



# Sun StorEdge™ Enterprise Backup Software 7.0

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Release Notes

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# Sun StorEdge EBS Software Release 7.0

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Sun StorEdge EBS software release 7.0, contains new features and improvements. This chapter discussed the following topics:

- [“Supported Operating Systems” on page 17](#)
- [“Related Documents” on page 18](#)
- [“New or Enhanced Features” on page 18](#)
- [“Installation and Upgrade Notes” on page 28](#)
- [“Important Notes and Tips” on page 33](#)
- [“Known Limitations” on page 51](#)
- [“Documentation Corrections and Additions” on page 83](#)

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

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## Supported Operating Systems

Sun StorEdge EBS release 7.0 server software is supported on Sun Solaris 7, 8, 9. Sun StorEdge EBS release 7.0 client software is supported on the following operating systems and platforms:

- Sun Solaris 7, 8, 9
- HP Tru64 UNIX 5.0a, 5.1, 5.1a, 5.1b
- HP-UX 10.20 (on PA-RISC and client only), 11.0, 11i, 11i Version 1.5 (on Itanium)
- AIX 4.3, 4.3.1, 4.3.2, 4.3.3, 5L 5.1

- Linux (on Itanium), SuSE Enterprise Server 7
- Linux (on x86) Red Hat 7.1, 7.2, 7.3, Advanced Server Edition 2.1, SuSE 7.3, 8.0 Enterprise Server 7, Caldera Server 3.1.1 (client only), TurboLinux 7.0 (client only)
- Linux (on IBM s390/Zseries), SuSE Enterprise Server 7, Red Hat 7.2
- SGI IRIX 6.5, 6.5.1-15 and above (32-bit)
- Microsoft Windows NT, Windows 2000, Windows XP and Windows .NET

For further, up-to-date details on supported operating systems, refer to the *Legato Compatibility Guides* available on the Sun web site at [www.legato.com](http://www.legato.com).

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## Related Documents

The following documents, available on the Sun web site at [www.sun.com](http://www.sun.com), provide further information about the Sun StorEdge EBS software:

- *Sun StorEdge Enterprise Backup Administrator's Guide, Release 7.0*
- *Sun StorEdge Enterprise Backup Installation Guide, Release 7.0* (Version varies by platform)
- *Legato NetWorker Disaster Recovery Guide, Release 7.0, UNIX Version*
- *Legato Command Reference Guide, Release 7.0*
- *Legato NetWorker Power Edition Performance Tuning Guide, (All Platforms)*
- *Legato NetWorker Error Message Guide, Release 7.0*
- Technical Bulletins

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## New or Enhanced Features

Sun StorEdge EBS release 7.0 includes the following new or enhanced features:

- “[Business Editions](#)” on page 19
- “[Improved Error Handling for Lost Volume Names](#)” on page 19
- “[Sun StorEdge EBS DiskBackup](#)” on page 20
- “[Common Device Interface](#)” on page 20
- “[Configuring a Virtual Client to Back Up to a Local Storage Node](#)” on page 20
- “[Monitoring Sun StorEdge EBS Resources](#)” on page 20
- “[New Resource Database Has Replaced nsr.res and nsrjb.res Files](#)” on page 21

- “Generating Program-Readable Reports” on page 22
- “Comment Attribute in Sun StorEdge EBS Resources” on page 22
- “User Group Resource” on page 23
- “Unique Identification of Devices” on page 23
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- “TapeAlert Capability” on page 24
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- “Support for Linux on the Mainframe” on page 25
- “Dedicated Storage Node Attribute” on page 25
- “User ID Attribute Added to the Sun StorEdge EBS Administrator Program” on page 25
- “The nsr\_support Program” on page 26
- “The nsr\_support Program” on page 26
- “Time Zone Offset” on page 27
- “Time of Save Group Completion - Last End” on page 27

## Business Editions

A new base enabler, Business Edition, includes the Workgroup Edition features and also enables a 1- to 26-slot autochanger. It can also accept additional enablers to support more autochangers.

Business and Workgroup editions both support four devices. They do not support a remote storage node.

## Improved Error Handling for Lost Volume Names

The Sun StorEdge EBS software has improved error handling and reporting to the media database that ensures the `nsrjb` process correctly updates an inventory after an unsuccessful read-label operation. This enhancement allows the Sun StorEdge EBS software to update a Jukebox resource and avoid an infinite loop of subsequent unsuccessful mounts for the same volume.

# Sun StorEdge EBS DiskBackup

Release 7.0 of the Sun StorEdge EBS software offers two ways to save data to a computer's local or network-attached disk:

- File Type Device
- Advanced File Type Device (Adv\_file)

Storing data using the Sun StorEdge EBS DiskBackup solution greatly reduces the time it takes to both save and recover data compared to using tape.

## Common Device Interface

The common device interface (CDI) is a new method for the Sun StorEdge EBS software to send commands to tape devices. The CDI feature enables the Sun StorEdge EBS software to send any SCSI command to SCSI or SCSI-like connected tape drives. For more information, see [“Running CDI on Tru64 with Specific Hardware Configuration Might Impede System Functionality”](#) on page 36.

## Configuring a Virtual Client to Back Up to a Local Storage Node

In Sun StorEdge EBS release 7.0, you have the option of configuring a virtual client within a cluster so that its backups are directed to the storage node on the physical host on which it is currently residing.

## Monitoring Sun StorEdge EBS Resources

The Monitor resource allocation protocol (RAP) option tracks the history of additions, deletions, or modifications to a Sun StorEdge EBS resource or resource attribute. These changes are recorded in the `rap.log` file located in the `/nsr/logs` directory. The `rap.log` file lists the user name, the source computer, and the time of the modification. Sufficient information is logged in the `rap.log` file to enable an administrator to undo any changes. You must have Administrator privilege to enable this feature.

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**Note** – By default, the Monitor RAP option is disabled.

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To enable the Monitor RAP option:

1. In the Sun StorEdge EBS Administrator program, select Server Setup from the Server menu.
2. On the General tab of the Set Up Server dialog box, set the Monitor RAP attribute to Enabled.
3. Click OK.

## New Resource Database Has Replaced nsr.res and nsrjb.res Files

In previous Sun StorEdge EBS releases, all resource information was stored in \*.res files. To provide better performance and improved scalability, Sun StorEdge EBS release 7.0 replaces the following files with a new Sun StorEdge EBS resource database:

```
/nsr/res/nsr.res  
/nsr/res/nsrjb.res
```

The configuration information these files contained now resides in the following directory structure:

```
/nsr/res/nsrdb/00  
.  
.  
.  
/nsr/res/nsrdb/09
```

Within this directory structure, each resource is stored in a separate numbered file. As new resources are created (for example, Client, Group, or Pool resources), new files are added in these directories.

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**Note** – Because client resources are generally small, the Sun StorEdge EBS client (nsrexecd) continues to use the /nsr/res/nsrla.res file.

---

For information about automatic conversion of the resource database during installation, refer to the *Sun StorEdge Enterprise Backup Installation Guide*. For information about viewing resources, restoring previous versions, and repairing database corruption, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide, Release 7.0*.

## Generating Program-Readable Reports

The Sun StorEdge EBS software now lets you generate reports in formats that scripts and computer programs can easily parse. You can generate these program-readable reports using the `mminfo` and `nsrinfo` commands with the `-x` option. Two formats are available for output:

- Delimiter-separated values format
- XML format

For more information, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide, Release 7.0* or the man pages for the `mminfo` and `nsrinfo` commands.

## Comment Attribute in Sun StorEdge EBS Resources

A Comment attribute has been added to each Sun StorEdge EBS resource that allows Sun StorEdge EBS administrators to provide unique descriptions of each resource instance. For example, if there are multiple Client resources with the same name, the Comment attribute can be used to distinguish each resource.

Comments entered in the Comment attribute appear along with resource names in the various dialog boxes used to select resources in the Sun StorEdge EBS Administrator program.

# User Group Resource

The Sun StorEdge EBS software includes an access control feature that is configured through a new User Group resource, which allows Sun StorEdge EBS administrators to assign users to one of two Sun StorEdge EBS user groups. [TABLE 1-1 on page 23](#) provides information on the two preconfigured user groups.

**TABLE 1-1** Preconfigured Sun StorEdge EBS User Groups

User Group	Description
Administrators	Members of the Administrators group have permission to perform all Sun StorEdge EBS functionality. The <code>root@server</code> user is always a member of this group and cannot be removed from the group. <b>Note:</b> Privileges associated with the Administrators group cannot be changed.
Users	By default, members of the Users group are granted permission to back up and recover local data and to monitor Sun StorEdge EBS operations. They cannot view or edit configurations. You can change the privileges associated with the Users group by adding or removing privileges.

You can add new users to either the Administrators or Users groups, and you can edit the privileges associated with the Users group. However, you cannot delete the above Sun StorEdge EBS user groups.

## Unique Identification of Devices

Sun StorEdge EBS release 7.0 contains the following enhancements to make device configuration easier:

- The `inquire` command has been enhanced to uniquely identify attached devices by a combination of identifiers including manufacturer, product ID, serial number, World Wide Number (WWN) and World Wide Port Name (WWPN).
- A new command, `sjisn`, has been added. The `sjisn` command displays the attached devices in the order of their element connection.

The output of these commands may be useful when running `jbconfig` to configure autochanger(s) that contain many drives. The output may help reduce guesswork or manual inspection when determining drive order within the autochanger(s) being configured.

## Service Mode for Devices

This release permits devices to be put into a service state. Devices in this state are removed from automated allocation, but they are able to complete their current or pending backup and recovery operations.

## TapeAlert Capability

The new TapeAlert feature displays diagnostic and status messages for devices. These messages may provide:

- Critical diagnostic information, such as for media or drive failure, when user intervention is urgent and data is at risk.
- Warnings when the media or device needs servicing.
- Information regarding media or device status.

## Enhanced Browsing Capability

Sun StorEdge EBS software has added the ability to use the `nwrecover` program to browse client file indexes across different operating systems. Client file indexes can be browsed from the command line interface using the `recover` command with various options.

For example, from a UNIX operating system, you can browse client file indexes that originated on a Microsoft Windows client from either:

- The `nwrecover` program
- The command line interface using the `recover` command

Afterward, use the `recover` command to direct the recovery operation to a destination location on either the same Microsoft Windows client or a different Microsoft Windows client that has the same—or a compatible—filesystem type.

For more information, refer to the Directed Recovery chapter of the *Sun StorEdge Enterprise Backup Administrator's Guide*. For a complete description of the `recover` command and its options, refer to the `recover` man page or the *Legato Command Reference Guide*.

## Support for Linux on the Mainframe

Sun StorEdge EBS client functionality is now available for IBM S/390 and zSeries Linux mainframe servers. The following features are supported:

- Full compatibility with releases 6.1.3 and 7.0 of Sun StorEdge EBS server and storage nodes.
- Standard IBM S/390 and zSeries operating modes (native, logical partitions, and zVM, version 4, release 2 or greater).

For information about system requirements, licensing, and installation, refer to the *Legato NetWorker, Installation Guide, Linux Version*.

## Dedicated Storage Node Attribute

All devices created on storage nodes (with the exception of servers) have a new resource administration platform attribute: Dedicated Storage Node. The attribute is displayed in both the `nwadmin` and `nsradmin` programs. A dedicated storage node can only back up its own local data.

The Dedicated Storage Node attribute is set when creating a device on a remote storage node. If the Dedicated Storage Node attribute is set to Yes, a Dedicated Storage Node License for the storage node is needed.

However, if the Dedicated Storage Node is set to No (the default value), the standard storage node license is required. All storage nodes earlier than Sun StorEdge EBS release 7.0 behave as if the Dedicated Storage Node attribute is set to the default No.

A storage node host cannot mix storage node types. All devices on a storage node must be set up for either a dedicated storage node or a standard storage node.

For more information, refer to the *Sun StorEdge Enterprise Backup, Administrator's Guide*.

## User ID Attribute Added to the Sun StorEdge EBS Administrator Program

An attribute named User ID, has been added to the Sun StorEdge EBS Administrator program (`nwadmin`). This read-only attribute identifies the user that is currently using the Sun StorEdge EBS Administrator program.

The user's identity appears in the following format:

```
user/host@domain
```

where:

- *user* is the user's login name
- *host* is the name of the computer that the user is logged into
- *domain* is the network domain in which the computer resides.

For example, if the user *djeffries* was accessing the Sun StorEdge EBS Administrator program on the computer named `mars.jupiter.com`, which belongs to the domain named SATURN.JUPITER.COM, the user identification would display as:

```
djeffries/mars.jupiter.com@SATURN.JUPITER.COM
```

The User ID attribute is available in the UNIX Sun StorEdge EBS Administrator program from two locations: the Sun StorEdge EBS Administrator main window and the Server Setup window. In the main Sun StorEdge EBS window, the User ID attribute is located on the right side directly above the Devices pane.

To view the User ID attribute on the UNIX Sun StorEdge EBS Server Setup window:

1. From the Server menu, select Server Setup.
2. From the View menu, select Details.
3. Scroll to the bottom of the window and locate the User ID attribute.

## The nsr\_support Program

The `nsr_support` program gathers system information, including Sun StorEdge EBS software-specific details and general information regarding the computer environment, and generates a user-friendly, HTML-format report that can be used for troubleshooting Sun StorEdge EBS software configurations and system analysis.

If you contact Technical Support for assistance, you might be asked to run the `nsr_support` program on your system. Depending on the nature of the problem, you might also be asked to supply specific command line parameters when running this program.

For information about the command line parameter options available for the `nsr_support` command, see the `nsr_support -h` man page or the *Sun Command Reference Guide*.

To run the `nsr_support` program in interactive mode:

1. Change to the `/usr/sbin/nsr` directory.
2. Enter the following at the command line to run the `nsr_support` program and generate an HTML-format report:

```
# nsr_support
```

3. Follow the prompts to finish generating the report.

---

**Note** – It could take some time for the `nsr_support` command to gather all required information.

---

The reports the `nsr_support` program generates are written to the client's filesystem. For example:

- `/tmp/nsrsup.pid.out.html`
- `/nsr/tmp/nsrsup.pid.out.html`

Future-generated HTML-format reports are written to different file names, as identified by the process id for each log.

## Time Zone Offset

To enable management and reporting applications to properly handle Sun StorEdge EBS servers in different timezones, the server's local time is displayed as an offset from Greenwich Mean Time (GMT). This value is displayed in the Server window of the Sun StorEdge EBS Administration Program.

## Time of Save Group Completion - Last End

The Last End field is an information-only field that displays the time at which the last save group completed. This field is located in the Groups window of the *Sun StorEdge EBS Administration Program*. The Last End field is updated if the Last Start field is updated and the save group completes normally. A save group will not complete normally if there is an abnormal shutdown such as a computer crash or core dump.

---

# Installation and Upgrade Notes

This section provides notes pertaining to installing and upgrading the Sun StorEdge EBS software and related products.

## Host Agent Daemon on Sun StorEdge EBS

The Host Agent daemon, `hagentd`, is not currently supported in the Sun StorEdge EBS 7.0 release. During the Sun StorEdge EBS installation, the `hagentd` daemon is added to the Sun StorEdge EBS server. This daemon is not started by default and does not currently perform any function. The Host Agent daemon has been added in preparation for a future release.

The following list identifies all host agent related files that are installed during the Sun StorEdge EBS installation:

Binary files:

- `hasubmit`
- `hagetconf`
- `hafs`
- `hasys`
- `hascsi`
- `hadump` - Sun StorEdge EBS server only
- `haprune` - Sun StorEdge EBS server only
- `hagentd` - Sun StorEdge EBS server only

---

**Note** – A man page file is also installed for each binary file.

---

Schema files:

- `hafs.sch`
- `hasys.sch`
- `hascsi.sch`

You can safely leave all of the installed host agent files on your computer.

# Licensing

This section discusses changes in licensing for this release of Sun StorEdge EBS software.

## Updating to This Release

As a major release with important new features, updating to Sun StorEdge EBS release 7.0 requires an update enabler. The update enabler *must be installed before performing the update*; otherwise, the Sun StorEdge EBS server will be disabled from performing any other function until the update enabler is applied. The update enabler code is only available if you have a maintenance contract. Clients running prior supported releases of Sun StorEdge EBS software may still be backed up by a Sun StorEdge EBS 7.0 server.



---

**Caution** – Sun recommends a backup of your Sun StorEdge EBS metadata prior to updating to release 6.x and another backup prior to updating to release 7.0.

---

## Dynamic Drive Sharing

In prior releases, DDS licensing was not fully enforced and one DDS license allowed unlimited shared drives in a data zone. In this release, DDS licensing is now fully enforced and one DDS license is required for each physical drive that is shared in the data zone. If a DDS drive becomes unlicensed (for example, if the license is deleted or an evaluation enabler expires), only one drive path will be able to access the drive, while all other shared drive paths will be disabled for that drive.

## Application Modules

In prior releases, Application Module licensing was not fully enforced and a single NetWorker Module license allowed unlimited backups of that module type over a data zone. In this release, Application Module licensing is now fully enforced and a NetWorker Module license is required for each type of database module installed on a host. Multiple instances of the same database type on a host requires only one enabler.

# Legato NetWorker on AIX Is Installed Using SMITTY/SMIT Not NSR\_IZE

To take advantage of the native AIX package installation utility `installp`, NetWorker packages are now installed with the AIX System Management Interface Tool (SMIT) or `smitty` program. The `smitty` program is a command line based software management program; the SMIT offers the same functionality with a graphical user interface. The NetWorker installation program `nsr_ize` is no longer supported.

Be aware that the AIX `installp` utility does not enable you to change the default installation location of packages. NetWorker binaries are installed to the `/usr/bin` filesystem.

## ClientPak Installation Documentation

The *Legato NetWorker ClientPak® Installation Guide* is no longer published.

Installation information for the Legato NetWorker ClientPak is now found in the platform-specific *Sun StorEdge Enterprise Backup Installation Guide* and *Legato NetWorker Installation Guides*.

## Vendor-Specific ASC and ASCQ Codes Supported

The Additional Sense Code (ASC) utility, including its associated `ascrcode` and library, translates vendor-specific ASC and Additional Sense Code Qualifier (ASCQ) error messages.

The ASC utility is located in the Sun StorEdge EBS driver package, which is a software requirement for the storage node and the server package. Requisite software is installed automatically by default, so if you elect to install the storage node, then the driver package, and thus the ASC utility, is installed automatically.

Notes:

If you elect not to install the requisite software automatically, and you do not manually select drivers to install with the storage node, the storage node installation will fail.

If you install only the client package, then the storage node package, and thus the ASC utility, is not installed.

The ASC utility translates vendor-specific error messages for the following vendors:

- ADIC
- ATL
- BHTi
- Benchmark
- EXABYTE
- Fujitsu
- HP
- IBM
- Overland
- Plasmon
- Qualstar
- Quantum
- Seagate
- STK
- Tandberg

## Media Database Queries from a Client Earlier Than 6.0

The Sun StorEdge EBS software uses save set names and client names that are unique across Sun StorEdge EBS servers. If you are using a Sun StorEdge EBS client and Sun StorEdge EBS server running release 7.0, the `mminfo` program output displays these unique client names as:

`index: clientname.`

Sun StorEdge EBS clients from releases earlier than 6.0 are unable to display the cross-server name information in an easy-to-read format. If you run the `mminfo` program from a 5.x or earlier client, specifying a Sun StorEdge EBS server that is running the release 7.0, a client name output appears as a long string of characters. For example, a client name appears as:

```
index:db4e3d0-00000004-3957b0d5-3957b0d4-00010000-8945081f.
```

While this string of characters properly identifies the client name to the Sun StorEdge EBS server, it is not easy to read.

## Workaround

Upgrade the Sun StorEdge EBS client to release 7.0.

## Continued Save Sets Eliminated

The 64-bit format eliminates the need for continued save sets when saving data. To use the larger save sets, the clients and servers must both be running Sun StorEdge EBS release 6.0 or later software. As a result of this change, the Save Set Cutoff value in the Server resource is no longer used unless the client software is earlier than Sun StorEdge EBS release 6.0. A value in this attribute is ignored if you are backing up a Sun StorEdge EBS release 6.0 or later client.

## Updating Sun StorEdge EBS Servers and Storage Nodes

Storage nodes running Sun StorEdge EBS release 7.0 or later are not compatible with Sun StorEdge EBS servers running releases earlier than 6.0. Upgrade the Sun StorEdge EBS servers before upgrading storage nodes.

---

**Note** – A Sun StorEdge EBS server will support a release 6.x storage node.

---

## Administering Sun StorEdge EBS Release 7.0 Servers from Earlier Clients

You can create Sun StorEdge EBS resources (such as directives and archive annotations) with RAP values that are larger than 1 KB. The 1 KB size limitation has been removed. Clients running the release 5.5.x Administrator program, however, do not support resource values larger than 1 KB. Consequently, to use the larger resource values, clients and servers must both be running Sun StorEdge EBS release 6.0 or later software. Once the server contains resource values larger than 1 KB, it is important that all Administrator programs be upgraded.

Backup and recovery operations are not affected by this incompatibility. Only Administrator programs are affected.

---

# Important Notes and Tips

This section describes important notes and tips about using the Sun StorEdge EBS software.

## Solaris 9 Features Not Supported

The following Solaris 9 features are not supported:

- Minimal Installation
- Extended File Attributes
- UFS Snapshots

## Value for Hardware ID Attribute

The hardware ID tracks drives being shared by multiple hosts. Device instances sharing the same physical drive across multiple hosts have the same hardware ID. You can update the hardware IDs during the device configuration process. Any character string can be used as a value.

The value for the hardware ID attribute is a string that is too long for the Sun StorEdge EBS Administrator program to effectively display. Consequently, when hardware IDs are enabled, a unique positive integer is assigned to all the shared devices.

The Sun StorEdge EBS Administrator program clearly displays this shorter number when two paths refer to the same device. The hardware ID is arbitrarily generated and assigned a run time. If you reboot a server, or enable and disable the DDS feature, the hardware ID is regenerated and reassigned a run time.

## Configure Linux Operating System to Detect SCSI Devices

Proper configuration of the SCSI subsystem is required to get full usage of SCSI devices and allow the operating system to detect SCSI devices attached to the machine. If you have a device configured with multiple logical unit numbers (LUNs), then the kernel parameter "Probe all LUNs of each SCSI Device" must be set

to Yes. For more information on configuring the Linux 2.4 SCSI subsystem, refer to *The Linux Documentation Project* web site. For information on your SCSI device contact the manufacturer.

## XKeysymDB File Necessary to Run Motif based Graphical Interfaces

If you want to run the motif based graphical user interfaces (*nwrecover*, *nwbackup*, *nwretrieve*), the XKeysymDB file must be installed. This file is used to translate virtual keysymbols, without it Xt is unable to not able to translate these symbols reducing interface functionality.

For more info on XKeysymDB, see:

<http://www.rru.com/~meo/pubsntalks/unp/xkeysymdb.html>

## Syntax for the Administrator Attribute of the Server Resource

Entries in the Administrator attribute of the Server resource should be listed in the form of name/value pairs, using the syntax:

*name=value[,name=value[, ...]]*

where *name* can be one of the following:

- user
- group
- host
- domain
- domain\_sid
- domaintype (either NIS or WINDOMAIN)

For example, to grant administrative privileges to a user named *jdoe* on the host named *jupiter*, enter the following for the Administrator attribute:

**user=jdoe,host=jupiter**

---

**Note** – The formats *user@host*, *host/user*, and similar formats are supported, but are ambiguous as to whether host or domain is intended. As a result, the *name=value* format is preferred.

---

If the value has spaces, it should be surrounded by quotation marks; for example:

```
domain="Domain Admins"
```

You can also enter only a user name, which allows that user to administer the Sun StorEdge EBS software from any host (this is equivalent to entering *user=username*).

---

**Note** – Wildcards can also be used in place of a value; however, wildcards should be used with caution to avoid compromising your enterprise security. Netgroup names can also be entered and must be preceded by an ampersand(&).

---

For more information, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide*.

## Save Group Attributes: Inactivity Timeout and Client Retries

The Inactivity timeout attribute is the maximum amount of time (in minutes) a client is given to fail to communicate back to the server. If a client fails to respond longer than the Inactivity timeout value, the server will consider the client as timed-out (stopped responding). If a client fails due to any reason, a retry is initiated immediately. This ensures that no time is lost during the scheduled backup due to any failures. The Client retries attribute defines how many retries should be attempted on the client.

## Unregistered Client names will Fail to Save

If a client is registered using a short name, and its fully qualified name is not listed in the Aliases attribute, the save operation fails with the following error message:

```
machine is not a registered client
```

For example, if `mars` is a registered client and `mars.domain.com` is not listed in the Aliases attribute of `mars`'s Client resource, the save operation fails, and the following error message appears in the Sun StorEdge EBS daemon log:

```
tabasco:/ save: SYSTEM error: `tabasco.domain.com' is not a
registered client

tabasco:/ save: Cannot open save session with nw-70
```

Use the Sun StorEdge EBS Administrator program, add the hostname reported in the `daemon.log` to the Aliases attribute of the Client resource.

## Running CDI on Tru64 with Specific Hardware Configuration Might Impede System Functionality

CDI is a new feature added to Sun StorEdge EBS release 7.0 software; it is a new method for the Sun StorEdge EBS software to send commands to tape devices.

The CDI feature can be configured through the Device resource in the Sun StorEdge EBS Administrator program. By default, the CDI feature is set to SCSI commands, which means that it is enabled when you install the Sun StorEdge EBS software. To disable the CDI feature, you must select the Not Used attribute.

The following sections describe important notes and tips when using CDI on HP Tru64. For further information about the CDI feature, refer to the *Sun StorEdge EBS Administrator's Guide*.

### Specific Software and Hardware Configurations Experience Kernel Panic with CDI Enabled

A kernel panic might occur when the Tru64 machine is acting as a remote storage node to another server or as a server with a local storage node.



---

**Caution** – If you are running HP Tru64 5.0A, it is recommended you upgrade to a later version of HP Tru64. If you are unable to upgrade the operating system, disable the CDI feature for any tape devices that you have configured. For further information, see the remaining sections of this bug documentation.

---

## HP Tru64 5.1 or Later

If you are running Sun StorEdge EBS release 7.0 software on HP Tru64 5.1, apply Patch Kit 3 or later from the following link:

<http://ftpl.support.compaq.com/public/unix/>

If you are running Sun StorEdge EBS 7.0 on HP Tru64 5.1A or later, you should not encounter a kernel panic with the CDI feature enabled.

## Sun StorEdge EBS Release 7.0 with CDI Enabled on HP Tru64 Version 5.1

The following configuration of Sun StorEdge EBS release 7.0 with CDI enabled experienced a kernel panic in testing:

1. Disable CDI.
2. From the following website download patch kit 3 or the latest HP patch kit.  
<http://ftpl.support.compaq.com/public/unix/>
3. Verify the patch kit has been successfully installed.
4. Enable the CDI feature.

---

**Note** – CDI is not supported for NDMP.

---

The following configuration on Sun StorEdge EBS 7.0—with CDI enabled— has experienced a kernel panic in testing:

- HP Tru64 version 5.1
- Jukebox: Quantum with 1 SDLT320 drive
- Direct SCSI connect
- Sun StorEdge EBS release 7.0
- CDI on (enabled)

### ▼ To Avoid a Kernel Panic

1. Determine which operating system and version you are using.
2. Determine which patch level (if any) you have installed.
3. Temporarily disable the CDI feature on the Sun StorEdge EBS 7.0 software.

4. Download Patch Kit 3 or the latest HP patch kit from the following web site:  
<http://ftpl.support.compaq.com/public/unix/>
5. Verify the patch kit has been successfully installed.
6. Enable the CDI feature.
7. Complete a small-scale save and recover to determine if a kernel panic occurs.

---

**Note** – If you experience a kernel panic, contact Sun Technical Support.

---

## Scanner Command Automounts Read-Only `adv_file` Type Device

The `scanner` command automounts readonly `adv_file` type device when using this command with the `adv_file` type device.

When both *primary* and *\_AF\_readonly* `adv_file` type devices are unmounted, running the following command results in *\_AF\_readonly* device being mounted:

```
scanner -m -s SSID primary_device_name
```

This is the expected behavior of the `scanner` command with `adv_file` type device.

## Support for HAStoragePlus Resource Type in Sun Cluster Version 3.0 U3 and Later

The new HAStoragePlus resource type in Sun Cluster Version 3.0 U3 can be used to do the following:

1. Synchronize the startups between resource groups and disk device groups (similarly to the HAStorage resource type)
2. Make a local filesystem highly available



---

**Caution** – Sun StorEdge EBSserver release 7.0 does not yet support the HAStoragePlus resource type; thus, it cannot be added to the Sun StorEdge EBS server's resource group.

---

# Configuring SAN/Leadville Driver Environments

The following procedures should be followed when configuring Sun StorEdge EBS software in a SAN 4.x/Leadville 6.x.x environment:

1. The tape devices must be configured before configuring Sun StorEdge EBS in SAN 4.x/Leadville 6.x.x:

- a. Verify that the tape device nodes are listed:

```
cfgadm -al
```

- b. Configure the controller(s) for the devices:

```
cfgadm -c configure <controller ap_id>
```

For example:

```
cfgadm -c configure c7
```

**Note:** When using `cfgadm` to configure controllers it is not recommended to change the number of actual or logical bus instances.

An I/O error will be received at this point when running with SAN 4.1/Leadville 6.x.x. Ignore this error and continue with the rest of the steps.

- c. Verify that the native driver nodes are created by using the `cfgadm` command:

```
cfgadm -al <controller ap_id>
```

For example: `cfgadm -al c7`

2. Sun StorEdge EBS `lus` driver must be unloaded before unconfiguring tape device nodes in SAN 4.x/Leadville 6.x.x.:

- a. Shutdown the Sun StorEdge EBS daemons to avoid loading the `lus` driver while working with the devices.
- b. Locate the loaded `lus` driver:

```
modinfo | grep lus
```

- c. Unload the lus driver:

```
modunload -i <lus module_id>
```

- d. Unconfigure the devices:

```
cfgadm -c unconfigure <controller/device ap_id>
```



---

**Caution** – After a tape device is unconfigured, if the lus driver is loaded and the `cfgadm -al` command is executed, the output will show the unconfigured tape device as being configured. This is a result of an inconsistency between the state of the lus driver and the Solaris native driver (st driver). Therefore, the lus driver must stay unloaded when verifying devices with the `cfgadm -al` command at this stage. To make lus driver recognize this tape device as unconfigured, run the `/usr/sbin/nsr/lus_add_fp_devs` command again.

---

3. If the system is rebooted after the tape devices are configured with SAN 4.1/Leadville 6.1.x and the Sun StorEdge EBS software, configure the robotic/media changer devices:

- a. Configure the robotic device:

```
cfgadm -c configure <robotic_dev ap_id>
```

For example: `cfgadm -c configure c3::500104f00045df22`

- b. Locate the loaded lus driver:

```
modinfo | grep lus
```

- c. Unload the lus driver:

```
modunload -i <lus module_id>
```

- d. Reload the lus driver:

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



---

**Caution** – When Sun StorEdge EBS software is configured with SAN 4.1/Leadville 6.1.x, using the `cfgadm -al` command while `lus` driver is loaded, the output displays the Type of the tape devices as "unknown". To avoid this problem, the `lus` driver must be unloaded before running the `cfgadm -al` command to verify the devices. To unload the `lus` driver, refer to the steps a to c in Step 2.

---

## Increase Unload and Load Sleep Time for an IBM Magstar 3590 Tape Drive

When backing up data with an IBM Magstar tape drive, increase the Unload/Load sleep times in the Sun StorEdge EBS Administrator program from the default 5 seconds to at least 45 seconds.

The following error might be reported when backing up data with an IBM Magstar tape drive if the Unload/Load attribute is not increased:

```
nsrd: media warning: /dev/rmt/0cbn reading: The media in the drive  
may have changed.
```

Thus, the Sun StorEdge EBS software cannot label tapes and subsequently cannot load a tape into the drive or write data to it.

To adjust the sleep periods for autochanger tasks:

1. In the Sun StorEdge EBS Administrator program, select Jukeboxes from the Media menu.
2. In the Jukeboxes dialog box, select Details from the View menu to display hidden attributes.
3. Select the appropriate autochanger.
4. Adjust the Unload/Load Sleep Attribute to 45 seconds.
5. Click Apply.

For more information, refer the *Sun StorEdge Enterprise Backup Administrator's Guide*.

# Obtaining Accurate Drive Information

The `jbconfig` program is used to configure autochangers in the Sun StorEdge EBS software. During the configuration process, the `jbconfig` program returns information about the number of drives in the autochanger being configured and their SCSI addresses. It does this by relying on the jukebox to provide the drive information. The user can override this information if the user believes the information is incorrect.

In any one of the following configurations exist there is a possibility that this drive information is not entirely correct:

- Fibre Channel environment
- SCSI environment
- Drives are on buses other than the one on which the library controller is located
- Drives are on the same bus as the one on which the library controller is located

It may also happen that some jukeboxes return erroneous information about their drives due to various reasons.

To consistently obtain accurate drive information, the user should use the `inquire` command and use this drive information to verify and/or correct the information provided by the `jbconfig` program.

For examples of screen output illustrating the messages you can expect in a fibre channel environment or drives on a bus located other than on the library controller, refer to the following:

- [“Sample jbconfig Program Output in a Fibre Channel Environment” on page 42](#)
- [“Sample jbconfig Output in a Configuration Where the Drives are on a Bus” on page 45](#)

## Sample jbconfig Program Output in a Fibre Channel Environment

See the note in the following screen output for an example of the information the `jbconfig` program displays in a fibre channel environment.

```
# jbconfig

1) Configure an Autodetected SCSI Jukebox.

2) Configure an Autodetected NDMP SCSI Jukebox.
```

3) Configure an SJI Jukebox.

4) Configure an STL Silo.

What kind of Jukebox are you configuring? [1] 1

Installing 'Standard SCSI Jukebox' jukebox - scsidev@5.3.0.

What name do you want to assign to this jukebox device? STK\_L180

Turn NetWorker auto-cleaning on (yes / no) [yes]? no

In a fibre channel environment, the jbconfig program displays the following output requesting the drive information.

The drives in this jukebox cannot be auto-configured with the available information. You will need to provide the path for the drives.

Is (any path of) any drive intended for NDMP use? (yes / no) [no]

Is any drive going to have more than one path defined? (yes / no) [no]

Please enter the device path information in one of the following formats:

/dev/rmt/lcbn --for local path or

host:device-path --for remote node or

host:drive-letter:directory path --for Windows disk file

Drive 1, element 500

Drive path ? /dev/rmt/0cbn

Drive 2, element 501

Drive path ? /dev/rmt/lcbn

Please select the appropriate drive type number:

1) 3480	18) 9840	35) optical
2) 3570	19) 9840b	36) qic
3) 3590	20) 9940	37) SD3
4) 4890	21) adv_file	38) sdlt
5) 4mm	22) dlt	39) sdlt320
6) 4mm 12GB	23) dlt1	40) SLR
7) 4mm 20GB	24) dlt7000	41) tkz90
8) 4mm 4GB	25) dlt8000	42) travan10
9) 4mm 8GB	26) dst	43) tz85
10) 8mm	27) dst (NT)	44) tz86
11) 8mm 20GB	28) dtf	45) tz87
12) 8mm 5GB	29) dtf2	46) tz88
13) 8mm AIT	30) file	47) tz89
14) 8mm AIT-2	31) himt	48) tz90
15) 8mm AIT-3	32) logical	49) tzs20
16) 8mm Mammoth-2	33) LTO Ultrium	50) VXA
17) 9490	34) LTO Ultrium-2	

Enter the drive type of drive 1? 33

Are all the drives the same model? (yes / no) [yes]

Jukebox has been added successfully

The following configuration options have been set:

```
> Jukebox description to the control port and model.

> Autochanger control port to the port at which we found it.

> Autocleaning off.

> Barcode reading to on.

> Volume labels that match the barcodes.

> Slot intended to hold cleaning cartridge to 174. Please insure
that a cleaning cartridge is in that slot

> Number of times we will use a new cleaning cartridge to 50.

You can review and change the characteristics of the autochanger
and its associated devices using nwadmin.

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

## Sample jbcconfig Output in a Configuration Where the Drives are on a Bus

See the note in the following screen output for an example of the information the **jbcconfig** program displays when the drives are on a bus other than the one on which the library controller is located.

```
# jbcconfig

1) Configure an AlphaStor/SmartMedia Jukebox.

2) Configure an Autodetected SCSI Jukebox.

3) Configure an Autodetected NDMP SCSI Jukebox.

4) Configure an SJI Jukebox.

5) Configure an STL Silo.

What kind of Jukebox are you configuring? [1] 2
```

These are the SCSI Jukeboxes currently attached to your system:

- 1) scsidev@3.0.0: Standard SCSI Jukebox, ADIC / FastStor 2
- 2) scsidev@9.0.0: Standard SCSI Jukebox, HP / C7145
- 3) scsidev@13.1.0: Standard SCSI Jukebox, ADIC / FastStor DLT
- 4) scsidev@14.0.0: Standard SCSI Jukebox, HP / C7200

Which one do you want to install? 4

Installing 'Standard SCSI Jukebox' jukebox - scsidev@14.0.0.

What name do you want to assign to this jukebox device? L20-LTO

Turn NetWorker auto-cleaning on (yes / no) [yes]?

The following drives have been detected in this auto-changer:

1> LTO Ultrium @ 14.1.0 ==> /dev/rmt/2cbn

In a configuration where the drives are on a bus other than the one on which the library controller is located, the jbcconfig program displays the following output requesting the drive information.

The 1 drive(s) that cannot be auto-configured will be addressed in a moment, but first:

Is (any path of) any drive intended for NDMP use? (yes / no) [no]

Please enter the device path information in one of the following formats:

/dev/rmt/1cbn --for local path or

host:device-path --for remote node or

```
host:drive-letter:directory path --for Windows disk file
We are only going to prompt you for drives for which we don't know
the paths so we'll be skipping some of them. Be careful.
```

```
Drive 2, element 2
```

```
Drive path ?
```

## Sun StorEdge EBS Logs Large Number of Removed Save Sets in daemon.log

Sun StorEdge EBS software automatically removes unusable save sets from the media database. This is expected behavior and is designed to remove old data from the media database. As part of this pruning process, a record of the removed save sets is logged in the `daemon.log` file.

It is normal to see a very large number of removed save sets logged in the `daemon.log` file after a media database consistency check resulting from an improper media database shutdown or running the `nsrck -m` command for the first time.

After this first pruning process, there should be minimal entries in the `daemon.log`. An administrator may choose to run the `nsrck -m` command immediately after updating to Sun StorEdge EBS release 7.0. This way the `nsrck -m` command can be used to determine whether any new invalid entries have been found since the update, or between any consecutive `nsrck -m` commands. The `nsrck -m` command should be used judiciously since it takes time to process and should not be run when active sessions are running. The media database is unavailable when the `nsrck -m` command is running.

## Expanding Virtual Memory for HP-UX

Due to the HP-UX operating system architecture, virtual memory with the 32-bit Sun StorEdge EBS binaries on an HP-UX PA-RISC computer is generally 1 GB of space. To back up a large number of files, you must increase the virtual memory.

To expand the virtual memory to 2 GB, run the following command:

```
chatr +q3p enable nsrdmpix
```

After issuing this command, the memory is expanded to 2 GB. You can now back up approximately 9.7 million files per save set.

## Recovering a Sun StorEdge EBS Bootstrap

This procedure describes how to recover a corrupted bootstrap on a computer that is both a Sun StorEdge EBS server and a Recovery Manager server. When recovering the bootstrap on such a computer, special steps are required to avoid losing Recovery Manager resources. Recovery Manager resources contain information about each client protected with Recovery Manager.

---

**Note** – Recovery Manager is not available from Sun.

---

To recover a bootstrap on a computer that is both a Sun StorEdge EBS and a Recovery Manager server:

1. Log in as root and run `mmrecov` to recover the media database and resource files.
2. Shut down the Recovery Manager daemon, **nrmd**, as follows:

```
# ps -ef | grep -v grep | grep nrmd

# kill -9 nrmd_pid
```

where `nrmd_pid` is the process identification (PID) number that was returned by the `ps` command in the first line.

3. Shut down the Sun StorEdge EBS server.
4. Enter the following command to copy the existing Recovery Manager resources to the recovered bootstrap:

```
# cp -pr /nsr/res/nrm.res /nsr/res.R/nrm.res
```

5. Copy or move the recovered Sun StorEdge EBS resource files from `/nsr/res.R` to `/nsr/res`.

6. Start the Sun StorEdge EBS server.
7. Enter the following command to recover the Sun StorEdge EBS server's indexes:

```
# nsrck -L7 nw_server
```

where `nw_server` is the host name of the Sun StorEdge EBS server.

8. Start the Sun StorEdge EBS server and the Recovery Manager daemon.
9. Use a Recovery Manager command, such as `nsrmminfo`, to determine whether the Recovery Manager resources are corrupted. If they are corrupted, perform the following steps to recover the last Recovery Manager resource backup:
  - a. Shut down the Recovery Manager daemon, `nrmd`, as follows:

```
# ps -ef | grep -v grep | grep nrmd  
  
# kill -9 nrmd_pid
```

Where `nrmd_pid` is the PID number that was returned by the `ps` command in the first line.

- b. Enter the following command to recover the backed-up Recovery Manager resources:

```
# recover -s nw_server /nsr/res/nrm.res
```

where `nw_server` is the hostname of the Sun StorEdge EBS server.

- c. Start the Recovery Manager daemon.

## Sun StorEdge EBS Security

*Technical Bulletin 372: NetWorker Security* describes several circumstances that can compromise Sun StorEdge EBS security, and provides solutions for protecting and configuring the Sun StorEdge EBS environment to safeguard it against these security risks.

*Technical Bulletin 372: NetWorker Security* is available on the Legato web site at [www.legato.com](http://www.legato.com).

## Pause Wait Recommended between File Creation and Backup with EMC IP4700

If a level [1-9] backup is run on an EMC IP4700 filer within five minutes of creating a file, more files than expected may be saved. For example, if a level 1 backup is run, followed by a level 2 backup, and both of these backups complete within five minutes of the file being created, the newly created file might appear on both the level 1 and level 2 backups, even though the files should only be added to the level 1 backup. To avoid this problem, wait at least five minutes after creating a file to run a backup.

## Backing Up Large Numbers of Files on HP-UX Requires Increasing maxdsiz Parameter

On HP-UX systems, verify that the Process Maximum Heap Limit parameter for the kernel (`maxdsiz`) is large enough to accommodate backups of 1 million files or more. Do this by changing the `maxdsiz` parameter to 2 GB using the SAM utility.

To change the `maxdsiz` parameter:

1. Log in as root and run the SAM utility.
2. Select the Kernel Configuration option.
3. Select Configurable Parameters.
4. Select the `maxdsiz` parameter.
5. Change the value of the `maxdsiz` parameter to 2 GB.
6. Recompile the kernel and reboot the machine.

## Bus Reset Can Rewind Tape on Devices Shared by Multiple Computers

Tape devices shared by more than one computer can, at unpredictable times, experience bus resets from any of the computers. These reset commands can cause a tape on a shared bus (such as SCSI or Fibre Channel) to rewind. The results can include:

- Tapes that are prematurely treated as full
- Corrupted data on tapes

System configurations that do not properly protect tape devices shared by more than one computer can experience these bus resets. Some switching hardware can be configured to protect tape devices from resets; certain operating systems include built-in protection (that can be turned on by the user) against stray bus resets. To determine whether your switch or operating system includes such protection, and to learn how to use it, refer to the manufacturer's documentation or contact the manufacturer.

Therefore, Sun StorEdge EBS software does not support configuring a tape device in a shared SCSI or Fibre Channel environment without using either a hardware switch or an appropriate operating system solution that handles the bus reset issue.

## Best Practice in Using the `nsr_shutdown` Command

For information on best practices when using the `nsr_shutdown` command refer to, *Technical Bulletin 370: Best Practice in Using the `nsr_shutdown` Command* on the Legato web site at [www.legato.com](http://www.legato.com).

## Existing Directory Required for Auspex Directed Recovery

If you attempt a directed recovery on an Auspex filer and the directory to which you are relocating the recovery does not already exist, the recovery fails. To complete a successful directed recovery, you must specify an existing directory as the destination directory.

---

## Known Limitations

The following sections describe known limitations in release 7.0:

- [“Limitations in Feature Support” on page 52](#)
- [“Limitations in Platform Support” on page 74](#)
- [“Limitations That Pertain to Internationalization” on page 81](#)

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**Note** – When appropriate, both Legato and Sun bug IDs are provided.

---

# Limitations in Feature Support

The following section describes feature-related limitations.

## Changes to the Savegroup Completion Report (Legato Bug ID: LGTpa51237)

The savegroup completion report has been changed, so that the first line of the report will include the number of clients whose hostnames were not resolved. The new format for the savegroup completion report is:

```
NetWorker savegroup: (alert) group completed, total 5 client(s), 2
Hostname(s) Unresolved, 1 Failed, 2 Succeeded. (jupiter Failed)

hostname resolution failed for 2 client(s)
                                mars
                                saturn
```

If you have any scripts that parse the savegroup completion report, these scripts will need to be changed because of this new format.

## Grace Period Limited to One Day (Legato Bug ID: LGTpa52238)

The "grace" period that can be applied following the evaluation period does not function properly in the current distribution. After entering the grace period, once the system date has advanced a day, the server is disabled and requires a permanent base enabler.

## Sun StorEdge EBS Release 7.0 Clients Backing up to a Sun StorEdge EBS Datazone Earlier Than Release 7.0 (Legato Bug ID: LGTpa52303)

If installing a Sun StorEdge EBS client release 7.0 into Sun StorEdge EBS datazone earlier than release 7.0 (for example, Sun StorEdge EBS release 6.1.3 Server backing up 7.0 Client), you will require a fix for the pre-7.0 Sun StorEdge EBS Server. Please contact Legato Technical Support for this fix.

A release 7.0 client will be able to backup and recover to a pre-7.0 server without this fix, but backup failures of the 7.0 client will be reported as successful.

## Backing Up a Sun Solaris Client to an SGI IRIX Server May Be Slow (Legato Bug ID: LGTpa52106)

When backing up a Sun Solaris client to a SGI IRIX server with an attached tape drive, the backup may be slow.

On the Sun client set the `/dev/tcp tcp_wscale_always` variable to 1 using the following command:

```
# ndd -set /dev/tcp tcp_wscale_always 1.
```

## Maximum Save Set Per Volume Limitation When Using an Adv\_file Device (Legato Bug ID: LGTpa52091)

When the number of save sets in a volume is more than 250, 000, the media database will become corrupt.



---

**Caution** – Sun recommends that when using a large disk array:

- Configure multiple `adv_file` type devices into different backup pools
- Limit the number of save sets to an `adv_file` volume

Ensuring both of these tasks are done will help to avoid this issue and provide consistent performance.

---



---

**Caution** – If your media database has become corrupt you must recover your Sun StorEdge EBS metadata. If the media database is corrupt, recover the previous copy by doing the following:

1. Enter the following command to get the latest bootstrap ID (if you cannot locate the bootstrap ID in the bootstrap report):

```
# scanner -B device_name
```

2. Enter the `mmrecov` command to recover the media index and server's resources files.

**Note:** While executing the `mmrecov` command, the media index and server's resource files are recovered, but the mount device process might hang for a long time. If the `mmrecov` command hangs, press Control C (Ctrl C) to stop the process.

3. Shutdown `nsr` daemons.

4. Rename the `/nsr/res.R` file to `/nsr/res`
  5. Start nsr daemons
- 

In order to prevent a volume reaching this limit for an `adv_file` device, do ONE of the following.

1. Complete staging with the proper criteria for Max storage period high and low water marks, and check the file system interval:

- a. Open the Sun StorEdge EBS Administrator program
- b. From the Customize menu, select Staging to open the Stage window
- c. In the Enabled attribute, select Yes

For more detailed information, refer to the *Sun Sun StorEdge EBS Administrator's Guide*.

2. Before a backup, ensure there is enough space on filesystems where the `adv_file` device is located by manually staging the save sets on the `adv_file` device:

From the command line, enter the following command:

```
# nsrstage -m -S ssid
```

OR

- a. Open the Sun StorEdge EBS Administrator program
- b. From the Customize window select the Staging attribute
- c. Start Now attribute, select the Check file system operation

**Note:** The choice you make takes effect immediately after clicking Apply. If you do not want any action to start now, leave this attribute alone.

- d. Click Apply.

For more detailed information, refer to the *Sun Sun StorEdge EBS Administrator's Guide*.

3. Setup the client and save set retention policy in the order it expired. Recyclable save sets will automatically be purged from `adv_file` type device at the end of `savegrp` once a day with the `nsrim` process.

For more detailed information, refer to the *Sun Sun StorEdge EBS Administrator's Guide*.

## The Sun StorEdge EBS Software Keeps Trying to Eject a Stuck Tape (Legato Bug ID: LGTpa51725)

If there is a hardware problem that results in a tape becoming stuck in a drive, the Sun StorEdge EBS software will keep trying to eject the tape instead of continuing the backup on another tape. In this situation, save stream backups from clients intended for the stuck tape/drive might fail.

If the Sun StorEdge EBS software keeps trying to eject a stuck tape, perform the following procedure to correct the problem:

1. Mark the volume as read-only.
2. Disable the drive.
3. Manually eject the tape.
4. Inventory the slot to which the tape was ejected.
5. Resolve the hardware error that led to the tape becoming stuck in the drive (for example, a faulty tape or a faulty drive).
6. Re-enable the drive.
7. Mark the volume appendable again (if appropriate).

## CIFS adv\_file Type Device Full Results in Save Failure (Legato Bug ID: LGTpa51661)

To prevent a save failure from occurring, perform ONE of the following operations.

1. Complete staging with the proper criteria for Max storage period high and low water mark, and check file system interval:
  - a. Open the Sun StorEdge EBS Administrator program
  - b. From the Customize menu, select Staging to open the Stage window
  - c. In the Enabled attribute, select Yes

For more detailed information, refer to the *Sun Sun StorEdge EBS Administrator's Guide*.

2. Before a backup, ensure there is enough space on CIFS filesystems where the adv\_file device is located by manually staging the save sets on the CIFS adv\_file device:

From the command line, enter the following command:

```
# nsrstage -m -S ssid
```

OR

- a. Open the Sun StorEdge EBS Administrator program
- b. From the Customize window select the Staging attribute
- c. Start Now attribute, select the Check file system operation

**Note:** The choice you make takes effect immediately after clicking Apply. If you do not want any action to start now, leave this attribute alone.

- d. Click Apply.

For more detailed information, refer to the *Sun Sun StorEdge EBS Administrator's Guide*.

3. Setup the client and save set retention policy in the order it expired. Recyclable save sets will automatically be purged from CIFS `adv_file` type device at the end of savegrp once a day with the nsrim process.

For more detailed information, refer to the *Sun Sun StorEdge EBS Administrator's Guide*.

## Creating Multiple Clones of the Same Save Set (Legato Bug ID: LGTpa51270)

When multiple clones of the same save set are created at the same time using the `nsrclone [-S ssid/cloneid]` command, the media database may not be updated with an entry for each clone. This problem is most likely to occur when cloning from the primary and secondary (RO) devices of an advanced file type volume (`adv_file`). The problem can be observed with the `mminfo` command not showing a clone after a successful clone operation.

If an entry for a cloned save set does not exist in the media database, it is difficult to determine on which volume the cloned save set exists. In this situation, you can use the scanner command to search the contents of your tape volumes; however, this can be a time-consuming process.

## *Workaround*

To avoid this problem, do the following:

- Modify your backup scripts so that a one second delay occurs between each clone operation.
- Allow at least a one second delay between each manual clone operation.

## Limitation on Browse and Retention Policy Dates (Legato Bug ID: LGTpa37508)

Client file index browse and save set retention policies can be set no later than the year 2036. This is caused by an operating system limitation in which support for times is limited to a maximum of 68 years starting from the year 1970.

---

**Note** – Be aware that an expired save set retention date does not automatically result in the save set being overwritten. Save sets can only be overwritten after the retention policy has expired *and* the user selects to either relabel the volume or manually delete the save set from the volume.

---

## *Workaround*

To enable full browse and retention policies beyond the year 2036, use the Sun StorEdge EBS Archive feature. For more information about data archiving, refer to the *Sun StorEdge EBS Administrator's Guide*.

## Alternative to Browsing Large Save Sets (Legato Bug ID: LGTpa40796)

Browsing or recovering a save set with 1 million or more files uses more memory than doing the alternative saveset recover. If there is 10 to 64 GB of free memory on the system, then browsing a saveset with 1 million or more files is not a problem. For more detailed information, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide*.

## Devices Not Recognized in SAN Topology (Legato Bug ID: LGTpa51388)

Ensure that all devices in the SAN environment are set and connected correctly. This is crucial for recognition by the `inquire` command and for any operation on the devices to be recognized and operate as expected. For detailed information, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide*.

## Date Last Cleaned Not Propagating Among Shared Devices (Legato Bug ID: LGTpa49801)

In a DDS environment, the Sun StorEdge EBS software does not update all the `nsr` device resources with the same hardware ID when a one of the drives is cleaned.

### *Workaround*

Turn the Auto-Clean feature off in a DDS environment:

1. Open the Media window in the Sun StorEdge EBS Administrator program.
2. Select Jukeboxes.
3. Select the jukebox from the list of jukeboxes.
4. Click View>Details.
5. Turn the Auto-Clean feature off.

## Excessive Memory Used While Browsing Large Save Sets (Legato Bug ID: LGTpa51701)

The current index browser exhausts available memory while browsing save sets with millions of files on the system. The alternative is to use save set recover.

## Directory Recovery With DAR-Enabled NetApp NAS Filer Fails (Legato Bug ID: LGTpa42642)

When DAR is enabled on a NetApp filer, a file-by recovery of an empty directory fails. This is a known limitation that will be fixed in a later release of the NetApp Data ONTAP software. For more information, contact NetApp customer support.

## Enabling CDI with IBM Ultrium-2 Fibre Channel Drive May Slow Backups (Legato Bug ID: LGTpa50804)

Enabling the Common Device Interface (CDI) on the Solaris 9 operating system with the following devices might slow down the Sun StorEdge EBS backup process:

- QLogic 22xx Fibre-channel Adapter Card
- An IBM autochanger with an LTO Ultrium-2 FC drive

If your Sun StorEdge EBS performance is compromised within this configuration, disable the CDI feature.

## Error Downgrading to Business Edition (Legato Bug ID: LGTpa50807)

To downgrade from Power Edition or Network Edition to Business Edition, use the following workaround:

1. Enter the computer's hostname in the License Server attribute:
  - a. Run the Sun StorEdge EBS Administrator program, `nwadmin`, on the Sun StorEdge EBS server.
  - b. From the Server menu, select Server Setup.
  - c. From the View menu, select Details.
  - d. Enter the hostname in the License Server attribute and click Add.
2. Delete the base enabler of the edition being downgraded:
  - a. From the Server menu, select Registration.
  - b. In the Registration window, select the Sun StorEdge EBS product whose enabler code you want to delete.

A series of pop-up windows are displayed asking to confirm the deletion and to repeat [Step a](#) and [Step b](#) for verification.
  - c. Click OK in the pop-up windows and repeat the steps to delete the base enabler.
3. Remove the hostname from the Sun StorEdge EBS server's License Server attribute:
  - a. From the Server menu, select Server Setup.

- b. From the View menu, select Details.
  - c. Select the hostname in the License Server attribute that was entered in [Step 1](#) and click Delete; then click Apply.
4. Enter the Business Edition enabler code:
  - a. From the Server menu, select Registration.
  - b. Click the Create button.
  - c. Enter the Business Edition enabler code in the Enabler Code attribute and click Apply.

## Increase the Value of Save Mount Timeout Attribute to 60 Minutes When Auto-Media Management is Enabled (Legato Bug ID: LGTpa50485)

When Auto-media Management is enabled and a backup operation is initiated, if the Sun StorEdge EBS software encounters a corrupted tape during the label operation, it can take longer than 30 minutes (the default timeout value) before the label operation fails. The Sun StorEdge EBS software keeps a record of the location of the corrupted tape only for the current backup operation, so a corrupted tape could be used again for the next backup operations if it is not removed by the operator.

---

**Note** – This issue has only been seen on SDLT110/220 drives.

---

### *Workaround*

Increase the value of Save Mount Timeout attribute to 60 minutes (from the default 30 minutes). To increase the value of Save mount Timeout attribute, do the following:

1. Open the Media window in the Sun StorEdge EBS Administrator program
2. Under the Devices menu Select View
3. Click Details

Change the Save Mount Timeout attribute to 60 minutes

## Perform a Save Set Recovery When Using the save Command with the -I <input\_file> Option (Legato Bug ID: LGTpa50281)

When using the `save` command with the `-I input_file` option and one of the entries is deleted while the backup is running, the remaining entries in the input file are saved successfully. However, the save of connecting directories will fail and therefore it will not be possible to perform index-based recovers. The workaround is to perform a save set recovery.

## Using jbconfig With Autochangers That Have Multiple Buses (Legato Bug ID: LGTpa50289)

The `jbconfig` command automatically configures autochanger drives that reside on the same physical bus as the autochanger's robotic controller. Drives that reside on additional physical buses within the same autochanger can be added by following the remaining prompts of the `jbconfig` installation script. For more information about using `jbconfig` to add autochangers, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide*.

## Reports Generated With the mminfo Command (Legato Bug ID: LGTpa41981)

The `clflags` column may contain invalid information. The `clflags` column identifies the status of a cloned save set. Data from the `ssflags` column may be inadvertently copied into the `clflags` column.

## Sun StorEdge EBS Might Take An Excessive Amount of Time to Fail a Drive (Legato Bug ID: LGTpa50485)

The Sun StorEdge EBS software encounters a corrupt tape in a SDLT drive, it might take an excessive amount of time to eject that tape.

This scenario might happen if the following is true:

- A batch of new tapes is put in the library and Automedia management is turned On. In this scenario, when the Sun StorEdge EBS software loads one of the new tapes, and that tape is corrupt, the impact will be a longer backup window.
- If the `nsrjb - I` command is run on a library with some corrupt tapes.

---

**Note** – This behavior does not cause the Sun StorEdge EBS software to stop responding, but it slows the operation considerably. For example, the following error messages appear in the `daemon.log` file:

---

```
11/16/02 08:41:52 nsrd: /dev/ntape/tape15_d1 Verify label
operation in progress

11/16/02 11:05:13 nsrd: media critical: TapeAlert flag "Read
failure" has been posted for /dev/ntape/tape15_d1

11/16/02 11:05:13 nsrd: media warning: TapeAlert flag "Hard error"
has been posted for /dev/ntape/tape15_d1

11/16/02 13:09:17 nsrd: media warning: /dev/ntape/tape15_d1
reading:Successful

11/16/02 13:54:05 nsrd: media warning: /dev/ntape/tape15_d1
reading: no tape label found

11/16/02 13:54:05 nsrd: /dev/ntape/tape15_d1 Eject operation in
progress
```

## TapeAlert Messages Do Not Propagate to Other Shared Devices (Legato Bug ID: LGTpa42152)

Sun StorEdge EBS release 7.0, contains a limitation in the functionality of the TapeAlert feature in a DDS configuration.

When the CDI is enabled, the TapeAlert feature is automatically enabled. In a DDS configuration, although a TapeAlert message should appear on all paths that share the drive, it only appears for the path in use when the message is retrieved from the tape drive. Any other paths sharing the same drive do not display the TapeAlert message.

Consequently, if CDI is enabled within a DDS configuration and any issues arise with the TapeAlert feature, check all the Sun StorEdge EBS tape devices that are using the same hardware.

## Increase Server Parallelism to Complete Concurrent Operations (Legato Bug ID: LGTpa51184)

You might need to increase your Server parallelism value to complete the concurrent operations with `adv_file` device when the number of simultaneous save sessions has reached the maximum value for server parallelism.

For example, if the server parallelism is set to 4 and there are 4 simultaneous saves going to an `adv_file` device, set the server parallelism to 5 to complete a concurrent clone/stage operation from this `adv_file` while the 4 saves are in progress. This requirement may be more apparent with `adv_file` as it supports concurrent operations, but it is applicable to all other device types with a similar setup.

## Inquire Command Cannot Detect STK L180 Library on AIX in a Fibre Channel Environment (Legato Bug ID: LGTpa48126)

In a SAN environment, using the IBM 6228, AIX 5.1L, the `inquire` command cannot detect the robotic controller of the STKL180.

### *Workaround*

Populate the switch from lowest numbered to highest numbered ports. Open (unused) ports should occupy the higher numbered ports. Adding devices at a later date might not interfere with the current configuration if higher numbered ports are used.



---

**Caution** – The `inquire` command has been modified to locate non-IBM libraries when running in a Fibre Channel environment on AIX. Under normal operations, the Sun StorEdge EBS software will only report IBM libraries that are connected with AIX native Fibre Channel drivers and HBA. The only way for the `inquire` command to report non-IBM libraries is to query the Fibre HBA for known node IDs, and compare the returned list of IDs against the IDs that the `inquire` command has already obtained from the operating system. For those nodes that are not identified by the `inquire` command, the Sun StorEdge EBS software will attempt to open the device to collect inquiry information. If the device represented by that node ID responds to the `inquire` command, the inquiry information will be displayed.

---

---

**Note** – Adding or removing devices may require a reconfiguration (running the `jbconfig` command) as adding or removing devices might shift the target IDs of non-IBM libraries.

---

Non-IBM libraries might not appear adjacent to the drives in the `inquire` command output (see sample output below). Grouping drives and associated autochangers together in the switch might make the output from the `inquire` command more concise.

---

**Note** – There is no way to associate a given non-IBM library to its drives based on its apparent SCSI ID.

---

### Sample output:

In the sample output below, the STK L180 autochanger (referenced by `scsidev@4.6.0`) is the library holding the two IBM drives (referenced as `scsidev@4.1.0` and `scsidev@4.2.0`). The sample output illustrates the non-adjacent reporting of drives and autochanger due to the additional scanning performed for devices that are not known to the operating system:

```
root@hal: ./inquire

scsidev@4.1.0:IBM      ULTRIUM-TD1      22U0|Tape, /dev/rmt8.1

    S/N: 6811061708

    ATNN:IBM      ULTRIUM-TD1

6811061708

    WWNN:500507630000857D

scsidev@4.2.0:IBM      ULTRIUM-TD1      22U0|Tape, /dev/rmt9.1

    S/N: 6811061742

    ATNN:IBM      ULTRIUM-TD1

6811061742

    WWNN:50050763000085AA

scsidev@4.3.0:QUALSTARTLS-4212i      214d|Autochanger (Jukebox)

    S/N: 4ABC1818
```

```
WWNN:6005013000B102113441424331383138
```

```
PORT:00000001
```

```
scsidev@4.3.1:SONY      SDX-500C      |Tape, /dev/rmt3.1
```

```
scsidev@4.3.2:SONY      SDX-500C      |Tape, /dev/rmt10.1
```

```
scsidev@4.6.0:STK       L180          0301|Autochanger (Jukebox)
```

```
S/N: MPC01000218
```

```
WWNN:500104F00042BFE8
```

```
WWPN:500104F00045CB85
```

```
PORT:00000001
```

```
scsidev@5.1.0:QUALSTARTLS-8222      214d|Autochanger (Jukebox)
```

## Stage Operation Fails from a Staging Device with a Large Number of Save Sets (Legato Bug ID: LGTpa49082)

Automatic or manual staging a large number of save sets (greater than 100) to another volume fails, and the following error message is reported:

```
Starting migration operation...
```

```
nsrstage: SYSTEM error: Not enough space
```

```
nsrstage: Cannot open nsrstage session with sys-nwserve
```

```
nsrstage: Failed to clone any save sets
```

## Default Port Number is 3000 for the SunPlex Manager (Legato Bug ID: LGTpa42901)

If the default port number (3000) conflicts with another running process, change the port number of SunPlex Manager on each node of the cluster.

For more information on how to change the port number for the SunPlex Manager, refer to [www.sun.com](http://www.sun.com).

## Extension Properties Are Not Validated in a SunCluster Environment (Legato Bug ID: LGTpa48510)

In a SunCluster environment, when creating an instance of a Sun StorEdge EBS Server (*LGTO.serv*) resource type or when creating instances of a Sun StorEdge EBS Client (*LGTO.cnt*) resource type, the values of the extension properties of these resources are not validated (`config_dir` property for *LGTO.serv* and `owned_paths` property for *LGTO.cnt*).

Resource creation is successful, even if you specify incorrect values. However, you cannot start the Sun StorEdge EBS Server resource with an invalid `config_dir` property.

Invalid `owned_paths` property for resources of a *LGTO.cnt* type can result in defining incorrect path ownership rules for the cluster filesystems (path ownership rules determine to which client index a filesystem is saved).

---

**Note** – The path-ownership rules are defined by an administrator for a particular cluster as a result of following the installation/configuration instructions. For more information on how to define and verify path ownership rules, refer to the *Sun Sun StorEdge EBS Administrator's Guide*.

---

## Volume Remains in the Tape Drive If the Storage Node nsrmmd Is Not Responding in a Shared Drive Environment with DDS (Legato Bug ID: LGTpa45470)

In a DDS environment, where physical drives are accessed by multiple Sun StorEdge EBS storage nodes, if the Sun StorEdge EBS server is unable to communicate with the `nsrmmds` on any storage node and if that node has loaded or mounted volumes onto the shared drives, these volumes remain in the physical drives.

If the drives are within a jukebox, issuing a hardware reset from the node controlling the jukebox (`nsrjb -H`) clears the physical drives through another device path. The `nsrjb -H` command resets the jukebox hardware, so the tape ejects if a drive is loaded.

## Modifying Attributes with the Sun StorEdge EBS Administrator Program (Legato Bug ID: LGTpa43676)

When modifying an attribute with `nsradmin`, the following must be performed or the modification might be incorrectly reported as successful and no warning message appears:

- Attribute must be specified correctly
- Sun StorEdge EBS Administrator program must be in Visual mode

## Sun StorEdge EBS Software Fails to Use Tapes Preinitialized in NDMP-Enabled Tape Devices (Legato Bug ID: LGTpa28778)

If a new tape is pre-initialized in an NDMP-enabled tape device, then the Sun StorEdge EBS software will not use the tape.

To ensure that Sun StorEdge EBS software uses all tapes in an NDMP tape device:

1. Do not use tapes that were preinitialized in an NDMP-enabled tape device.
2. Label preinitialized tapes in a non-NDMP tape device using Sun StorEdge EBS software and then use these tapes in the NDMP tape devices

## System Log Notifications Fail on SuSE 8.0 (Legato Bug ID: LGTpa43135)

System log notifications might fail on the SuSE 8.0 operating system. The logger binary appears in the `/bin` directory instead of `/usr/bin`. This causes the Log Default notification to fail.

---

**Note** – The SuSE 7.3 distribution does not have this problem.

---

## *Workaround*

To resolve this issue, do *one* of the following:

- Create a link in the `/usr/bin` directory to `/bin/logger`.

---

**Note** – The default Tape Mount Request 1 and Tape Mount Request 2 notifications must be updated if a link is not created.

---

- Modify the Log Default notification and change the `/usr/bin/logger` filepath to `/bin/logger`

## **RAP Queries May Fail with the nsradmin Program (Legato Bug ID: LGTpa36673)**

One of the following might occur if the Sun StorEdge EBS software cannot find a corresponding entry when performing RAP queries with the nsradmin program:

- The server (`nsrexecd`) might allocate large amounts of memory, causing the host system to become less responsive, or causing the operating system to terminate the Sun StorEdge EBS software.
- The server returns an error message.

## *Workaround*

To resolve the issue, use a new version of the nsradmin program to perform RAP queries.

---

**Note** – The Sun StorEdge EBS software will only operate successfully if the correct entries are in the `/etc/rpc` file.

---

## The nsrjb -L and -I and save Operations Fail with an Exabyte Mammoth-2 Tape Drive with Fibre Channel Device (Legato Bug ID: LGTpa37996)

When using the nsrjb -L and I commands to perform inventory and tape label operations the Sun StorEdge EBS software reports the following error message with an Exabyte Mammoth-2 tape drive with a Fibre Channel device:

```
<time stamp> /dev/rmt/2cbn Tape label read for volume ? in pool ?,  
is not recognized by Networker: I/O error"
```

### *Workaround*

Upgrade the firmware on the Exabyte Mammoth-2 tape drive with Fibre Channel Device to version v07h and the changer firmware to 3.03.

## The Sun StorEdge EBS Administrator Program Does Not Reconnect to the Server after a Failover (Legato Bug ID: LGTpa27089)

After a failover the Sun StorEdge EBS Administrator program does not reconnect to the virtual server, even if the virtual server is running on another node with the same host name.

---

**Note** – If the Sun StorEdge EBS Administrator program is running on a node external to the cluster, when the nsrd process restarts the Sun StorEdge EBS Administrator program reconnects.

---

### *Workaround*

To reconnect to the server after a failover, perform one of the following workarounds:

- Run the Sun StorEdge EBS Administrator program on a node external to the cluster. When the Sun StorEdge EBS Administrator program starts on a node where the nsrd process is local, it binds to the local host (the physical host) and the virtual server name is aliased to the physical host.
- If the Sun StorEdge EBS Administrator program must run on one of the cluster nodes, reconnect the server by explicitly connecting to the physical hostname where the nsrd process is running.

## Element Status Feature Must Be Manually Enabled for Jukeboxes That Support the Feature (Legato Bug ID: LGTpa26003 Sun Bug ID: 4306035)

When a jukebox supports the element status feature but that feature is not enabled in the Autochanger resource of the Sun StorEdge EBS Administrator program, `nsrjb -I` and `nsrjb -H` will not work properly.

When using jukeboxes that support the element status feature, make sure that this feature is enabled in the Autochanger resource of the Sun StorEdge EBS Administrator program before using `nsrjb`.

## Using Solstice Firewall v4.1sp3 and Non-Sync Packets (Legato Bug ID: LGTpa30256, Sun Bug ID: 4427943)

Because Sun StorEdge EBS uses non-sync packets to perform backups, when using the Solstice Firewall v4.1sp3, these packets will be dropped unless you specify that the rule base should allow them. To specify that the rule base should allow non-sync packets, uncomment the following line in the `$FWDIR/lib/fwui_head.def` file (where `$FWDIR` is the installation directory of your firewall software; the default location is `/etc/fw`):

```
define ALLOW_NON_SYNC_RULEBASE_MATCH
```

## The `jbexercise -D` and `-d` Options Do Not Work (Legato Bug ID: LGTpa30555, Sun Bug ID: 4462022)

The `-D` and `-d` options for the `jbexercise` program do not work.

### *Workaround*

Use `jbexercise` with the `-m other` option rather than specifically specifying the jukebox model.

## Incremental Backups After Renaming Files and Directories (Legato Bug ID: LGT44728)

When recovering a directory that has been renamed since the last full backup (and only incremental backups have been run since then), you might find that files that you expect to find under the renamed directory are not there. To recover those files, either perform a full backup before starting the recovery, or do the following:

1. Shut down the Sun StorEdge EBS daemons on the server and client.
2. Set the environment variable `NSR_RENAME` to Yes before starting the client.
3. Set the environment variable `NSR_NAMEONLY` to No before starting the server.
4. Start the recover session.

## Enabling SCSI Reserve/Release for DDS Drives (Legato Bug ID: LGTpa30565)

It is recommended that the SCSI reserve/release for DDS drives is enabled. When multiple hosts have access to the same drive, it is possible for any host to issue tape movement commands. For example, if a drive is rewound during a backup due to a tape movement command issued from another host, the Sun StorEdge EBS software does not receive a message indicating that the drive has been reserved and might write over data that has just been written to the tape. With the drive reserved, no external system can reposition the drive while it is in use. If the tape is repositioned while the Sun StorEdge EBS software is not writing data, this is noted and the tape is positioned correctly before the next write.



---

**Caution** – SCSI reserves can be broken by SCSI resets (RST). If an RST is sent while data is being written to a volume, the Sun StorEdge EBS software will receive an I/O error, mark the tape as full, and request another tape. If the drive is in a "writing, idle" state at the time of the RST, the tape might be rewound and data rewritten. It may be possible to block a RST using a Fibre-SCSI bridge. For more information on drives that use native fibre connections, contact the hardware vendor.

---

See the following sections for specific information about how to enable SCSI reserve/release for DDS drives.

### *Solaris*

SCSI reserve/release is configurable as a bit setting in the `st.conf` file for each device type in use. For more information, refer to the Tape Configuration section of the `st` man page.

## *AIX*

To reset the reserve/release setting on an AIX operating system:

1. Through the SMIT or the `smitty` interface, select Tapes from the Devices menu.
2. Change the value for the attribute RESERVE/RELEASE support attribute from No to Yes.

## *HP-UX*

To reset the reserve/release setting on an HP-UX 11 operating system:

1. Change the `st_ats_enable` kernel variable to a value other than zero.
2. You may have to restart the computer to ensure the change was implemented.

---

**Note** – The reserve/release is a fixed setting in HP-UX 10.

---

## *Tru64*

SCSI reserve/release is only available on version 5.1b and later.

## *Workaround*

Avoid choosing the Details view if the Help window is open and the highlighted Help topic has been deselected. A unselected topic shows no highlighting, but is simply surrounded by a line of dash marks (- - -).

## **Limitation of Incremental Backups (Legato Bug ID: LGTpa35113)**

If you move files within a filesystem, the Sun StorEdge EBS software does not detect the relocated files when performing an incremental backup. This limitation is due to the change time (`ctime`) not being updated by certain operating systems.

## *Workaround*

Use a command such as `touch` or `copy` when relocating files to ensure that the change time (`ctime`) for the files is updated.

## Incorrect Path with nsradmin -d Creates Empty Directories (Legato Bug ID: LGTpa35621)

If you enter an incorrect path with the Sun StorEdge EBS `nsradmin -d` command, empty resource directories are created at the location specified. For example, if you enter the following at the command prompt:

```
# nsradmin -d /nsr/res
```

The following empty resource database directory structure is created:

```
/nsr/res/nsrdb/00  
.  
.  
.  
/nsr/res/nsrdb/09
```

If you then execute the `nsradmin print` command, the following message appears:

```
No resources found for query
```

To avoid this problem, use the correct path for your Sun StorEdge EBS resource files when running `nsradmin -d`. For example:

```
# nsradmin -d /nsr/res/nsrdb
```

If you do inadvertently create empty resource directories, be sure to delete them to avoid confusion.

## Save Sets Incorrectly Displayed As Cloned in the Volumes Window (Legato Bug ID: LGTpa36325)

The Volumes window of Sun StorEdge EBS Administrator program indicates save sets created by an advance file type (`adv_file`) device were cloned when in fact they are not.

## Directives Are Ignored When Backups Are Initiated from nwbackup (Legato Bug ID: LGTpa51026)

Directives are ignored when backups are initiated from the `nwbackup` program. To ensure that directives are executed, set up a scheduled backup in the Sun StorEdge EBS Administrator program, `nwadmin`.

## Limitations in Platform Support

This section discusses platform-related limitations in Sun StorEdge EBS release 7.0.

### Managing Optical Drives with Solaris 9 (LGTpa48374)

With Solaris 9, the Volume Management daemon (`vold`) was changed so that it automatically attempts to manage all removable media devices. Because of this change, the Volume Management daemon may interfere with Sun StorEdge EBS operations related to optical drives.

There are two workarounds for this problem: either disable the Volume Management daemon or modify the daemon configuration file (`vold.conf`) to disable the settings that manage removable media devices.

#### *Workaround 1: Disable the Daemon*

To disable the volume management daemon, `vold`:

1. Log in as root on the Sun StorEdge EBS storage node and remove or rename the `/etc/rc2.d/*volmgt` script.
2. Type `/etc/init.d/volmgt stop` and press Enter.

#### *Workaround 2: Modify the Daemon Configuration File*

This workaround describes how to modify the Volume Management daemon configuration file to disable the functions that manage removable media devices.

To modify the daemon configuration file:

1. Log in as root on the Sun StorEdge EBS storage node and open the daemon configuration file, `/etc/vold.conf`, in a text editor.

2. Comment out the following line, which is located in the section titled, `Devices to use`.

```
use rmescsi drive /dev/rdisk/c*s2 dev_rmescsi.so rmescsi%d
```

After commenting out this line, the `Devices to use` section of the configuration file looks similar to the following example:

```
# Devices to use

#use rmescsi drive /dev/rdisk/c*s2 dev_rmescsi.so rmescsi%d
```

3. Save the configuration file.
4. Re-initialize the Volume Management daemon with the new configuration file settings. One way to do this is to send a hangup signal to the daemon, for example:

```
# ps -ef | grep vold

# kill -HUP vold_pid
```

where `vold_pid` is the process ID of the volume management daemon, `vold`.

## Upgrade Kernel Version of SuSE Linux Enterprise Server 7 to Solve Itanium Issue (Legato Bug ID:LGTpa51123)

Due to a problem with the 2.4.7 kernel as shipped with SuSE Linux Enterprise Server, it is recommended that you upgrade your kernel to version 2.4.19. The kernel is available at [www.kernel.org](http://www.kernel.org).

---

**Note** – Sun will not provide any information on how to upgrade your kernel. For information on kernel compilation see the Documentation directory provided with your kernel, or the Linux Documentation Project's web site.

---

## Limitations with Red Hat 7.1 When Using An Emulex Fibre Channel Card (Legato Bug ID: LGTpa37268)

The reset (`nsrjb -HEv`) and force eject (`nsrjb -HHv`) commands do not function with Red Hat Linux 7.1, when using an Emulex driver v4.12c or lower.

Use the `mt -f <device name> rewoffl` command to eject a tape from a drive and then run the `nsrjb -HEv` command to reset the tape. If this does not work, do the following:

1. Upgrade your kernel to the latest as provided by Red Hat on the Red Hat web site.
2. Upgrade the Emulex driver to v4.20p or higher, as provided on the Emulex support website.

## NetWorker Software on Linux Is Not Supported With Older Versions of Intel

To take advantage of IA-32 586 and 686 optimizations in the compiler as well as the new instructions provided on those architectures, NetWorker 7.0 on Linux is not supported with older versions of Intel, e.g. 486.

---

**Note** – NetWorker 6.1.x on Linux fully supports older versions of Intel architecture including 386 and 486.

---

## The Installation of the NetWorker Client rpm Fails on TurboLinux 7 Due to a File Conflict (Legato Bug ID: LGTpa51333)

To avoid a file conflict when installing the NetWorker client rpm on TurboLinux 7, use the `--replacefiles` option:

```
# rpm -i --replacefiles lgtocln7-7.0-1.i686.rpm
```

## Restrictions for Pre-Sun StorEdge EBS 5.5 Clients Running on Sun StorEdge EBS 7.0 Servers (Legato Bug ID: LGTpa50711, LGTpa51370)

The Sun StorEdge EBS 7.0 release contains a new Access Control feature that changes the underlying authentication method for Sun StorEdge EBS clients authenticating to a Sun StorEdge EBS 7.0 server (such as Sun StorEdge EBS for NetWare 4.x clients and Sun StorEdge EBS for Sun OS 4.x clients). As a result, any client base earlier than Sun StorEdge EBS 5.5 will experience the following restrictions:

- Performing a save set recover (LGTpa50711).
- Performing the following operations with the `nwadmin` program on UNIX and Microsoft Windows platforms, or with `NETWORKR.NLM` on NetWare (LGTpa51370):

- Creating, deleting, or modifying any resource (for example, client or group resources).

**Note:** These resources can be viewed, but operations cannot be performed on them.

- Viewing indexes, back up volumes, or group status.

**Note:** High-level detail on indexes can be viewed, but low-level (save set) details cannot be viewed. Also, cross-check or reclaim-space cannot be performed on indexes.

- Performing *all* device operations, including: mount, unmount, label, and inventory.

---

**Note** – All other configurations are supported, such as NetWorker for NetWare 4.x or Sun StorEdge EBS for Sun OS 4.x clients authenticating to a Sun StorEdge EBS 5.x or 6.x server.

---

## Shared SCSI Bus Tape Drives Are Not Supported On An Unpatched Version of the HP Tru64 5.1B (Legato Bug ID: LGTpa50805)

Shared SCSI bus tape drives are not supported on an unpatched version of the HP Tru64 5.1B operating system. It is recommended you install Tru64 V5.1B IPK or higher if you want to configure shared scsi bus tape drives on your system.

## Cannot Label a Tape If CDI Is Enabled on a Tape Drive on a HP TruCluster 5.1 Operating System (Legato Bug ID: LGTpa50279)

To use the CDI feature with a storage node or server running on HP Tru64 UNIX version 5.1, install the latest patch kit available from HP. If you choose not to install the patch kit on the Tru64 5.1 operating system, you should disable the CDI feature on any devices you have configured.

## SGI IRIX XFS 64-Bit Inodes Do Not Back Up (Legato Bug ID: LGTpa40680)

The Sun StorEdge EBS software does not back up files on SGI IRIX XFS filesystems that have a 64-bit inode. The IRIX 6.5 64-bit operating system randomly writes 64-bit and 32-bit inodes, and if a file is written with a 64-bit inode, the Sun StorEdge EBS software will not back it up. The following error message appears when the Sun StorEdge EBS software encounters 64-bit inodes:

```
readdir overflow error, backup of directory cannot continue
```

The name of the directory not being saved appears immediately below this error message.

### *Workaround*

Upgrade to the IRIX 6.5.15 XFS filesystem. For filesystems up to 8 terabytes, the IRIX 6.5.15 XFS filesystem now only allocates inodes in the 32-bit range to avoid an overflow error.

---

**Note** – For information on upgrading to the IRIX 6.5.15 XFS filesystem, refer to the appropriate SGI IRIX 6.5.15 documentation.

---

## The nsrjb -HEv and nsrjb -HHv Commands Do Not Function with Red Hat Linux 7.1 (Legato Bug ID: LGTpa37268)

The reset (`nsrjb -HEv`) and force eject (`nsrjb -HHv`) commands do not function with Red Hat Linux 7.1. When either command is executed, the command runs to completion but does not reset the autochanger or eject the tape, and no error message is reported.

## Workaround

Use the `mt -f device name rewoffl` command to eject a tape from a drive and then run the `nsrjb -HEv` command to reset the tape.

## The `jbconfig` Command Reports More Drives Than Are Connected To the Node (Legato Bug ID: LGTpa45055)

The `jbconfig` command does not allow the user to configure fewer drives than are physically present in the autochanger or library. All drives in the library must be accessible (included in zones accessible by the server) by the Sun StorEdge EBS backup server at the time of installation.

## Using the `jbconfig` Command with Sun StorEdge RAID Manager (Legato Bug IDs: LGTpa24044, LGTpa27298, Sun Bug ID: 4358034)

When Sun StorEdge™ disk arrays are used in conjunction with the Sun StorEdge RAID Manager, the **inquire** program might take an unexpectedly long time to complete. The **jbconfig** command uses the **inquire** program to obtain information about autochangers that are attached to the system.

A possible workaround for this problem is to stop the RAID Manager daemons before running **jbconfig**. One disadvantage of this workaround is that RAID Manager features, such as disk failover protection, are not operational during this period. However, **jbconfig** is usually run only during installation and initial configuration of the Sun StorEdge EBS software, and subsequently when adding autochanger hardware to the system. Often these tasks are performed during scheduled system maintenance periods when shutdown of the RAID Manager software is acceptable. If you want the **jbconfig** program to complete rapidly, then it is best to use **jbconfig** during scheduled system maintenance periods after stopping the RAID Manager daemons.

Another possible workaround for this problem is to allow the **jbconfig** command to execute with the RAID Manager daemons still running. If this method is used, **jbconfig** may take a long time to complete, and this may cause unacceptable system performance issues.

Another workaround is to perform the following procedure:

1. In `/etc/driver_classes`, delete the following line:

```
rdnexus scsi
```

This will prevent the framework from enumeration scsi target nodes under rdnexus.

2. In `rdriver.conf`, change

```
class="scsi"
```

to

```
parent="rdnexus"
```

This will cause driver nodes to be created under rdnexus, but not under physical HBA drivers.

This change will only last until the next `boot -r` or `hot_add`.

## UFS Files Having Inode 4 or 5 Recovered to an Advanced Filesystem on HP Tru64 UNIX (LGTpa25810)

Do not attempt to recover a UNIX file system (UFS) file that has an inode of either 4 or 5 to an Advanced File System (AdvFS) on HP Tru64 UNIX. Such an attempt fails, because AFS user quota files are already assigned inode 4 and group quota files are already assigned inode 5. These AFS quota files cannot be overwritten. (Sun StorEdge EBS software uses a special algorithm to save and recover AdvFS quota files.)

To recover a UFS file having either inode 4 or 5 to an AFS:

1. Recover the file to a UFS.
2. Enter the **cp** command to copy the file to the desired location in the AFS.

# Limitations That Pertain to Internationalization

The following limitations related to internationalization pertain to the Sun StorEdge Enterprise Backup Software, when an English base EBS runs on a localized operating system.

## Directed Recovery of Non-ASCII Characters Might Fail

Performing a directed recovery of files from a client whose filenames include any non-ASCII characters might fail. The files are browseable in the Sun StorEdge EBS Administrator program, but when the recovery is initiated, an error message is produced stating the files are not in the client file index.

### *Workaround*

Perform the directed recovery from a client running in C locale.

## Remote Login from a Local Host to a Remote Localized Host Does Not Display Sun StorEdge EBS Data in Localized Language

If you remotely log in or telnet from a local host to a remote host with a localized version of the Sun StorEdge EBS software, you must meet the following conditions:

- The locale setting on the local machine must be set to the appropriate localized language.
- The XFILESEARCHPATH environment variable on the local host must be set correctly.

If these conditions are not met, the Sun StorEdge EBS Administrator program displays English language characters while the data appears in the desired localized language.

This is not an issue unique with the Sun StorEdge EBS software, it is a motif issue. The XFILESEARCHPATH environment variable is automatically set when you log in to a Solaris computer. During a telnet session or remote login, the search order for the XFILESEARCHPATH environment variable is changed and the localized path is not located.

Consequently, for a remote login or telnet session to display the localized software correctly on a remote machine, you must ensure the configuration for the XFILESEARCHPATH environment variable is changed appropriately on the remote host.

For example: XFILESEARCHPATH environment variable on a remote computer (with localized software) should have the XFILESEARCHPATH environment variable input in the following manner:

```
/usr/lib/X11/%T/%N%C%S:/usr/lib/X11/%T/%N%S:/usr/openwin/lib/locale/%L/%T/%N  
%S:/usr/openwin/lib/%T/%N%S
```

## Only US-ASCII 7-Bit Characters Supported

Sun StorEdge EBS release 7.0 supports only U.S.-ASCII 7-bit characters in resource names and attributes in the Sun StorEdge EBS Administrator program and from the command line. Do not use multibyte characters, such as Chinese or Japanese, or roman-language characters that include non-U.S. markings (for example, accents or umlauts), to complete attributes, such as Schedule, Group, or Storage Node. All resource names and attributes must use US-ASCII 7-bit characters. You can, however, use multibyte language characters or roman characters with non-U.S. markings as filenames.



---

**Caution** – Non-ASCII characters are displayed correctly with the English Sun StorEdge EBS 7.0 binaries only for European locales (within the ISO 8859 code set). Non-ASCII characters are not displayed correctly with English Sun StorEdge EBS 7.0 binaries for Asian locales.

---

For further information regarding alphanumeric characters that can be used in attribute names, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide*.

## Length Limits to Filepaths and Directory Names

Sun StorEdge EBS release 6.0 and later software supports a full filepath length limit of 1,024 bytes (standard for most operating systems). Consequently, if you are working in a language that uses multibyte characters (for example, Chinese or Japanese), ensure that the filepath and directory names remain within the limits imposed by the operating system and the Sun StorEdge EBS software.

**Note:** For NDMP, the full filepath length limit is 3,045 bytes.

---

# Documentation Corrections and Additions

This section contains corrections or additions to the Sun StorEdge EBS release 7.0 documentation. Note that page number references in parentheses refer to pages in PDF or hardcopy version of the documentation.

- [“Administrator’s Guide” on page 83](#)
- [“Legato Networker Installation Guide, AIX Version” on page 85](#)

## Administrator’s Guide

### Changing the Name of the Server (pages 144-147)

The section Changing the Name of the Server, as well as the section How to Move the Sun StorEdge EBS Server Software to a Different Computer, and all sub-sections for both of these, should be removed.

### Advanced File Type Device (pages 247-248)

The section Advanced File Type Device should be replaced with the following text:

The *advanced file type* is designed for very large disk devices. It differs from the file type device because the volume for the advanced file type device is never marked full.

When an advanced file type device runs out of disk space, the current backup is suspended. The following message appears:

Waiting for more available space on filesystem *device-name*

Immediately after the message appears, the action associated the Filesystem Full — Recover adv\_file Space notification takes place. By default, the action for this notification uses the `nsrim` command to delete expired save sets until more space is made available. If enough space has been cleared, the backup continues.



---

**Caution** – When using the advanced file type device, the upper limits of save set size depend on the upper limits supported by your operating system or the file size specified by your disk device vendor.

---

The advanced file type device deletes expired save sets depending on how your retention policy is set.

If sufficient storage space has not been cleared after a 10-minute period from the start of the initial deletion of the expired save sets, the action associated with the Filesystem Full—Waiting for adv\_file Space notification takes place. By default, the action for this notification sends an email to root indicating that the volume is full.

At this point, the backup ceases until you make more storage space available. The notifications listed here are new default notifications pertaining specifically to the advanced file system type device. For further information explaining how to create or edit a notification, see "Notifications" on page 107.

For further information regarding backup issues, see "How the Sun StorEdge EBS Software Backs Up Data" on page 56 or the **savegrp** man page.

Dynamic Drive Sharing and NDMP are not supported with the advanced file type device.

## About Save Set Recover (page 346)

The caution at the end of the section About Save Set Recovery should be changed to:



---

**Caution** – Only `root` has the permission to perform a save set recovery. In the case of a remote Sun StorEdge EBS client, `root@client` must have the Recover Local Data privilege to perform the save set recover; `root@<ebs_server>` automatically has this privilege.

---

## Limited Frame Buffer Capabilities May Cause nwadmin to Display Incorrectly (pages 577-578)

In the section Limited Frame Buffer Capabilities May Cause nwadmin to Display Incorrectly, the following changes should be made:

Step four and five refer to changing the Sun StorEdge EBS background and changing the color mapping to black. This change should be made to all background entries in the file.

Step seven displays an example for setting environment variables in ksh. An example for csh should be provided as well:

```
setenv XAPPLRESDIR /usr/lib/X11/app-defaults
```

## Legato NetWorker Installation Guide, AIX Version

### Update the NetWorker Software (page 30)

Step 2 in the section Task2: Update the NetWorker Software should be replaced with the following text:

3. Remove the earlier NetWorker release, but do *not* remove the /nsr directory:

a. Change to the NetWorker installation directory. For example:

```
/usr/bin
```

b. Enter the following command to remove the NetWorker software:

```
# NSR_IZE -u
```



---

**Caution** – The **-u** option should *not* be used with any other options or the update will fail.

---



# NDMP Release Supplement

---

Network Data Management Protocol (NDMP) is a standards-based storage management client/server protocol for enterprise-wide backup of heterogeneous, network-attached storage.

This chapter discusses the following topics:

- [“NDMP Support” on page 87](#)
- [“Enhanced NDMP Features” on page 89](#)
- [“Important Notes and Tips” on page 94](#)
- [“Known Limitations” on page 98](#)

NDMP enables the Sun StorEdge EBS software to provide connections to computers with NDMP data modules for tape operations, significantly reducing network traffic and making better use of the time window dedicated to backups. NDMP also allows the Sun StorEdge EBS software to maintain the client file index and media database, as well as control backup operations on a UNIX computer with an NDMP service installed.

---

## NDMP Support

This section describes operating systems that support the Sun StorEdge EBS NDMP Module, as well as the NDMP disk and tape services the Sun StorEdge EBS NDMP Module supports.

### Operating Systems

The Sun StorEdge EBS NDMP Module is supported on Sun Solaris 2.6, 7, 8, and 9.

# NDMP Disk and Tape Services

The Sun StorEdge EBS NDMP Module supports the following NDMP disk and tape services:

- NetApp Filer
- EMC Celerra
- EMC IP4700
- Auspex NS2000 and NS3000
- Mirapoint
- Procom Technology NetFORCE
- Legato SnapImage Module

The Legato SnapImage Module is a high-performance backup solution that uses snapshot technology to back up and recover data across a LAN or SAN while keeping the filesystem available to users. The software provides full image backups and recoveries for customers with large filesystems who need to back up large amounts of data in a short period of time. The Legato SnapImage Module, can be used as an NDMP tape server. For additional information about SnapImage, refer to the *Legato SnapImage Installation and Administrator's Guide*.

For information about which versions of the disk and tape services are supported, refer to the *Legato Software Compatibility Guide* on the Legato web site.

TABLE 2-1 lists the supported NDMP features for each disk and tape service.

TABLE 2-1 Supported NDMP Features with Disk and Tape Services (1 of 2)

Server Type	NDMP Feature Summary					Limitations
	Local	3-Party	Remote	DAR	DDS	
NetApp	Yes	Yes	Yes	Yes	Yes	File-level restore using the <b>nwrecover</b> program or <b>recover</b> command is limited to 1,024 files per direct access restore DAR restore operation and 10,240 files for a non-DAR operation.
EMC Celerra	Yes	Yes	No	Yes	No	File-level restore using the <b>nwrecover</b> program or the <b>recover</b> command is limited to 10,000 files per restore operation.
EMC IP4700	Yes	Yes	Yes	No	Yes	File-level restore using the <b>nwrecover</b> program or the <b>recover</b> command is limited to approximately 4 million files per restore operation.
Auspex NS2000	Yes	Yes	Yes	Yes	Yes	File-level restore using the <b>nwrecover</b> program or the <b>recover</b> command is limited to 10,000 files per restore operation.

**TABLE 2-1** Supported NDMP Features with Disk and Tape Services (2 of 2)

Server Type	NDMP Feature Summary					Limitations
	Local	3-Party	Remote	DAR	DDS	
Auspex NS3000	Yes	Yes	Yes	Yes	No	File-level restore using the <b>nwrecover</b> program or the <b>recover</b> command is limited to 10,000 files per restore operation.
Procom	Yes	No	No	No	No	Only Full backups are supported. Level backups are not supported. File-level restore using the <b>nwrecover</b> program or the <b>recover</b> command is limited to 250 files per restore operation.
Mirapoint	Yes	Yes	Yes	No	No	None.

## Enhanced NDMP Features

Sun StorEdge EBS software release 7.0 supports the following NDMP features:

- [“Forcing Down the NDMP Version on EMC Celerra Data Movers” on page 89](#)
- [“NDMP Version 4” on page 91](#)
- [“Cloning with NDMP Version 4” on page 91](#)
- [“Directory-Level Save Set Restores” on page 92](#)
- [“AIX and HP Tru64 Are Supported As Sun StorEdge EBS Servers” on page 92](#)

## Forcing Down the NDMP Version on EMC Celerra Data Movers

EMC Celerra data movers are often run in the default configuration, which enables the highest supported level of the NDMP version. Servers autonegotiate with other NDMP devices so that the NDMP versions are compatible. There have been instances when the autonegotiation functionality breaks. In this case, the NDMP version can be manually forced down to test whether the devices can still function. Additionally, forcing down the NDMP version can help isolate NDMP issues by determining if the problem happens on different versions.

## ▼ To Force Down the NDMP Version

To set the NDMP version on EMC Celerra data movers so that the data mover only negotiates at the specified NDMP version or lower, modify the *netd* file, as follows:

---

**Note** – The NDMP version must be set individually on each data mover that requires the modification.

---

1. Log in as root to the EMC Celerra Control Station.
2. At the prompt, enter the following command:

```
cd /nas/server/slot_#
```

where *slot\_#* correlates directly to the server number. For example, */nas/server/slot\_2/netd* contains the configuration files for *server\_2*.

3. Edit the *netd* file using the following command:

```
vi netd
```

4. At the end of the NDMP string in the *netd* file, add the following:

```
proto=ndmp_version_#
```

For example, the resulting NDMP string would look like the following when setting the NDMP version to 3:

```
ndmp port=10000 proto=3
```

5. Save the file.
6. In order for the changes to take effect, enter the following command at the prompt to reboot the data mover:

```
server_cpu server_name -reboot -m now
```

## ▼ To Set the *ntape* Parameter

To help avoid tape drive issues, EMC recommends setting the *ntape* parameter on the EMC Celerra filer.

For every tape drive discovered on a particular data mover there must be a corresponding value set for the NDMP *ntape*=# value. For example, if a data mover has five tape drives configured on it, set the parameter to NDMP *ntape*=5.

To modify the parameter:

1. Using a text editor, open the `/nas/server/<slot_#>/param` file, where `slot_#` correlates directly to the server number. For example, `/nas/server/slot_2/netd` contains the configuration files for *server\_2*.

2. Add or modify the following line:

```
[NDMP ntape=n]
```

**Note:** The value of *n* cannot be greater than 8.

3. In order for the changes to take effect, reboot the data mover.

## NDMP Version 4

Sun StorEdge EBS software with NDMP version 4 is backward-compatible with version 2 and version 3 of NDMP servers that have been fully qualified with current Sun StorEdge EBS releases.

## Cloning with NDMP Version 4

NDMP cloning is set through the same Sun StorEdge EBS clone interface as non-NDMP backups. The following functionality applies to NDMP cloning:

- Cloning is only supported with NDMP version 4, not version 2 or 3.
- The Sun StorEdge EBS Administrator program and command line interface support NDMP volume cloning and the cloning of all the save sets as a part of a scheduled group.
- NDMP tapes from one NDMP host can be cloned to another NDMP host of the same type. For example, tapes from a NAS filer that has a library attached can be cloned to another NAS filer or to the same filer.
- Cloned data can copy data from one type of tape device to another, for example data from DLT to AIT tape devices.

## Directory-Level Save Set Restores

The Path to Recover attribute for NDMP recoveries is enabled for save set restores. A directory list belonging to the save set can be specified in the Path to Recover attribute and data from that directory is recovered. The permissions of the recovered files and directories will match their corresponding original permissions.

## AIX and HP Tru64 Are Supported As Sun StorEdge EBS Servers

AIX and HP Tru64 platforms are supported as Sun StorEdge EBS servers and can perform NDMP backups and recoveries of supported NDMP servers.

---

## Additional Features

This section discusses additional NDMP features Sun StorEdge EBS release 7.0 supports.

## Support for Procom NetFORCE

Procom NetFORCE is a NAS appliance that operates as a dedicated data server to improve network file access and overall network speeds. For complete instructions on configuring the Sun StorEdge EBS server for NDMP and Procom operations, and backing up or restoring files, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide, Release 7.0*.

---

**Note** – The tape library name appears 16 times during configuration through the `jbconfig` command.

---

## Support for Mirapoint

Mirapoint products are specifically designed to route, store, and access web mail and messages quickly and seamlessly. Mirapoint systems can be backed up and restored in a Solaris environment with Sun StorEdge EBS software, release 7.0. For a list of the supported Solaris and Mirapoint releases, refer to the *Legato Software Compatibility Guide*.

Mirapoint's NDMP service can perform full and incremental backups of the mailstore. Individual mailboxes, domains, or distribution lists cannot be recovered.

For complete instructions on configuring the Sun StorEdge EBS server for NDMP and Mirapoint operations, and backing up or restoring files, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide*.

## Setting Specific Jukebox Attributes

Once the jukebox is configured with the `jbconfig` command, certain attributes must be modified in the Jukebox resource window. Set the Load Sleep and Eject Sleep attributes to the following values:

Load Sleep: 90

Eject Sleep: 30

## Rebooting the Mirapoint System After Full Restore

After restoring a full backup, the Mirapoint system must be rebooted. The system does not need to be rebooted after an incremental restore.

---

## Important Notes and Tips

This section describes important notes and helpful tips related to the Sun StorEdge EBS NDMP Module.

### Configuring Devices in an NDMP Environment (LGTpa32633)

The Sun StorEdge EBS NDMP SCSI library software scans up to 16 (0-15) controller IDs, with 32 (0-31) targets on each controller and 32 (0-31) LUNs on each target on the NDMP Server. If any device in an NDMP configuration resides beyond these values, NDMP does not discover it.

This can be a problem for robotic devices, which tend to scan higher than the supported values. Standard tape devices do not encounter this issue.

The issue occurs in the following configurations:

- A SAN environment where the robotics are in the SAN and not directly attached via SCSI to the server.

In this configuration, the workaround is to make sure the devices are connected to a lower address.

- A configuration where a Fibre library is directly attached to a data mover.

This configuration is not supported.

### Do Not Use `server_devconfig -c` Option When Discovering New Devices with EMC

Each time a new device is added to a configuration involving EMC filers, you must discover the new device through the `server_devconfig` command. However, if you use the `-c` option with the `server_devconfig` command, the device names are repeated several times in the corresponding file. To avoid this problem, use the `-p` option instead or discover the new devices through the interface.

## Licensing Update

Prior to the release of Sun StorEdge EBS release 6.1 software, each NDMP client required both an NDMP client connection and a SAN storage node enabler code. Sun StorEdge EBS release 7.0 software does not require the SAN storage node enabler code. Only an NDMP client connection is required.

## Environment Variable Updates

The environment variable values specified in the *Sun StorEdge Enterprise Backup Administrator's Guide, Release 7.0* were required by the NDMP data module or the NDMP-enabled application server at the time of publication. Check with the vendor's web site for the most up-to-date values and syntax, as they may change periodically.

## Auspex Requirements and Tips

The following sections describe requirements and tips for supporting Auspex in a Sun StorEdge EBS with NDMP environment.

### DD-type Backup Limitations and Requirements

DD-type backups have the following limitations and requirements:

- DAR is not supported.
- HIST=T is not supported. Set this value to HIST=F.
- Only full (level 0) backups are supported.
- DD- type backups are only supported with NetOS V4.1P3 or higher.

### Autochanger Configuration Tips

Configure the Autochanger resource to have these minimum timeout values:

- Eject Sleep: 10
- Cleaning Delay: 60
- Unload Sleep: 10
- Load Sleep: 90
- Deposit Timeout: 15

- Withdraw Timeout: 15
- Port Polling Period: 3

## Auspex Limitations

The following limitations apply to Auspex backups and recoveries:

- Root partition backups are not supported. Do not back up the root partition.
- During a file-by-file recovery, it is not recommended that the recovery does not exceed 10,000 files per recovery.

To recover a larger number of files, do one of the following:

- Set up multiple save sets for a given client to break the filesystem into directory-level save sets rather than whole volumes.
- Perform a save set recovery using the Sun StorEdge EBS Administrator program or the `nsrndmp_recover` command from the command line.

## Optimizing Qtree Backups with NetApp Data ONTAP 5.3.x

If you are using Data ONTAP 5.3.x and are backing up more than eight qtrees on a single volume, you may want to use the NDMP logical find option to speed up the backup.



---

**Caution** – If you are running Data ONTAP 6.0 or later, do not use the logical find option. The filer automatically selects the optimal backup method.

---

To enable the logical find option

1. Enter the following command at the filer console's prompt:

```
filer> ndmpd logical_find
```

When the option is enabled, the following message appears:

```
logical find set to: true
```

2. If enabling the logical find option does not increase the backup speed, disable the option. To disable the option, enter the following at the filer console's prompt:

```
filer> ndmpd logical_find
```

When the option is disabled, the following message appears:

```
logical find set to: false
```

---

**Note** – If you reboot the filer, you must enable the logical find option again.

---

For more information regarding qtrees, refer to your Data ONTAP documentation.

## Environment Variable Considerations

The environment variables to be set for NDMP backups are case-sensitive. You must match the case that is listed in the *Sun StorEdge Enterprise Backup Administrator's Guide, Release 7.0*.

For example, for HIST=T, HIST and T must be all uppercase letters. If you do not use the correct case when specifying a value for the variable, the default value is used.

---

**Note** – NDMP version 4 does not support T/F. The values must be y/n.

---

## Existing Directory Required for Auspex Directed Recovery

If you attempt a directed recovery on an Auspex filer and the directory to which you are relocating the recovery does not already exist, the recovery fails. To complete a successful directed recovery, Auspex requires that you specify an existing directory as the destination directory.

---

## Known Limitations

This section describes known limitations, configuration tips, and workarounds in NDMP Module support.

### Message Displayed When CDI Enabled on NDMP or Disk File Type Device (Legato Bug ID: LGTpa51410)

If you enable the Common Device Interface (CDI) feature while using an NDMP tape device or disk file type device, a message similar to the following appears in the Sun StorEdge EBS message log:

```
nsrd: media notice: The CDI attribute for device "/dev/rmt/3cbn"
has been changed to "Not used".
```

To avoid this message, do not enable the CDI attribute for these device types.

### Command Line File-by-File NDMP Recovery for SnapImage Leaves Browse Session Open (Legato Bug ID: LGTpa48283)

After a SnapImage file-by-file NDMP recovery is performed from the command line, a browse session remains open in the Session window of the Sun StorEdge EBS Administrator program. If several file-by-file recoveries are performed, the browse sessions continue to build in the window. The recoveries completed successfully, so these browse sessions can be ignored. To clear the Session window, close and reopen the Sun StorEdge EBS Administrator program.

## Tape Marked Full for NDMP Backups with AIX (Legato Bug ID: LGTpa51909)

After the first NDMP backup to a tape in an AIX environment, subsequent backups may show the tape as full, even though it is not. The following message is briefly displayed:

```
Waiting for writable volume
```

The Sun StorEdge EBS server reads the label again, mounts the tape, and the backup proceeds as expected.

## NDMP Savegrp Process Abort Takes a Long Time (Legato Bug ID: LGTpa45126)

When a Sun StorEdge EBS NDMP `savegrp` process is aborted, the abort can take as long as 30 minutes to complete. This problem only occurs in a configuration where the tape library is attached to an EMC Celerra filer with DartOS T4.1.8 or higher.

## Invalid Backup Path Recovery Takes a Long Time (Legato Bug ID: LGTpa45195)

When an incorrect backup path is specified for an NDMP Sun StorEdge EBS recovery, an error message may not be returned for up to 30 minutes. This problem only occurs in a configuration where the tape library is attached to an EMC Celerra filer with DartOS T4.1.8 or higher. To avoid this problem, verify that the correct backup path is specified for the recovery.

## Sun StorEdge EBS NDMP Configuration Problems with Linux SuSE SLE7 (Legato Bug ID: LGTpa44963)

The Linux SuSE installation automatically sets the NDMP ports in the `/etc/services` file to port 10,000. During the autochanger configuration, the `jbconfig` program is unable to discover the attached autochanger. To successfully configure the autochanger, you must comment out the two NDMP entries in the `/etc/services` file.

To edit the file:

1. In a text editor, open the `/etc/services` file.
2. Comment out the two NDMP entries by adding the `#` sign at the start of each line as follows:

```
# ndmp 10000/tcp# Network Data Management Protocol  
  
# ndmp 10000/udp# Network Data Management Protocol
```

3. Save the file.

## Renamed EMC Celerra Directory Not Processed in Level Backup (Legato Bug ID: LGTpa44856)

If a directory is renamed between a full backup and a level backup, EMC Celerra fails to process the renamed directory. Neither the original directory name nor the new directory name appears in the `nwrecover` program or the `recover` command line. To recover the renamed directory, perform a save set recovery.

## DAR All-File Recovery Unreasonably Slow with NetApp Client (Legato Bug ID: LGTpa36169)

A DAR recovery where all files are recovered takes a long time when using DLT 7000 or DLT 8000 drives with a NetApp client. For example, a 100 MB recovery can take more than five hours to complete. To avoid this problem, perform either a save set or non-DAR index recovery.

## Permission Problems with DAR Recovery of NetApp Servers (Legato Bug ID: LGTpa45205)

When a DAR recovery of an NDMP backup of a NetApp server is performed, the permissions of the recovered directories and subdirectories do not match the permissions of the original directories and subdirectories.

To avoid this problem, perform one of the following:

- Manually change the directory attributes of the new directory after the recovery.
- Perform a save set recovery or a non-DAR index recovery instead of a DAR recovery.

## The Output of the Index Recover Status Windows Is in English Instead of Japanese (Legato Bug ID: LGTpa43741)

When recovering Japanese data in a localized Japanese NDMP environment, the Index recover status window shows the process in English instead of Japanese.

## Multiple Save Set and Volume Cloning Not Supported with NDMP (Legato Bug ID: LGTpa43361, 43493)

Volume cloning and the cloning of multiple NDMP save sets are not supported. The cloning process stops responding after the first save set is cloned. To avoid this problem, clone only one save set at a time.

## Aborted NDMP Save Sets Visible in Interface (Legato Bug ID: LGTpa42792)

If you abort an NDMP save set backup, the backup still appears in the `nwrecover` interface. These save sets cannot be recovered and should be ignored.

## Nonexistent Save Set May Cause Backup to Stop Responding with NetApp Filer and NDMP Version 4 (Legato Bug ID: LGTpa42794)

When performing backups with a NetApp filer and NDMP version 4, you must specify existing save sets. If you try to back up a save set that does not exist, `nsrndmp_save` may not terminate and the backup stops responding indefinitely. If this problem occurs, perform the following steps:

1. Manually terminate the `nsrndmp_save` process.
2. Mark the volume as read-only or recycle the volume so that the volume is not selected for subsequent backups.

## Tapes Marked Full If NDMP Passwords Do Not Match (Legato Bug ID: LGTpa35547)

When performing an NDMP backup, the tape is marked full if the password for the NAS filer does not match the NDMP password of the media database, regardless of how much data is backed up to the tape. The two passwords must match. If the NDMP password for the NAS filer is changed, the NDMP password of the Sun StorEdge EBS server must be updated accordingly.

## Backup Fails When Pathnames Exceed 260 Characters in Length (Legato Bug ID: LGTpa42330)

The Sun StorEdge EBS software fails to backup or recover files or directories with pathnames that exceed 260 characters.

## Cloning Not Supported for NDMP with Data ONTAP 6.2 R1 (Legato Bug ID: LGTpa39236, 41017)

The following issues have been encountered with Data ONTAP 6.2 R1 for NDMP tape cloning:

- Performance is unacceptably slow during an NDMP cloning operation. On average, 36 KB of data are cloned per second, which means the cloning of a 1.4 GB NDMP save set takes approximately 12 hours to complete.
- When Data ONTAP 6.2 R1 is running with NDMP version 4, the cloning of 4 GB or more of data causes the cloning operation to stop responding indefinitely. This problem does not occur with NDMP version 3.

Sun Systems is working with Network Appliance to resolve these issues before the final release of the Sun StorEdge EBS release 7.0 product.

## Progress of Backup Not Displayed in Sun StorEdge EBS Administrator Program with Data ONTAP 6.2 R1 and NDMP Version 4 (Legato Bug ID: LGTpa42865)

When performing a backup of a save set with NetApp Data ONTAP 6.2 R1 and NDMP version 4, the progress of the backup is updated infrequently in the Sun StorEdge EBS Administrator program, and it may appear that the backup has failed. In fact, the data is successfully backed up and recoverable. This issue is not seen when running Data ONTAP 6.2 R1 with NDMP version 3 and earlier.

## Unable to See All Recovered Files in nwrecover Program (Legato Bug ID: LGTpa31410)

When consecutive file recoveries are performed, sometimes only the recovery of the first file appears in the `nwrecover` program. For example, if you recover a single file using `nwrecover` and then recover a second file from the same directory, both files are successfully recovered, but only the first recovered file is displayed in `nwrecover`.

This issue only occurs from the host. When the filesystem is mounted to another system, all recovered files are visible

## Symbolic Links Are Not Restored during DAR Recovery with NetApp

When performing a DAR recovery, symbolic links for files, directories and other specific files, such as device files or named pipes, cannot be recovered. To recover these files, use the NetApp restore command with the `-x` option. For more information about the NetApp restore command, refer to the Network Appliance documentation.

## Eight-Character NDMP Password Limitation Not Enforced (Legato Bug ID: LGTpa35523)

When specifying an NDMP password, the password cannot exceed eight characters for a NetApp machine. However, when you specify a password for a NetApp machine through the Sun StorEdge EBS Administrator program, the Password attribute accepts more than eight characters and does not display an error message. If you specify a password that is nine characters or more, you will not be able to back up data. To avoid this problem, always specify a password that is eight characters or less.

## Error Message Appears When Loading a Cleaning Tape (Legato Bug ID: LGTpa33043)

When attempting to load a cleaning tape using the `nsrjb -l` command, the following incorrect error message may appear:

```
Possible recoverable media changer error during move.
```

The cleaning tape does load successfully.

## Save Set Recovery of an EMC IP4700 NDMP Client Causes NDMP Heading Error (Legato Bug ID: LGTpa37361)

Executing a save set recovery of a backup of an EMC IP4700 NDMP client to the original location causes the following error:

```
ndmp header: failed to decode the message
```

This error only occurs when the mount point option (-m) is not specified.

---

**Note** – Not specifying a mount point with a save set recovery of an NDMP filer client will by default, restores to the original location. This problem is only present with EMC IP4700 NDMP clients. The same scenario executed with an NDMP NetApp client exhibits no problems.

---

## Tar-Based Backup of an EMC IP4700 NDMP Client from the Command Line Causes Index File Problems (Legato Bug ID: LGTpa37223)

Executing a backup of an EMC IP4700 NDMP client with the `nsrndmp_save` command from the command line results in a problem recovering the client file indexes. Since the client file indexes cannot be recovered, a file-by-file recovery cannot be performed. A save set recovery of the same command line backup is successful.

---

**Note** – This problem only occurs under the following conditions:

---

- A forward slash (/) character is specified at the end of the target backup partition. For example: `/B0/filesys/`
- The target partition is being backed up for the first time using the command line and not the Sun StorEdge EBS Administrator program.

## Sun StorEdge EBS Server Stops Responding If NDMP Backup Aborted (Legato Bug ID: LGTpa32007, 32882)

If you abort an NDMP save set backup, the backup should terminate immediately. Instead, the Sun StorEdge EBS server stops responding for the amount of time it would have taken the backup to complete. To avoid this problem, do not abort a save set backup.

## Recovering Several Subdirectories May Cause the Sun StorEdge EBS Software to Stop Responding in an NDMP Environment (Legato Bug ID: LGTpa32414)

When recovering several NDMP subdirectories using the `nwrecover` command, the Sun StorEdge EBS software might stop responding if you do not shut down and restart `nwrecover` after the first successful recovery of a subdirectory.

After the first subdirectory has been recovered, exit and restart `nwrecover` and then recover the remaining directories.

## Unable to Recover Files in a Subdirectory from Multiple Tapes Using `nwrecover` in an NDMP Environment client file indexes with EMC Celerra Version 2.2.xx.x (Legato Bug ID: LGTpa32433)

When recovering files and subdirectories from multiple tapes with EMC Celerra version 2.2.xx.x, the `nwrecover` command only recovers files from the first tape volume successfully in an NDMP environment.

Subdirectories and files on subsequent tapes can be recovered one file at a time. You may have to reboot if this error occurs.

## Error Message after Successful Three-Party DAR Recovery (Legato Bug ID: LGTpa36155, 48565, 41852)

After a three-party DAR index recovery of all files has completed, the following error message may appear:

```
Tape server halted: mover aborted by client
```

This message can be ignored. The data has been successfully restored. The message is caused by the data server moving to a Halted state while the data mover is still in the Active state. The `recover` program waits a specified time before sending a `mover_abort` command to the mover, resulting in the error message. This is a limitation of the NDMP protocol.

## User Must Be Root for NDMP Backup or Recovery

In order to perform either a backup or recovery operation, the user must be logged in as `root` on the Sun StorEdge EBS server. If the user is not `root`, the backup or recovery fails.

## Permission Problems with Index Recoveries of EMC Celerra Servers (Legato Bug ID: LGTpa29103)

When using the `nwrecover` program or the `recover` command to perform an index-based recovery of one or more files to a directory that does not exist in the target EMC Celerra server, EMC Celerra creates a new directory. This new directory will receive default attributes, which might not match the attributes of the originally backed up directory.

To avoid this problem, perform one of the following:

- Manually change the directory attributes of the new directory after the recovery.
- Perform a save set recovery instead of an index-based recovery.

## Large Number of Files Limitation with Index Recoveries on EMC Celerra

When using the `nwrecover` program or the `recover` command to perform an index-based recovery of an EMC Celerra server, Sun recommends each recovery not exceed 10,000 files.

To recover a larger number of files, perform a save set recovery through the or the `nsrndmp_recover` command.

## Disabling Locally Attached Drives Can Cause Restore Failure (Legato Bug ID: LGTpa31403)

If you have library sharing between two data movers and you use the Sun StorEdge EBS Administrator program to disable one or more drives that are locally attached to one of those data movers, performing a restore forces the Sun StorEdge EBS software to choose the drive that is attached to the other data mover, thus causing a three-party restore. This forced three-party restore then fails. To successfully restore the data, reenable the locally attached drives.

## NDMP Save Set Recovery Fails with Files and Directories with Long Names (Legato Bug ID: LGTpa31404)

If a file or directory name contains approximately 1 KB of characters or longer, recovering these files through an NDMP Save set recovery fails. To avoid this problem, create files and directories with shorter names.

## NDMP Index Recovery Fails with Certain File and Directory Names (Legato Bug ID: LGTpa31405)

An NDMP index recovery may fail if the file or directory names contain the following characteristics:

- Approximately 1 KB of characters or longer
- Specific metadata characters

To avoid these problems, create files or directories with shorter names and do not include metadata characters.

## No File Index for Multiple Mount Points on the Same Host with Celestra (Legato Bug ID: LGTpa24557)

The Sun StorEdge EBS software does not distinguish between mount points and normal directories when sending file history when using Celestra. For example, if you back up a filesystem mounted on `/mnt2/mnt3` and browse the client file indexes for the filesystem, the software displays all the indexes correctly. If you then unmount `/mnt2/mnt3` and later back up only `/mnt2`, `nwrecover` program and the `recover` command do not show the directories under `/mnt2/mnt3`. In order to see the indexes from `/mnt2/mnt3`, you must browse the file indexes of the previously backed-up partition.

To avoid this issue, back up `/mnt2` first and then back up `/mnt2/mnt3`. When the backups are completed in this order, the software displays all the indexes correctly.

## NDMP Backup Pools (Legato Bug ID: LGTpa23888)

Recovery of an NDMP backup fails if the volume is loaded in a non-NDMP device. To prevent non-NDMP volumes from being recommended for NDMP backups, create separate pools for NDMP and non-NDMP volumes.

## File Recovery Limitation (Legato Bug ID: LGTpa24935)

When performing a recovery while also using Data ONTAP 6.0, you must specify a forward slash (/) at the end of the mount point. Otherwise, the recovery fails. When you specify a forward slash, the recovery is successful.

## Preinitialized STK Tapes in NDMP-Enabled Tape Devices Not Used (Legato Bug ID: LGTpa28778)

STK offers two types of tapes: preinitialized and uninitialized. `nwrecover` program does not use tapes that have been preinitialized in an NDMP-enabled tape device.

To ensure that all tapes in an NDMP tape device are used:

- Do not use tapes that were preinitialized in an NDMP-enabled tape device.
- Label preinitialized tapes in a non-NDMP tape device using Sun StorEdge EBS software and then use only those tapes in the NDMP-enabled tape devices.

## Path to Recover Attribute in nwadmin Not Supported for NDMP (Legato Bug ID: LGTpa27162)

When performing a recovery using the Sun StorEdge EBS Administrator program, you must complete the attributes in the Save Set Recover Status dialog box. If, however, you are performing an NDMP recovery, do not complete the Path to Recover attribute in the Save Set Recover Status dialog box. This attribute is not supported in an NDMP recovery; attempting to use it results in an error message. Leave the Path to Recover attribute blank and complete the other required attributes before clicking Start.

## EMC Celerra Level 5 Recovery Recovers More Than Original Backup (Legato Bug ID: LGTpa29467)

During a level 5 recovery on EMC Celerra, the Sun StorEdge EBS server also recovers an empty subdirectory from the last full backup, even though the contents and name of the subdirectory did not change. To avoid this problem, perform a file-by-file recovery when recovering a level 5 backup.

## Specify Mount Point Attribute When Performing an NDMP Directed Recovery (Legato Bug ID: LGTpa29497)

When you perform a directed recovery on an NDMP sever, the recovery fails if a value has been specified in the Relocate attribute of the Options dialog box. To avoid this problem and perform a directed recovery, specify the new location in the Mount Point attribute of the Save Set Recover Status dialog box and leave the Relocate attribute blank.

## NDMP Recovery of Large Number of Files Causes NetApp Filer Panic (Legato Bug ID: LGTpa32106)

If you perform a file-by-file recovery using the `recover` command or the `nwrecover` program, specifying a recovery of more than 10,240 files may cause the NetApp filer to panic or result in an error message. To avoid this problem, perform a save set recovery or recover fewer than 10,240 files at one time.

Network Appliance has documented this problem in NetApp Bug 52946 and has patches available for both Data ONTAP 6.1 and 6.1.1. These Data ONTAP patches are available by contacting Network Appliance support at the Network Appliance web site.

## Only New or Changed Files Appear in User Interface for NDMP Backups (Legato Bug ID: LGTpa28760)

When the `nwrecover` command is run after a level [1-9] backup, the command shows only the files saved during that backup, rather than all the files from the last full backup. To view all the files from the most recent full backup, change the browse time to a time before the level 1 through 9 backup was performed.

# Support for European Filenames

The Sun StorEdge EBS software supports the NDMP backup, recovery (save set, directory, and file-level), and interface display of European filenames using a NetApp filer and supported Data ONTAP version using non-localized Sun StorEdge EBS 7.0 software for Solaris English 8 (or localized European version, if available) on NetApp Data ONTAP 6.3.x filers and above.

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**Note** – Contact Network Appliance Customer Support to verify which Data ONTAP versions support which languages. Not all Data ONTAP versions support the backup and recovery of all languages. NetApp is compliant with internationalization support. However, the ability of a particular Data ONTAP version to backup and recover the local language settings must be verified.

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The following sections contain important notes, requirements, and recommendations for supporting localized data with NDMP.

## UTF-8 Versions Supported

The Sun StorEdge EBS software supports the UTF-8 format in supported code sets. Support for UTF-8 is specified in the Application Information attribute of the Client resource.



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**Caution** – If the NetApp filer's volume has UTF8 set to Yes, the Sun StorEdge EBS server must also have the UTF8 variable set to Yes in the Application Information attribute of the NDMP Client resource. If the Filer's volume has UTF8 set to No, the Sun StorEdge EBS server must also have the UTF8 variable set to No. To support non-ASCII characters using NDMP, the UTF8 settings must match between the filer and the Sun StorEdge EBS server.

---

To set the UTF8 variable:

- If the data from the filer is in non-UTF-8 format, set the UTF8 environment variable as follows or leave the value blank:

UTF8=n

The default is n.

- If the data from the filer is in UTF-8 format, set the UTF8 environment variable as follows:

UTF8=y

The default is n.

## Single Save Sets Support Only One Code Set

A single save set supports data belonging to only one code set. If you have data in multiple code sets, you must create multiple save groups.

The save set can contain filenames that belong to different languages if all characters in those languages belong to the same code set. For example ISO 8859-1 and ISO 8859-15 include most Western European languages, such as French (fr), Spanish (es), and Portuguese (pt), so filenames from these languages can be backed up in a single save set.



# Fixed Bugs List

This Fixed Bugs List provides a list of bugs that have been fixed in Sun StorEdge Enterprise Backup release 7.0.

For information about configuring and using the Sun StorEdge EBS software, refer to the *Sun StorEdge Enterprise Backup Administrator's Guide, Release 7.0, UNIX Version*.

## Fixed Bugs for Sun StorEdge EBS Release 7.0

The following lists all bugs and requests for enhancements (RFEs) that have been fixed in Sun StorEdge EBS release 7.0:

When appropriate, both Legato and Sun Bug IDs are included.

TABLE 3-1 Fixed in Sun StorEdge EBS Release 7.0 (1 of 9)

Number	Description	Type
LGTpa19711, 26563 / Sun Bug ID 4450995	Volumes names were being lost from the volume inventory during a backup.	Bug/escal
LGTpa20953	When all cleaning cartridges had expired and an operation that requires cleaning was started, no "Cleaning cartridge required" notification was sent. This has been resolved.	Bug/escal
LGTpa22651	A Comment attribute has been added to all resources. It is single valued and can be edited by the administrator.	RFE
LGTpa30483/ Sun Bug ID 4462970	The Sun StorEdge EBS software can not install ti an alternate path during the jumpstart process. This has been resolved.	RFE

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (2 of 9)

Number	Description	Type
LGTpa30567/ Sun Bug ID 4452348	The <code>jbconfig</code> command does not involve users in the hardware ID definition process.	RFE
LGTpa30741/ Sun Bug ID 4468651	The <code>nsrd</code> process reported a failure, during an automatic space recover from a file device configured for staging. This has been resolved.	Bug/ escal
LGTpa31201	Network Data Management Protocol (NDMP) save set restores can be performed at a directory level. Previously, NDMP save sets were limited to full restore only.	RFE
LGTpa31532/ Sun Bug ID 4462664	When recycling a tape, the previous pool information was not retained and did not revert to the default pool. This has been resolved.	Bug/ escal
LGTpa32112 / Sun Bug ID 4462769	When selecting <code>dlt</code> as the drive type, it appeared as <code>dltdlt1</code> . This has been resolved.	Bug/ Escal
LGTpa32142	The Sun StorEdge EBS software supports the STK-T9840B tape drive.	RFE
LGTpa32734 / Sun Bug ID 4614434	Only the last 1K of save output was being kept for the completion report and messages file unless run in verbose mode. This has been resolved.	Bug/ Escal
LGTpa33308 / Sun Bug ID 4526568	When configuring a jukebox using the <code>jbconfig</code> command, the user was prompted identify the tape drive type multiple times. This has been resolved.	RFE
LGTpa33520	The Sun StorEdge EBS server is not completely backing up all the clients in a group before ejecting the volume and starting the backup of other groups. This has been resolved.	Bug/ escal
LGTpa33547	When querying the media database for two pools using the <code>mminfo</code> command, all save sets did appear. This has been resolved.	Bug/ escal
LGTpa33923 / Sun Bug ID 4631307	A warning message is reported when installing the Sun StorEdge EBS software using the default order. This has been resolved.	RFE
LGTpa34925	When running the <code>jbconfig</code> command to install a STK9740 silo, the library stopped responding. This has been resolved.	Bug/ escal
LGTpa35020	The utility <code>save</code> command caused the Sun StorEdge EBS software to core dump intermittently on an HP Tru64 operating system. This has been resolved.	Bug/ escal

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (3 of 9)

Number	Description	Type
LGTpa35203 / Sun Bug ID 4529161	The packaging scripts are now located in the <code>/usr/lib/nsr</code> directory.	RFE
LGTpa35288 / Sun Bug ID 4519579	If a <code>savepnpc</code> process did not run to completion, the lock files in the <code>/nsr/tmp</code> directory remained in the directory and the process continued to execute the save. This has been resolved.	Bug/ escal
LGTpa35515	If you used the Policy Manager to change the retention policy to be the same as the browse policy, the following error message appeared:  Server <code>&lt;server_name&gt;</code> : you cannot make clients <code>&lt;client_name&gt;</code> retention policy shorter than its browse policy  This has been resolved.	Bug/ escal
LGTpa35728	The <code>nsrd</code> process stopped responding to blocking system calls, causing the Sun StorEdge EBS software to time out. This has been resolved.	Bug/ escal
LGTpa35871	The date format in the Sun StorEdge EBS Administrator program is not following the time format configured by the Solaris environment variable <code>LC_TIME</code> . This has been resolved.	Bug/ escal
LGTpa35985	Marking items for recovery took a long time if incremental or level backups existed on a client with large filesystems. This has been resolved.	Bug/ escal
LGTpa36192	If the <code>nsrdmpix</code> process fails, the Sun StorEdge EBS software might delete the files in the <code>/nsr/tmp</code> directory. This has been resolved.	RFE
LGTpa36541	During the cloning phase, the Sun StorEdge EBS software correctly mounted the source tape, but continued to request the same tape and the cloning operation failed. This has been resolved.	Bug/ escal
LGTpa36623	Scanning NDMP backups that span multiple volumes failed with an HP-UX Sun StorEdge EBS server. This has been resolved.	Bug/ escal
LGTpa36639	If a Domain Name Server (DNS) was misconfigured, the <code>nsrd</code> process timed out and the following error message appeared:  <code>nsrd: gethostbyname failed for host abcde-01 with NULL</code>  This has been resolved.	Bug/ escal

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (4 of 9)

Number	Description	Type
LGTpa36654	The <code>scanner</code> command with the <code>-vvvvv</code> option will reports the length of each record. For example:  <pre>scanner: scanning fn 3024224769(3024224769) rn 0(0) len 34356</pre>	RFE
LGTpa36678 / Sun Bug ID 4666444	The <code>nsrim</code> process determined a one-month retention period based on the previous month as opposed to a calendar month. This has been resolved.	Bug/ escal
LGTpa36734	The <code>recover</code> command specified the local host as the Sun StorEdge EBS server if the <code>-s</code> option was not used. This has been resolved.	Bug/ escal
LGTpa36830	The Sun StorEdge EBS software did not resize the buffer size to a larger value when a server has multiple hostnames. This has been resolved.	Bug/ escal
LGTpa36836	The <code>nsrmmd</code> process reports a status message as an asynchronous message rather than as a blocking remote procedure call (RPC).	RFE
LGTpa36868	Volumes with no valid save sets and a Full status were not recycled. This has been resolved.	Bug/ escal
LGTpa37058	The Sun StorEdge EBS software did not resize the buffer size to a larger value when a server has multiple hostnames. This has been resolved.	Bug/ escal
LGTpa37138	The <code>mminfo</code> command out displayed duplicate entries when the <code>-o</code> option is used. This has been resolved.	Bug/ escal
LGTpa37253	During an inventory operation the following error message appeared when a volume label was not a recognized Sun StorEdge Enterprise Backup volume label:  <pre>media warning: /dev/rmt/Xcbn reading: Tape label read: Bad file number</pre> <p>The following message now appears when a volume label is not a recognized Sun StorEdge Enterprise Backup volume label:</p> <pre>Tape label for volume in pool , is not recognized by Networker</pre>	Bug/ escal

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (5 of 9)

Number	Description	Type
LGTpa37506 / Sun Bug ID 4803232	After installing the Sun StorEdge EBS software, if you create a remote client resource and attempt to perform a scheduled or manual backup, some clients might fail with an error message. For example: SYSTEM error: `boreas.legato.com' is not a registered client This has been resolved.	Bug/ escal
LGTpa37545	The Sun StorEdge EBS software relabeled all tapes even when a syntax error occurred and a range of slots is specified with the -s option. This has been resolved.	Bug/ escal
LGTpa37651	When using the <code>mminfo</code> command from a release 6.2 Sun StorEdge EBS server to query a media volume database of a server from a release earlier than 6.2, the process was incorrectly displayed as "In Progress". This has been resolved.	Bug/ escal
LGTpa37892	The Search option in the <code>nwrecover</code> program did not locate a specified file unless you were in the directory that contains the file. This has been resolved.	Bug/ escal
LGTpa37995	In a large enterprise environment (more than a thousand clients) the savegroup completion report grew to an unmanageable size. The savegroup completion reports and worklists are now stored in a tmp file in <code>/nsr/tmp/sec/sg/&lt;groupname&gt;</code> . The file stores filenames as the value of the savegroup Progress File Name attribute.	RFE
LGTpa38096	The Sun StorEdge EBS software does not close file descriptors in a HP cluster configuration. This has been resolved.	Bug/ escal
LGTpa38261	The Sun StorEdge EBS software did not automatically label a tape for the archive with Legato GEMS SmartMedia software. This has been resolved.	Bug/ escal
LGTpa38491	In a Legato GEMS SmartMedia or AlphaStor environment, the <code>nsrjb -H</code> process took too long to synchronize the libraries between the AlphaStor and the Sun StorEdge EBS resource databases. This has been resolved.	Bug/ escal
LGTpa38666	After the Sun StorEdge EBS server was shut down and restarted, some storage node devices might be deleted, even though the Legato License Manager indicated that there were storage node licenses installed. This has been resolved.	Bug/ escal
LGTpa38828	When installing more than 16 SCSI buses, the Sun StorEdge EBS software stopped responding. This has been resolved. <b>Note:</b> The maximum recommended number of SCSI buses the Sun StorEdge EBS software can handle is 16.	Bug/ escal

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (6 of 9)

Number	Description	Type
LGTpa38948	The Sun StorEdge EBS software stopped responding when multiple tape mount requests were pending on a <code>savegrp</code> . This has been resolved.	Bug/escal
LGTpa38971	The media database produced incorrect results when the <code>mminfo</code> command was used to perform a query on the <code>volretent</code> string attribute. This has been resolved.	Bug/escal
LGTpa39045	When multiple Sun StorEdge EBS servers were listed in the <code>servers</code> file, the <code>recover</code> command defaulted to the last server listed if the <code>-s</code> option was not defined. This has been resolved.	Bug/escal
LGTpa39047	As the operating system initiated a system shutdown, the <code>/etc/init.d/networker</code> script executed <code>nsr_shutdown</code> in the background, which caused the Sun StorEdge EBS software to shutdown before all processes were properly stopped. This has been resolved, and now the <code>/etc/init.d/networker</code> script executes a <code>nsr_shutdown</code> in the foreground, forcing the operating system to wait until the shutdown is complete.	Bug/escal
LGTpa39168	Entering 0 (zero) in the month field in <code>nsradmin</code> program might cause the Sun StorEdge EBS software to core dump. This has been resolved.	Bug/escal
LGTpa39200	The man page for <code>nsrjb</code> (option <code>-l</code> ), states, "the cleaning cartridge selected is the one with the fewest remaining uses." The Sun StorEdge EBS software does not select the proper cleaning cartridge, as described in the man page. This has been resolved.	Bug/escal
LGTpa40495	If the Override option in the Schedules window was set as Full First Saturday Every Month, the Sun StorEdge EBS software was performing a full backup on the second Saturday of every month. This has been resolved.	Bug/escal
LGTpa40512,	The transmission of data over an ATM card from a Tru64 client to a Solaris server was very slow. This has been resolved.	Bug/escal
LGTpa40807	The <code>scanner -S SSID</code> command might fail when scanning data larger than 2 GB. The following error message is reported:  File too large  This has been resolved.	Bug/escal
LGTpa41014	Label verification failed if there were more than 4,000 save sets on a single volume. This has been resolved.	Bug/escal
LGTpa41795	Savegroup notification scripts were looping and many <code>nsrd</code> processes were spawned, causing some backups to fail. This has been resolved.	Bug/escal

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (7 of 9)

Number	Description	Type
LGTpa41872 / Sun Bug ID 4673857	If you are using a system with limited frame buffer capabilities (for example, a 8-bit frame buffer), the Sun StorEdge EBS Administrator program might start with both a white foreground and a white background. This might happen if another application is open and is using most of the available colors. This has been resolved.	RFE
LGTpa42098 / Sun Bug ID 4787305	When using a Sun HBA driver version 1.1 (s28) with a QLogic ISP 10160 HBA, the <code>inquire</code> command (using the <code>lus.conf</code> file) did not identify the card correctly. This has been resolved.	Bug/escal
LGTpa42197	During save set recovery, the following error message appeared:  valid # fn #, rn #, decoded 13 chunks, expected 19 chunks  This has been resolved.	Bug/escal
LGTpa42279, 49613 / Sun Bug ID 4471521	If a group of tapes are specified to be labelled, and one or more of the tapes has no barcode label, the <code>nsrjb</code> program reported the following error message and failed to continue labeling the other volumes:  <code>nsrjb: labeling: 'match barcode labels' is set to 'Yes' and slot `7' has no barcode label</code>	Bug/escal
LGTpa42349	If a file is backed up using the <code>posixcrccasm</code> command, subsequently changed and then recovered, a warning that the file was modified is not reported. This has been resolved.	Bug/escal
LGTpa42465	On a Sequent operating system, files with non-display character filenames might cause a backup to fail. The following error message is reported:  RPC error : RPC cannot encode arguments  This has been resolved.	Bug/escal
LGTpa42516	In an environment with multiple <code>nwadmin</code> programs operating, the following message might be reported:  Error: nwadmin: fillin_details: volume overrun  This has been resolved.	Bug/escal
LGTpa43071	The following error message no longer appears when multiple save sets are specified for a client:  the temp file exists another savepnpc must be running	RFE

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (8 of 9)

Number	Description	Type
LGTpa43141	When there was a bad connection between the client and/or the storage node and Server, the follow error messages appears in the daemon.log file:  <code>&lt;volume &lt;volume ID&gt; not found in Media index</code>  This has been resolved.	Bug/ escal
LGTpa43150	After deleting a client, the client name was still showing up in the Client Indexes window. This has been resolved.	Bug/ escal
LGTpa43307	The LC_TIME value is set to a value not listed in the directory /usr/lib/locale, nsrwatch core dumped. This had been fixed.	Bug/ escal
LGTpa43349	If a tape volume is stuck in the drive, even after running the <code>nsrjb -H(E)vv</code> command, the Sun StorEdge EBS software did not display the volumes loaded in the drive. This has been resolved.	Bug/ escal
LGTpa43378	Duplicate volume entries for tapes that were previously recycled were appearing in the media database following a Sun StorEdge EBS server recycle during a host system reboot. This has been resolved.	Bug/ escal
LGTpa43433	The archive command will not automatically mount a tape on a storage node. This has been resolved.	Bug/ escal
LGTpa43515/ Sun Bug ID 4739644	When there is a directory path that is greater than 1024 characters, the save command was backing up directories until the limit (1024 -1). This has been resolved. An incomplete save set will not be backed up and will be marked as Incomplete.	Bug/ escal
LGTpa43757	When running NDMP backups, the backups randomly failed when spanning multiple tapes. This has been resolved.	Bug/ escal
LGTpa43899	The <code>jbconfig</code> command did not recognize the bar code reader on Sun L25 and L100 libraries. This has been resolved.	RFE
LGTpa44403	The <code>-m</code> option to the <code>mminfo</code> command man page was updated to indicate the <code>-m</code> option indicates the number of times the read/label operation is performed for the particular volume.	Bug/ escal
LGTpa45176	When using the <code>jbconfig</code> command to configure a jukebox over a Fibre Channel on an AIX operating system, an error message was reported. This has been resolved.	RFE
LGTpa45257	When 8 <code>nsrjb</code> commands were issued at the same time from a script file, several of the commands completed, but the rest did not exit correctly. This has been resolved.	Bug/ escal

**TABLE 3-1** Fixed in Sun StorEdge EBS Release 7.0 (9 of 9)

Number	Description	Type
LGTpa48018	Backing up a high-density file system (HDFS) with a large filesystem (greater than 20 million files) was extremely slow. This has been resolved.	RFE
LGTpa48142	The <code>jbconfig</code> command configured the ADIC FastStor DLT device with a bar code reader as a default, although this is an optional feature for this device. This has been resolved.	RFE
LGTpa48251, 44569	Case inconsistencies existed in the error status messages logged in <code>daemon.log</code> file. Savegroup and media messages always appear in lowercase.	RFE
LGTpa48914	When tapes were not available on the stand-alone drives for satisfying mount requests the delay caused the Sun StorEdge EBS software to stop responding. This has been resolved.	Bug/ escal
LGTpa49915, LGTpa50173/ Sun Bug ID 4811796	Client authentication problems occurred while executing scheduled saves on running a Sun StorEdge EBS release5.1 client immediately following an upgrade of the Solaris server from release 6.1.2 to 6.1.3. This has been resolved.	Bug/ escal
LGTpa50278, 45300/ Sun Bug ID 4679222	During an automatic clone savegroup operation, if the cloning process fails due to a bad tape, tape drive or file device, the Sun StorEdge EBS software will report the backup and cloning operations as successful. However, save set status indicates only the bootstrap is cloned and the clone operation actually failed. This has been resolved.	Bug/ escal

