

**Sun Cluster 3.2 11/09 Geographic Edition
Release Notes**

3.2 11/09 Release Notes

821-0713

Release Notes

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(English) Sun Cluster Geographic Edition 3.2 11-09 Release Notes

This document provides the following information for Sun™ Cluster Geographic Edition 3.2 11/09 software.

- [New Features and Functionality](#)
- [Supported Products](#)
- [Commands Modified in This Release](#)
- [Restrictions](#)
- [Known Issues and Bugs](#)
- [Required Patches](#)
- [Sun Cluster Geographic Edition 3.2 11/09 Documentation](#)
- [Localization Issues](#)
- [Documentation Issues](#)

[Top](#)

New Features and Functionality

This section describes each of the following new features provided in the Sun Cluster Geographic Edition 3.2 11/09 software.

[Top](#)

Hitachi Universal Replicator

Data replication with Hitachi Universal Replicator is now supported. It features:

- Data pulls from the array on the primary cluster by the array on the secondary cluster. Data flow is more even and bandwidth needs are more predictable than for products that push data from the primary array.
- The ability to associate journal volumes with data volumes on both clusters. If the secondary cluster cannot pull data as fast as it is produced and committed to storage on the primary cluster, any backlogged I/O is written to journal volumes along with a sequence number. Eventually backlogged data is pulled to the secondary cluster, written to journal volumes on the secondary cluster, and finally, committed to data storage on the secondary cluster. Sequence numbers ensure that data is written in the same order in which it was written on the primary cluster, so that data consistency is preserved.
- Guaranteed data consistency for asynchronous I/O to one or more volumes under all conditions.

Both Hitachi TrueCopy and Hitachi Universal Replicator allow data replication in synchronous or asynchronous mode. In synchronous mode replication, I/O writes are confirmed to the application only after data is written to both primary and secondary storage. Data consistency is always guaranteed, but synchronous mode replication is only viable over limited distances and can affect application performance, as the application waits for confirmation of data replication to the secondary array. In asynchronous mode replication, I/O writes are confirmed as soon as data is written to primary storage. Asynchronous mode replication can therefore be used over great distances without affecting application performance, but if there is a failure in the system, data consistency might be compromised, particularly if an application writes to multiple volumes that must remain consistent with each other.

Sun Cluster Geographic Edition 3.2 11/09 software provides a new protection group property, `ctgid`. When used with Hitachi Universal Replicator journaling, the `ctgid` property guarantees data consistency in the event of the temporary failure of communications, or of a "rolling failure," in which different parts of the system fail at different times. When a protection group is assigned a consistency group ID (CTGID), the Sun Cluster Geographic Edition module requires all disk devices in the protection group to have that consistency group ID. When Hitachi Universal Replicator commits journaled I/O to storage, it maintains all disk devices with the same CTGID in a state of consistency.

[Top](#)

Script-Based Plug-Ins

The script-based plug-in architecture permits the implementation of replication technologies other than those explicitly supported in Sun Cluster Geographic Edition software. More information is available at [Script-Based Plug-Ins](#).

[Top](#)

MySQL Replication

Asynchronous MySQL replication is supported as a replication protocol between the primary and the secondary cluster in a Sun Cluster Geographic Edition configuration. The MySQL replication protocol is extremely bandwidth efficient, as long as statement replication is configured, but row-based replication is supported as well.

[Top](#)

Supported Products

This section describes the supported software for Sun Cluster Geographic Edition 3.2 11/09 software.

- [Supported Software Products](#)
- [Restrictions](#)
- [Support for EMC Symmetrix Remote Data Facility \(SRDF\) Configurations](#)

[Top](#)

Supported Software Products

This section lists the software products and versions that are supported by Sun Cluster Geographic Edition 3.2 11/09 software.

Data Replication

- [EMC Symmetrix Remote Data Facility](#)
- [Hitachi TrueCopy](#)
- [Hitachi Universal Replicator](#)
- [\(with Oracle RAC 10g/11g only\) Oracle Data Guard](#)
- [\(Solaris 9\) Sun StorEdge Availability Suite 3.2.1](#)
- [\(Solaris 10\) Sun StorageTek Availability Suite 4](#)

[Top](#)

Solaris Operating System

| Platform | OS Version |
|----------|--|
| SPARC™ | Solaris 10 5/09, Solaris 10 10/09 Solaris 9 9/05, Solaris 9 9/05 HW |
| x86 | Solaris 10 5/09, Solaris 10 10/09 |

[Top](#)

Sun Cluster Software

- [Sun Cluster 3.2 11/09](#)
- [Sun Cluster 3.2 1/09](#)

[Top](#)

Volume Management Software

| Data Replication Software | Supported Volume Managers |
|---------------------------|---------------------------|
|---------------------------|---------------------------|

| | |
|--|--|
| EMC Symmetrix Remote Data Facility | Veritas Volume Manager |
| Hitachi TrueCopy | Veritas Volume Manager |
| Hitachi Universal Replicator | Veritas Volume Manager |
| Oracle Data Guard ¹ | Solaris Volume Manager for Sun Cluster Veritas Volume Manager with cluster feature Oracle Automatic Storage Management |
| (Solaris 10) Sun StorageTek™ Availability Suite 4 | Solaris Volume Manager Veritas Volume Manager |
| (Solaris 9) Sun StorEdge™ Availability Suite 3.2.1 | Solaris Volume Manager Veritas Volume Manager |

¹ For information about additional supported storage management options, see "[Storage Management Requirements for Oracle Files](#)" in the Sun Cluster Data Service for Oracle RAC Guide.

[Top](#)

Restrictions

As of the time of initial release, the following features or products are not supported by the 3.2 11/09 release of Sun Cluster Geographic Edition software:

ZFS Replicated Storage

ZFS storage pools are not supported as replicated storage that is managed by Sun Cluster Geographic Edition software. However, you can have a ZFS storage pool on a cluster node that runs Geographic Edition software if that storage pool is not part of the replicated storage that is managed by Geographic Edition software.

Contact your Sun representative to learn whether a feature or product becomes qualified with Sun Cluster Geographic Edition 3.2 11/09 software at a later date.

[Top](#)

EMC SRDF Support and Restrictions

Sun Cluster Geographic Edition 3.2 11/09 software currently supports the following EMC Symmetrix Remote Data Facility (SRDF) configurations:

- Dynamic SRDF device group
- Static SRDF device group

Sun Cluster Geographic Edition 3.2 11/09 software supports these configurations in Synchronous and Asynchronous modes for data replication in disaster-recovery environments. Synchronous mode is supported for takeover and switchover operations. Asynchronous mode is supported for takeover operations, and a workaround permits switchover in asynchronous mode as well. For details, see the workaround for Bug 6389092 [here](#).



Caution

EMC SRDF Adaptive mode is not supported for use with clustered data services. It does not guarantee data consistency in normal operations.

The `domino` option, which can be set on EMC SRDF device pairs, suspends writes to the primary site if writes to the secondary site fail. Any failure of secondary storage or of the communication link between the Sun Cluster Geographic Edition partnered clusters might cause the complete loss of application data services. This is not a highly available configuration, and you should not configure the `domino` option on devices that will be used by clustered data services.

[Top](#)

Commands Modified in This Release

New Property `ctgid` Is Added to the `geopg create` Command

A new property, `ctgid`, can be set on protection groups where the data replication type is `truecopy`. You can set the `ctgid` property only at creation time by using the `geopg create -d truecopy` command with the option `-p ctgid=consistency_group_ID`.

This property enables you to assign a unique integer consistency group ID (CTGID) to the protection group. Once the property is set on a protection group, all Hitachi Universal Replicator device groups that you add to the protection group must have this CTGID, and you must add all device groups with this CTGID to the protection group. If you add uninitialized device groups to the protection group, they are initialized with the CTGID of the protection group when the protection group is started with the `geopg start` command.

The assignment of a CTGID to a protection group enforces data consistency over all storage that is used by the application that is controlled by that protection group. In combination with journaling, it guarantees data consistency in the event of a failure of one or more elements of a Sun Cluster Geographic Edition partnership.

Category: Optional

Default: None

Tunable: At creation

[Top](#)

Known Issues and Bugs

The following known issues and bugs affect the operation of the Sun Cluster Geographic Edition 3.2 11/09 release.

Unable to Take Over Availability Suite Protection Group From Secondary After Primary Cluster Is Gracefully Brought Down (6762103)

Problem Summary: When using Sun StorageTek Availability Suite replication, if an active primary cluster is gracefully shut down by using the `cluster shutdown` command, the secondary data volume can be left in the `need sync` state by Availability Suite software. Data on that volume will be inaccessible until synchronization is completed.

Workaround: Do not use the `cluster shutdown` command to gracefully shut down a cluster that is a member of an active Sun Cluster Geographic Edition partnership. In normal circumstances, use the appropriate Sun Cluster Geographic Edition commands to first stop the protection groups and the Sun Cluster Geographic Edition framework, and then shut down the cluster.

To perform an abrupt shutdown to simulate a site failure for test purposes, use the `uadmin 2 0` command on all nodes at the same time.

[Top](#)

Switchover Cannot Be Performed with Asynchronous SRDF (6389092)

Problem Summary: When Symmetrix Remote Data Facility (SRDF) data replication is used, Sun Cluster Geographic Edition software does not allow you to issue the `geopg switchover` command if a device group that is included in a protection group is set to Asynchronous mode.

The failback-switchover procedure that is included in the Sun Cluster Geographic Edition documentation for SRDF therefore does not work as written for device groups in Asynchronous mode because the procedure includes the `geopg switchover` command.

Workaround: To perform a failback-switchover, after you resynchronize the clusters in the partnership, temporarily change device groups from Asynchronous mode to Synchronous mode by using the following command:

```
# symrdf -g devicegroup set mode sync
```

After you complete and verify the switchover, set the device groups back to Asynchronous mode by using the following command:

```
# symrdf -g devicegroup set mode async
```

[Top](#)

Required Patches

This section provides information about patches for Sun Cluster Geographic Edition configurations.



Note

You must be a registered My Oracle Support™ user to view and download the required patches for the Sun Cluster Geographic Edition product. If you do not have a My Oracle Support account, contact your Oracle service representative or sales engineer, or register online at [My Oracle Support](#).

If a cluster runs Sun StorageTek Availability Suite or Sun StorEdge Availability Suite, you must have the following patches installed:

- Sun StorEdge Availability Suite 3.2.1 CORE: a minimum of 116466-09
- Sun StorEdge Availability Suite 3.2.1 II: a minimum of 116467-09
- Sun StorEdge Availability Suite 3.2.1 SNDR: a minimum of 116468-13
- SPARC: Sun StorageTek Availability Suite 4 SNDR: a minimum of 123246-03
- x86: Sun StorageTek Availability Suite 4 SNDR: a minimum of 123247-03

Check with a Sun service representative for the availability of these patches.

[Top](#)

Sun Cluster Geographic Edition 3.2 11/09 Documentation

The Sun Cluster Geographic Edition 3.2 11/09 user documentation set consists of the following collections:

- Sun Cluster Geographic Edition 3.2 11/09 Release Notes Collection
- Sun Cluster Geographic Edition 3.2 11/09 Software Collection
- Sun Cluster Geographic Edition 3.2 11/09 Reference Collection

For the latest documentation, go to the docs.sun.com web site. The docs.sun.com web site enables you to access Sun Cluster Geographic Edition documentation on the Web. You can browse the docs.sun.com archive or search for a specific book title or subject at the following Web site:

| <http://docs.sun.com>

[Top](#)

Sun Cluster Geographic Edition 3.2 11/09 Software Collection

The Sun Cluster Geographic Edition 3.2 11/09 Software Collection contains the following manuals.

| Part Number | Book Title |
|-------------|--|
| 821-0708 | Sun Cluster Geographic Edition Overview |
| 821-0712 | Sun Cluster Geographic Edition Installation Guide |
| 821-0711 | Sun Cluster Geographic Edition System Administration Guide |

| | |
|----------|---|
| 820-6216 | Sun Cluster Geographic Edition Data Replication Guide for EMC Symmetrix Remote Data Facility |
| 821-0709 | Sun Cluster Geographic Edition Data Replication Guide for Hitachi TrueCopy and Hitachi Universal Replicator |
| 820-5016 | Sun Cluster Geographic Edition Data Replication Guide for Oracle Data Guard |
| 820-6218 | Sun Cluster Geographic Edition Data Replication Guide for Sun StorageTek Availability Suite |

[Top](#)

Sun Cluster Geographic Edition 3.2 11/09 Reference Collection

This collection contains the [Sun Cluster Geographic Edition Reference Manual](#), part number 821-0402.

[Top](#)

Localization Issues

Sun Cluster Geographic Edition 3.2 (11/09) documentation is available only in English.

Past releases of Sun Cluster Geographic Edition software included localization for languages that are no longer supported. In Sun Cluster Geographic Edition 3.2 11/09 releases. Some system messages and user interfaces might still be supplied with old translations in previously supported languages.

[Top](#)

Documentation Issues

This section discusses known errors or omissions for man pages, documentation, or online help and steps to correct these problems.

Data Replication Guide for Oracle Data Guard

In the beginning of Chapter 1, the introduction incorrectly states that both the Oracle Data Guard Physical standby and Logical standby types are supported with this release of Sun Cluster Geographic Edition software. At this time, only the Physical standby type is supported.

[Top](#)