



# Sun StorEdge™ Availability Suite 3.1 Point-in-Time Copy Software Release Notes

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Adobe PostScript

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# Release Notes

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The *Sun StorEdge Availability Suite 3.1 Point-in-Time Copy Software Release Notes* contains important product notes and open bugs for Sun StorEdge™ Availability Suite 3.1 point-in-time copy software.

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**Note** – This software was previously known as the Sun StorEdge Instant Image data services software.

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The main topics covered are:

- [“Installation and Service Information” on page 2](#)
- [“Accessing Sun Documentation Online” on page 2](#)
- [“Related Documentation” on page 3](#)
- [“Documentation on CD” on page 4](#)
- [“Sun Welcomes Your Comments” on page 4](#)
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- [“Open Bugs” on page 15](#)

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## Installation and Service Information

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

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

For installation services in the USA, please contact Sun at the following number.

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

For installation services outside the USA, please 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>

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## Accessing Sun Documentation Online

A broad selection of Sun system documentation is located at:

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

A complete set of Solaris™ documentation and many other titles are located at:

<http://docs.sun.com>

For late-breaking news about this release, go to the following web sites and select the Sun StorEdge Availability Suite 3.1 software product.

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

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

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

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## Related Documentation

Application	Title	Part Number
man pages	iiadm(1M) sndradm(1M) svadm(1M) dscfg(1M) pkgadd(1M) pkgrm(1M) file(1M) scmadm(1M)	N/A
Release	<i>Sun StorEdge Availability Suite 3.1 Remote Mirror Software Release Notes</i>	816-4414
	<i>Sun Cluster 3.0 and Sun StorEdge Software Release Notes Supplement</i>	816-5128
Installation	<i>Sun StorEdge Availability Suite 3.1 Point-in-Time Copy Software Installation Guide</i>	816-4312
	<i>Sun StorEdge Availability Suite 3.1 Remote Mirror Software Installation Guide</i>	816-4413
System Administration	<i>Sun StorEdge Availability Suite 3.1 Point-in-Time Copy Software Administration and Operation Guide</i>	816-4313
	<i>Sun StorEdge Availability Suite 3.1 Remote Mirror Software Administration and Operation Guide</i>	816-4415
Sun Cluster Usage	<i>Sun Cluster 3.0 and Sun StorEdge Software Integration Guide</i>	816-5127

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# Documentation on CD

The Sun StorEdge Availability Suite 3.1 point-in-time copy software documentation is available on the product CD in Adobe Acrobat (PDF) format.

To access this documentation:

1. **Become the root user.**
2. **Insert the Sun StorEdge Availability Suite 3.1 software CD into the CD-ROM drive that is connected to your system.**
3. **Start the Volume Manager daemon `vold(1M)` (if needed).**

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

4. **Change to the `Docs` directory.**

```
# 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 `/cdrom/cdrom0/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](http://www.adobe.com).

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# Supported Hardware and Software in a Nonclustered Environment

If you have a SunSolve service subscription, patches are available at:  
<http://sunsolve.sun.com/>

**TABLE 1** Supported Software, Nonclustered Environments

<b>Operating Environment and Software</b>	<b>Patches Required</b>
Solaris 2.6 05/98	105181-28 - kernel super patch 106639-06 - rpcmod patch
Solaris 7 8/99 Solaris 7 11/99	None
Solaris 8	None
Solaris 9	None

**TABLE 2** Supported Platforms

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<b>Storage Platforms</b>	<ul style="list-style-type: none"><li>• A1000, D1000, A3500, A5000, A5100, and A5200</li><li>• T3 Workgroup</li><li>• T3 Enterprise</li><li>• Sun StorEdge 39xx and 69xx</li><li>• Third party storage</li></ul>
<b>Entry Level Servers</b>	<ul style="list-style-type: none"><li>• Sun Enterprise 220R, 250, Ultra 10S, 420R, and 450</li><li>• Sun Fire 280R and V880</li></ul>
<b>Midframe and Midrange Servers</b>	<ul style="list-style-type: none"><li>• Sun Fire 3800, 4800, 4810, 6800</li><li>• Sun Enterprise 3500, 4500, 5500, and 6500</li></ul>
<b>High-End Servers</b>	<ul style="list-style-type: none"><li>• Sun Fire 15K</li><li>• Sun Enterprise 10000</li></ul>
<b>NEBS Certified Servers</b>	<ul style="list-style-type: none"><li>• Netra 20</li><li>• Netra ct 400 and 800</li><li>• Netra t 100, 105, 1120,1125, 1400, 1405</li><li>• Netra T1 AC200 and DC200</li><li>• Netra ft 1800</li><li>• Netra X1</li></ul>
<b>Workstations</b>	<ul style="list-style-type: none"><li>• Sun Blade 100 and 1000 Workstations</li><li>• Ultra 60 Workstation</li><li>• Ultra 80 Workstation</li></ul>

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**Requirements:**

- A CD-ROM drive connected to the host server where the Sun StorEdge Availability Suite 3.1 software is to be installed.
- If you plan to export shadow volumes, you must store the shadow volume on a dual-ported drive.
- Disk space requirements:
  - The Sun StorEdge Availability Suite 3.1 point-in-time copy software needs approximately 1 MB.
  - The Sun StorEdge Availability Suite 3.1 remote mirror software needs approximately 1.5 MB.
  - Supporting packages need approximately 3 MB.
  - The Sun StorEdge configuration location needs a minimum of 5.5 MB of disk space.

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# Supported Hardware and Software in a Sun Cluster 3.0 Environment

If you are using the Sun StorEdge Availability Suite 3.1 software in a Sun Cluster 3.0 Update 1 or Update 2 environment, see the *Sun Cluster 3.0 and Sun StorEdge Software Integration Guide* for more information. Sun Cluster 3.0 Update 1 is also known as the Sun Cluster 3.0 07/01 release; Sun Cluster 3.0 Update 2 is also known as the Sun Cluster 3.0 12/01 release.

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**Note** – The Sun StorEdge Availability Suite 3.1 software is not supported in a Sun Cluster 2.2, Solaris 7, operating environment. See the *Sun Cluster 3.0 and Sun StorEdge Software Integration Guide* for more information.

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**Note** – You cannot use the Sun StorEdge Fast Write Cache (FWC) product (all versions, including any version of the SUNWnvm 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.

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# Product Notes

This section contains the Sun StorEdge Availability Suite 3.1 software product notes, including the following topics:

- [“Metatrans Devices” on page 8](#)
- [“Sun StorEdge Fast Write Cache” on page 8](#)
- [“Software Differences between Instant Image Software and Availability Suite 3.1 Software” on page 9](#)
- [“Bitmap Volume Placement” on page 10](#)
- [“Which Version Do I Have?” on page 11](#)
- [“Rebooting Your Server Using the shutdown Command” on page 11](#)
- [“Volume Size Requirements” on page 12](#)
- [“Increasing the Storage Volume Limit” on page 12](#)
- [“Upgrading the Solaris Operating Environment with the Availability Suite 3.1 Software Installed” on page 13](#)
- [“The Sun StorEdge Availability Suite 3.1 Software is Not Compatible with Previous Versions” on page 13](#)
- [“Bitmap Files are Not Supported” on page 13](#)
- [“Creating and Configuring Sun StorEdge Volume Sets” on page 14](#)
- [“Using the Import, Export, and Join Features in a Sun Cluster Environment” on page 14](#)

## Metatrans Devices

The remote mirror and point-in-time copy software do not support metatrans devices (also known as trans metadevices) created by the Sun Solstice DiskSuite™ and Solaris Volume Manager software. Metatrans devices are intended for use with the UNIX file system (ufs) without using any other layered services. Use the ufs logging mount option as an alternative to the use of SVM metatrans devices. The Sun StorEdge Availability Suite 3.1 software supports ufs logging, which should be used when available instead of metatrans devices.

## Sun StorEdge Fast Write Cache

Sun StorEdge Availability Suite 3.1 software does not support the use of Sun StorEdge Fast Write Cache hardware or the associated SUNWnvm software.

# Software Differences between Instant Image Software and Availability Suite 3.1 Software

This section briefly describes the differences between the Sun StorEdge Instant Image software and the Sun StorEdge Availability Suite 3.1 point-in-time copy software.

**TABLE 3** Version Differences

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<b>Solaris compatibility</b>	Sun StorEdge Availability Suite 3.1 software is compatible with Solaris 2.6, Solaris 7, Solaris 8, and Solaris 9.
<b>Statistics reporting</b>	Sun StorEdge Availability Suite 3.1 software has a new status reporting capability in the <code>dsstat</code> utility. This utility allows you to determine performance statistics for point-in-time copy software and remote mirror software.
<b>PID locking</b>	Process ID locking is a new feature in Sun StorEdge Availability Suite 3.1 software. The <code>update</code> , <code>copy</code> , and <code>wait</code> command options can include process ID locking, or PID locking, which enables you to lock a volume set so that no other process can affect it.
<b>Volume names</b>	As of Sun StorEdge Availability Suite 3.1 point-in-time copy software, only path names that begin with <code>/dev/</code> are accepted.
<b>Modified CLI</b>	As of the Sun StorEdge Availability Suite 3.1 software, three commands have been removed from the command set of the <code>iiadm</code> CLI: <code>suspend (-s)</code> , <code>resume (-r)</code> , and <code>offline (-o)</code> . These commands, which are not now needed in the CLI, are no longer supported in the point-in-time copy software.
<b>Bitmap files and volumes</b>	Only volume-based bitmaps, not file-based bitmaps, are supported in Instant Image Version 3.0 and higher.
<b>Multiple shadows of the same master</b>	You can enable more than one volume set with the same master volume, which provides multiple shadow volumes for that master volume, in Sun StorEdge Instant Image Version 3.0 and higher, including Sun StorEdge Availability Suite 3.1 software.
<b>Compact dependent shadow volume</b>	Compact dependent shadow volumes, which can be much smaller than their master volumes, are available in Sun StorEdge Instant Image Version 3.0 and higher, including Sun StorEdge Availability Suite 3.1 software.
<b>Overflow volumes for compact dependent shadow volumes</b>	Compact dependent shadow volumes should be sized to contain all the expected changes caused by writes. However, in case the actual changes exceed the size of the compact dependent shadow volume, you can attach an overflow volume in Sun StorEdge Instant Image Version 3.0 and higher, including Sun StorEdge Availability Suite 3.1 software. The overflow volume can accept writes to a compact dependent shadow volume that is full.

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**TABLE 3** Version Differences

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<b>Export and import of dual-ported shadow volumes</b>	An independent shadow volume that is stored on a dual-ported device can be exported, which allows another host to import the shadow and use it as though it were part of its own storage. Later the shadow volume can be rejoined to its master volume on the original host along with any changes made while exported. This feature is available in Sun StorEdge Instant Image Version 3.0 and higher, including the Sun StorEdge Availability Suite 3.1 software.
<b>Grouping of shadow volume sets</b>	You can collect volume sets into I/O groups of one or more shadow volume sets. Grouping enables you to execute commands against all members of the I/O group. For example, grouping enables a single point-in-time for all members of an I/O group. This feature is available in Sun StorEdge Instant Image Version 3.0 and higher, including the Sun StorEdge Availability Suite 3.1 software.
<b>Cluster capability</b>	This feature is available in Sun StorEdge Instant Image Version 3.0 and higher, including the Sun StorEdge Availability Suite 3.1 software. See the <i>Sun Cluster 3.0 and Sun StorEdge Software Integration Guide</i> .
<b>Enhanced CLI</b>	The Sun StorEdge Instant Image software is based on an enhanced CLI and does not employ a Graphical User Interface (GUI). This feature is available in Sun StorEdge Instant Image Version 3.0 and higher, including the Sun StorEdge Availability Suite 3.1 software.
<b>Sun StorEdge Target Emulation (STE)</b>	The Sun StorEdge Instant Image 3.0 software and higher, including Sun StorEdge Availability Suite 3.1 software, does not include support for Sun StorEdge Target Emulation (STE). Customers requiring secondary host access to a shadow volume set can consider exporting the shadow volume with the export, import, and join commands, or using Sun StorEdge Availability Suite 3.1 remote mirror software.

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## Bitmap Volume Placement

Due to the read-modify-write behavior of point-in-time bitmap volumes, placing many of them on a single RAID-5 volume introduces high I/O contention involving the disks associated with the RAID-5 volume. This I/O contention can be very noticeable at volume unmounting time, as seen when an application suite or system is being shutdown.

It is suggested that you place bitmap volumes on RAID-1 sets, multiple RAID-5 sets, or on a cached-array disk controller.

## Which Version Do I Have?

To find out which version of the Sun StorEdge Availability Suite 3.1 point-in-time copy software you have installed, perform the following step for the `SUNWiiu` and `SUNWiir` packages.

---

**Note** – In the versions prior to the Sun StorEdge Availability Suite 3.1 software, only the package `SUNWii` is present. `SUNWiiu` and `SUNWiir` replaced `SUNWii` in the Sun StorEdge Availability Suite 3.1 software.

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- Use the `pkginfo(1M)` command by typing:

```
# pkginfo -l SUNWiiu | grep VERSION
VERSION=3.1.nn,REV=n.n.n.nnnn.nn.nn
# pkginfo -l SUNWiir | grep VERSION
VERSION=3.1.nn,REV=n.n.n.nnnn.nn.nn
```

Where *n* is a variable number.

If the `pkginfo` command displays `VERSION=3.1.nn`, then you have the Availability Suite 3.1 software. This step is more precise than the `iiadm -v` command, which displays as follows:

```
# iiadm -v
InstantImage version 3.1.
```

## Rebooting Your Server Using the shutdown Command

During the installation and upgrade processes, the Sun StorEdge Availability Suite 3.1 software installation guides instruct you to restart your server. **Do not use the `reboot` command.** As described in the instructions, always use the `shutdown` command. The `shutdown` command ensures that any shutdown scripts in the `/etc/init.d` directory are executed.

# Volume Size Requirements

Ensure that you have at least 5.5 MB of disk space for the Sun StorEdge configuration.

See the *Sun StorEdge Availability Suite 3.1 Point-in-Time Copy Software Installation Guide* for details about the required characteristics of the configuration location.

## Increasing the Storage Volume Limit

The Sun StorEdge Availability Suite 3.1 software has a default limit of 1024 storage volumes for use with the software. For example, if you use point-in-time copy software only, you can have 341 volume sets, each consisting of master, shadow, and bitmap volumes. If you use both the remote mirror and the point-in-time software products, the number of volume sets is divided between these two products.

The following procedure describes how to increase this default limit.

### ▼ To Increase the Storage Volume Limit

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**Caution** – Increasing this limit causes more memory to be used. You might need 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. **Restart your server as follows:**

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

---

**Note** – Do not use the `reboot` command. Always use the `shutdown` command. Using the `shutdown` command ensures that any shutdown scripts in the `/etc/init.d` directory are executed.

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# Upgrading the Solaris Operating Environment with the Availability Suite 3.1 Software Installed

If you installed the Sun StorEdge Availability Suite 3.1 software in one Solaris operating environment and now wish to upgrade to a newer release of the Solaris operating environment, then follow this sequence of steps:

- i. Remove the Sun StorEdge Availability Suite 3.1 software.
- ii. Upgrade the operating environment.
- iii. Reinstall the Sun StorEdge Availability Suite 3.1 software.

## The Sun StorEdge Availability Suite 3.1 Software is Not Compatible with Previous Versions

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**Note** – The Sun StorEdge Availability Suite 3.1 software is binary incompatible with all earlier Sun StorEdge data services software Versions, including 1.x, 2.0 and 2.0.1, and 3.0 and 3.0.1. You *must* remove any of these earlier versions as instructed in the installation documents prior to installing the 3.1 version.

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If your system includes any earlier versions of the Sun StorEdge Instant Image, Sun SNDR, Sun StorEdge Fast Write Cache software and supporting packages, you must remove them before installing the Sun StorEdge Availability Suite 3.1 software. A shell script, called `probe_script`, that will list all the packages that you need to remove is included with the software installation CD.

## Bitmap Files are Not Supported

If you used bitmap files in the version of the Sun StorEdge Instant Image software that was previously installed on your system, you must convert them to bitmap volumes for use with Sun StorEdge Availability Suite 3.1 software. See the *Sun StorEdge Availability Suite 3.1 Point-in-Time Copy Software Installation Guide* for conversion directions.

# Creating and Configuring Sun StorEdge Volume Sets



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**Caution** – Only one system administrator or root user at a time should create and configure Sun StorEdge shadow volume sets. This helps avoid inconsistency in the Sun StorEdge configuration.

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

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

## Using the Import, Export, and Join Features in a Sun Cluster Environment

The Sun StorEdge Availability Suite 3.1 point-in-time copy software's export/import/join facility is *not supported* in a Sun Cluster environment.

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# Open Bugs

This section provides descriptions of the following known bugs and any suggested workarounds.

[“4438291 Incorrect Status Reporting While Enabling Large Volumes”](#) on page 15

[“4670807 The Session Hangs While Disabling the Cache”](#) on page 16

[“4678727 Repeat Remote Mirror Installation Reports That Previous Installation Was Incomplete”](#) on page 17

[“4680046 Availability Suite 3.1 TNF Tracing Panics a Solaris 2.6 System”](#) on page 18

[“4682519 Cache Display for dsstat Limited to Path Names of 16 Characters or More”](#) on page 18

[“4684695 Three Switches for `scmadm` Do Not Accept `all` as a Valid Argument”](#) on page 19

## **4438291**

### ***Incorrect Status Reporting While Enabling Large Volumes***

After enabling a large point-in-time copy shadow volume set (1 TB volumes), the `iiadm -i` command reports a negative value for the "Percent of bitmap set" while the volume is still copying.

This is a computation problem and does not affect the enabling of the shadow volume set.

**4670807**

### ***The Session Hangs While Disabling the Cache***

The session hangs (waits forever) while disabling the cache (`scmadm -d`) after enabling a large number of compact dependent shadow volume sets with overflow volumes attached.

*Workaround 1:* Do not disable the cache when you are operating in an environment consisting of compact dependent shadow volume sets with attached overflow volumes.

*Workaround 2:* To disable the cache in such an environment:

1. Restart system in single-user mode.
2. Disable the cache.
3. Restart the system in multi-user mode.

## 4678727

### *Repeat Remote Mirror Installation Reports That Previous Installation Was Incomplete*

Attempts to install the remote mirror 3.1 software over an existing installation result in invalid error messages. If you try to install the software on a machine where it is already installed, the following error message is displayed:

```
ERROR: A previous installation of package SUNWrdcu was not complete.  
Please remove this package with the command pkgrm, then re-run install.sh
```

This error message is invalid. For example, the `pkginfo` command shows that the package is already installed.

```
# pkginfo -l SUNWrdcu  
  PKGINST:  SUNWrdcu  
    NAME:  Sun StorEdge Availability Suite remote mirror software (usr)  
  CATEGORY:  system  
    ARCH:  sparc  
  VERSION:  3.1.28,REV=2002.04.25  
  BASEDIR:  /usr  
    VENDOR:  Sun Microsystems, Inc.  
    DESC:  The Sun StorEdge remote mirror software provides replication of  
volumes across physically separate hosts without host intervention.  
  PSTAMP:  SPS 04/25/02  
  INSTDATE:  May 02 2002 10:10  
  HOTLINE:  Please contact your local service provider  
  STATUS:  completely installed  
  FILES:    78 installed pathnames  
            20 shared pathnames  
            1 linked files  
            30 directories  
            30 executables  
            4075 blocks used (approx)
```

*Workaround:* Ignore the message.

## **4680046**

### ***Availability Suite 3.1 TNF Tracing Panics a Solaris 2.6 System***

Enabling Availability Suite 3.1 TNF tracing on any system running these operating environments causes the system to panic:

- Solaris 2.6
- Solaris 7, initial release
- Solaris 7, 3/99 release (also known as Update 1)

*Workaround:* Do not initiate TNF tracing with the `prex -k` command on any system running an operating environment prior to Solaris 7, Update 2.

## **4682519**

### ***Cache Display for dsstat Limited to Path Names of 16 Characters or More***

If you use the `dsstat` command to display cache statistics, the command displays the statistics for volumes that have full path names that are at least 16 characters long. (Type `scmadm` at a command prompt to show all volumes.)

The first volume found that has a path name less than 16 characters is displayed as a blank or null field. Any other volumes like this are considered duplicates and are not reported.

For example, the command will display information for a volume named `/dev/md/rdisk/d11`, but the command will not display information for a volume named `/dev/md/rdisk/d5`.

*Workaround:* Use volume path names that are 16 characters or longer.

## 4684695

### *Three Switches for `scmadm` Do Not Accept `all` as a Valid Argument*

The `scmadm` man page erroneously states that the `scmadm` command can use the `all` option with the following switches:

- `purge scmadm -p`
- `sync scmadm -s`
- `redevi scmadm -r`

Typing `scmadm -h` to display syntax usage also shows `all` as an option with these command switches. This option is not available.

*Workaround:* Do not use the `all` argument with the commands `scmadm -p`, `scmadm -s`, or `scmadm -r`.

