Oracle® Solaris Cluster Geographic Edition 3.3 5/11 Security Guide

Part No: E23167
May 2011, Revision A

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Preface

Oracle Solaris Cluster Geographic Edition Security Guide contains conceptual information about the Oracle Solaris Cluster Geographic Edition software product.

How This Book Is Organized

The *Oracle Solaris Cluster Geographic Edition Security Guide* contains the following chapter:

- Chapter 1, "Introduction to Oracle Solaris Cluster Geographic Edition Security," provides an overview of the concepts that you need to know about Oracle Solaris Cluster Geographic Edition security.

Related Documentation

Information about related Geographic Edition topics is available in the documentation that is listed in the following table. All Oracle Solaris Cluster Geographic Edition documentation is available at `http://www.oracle.com/technetwork/indexes/documentation/index.html`.

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Topic	Documentation
Overview	*Oracle Solaris Cluster Geographic Edition Overview* *Oracle Solaris Cluster Geographic Edition 3.3 5/11 Documentation Center*
Installation	*Oracle Solaris Cluster Geographic Edition Installation Guide*

Topic	Documentation
Data Replication	*Oracle Solaris Cluster Geographic Edition Data Replication Guide for EMC Symmetrix Remote Data Facility*
	Oracle Solaris Cluster Geographic Edition Data Replication Guide for Hitachi TrueCopy and Universal Replicator
	Oracle Solaris Cluster Geographic Edition Data Replication Guide for Oracle Data Guard
	Oracle Solaris Cluster Geographic Edition Data Replication Guide for Sun StorageTek Availability Suite
System administration	*Oracle Solaris Cluster Geographic Edition System Administration Guide*

For a complete list of Oracle Solaris Cluster Geographic Edition documentation, see *Oracle Solaris Cluster Geographic Edition 3.3 5/11 Release Notes*.

Topic	Documentation
Concepts	*Oracle Solaris Cluster Concepts Guide*
Hardware installation and administration	*Oracle Solaris Cluster 3.3 Hardware Administration Manual*
	Individual hardware administration guides
Software installation	*Oracle Solaris Cluster Software Installation Guide*
Data service installation and administration	*Oracle Solaris Cluster Data Services Planning and Administration Guide*
	Individual data service guides
Data service development	*Oracle Solaris Cluster Data Services Developer's Guide*
System administration	*Oracle Solaris Cluster System Administration Guide*
	Oracle Solaris Cluster Quick Reference
Software upgrade	*Oracle Solaris Cluster Upgrade Guide*
Error messages	*Oracle Solaris Cluster Error Messages Guide*
Command and function references	*Oracle Solaris Cluster Reference Manual*
	Oracle Solaris Cluster Data Services Reference Manual
	Oracle Solaris Cluster Quorum Server Reference Manual

Documentation, Support, and Training

See the following web sites for additional resources:

- Documentation (`http://www.oracle.com/technetwork/indexes/documentation/index.html`)
- Support (`http://www.oracle.com/us/support/systems/index.html`)
- Training (`http://education.oracle.com`) – Click the Sun link in the left navigation bar.

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Oracle Technology Network (`http://www.oracle.com/technetwork/index.html`) offers a range of resources related to Oracle software:

- Discuss technical problems and solutions on the Discussion Forums (`http://forums.oracle.com`).
- Get hands-on step-by-step tutorials with Oracle By Example (`http://www.oracle.com/technetwork/tutorials/index.html`).
- Download Sample Code (`http://www.oracle.com/technology/sample_code/index.html`).

Getting Help

If you have problems installing or using Oracle Solaris Cluster Geographic Edition software, contact your service provider and provide the following information:

- Your name and email address (if available)
- Your company name, address, and phone number
- The model and serial numbers of your systems
- The release number of the operating system (for example, Solaris 10)
- The release number of the Oracle Solaris Cluster Geographic Edition software (for example, 3.3)
- The contents of the `/var/cacao/instances/default/logs/cacao.0/1/2` file

Also have available the contents of the `/var/adm/messages` file.

◆ ◆ ◆ CHAPTER 1

Introduction to Oracle Solaris Cluster Geographic Edition Security

The Oracle Solaris Cluster Geographic Edition software product protects applications from unexpected disruptions by using multiple clusters that are geographically separated by long distances. These clusters contain identical copies of the Geographic Edition infrastructure, which manage replicated data between the clusters. Geographic Edition software is a layered extension of the Oracle Solaris Cluster software.

The *Oracle Solaris Cluster Geographic Edition Security Guide* provides a information on secure installations, configuration, and security features for the Oracle Solaris Cluster product. Use this book with the entire Oracle Solaris Cluster Geographic Edition documentation set to provide a complete view of the Geographic Edition software.

This chapter contains the following sections:

- "Overview of Oracle Solaris Cluster Geographic Edition and Security" on page 9
- "Secure Installation and Configuration" on page 10
- "Security Features" on page 11

Overview of Oracle Solaris Cluster Geographic Edition and Security

Oracle Solaris Cluster Geographic Edition software is a layered extension of the Oracle Solaris Cluster software. Data replication software enables applications that are running on a Geographic Edition cluster to tolerate disasters by migrating services to a geographically separated secondary cluster. A disaster such as an earthquake, fire, or storm might disable the cluster at the primary site.

If a disaster occurs, the Geographic Edition cluster can continue to provide services by using the following levels of redundancy:

- A secondary cluster
- Duplicated application configuration on the secondary cluster

- Replicated data on the secondary cluster

The Geographic Edition software provides a suite of tools to manage and configure geographically separated clusters with a migration of services between sites. The Geographic Edition software can manage availability across multiple physical locations through robust security, application service migration, and data replication to tolerate disaster across an enterprise system.

On Geographic Edition 3.3, the clusters can be global clusters, zone clusters, or a combination of both.

General Security Principles

The following principles are fundamental to using the Oracle Solaris Cluster Geographic Edition application securely.

- Keep software up to date
- Restrict network access to critical services
- Follow the principle of least privilege
- Monitor system activity
- Keep up to date on the latest Oracle security information

Secure Installation and Configuration

This section provides links for planning and executing a secure installation and configuration of Oracle Solaris Cluster Geographic Edition.

- Installation – Geographic Edition software must be installed on a cluster that is running the Oracle Solaris Operating System and the Oracle Solaris Cluster software. You can install Geographic Edition software at the same time that you install Oracle Solaris Cluster software or at any time afterwards. The Geographic Edition software configuration is identical to the Oracle Solaris Cluster software configurations. See Chapter 2, "Installing Geographic Edition Software," in *Oracle Solaris Cluster Geographic Edition Installation Guide*.
- Configuration – You can perform all administration tasks on a cluster that is running the Geographic Edition software without causing any nodes or the cluster to fail. You can install, configure, start, use, stop, and uninstall the Geographic Edition software on an operational cluster. See Chapter 4, "Administering Access and Security," in *Oracle Solaris Cluster Geographic Edition System Administration Guide*.

Security Features

This section contains information about specific security mechanisms offered by Oracle Solaris Cluster Geographic Edition.

A secure installation uses the following critical security features:

- Role-Based Access Control (RBAC) – Geographic Edition software bases its RBAC profiles on the RBAC rights profiles that are used in the Oracle Solaris Cluster software. If you are not a superuser, use the RBAC roles of `solaris.cluster.geo.modify`, `solaris.cluster.geo.admin`, and `solaris.cluster.geo.read` to access the cluster. For more information, see "Geographic Edition Software and RBAC" in *Oracle Solaris Cluster Geographic Edition System Administration Guide*.
- Security Certificates – During installation, the cluster is configured for secure cluster communication by using security certificates (nodes within the same cluster must share the same security certificates). The communication is secured through the Java Management Extensions (JMX) port with Secure Sockets Layer (SSL) and security certificates. For more information, see "Configuring Trust Between Partner Clusters" in *Oracle Solaris Cluster Geographic Edition Installation Guide*.
- Common Agent Container – To enable a zone cluster to function as a member of a Geographic Edition partnership, the common agent container must be manually configured within the zone cluster. For more information, see "Preparing a Zone Cluster for Partner Membership" in *Oracle Solaris Cluster Geographic Edition Installation Guide*.
- IP Security Architecture (IPsec) – Use IPsec to configure secure TCP/UDP heartbeat communications between partner clusters. For more information, see "Configuring Secure Cluster Communication Using IPsec" in *Oracle Solaris Cluster Geographic Edition System Administration Guide*.

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