



Sun StorEdge™ Network Data Replicator 3.0 Release Notes

Sun Microsystems, Inc.
901 San Antonio Road
Palo Alto, CA 94303-4900 U.S.A.
650-960-1300

Part No. 806-7513-10
June 2001, Revision A

[Send comments about this document to: docfeedback@sun.com](mailto:docfeedback@sun.com)

Copyright 2001 Sun Microsystems, Inc., 901 San Antonio Road, Palo Alto, CA 94303-4900 U.S.A. All rights reserved.

This product or document is distributed under licenses restricting its use, copying, distribution, and decompilation. No part of this product or document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any. Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, Sun StorEdge, SunATM, Sun Enterprise, Sun Fire, and Solaris are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

Federal Acquisitions: Commercial Software—Government Users Subject to Standard License Terms and Conditions.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2001 Sun Microsystems, Inc., 901 San Antonio Road, Palo Alto, CA 94303-4900 Etats-Unis. Tous droits réservés.

Ce produit ou document est distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a. Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, Sun StorEdge, SunATM, Sun Enterprise, Sun Fire, et Solaris sont des marques de fabrique ou des marques déposées, ou marques de service, de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ETAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.



Contents

- 1. Sun StorEdge Network Data Replicator Release Notes 1**
 - Introduction 2
 - Related Documentation 3
 - Documentation on CD 4
 - Supported Hardware and Software 5
 - Product Notes 6
 - Differences Between Versions 2.0 and 3.0 6
 - Rebooting Your Server Using the Shutdown Command 7
 - Bitmap Files Are Not Supported in Version 3.0 7
 - Log File 7
 - Raw Partitions and Volumes Used with the Sun SNDR Software 8
 - Volume Size Requirements for the Sun StorEdge Configuration 8
 - Volumes Eligible for Replication 9
 - Secondary Volume Mirroring 9
 - Installing the Sun StorEdge Instant Image Software Version 3.0 with the Sun SNDR Software Version 3.0 10
 - Using More Than 64 Sun SNDR Software Volume Sets 11
 - Upgrading the Solaris Operating Environment with the Sun SNDR Software Installed 12
 - ▼ To Remove and Reinstall the Sun SNDR Software 12

| | |
|--|----|
| Product Limitations | 14 |
| Version 3.0 and Versions 1.x, 2.0, and 2.0.1 Sun SNDR and Data Services Software | 14 |
| Using the Sun StorEdge Data Services Software in a Sun Cluster Environment | 15 |
| Increasing the Storage Volume Limit | 16 |
| ▼ To Increase the Storage Volume Limit | 16 |
| Documentation Errata and Additions | 17 |
| Open Bugs | 18 |

Sun StorEdge Network Data Replicator Release Notes



Caution – Do not install or use the Sun StorEdge Version 3.0 Core Services, Sun SNDR, and Instant Image software on servers operating the initial release of the Sun Cluster 3.0 software. The Version 3.0 software is not co-existent in this Sun Cluster 3.0 environment.

The Sun StorEdge Fast Write Cache product, all versions, is not supported in any cluster environment.

See [“Using the Sun StorEdge Data Services Software in a Sun Cluster Environment”](#) on page 15.

Note – You can install and use the Sun StorEdge Version 3.0 Core Services, Sun SNDR, and Instant Image software on servers in a Sun Cluster 3.0 Update 1 environment.

The Version 3.0 Core Services, Sun SNDR, and Instant Image software is cluster aware in the Sun Cluster 3.0 Update 1 environment and provides high availability for the Sun StorEdge software. The Version 3.0 Core Services, Sun SNDR, and Instant Image software is co-existent in the Sun Cluster 2.2, Solaris 8 operating environment, where it will not interfere with failover.

Introduction

This document contains important product notes and open bugs for the Sun StorEdge™ Network Data Replicator (Sun SNDR) Version 3.0 software. The Sun SNDR software is a remote replication facility providing redundant storage of critical information across physically separate sites.

For late-breaking news about this release, go to the following web sites and select the Sun SNDR software product:

<http://www.sun.com/storage/software/>

If you are a Sun™ support or service provider, go to:

<http://webhome.ebay/networkstorage/products/>

For the latest version of released storage software documentation, go to:

<http://www.sun.com/products-n-solutions/hardware/docs/Software/>

For installation services in the USA, please contact Sun at the following number. For installation services outside the US, please contact your local sales or service representative.

1-800-USA4SUN (1-800-872-4786)

For information about service, sales, consulting, and support, go to:

<http://www.sun.com/service/support/contactsalesoffice.html>

<http://www.sun.com/service/support/sunsolve/index.html>

Related Documentation

| Application | Title | Part Number |
|-----------------------|--|-------------|
| man pages | sndradm | N/A |
| | dscfg | |
| | scmadm | |
| | svadm | |
| | iiadm | |
| | shutdown | |
| Release | <i>Sun StorEdge Instant Image 3.0 Release Notes</i> | 806-7678 |
| Installation and user | <i>Sun StorEdge Network Data Replicator 3.0 Installation Guide</i> | 806-7514 |
| | <i>Sun StorEdge Instant Image 3.0 Installation Guide</i> | 806-7675 |
| | <i>SunATM 3.0 Installation and User's Guide</i> | 805-0331 |
| | <i>Sun ATM 4.0 Installation and User's Guide</i> | 805-6552 |
| | <i>Sun Gigabit Ethernet FC-AL/P Combination Adapter Installation Guide</i> | 806-2385 |
| | <i>Sun Gigabit Ethernet/S 2.0 Adapter Installation and User's Guide</i> | 805-2784 |
| | <i>Sun Gigabit Ethernet/P 2.0 Adapter Installation and User's Guide</i> | 805-2785 |
| | <i>Sun Enterprise 10000 InterDomain Networks User Guide</i> | 806-4131 |
| System administration | <i>Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide</i> | 806-7512 |
| | <i>Sun StorEdge Instant Image 3.0 System Administrator's Guide</i> | 806-7677 |
| | <i>TCP/IP and Data Communications Administration Guide</i> | 805-4003 |
| Configuration | <i>Sun StorEdge Network Data Replicator 3.0 Configuration Guide</i> | 806-7550 |
| | <i>Sun Enterprise 10000 InterDomain Network Configuration Guide</i> | 806-5230 |

Documentation on CD

The Sun SNDR Version 3.0 documentation is available on the Sun SNDR product CD in Adobe Acrobat .pdf format.

- *Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide*
- *Sun StorEdge Network Data Replicator 3.0 Installation Guide*
- *Sun StorEdge Network Data Replicator 3.0 Configuration Guide*

To access this documentation:

1. **Log on as root.**
2. **Insert the Sun SNDR Version 3.0 software CD into the CD-ROM drive that is connected to your system.**
3. **Start the Volume Manager daemon `vold(1M)` (if needed) and change to the `Docs` directory.**

```
# /etc/init.d/volmgt start
# cd /cdrom/cdrom0/Docs
```

From this location, you can view the documentation using the free Adobe Acrobat Reader software. This CD also contains the Adobe Acrobat Reader software in the `/Acro_Read` directory. Install this to your local machine if you do not currently have the Adobe Reader software installed. It is also available from Adobe Systems at www.adobe.com.

Supported Hardware and Software

| | |
|-----------------------------------|---|
| Operating Environment | Operating environment: <ul style="list-style-type: none">• Solaris™ 7 (all versions)• Solaris 8• Solaris 8 6/00 (also known as Update 1)• Solaris 8 10/00 (Update 2)• Solaris 8 01/01 (Update 3)• Solaris 8 04/01 (Update 4) |
| Supporting Software | TCP/IP network transport software such as SunATM™ or Gigabit Ethernet transports |
| Optional Software | Sun StorEdge Instant Image software Version 3.0; install this package for additional point-in-time copy capability |
| Host Types | Server hosts using the Solaris operating environment and any Sun-supported network interface card. Hosts include: <ul style="list-style-type: none">• Sun Enterprise™ server models 2x0 through 4x0• Sun Enterprise server models 3x00 through 10000• Sun Fire™ server models, 3800, 4800, 4810, and 6800 |
| Supported Attached Storage | The Sun SNDR software is storage-hardware independent. |

Product Notes

Differences Between Versions 2.0 and 3.0

TABLE 1 briefly describes differences between the Sun SNDR software Versions 2.0 and 3.0. See the *Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide* for more information.

TABLE 1 Version Differences

| | |
|---|---|
| rdcadm command line interface | <p>The Version 3.0 <code>sndradm</code> command is linked to the <code>rdcadm</code> command and is generally compatible with Sun SNDR software Version 2.0 <code>rdcadm</code> command.</p> <p>Like the Sun SNDR Version 2.0 software, Version 3.0 does not contain a graphical user interface (GUI).</p> |
| Bitmap Files and Volumes | <p>If you used files as bitmaps in the Sun SNDR Version 2.0 software, you must convert them to volumes after you upgrade from Version 2.0 to Version 3.0. The Sun SNDR software Version 3.0 software does not support bitmap files. The <i>Sun StorEdge Network Data Replicator 3.0 Installation Guide</i> describe how to convert bitmap files to volumes.</p> |
| Configuration files | <p>Version 2.0 required you to create an <code>rdc.cf</code> configuration file containing the Sun SNDR volume sets and to place these volumes in the Storage Volume manager <code>sv.cf</code> configuration file. Version 3.0 does not; when you enable a volume set, the Sun SNDR software automatically includes the volume set in the data service configuration, used and accessible by all installed Sun StorEdge data services.</p> |
| Ability to control groups of volume sets, Version 3.0 only | <p>Version 3.0 enables you to perform functions on more than one volume set at a time by grouping certain volume sets. You can assign specific volume sets to a group to perform replication on these volume sets and not on others you have configured.</p> |
| One-to-many and multihop sets, Version 3.0 only | <p>One-to-many: replicate data from one primary volume to many secondary volumes residing on one or more hosts. When you perform a forward resynchronization, you can synchronize one volume set or all volume sets. Issue a separate command for each set. You can also update the primary volume using a specific secondary volume.</p> <p>Multihop: replicate data from one primary volume to a secondary volume; the secondary volume then replicates the data again to another secondary volume, and so on in a "daisy-chain" fashion.</p> |

TABLE 1 Version Differences (Continued)

| | |
|---|--|
| Security and Internet Protocols, Version 3.0 | Version 3.0 operates in the Sun Solaris 7 and 8 operating environments, which support Internet Security Protocol (IPsec). The Solaris 8 operating environment also supports Internet Protocol Version 6 (IPv6). (The Solaris 7 operating environment does not support IPv6.) |
| | Version 3.0 does not require the use of an <code>.rhosts</code> file. You place the hosts to be used in the <code>/etc/hosts</code> file of each host running the Sun SNDR Version 3.0 software in your configuration. |
| Cluster Capability | See “Using the Sun StorEdge Data Services Software in a Sun Cluster Environment” on page 15. |

Rebooting Your Server Using the Shutdown Command

During the Sun StorEdge Core and data services installation and upgrade processes, the Sun SNDR and Instant Image 3.0 installation guides instruct you to reboot your server. **Do not use the `reboot` command.** As described in the instructions, always use the `shutdown` command. The `shutdown` command also ensures that any shutdown scripts in the `/etc/init.d` directory are executed.

Bitmap Files Are Not Supported in Version 3.0

If you used bitmap files in the Sun SNDR Version 2.0 software, you must convert them to volumes after you upgrade from Version 2.0 to Version 3.0. The Sun SNDR software Version 3.0 software does not support bitmap files. The *Sun StorEdge Network Data Replicator 3.0 Installation Guide* describes how to convert bitmap files to volumes.

Log File

The `/var/opt/SUNWesm/ds.log` file contains operation log messages for the Sun SNDR commands.

Raw Partitions and Volumes Used with the Sun SNDR Software

When selecting a volume to be used in a Sun SNDR software volume set (including the configuration location), ensure that volume does not contain disk label private areas (for example, slice 2 on a Solaris operating environment-formatted volume). The disk label region is contained in the first sectors of a disk. The safest method is to ensure that cylinder 0 is not part of any logical volume that is replicated (except for volumes under Veritas Volume Manager control, where cylinder 0 can be part of a logical volume that is replicated).



Caution – When the volume to be used in a Sun SNDR software volume set is a raw partition, the partition *must not* include the cylinder that contains the label for the disks. On Sun disks, this is cylinder 0.

Volume Size Requirements for the Sun StorEdge Configuration

Ensure that you have at least 500 Kbytes of disk space for the Sun StorEdge configuration used by the Sun StorEdge data services.

The configuration location must be a file name or block device for the single configuration location used by all Sun StorEdge data service software you plan to install. For example, `/dev/dsk/c1t1d0s7` or `/config`.

If you select a file name, its file system *must* be the root (`/`) or `/usr` file system. If you select a volume manager-controlled volume, it must be available when the Sun StorEdge data services software is started.

Volumes Eligible for Replication

Generally, include the following critical volumes in the Sun SNDR configuration:

- Database and database management system (DBMS) logs (the total database or online DBMS log)
- Access control files

You can exclude volumes from the Sun SNDR software configuration if they can be reconstructed at the recovery site or if they seldom change:

- Temporary volumes (such as those used in sort operations)
- Spool files
- Paging volumes

Secondary Volume Mirroring

- RAID levels – The secondary volume can be any RAID level. It does not have to be the same the RAID level as the primary volume.
- One-to-many and multihop sets – The Sun SNDR software enables you to create one-to-many and multihop volume sets. See the *Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide* for more information.

In a one-to-many volume set, you can replicate data from one primary volume to many secondary volumes residing on one or more hosts. One primary volume and each secondary host volume with related bitmap volumes are a single volume set. When you perform a forward resynchronization, you can synchronize one volume set or all volume sets. (Ensure that you issue a separate command for each set.) You can also update the primary volume using a specific secondary volume.

In a multihop set, the secondary host volume of one volume set can be the primary host volume of another volume set.

Installing the Sun StorEdge Instant Image Software Version 3.0 with the Sun SNDR Software Version 3.0

Note – For information on the Sun StorEdge Core and data services installation order, see the *Sun StorEdge Network Data Replicator 3.0 Installation Guide*. Install the Sun StorEdge Core Services software first.

To help ensure maximum data integrity, operate the Sun SNDR Version 3.0 software with the Sun StorEdge Instant Image Version 3.0 software. The Sun SNDR software and the Instant Image software integrate to help ensure that data consistency can be maintained during the Sun SNDR software resynchronization operations.

Before you start a resynchronization operation, ensure that you have an appropriate Instant Image software copy of the Sun SNDR software target volume.

For more information, see the Sun SNDR system administrator's and installation guides listed in [“Related Documentation” on page 3](#).

Using More Than 64 Sun SNDR Software Volume Sets

Note – After editing the `/usr/kernel/drv/rdc.conf` file, reboot your server using the `shutdown` command.

If you configure more than 64 Sun SNDR software volume sets, you must edit the `rdc_max_sets` field in the `/usr/kernel/drv/rdc.conf` file on each machine running the Sun SNDR software. The default number of configured volume sets is 64.

For example, to use 128 sets, change the file as follows; note the semicolon character (;) at the end of the `rdc_max_sets` field:

```
#
# rdc_max_sets
# - Configure the maximum number of RDC sets that can be enabled on
# this host. The actual maximum number of sets that can be
# enabled will be the minimum of this value and nsc_max_devices
#(see nsctl.conf) at the time the rdc kernel module is loaded.
#
rdc_max_sets=128;
```

Upgrading the Solaris Operating Environment with the Sun SNDR Software Installed

If you installed the Sun SNDR software in a Solaris 7 operating environment and now wish to upgrade to the Solaris 8 operating environment, remove and reinstall the Sun SNDR software. The following text describes this procedure.

Note – Perform this procedure on each machine where the Sun SNDR software is installed and you are also upgrading the operating environment.

▼ To Remove and Reinstall the Sun SNDR Software

1. **Log on as the root user.**
2. **(Optional) Back up your Sun StorEdge data services configuration by writing it to an ASCII file.**

This step is optional. When you remove the Sun SNDR packages, your configuration information is preserved.

```
# /usr/opt/SUNWscm/sbin/dscfg -l > ASCII-output-file
```

3. **Remove the Sun SDNR software packages.**

```
# pkgrm SUNWrdcu SUNWrdr
```

4. **Reboot your server.**

```
# shutdown -y -i 6 -g 0
```

5. **Upgrade your operating environment to Solaris 8.**
6. **Log on again as the root user.**
7. **Start the Volume Manager daemon `vold(1M)` (if needed).**

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

8. **Insert the Sun SNDR CD and install the Sun SNDR software.**

- To install Sun SNDR software using the installation script, type:

```
# cd /cdrom/cdrom0
# ./install_sndr
```

The package installation starts.

9. Remove the Sun SNDR software CD from the CD-ROM drive:

```
# cd /
# eject cdrom
```

10. Reboot your server as follows:

```
# touch /reconfigure
# /etc/shutdown -y -g 0 -i 6
```

Product Limitations

Version 3.0 and Versions 1.x, 2.0, and 2.0.1 Sun SNDR and Data Services Software



Caution – The Version 1.x and 2.0 editions of any of the Sun StorEdge data services cannot operate with the Version 3.0 editions. These editions include Instant Image Versions 1.0, 2.0, and 2.0.1, Sun StorEdge Target Emulation Version 1.2, Sun StorEdge Fast Write Cache, and Sun SNDR software. For example, you cannot use Sun StorEdge Instant Image software Version 2.0 with the Sun SNDR software Version 3.0. When you plan to install or upgrade to a Version 3.0 data service, you must uninstall all Version 2.0 and 2.0.1 data services.

The Version 1.x, 2.0, 2.0.1, and Version 3.0 Sun StorEdge data services are binary incompatible. If your system includes Versions 1.x, 2.0, and 2.01 of the Instant Image software (including Instant Image 2.0.1 with STE 1.2) and the Sun SNDR software, you must remove them before installation. See the installation documentation listed in [“Related Documentation” on page 3](#).

For example, you cannot use the Sun StorEdge Fast Write Cache product Version 2.0 with the Sun SNDR software Version 3.0. When you plan to install or upgrade to a Version 3.0 data service, you must uninstall all Version 2.0 and 2.0.1 data services.

However, the Sun StorEdge Core Services Version 3.0 CD contains the Sun StorEdge SUNWnvm Version 3.0 software package. This package is intended for those users whose systems include Version 2.0 of the Sun FWC hardware and software product and who wish to continue using the Sun FWC product in a nonclustered environment. See the *Sun StorEdge Network Data Replicator 3.0 Installation Guide* for details.

All versions of the Sun StorEdge Fast Write Cache product are not supported in a Sun Cluster environment because cached data is inaccessible from other machines in a cluster. To compensate, you can use a caching array such as the Sun StorEdge A3500 disk array.

Using the Sun StorEdge Data Services Software in a Sun Cluster Environment



Note – The Version 3.0 data services are not supported in a Sun Cluster 2.2, Solaris 7 operating environment.

All versions of the Sun StorEdge Fast Write Cache product are not supported in a Sun Cluster environment. You cannot use the Sun StorEdge Fast Write Cache (FWC) product, including the SUNWnvm Version 3.0 software, in a Sun Cluster environment because cached data is inaccessible from other machines in a cluster. To compensate, you can use a caching array such as the Sun StorEdge A3500 disk array.

Note – The Sun StorEdge data services software volumes, such as those used with the Sun SNDR and Instant Image Version 3.0 Software, do not fail over in a Sun Cluster 2.2 environment.

In a Sun Cluster 2.2 environment, the Sun StorEdge Version 3.0 data services software requires that the following patch be installed:

| | |
|--|------------------------|
| Solaris 8 operating environment | Patch number 109210-05 |
|--|------------------------|

During a failover or takeover operation on a Sun Cluster 2.2 logical host, the list of all volumes being deported is checked to determine whether they are part of one or more Sun StorEdge data services software volume sets. For each volume that is part of such a volume set, the following occurs:

- All processes accessing these volumes or raw devices will be politely killed
- All mounted file systems (nfs, ufs, or vxfs) will be unshared or unmounted
- The Sun StorEdge data services software volume sets will be disabled and then removed from the data services and Storage Volume (SV) driver configuration.

After a Sun Cluster 2.2 failover or takeover operation, the volume sets remain disabled and require manual reconfiguration using the Sun SNDR software before you can use them.

Increasing the Storage Volume Limit

The Sun StorEdge Version 3.0 data services software has a default limit of 1024 storage volumes for use with the software. For example, if you use Instant Image only, you can have 341 volume sets, each consisting of master, shadow, and bitmap volumes. Also, if you use Sun SNDR and Instant Image Version 3.0 software packages together, the number of volume sets are divided between the two packages. The limit is divided among the number of Version 3.0 data services you have installed.

The following procedure describes how to increase this default limit.

▼ To Increase the Storage Volume Limit



Caution – Increasing this limit causes more memory to be consumed. You might have to adjust the `nsc_global_pages` value in the `/kernel/drv/mc_rms.conf` file. Only an experienced system administrator should make these changes.

1. **Log on as the root user.**
2. **Open the `/kernel/drv/nsctl.conf` file using a text editor such as `vi(1)` or `ed(1)`.**
3. **Search for the `nsc_max_devices` field.**
4. **Edit the number in this field to increase your volume limit.**
5. **Save and exit the file.**
6. **Reboot your server using the `shutdown` command.**

Documentation Errata and Additions

■ *Sun SNDR 3.0 System Administrator's Guide*

1. This guide includes a section titled “Using the Sun StorEdge Data Services in a Sun Cluster Environment”. This section describes the Solaris 7 operating environment patch 109206-06 for use with Sun Cluster 2.2 and the Sun SNDR Version 3.0 data services software. The Version 3.0 data services are not supported in a Sun Cluster 2.2, Solaris 7 operating environment. See “[Using the Sun StorEdge Data Services Software in a Sun Cluster Environment](#)” on page 15 in this document for the correct information.
2. This guide describes the syntax and use of the Sun SNDR enable command `sndradm -e|-E` incorrectly. In the guide, the enable syntax incorrectly shows that you can add a volume set to an I/O group (using the `-g io-groupname` option) and to a disk device or resource group (using the `-C tag` option):

Incorrect

- `sndradm -e [-g io-groupname] [-C tag] [-n] {-f config-file | SNDR-set}`
- `sndradm -E [-g io-groupname] [-C tag] [-n] {-f config-file | SNDR-set}`

When you enable a volume set and wish to add the volume set to an I/O group or disk device or resource group, use this syntax:

Correct

- `sndradm -e [-n] {-f config-file | SNDR-set}`
- `sndradm -E [-n] {-f config-file | SNDR-set}`

Specify the I/O group or disk device or resource group in the SNDR-set definition:

```
phost pdev pbitmap shost sdev sbitmap ip {sync | async} [g io-groupname] [C tag]
```

where `g io-groupname` indicates the I/O group name and `C tag` indicates the disk device or resource group name.

You can use the `-g io-groupname` and `-C tag` options with other `sndradm` commands, when you wish to restrict operations to only those previously-enabled volume sets in the respective groups.

Open Bugs

4453470

The Sun SNDR software allows you to specify block devices in the volume set

The Sun SNDR software `sndradm` command allows a user to specify block devices as the parts of the volume set. **The Sun SNDR Version 3.0 software does not support block devices.** The Sun SNDR software supports the use of **raw devices** as volumes and to store bitmaps.

Using a block device causes the Sun SNDR software to fail to:

- Replicate between volumes
- Log volume differences
- Add volume information to the SV driver

Workaround

Specify raw devices as volumes and bitmaps, as described in the Sun StorEdge Network Replicator 3.0 documentation listed in [“Related Documentation” on page 3](#).

4453357

Autosynchronization option (`sndradm -a`) does not work correctly

The autosynchronization option might not work correctly in either of the following scenarios:

1. If the user has enabled a volume set and then set the autosynchronization option for the volume set using the `sndradm -a` command, autosynchronization operations might not occur.
2. If the user has enabled a volume set, set the autosynchronization option for the volume set using the `sndradm -a` command, and the link has been interrupted, the autosynchronization operation might not occur when the link is reestablished.

Workaround

Restart the autosynchronization daemon `sndrsyncd` on the primary and secondary hosts.

1. Kill any current `sndrsyncd` processes.

```
# ps -ef | fgrep sndrsyncd
# kill process-ids
```

where *process-ids* are the process IDs of the daemon.

2. Restart the daemon on the primary and secondary hosts.

```
# /usr/opt/SUNWrdc/lib/sndrsyncd
```

4462084

The Sun SNDR software allows you to specify in-use volumes as bitmaps using the `sndradm -R b` command

The Sun SNDR command `sndradm -R b {p|s}` command allows you to specify in-use volumes as bitmaps. You typically use this command to assign a new bitmap volume to a volume set.

If you inadvertently do this, the `svadm` command functionality may be unavailable and the Sun StorEdge configuration may become corrupted.

Workaround

Check that the volume to be assigned to the volume set is not in use. The `sndradm -i` and `svadm -i` commands list all volumes currently in the configuration.

4462376

The Sun SNDR `sndradm -i` and `dscfg -l` commands do not show the correct information after converting bitmap files to volumes

If you convert Sun SNDR Version 2.0 bitmap files to bitmap volumes as described in the *Sun StorEdge Network Data Replicator 3.0 Installation Guide*, the `sndradm -i` and `dscfg -l` commands do not display that information correctly. However, the conversion works if you have performed it correctly.

The `sndradm -i` command displays the bitmap volume information correctly when the command is issued from the host where you converted the bitmap file to a volume.

For example:

- If you issue the `sndradm -i` command from the *primary* host after converting the primary host bitmap, the primary host bitmap volume information displays correctly.
- If you issue the `sndradm -i` command from the *secondary* host after converting the primary host bitmap, the primary host bitmap volume information might display incorrectly.

If the primary bitmap information displays incorrectly on the primary host, you need to repeat the conversion process on the primary host.

If the secondary bitmap information displays incorrectly on the secondary host, you need to repeat the conversion process on the secondary host.

Workaround

No workaround is currently available.

4468508

Performing a disable operation (`sndradm -d`) on the secondary host results in intermittent system lockup

If you disable the Sun SNDR volume sets from the secondary host using the `sndradm -d` command without specifying the volume sets or a configuration file, the secondary host appears to hang.

Workaround

Always specify the volume sets to disable; where a number of volume sets are enabled, use the `sndradm -d -f config-file` command to specify them. See the `sndradm` man page.

4470484

Inconsistency between the `sndradm` man page and the usage syntax from the command line

The usage for the autosynchronization option `sndradm -a` is shown differently on the man page and the command line usage syntax.

The command line usage syntax is correct:

```
sndradm [opts] -a {on | off} [set] set autosync
```

The man page indicates `{value}` instead of `{on|off}` but does indicate that the value is `on` or `off`.

Additionally, the man page states that the `sndradm -h` command displays command usage syntax and information. As of this release, the system prompt returns without displaying any information.

