example, you can use a Solstice Backup storage node on a Solaris operating system with a Solstice Backup server on an AIX<sup>®</sup> operating system. However, the storage node's enabler on the server must be of the same edition (either Network Edition or Power Edition) as the base enabler for the Solstice Backup server.

# Solstice Backup Client

The Solstice Backup client software provides recover and on-demand backup functionality, and it communicates with the Solstice Backup server. You install the Solstice Backup client software on all computers that you want to back up to the Solstice Backup server.

Solstice Backup clients may not have to be of the same operating system as the Solstice Backup server. However, to back up clients of other operating systems, your Solstice Backup server must have a Legato NetWorker ClientPak enabler for that type of client. For example, the Solstice Backup server is allowed to back up Solstice Backup clients on the Solaris™ operating system, but if you also want to back up Solstice Backup clients on another operating system, you must purchase and enter the Legato NetWorker ClientPak enabler for that operating system.

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## Supported Devices

Sun Solstice Backup software supports a variety of media types and devices, either stand-alone or in an autochanger or silo tape library. Devices can be attached to a Solstice Backup server or a designated storage node. To obtain the latest list of supported devices, refer to the Legato® Compatibility Guides on the Legato web site at [www.legato.com](http://www.legato.com).

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**Note** – The term “autochanger” refers to a variety of backup devices: autoloader, carousel, datawheel, jukebox, library, and near-line storage.

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You must use a nonrewinding device for Solstice Backup backups. The pathnames for these devices must follow the Berkeley Storage Device (BSD) semantic rules, for example, `/dev/rmt/0mbn`. The “b” in the pathname satisfies the BSD semantics requirement. If you use a file device, you must enter it as a directory path (the same as for other device types) rather than as just a filename.

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## Enabler Codes

Enabler codes (licenses), which activate the functionality of Solstice Backup software and other Sun software, are sold separately. For more information, refer to *“Enabling and Registering Solstice Backup and NetWorker Module Products”* .





## Installing the Solstice Backup Software

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This chapter explains how to install Solstice Backup software on Solaris. It includes the following sections:

- [“Software Installation Roadmap” on page 17](#)
- [“Installation Requirements” on page 18](#)
- [“Installing the Solstice Backup Software” on page 21](#)
- [“Installing the Solstice Backup Software” on page 21](#)
- [“Verifying Your Installation” on page 28](#)
- [“Changing the Solstice Backup Servers with Access to a Client” on page 31](#)
- [“Uninstalling the Solstice Backup Software” on page 32](#)

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## Software Installation Roadmap

The following numbered tasks are a roadmap to follow when installing Solstice Backup software. Read the roadmap and the referenced sections before installing the software:

1. Review the requirements section and note the default directory location and the installation file space requirements. For more information, see [“Installation Requirements” on page 18](#).
2. If you have an earlier release of Solstice Backup software installed, update the software. For more information, see [Chapter 3](#).
3. Install the required Solstice Backup software. For more information, see [“Installing the Solstice Backup Software” on page 21](#).

4. Install the device drivers for the Solstice Backup server and any storage nodes. For more information, refer to the following sources:
  - [Chapter 4](#)
  - The autochanger and silo chapters in the *Solstice Backup Administrator's Guide*
5. Enable and register all of your Solstice Backup products. For more information, refer to *"Enabling and Registering Solstice Backup and NetWorker Module Products"*.

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## Installation Requirements

The system requirements differ for each of the installation types:

- ["Client Software" on page 18](#)
- ["Storage Node" on page 19](#)
- ["Server Software" on page 20](#)



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**Caution** – Before installing Solstice Backup software, make sure that your operating system is up-to-date with the most recent system and Solstice Backup patches.

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**Note:** Solstice Backup software does not support locales (defined by your operating system) or codesets that remap characters having special meaning for filesystems. Depending on the filesystem, these special characters may include the forwardslash (/), the backslash (\), the colon (:), or the period(.). De\_DE.646 is an example of one unsupported locale. For detailed information, refer to the *Solstice Backup Administrator's Guide, UNIX Version*.

## Client Software

The following sections describe Solstice Backup client software installation requirements:

- ["System Requirements" on page 18](#)
- ["Installation Requirements" on page 19](#)

## System Requirements

The system requirements differ, depending on whether or not the clients have the same operating system as the Solstice Backup server.

The Solstice Backup client software package temporarily requires 30 MB of free space on the client computer.

To install software on clients:

- Of the same operating system, use the same installation media used to install the Solstice Backup server.
- Of different operating systems, use the Solstice Backup client software for that operating system on each client computer and purchase the required Legato NetWorker ClientPak enabler code. For more information, refer to the appropriate installation guide.

## Installation Requirements

To install the Solstice Backup client software, the following requirements must be met:

- The *PATH* environment variable for the user root on both the Solstice Backup server and the Solstice Backup client must include the directory where the Solstice Backup executables reside. By default, the executables reside in the *usr/bin/nsr* and the *usr/sbin/nsr* directories.
- The client software must be installed either on a remote network file system-mounted directory or a local drive.
- The *nsrexecd* command must be specified in each client's startup file.

## Storage Node

To install the Solstice Backup server software, the following requirements must be met:

- Device driver (*SUNWsbu2*) and client software (*SUNWsbuc*) must be installed. For more information, see [“Changing the Solstice Backup Servers with Access to a Client” on page 31](#).
- At least one supported storage device must be attached and installed. The device can either be a stand-alone device, autochanger or silo tape library. For a list of supported devices, obtain the Legato Compatibility Guides from the Legato web site at [www.legato.com](http://www.legato.com).

# Server Software

This section describes Solstice Backup server installation requirements:

- “System Requirements” on page 20
- “Installation Guidelines” on page 20

## System Requirements

To install Solstice Backup software on a Solaris server, make sure that:

- Your system must have the space recommended in [TABLE 2-1 on page 21](#).
- You have a directory on the server large enough for the Solstice Backup client, server indexes and media database (usually `/nsr`). The installation script checks for space and suggests one or more locations for the indexes and media database.
- You know the system pathname of at least one storage device for use by the Solstice Backup server to back up and recover files.

If you use a tape device to back up data you must use a valid pathname for that device. For example:

```
/dev/rmt/0cbn
```

**Note:** The tape device must be nonrewinding.

- Install Acrobat Reader if you want to read the documentation PDFs. To install Acrobat Reader, you need a directory with enough space to install the Acrobat Reader software included with the Solstice Backup distribution files.

## Installation Guidelines

On the system you are designating as the Solstice Backup server, you must install all of the Solstice Backup software: client, storage node, server, and device drivers. It is recommended that you install all of the Solstice Backup software on the server at the same time.

If you accept the default locations, the installation script chooses the directory locations shown in [TABLE 2-1](#).

**TABLE 2-1** Default Locations and Space Requirements

Software/Documentation Files	Solstice Backup Server Default Location	Space Needed
Solstice Backup GUI program files	/usr/bin/nsr	23 MB
Solstice Backup daemon and utility command files	/usr/sbin/nsr	22 MB
Online client file indexes; media database	/nsr	varies
Solstice Backup device drivers	/etc/LGTOusc /usr/kernel/drv /usr/kernel/drv/sparcv9 /usr/lib/nsr	21 MB
Solstice Backup man pages	/usr/share/man	1 MB
Adobe Acrobat Reader	/opt/Acrobat3/bin	8 MB
Documentation PDFs	optional	varies

## Installing the Solstice Backup Software

The following sections explain how to access and install the Solstice Backup software:

- [“Task 1: Access the Solstice Backup Software” on page 21](#)
- [“Task 2: Install the Solstice Backup Software” on page 23](#)

### Task 1: Access the Solstice Backup Software

You can access the Solstice Backup software:

- [“To Access the Installation Files from a Local CD-ROM” on page 22](#)
- [“To Access the Installation Files from a Remote CD-ROM” on page 22](#)

**Notes:**

- To install and run any version of the non-English, localized Solstice Backup software, release 6.0.1L — you must first install the localized English language release of the Solstice Backup 6.0.1L software. Once this release of the software is

installed, you can install the required localized version of the Solstice Backup software. If you are currently running the localized English 6.0.1L Solstice Backup software, you can install the required localized software.

Solstice Backup 6.0.1L is the most recent localized version.

- After installation, you can change the list of trusted Solstice Backup servers that you want to have access to the client's data by editing the `/nsr/res/servers` file. For detailed instructions on how to change the Solstice Backup servers that are authorized to access the client, see [“Changing the Solstice Backup Servers with Access to a Client” on page 31](#).

## ▼ To Access the Installation Files from a Local CD-ROM

1. Log in as root to the system where you are installing Solstice Backup software.
2. Mount the CD-ROM.
3. Locate the appropriate directory for your platform on the CD-ROM.
4. Set the `PATH` environment variable for user root, on both the Solstice Backup server and client, to contain the directory where the Solstice Backup executables reside. For information on this directory, see [TABLE 2-1 on page 21](#).

## ▼ To Access the Installation Files from a Remote CD-ROM

1. On the remote system:
  - a. Insert the CD-ROM into the remote system's drive.
  - b. Mount the CD-ROM on the remote system.
  - c. Make the CD-ROM exportable through the Network File System (NFS).
2. On the local system:
  - a. Log in as root on the system where you are installing Solstice Backup software.
  - b. Create a mount point.
  - c. Mount the remote CD-ROM filesystem. For example:

```
# mount remote-host:/cdrom/mount-dir
```
3. Set the `PATH` environment variable for user root, on both the Solstice Backup server and client, to contain the directory where the Solstice Backup executables reside. For information on this directory, see [TABLE 2-1 on page 21](#).

## Task 2: Install the Solstice Backup Software

By default, the Solstice Backup software is installed in the `/usr` directory. You can install the software in a default or nondefault location. For instructions, see:

- [“Installing to a Default Location” on page 23](#)
- [“Installing to a Nondefault Location” on page 26](#)

### Installing to a Default Location

This section explains how to install the server, client, and storage node software:

- [“To Install a Solstice Backup Client” on page 23](#)
- [“To Install a Solstice Backup Storage Node” on page 24](#)
- [“To Install the Solstice Backup Server” on page 25](#)

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**Note** – To install and run any version of the non-English, localized Solstice Backup software, release 6.0.1L — you must first install the localized English language release of the Solstice Backup 6.0.1L software. Once this release of the software is installed, you can install the required localized version of the Solstice Backup software. If you are currently running the localized English 6.0.1L Solstice Backup software, you can install the required localized software.

---

Solstice Backup release 6.0.1L is the most recent localized version.

### ▼ To Install a Solstice Backup Client

To install Solstice Backup software on the computer that you are designating as the Solstice Backup client:

1. Enter the `pkgadd` command at the system prompt. For example:

```
# pkgadd -d /cdrom/cdrom0/solaris/sparc
```



---

**Caution** – Do *not* press the [Enter] key for the default response All. Accepting the default installs the server and the device driver packages.

---

2. At the prompt, enter the appropriate option number to install the client package (`SUNWsbuc`). The package temporarily requires 70 MB of free space on the client computer.

3. (Optional) At the prompt, enter the appropriate options number to install the man pages, (*SUNWsbun*).
4. At the prompt, start the NetWorker daemons.
5. When you have added all the applicable packages and the prompt appears, press enter [q] to exit.

---

**Note** – After installation, you can change the list of trusted NetWorker servers that you want to have access to the client’s data by editing the `/nsr/res/servers` file. For detailed instructions on how to change the NetWorker servers that are authorized to access the client, see [“Changing the Solstice Backup Servers with Access to a Client”](#) on page 31.

---

## ▼ To Install a Solstice Backup Storage Node

To install Solstice Backup software on the computer that you are designating as the Solstice Backup storage node and have purchased an enabler code for:

1. Enter the `pkgadd` command at the system prompt. For example:

```
# pkgadd -d /cdrom/cdrom0/solaris/sparc
```



---

**Caution** – It is recommended that you start the NetWorker daemons *only* after you have installed the last NetWorker package.

---

2. At the prompt, enter the appropriate option to install the following packages. Should you choose to install only selected software packages on the storage node, you must install them in the following order:
  - *SUNWsbuc* (client software package)
  - *SUNWsbus2* (device driver software package)
  - *SUNWsbun* (storage node software package)
  - *SUNWsbun* (optional man pages)
3. Start the NetWorker daemons.
4. When you have added all the applicable packages and the prompt appears, press [q] to exit.
5. Configure the driver software to provide support for Solstice Backup software to back up data to the SCSI storage devices attached to the system. For more information, see [“Autochanger Configuration and Testing”](#) on page 56.



For the latest information about supported devices, refer to the Legato Compatibility Guides on the Legato web site at [www.legato.com](http://www.legato.com).

After installation, you can change the list of trusted NetWorker servers that you want to have access to the client's data by editing the `/nsr/res/servers` file. For detailed instructions on how to change the NetWorker servers that are authorized to access the client, see [“Changing the Solstice Backup Servers with Access to a Client” on page 31](#).

## ▼ To Install the Solstice Backup Server

To install Solstice Backup software on the computer that you are designating as the Solstice Backup server:

1. Keep a copy of your current configuration. The Solstice Backup software installation script modifies the `/etc/rpc` and `/etc/syslog.conf` files during the installation process.

For example:

```
# cp /etc/rpc /etc/rpc.old  
  
# cp /etc/syslog.conf /etc/syslog.conf.old
```

2. Enter the `pkgadd` command at the system prompt. For example:

```
# pkgadd -d /cdrom/cdrom0/solaris/sparc
```

3. At the prompt, press [Enter] to install all of the packages on the server. Sun recommends that you install all of the Solstice Backup software on the server at the same time.



---

**Caution** – It is recommended that you start the NetWorker daemons *only* after you have installed the last NetWorker package.

---

You can override the default selection to install only selected software. If you choose to install only selected software packages on the server, you must install them in the following order:

- `SUNWsbuc` (client software package)
- `SUNWsbu2` (device drivers package)
- `SUNWsbun` (storage node software package)

- *SUNWsbu1* (server software package)
  - *SUNWsbun* (optional man pages)
4. Start the NetWorker daemons.
  5. When you have added all the applicable packages and the prompt appears, press [q] to exit.
  6. Verify that the Solstice Backup daemons shown in [TABLE 2-2](#) are running. Enter the following command at the system prompt:

```
# ps -ef | grep nsr
```

**TABLE 2-2** Solstice Backup Daemons

Solstice Backup Installation Packages	Solstice Backup Daemons
Solstice Backup server	<b>nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmmd</b>
Solstice Backup client	<b>nsrexecd</b>
Solstice Backup storage node	<b>nsrexecd, nsrmmmd</b>

7. If the output does not list `nsrd` and `nsrexecd` as current processes, run the following command to start the Solstice Backup daemons on the Solstice Backup server:

```
# /etc/init.d/networker start
```

**Note:** After installation, you can change the list of trusted NetWorker servers that you want to have access to the client's data by editing the `/nsr/res/servers` file. For detailed instructions on how to change the NetWorker servers that are authorized to access the client, see [“Changing the Solstice Backup Servers with Access to a Client” on page 31](#).

## Installing to a Nondefault Location

By default, Solstice Backup software is installed in the `/usr` directory. If you have insufficient disk space on the `/usr` partition, you can relocate the following Solstice Backup packages to a specified directory on another partition:

- *SUNWsbuc* (client software package)
- *SUNWsbun* (storage node software package)
- *SUNWsbu1* (server software package)

The following Solstice Backup packages are not relocatable; they are always installed in the default location:

- *SUNWsbum* (optional Solstice Backup man pages)
- *SUNWsbus2* (optional Solstice Backup device driver commands, libraries, and utilities)

For a listing of the default locations and size requirements, see [TABLE 2-1 on page 21](#).



---

**Caution** – Do not relocate any of the packages if Legato NetWorker Module software is also installed on the computer.

---

## ▼ To Install the Relocatable Solstice Backup Packages to a Nondefault Location

1. Copy the `/var/sadm/install/admin/default` file, as shown:

```
# cp /var/sadm/install/admin/default /tmp/default.tmp
```

2. Edit the `/var/sadm/install/admin/default` file and change the value assigned to the `basedir` variable from **default** to **ask**, as shown:

```
basedir=ask
```



---

**Caution** – To successfully install the *SUNWsbus2* package, you must provide the root directory (`/`) as the response to the query about which directory to install the device drivers in.

---

3. Create a directory and the `/bin/nsr` and `/sbin/nsr` subdirectories where you will install the Solstice Backup packages, for example:

```
# mkdir -p /my-path/sbin/nsr  
  
# mkdir -p /my-path/bin/nsr
```

4. Modify the root PATH variable to include the */bin* and */sbin* subdirectories of the directory just created, for example:

```
/my-path/bin/nsr : /my-path/sbin/nsr
```

5. Enter the **pkgadd** command:

```
# pkgadd -d /cdrom/cdrom0/solaris/sparc
```

6. When the following prompt appears in the script, enter the same base directory for all the relocated packages:

```
Enter path to package base directory (default: /usr) [?,q]  
/my-path
```

```
Using /my-path as the package base directory.
```

7. When you have added all the applicable packages and the prompt appears, press [q] to exit.
8. Copy the */tmp/default.tmp* file to the following location. For example:

```
# cp /tmp/default.tmp /var/sadm/install/admin/default
```

If you use **pkgrm** to remove the packages at a later date, you must also supply the base directory you specified.

---

**Note** – After installation, you can change the list of trusted NetWorker servers that you want to have access to the client’s data by editing the */nsr/res/servers* file. For detailed instructions on how to change the NetWorker servers that are authorized to access the client, see [“Changing the Solstice Backup Servers with Access to a Client”](#) on page 31.

---

---

## Verifying Your Installation

The following sections provide information about verifying your installation:

- “Ensuring the Solstice Backup Software Starts” on page 29
- “Performing a Test Backup” on page 30

## Ensuring the Solstice Backup Software Starts

The Solstice Backup software provides both a GUI and a command-line interface. Use the GUI for the following procedures. To learn more about the command line interface, refer to the `nsradmin(8)` man page.

The toolbar buttons displayed in the main window of `nwadmin` provide quick access to the most frequently performed Solstice Backup administration tasks.

The program’s online help is available through the Help menu. You can view a topic that is specific to the window you are using or scroll to another topic of your choice.

## How to Start the Solstice Backup GUI

To start the Solstice Backup GUI, enter **the following command at the command line**:

```
# nwadmin -s server_name &
```

If the Solstice Backup GUI does not appear, try one of the following:

- Check that the `DISPLAY` environment variable is set correctly.
- Check that the `PATH` environment variable contains the correct path to the Solstice Backup programs. The default installation directories for the Solaris platform are:

```
/usr/bin/nsr
```

```
/usr/sbin/nsr
```

If the Solstice Backup GUI cannot connect to the specified server:

1. Run the `ps` command to check that the required Solstice Backup daemons, `nsrd` and `nsrexecd`, are present on the Solstice Backup server:

```
# ps -ef | grep nsr
```

2. If the output does not list `nsrpd` and `nsrexecd` as current processes, run the following command to start the Solstice Backup daemons on the Solstice Backup server:

```
# /etc/init.d/networker start
```

## Performing a Test Backup

To perform a test backup using stand-alone devices:

1. Configure a device on the Solstice Backup server. For more information, refer to the *Solstice Backup Administrator's Guide*.
2. Insert a volume into the device you configured.
3. Label the volume with the Default label template:
  - a. Select the device.
  - b. Select Label from the main window. The `nwadmin` program displays the preconfigured label templates.
  - c. Select the Default pool.
  - d. Click OK.
4. Mount the volume in the drive by selecting Mount from the main window.
5. Configure the Solstice Backup client:
  - a. From the main window, select Clients>Clients Setup.
  - b. For the Clients attribute, select the Solstice Backup server host.
  - c. For the Save set attribute, click Change and specify the path of a single file that you want to back up and then click Add. For example, `/usr/etc/hosts`.
  - d. Click Apply to apply your changes.
6. Test the group backup:
  - a. Select Group Control from the main window. The Group Control window appears with the Default group highlighted.
  - b. Click Start.
7. To view the progress of your test backup, select Details from the Group Control window. Messages appear in the panels of the main window as the backup progresses.

8. To view the client file index entries, select Indexes. These entries were created during the test backup. You should also see entries under Save Sets that indicate what data was backed up.

If the test backup was not successful, refer to the troubleshooting information in the *Solstice Backup Administrator's Guide* to determine the cause.

---

## Changing the Solstice Backup Servers with Access to a Client

To limit the servers authorized to access a client, you can specify a list of trusted Solstice Backup servers for a client in the `/nsr/res/servers` file.

After installing the client, storage node, and server software, you can use the following procedure to change the Solstice Backup servers that are authorized to access a client.

### ▼ To Change Client Access

To change which Solstice Backup servers can access a client:

1. Enter the following command to shut down the Solstice Backup daemons:

```
# nsr_shutdown
```

2. Edit or create the `/nsr/res/servers` file and add the set of Solstice Backup servers, one per line, that you want to grant access to the client. The first entry in this file becomes the default Solstice Backup server.
3. If necessary, remove the `-s` option from the `nsrexecd` command that is invoked by the boot-time startup file. Running `nsrexecd` with the `-s` option supersedes the `/nsr/res/servers` file:
  - a. Check the Solstice Backup boot-time startup file to see whether `nsrexecd` is being run with the `-s` option. The boot-time startup file for the Solaris platform is `/etc/init.d/networker`.
  - b. If the `-s` option exists in the boot-time startup file, remove all occurrences of `-s server_name` in the startup file.

4. Start the Solstice Backup daemons. The command required for the Solaris platform to start the Solstice Backup daemons is:

```
# /etc/init.d/networker start
```

5. Verify that the Solstice Backup daemons shown in [TABLE 2-3](#) are running by entering the following command at the system prompt:

```
# ps -ef | grep nsr
```

---

**Note** – The Solstice Backup daemon `nsrmmmd` will only be present if one or more devices are enabled.

---

**TABLE 2-3** NetWorker Daemons

NetWorker Installation Packages	NetWorker Daemons
NetWorker server	<code>nsrd</code> , <code>nsrexecd</code> , <code>nsrindexd</code> , <code>nsrmmdbd</code> , <code>nsrmmmd</code>
NetWorker client	<code>nsrexecd</code>
NetWorker storage node	<code>nsrexecd</code> , <code>nsrmmmd</code>

---

## Uninstalling the Solstice Backup Software

Use the `pkgrm` command to remove individual Solstice Backup packages or all of the Solstice Backup packages at the same time.



---

**Caution** – The Solstice Backup software packages depend on each other. To remove them all, you must remove them in the following order: *SUNWsbu1*, *SUNWsbun*, *SUNWsbu2*, *SUNWsbuc*. The man pages (*SUNWsbum*) and document files have no dependencies—you can remove them at any time.

---



## ▼ To Remove the Solstice Backup Software Packages

1. Log in as root on the system where you are removing the software.
2. Enter the **nsr\_shutdown** command to shut down the Solstice Backup daemons. A list of Solstice Backup daemons that will be shut down appears, along with a prompt that asks whether you want to continue with the **nsr\_shutdown** command.
3. Enter the **pkgrm** command to remove the software. For example:
  - To remove *all* the packages, enter the following command:

```
# pkgrm SUNWsbus1 SUNWsbun SUNWsbus2 SUNWsbuc SUNWsbum
```



**Caution** – Do not choose the default option All to remove the Solstice Backup software packages. Choosing this option removes all the software packages (not just Solstice Backup software) that were installed on your computer using the **pkgadd** utility.

- To remove *only* the:
  - Server software, enter the following command:

```
# pkgrm SUNWsbus1
```

- Storage node software, enter the following command:

```
# pkgrm SUNWsbun
```

- Device driver software, enter the following command:

```
# pkgrm SUNWsbus2
```

This removes the `SUNWsbus2` package from the server or storage node where the device driver software is installed.

- Client software, enter the following command:

```
# pkgrm SUNWsbuc
```

– Solstice Backup man pages, enter the following command:

```
# pkgrm SUNWsbum
```

This removes the `SUNWsbum` package from the server, storage node, or client where the man pages are installed.

## Updating from a Previous Solstice Backup Release

---

The following sections explain how to update from a previous release of Solstice Backup software:

- [“Introduction” on page 35](#)
- [“Automatic Conversion Method” on page 37](#)
- [“Manual Conversion Method” on page 49](#)



---

**Caution** – To update from Solstice Backup release 4.2 or earlier, you must first update to Solstice Backup release 5.x, and then update to Solstice Backup release 6.1 or later.

---

---

### Introduction

When you update to Solstice Backup release 6.1, the client file indexes and media database must be converted to a new format.



---

**Caution** – Once the client file indexes and the media database have been updated to the Solstice Backup release 6.1 and later format, there is no way to revert these objects for use by a previous release of the Solstice Backup software. It is a one-way conversion.

---

You can perform the update using one of the following two methods:

- **Automatic Conversion**

Use this method if you are running Solstice Backup release 5.0 or later and have sufficient disk space to perform the conversion.

The Solstice Backup 6.1 or later index conversion requires that there be at least enough free disk space to match the largest client file index that is to be converted. This space is used during the conversion process and will be released when completed. Following conversion, expect the media database to be approximately twice its original size. The client file indexes will be reduced in size by 20 to 40 percent. This change in storage requirements is permanent.

For detailed instructions, see [“Automatic Conversion Method” on page 37](#).

**Note:** If the automatic conversion fails, you can use the manual conversion method to update to Solstice Backup release 6.1 and later.

- **Manual Conversion**

Use this method if you *do not* have sufficient disk space to use the automatic conversion method.

The Solstice Backup release 6.1 or later index conversion requires that there be at least enough free disk space to match the largest client file index that is to be converted.

For detailed instructions, see [“Manual Conversion Method” on page 49](#).

## Update Enablers for Solstice Backup 6.1

You may require an update enabler to update to Solstice Backup release 6.1. See the following table for a list of the required update enablers:

**TABLE 3-1** Update Enablers for Solstice Backup 6.1

Solstice Software Release	Update Enabler Required
Release 6.0/6.0.1 to 6.1	no update enabler required
Release 5.5/5.5.1 to 6.1	Update/7
Release 5.1/5.5.1 to 6.1	Update/6, Update/7
Release 4.2.6 to 6.1	Update/5, Update/6, Update/7
Release 4.2 to 6.1	not supported

---

# Automatic Conversion Method

Use this method if you have sufficient disk space to perform the conversion. The following sections provide update procedures for Solstice Backup release 6.1.

- [“Updating a Solaris Master Server” on page 37](#)
- [“Updating a Solaris Storage Node” on page 47](#)
- [“Updating a Solaris Client” on page 48](#)

## Updating a Solaris Master Server

To update a Solaris Master Server, see the following:

- [“Solstice Backup Release 6.0 to 6.1” on page 37](#)
- [“Solstice Backup Release 5.5.1 to 6.1” on page 39](#)
- [“Solstice Backup Release 5.1/5.1.1 to 6.1” on page 41](#)
- [“Solstice Backup Release 4.2.6 to 6.1” on page 44](#)

## Solstice Backup Release 6.0 to 6.1

To update Solstice Backup release 6.0 to 6.1:

1. Prepare to update the Solstice Backup software:
  - a. Back up all client file indexes and generate a bootstrap for the server.

If you do not have a current bootstrap and backup of all client file indexes, perform scheduled backups on all your clients before updating to the next Solstice Backup release.

For example, to save your bootstrap information, enter the following command:

```
# savegrp -O group
```

**Note:** Make sure that all clients are included in the groups you are backing up.
  - b. Record the latest bootstrap save set ID and its associated volume label. To obtain this information, use the following command:

```
# mminfo -B
```
  - c. If the Solstice Backup software is not currently installed in the default location, record the location of the client file indexes.

2. Make sure that no backups or restores are presently running.
3. Shutdown the Solstice Backup daemons from root:

```
# nsr_shutdown
```

4. Remove the following Solstice Backup 6.0 packages:

```
# pkgrm SUNWsbus1 SUNWsbus2 SUNWsbun SUNWsbum SUNWsbuc
```



---

**Caution** – Do not remove the `/nsr` directory. This directory contains the Solstice Backup databases.

---

5. Install Solstice Backup 6.1 software:

- a. From a CDROM:

```
# cd /cdrom/cdrom0/solaris/sparc  
  
# pkgadd -d
```

**Note:** If you are installing Solstice Backup software from a location other than the CDROM, check the man page for the correct syntax.

- b. Select the default to install all packages.
- c. Answer [no] to starting the daemons.
- d. Select [q] at the `pkgadd` prompt.

For more information, see [“Task 2: Install the Solstice Backup Software” on page 23](#).

6. Download any Solstice Backup 6.1 patches from SunSolve.
7. Install the Solstice Backup 6.1 patches by following the instructions provided in the README file.
8. Start the Solstice Backup 6.1 daemons:

```
# /etc/init.d/networker start
```

9. Start the `nwadmin` GUI.



---

**Caution** – Updating from Solstice Backup release 6.0 to 6.1 does not require an update enabler.

---

# Solstice Backup Release 5.5.1 to 6.1

To update Solstice Backup release 5.5.1 to 6.1 on a Solaris Master server:

1. Prepare to update the Solstice Backup software:

- a. Determine whether you have adequate space to use the automatic conversion method. The Solstice Backup 6.0 or later index conversion requires that there be at least enough free disk space to match the largest client file index that is to be converted. This space is used during the conversion process and will be released when completed.

If you *do not* have sufficient disk space, use the manual conversion method. For detailed instructions, see [“Manual Conversion Method” on page 49](#).

- b. Backup all client file indexes and generate a bootstrap for the server.

If you do not have a current bootstrap and backup of all client file indexes, perform scheduled backups on all your clients before updating to the next Solstice Backup release.

For example, to save your bootstrap information, enter the following command:

```
# savegrp -O group
```

**Note:** Make sure that all clients are included in the groups you are backing up.

- c. Record the latest bootstrap save set ID and its associated volume label. To obtain this information, use the following command:

```
# mminfo -B
```

- d. If the Solstice Backup software is not currently installed in the default location, record the location of the client file indexes.

2. Make sure that no backups or restores are presently running.

3. Shutdown the Solstice Backup daemons from root:

```
# nsr_shutdown
```

4. Remove the following Solstice Backup packages:

```
# pkgrm SUNWsbus1 SUNWsbus2 SUNWsbun SUNWsum SUNWsbuc
```



---

**Caution** – Do not remove the `/nsr` directory. This directory contains Solstice Backup databases.

---

5. Install the Solstice Backup 6.1 packages:

a. From a CDROM:

```
# cd /cdrom/cdrom0/solaris/sparc
# pkgadd -d
```

**Note:** If you are installing Solstice Backup software from a location other than the CDROM, check the man page for the correct syntax.

b. Select the default to install all packages.

c. Answer [no] to starting the daemons.

d. Select [q] at the **pkgadd** prompt.

For more information, see [“Task 2: Install the Solstice Backup Software” on page 23](#).

6. Download any Solstice Backup 6.1 patches from SunSolve.

7. Install the Solstice Backup 6.1 patches by following the instructions provided in the README file.

8. Start the Solstice Backup 6.1 daemons:

```
# /etc/init.d/networker start
```

The media database and the client file index are converted automatically.

You can enhance the client file index conversion by running multiple instances of the **nsrck** program concurrently. This process converts multiple client file indexes in parallel. To convert multiple client file indexes in parallel, you can either:

- Specify the client file index to convert. For example:

```
# nsrck client_name
```

or

- Enter the **nsrck** command without a client name. This initiates the conversion of the next client in the list.

Each instance of **nsrck** running occupies a portion of your server’s processing, memory, and space swapping capability. You must balance the speed with which you want to convert your indexes against other Solstice Backup server needs. You should also monitor your system performance using a diagnostic tool to determine the optimum number of **nsrck** instances to launch.

Once the media database is converted, you can run scheduled backups. These backups, however, are not browsable until the Solstice Backup software on the associated client is updated.



9. Locate the Enabler Certificate for Update/7. If you do not have the Enabler Certificate, contact the Sun Solution Center or Sun service provider for assistance.  
For further assistance, call 1-800-USA-4SUN in the U.S.A. and 1-800-722-4SUN in Canada. In all other countries, contact the Service Sales Office in your area.

10. Install the enabler:

```
# /usr/sbin/nsr/nsrcap -c -v enabler_code
```

11. Register the updated software with the Sun Center. Follow the instructions on the update Enabler Certificate.

**Note:** Customers with maintenance contracts automatically receive update enablers.

If you received an enabler code without an Enabler Certificate, refer to [Chapter 5](#).

12. Enter the permanent authorization code once you receive the authorization code from the Sun Licensing Center:

- a. Start the **nwadmin** GUI.
- b. Click Server> Registration.
- c. Highlight the "Update/ 7" enabler code.
- d. Enter the authorization code.
- e. Click Apply.



---

**Caution** – The update enabler provides base functionality from the previous Solstice release. It does not add new functionality nor does it update any optional modules (Application Module for Oracle).

To add new functionality or modules refer to the appropriate Installation Guide.

---

## Solstice Backup Release 5.1/5.1.1 to 6.1

To update Solstice Backup release 5.1/5.1.1 to 6.1 on a Solaris Master server:

1. Prepare to update the Solstice Backup software:
  - a. Determine whether you have adequate space to use the automatic conversion method. The Solstice Backup 6.1 or later index conversion requires that there be at least enough free disk space to match the largest client file index that is to be converted. This space is used during the conversion process and will be released when completed.

If you *do not* have sufficient disk space, use the manual conversion method. For detailed instructions, see “Manual Conversion Method” on page 49.

- b. Backup all client file indexes and generate a bootstrap for the server.

If you do not have a current bootstrap and backup of all client file indexes, perform scheduled backups on all your clients before updating to the next Solstice Backup release.

For example, to save your bootstrap information, enter the following command:

```
# savegrp -O group
```

**Note:** Make sure that all clients are included in the groups you are backing up.

- c. Record the latest bootstrap save set ID and its associated volume label. To obtain this information, use the following command:

```
# mminfo -B
```

- d. If the Solstice Backup software is not currently installed in the default location, record the location of the client file indexes.

2. Make sure that no backups or restores are presently running.

3. Shutdown the Solstice Backup daemons from root:

```
# nsr_shutdown
```

4. Remove the following Solstice Backup packages:

```
# pkgrm SUNWsbus1 SUNWsbus2 SUNWsbun SUNWsbun SUNWsbuc
```



---

**Caution** – Do not remove the `/nsr` directory. This directory contains your Solstice Backup databases.

---

5. Install Solstice Backup 6.1 packages.

- a. From a CDROM:

```
# cd /cdrom/cdrom0/solaris/sparc
```

```
# pkgadd -d
```

**Note:** If you are installing Solstice Backup software from a location other than the CDROM, check the man page for the correct syntax.

- b. Select the default to install all packages.

- c. Answer [no] to starting the daemons.

- d. Select [q] at the `pkgadd` prompt.

For more information, see [“Task 2: Install the Solstice Backup Software” on page 23](#).

6. Download any Solstice Backup 6.1 patches from SunSolve.
7. Install the Solstice Backup 6.1 patches by following the instructions provided in the README file.
8. Start the Solstice Backup 6.1 daemons:  

```
# /etc/init.d/networker start
```

The media database and the client file index are converted automatically.  
You can enhance the client file index conversion by running multiple instances of the `nsrck` program concurrently. This process converts multiple client file indexes in parallel. To convert multiple client file indexes in parallel, you can either:
  - Specify the client file index to convert. For example:  

```
# nsrck client_name
```

or
  - Enter the `nsrck` command without a client name. This initiates the conversion of the next client in the list.  
Each instance of `nsrck` running occupies a portion of your server’s processing, memory, and space swapping capability. You must balance the speed with which you want to convert your indexes against other Solstice Backup server needs. You should also monitor your system performance using a diagnostic tool to determine the optimum number of `nsrck` instances to launch.  
Once the media database is converted, you can run scheduled backups. These backups, however, are not browsable until the Solstice Backup software on the associated client is updated.
9. Locate the Enabler Certificate for Update/7. If you do not have the Enabler Certificate, contact the Sun Solution Center or Sun service provider for assistance.  
**Note:** Customers with maintenance contracts automatically receive update enablers.  
For further assistance, call 1-800-USA-4SUN in the U.S.A. and 1-800-722-4SUN in Canada. In all other countries, contact the Service Sales Office in your area.
10. Enable the software by entering the following command (once for each module):  

```
# /usr/sbin/nsr/nsrcap -c -v enabler_code
```
11. Register the updated software with the Sun Center. Follow the instructions on the Enabler Certificate.  
If you received an enabler code without an Enabler Certificate, refer to [Chapter 5](#).

12. Enter the permanent authorization code once you receive the authorization code from the Sun Licensing Center:
  - a. Start the **nwadmin** GUI.
  - b. Click Server> Registration.
  - c. Highlight the "Update/6" or "Update/7" enabler code.
  - d. Enter the authorization code.
  - e. Click Apply.



---

**Caution** – The update enabler provides base functionality from the previous version. It does not add new functionality nor does it update any optional modules (Application Module for Oracle).

To add any new functionality or modules, refer to the appropriate Installation Guide.

---

## Solstice Backup Release 4.2.6 to 6.1

To update Solstice Backup release 4.2.6 to 6.1 on a Solaris Master Server:

1. Prepare to update the Solstice Backup software:
  - a. Determine whether you have adequate space to use the automatic conversion method. The Solstice Backup 6.0 or later index conversion requires that there be at least enough free disk space to match the largest client file index that is to be converted. This space is used during the conversion process and will be released when completed.  
  
If you *do not* have sufficient disk space, use the manual conversion method. For detailed instructions, see [“Manual Conversion Method” on page 49](#).
  - b. Backup all client file indexes and generate a bootstrap for the server.  
  
If you do not have a current bootstrap and backup of all client file indexes, perform scheduled backups on all your clients before updating to the next Solstice Backup release.  
  
For example, to save your bootstrap information, enter the following command:  
  

```
# savegrp -O group
```

  
**Note:** Make sure that all clients are included in the groups you are backing up.
  - c. Record the latest bootstrap save set ID and its associated volume label. To obtain this information, use the following command:

```
# mminfo -B
```

d. If the Solstice Backup software is not currently installed in the default location, record the location of the client file indexes.

2. Make sure that no backups or restores are presently running.

3. Shutdown the Solstice Backup daemons from root:

```
# nsr_shutdown
```

4. Remove the following Solstice Backup packages:

```
# pkgrm SUNWsbu1 SUNWsbu2 SUNWsbun SUNWsbum SUNWsbuc
```



---

**Caution** – Do not remove the */nsr* directory. This directory contains your Solstice Backup databases.

---

5. Obtain a copy of one of the following Solstice Backup releases:

- 5.1
- 5.1.1
- 5.5.1 (preferred)

6. Install the Solstice Backup 6.1 packages:

a. From a CDROM:

```
# cd /cdrom/cdrom0/solaris/sparc
```

```
# pkgadd -d
```

**Note:** If you are installing Solstice Backup software from a location other than the CDROM, check the man page for the correct syntax.

b. Select the default to install all packages.

c. Answer [no] to starting the daemons.

d. Select [q] at the **pkgadd** prompt.

For more information, see [“Task 2: Install the Solstice Backup Software” on page 23](#).

7. Start the Solstice Backup 5.x daemons:

```
# /etc/init.d/networker start
```

8. Repeat steps 3, 4, and 6 to install Solstice Backup 6.1 software.

9. Download any Solstice Backup 6.1 patches from SunSolve.

10. Install the Solstice Backup 6.1 patches by following the instructions provided in the README file.

11. Start the Solstice Backup 6.1 daemons:

```
# /etc/init.d/networker start
```

The media database and the client file index are converted automatically.

You can enhance the client file index conversion by running multiple instances of the `nsrck` program concurrently. This process converts multiple client file indexes in parallel. To convert multiple client file indexes in parallel, you can either:

- Specify the client file index to convert. For example:

```
# nsrck client_name
```

or

- Enter the `nsrck` command without a client name. This initiates the conversion of the next client in the list.

Each instance of `nsrck` running occupies a portion of your server's processing, memory, and space swapping capability. You must balance the speed with which you want to convert your indexes against other Solstice Backup server needs. You should also monitor your system performance using a diagnostic tool to determine the optimum number of `nsrck` instances to launch.

Once the media database is converted, you can run scheduled backups. These backups, however, are not browsable until the Solstice Backup software on the associated client is updated.

12. Install the following update enablers:

- Update/5
- Update/6
- Update/7

**Note:** Customers with maintenance contracts automatically receive update enablers.

If you do not have the Enabler Certificate, contact the Sun Solution Center or Sun service provider for assistance.

For further assistance, call 1-800-USA-4SUN in the U.S.A. and 1-800-722-4SUN in Canada. In all other countries, contact the Service Sales Office in your area.

13. Enable the software by entering the following command (once for each module):

```
# /usr/sbin/nsr/nsrcap -c -v enabler_code
```

14. Register the updated software with the Sun Center. Follow the instructions on the Enabler Certificate.

If you received an enabler code without an Enabler Certificate, refer to [Chapter 5](#).

15. Enter the authorization codes for the update enabler once the authorization codes are received from the Sun Licensing Center:

- a. Start the **nwadmin** GUI.
- b. Click Server> Registration.
- c. Highlight the "Update/5", "Update/6" or "Update/7" enabler code.
- d. Enter the authorization code.
- e. Repeat step c two more times.
- f. Click Apply.



---

**Caution** – The update enabler provides base functionality from the previous version. It does not add new functionality nor does it update any optional modules (Application Module for Oracle)

To add new functionality or modules refer to the appropriate Installation Guide.

---

## Updating a Solaris Storage Node

To update from Solstice Backup release 5.5.1/6.0 to 6.1 on a Solaris Storage Node:



---

**Caution** – The concept of a storage node did not exist with Solstice Backup release 5.1 and 5.1.1. Therefore no update is possible.

---

1. Review the following documentation:
  - [“Storage Node” on page 19.](#)
  - [“Solstice Backup Storage Node” on page 14.](#)
2. Make sure that no backups or restores are presently running.
3. Shutdown the Solstice Backup daemons from root:

```
# nsr_shutdown
```

4. Remove the following Solstice Backup 6.0 packages:

```
# pkgrm SUNWsbus2 SUNWsbun SUNWsbum SUNWsbuc
```

**Note:** *SUNWsbum* (man pages for Solstice Backup 6.1) may not have been installed on the Storage Node.

5. Install Solstice Backup 6.1 software:

a. from a CDROM:

```
# cd /cdrom/cdrom0/solaris/sparc  
# pkgadd -d
```

**Note:** If you are installing Solstice Backup software from a location other than the CDROM, check the man page for the correct syntax.

For more information, see [“Task 2: Install the Solstice Backup Software” on page 23.](#)

b. Select the following packages to install:

- SUNWsbuc
- SUNWsbuc2
- SUNWsbun
- SUNWsbum

c. Answer [no] to starting the daemons in all cases.

d. Select [q] once you come back to the **pkgadd** prompt.

6. Check Sunsolve for any Solstice Backup 6.1 patches.

7. Download any Solstice Backup 6.1 patches.

8. Install the Solstice Backup 6.1 patches by following the instructions provided in the README file.

9. Start the Solstice Backup 6.1 daemons:

```
# /etc/init.d/networker start
```

10. Repeat the above instructions for each storage node.

## Updating a Solaris Client

To update Solstice Backup software from a release prior to 6.1 on a Solaris Client:

1. Make sure no backups or restores are currently running.

2. Shutdown the daemons from root:

```
# nsr_shutdown
```

3. Remove the Solstice Backup 6.0 packages:

```
# pkgrm SUNWsbuc2 SUNWsbun SUNWsbuc SUNWsbum
```

**Note:** *SUNWsbum* (man pages for Solstice Backup) may or may not be installed on the Storage Node.



4. Install the Solstice Backup 6.1 software:
  - a. From a CDROM:

```
# cd /cdrom/cdrom0/solaris/sparc
```

```
# pkgadd -d
```

**Note:** If you are installing Solstice Backup software from a location other than the CDROM, check the man page for the correct syntax.

    - a. Select the *SUNWsbuc* package to install.
    - b. Answer [no] to starting the daemons.
    - c. Select [q] at the **pkgadd** prompt.
5. Check Sunsolve for any Solstice Backup 6.1 patches.
6. Download any Solstice Backup 6.1 patches.
7. Install the Solstice Backup 6.1 patches by following the instructions provided in the README file.
8. Start the Solstice Backup 6.1 daemons:

```
# /etc/init.d/networker start
```
9. Repeat the above instructions for each Solstice Backup Client.



---

**Caution** – The Solstice Backup Client package does not have to be at the same revision level (the master server has 6.0 and the client has 5.5.1) but it is highly recommended that the client has the same binary set as the server whenever possible.

---

---

## Manual Conversion Method

If you *do not* have sufficient disk space to use the automatic conversion method, use the manual conversion method.

The following sections explain how to complete the update process, using the manual conversion method:

- [“Task 1: Prepare to Update the Solstice Backup Software” on page 50](#)
- [“Task 2: Update the Solstice Backup Software” on page 50](#)
- [“Task 3: Recover the Solstice Backup Server Bootstrap” on page 51](#)

- [“Task 4: Rename the Solstice Backup Resource Files” on page 52](#)
- [“Task 5: Recover the Client File Indexes” on page 53](#)
- [“Task 6: Enable and Register the Software” on page 53](#)

## Task 1: Prepare to Update the Solstice Backup Software

To prepare to update from a previous release:

1. Backup all client file indexes and generate a bootstrap for the server.

If you *do not* have a current bootstrap and backup of all client file indexes, perform a scheduled backup on all your clients before updating to the next Solstice Backup release.

To save your bootstrap information, enter the following command:

```
# savegrp -O group
```

**Note:** Make sure that all clients are included in the groups you are backing up.

2. Record the latest bootstrap save set ID and its associated volume label. To obtain this information, use the following command:

```
# mminfo -B
```

3. If the Solstice Backup software is not currently installed in the default location, record the location of the client file indexes.

## Task 2: Update the Solstice Backup Software

To update the Solstice Backup software:

1. Shut down the Solstice Backup software. For example:

```
# nsr_shutdown
```

2. Remove the earlier Solstice Backup release, but do not remove the client file indexes, the resource files, or the media database.

For more information, see [“Uninstalling the Solstice Backup Software”](#) on page 32.

3. Install the new release of the Solstice Backup software. For more information, see [“Installing the Solstice Backup Software”](#) on page 21.
4. Apply any required Solstice Backup software patches.

## Task 3: Recover the Solstice Backup Server Bootstrap

This section describes how to recover the Solstice Backup server bootstrap using the `mmrecov` command.

---

**Note** – In Solstice Backup release 6.0 or later, the `mmrecov` command is only used to recover the Solstice Backup server’s media database and resource files; the `nsrck` command is used in [“Task 4: Rename the Solstice Backup Resource Files”](#) to recover the server’s client indexes.

---

To recover the Solstice Backup server bootstrap, use the same backup device that you used to save the bootstrap:

1. Insert the volume that contains the most recent backup named *bootstrap* and load it into the server’s backup device.
2. At the command line, enter the following command to recover the media database and resource files:

```
# mmrecov
```

The `mmrecov` program prompts you for the:

- Latest bootstrap save set ID
  - Starting file number (if known)
  - Starting record number (if known)
  - Volume on which the save set ID started
3. If you have more than one backup device available, enter the name of the device you want to use. To accept any default values, press [Enter].

Recovery of the Solstice Backup media database and resource files is complete when the following message appears:

If your resource files were lost, they are now recovered in the 'res.R' directory.

Copy or move them to the 'res' directory, after you have shut down the service. Then restart the service. Otherwise, just restart the service.

If the on-line index for the [server\_name] was lost, it can be recovered using the nsrck command.

**Notes:**

- For more information about the mmrecov command, refer to the *Legato NetWorker Disaster Recovery Guide* or to the mmrecov man page.
- You can use the Solstice Backup nsrwatch or nwadmin programs to monitor the recovery of the media database and resource files.

## Task 4: Rename the Solstice Backup Resource Files

You must rename the Solstice Backup resource files because the configuration files cannot be reliably overwritten while the Solstice Backup software is running. The mmrecov program recovers the res directory as res.R.

To rename the configuration files:

1. Shut down the Solstice Backup daemons:

```
# nsr_shutdown
```

2. Switch to the following directory:

```
# cd /nsr
```

3. Rename the existing res directory to res.orig:

```
# mv res res.orig
```

4. Rename the recovered res.R directory to res:

```
# mv res.R res
```

- Restart the Solstice Backup software by running the Solstice Backup startup script:

```
# /etc/init.d/networker start
```

- After you verify that the Solstice Backup configurations are correct, remove the `res.orig` directory.

---

**Note** – Once the media database is restored, you can run scheduled backups. These backups, however, are not browsable until the Solstice Backup software on the associated client file index is updated.

---

## Task 5: Recover the Client File Indexes

Once you recover the server's media database and resource files, recover all indexes for clients on the Solstice Backup server.

- To recover all of the Solstice Backup clientindexes to the Solstice Backup server, enter the following command:

```
# nsrck -L7
```

- To recover the Solstice Backup clientindexes individually, enter the following command:

```
# nsrck -L7 client_name
```

## Task 6: Enable and Register the Software

To enable and register your Solstice Backup software refer to [Chapter 5](#).



# Autochanger Installation and Configuration

---

The following sections provide information on installing and configuring autochangers:

- [“Autochanger Configuration and Testing” on page 56](#)
- [“The jbconfig Command Output” on page 58](#)

**Note:** The term “autochanger” refers to a variety of backup devices: autoloader, carousel, datawheel, jukebox, library, and near-line storage.

For more information explaining which autochangers are supported by the Solstice Backup software, refer to the Legato Compatibility Guides on the Legato web site at [www.legato.com](http://www.legato.com).

## Notes:

- With this release of the Solstice Backup software, you can configure the drives on an autochanger to be shared. For more information about this new Solstice Backup feature - Dynamic Drive Sharing (DDS) - refer to the *Solstice Backup Administrator's Guide*.
- To install and configure Solstice Backup support for Network Data Management Protocol (NDMP), refer to the Solstice Backup Administrator's Guide.
- The Sun StorEdge NetWork Foundation HBA/Driver requires a special configuration to bind the device World Wide Port Names that are used by the Legato lus driver.  
For information explaining how to configure the Sun StorEdge NetWork Foundation HBA/Driver, refer to the *Solstice Backup Administrator's Guide, UNIX Version*.

---

# Autochanger Configuration and Testing

Follow the instructions in this section to configure and test the device driver software on a Solstice Backup server or storage node with an attached autochanger. For more information on configuring an autochanger, refer to the *Solstice Backup Administrator's Guide*.

To use an autochanger for Solstice Backup storage management, follow the procedures for these tasks:

- [“To Configure The Autochanger” on page 56](#)
- [“To Test The Autochanger Connection” on page 57](#)

---

**Note** – Before physically attaching the autochanger, you can use the `inquire` command to determine which SCSI addresses are available to connect the autochanger.

---

A list of SCSI devices attached to your server, if any, appears on your screen.

If you attached your autochanger before installing the driver, your jukebox should appear in a list similar to the following example:

```
scsidev@0.0.0: FUJITSU M2263S-51201 | Direct Access  
  
scsidev@0.4.0: Quantum DLT4700 | Sequential Access  
  
scsidev@0.4.1: Quantum TZ Media Changer | Changer Device
```

## ▼ To Configure The Autochanger

1. Log in as root on the Solstice Backup server.
2. Enter the `inquire` command. The `inquire` commands for the Solaris platform is:

```
# /etc/LGTOuscsci/inquire
```

The **inquire** command allows you to verify that the autochanger is attached and determine the addresses of the robotics and tape drives. For more information about the **inquire** command, refer to the **inquire** man page.



3. Enter the **jbconfig** command. The program displays four different types of autochangers.
  - For an example, see [“The jbconfig Command Output” on page 58](#).
  - For additional information on the available command options, refer to the **jbconfig** man page.



---

**Caution** – Before running the **jbconfig** command in the next step, check the devices that are defined in the Devices panel of the Solstice Backup Administrator program. By default, the Solstice Backup software configures a single tape device with a media type that might not match your system. If the media type is incorrect, delete the device. For information about deleting devices, refer to the *Sun Solstice Backup Administrator’s Guide* .

---

4. When prompted, select one of the available options to indicate which type of autochanger to install.
5. Use the addresses obtained from the **inquire** command to continue to configure the robotics and tape drives.

When the configuration is complete, the program displays the following message:

```
Jukebox has been added successfully.
```

When you use the **jbconfig** program to configure an autochanger, a new resource is created with the name you specified. To view the:

- New resource created in the Jukeboxes’ resource, use the Solstice Backup Administration program.
- Attributes of the Jukeboxes’ resource, refer to the online help or the **nsr\_jukebox(5)** man page.

For more information on configuring an autochanger, refer to the *Solstice Backup Administrator’s Guide*.

## ▼ To Test The Autochanger Connection

1. Log in as root on the Solstice Backup server or storage node.
2. Insert two volumes, one each into the first and last slots of the autochanger. Make sure that the drives are empty and that any drive doors are open.
3. Enter the **jbexercise** command at the prompt and specify the control port and the jukebox model. Make sure that you use the same control port pathname that was used in [“To Configure The Autochanger” on page 56](#).

For example, the following command runs the **jbexercise** program on the Quantum DLT/Digital DLT autochanger detected by the **jbconfig** script:

```
# jbexercise -c scsidev@0.2.1 -m "Quantum DLT/Digital DLT"
```

For additional information on the command options available for the **jbexercise** command, refer to the **jbexercise(1m)** man page.

**Notes:**

- To list the SCSI devices that are available, use the `inquire` command. The control port for SCSI autochangers is typically expressed in the format `scsidev@n.n.n`.
- To obtain information about a standard SCSI jukebox, run the **jbexercise** command with the following options:

```
# jbexercise -m other -c <bus.target.lun>
```

The `-D` option (for a specified drive) does not currently work with the **jbexercise** command.

- To obtain the exact control port pathname, use the response displayed by the **jbconfig** command script when the autochanger was configured:

These are the SCSI Jukeboxes currently attached to your system

- 1) `scsidev@1.2.0`: DLI Libra Series
- 2) `scsidev@0.2.1`: Quantum DLT/Digital DLT

## The jbconfig Command Output

The following is an example of what would be displayed when installing an Autodetected SCSI Jukebox on a Solaris computer:

```
# jbconfig

1) Install a SmartMedia Jukebox.

2) Install an Autodetected SCSI Jukebox.

3) Install an Autodetected NDMP SCSI Jukebox.

4) Install an SJI Jukebox.
```

5) Install an STL Silo.

What kind of Jukebox are you installing? [1] 2

These are the SCSI Jukeboxes currently attached to your system:

1) scsidev@0.4.1: HP-C1557A/Surestore 12000e

Which one do you want to install? 1

Installing an 'HP-C1557A/Surestore 12000e' jukebox.

Name you would like to assign to the jukebox device? juke

A brief description of the jukebox device? [scsidev@0.4.1: HP-C1557A/Surestore 12000e] peter's

Pathname of the control port for the jukebox device?  
[scsidev@0.4.1]

Do you want automated device cleaning support enabled? (yes/no) n

Will media drive 1 be shared by multiple device paths? (yes/no) n

Enter hostname that owns media drive 1: ? [bluenose]

An example of a valid device name for this OS is '/dev/rmt/lcbn'

Enter pathname of media drive 1: ? /dev/rmt/0cbn

using '/dev/rmt/0cbn' as device name

Should the drive be configured as a NDMP device? (yes/no) n

This media device has not been configured yet. Please

select a media device type for /dev/rmt/0cbn.

1) 3480

22) dst

2) 3570

23) dst (NT)

- |                   |                 |
|-------------------|-----------------|
| 3) 3590           | 24) dtf         |
| 4) 4890           | 25) file        |
| 5) 4mm            | 26) hint        |
| 6) 4mm 12GB       | 27) logical     |
| 7) 4mm 20GB       | 28) LTO Ultrium |
| 8) 4mm 4GB        | 29) optical     |
| 9) 4mm 8GB        | 30) qic         |
| 10) 8mm           | 31) SD3         |
| 11) 8mm 20GB      | 32) sdlt        |
| 12) 8mm 5GB       | 33) SLR         |
| 13) 8mm AIT       | 34) tkz90       |
| 14) 8mm AIT-2     | 35) tz85        |
| 15) 8mm Mammoth-2 | 36) tz86        |
| 16) 9490          | 37) tz87        |
| 17) 9840          | 38) tz88        |
| 18) dlt           | 39) tz89        |
| 19) dlt1          | 40) tzs20       |
| 20) dlt7000       | 41) vhs         |
| 21) dlt8000       | 42) VXA         |

```
Choice? 5
```

```
Jukebox has been added successfully
```

```
Would you like to configure another jukebox? (yes/no) n
```

---

## How to Determine Device Mapping to Drives on L180/L700 Library

If your system is connected with the Sun Storage Fibre Channel host bus adapter (HBA), the **inquire** command will not provide you with accurate information about tape device file to drive mapping on the L180/L700 Library.

To determine tape device file to drive mapping on an L180/L700 library, complete the following steps:

1. Obtain the serial numbers from the front panel of the L180/L700 library:
  - a. Select Menu>main menu>drive information.
  - b. Select a drive. The serial number is displayed: Drive 0331000033518
  - c. Select Menu to once again display all drives after you have recorded the serial number for a drive.
  - d. Select the other drives as required. Record the serial numbers for each drive in the library.
2. Complete the following steps to obtain the serial number of the drive to which each device is mapped:
  - a. As root at your computer, enter the following command to display the available tape device files:

```
# ls /dev/rmt/*cbn
```

The tape device files should be displayed in the following format:

```
/dev/rmt/0cbn /dev/rmt/1cbn /dev/rmt/2cbn /dev/rmt/3cbn
```

The information you need is the base device number: 0, 1, 2
  - b. Enter the following command with a specific device:

```
# luxadm inq <device_path>
```

The following information is displayed about the device, including the serial number of the drive to which it is mapped. Other information, not relevant at this time, is also displayed:

```
neptune{root}109: luxadm inq /dev/rmt/1
INQUIRY:
Physical Path:
/devices/pci@1f,0/pci@1/pci@1/pci@f/SUNW,qlc@4/fp@0,0/st@w50
010 4f000428e49,0:
Vendor:STK
Product:9840
Revision:1.28
Serial Number331000033518
Device type:0x1 (Tape device)
```

c. Repeat step b for all devices on your system.

3. Match the serial numbers you obtained in step 1 to the library's drive numbers.

---

**Note** – There is no connection between the serial numbers and the device file mapping.

---

Drive	Serial number	device file
0	331000033518	/dev/rmt/1
1	331000033359	/dev/rmt/0

You will use this information when you are configuring the library using the **jbconfig** program. You must enter the device paths to correspond to the order of the drives in the library. For example, the first device path you enter must correspond to Drive 0 in the L180/L700 library.

## Enabling and Registering Solstice Backup and NetWorker Module Products

---

This section describes enabling and registering Solstice Backup software.

Enabler codes and authorization keys are needed to turn on the ability to use features of the software on the Solstice Backup software CD-ROMs. Each collection of Solstice Backup software and feature options is sold separately as a product and each has its own enabler code. For example, each of the following options has its own enabler code:

- Network Edition
- Autochanger Software Modules
- Storage Node
- Client connections

The following sections describe how the Solstice Backup software is ordered and used *temporarily* for evaluation purposes:

- [“Temporary Use With a Built-in Enabler Code” on page 64](#)
- [“Temporary Use With an Evaluation Enabler Code” on page 64](#)

The following section describes how the Solstice Backup software is *permanently* licensed:

- [“Permanent Use With a Purchased Enabler Code, Registration, and Authorization Key” on page 65](#)

---

## Temporary Use With a Built-in Enabler Code

You can install and use the Solstice Backup software from the media kit without entering an enabler code. A built-in temporary enabler code is in effect for 30 days after installation.

The built in enabler gives you the following functionality:

- The ability to backup to 10 client (9 clients plus the server)
- Use a tape library of up to 16 slots (storage bins)

If other functionality is needed for the evaluation period, you will need to use evaluation enablers. See the *Solstice Backup Roadmap* for a list of evaluation enablers.

When you follow the installation instructions in the appropriate manual for the desired locale, the installation software notifies you that you must enter an enabler code to continue using the software beyond 30 days.



---

**Caution** – If you do not enable the software within the 30 day period using either a evaluation or purchased enabler code, the ability to backup data is disabled, although restoration of data is still allowed. Any time during the initial 30-day period, you can either enter a evaluation or purchased enabler code, as described in the sections [“Temporary Use With an Evaluation Enabler Code”](#) on page 64 and [“Permanent Use With a Purchased Enabler Code, Registration, and Authorization Key”](#) on page 65.

---

---

## Temporary Use With an Evaluation Enabler Code

You can install the Solstice Backup software and any combination of evaluation enabler codes to evaluate the Solstice Backup software for 45 days. See the *Solstice Backup Roadmap* for a list of evaluation enablers.



## ▼ To Enter the Evaluation Enable Code

After you follow the Solstice Backup installation instructions, perform the following procedure:

1. Obtain the appropriate enabler code for the type of Solstice Backup server and client configuration you are using.

For the appropriate enabler codes, see See the *Solstice Backup Roadmap* for a list of evaluation enablers.

2. Become superuser on the Solstice Backup main server or log in as a user with administrative rights.

3. Enter the following command to enable the software:

```
# nsrccap -v -c <enabler_code>
```



---

**Caution** – If you do not enable the software with a purchased enabler code within the 45 day period after entering an evaluation enabler code, the ability to backup data is disabled. Restoration of data is still allowed. Any time during the 45 days after you enter an evaluation enabler, you can enter a purchased enabler code, as described in [“Permanent Use With a Purchased Enabler Code, Registration, and Authorization Key”](#) on page 65.

---

---

## Permanent Use With a Purchased Enabler Code, Registration, and Authorization Key

You can purchase a license for the Solstice Backup software either at the same time that you purchase a media kit, or any time during an evaluation period. You can also purchase upgrade licenses for additional clients, database modules, and jukeboxes.

Once you have purchased your licenses, you will receive one or more enabler certificates in the mail. If this is a new purchase, you will receive an enabler code for the base software and one for each additional module. If you are upgrading or adding new functionality, you will receive an enabler for each additional module.

As described on the enabler certificate, after you enable the Solstice Backup software with the code supplied on the certificate, you must register the Solstice Backup software. Sun will then send you an authorization code, which you must enter in the registration window of the Solstice Backup Administrator program. The authorization code must be entered within 45 days of the date you entered the purchased enabler certificate.



---

**Caution** – If you do not enter the permanent authorization code within the 45 day period after entering the purchased enabler code, the ability to backup data is disabled, although restoration of data is still allowed.

---

## ▼ To Enable and Register the Solstice Backup Software

1. Order licenses from Sun for the type of Solstice Backup server and client configuration you are using.

When you get the purchased enabler certificate in the mail, proceed to [Step 2](#).

2. Become superuser on the Solstice Backup main server or log in as a user with administrative rights.
3. Perform the following operations to enter the purchased enabler codes:
  - a. If you have been evaluating the Solstice Backup software and have now purchased the software:
    - i. Upgrade from your base evaluation enabler to your purchased base enabler by entering the following command:

```
# nsrccap -v -u base_enabler_code
```

- ii. (Optional) Delete any remaining evaluation enablers via the Solstice Backup Administrator program (nwadmin). This will eliminate warning messages coming from expiring evaluation enablers. Add your purchased enablers for additional functionality as shown in [Step b](#).

- b. Enter the following command, once for each module:

```
# nsrccap -v -c enabler_code
```

4. Start the Solstice Backup Administrator program:

```
# nwadmin &
```

5. Select View>Tabular.

6. Select Server>Registration.

The registration window lists all enabled modules by name, serial number, hostid, the expiration date, and the enabler's authorization key. If an enabler is authorized, no expiration date is shown. If an enabler is not authorized, no authorization key is shown.

7. Enter the required information in the fields for the following:

- Name
- Company
- Address
- Phone number
- Email
- Date purchased

8. With the registration information from [Step 6](#) available, call the license center at 1-800-usa4sun or send email to [license@sun.com](mailto:license@sun.com).

To send email, copy and paste the registration window contents (enabler codes, hostids, and expiration dates) along with your name, company name, address, phone number, email address and date of purchase into an email message. Include a brief note stating that you are requesting authorization keys.

The authorizations keys are returned within two days by the same method you use to request them.



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**Caution** – If you do not enter an authorization key within the 45 day period after entering the purchased enabler code, the ability to backup data is disabled. Restoration of data is still allowed.

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## ▼ To Enter the Permanent Authorization Code

To enter the permanent authorization code for Solstice Backup servers and clients:

1. Apply for the authorization key from the Sun license center, as described in [“To Enable and Register the Solstice Backup Software”](#) on page 66.

When the authorization keys arrive, proceed to [Step 2](#).

2. Become superuser on the Solstice Backup main server or log in as a user with administrative rights.
3. Start the Solstice Backup Administrator program:

```
# nwadmin&
```

4. Select Server>Registration.
5. Enter each authorization key into the Authorization Key field for the corresponding enabler.  
For example, if you have enabled and obtained the authorization key for the Autochanger Software Module, enter the authorization key into the entry for the Autochanger Software Module enabler.

## Update Enablers

If you have an enabler for an earlier release of the Solstice Backup software and are installing this release as an update, you received the update enabler code on the Enabler Certificate. The update enabler brings forward all the licenses for which you've already been authorized. Enter the update enabler code as you would any other enabler code. Enter the update enabler code without removing any of the previously authorized codes.