Sun microsystems

Sun StorEdge™ Network Data Replicator 3.0.1 Release Notes

Please
Recycle

Adobe PostScript™

Contents

Sun StorEdge Network Data Replicator 3.0.1 Release Notes

This document contains important last-minute product information about the Sun StorEdge™ Network Data Replicator (Sun SNDR) software. This document describes the following topics:

- "Installation and Service Information" on page 2
- "Related Documentation" on page 3
- "Reading the Sun SNDR and Related Man Pages" on page 6
- "Supported Hardware and Software In a Nonclustered Environment" on page 7
- "Supported Hardware and Software In a Sun Cluster 3.0 Update 1 Environment" on page 8
- "Product Notes" on page 9
- "Documentation Additions and Errata" on page 21
- "Known Bugs" on page 26

Note – If have already installed the Sun SNDR 3.0 software with the patches listed in TABLE 1, you do not need to install the version 3.0.1 software.

Installation and Service Information

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

`http://webhome.ebay/networkstorage/products/`

For installation services in the U.S., contact Sun at the following number.

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

For installation services outside the U.S., contact your local sales or service representative.

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

For late-breaking news about this release, go to the following web site:

`http://www.sun.com/storage/software/`

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

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

Application	Title	Part Number
man pages	`sndradm(1M)`	N/A
	`dscfg(1M)`	
	`ds.log.4(4)`	
	`scmadm(1M)`	
	`svadm(1M)`	
	`iiadm(1M)`	
	`shutdown(1M)`	
	`sndrd.1m`	
	`sndrsyncd.1m`	
	`rdc.cf.4`	
Release	*Sun StorEdge Instant Image 3.0.1 Release Notes*	806-7678
Installation and user	*Sun StorEdge Network Data Replicator 3.0.1 Installation Guide*	806-7514
	Sun StorEdge Instant Image 3.0.1 Installation Guide	806-7675
	SunATM 3.0 Installation and User's Guide	805-0331
	Sun ATM 4.0 Installation and User's Guide	805-6552
	Sun Gigabit Ethernet FC-AL/P Combination Adapter Installation Guide	806-2385
	Sun Gigabit Ethernet/S 2.0 Adapter Installation and User's Guide	805-2784
	Sun Gigabit Ethernet/P 2.0 Adapter Installation and User's Guide	805-2785

Application	Title	Part Number
	Sun Enterprise 10000 InterDomain Networks User Guide	806-4131
	Sun Cluster 3.0 U1 and Sun StorEdge 3.0 Software Integration Guide	816-1544
System administration	*Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide*	806-7512
	Sun StorEdge Instant Image 3.0 System Administrator's Guide	806-7677
	TCP/IP and Data Communications Administration Guide	805-4003
Configuration	*Sun StorEdge Network Data Replicator 3.0 Configuration Guide*	806-7550
	Sun Enterprise 10000 InterDomain Network Configuration Guide	806-5230

Documentation on CD

The Sun SNDR Version 3.0.1 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 3.0.1 Installation Guide*
- *Sun StorEdge Network Data Replicator 3.0 Configuration Guide*
- *Sun Cluster 3.0 U1 and Sun StorEdge 3.0 Software Integration Guide*

To access this documentation:

1. **Log on as root.**

2. **Insert the Sun SNDR Version 3.0.1 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 software to your local machine if you do not currently have the Adobe Reader software installed. It is also available from Adobe Systems at `http://www.adobe.com`.

Reading the Sun SNDR and Related Man Pages

Note – The *Sun StorEdge Network Data Replicator 3.0.1 Installation Guide* describes how to set your environment variables to include the Sun SNDR man page paths in your shell.

- **To read the Sun SNDR man pages, type:**

  ```
  # man -M /usr/opt/SUNWesm/SUNWrdc/man manpage
  ```

  where *manpage* is one of the following:

manpage	sndradm.1m
	sndrd.1m
	sndrstat.1m
	sndrsyncd.1m
	rdc.cf.4

- **To read related manpages, type:**

  ```
  # man -M /usr/opt/SUNWesm/SUNWscm/man/ manpage
  ```

  where *manpage* is one of the following:

manpage	ds.log.4
	dscfg.1m
	scmadm.1m

Supported Hardware and Software In a Nonclustered Environment

TABLE 1 shows the supported software in a nonclustered environment.

If you have a SunSolve service subscription, patches are available at:

`http://sunsolve.sun.com/`

TABLE 2 shows the supported hardware in a nonclustered environment.

TABLE 1   Supported Software, Noncluster Environments

Operating Environment and Software	Patches Required
Solaris™ 2.6 05/98	105181-28 - kernel super patch 106639-06 - rpcmod
Solaris 7 8/99 (also known as Update 3) Solaris 7 11/99 (Update 4)	None
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)	None
Sun StorEdge Version 3.0.1 software, including the Sun StorEdge core services.	111945-nn - Storage Cache Manager 111946-nn - Storage Volume Driver 111948-nn - Sun SNDR software
TCP/IP network transport software such as SunATM™ or Gigabit Ethernet transports	None
Sun StorEdge Instant Image software is an optional software component. Install this package for additional point-in-time capability	111945-nn - Storage Cache Manager 111946-nn - Storage Volume Driver 111947-nn - Sun StorEdge Instant Image

TABLE 2   Supported Hardware, Noncluster Environments

Hardware	A CD-ROM drive connected to the host server where the Sun SNDR software is to be installed.
	The Sun SNDR software is supported on server hosts using the Solaris operating environment and any network interface card supported by Sun. Hosts include but are not limited to:
	• Sun Enterprise™ server models 2x0 through 4x0
	• Sun Enterprise server models 3x00 through 10000
	• Sun Fire™ server models, 3800, 4800, 4810, and 6800
Disk Space	The Sun SNDR software requires approximately 1.4 Mbytes.
	The Sun StorEdge configuration location requires 4.5 Mbytes.
	Supporting packages require approximately 3 Mbytes.
Supported Attached Storage	The Sun SNDR software is storage-hardware independent.

Supported Hardware and Software In a Sun Cluster 3.0 Update 1 Environment

If you are using the Sun StorEdge services software in a Sun Cluster 3.0 Update 1 environment, see the *Sun Cluster 3.0 U1 and Sun StorEdge Software 3.0 Integration Guide* for more information. Sun Cluster 3.0 Update 1 is also known as the Sun Cluster 3.0 07/01 release.

Note – You cannot use the Sun StorEdge Fast Write Cache (FWC) product (all versions, including the SUNWnvm Version 3.0 software) in any Sun Cluster environment because cached data is inaccessible from other machines in a cluster. To compensate, you can use a Sun caching array.

Product Notes

This section describes the Sun SNDR 3.0.1 product notes, including the following topics:

Which Version Do I Have?

To find out which version of the Sun SNDR software you have installed, perform the following step.

● **Use the** pkginfo**(1M) command by typing:**

```
# pkginfo -l SUNWrdcu |grep VERSION
VERSION=3.0.28,REV=5.8.0.2001.06.21
# pkginfo -l SUNWrdcu |grep PATCHLIST
PATCHLIST=111948-nn 112046-nn
```

where *nn* is the revision level of the patch.

If the pkginfo command displays the above information, you have the Sun SNDR 3.0.1 software. Other patch information might display, but as long as the two patch numbers are shown, you have version 3.0.1.

This step is more precise than the sndradm -v command, which displays as follows:

```
# sndradm -v
SNDR version 3.xx
```

where *xx* is a software build number.

Volume Size Requirements for the Sun StorEdge Configuration

Sun StorEdge configuration location	• Ensure that you have at least 4.5 Mbytes 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.
Primary and secondary volumes	• The size of the secondary site volume must be equal to or greater than the corresponding primary site volume. If you enable a volume set where the secondary volume is smaller than the primary volume, the Sun SNDR command `sndradm` fails with an error.

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).

<div>⚠</div>

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.

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 (each volume requires its own unique bitmap volume). 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.

Creating and Configuring Sun StorEdge Volume Sets

Caution – Only one system administrator or root user at a time is allowed to create and configure Sun StorEdge volume sets. This restriction helps avoid corrupting the Sun StorEdge services configuration.

Two administrators should not be writing to the Sun StorEdge services configuration at the same time. The operations that access the configuration include but are not limited to:

- Creating and deleting volume sets
- Adding and removing volume sets from I/O groups
- Assigning new bitmap volumes to a volume set
- Updating the disk device group or resource name
- Any operation that changes the Sun StorEdge services and related volume set configuration

Using More Than 64 Sun SNDR Software Volume Sets

Note – After editing the `/usr/kernel/drv/rdc.conf` file, shut down and restart 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;
```

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 `/usr/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** `/usr/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.**

Bitmap Files Are Not Supported in Version 3.0.1

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 3.0.1. The Sun SNDR 3.0.1 software does not support bitmap files. The *Sun StorEdge Network Data Replicator 3.0.1 Installation Guide* describes how to convert bitmap files to volumes.

Bitmap Size Requirements

The bitmap size can be calculated using the following formula:

■ 4 Kbytes per Gbyte of device storage space + 1 Kbyte

For example, a 2-Gbyte data device requires a bitmap size of 9 Kbytes, a 5-Gbyte data device requires a bitmap size of 21 Kybtes, and so on. (You can create bitmaps that are larger than the calculated size.)

About Replicating File Systems

If a file system is replicated, remember that the Sun SNDR software is not a file system replicator but a volume replicator. When you replicate a Sun SNDR volume that contains a file system, the secondary host volume gets an exact copy of the bits on the primary host volume, including any file systems on that volume.

When replicating, the primary host file system is mounted. Do not mount the file system on the secondary host until you are ready to fail over to that site. Changes appear on a replicated file system volume only after a remount.

Also, a file system on secondary host can be mounted only in read-only mode while the Sun SNDR volume set continues to replicate. Once secondary host volumes are placed into logging mode, the file system can be mounted for read/write operations.

Log File

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

Differences Between Versions 2.0 and 3.0.1

TABLE 3 briefly describes differences between the Sun SNDR software Versions 2.0 and 3.0.1. See the *Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide* for more information.

TABLE 3   Version Differences

`rdcadm` **command line interface**	The Version 3.0.1 `sndradm` command is linked to the `rdcadm` command and is generally compatible with Sun SNDR software Version 2.0 `rdcadm` command.
	Like the Sun SNDR Version 2.0 software, Version 3.0.1 does not contain a graphical user interface (GUI).
Bitmap Files and volumes	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 3.0.1. The Sun SNDR software Version 3.0.1 software does not support bitmap files. The *Sun StorEdge Network Data Replicator 3.0.1 Installation Guide* describes how to convert bitmap files to volumes.
Configuration files	Version 2.0 required you to create an `rdc.cf` configuration file containing the Sun SNDR volume sets and to place these volumes in the Storage Volume manager `sv.cf` configuration file. Version 3.0.1 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.
	You can continue to use the Version 2.0 configuration files using the `sndradm -f` *config-file* command. See the *Sun StorEdge Network Data Replicator 3.0.1 Installation Guide* for details.
Ability to control groups of volume sets, Version 3.0.1	Version 3.0.1 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.
One-to-many and multihop sets, Version 3.0.1	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.
	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.

TABLE 3   Version Differences *(Continued)*

Logging Mode	In Version 2.0, when you put a volume into logging mode, the volumes in the volume set entered logging mode and stopped any replication operations. In Version 3.0.1, the other volume in the volume set remains in replication mode.
	In Version 3.0.1, if you put a volume that is part of an I/O group into logging mode, all volumes in the I/O group stop replicating and are put into logging mode.
Security and Internet Protocols, Version 3.0.1	Version 3.0.1 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 3.0.1 does not require the use of an .rhosts file. You place the hosts to be used in the /etc/hosts file of each host running the Sun SNDR Version 3.0.1 software in your configuration.
Cluster Capability	See the *Sun Cluster 3.0 U1 and Sun StorEdge 3.0 Software Integration Guide.*

The Sun StorEdge 3.0.1 Services Software is Not Compatible with Previous Versions

Caution – Do not attempt to mix Sun SNDR software versions on primary and secondary hosts. For example, do not run the Sun SNDR 2.0 software on a primary host and attempt to enable volumes on a secondary host running the Sun SNDR 3.0.1 software. This configuration is not supported. Upgrade all hosts to the Version 3.0.1 software according to the information described in the *Sun StorEdge Network Data Replicator 3.0.1 Installation Guide.*

The Sun StorEdge 3.0.1 services software is binary incompatible with the Sun StorEdge software Versions 1.x, 2.0, and 2.0.1. When you plan to install or upgrade to a Version 3.0.1 service, you must remove all Version 1.X, 2.0, and 2.0.1 services first.

If your system includes Versions 1.x and 2.0 of the Sun StorEdge Instant Image software (including Instant Image 2.0.1 with the Sun target emulation utility version 1.2) and the Sun SNDR software, you must remove them before installing the Version 3.0.1 services. For example, you cannot use the Sun StorEdge Instant Image software Version 2.0 with the Sun SNDR software Version 3.0.1.

However, the Sun StorEdge core services Version 3.0.1 CD contains the Sun StorEdge `SUNWnvm` Version 3.0.1 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.

Installing the Sun StorEdge Instant Image Software Version 3.0.1 with the Sun SNDR Software Version 3.0.1

Note – For information on the Sun StorEdge core and data services installation order, see the *Sun StorEdge Network Data Replicator 3.0.1 Installation Guide.* Install the Sun StorEdge core services software first.

To help ensure maximum data integrity, operate the Sun SNDR Version 3.0.1 software with the Sun StorEdge Instant Image Version 3.0.1 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 about these products, see the Sun SNDR and Instant Image documentation listed in "Related Documentation" on page 3.

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 3.0.1 installation guides instruct you to shut down and restart your server. **Do not use the `reboot` command.** As described in the instructions, always use the shutdown(1M) command. The shutdown command also ensures that any shutdown scripts in the `/etc/init.d` directory are executed.

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 SNDR software packages.**

   ```
   # pkgrm SUNWrdcu SUNWrdcr
   ```

4. **Shut down and restart 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. **Shutdown and restart your server as follows:**

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

Documentation Additions and Errata

> **Note –** You can use the *Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide, Sun Cluster 3.0 U1 and Sun StorEdge 3.0 Software Integration Guide,* and *Sun StorEdge Network Data Replicator 3.0 Configuration Guide* with the Sun SNDR Version 3.0.1 software.

This information in this section supplements or corrects the product documentation. This section contains the following topics:

- "Sun SNDR 3.0 System Administrator's Guide" on page 21

Sun SNDR 3.0 System Administrator's Guide

This section supplements the *Sun StorEdge Network Data Replicator 3.0 System Administrator's Guide,* part number 806-7512-10.

- "Volume Size Requirements" on page 22
- "Using the Sun StorEdge Data Services in a Sun Cluster Environment" on page 22
- "Sun SNDR Software Enable Command (sndradm -e | -E)" on page 23
- "Putting Sun SNDR Volume Sets into Logging Mode" on page 24
- "Assigning a New Scoreboard Bitmap to a Volume Set" on page 24
- "Moving a Volume Set to a Different I/O Group" on page 25

Volume Size Requirements

This guide includes a section titled "Volume Size Requirements". This section makes the following statement. In fact, no warning message is displayed when the secondary volume is larger than the primary volume.

Incorrect

The primary and secondary volumes must be the same size. *If you initiate a resynchronization on a Sun SNDR software volume set where the secondary is larger than the primary, a warning message appears but the initiation is allowed to continue.* If you initiate a resynchronization on a Sun SNDR software volume set where the secondary volume is smaller than the primary, the Sun SNDR software fails with an error.

Correct

The size of the secondary site volume must be equal to or greater than the corresponding primary site volume. If you initiate a resynchronization on a Sun SNDR software volume set where the secondary volume is smaller than the primary, the Sun SNDR software fails with an error.

Using the Sun StorEdge Data Services in a Sun Cluster Environment

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 and 3.0.1 data services are not supported in a Sun Cluster 2.2, Solaris 7 operating environment. See the *Sun Cluster 3.0 and Sun StorEdge 3.0 Software Integration Guide* for more information.

Sun SNDR Software Enable Command (`sndradm -e|-E`)

Note – A bug about this errata has been filed: 4527765.

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.

Putting Sun SNDR Volume Sets into Logging Mode

On page 27, this guide contains a section on page 27 named "Which Host Do I Issue Commands From?". This section explains the Sun SNDR `sndradm -l` logging command. This command stops any replication and puts the volumes into logging mode.

You issue the `sndradm -l` command as follows:

- From the primary host if a synchronization is in progress
- From the secondary host if the primary host or volume has failed
- From either host if there is no replication occurring

When you place the secondary host into logging mode, the primary host continues in replication mode (that is, the primary host is not automatically placed into logging mode). If you place the primary host into logging mode, both the primary and the secondary hosts begin logging.

Assigning a New Scoreboard Bitmap to a Volume Set

Note – A bug about this errata has been filed: 4527634.

On page 40 of this guide, the section named "Assigning a New Scoreboard Bitmap to a Volume Set" does not include the following information:

Note – Before assigning a new bitmap to a volume set, place the volume set into logging mode using the `sndradm -l` command from the primary host machine:

```
# /usr/opt/SUNWesm/sbin/sndradm -l set-name
```

where *set-name* is the name of the Sun SNDR software volume set as assigned by the Sun SNDR software.

Also, the syntax for the command syntax in this section is incorrect. This section states that the -g *io-groupname* option for the `sndradm -R b {p|s}` command is valid; it is not.

Incorrect

- `sndradm -R b {p|s}` *new-bitmap-name* [-g *io-groupname*] [-C *tag*] [-n] [-f *config-file* | *SNDR-set* | *set-name*]

When you want to change a volume set's bitmap volume, use this syntax:

Correct

```
sndradm -R b {p|s} new-bitmap-name [-C tag] [-n] [-f config–file | SNDR–set | set-name]
```

Moving a Volume Set to a Different I/O Group

On page 44 of this guide, the second tip under the "Moving a Volume Set to a Different I/O Group" is incorrect.

Incorrect

Tip – To remove a volume set from an I/O group, use double quotes to specify a null group used with the -g command option as follows:
```
sndradm -R g "" {SNDR-set | set-name}
```

To remove all volume sets from an I/O group:
```
sndradm -R g "" -g io-groupname
```

To remove selected sets from an I/O group, enter the volume set information in a file and use the -f config-file option.

Correct

Tip – To remove a volume set from an I/O group, use double quotes to specify a null group as follows:
```
sndradm -R g "" {SNDR-set | set-name}
```

To remove all volume sets from an I/O group:
```
sndradm -R g "" -g io-groupname
```

To remove selected sets from an I/O group, enter the volume set information in a file and use the -f config-file option.

Known Bugs

This section provides workarounds to or information about the following known bugs:

4480728

System Panic Occurs When Manually Switching Over More Than 160 Sun SNDR Volume Sets

If you use the `scswitch`(1M) command to manually switch over more than 160 Sun SNDR volume sets while the volume sets are synchronizing, a system panic might occur.

Workaround

Before you try to manually switch over more than 160 Sun SNDR volumes sets, place your Sun SNDR volume sets into logging mode. Logging mode stops the Sun SNDR replication and starts scoreboard bitmap logging for the volume sets

1. **Check the status of your Sun SNDR volumes.**

   This optional step enables you to see the volume sets that are currently synchronizing.

   ```
   # /usr/opt/SUNWscm/sbin/scmadm -S
   ```

2. **Place all volume sets into logging mode.**

   This step halts any synchronization operations and starts logging changes to volumes.

   ```
   # /usr/opt/SUNWesm/sbin/sndradm -l
   ```

3. **Check the status again to make sure the volume sets are in logging mode.**

4. **Manually switch over the volume sets using the** `scswitch` **command.**

5. **To resynchronize the volume sets, use the** `sndradm -m` **or** `sndradm -m -r` **commands.**

4509306

Bitmap Reconfiguration Sometimes Fails On the Secondary (remote) Host

If you attempt to reconfigure or change a volume set's bitmap volume using the `sndradm -R b {p|s}` command, it sometimes fails on the secondary or remote host. See also "4523443 Bitmap Is Reconfigured Inconsistently" on page 28.

Workaround

No workaround exists.

4512334
The `sndradm -p` Command Does Not Work for Non-root Users

You must be superuser (root) to use Sun SNDR 3.0.1 commands.

Workaround

No workaround exists.

4523443
Bitmap Is Reconfigured Inconsistently

If you attempt to reconfigure or change a volume set's bitmap volume using the `sndradm -R b {p|s}` command, when the volume set is in replicating mode, an error message displays. When reconfiguring a bitmap volume, make sure the volume set is in logging mode. See ."Putting Sun SNDR Volume Sets into Logging Mode" on page 24 and "Assigning a New Scoreboard Bitmap to a Volume Set" on page 24.

4523447
`ds.log` Entry is Incomplete Following a Failed `sndradm -R b` Command

After issuing a `sndradm -R b {p|s}` command that fails, the Sun SNDR software writes an incomplete entry to the `/var/opt/SUNWesm/ds.log` file. This bug is related to "4523443 Bitmap Is Reconfigured Inconsistently" on page 28.

Workaround

No workaround exists.

4522559
Sun SNDR Volume Sets Do Not Enable in an IPv6 Only Environment

If you have configured all hosts where the Sun SNDR software is to be used with the Internet Protocol version 6 (IPv6) network interface only, volumes sets will not be enabled with the `sndradm -e` command.

Workaround

Make sure that you have also configure an Internet Protocol version 4 (IPv4) on each host. The *Sun StorEdge Network Data Replicator 3.0.1 Installation Guide* describes this step.

4527634

Sun SNDR 3.0 System Administrator's Guide States that the -g io-groupname is a Valid Option for the `sndradm -R b {p|s}` *Command*

See "Assigning a New Scoreboard Bitmap to a Volume Set" on page 24.

4527765

Sun SNDR 3.0 System Administrator's Guide Contains Incorrect Syntax for Enabling Volume Sets

See "Sun SNDR Software Enable Command (sndradm -e|-E)" on page 23.